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UNITED STATES PATENT OFFICE

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MICRO PHOTO DIVISION
BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 6, 1966 Volume 830 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of July 1966

Examiner affirmed	215
Examiner affirmed in part	49
Examiner reversed	63
Total	327

United States Adopted Names

List No 14

March 1, 1966 to June 30, 1966

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Assistant Director, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

allobarbital: central nervous system depressant
betamethasone acetate: corticosteroid
betamethasone disodium phosphate: corticosteroid
cloperidone hydrochloride: sedative; tranquilizer
descinolone acetonide: glucocorticoid
gamfexine: antidepressant
guanethidine monosulfate: hypotensive
hycanthone: schistosomacide
isosorbide: oral osmotic diuretic
lidoflazine: cardiovascular agent
mesterolone: oral androgenic hormone
metyrapone tartrate: diagnostic test of pituitary function
niclosamide: anthelmintic
nitarsone: veterinary histomonastat
nonoxynol: spermatocide
prednival: topical anti-inflammatory
prilocaine hydrochloride: local anesthetic
propiram fumarate: analgesic
pyrantel tartrate: anthelmintic
rifamide: antibacterial
roxarsone: veterinary growth stimulant
sodium ampicillin: antibiotic
sodium edetate: chelating agent
tetroquinone: treatment of keloids
trimoxamine hydrochloride: antihypertensive
trisodium edetate: chelating agent
viridofulvin: antifungal antibiotic

United States Adopted Names (USAN) and United States Adopted Names (Proposed) (USAN)

QUARTERLY CUMULATIVE LIST

January 1, 1966–June 30, 1966

This is a revised alphabetical listing of the nonproprietary names *proposed for adoption* by the USAN Council which were published in the Trademark Bureau Bulletin during the period indicated. The listing also incorporates the revised lists of *adopted* nonproprietary names issued by the USAN Council, but not published in the Bulletin.

The Quarterly Cumulative List is intended to supplement USAN Cumulative List 4, 1961–1965, published annually for the Council by the United States Pharmacopeia; it is distributed with an issue of the Trademark Bureau Bulletin.

An asterisk (*) before a name indicates an *adopted name;* all other names on the list are *proposed for adoption.*

Since Q.C.L. is cumulative, only the latest issue need be consulted. All preceding lists may be discarded.

Any comments or protests regarding proposed names should be brought promptly to the attention of the USAN Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

*allobarbital: central nervous system depressant
asperlin: antibacterial; antineoplastic
*betamethasone acetate: corticosteroid
*betamethasone disodium phosphate: corticosteroid
*cloperidone hydrochloride: sedative; tranquilizer
*cyheptamide: anticonvulsant
*descinolone acetonide: glucocorticoid
*gamfexine: antidepressant
*guanethidine monosulfate: hypotensive
*hycanthone: schistosomacide
*ibufenac: analgesic; anti-inflammatory
*isosorbide: oral osmotic diuretic
*lidoflazine: cardiovascular agent
*mefruside: diuretic
*mesterolone: oral androgenic hormone
*metyrapone tartrate: diagnostic test of pituitary function
*niclosamide: anthelmintic
*nifuraldezone: antibacterial
*nitarsone: veterinary histomonastat
*nitrazepam: hypnotic; anticonvulsant
*nitromide: veterinary coccidiostat and antibacterial
*nonoxynol: spermatocide
*norgestrel: progestin
*pemoline: central nervous system stimulant
phenobarb: proposed abbreviation for phenobarbital
phthalofyne: veterinary anthelmintic

New Applications Received During July 1966

Patents	6925
Designs	380
Plant Patents	2
Reissues	14
Total	7321

Issue—September 6, 1966

Patents	1427	No. 3,270,351 to No.	3,271,777,	incl.
Designs	51	No. 205,651 to No.	205,701,	incl.
Plant Patents	4	No. 2,667 to No.	2,670,	incl.
Reissues	5	No. 26,073 to No.,	26,077,	incl.
Total	1487			

•prednival : topical anti-inflammatory
•prilocaine hydrochloride : local anesthetic
•propiram fumarate : analgesic
•pyrantel tartrate : anthelmintic
quilazine maleate : oxytocic
•rifamide : antibacterial
•roxarsone : veterinary growth simulant
seperidol hydrochloride : neuroleptic
•sodium ampicillin : antibiotic
•sodium edetate : chelating agent
•sodium ethacrynate : diuretic
sulfabenz : veterinary antibacterial and anticoccidial
sulfafen : antibacterial ; anticoccidial agent
•tetramisole hydrochloride : anthelmintic
•tetroquinone : treatment of keloids
thyroglobulin : thyroid preparation
•trimoxamine hydrochloride : antihypertensive
•trisodium edetate : chelating agent
•viridofulvin : antifungal antibiotic
xolertine hydrochloride : vasodilator, anti-adrenergic ; anti-hypertensive

Extensions of Time

It is ordinarily desirable that notice of the action taken by the Patent Office on requests for extension of time be communicated to the persons making the requests as soon as is reasonably possible. In order to improve Patent Office service to patent and trademark applicants in this regard, the following procedure is being instituted effective immediately. If a request for extension of time is filed in duplicate and accompanied by a stamped return-addressed envelope, the Office will indicate the action taken on the duplicate and return it promptly in the envelope. Utilization of this procedure is optional on the part of applicant.

EDWARD J. BRENNER,
Aug. 3, 1966. *Commissioner of Patents.*

Second Action Rejection

Effective Sept. 1, 1966, on a trial basis until further notice, second actions on the merits will not be made final where the Examiner introduces new art or a new ground of rejection not necessitated by an amendment or change in the claims or specification. Also, a shortened statutory period of three months will be set in such actions. The third action should then be made final and include a three-month shortened statutory period. Thus, no shortened statutory period in excess of three months will be set in any action.

RICHARD A. WAHL,
Assistant Commissioner

Discontinuation of a Service by Mail Room

Effective Sept. 1, 1966, the privilege that has been extended to applicants and their representatives with respect to personal service in the Mail Room will be modified. Amendments and other papers may continue to be hand delivered to the Mail Room where they will be dated and then processed in the normal manner. However, in the interest of Office efficiency, the special privilege of having these documents returned to the applicant or his representative for the purpose of hand delivery to other Branches or Examining Groups will be discontinued. If it is considered necessary to discuss the subject matter of any document that has been officially deposited in the Mail Room, it would be appropriate to use a copy of the document for that purpose.

EDWARD J. BRENNER,
Aug. 8, 1966. *Commissioner.*

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,848,049, D. H. Robbins and V. M. Corrado, JUSTIFICATION INFORMATION COMPUTER AND TAPE PERFORATOR FOR PHOTOCOMPOSING MACHINES, decided Aug 27, 1963, Interference No. 90,599, claims 36, 37, 38, 39, 42, 43, 49, 57 and 58

Patent No. 2,958,927, M K Kravats, METHOD OF MAKING ANTIFRICTION BEARING, decided Apr 29, 1966, Interference No. 92,681, claim 1

Patent No 3,000,845, K. W Doak and A. E Jeltsch, PROCESS OF PROMOTING CRYSTALLIZATION OF ISOTACTIC POLYSTYRENE WITH A CRYSTALLIZATION ENHANCER, decided July 22, 1966, Interference No. 94,530, claims 1, 2, 3, 4, 5 and 6

Patent No. 3,084,421, D. L. McDaniels, R. W. Jech, J. W. Weeton and D. W. Petrasek, REINFORCED METALLIC COMPOSITES, decided July 21, 1966, Interference No. 94,675, claim 3.

Patent No. 3,105,216, J Clayton, Jr., and L. Morton, Jr., POTENTIOMETER, decided May 27, 1966, Interference No. 94,697, claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13 and 14.

Patent No. 3,105,216, J. Clayton, Jr. and L. Morton Jr., POTENTIOMETER, decided May 4, 1966, Interference No. 94,734, claim 10.

Patent No. 3,108,201, D. N. Summerfield, BRUSH HOLDER ASSEMBLY, decided Dec. 15, 1965, Interference No. 94,370, claims 1, 2, 3, 4, 6, 7 and 8.

Patent No. 3,113,234, H. Schlegel, DISCHARGE LAMP WITH MAGNETIC STABILIZATION, decided July 19, 1966, Interference No. 95,191, claim 1.

Patent No. 3,122,621, C. A. Ellis, MERCURY SWITCH CONSTRUCTION, decided July 11, 1966, Interference No. 94,923, claims 1 and 2.

Patent No. 3,146,872, C. T. Prucha, AUTOMATIC BRAKE SYSTEM, decided July 22, 1966, Interference No. 94,987, claims 1, 2, 3, 4, 5, 6, 7 and 8.

Patent No. 3,150,105, W. E. Ledding, WET OXIDATIVE REACTIVATION OF SPENT ACTIVE CARBON, decided July 6, 1966, Interference No. 94,771, claim 1.

Patent No. 3,152,380, B. E. Martin, PROCESS FOR TREATING POLYPROPYLENE FIBERS, decided July 13, 1966, Interference No. 95,185, claim 1.

Patent No. 3,189,076, J. E. Adams, SHEET METAL CAGE NUT, decided June 15, 1966, Interference No. 95,265, claim 1.

Patent No. 3,199,163, Z. M. Surletta, SPRING CLIP, decided July 21, 1966, Interference No. 95,304, claim 1.

Patent No. 3,213,116, G. W. Moersch and W. A. Neukils, AMINE COMPOUNDS AND METHODS FOR THEIR PRODUCTION, decided July 13, 1966, Interference No. 95,340, claims 1 and 2.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JULY 1, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-1-63	11-14-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	1-29-63	2-20-61
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-1-63	4-13-62
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	7-1-63	7-11-60
COMPOSITIONS AND MOLDING, GROUP 150—M. STERMAN, Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	7-23-63	2-26-60
COATING AND LAMINATING, GROUP 160—J. R. LIBERMAN, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	6-4-63	12-4-61
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	11-16-62	10-11-61
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-11-63	12-18-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER AND ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches, Miscellaneous.	12-31-62	10-19-61
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	8-26-63	1-16-62
INFORMATION TRANSMISSION, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	4-4-63	12-22-61
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—E. J. SAX, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	12-28-62	2-6-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	12-17-62	7-31-61
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	1-8-63	8-8-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	9-18-63	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	5-17-65	9-21-64

Total number of pending applications (excluding Designs)	196,314
Total number of Design applications pending	4,534
Total number of applications awaiting action (excluding Designs)	145,101
Total number of Design applications awaiting action	2,563
Date of oldest new application awaiting action	Nov. 16, 1962
Date of oldest amended application awaiting action	Feb. 26, 1960

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during August 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 2,477,558 to 2,490,820, inclusive
Plant Patents ..... Numbers 858 to 869, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	10-5-64	2-19-64
MANUFACTURING; METAL, PLASTICS WORKING; MACHINE TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus, Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders.	3-3-64	3-6-62
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	7-7-64	4-30-63
FLUID HANDLING, GROUP 360—T. J. HICKEY, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	5-18-64	11-7-62
HEAT AND POWER ENGINEERING, GROUP 370—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	8-17-64	11-14-63
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	10-14-63	1-3-62
CIVIL ENGINEERING, GROUP 420—T. J. HICKEY, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	7-1-64	6-25-62
TEXTILES AND APPAREL, GROUP 440—W. S. COLE, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	7-1-64	6-21-62
TRANSPORTATION, GROUP 450—A. BERLIN, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	7-16-64	7-22-63
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	7-1-64	1-24-63
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—A. RUEGG, Manager Printing; Typewriters; Stationery; Material Treatment.	7-1-64	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ERWINE LAVERNE AND ESTELLE LAVERNE

No. 7546. Decided March 10, 1966

[53 CCPA —; 356 F.2d 1003; 148 USPQ 674]

1. DESIGN—PATENTABILITY—35 U.S.C. 171.

"The patentability of designs is provided for in 35 U.S.C. 171, the second paragraph of which reads: 'The provisions of this title relating to patents for inventions shall apply to patents for designs, except as otherwise provided'."

2. SAME—SAME—OBVIOUSNESS—"ART" OF INDUSTRIAL DESIGN—35 U.S.C. 103.

"What is 'the art to which the subject matter pertains' in this case? Is it the molded chair 'art' or is it the ornamental design 'art'? In what field is the 'inventor' of the design operating? Since those who create designs are designers, not chair makers, it would seem to follow that he is operating in the field of industrial design and that it is the 'art' involved."

3. PATENTABILITY—OBVIOUSNESS—"PERSON HAVING ORDINARY SKILL IN THE ART"—35 U.S.C. 103.

"The next question, then, is who is a 'person having ordinary skill in' this art? In the mechanical, chemical, and electrical 'arts' we have distinguished, since *Hotchkiss* v. *Greenwood*, 52 U.S. 248 (1850), between 'an ordinary mechanic acquainted with the business' and the 'inventor': between the craftsman or routineer on the one hand and the innovator on the other, now, by statute, the innovator who makes *unobvious* innovations. With respect to such inventions, these two categories of persons are workers in the same 'art'."

4. DESIGN—PATENTABILITY—OBVIOUSNESS—35 U.S.C. 103.

"The codification of the design law provisions in 1952, continuing as it did the statutory provisions for design patents without change in substance (see former statutes R.S. 4929 and 4933), did nothing to alleviate the difficulties. One thing it did do, however, * * * was to abolish as the test whether or not the design is 'inventive,' substituting the unobviousness test of section 103."

5. SAME—SAME—SAME—SAME.

"We feel that the test of patentability of an admittedly new design cannot be whether it is no more than a 'competent designer' might produce. That would be parallel to saying of a mechanical invention that it is no more than a 'competent inventor' might produce. The test must be obviousness, for that is the dictate of section 103, but it must be applied in a way which will implement the legislative intent to promote progress in the field of industrial design by means of the patent incentive. This will not be done by denying patents to everything competent designers produce by the skill of their calling."

6. SAME—SAME—SAME—SAME.

"Following the mandate of section 103, it would seem that what we have to do is to determine obviousness [of a design] to the ordinary intelligent man. The test is inherently a visual test, for the design is nothing more than appearance, and the appearance is that of the article as a whole. * * * No special skill is required to determine what things look like, though individuals react differently. It is bound to be an individual reaction."

7. SAME—SAME—SAME—SAME STYLE TREND.

"The Board felt that the ordinary individual would take the two designs here involved to be mere variations of the same design rather than different designs. We do not see how this is possible. One might feel that the two chairs were part of the same style trend, just as competing automobiles or refrigerators or radios seem to follow similar patterns from year to year, but they are, in our opinion, distinctly different designs within that style trend. The design which initiates a new style does not automatically close the field to all other designs within the same style pattern."

8. SAME—SAME—PARTICULAR SUBJECT MATTER—CHAIR.

The decision of the Board of Appeals, refusing an application for a design patent on a chair as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 68,190.

REVERSED.

Michael S. Striker, Gordon D. Coplein for appellants.

Clarence W. Moore (*S. Wm. Cochran* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

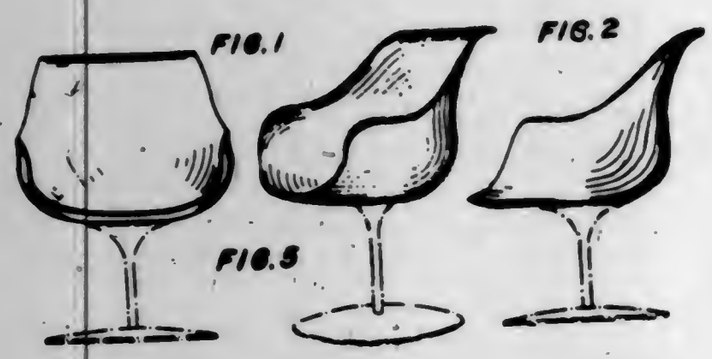
This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of application Serial No. D–68,190 filed January 4, 1962, for a Design for Chair or the Like.

The sole issue, as we see it, is the obviousness of appellants' design, under 35 U.S.C. 103, in view of the single reference relied on by the Board, the design patent to Eero Saarinen, Des. 181,945, issued Jan. 21, 1958. The Patent Office Solicitor so regarded the issue, but neither the Examiner nor the Board referred to any statutory ground of rejection.

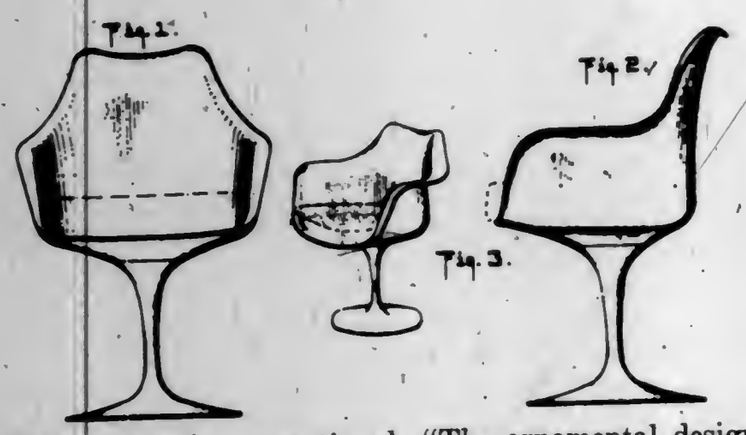
Appellants' chair and the Saarinen chair are of the same general type in that each consists of a one-piece molded seat supported on a pedestal (the latter being no part of the design claimed), a back, and sides.

We reproduce front, a perspective, and side views of appellants' chair and below them corresponding views of the Saarinen reference chair.

APPELLANTS



REFERENCE



Appellants' claim is conventional: "The ornamental design for a chair or the like as shown and described." See Patent Office Rule 153. However, there is no description other than the showing of the drawings.

The Patent Office does not question novelty.

The following excerpts from the Examiner's answer show his grounds of rejection [emphasis ours]:

> It is the Examiner's position that the chair disclosed and claimed herein is *substantially similar* in overall appearance to the Saarinen chair and as such it possesses *no patentable merit* thereover.
>
> Applicant's [sic] omission of the peripheral edge employed by Saarinen is noted. However, the omission of this flange is well *within the expected skill of a competent designer* and in any event it is insufficient as a basis for patentability.
>
> • • • • • • • •
>
> Appellant directs attention to the lipped edge of Saarinen, the angle of the side walls and, to the curvature of the back thereof when viewed in side elevation. These remarks, however, are held to be directed to variations which constitute *differences in minutiae*. • • •
>
> • • • • • • • •
>
> Consequently, it is not believed that the difference between the Saarinen chair and the chair disclosed herein can be called *inventive* without defining the term *invention* to be nothing more than the sort of variation to be expected from any ordinarily skillful *mechanic* conversant with the art involved.

The Board, in affirming, expressed its reasons in one paragraph, saying:

> • • • the over-all similarity between the two designs is so close that the ordinary individual would take them to be mere variations of the same design rather than essentially new or different designs. *In re Johnson*, 36 CCPA 1175; 1949 C.D. 458; 627 O.G. 911; 175 F.2d 791; 82 USPQ 199, and *In re Lamb*, 48 CCPA 817; 1961 C.D. 219; 769 O.G. 1051; 286 F.2d 610; 128 USPQ 539.

[1] The patentability of designs is provided for in 35 U.S.C. 171, the second paragraph of which reads:

> The provisions of this title relating to patents for inventions shall apply to patents for designs, except as otherwise provided.

On the patentability issue, novelty under 35 U.S.C. 102 not being questioned, the statutory provision which controls here is 35 U.S.C. 103. Stating the issue in the words of the statute, it is whether

> • • • the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

It will be noted that section 171 distinguished between "patents for inventions" and "patents for designs," which would seem to indicate a legislative consciousness that "inventions" and "designs" are different in kind. Because they are, the language of section 103, designed to apply to inventions in the field of process, machine, manufacture, and composition of matter (35 U.S.C. 101), is somewhat difficult to apply to the problem of the patentability of designs.

[2] What is "the art to which the subject matter pertains" in this case? Is it the molded chair "art" or is it the ornamental design "art"? In what field is the "inventor" of the design operating? [1]

[1] The only reason to call the design-creator an "inventor" is the language of 35 U.S.C. 171, which contains its own problems. It is:

> Whoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor, subject to the conditions and requirements of this title.

This is the problem: "Whoever invents" requires the applicant to have invented the design but this is the same thing as originating it, if "original" is given the meaning of doing it yourself without copying. With that meaning, either the word "invents" or the word "original" is superfluous. However, "original" has another possible meaning—something fresh, striking, or unusual and this clearly implies *novelty* to a considerable degree. If that is what is meant by "original" in the statute, then the word "new" becomes superfluous. Query: if "original" is given the second meaning of "out of the ordinary," then is not the section 171 requirement that the design be "original" redundant with respect to the section 103 requirement for unobviousness? It can scarcely be said that the statutory requirements are clear.

Since those who create designs are designers, not chair makers, it would seem to follow that he is operating in the field of industrial design and that it is the "art" involved.

[3] The next question, then, is who is a "person having ordinary skill in" this art? In the mechanical, chemical, and electrical "arts" we have distinguished, since *Hotchkiss* v. *Greenwood*, 52 U.S. 248 (1850), between "an ordinary mechanic acquainted with the business" and the "inventor"; between the craftsman or routineer on the one had and the innovator on the other, now, by statute, the innovator who makes *unobvious* innovations. With respect to such inventions, these two categories of persons are workers in the same "art."

In the field of design the analysis is not so easy. Design inventing or originating is done by designers. The Examiner here has referred to "the expected skill of a competent designer" as the basis of comparison. However, if we equate him with the class of mechanics, as the Examiner did, and refuse design patent protection to his usual work product, are we not ruling out, as a practical matter, all patent protection for ornamental designs for articles of manufacture? Yet the clear purpose of the design patent law is to promote progress in the "art" of industrial design and who is going to produce that progress if it is not the class of "competent designers"? We cannot equate them with the mechanics in the mechanic *vs.* inventor test for patentability. Correspondingly, we cannot solve the problem here, obviousness, by using for our basis of comparison the inventor class in the field of industrial design.

This court recognized and wrestled with the inherent difficulties of this problem under the old statutes twenty years ago in *In re Faustmann*, 33 CCPA 1065, 155 F.2d 388, 69 USPQ 541, with respect to the "existence of invention" and appreciated that the problem "must necessarily be approached from a different angle."

[4] The codification of the design law provisions in 1952, continuing as it did the statutory provisions for design patents without change in substance (see former statutes R.S. 4929 and 4933), did nothing to alleviate the difficulties. One thing it did do, however, as the Examiner seems not to have appreciated, was to abolish as the test whether or not the design is "inventive," substituting the unobviousness test of section 103.

[5] We feel that the test of patentability of an admittedly new design cannot be whether it is no more than a "competent designer" might produce. That would be parallel to saying of a mechanical invention that it is no more than a "competent inventor" might produce. The test must be obviousness, for that is the dictate of section 103, but it must be applied in a way which will implement the legislative intent to promote progress in the field of industrial design by means of the patent incentive. This will not be done by denying patents to everything competent designers produce by the skill of their calling.

[6] Following the mandate of section 103, it would seem that what we have to do is to determine obviousness to the ordinary intelligent man. The test is inherently a visual test, for the design is nothing more than appearance, and the appearance is that of the article as a whole. *In re Jennings*, 37 CCPA 1023, 182 F.2d 207, 86 USPQ 68. No special skill is required to determine what things look like, though individuals react differently. It is bound to be an individual reaction.

Having studied appellants' and Saarinen's drawings and tried to visualize what their chairs would look like in real life, we have concluded that under the statutory test, applied in the light of the foregoing analysis, appellants' chair design would not be obvious from Saarinen's. True, there is a general similarity in that they are both pedestal chairs with unitary molded seats, with the general features that go with molding a seat to accommodate the human anatomy. But we point out a number of differences, which we think are not properly characterized as "minutiae," legally speaking, the cumulative effect of which is unquestionably to create a different appearance.

From the front views in the above drawings it will be observed that appellants' general shape gives the impression of an upwardly tapering wine goblet with rounded bottom and straight top. The rear view, not shown here, gives even more of this impression, whereas the reference gives the impression of side arms flaring outwardly and of a narrow back with a concave top line.

The rounded bottom of appellants' goblet shape appears to stand upon the pedestal whereas in the reference the upward flare of the pedestal meets and blends with a downward flare of the seat in one smooth curve forming an integral unit.

The open edges of the reference seat, extending from the top corners of the back to the seat proper, are flared outwardly into arm rests of substantial width. The vertical front edges of the side arms are also flared outwardly. By contrast, appellants' chair has a thin edge providing no arm rests and from the front upper corners of the sides to the seat it curves inwardly, instead of outwardly, giving a closing-in rather than opening-out impression.

Looking at the side views, appellants' front and top edges consist of a pair of concave curves which seem to sweep upwardly to the right and the back has a reverse curve, from the top of the back downwardly, first concave and then pronouncedly convex at the back of the seat. The reference back is almost a straight line with a stiff rather than a form-fitting look, the back and seat bottom forming nearly a right angle.

Perhaps each of these differences by itself is a minor difference, but taken together the net result is a distinctly different appearance. These facts closely resemble those in the recent case of *In re McKay*, 50 CCPA 1257, 316 F.2d 952, 137 USPQ 558, opinion by Judge Martin, wherein we reversed the rejection of an application on a lint remover. We there said:

> In the present case, the cleaning implement of Sriminger may have "the same general overall shape" as appellant's design in the broad sense that both have a generally cylindrical body and a tapered handle attached at its smaller end to the body. However, the two devices are vastly different in the impression they make on an observer. The difference seems to us to have two aspects, one being in a difference in proportions of the elements and the other in particular features of the handle alone.

We found the differences "result in a new and ornamental design which would not be obvious from the prior art."

The previous year we reversed the rejection of a design for a rubber floor tile in *In re Bartlett and Fletcher*, 49 CCPA 969, 300 F.2d 942, 133 USPQ 204, pointing out that we felt the average observer would take the design of the appellants and of the reference to be different designs and might well have a preference for one over the other. We feel the same is true here. We there discussed the *Johnson* case, cited by the Board herein. We do not think the facts here any more resemble those in the *Johnson* case than did the facts in *Bartlett*.

The *Lamb* case cited by the Board, another of our recent decisions, also is distinguishable on its facts. We there found that the *same* design, which appeared in the prior art for a carving knife handle, had merely been *adapted to suit the size* of a steak knife, the prior art patent being appellant's own. We said, "the most appellant has done is to modify an already existing design in an obvious manner to harmonize with a smaller blade." We do not see how the Board could find that decision relevant to the facts here.

[7] The Board felt that the ordinary individual would take the two designs here involved to be mere variations of the same design rather than different designs. We do not see how this is possible. One might feel that the two chairs were part of the same style trend, just as competing automobiles or refrigerators or radios seem to follow similar patterns from year to year, but they are, in our opinion, distinctly different designs within that style trend. The design which initiates a new style does not automatically close the field to all other designs within the same style pattern.

[8] The decision of the Board is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

AMERICAN CYANAMID COMPANY *v.* UNITED STATES RUBBER COMPANY

No. 7544. Decided March 17, 1966

[53 CCPA—; 356 F.2d 1008; 148 USPQ 729]

1. TRADEMARK—CONFUSING SIMILARITY—"CYGON" AND "PHYGON" FOR PESTICIDES.
"However, the similarity in sound and spelling [of 'CYGON' for an insecticide and of 'PHYGON' for fungicides], particularly the former, is sufficient, we think, to create a likelihood of various kinds of confusion and mistake, considering the close relationship of the goods in use. They are both for use on the farm and would, we presume, be used by workers of divers degrees of intelligence, experience, and carefulness. While a farm manager planning a spraying program would no doubt exercise such a degree of care in selecting and compounding his spray as to preclude mistake on his part, we see merit in appellee's argument that the sale, purchase, and handling of CYGON and PHYGON products at the verbal level, possibly under noisy conditions, might result in confusion or mistake and even damage to crops through a confused worker applying the wrong material."

2. SAME—SAME—LIKELIHOOD OF CONFUSION NOT LIMITED TO ORIGIN—LANHAM ACT, SECTION 2(d).
"Section 2(d) of the Lanham Act (15 U.S.C. 1052(d)) prohibits registration of a mark if it would 'be likely, when applied to the goods of the applicant, to cause confusion, or to cause mistake, or to deceive,' without limitation as to the kind of confusion, mistake or deception. This provision is not limited to confusion, mistake or deception as to origin of the goods, though that is the question most often involved."

Appeal from the Patent Office. Opposition No. 41,786.

AFFIRMED.

James Edwin Archer for appellant.

David B. Miller (*Elmer Stewart* of counsel) for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board (142 USPQ 359) sustaining appellee's opposition to registration on the Principal Register of the word mark CYGON on application Serial No. 107,307, filed October 28, 1960, by appellant. The mark is sought to be registered for "an insecticide" and the claimed date of first use is September 15, 1960.

Opposition is based in part on prior use and registration of PHYGON for "fungicides," Reg. No. 430,237, granted June 10, 1947, to United States Rubber Company under the Act of February 20, 1905. The evidence shows extensive and continuing use of the mark. Opposer alleges similarity of the marks in sound, appearance, and meaning, and likelihood of misuse due to confusion of products when appellant's insecticides are sold under the mark CYGON, as well as damage from the registration is granted.

The record also shows that opposer has sold a combination fungicide-insecticide under the trademark PHYGON, marketed as a rose dust. Opposer sells insecticides under other trademarks.

PHYGON is marketed as a dry powder to be greatly diluted in water for use. CYGON is sold as an emulsifiable liquid in two different concentrations, also to be diluted in water for use.

There is some overlap in advertised uses in that both PHYGON and CYGON are recommended for use on apple trees, azaleas, and roses, albeit for different purposes.

Both products fall into the class of agricultural chemicals and they are both pesticides. They are sold through the same channels of trade consumers, namely, farmers.

The board felt that "it is clear that the products of the parties are of such a nature that they would be attributed to a single producer if sold under the same or similar mark." While that might be true in the case of the same mark, we cannot agree that the similar marks here, under the circumstances of this case, would likely lead to confusion *as to source*. The evidence shows that, with a single exception on the part of appellant, the producers' names are prominently associated with the marks on labels in such a way as to preclude mistake as to the origin of the goods. As to the exception, the evidence is that the distributor's name appears in place of that of the producer.

[1] However, the similarity in sound and spelling, particularly the former, is sufficient, we think, to create a likelihood of various kinds of confusion and mistake, considering the close relationship of the goods in use. They are both for use on the farm and would, we presume, be used by workers of divers degrees of intelligence, experience, and carefulness. While a farm manager planning a spraying program would no doubt exercise such a degree of care in selecting and compounding his spray as to preclude mistake on his part, we see merit in appellee's argument that the sale, purchase, and handling of CYGON and PHYGON products at the verbal level, possibly under noisy conditions, might result in confusion or mistake and even damage to crops through a confused worker applying the wrong material.

[2] Section 2(d) of the Lanham Act (15 U.S.C. 1052(d)) prohibits registration of a mark if it would "be likely, when applied to the goods of the applicant, to cause confusion, or to cause mistake, or to deceive," without limitation as to the kind of confusion, mistake or deception. This provision is not limited to confusion, mistake or deception as to origin of the goods, though that is the question most often involved.

We are aware that denial of registration is not a denial of the right

to use and that this decision may not affect existing practices but we are governed by the provisions of the statute.

We do not see error in the decision of the Board to sustain the opposition on the ground of likelihood of confusion or mistake and it is therefore affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

TEXAS INSTRUMENTS INCORPORATED *v.* TECHNI-RITE ELECTRONICS, INC.

No. 7521. Decided March 17, 1966

[53 CCPA—; 357 F.2d 398; 148 USPQ 726]

1. TRADEMARK—CONFUSING SIMILARITY—CONFUSION AS TO SOURCE—15 U.S.C. 1052(d).

"While the record supports specific differences in the goods, this is not the test to be applied in determining likelihood of confusion. * * *. Similarly, markets and distribution channels are but factors which may be considered in resolving the sole issue before us, which is whether applicant-appellee's mark '* * * so resembles a mark registered in the Patent Office or a mark or trade name previously used in the United States by another and not abandoned, as to be likely, when applied to the goods of the applicant, to cause confusion, or to cause mistake, or to deceive: * * * 15 U.S.C. 1052(d).' We now consider the respective marks to determine whether it would be likely to regard the goods as coming from the same source."

2. SAME—DISTINCTIVENESS—SUFFIX "RITE" IN TRADE NAMES.

"Some effort was made by appellant to suggest that since the suffix 'rite' was used in several of its trade names, i.e., 'servo/riter', 'oscillo/riter' and 'event/riter' to designate particular of its products, the public had associated appellant as the source of goods on which marks ending with the suffix 'rite' was employed. It is not seen on this record how this result can follow from such use. Instead, the record establishes that the suffix 'rite' was a common suffix prior to appellant's adoption of its mark. Thus, taken alone, the suffix 'rite' so lacks in distinctiveness that it cannot be said to support appellant's position."

3. SAME—CONFUSING SIMILARITY—EVIDENCE.

"We point out * * * that even though the proofs fail to establish actual confusion, it is sufficient to sustain an opposition if the proofs establish a 'likelihood' of confusion, mistake or deception of purchasers."

4. SAME—SAME—"TECHNI-RITE" AND "RECTI-RITE" FOR ELECTRONIC DATA EQUIPMENT.

Upon reviewing the decision of the Trademark Trial and Appeal Board which found no likelihood of confusion between the appellant-opposer's mark "recti-rite" and the appellee's mark "techni-rite" that was sought to be registered, both marks being for electronic data equipment, *Held* that "Considering the marks as applied to the goods of the parties, as required by the terms of 15 U.S.C. 1052(d), including the technical nature of the goods, their high cost, their respective markets and channels of distribution, the discrimination of prospective purchasers, and the differences in the marks, we agree with the decision of the Trademark Trial and Appeal Board and it is therefore *affirmed*."

Appeal from the Patent Office. Opposition No. 41,999.

AFFIRMED.

Stevens, Davis, Miller & Mosher (*J. W. Gipple* of counsel) for appellant.

Elliot A. Salter for appellee.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, J., delivered the opinion of the court.

The Trademark Trial and Appeal Board dismissed appellant-opposer's opposition to the registration of appellee's mark "techni-rite" for "data presentation equipment, namely, dimensional gauges and electronic recording and indicating apparatus and equipment used in association therewith."[1] (141 USPQ 932). The opposition was based on appellant's prior use of the marks "recti/rite" and "recti/riter"[2] and ownership of registrations[3] therefor for similar goods.

The sole issue is likelihood of confusion under 15 U.S.C. 1052(d). The board found that while the goods of the respective parties were related, the marks were not likely to cause confusion or to cause mistake or to deceive.

Appellee argues that the goods, markets and distribution channels are different. Appellee points out that the respective goods have different utility, are technical in nature, are relatively expensive (450 dollars and up), and all prospective purchasers thereof would exercise discrimination in their selection.

[1] While the record supports specific differences in the goods, this is not the test to be applied in determining likelihood of confusion. See Vandenburgh, Trademark Law & Procedure, Section 5.41 (1959). Similarly, markets and distribution channels are but factors which may be considered in resolving the sole issue before us, which is whether applicant-appellee's mark

> * * * so resembles a mark registered in the Patent Office or a mark or trade name previously used in the United States by another and not abandoned, as to be likely, when applied to the goods of the applicant, to cause confusion, or to cause mistake, or to deceive: * * * 15 U.S.C. 1052(d).

We now consider the respective marks to determine whether it would be likely to regard the goods as coming from the same source. See Hoge, *Lanham Act's Housekeeping Amendments*, 52 T.M.R. 1245, 1249 (1962).

Considered in their entireties the marks in issue are similar because of their common use of the phonetic suffix "rite." The phonetic suffix "rite" suggests the words "right" and "write." In the first connotation it imparts to the respective marks the concept of correctness in the recording devices. In its second connotation it suggests that the record is written. As stated by appellee's witness Gipple:

> * * * we had felt that there was a rather broad usage in connection with the selling and marking of technical products with names that used the word "rite" as a suffix, and we brought this to the attention of Mr. Salter, our patent counsel, and suggested that he make a search restricted to technical products.

The result of the search made by Mr. Salter supported the above statement and was made of record. Exhibit A consists of 17 registrations of trademarks in which "rite" is the suffix. They support the testimony of appellee's witness Ondis that:

> * * * at the time the corporation was formed we had a rather clear plan as to the type and nature of the products that would be designed and manufactured by us. We decided to adopt a name that would have some relation to those products, and since the products were all technical in the sense that they were other than consumer, we decided to adopt a name that incorporated some portion of the word "technical" and we used "techni". We then decided to take the suffix "rite" which, as we analyzed it, had a dual meaning; the first meaning might be compared to the word "right" implying correctness or excellence, and

[1] Application Ser. No. 129,057, filed Oct. 2, 1961.
[2] The parties agree that all of the marks involved consist entirely of lower case letters. In the briefs and the board opinion, however, the marks are sometimes shown in capital letters.
[3] Registrations Nos. 660,542, 674,174, 674,578 and 676,680.

the second meaning of the suffix "rite" alluding to the fact that the equipments were writers, recording instruments that wrote caligraphically.

Thus, as we consider the entire marks in issue it is necessarily against a background of the common and well recognized usage of trademarks in which the phonetic suffix "rite" has been used. The recognized meaning which it imparts to the entire mark is the same in all marks in issue but it is not sufficiently distinctive as applied to such marks to indicate either appellant or appellee as the source or origin of the goods to which it is applied.

[2] Some effort was made by appellant to suggest that since the suffix "rite" was used in several of its trade names, i.e., "servo/riter," "oscillo/riter" and "event/riter" to designate particular of its products, the public had associated appellant as the source of goods on which marks ending with the suffix "rite" was employed. It is not seen on this record how this result can follow from such use. Instead, the record establishes that the suffix "rite" was a common suffix prior to appellant's adoption of its mark. Thus, taken alone, the suffix "rite" so lacks in distinctiveness that it cannot be said to support appellant's position. See *Servo Corp. of America* v. *Servo-Tek Products Co.*, 48 CCPA 978, 289 F. 2d 955, 129 USPQ 352.

We think we are supported in our decision by the results of a survey made by McGraw Hill Company for appellant. Appellant in its brief has summarized the record concerning this survey as follows:

> In November of 1962, McGraw Hill Research, a department of McGraw Hill Publishing Company, conducted an advertising survey including specifically an inquiry as to what "trade name" was used by the Opposer-Appellant, Texas Instruments Incorporated, on oscillographic recorders. Of the three hundred and eighty-six responses, two hundred and seventy-eight did not know Texas Instruments made oscillographic recorders, eighty-two knew Texas Instruments made oscillographic recorders but did not know the "trade name," nine incorrectly identified the oscillographic recorder by the name "recti/riter" (which is Opposer-Appellant's trademark for galvanometric recorders), six correctly identified the oscillographic recorder as "oscillo/riters," three identified Opposer-Appellant's oscillographic recorder as "techni-writer" (Exhibits 1, 23a, 23b, 23c, 23d, 24, 25a and 25b; R. 47–61; R. 64–69). * * *

We would add that the responses were received from a total of 2000 questionnaires which McGraw Hill sent to a randomly selected list of subscribers to its publication "Electronics." It seems but reasonable to assume that if appellant's position was correct more responses would have associated appellant with "rite" and "riter" type marks.

Distinctiveness of the marks in issue therefore must be found in their prefixes and in the effect of such prefixes in imparting distinctiveness to the entire mark with which they are used. The prefix "techni" in appellee's mark imparts to its mark as a whole an entirely different meaning than does appellant's prefix "recti."

Appellant cites *The Magnavox Corp.* v. *Multivox Corp. of America*, 52 CCPA 1025, 341 F. 2d 139, 144 USPQ 501, where we found a likelihood of confusion between the marks "Magnavox" and "Multivox," as applied to the goods of the parties, and argues that the facts before us in that case are remarkably similar to the facts in the present case. Appellant states in its brief:

> * * * the suffix "rite" is no weaker than the suffix "vox" as applied to the goods involved and that the prefixes "recti" and "techni" have as much in common as "multi" and "magna."

Appellee answers this argument as follows:

> * * * the suffix "vox" is not thought to be nearly as descriptive as the suffix "Rite," nor are the prefixes "Techni" and "Recti" thought to be nearly as similar as the prefixes "Multi" and "Magna," both of which comprise the same number of letters, start with the same letter, and have generally the same meaning and significance. * * *

We find appellee's reasoning more persuasive and, concerning the marks, we think the facts in the present case are more similar to those in *New Castle Products, Inc.* v. *American Door Co.*, 48 CCPA 1036, 291 F. 2d 954, 130 USPQ 167, where we found no likelihood of confusion between the marks "Modernfold" and "Magna-Fold" when applied to similar goods. See also *American Grease Stick Co.* v. *Chemplast, Inc.*, 52 CCPA 1103, 341 F. 2d 942, 144 USPQ 676.

The Board considered this survey evidence, discussed supra, as to whether or not it formed a basis from which a conclusion of actual confusion could be reached. We find, as did the Board, that the survey falls short of establishing actual confusion. [3] We point out, however, that even though the proofs fail to establish actual confusion, it is sufficient to sustain an opposition if the proofs establish a "likelihood" of confusion, mistake or deception of purchasers. Even when tested against this concept, the survey proofs are insufficient and unpersuasive.

[4] Considering the marks as applied to the goods of the parties, as required by the terms of 15 U.S.C. 1052(d), including the technical nature of the goods, their high cost, their respective markets and channels of distribution, the discrimination of prospective purchasers, and the differences in the marks, we agree with the decision of the Trademark Trial and Appeal Board and it is therefore affirmed.

AFFIRMED.

MARTIN, *J.*, took no part in the consideration or decision of this case.

U.S. Court of Customs and Patent Appeals

IN RE FRIEDRICH HEBBERLING

No 7566. Decided March 17, 1966

[53 CCPA—; 357 F.2d 1001; 148 USPQ 730]

1. CLAIM—CONSTRUCTION OF CLAIMS.

   "While applying the terms of claim 17 to Chadwick involved inclusion of a common portion of the Chadwick drive means in both the [claimed] 'means connected * * *' and the [claimed] 'reversal means * * *,' we think that reading those expressions on the reference disclosure involves no more than a reasonable interpretation of the claim language."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"REINFORCED SHEET MATERIAL AND METHOD OF AND APPARATUS FOR FORMING SAME."

   The refusal of certain claims in an application entitled "Reinforced Sheet Material and Method of and Apparatus for Forming Same," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 80,477.

AFFIRMED.

Jack M. Wiseman for appellant.

Clarence W. Moore (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

MARTIN, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection, as unpatentable over the prior art, of claims 1, 2, 17 and 25 of Hebberling application Serial No. 80,477, filed January 3, 1961, entitled "Reinforced Sheet Material and Method of and Apparatus for Forming Same." Two claims stand allowed.

Claims 2 and 25 are representative and read:

2. A high speed reciprocating apparatus for imparting a cyclical motion to strands of filamentary material to produce a reinforced web material comprising a first carrier, a guide member carried by said first carrier for movement therewith and arranged to receive strands of filamentary material, means connected to said first carrier for imparting a reciprocating movement to said first carrier, a second carrier disposed adjacent to and in parallel relation with said first carrier, a guide member carried by said second carrier for movement therewith and arranged to receive strands of filamentary material, and means interengaging said first and second carrier and actuated by said first carrier for imparting a reciprocating movement to said second carrier to move said second carrier in a direction opposite from which said first carrier moves.

25. A method of forming reinforced sheet material comprising the steps of, continuously advancing spaced apart sheets of material, continuously advancing continuous strands of reinforcing material between confronting surfaces of said sheets of material, applying adhesive material to said strands of reinforcing material, guiding said sheets of material to converge toward one another with the confronting surfaces thereof meeting, imparting a cyclic motion to said continuous strands of reinforcing material with the adhesive material applied thereto, depositing said strands with adhesive material applied thereto between said sheets of material as the confronting surfaces of said sheets of material meet, and pressing said sheets of material toward one another with the strands of reinforcing material therebetween to form a reinforced sheet material.

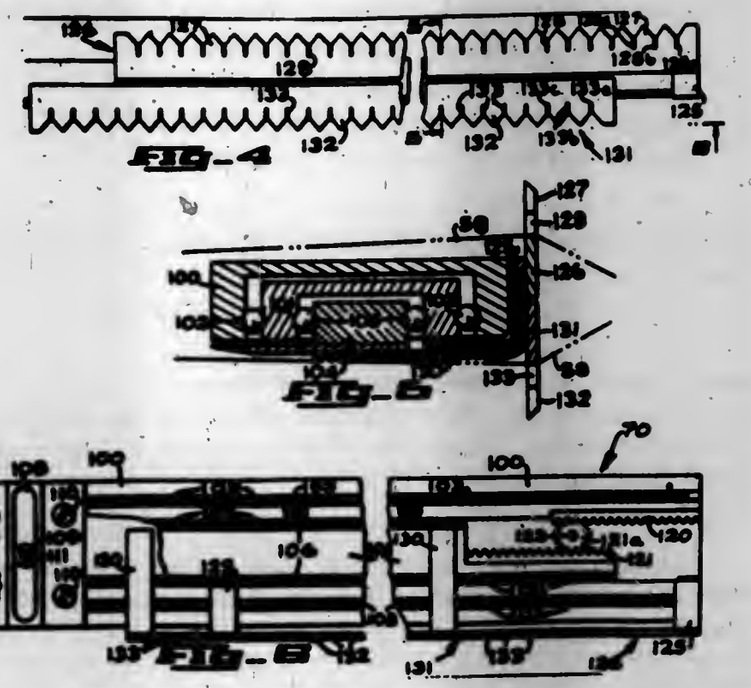
Claims 1 and 17 are apparatus claims to the same combination as claim 2 but are somewhat broader in their recitation of the "guide members" and the element designated "means interengaging * * *" in claim 2.

As is apparent from the representative claims, appellant's application relates to an apparatus and process for forming reinforced sheet material made up of two flat sheets of material secured together with continuous reinforcing strands of filamentary material disposed therebetween. In forming the reinforced material, a plurality of reinforcing strands are drawn from supply packages on spindles through a comb guide to assume a predetermined spaced relationship in a horizontal plane. The strands may then be passed over a heated roll after which they are received by a reciprocating apparatus disposed at the height of the confronting surfaces of a pair of vertically aligned nip rolls that rotate on horizontal axes and receive two sheets of sheet material therebetween. The reciprocating apparatus imparts to each reinforcing strand a predetermined cyclical motion, preferably a sinusoidal motion. As the two sheets approach and converge at the nip rolls, the reinforcing strands, positioned in accordance with the cyclical motion imparted to them by the reciprocating apparatus, are deposited between the confronting surfaces of the sheets. The nip rolls prevent any slippage of the strands once they have been deposited between the sheets. The heated roll over which the strands are passed brings them to a temperature of 150 to 500 degrees F. which is sufficient to cause the strands to be heat bonded to both sheets of sheet material[1] at the nip rolls so that the sheets with the strands therebetween advance beyond the rolls as united reinforced sheet material.

[1] The sheet material may be "made of fibrous or plastic substances."

In one modified form of the apparatus, the reinforcing strands, instead of being heated, are passed over a roll which applies a suitable adhesive bonding chemical to them before they are received by the reciprocating apparatus and pass between the individual sheets into the nip rolls.

The reciprocating apparatus defined in appealed claims 1, 2 and 17 is illustrated adequately by part of FIG. 4 and FIGS. 5 and 6 of the application drawings, reproduced below:



The apparatus includes a pair of guide bars 126 and 131 mounted ahead of the nip rolls for reciprocating movement in opposite directions along a line perpendicular to the path of the reinforcing threads. The bars, which may be of graphite, have serrated edges 127 and 132 opening into strand or fiber receiving slots 128 and 133, respectively. The reciprocating bars impart a preferably sinusoidal motion to the strands as they are continuously advanced into the nip rolls.

The means for mounting and driving the bars 126 and 131 includes an elongated stationary support member 100 of inverted U-shaped cross-section, a first carriage member 101 of similar cross-section mounted within the member 100 for reciprocal longitudinal movement therein on ball bearings 102, and a second carriage member 104 of rectangular cross-section in turn mounted in member 101 for reciprocal longitudinal movement therein on ball bearings 105. Guide bar 126 is secured to the first carriage member 101, with its serrated edge up, by a bracket 125, while a bracket 130 secures guide bar 131 to the second carriage 104 with its serrated edge down. Gear racks 120 and 121 are secured to the outer ends of carriages 101 and 104, respectively, in spaced opposed relationship so that their teeth engage a pinion 121*a* supported therebetween for rotation about a fixed axis. At its inner end, the carriage 101 has attached thereto a slide plate 107 provided with an elongated transverse slot 108. That slot receives a follower roller 109, which roller is driven through repeated cycles of sinusoidal motion through an eccentric drive from the rotating shaft of a motor.

Appellant describes the operation of the reciprocating means in his application as follows:

During each cycle of sinusoidal motion of the follower roller 109, longitudinal

movement is imparted to the outer carriage 101, which, in turn, moves the guide bar 126 longitudinally therewith. The longitudinal movement of the carriage 101 drives the inner carriage 104 longitudinally in an opposite direction through the pinion 121*a*. Consequently, the guide bar 131 moves longitudinally in a direction opposite from which the guide bar 126 is travelling. Thus, the guide bars 126 and 131 are always 180° out of phase. Each guide bar 126 and 131 is substantially equal in length to the width of either sheet material 23*a* or 23*b* and completes a reciprocating cycle during each cycle of sinusoidal motion of the follower roller 109.

The references relied on by the Board of Appeals are:

Chadwick, 1,914,801, June 20, 1933.
Mercer, 2,919,467, January 5, 1960.
Benbow, 627,968, July 4, 1899.
Caretta, 2,026,459, December 31, 1935.

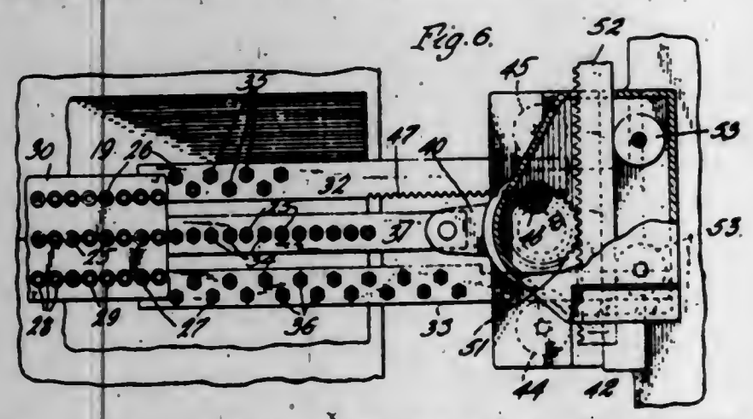
Chadwick discloses a machine for making reinforced sheet material such as composite paper that is reinforced by threads of fibrous material incorporated between two webs of paper which are secured together by an interposed adhesive film. The patent states:

• • • the thread reenforcement comprises a series of substantially straight spaced threads which run lengthwise of the web or sheet, and two series of spaced zig-zag threads, which extend lengthwise of the web or sheet in zig-zag courses with each of the zig-zag threads of one series crossing or intersecting several of the zig-zag threads of the other series and also several of the straight threads.

• • • • • • •

In the machine herein disclosed to illustrate my invention as usual in machines for producing reenforced material of the sort mentioned, two continuous webs of sheet material, such as paper, are caused to travel between presser rollers, an adhesive coating is applied to the inner surface of one or both of these traveling webs before it passes between the presser rollers, and thread guiding or laying means are also provided for introducing the reenforcing threads between the two traveling webs as they enter the bite of the presser rollers so that the threads will stick to the adhesive coating and be drawn with the webs between the rollers which press the two webs together, the webs being thus cemented together and the reenforcing threads cemented in place between the webs.

The pertinent features of the guide means employed by Chadwick to impart the desired displacement to the threads as they enter the sheets are illustrated in FIG. 6 reproduced below:



As shown in the drawing, a stationary beam 30, extending transversely of the machine in advance of the presser or nip rollers, is provided with three vertically spaced horizontal layers of orifices which receive threads from supply bobbins. Ahead of the beam 30 and just in advance of the rollers is a stationary bar 31 and upper and lower reciprocating bars 32 and 33. Stationary bar 31 guides threads passing therethrough so that they assume a position parallel to the direction of travel of the sheets of material and that bar is of

no further pertinence here. The reciprocating bars 32 and 33 have openings therein connected through flexible rubber tubes with corresponding openings in top and bottom rows of openings in the beam 30.

One end of the upper reciprocating bar 32 extends into a stationary guide box 42 and has rack teeth 47 on its lower edge for engagement with a pinion 46 in the box. The pinion also is engaged by teeth on a vertical rack bar 52 so that vertical reciprocating motion imparted to that bar will cause horizontal reciprocating motion of the bar 32. The opposite end of the lower guide bar 33 has teeth on its edge engaging another pinion driven by another rack bar which may be vertically reciprocated to cause horizontal reciprocating motion of that bar also. The two rack bars are driven from a common driving shaft by eccentric members arranged to cause the bars 32 and 33 to be driven simultaneously in opposite directions to cause a zig-zag configuration of the threads guided thereby as the threads pass into the rollers between the two sheets of material.

The Benbow and Caretta patents each show a mechanism wherein two parallel, longitudinally movable members are provided with teeth in facing edges in engagement with a pinion rotatable on a fixed axis located therebetween so that imparting a reciprocating motion to one member causes reverse reciprocating movement of the other member. In Benbow that mechanism is employed in a washing machine, while Caretta is directed to a general disclosure of transmission gearing.

The Examiner rejected apparatus claims 1, 2 and 17 as unpatentable over Chadwick. The Board affirmed that rejection as to claim 17 but reversed it as to claims 1 and 2. It made a new rejection, under Rule 196(b), of claims 1 and 2 as unpatentable over Chadwick in view of either Benbow or Caretta and adhered to such rejection on reconsideration.

It was the position of the Board that the structure recited in claims 1 and 2 is met by Chadwick except for the specific means for reciprocating the two carriers for the guide members and that it would be obvious to substitute well known mechanism for causing reverse reciprocation of two bars by means of a pinion interengaging racks on the two bars, as shown by Benbow and Caretta, for the carrier driving and reversing means of Chadwick.

Appellant argues:

• • • there is no suggestion or teaching in the art relied upon whether taken singly or in combination of the inventive concept of establishing an intimate correlation between the cyclic motions applied to strands of filamentary material, whereby the movement of the first carrier, which applies a cyclic motion to a first group of strands, activates the force transmitting means to impart a reciprocating movement to the second carrier, which applies a cyclic motion to a second group of strands. More significantly, the disclosure by Benbow does not suggest employing the rack and pinion thereof for establishing a time or phase relation between the agitators rotated thereby. Similarly, the disclosure by Caretta fails to suggest employing the racks and pinion thereof to establish a phase or time relationship between elements driven therefrom.

It cannot be argued that Chadwick fails to disclose the same concept of "an intimate correlation between the cyclic motions applied to the strands of filamentary material" that appellant employs. The guide bars 32 and 33 of Chadwick are interlocked through a common drive shaft so that they are "simultaneously reciprocated oppositely" transversely of the machine. It is true that Chadwick does not use a force transmitting means driven from the first driven means to

drive the second to accomplish that result. However, Benbow and Caretta show it is an old expedient to simultaneously reciprocate two driven members from the same source of power by driving one directly from the source and using a rack and pinion structure like that of appellant to drive the other. Since Chadwick's driving arrangement and that of the secondary references both provide the same function of driving the driven members from a single power supply with the same reverse reciprocating motions, we think it would clearly be obvious to a person of ordinary skill in the art to which the present invention is directed to substitute the drive arrangement of the secondary references in Chadwick's machine.

The decisions in *In re Ratti*, 46 CCPA 976, 270 F.2d 810, 123 USPQ 349, and *In re Shaffer*, 43 CCPA 758, 229 F.2d 476, 108 USPQ 326, relied on by the appellant, are not considered controlling here. In each of those cases, the court concluded that the modification of the basic reference relied on in the rejection reversed by it was not made obvious by the prior art. In the present case, we find nothing which satisfies us that the substitution suggested in the rejection of claims 1 and 2 would not have been obvious or provides any unobvious result. Appellant contends that his drive arrangement offers advantages because "the phase relationship between the carriers is intimately correlated regardless of wear, tear and setting of the drive mechanism" and because the arrangement, by reducing the number of parts required, "has reduced the oscillating mass to a large degree." However, we find no sound reason for doubting that a person of ordinary skill in the art would have been aware of any such characteristics of the drive arrangement of Benbow and Caretta as might provide those results and of the effects of substituting that arrangement in place of the Chadwick driving means.

Claim 17 differs from claims 1 and 2 in reciting "means * * * connected to said first carrier for imparting a reciprocating movement to said first carrier" and for "reversal means interconnecting said first and second carriers for imparting a reciprocating movement to said second carrier * * *." The Board regarded that language as making claim 17 broader than the other two claims and considered claim 17 unpatentable over Chadwick without finding it necessary to rely on the secondary references.

Appellant seems to argue that claim 17 should be regarded as requiring that the first carrier drive the second carrier even though that condition is not expressly recited. That interpretation, would appear to give claim 17 the same substance as claim 2. However, we agree with the Board that claim 17 is broader and was properly rejected on Chadwick alone. [1] While applying the terms of claim 17 to Chadwick involves inclusion of a common portion of the Chadwick drive means in both the "means connected * * *" and the "reversal means * * *" expressions set out above, we think that reading those expressions on the reference disclosure involves no more than a reasonable interpretation of the claim language. See *In re Kelley*, 49 CCPA 1359, 305 F.2d 909, 134 USPQ 397.

Regarding claim 25, rejected as unpatentable over Chadwick, appellant states:

> Method claim 25 distinguishes over the process disclosed by the patent to Chadwick in that it calls for the steps of applying adhesive material to strands of reinforcing material and imparting a cyclic motion to the strands of reinforcing material with the adhesive material applied thereto.

The Examiner and Board recognized that Chadwick applies adhesive to the sheet material rather than the strands but thought it would be obvious to follow the latter procedure. Although appellant argues there are some advantages to applying the adhesive to the strands, we do not think that either the procedure or the asserted advantages would be unobvious to a person of ordinary skill in the art.

[2] Since we think, for the foregoing reasons, that the Board was correct in finding the appealed claims unpatentable, the decision is affirmed.

AFFIRMED.

SMITH, *J.*, dissenting.

The majority finds that the reciprocating apparatus defined in the appealed claims would be obvious to one of ordinary skill in the art. I disagree with this finding and dissent for the following reasons.

Appellant in his brief states the case as I see it. He says:

> In support of applicant's contention that the reciprocating apparatus of the present invention is patentably distinct over the art of record, applicant points out that the following advantages flow from and are gained by the novel arrangement defined in claims 1 and 2:
>
> 1. By having the reciprocating movement of one carrier activate the force transmitting means to reciprocate another carrier, the phase relationship between the carriers is intimately correlated regardless of the wear, tear and setting of the drive mechanism. By virtue of the present invention, there is a precise and accurate phase relationship between adjacent strands of filamentary material to produce an improved and stronger reinforcing matrix.
>
> 2. By reducing the number of parts required, applicant has reduced the oscillating mass to a large degree. Consequently, applicant's machine attains greater operating speed with less power. This is significant, because the limiting factor in the speed of operation of the overall machine and the output of the reinforced sheet material is the reciprocator speed. Therefore, it is not just a matter of reducing parts, but more important it is a matter of output and speed of operation.

The majority opinion states that one of ordinary skill in the art would find these improved results to be obvious in view of the drive arrangement of Benbow and Caretta and concludes there is "no sound reason for doubting that a person of ordinary skill in the art" would be unaware of substituting these driving arrangements in Chadwick.

This reasoning involves a non sequitur. It is beyond question that the drive arrangement of Benbow and Caretta is *not* the same as that employed by appellant. Appellant clearly explains in his brief that:

> One carrier is driven directly by a drive mechanism and imparts a cyclical motion to strands of filamentary material. However, the other carrier is driven by the reciprocating movement of the first carrier. Stated otherwise, it is the movement of the first carrier which activates interengaging reversal means located between the first and second carriers that causes the reciprocating movement of the second carrier.

Benbow and Caretta, in contrast, utilize a pinion common to two racks to cause movement between the two racks. In Benbow, two washing machine agitators operate simultaneously. In Caretta, movement is transmitted to a remote element via parallel racks.

Thus, substituting the drive arrangements cannot *in fact* produce a mechanism capable of providing the improved results of appellant's claimed arrangement. Appellant's unique arrangement of the parts produces a result of apparent merit in that it:

> 1. correlates the phase relationship between the carriers regardless of wear and the setting of the drive mechanism;
>
> 2. maintains precise and accurate phase relationship between adjacent strands of filamentary material to produce an improved and stronger reinforcing matrix;

3. reduces the number of parts required and lessens the mass of the oscillating parts;
4. provides greater operating speed with less power;
5. results in greater output in reinforced sheet material.

The appealed claims define a machine and method which are new in this art and which permit improved results of substantial merit, all of which would not be mechanically possibly from any combination of the prior art teachings. Considering all of the teachings of record, I fail to see how such a machine and method can be found to be obvious to one of ordinary skill in the art when the statutory tests of 35 U.S.C. 103 are applied. I find that section 103 is not applied to the true fact situation before the court.

As the majority decision rests, as does the opinion of the Board, on what I believe to be the erroneous factual conclusion that the substituted prior art drive arrangements would in fact function as does appellant's claimed invention to produce the improved results first taught by appellant, the decision of the Board should be reversed.

U.S. Court of Customs and Patent Appeals

IN RE CARL DALTON LUNSFORD

No. 7512. Decided March 17, 1966

[53 CCPA —; 357 Fed 385; 148 USPQ 721]

1. PATENTABILITY — COMPOUND — OBVIOUSNESS — REFERENCES EVALUATED AS A WHOLE CONSIDERING SPECIFIC AND GENERAL TEACHINGS—35 U.S.C. 103.

"The rejection here is under 35 U.S.C. 103. The rejection is that the differences between the subject matter as a whole and the specific teachings of Biel I and III in view of the general teachings of the ancillary references are such that the subject matter would be obvious to one of ordinary skill in the art. We think as a matter of law that 35 U.S.C. 103 requires that the specific teachings, as well as the general teachings, be evaluated as a whole for what they fairly teach."

2. SAME—SAME—SAME—SAME.

"In the present case the claimed invention [pyrrolidyl compounds], considering the properties along with the structure, is clearly not obvious in view of the general teachings. It cannot be argued other than that these teachings are concerned only in a peripheral manner with the claimed invention. The Solicitor does not argue otherwise. The specific teachings, on the other hand, are closely concerned with the claimed invention. Absent any reason to the contrary, it is these teachings which a person [of] ordinary skill in the art would consider most pertinent and accord the most weight. The specific teachings, uncontradicted by the art of record, disclose that the ethyl-piperidyl form of compound performs as an antispasmodic in the stomach and duodenum and *will not perform as a lower intestinal antispasmodic*. As a matter of law and logic we think that it would not be obvious that the ethyl-pyrrolidyl form of compound would perform as an intestinal antispasmodic. Thus the Examiner erred in *ignoring* the specific teachings of the primary references, without citing other references containing specific teachings demonstrating that the specific teachings in Biel I and III could be ignored."

3. SAME—SAME—SAME.

"A person of ordinary skill in the art would consider all of the teachings in Biel I and III as well as the general teachings in the other references. It is not believed that he would consider only the *structures* of the compounds or would disbelieve specific teachings and rely only on less helpful general statements."

4. SAME—SAME—SAME—35 U.S.C. 103.

"The record thus does not support the Solicitor's position that the Examiner *in fact* 'suspected' that the compounds in Biel I possessed intestinal antispasmodic potency. Moreover, as a matter of law under 35 U.S.C. 103, the Examiner must substantiate his 'suspicions' on the basis of facts drawn from proper prior art. The issue to be resolved requires more than 'suspicions'; it requires *facts*."

5. SAME—SAME—SAME—SAME.

"The provisions of section 103 must be followed *realistically* to develop the *factual background* against which the section 103 determination must be made. *All* of the facts must be considered * * *."

6. SAME—AFFIDAVIT EVIDENCE SHOWING COMPARATIVE TESTS NOT PRIOR ART—35 U.S.C. 103.

"It is clear that the affidavit evidence [showing comparative tests of the claimed and prior art compounds] is not prior art under 35 U.S.C. 103 and may not be used alone or in combination with prior art references to support a rejection under that section."

7. SAME—COMPOUND—OBVIOUSNESS—AFFIDAVIT NOT REQUIRED WHERE ART LEADS AWAY FROM CLAIMED SUBJECT MATTER.

"Moreover, the record shows that this is not the type of case under 35 U.S.C. 103 where affidavits are needed. The prior art taught that the ethyl-piperidyl form of compound was effective as an antispasmodic for the stomach and duodenum [but not in the lower intestines]. Appellant therefore did not have to submit evidence that the potency of the claimed compounds [in the intestines] was unexpectedly superior to the potency of the prior art compounds in the intestines. He was entitled to rely on the fact that the most specific teachings cited by the Examiner, uncontradicted by the art of record, led away from what appellant claimed."

8. SAME—PARTICULAR SUBJECT MATTER—"1-SUBSTITUTED-3-PYRROLIDYL BENZILATES."

The refusal of certain claims in an application entitled "1-Substituted-3-Pyrrolidyl Benzilates," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 29,156.

REVERSED.

George W. Hueschen for appellant.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

The issue in this appeal is whether the invention as embodied in the chemical compounds, defined in appealed claims 6 and 13, would be obvious in view of the teachings of the prior art references of record.[1] The claims read as follows:

6. 1-ethyl-3-pyrrolidyl benzilate hydrochloride.
13. 1-ethyl-3-pyrrolidyl benzilate methobromide.

The compounds are disclosed as being active in inhibiting intestinal spasms. The application[2] states that an object of the invention is "to provide novel acetylcholine antagonists having a high degree of activity and satisfactory activity when compared with known compounds currently in use as inhibitors of gastrointestinal motility."

Claims 6 and 13 stand rejected as "unpatentable over" the teachings of the following references:

Martin et al., 2,987,517, June 6, 1961.
Biel [I], 2,918,406, December 22, 1959.
Biel [III], 2,918,408, December 22, 1959.
Ekenstam et al., 2,792, 399, May 14, 1957.
Bloxam (British), 483,258, April 14, 1938.
Richter, Organic Chemistry, Vol. 3 at p. 3 (1923).

[1] An appeal as to claims 1–5, 12 and 19 has been withdrawn.
[2] Filed May 16, 1960, Serial No. 29,156, entitled "1-Substituted-3-Pyrrolidyl Benzilates."

The two rejections made by the Examiner were treated by the Board of Appeals as follows:

Claims * * * 6 * * * [and] 13 * * * have been rejected as unpatentable over each of Biel I (2,918,406) or Biel III (2,918,408) in view of Richter and the British patent, and all the claims have further been rejected on these same references with the addition of the Martin et al. patent. The Examiner has also referred to the Ekenstam et al. patent as being cumulative in showing the equivalence of pyrrolidine and piperidine compounds. Inasmuch as the two rejections are quite similar, based upon the same references except for Martin et al., we will consider them together.

According to the Examiner,

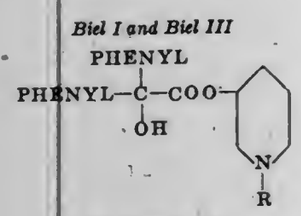
* * * The primary references [Biel I and Biel III] disclose the corresponding homologous piperidine benzilates while the ancillary art shows the equivalence of pyrrolidine and piperidine compounds (British Patent 483,258) and the homology of pyrrolidine and piperidine (Richter's Organic Chemistry). No invention can be seen in obvious equivalents of the prior art.

In view of the manner in which we dispose of the issue presented here, we also shall consider the rejections together and shall adopt the Board's nomenclature of "Biel I" and "Biel III" in referring to these references.

Because of the nature of the issues presented in appellant's arguments, a detailed discussion of the chemistry involved in the subject matter sought to be patented and the prior art is not necessary. It will suffice to point out that concerning the "primary references," Biel I discloses antispasmodic specifics (N-ethyl-3-piperidyl benzilate compounds) which have selective action in the stomach; and Biel III discloses antispasmodic specifics (N-methyl-3-piperidyl benzilate compounds) which have selective action in the colon. The pertinent teachings of the "ancillary references" are as follows: the Richter text teaches that pyrrolidine and piperidine are adjacent members of a homologous series; the British and Martin patents were relied on to show that esters exhibiting antispasmodic activity may contain either the pyrrolidyl or the piperidyl ring; and Ekenstam was regarded "as cumulative in also showing pharmaceutical compounds containing either the pyrrolidyl or the piperidyl ring."

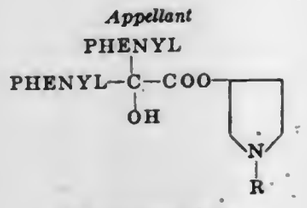
The structural difference between appellant's claimed compounds and those disclosed in the primary references is that the nitrogen heterocyclic rings of the claimed compounds are the five-membered pyrrolidyl rings whereas in the Biel compounds the nitrogen heterocyclic rings are the six-membered piperidyl rings, as shown in the following formulae:

Biel I and Biel III



(as onium salt)

Appellant



(as hydrochloride or methobromide salt)

Considering the closest compounds, in the appealed claims and Biel I, R is ethyl; and in Biel III, R is methyl.

Reference Teachings

Appellant argues that the rejections are improper because of certain teachings found in the primary references.

Biel I states:

Surprisingly, N-ethyl-3-piperidyl benzilate onium salts have a pronounced and selective action in the stomach, and have been found to be especially effective in the treatment of peptic ucler, without significantly altering normal tonus or motility of the stomach or intestines.

* * * * * * * *

Such unexpected specific activity in the stomach is even more surprising because the next adjacent homolog N-methyl-3-piperidyl benzilate, as the methyl bromide, does not have this specific activity but, instead, is specific for treating spasm of the colon.

Biel III states:

Surprisingly, N-methyl-3-piperidyl benzilate methonium compounds have a unique, highly selective antispasmodic action in the lower part of the gastro-intestinal tract, i.e., the colon. * * *

Such unexpected activity in the colon is even more surprising because the next adjacent homolog N-ethyl-3-piperidyl benzilate, as the methyl bromide, does not display activity in the colon but is a selective agent for peptic ulcer in the stomach and duodenum because of its action in suppressing gastric secretion and motility in this area.

For ease of consideration, the teachings of Biel I and III may be set forth as follows:

Ethyl-piperidyl Form of Compounds

1. "have a pronounced and selective action in the stomach" (Biel I)
2. "[are] especially effective in the treatment of peptic ulcer" (Biel I)
3. "[do not] significantly * * * [alter] normal tonus or motility of the stomach or intestines" (Biel I)
4. "[do] not display activity in the colon" (Biel III)
5. "is a selective agent for peptic ulcer in the stomach and duodenum because of its action in suppressing gastric secretion and motility in this area." (Biel III)

Methyl-piperidyl Form of Compounds

1. "have a unique, highly selective antispasmodic action in the lower part of the gastro-intestinal tract, i.e., the colon." (Biel III)
2. "[are] specific for treating spasms of the colon" (Biel I)
3. "[do] not have * * * [the] specific activity of [Biel I teachings 1, 2 and 3 under Ethyl piperidyl]"

Considering the teachings of the Biel references as a whole, we find that the ethyl-piperidyl form of compound is especially effective in the treatment of peptic ulcer, has selective action as an antispasmodic in the stomach and duodenum, does not display activity in the colon, and does not significantly alter normal tonus or motility of the stomach or intestines.[3] The methyl-piperidyl form of compound is especially effective in the treatment of spasm of the colon and does not display activity in the stomach or duodenum. The reference teachings convey a direct impression that each of the above forms of compounds operate in mutually exclusive areas of the gastro-intestinal tract as antispasmodics and that this is due to the influence of ethyl and methyl groups.

Appellant argues that given the teachings that the ethyl-piperidyl ring form of compound is an antispasmodic only in the stomach and

[3] The Biel compounds are effective only as to certain spasms and only in certain areas of the gastro-intestinal tract, meaning the stomach and intestines. This pinpointing of areas of effectiveness and the teachings as to the type of spasms controlled present some difficulties in interpretation of their teachings. Biel I states the compounds there have "selective action in the *stomach*" and are "especially effective in the treatment of peptic ulcer," which may occur in the esophagus, stomach or duodenum. They do not display activity in the colon, the large intestines. While Biel I compounds are effective in the duodenum, the initial portion of the small intestines, for treatment of peptic ulcer, they do not significantly alter "*normal* tonus or *motility* of the *stomach* or *intestines*." However, they are effective in reducing "either *involuntary* muscle or *nervous* spasm." For the purposes of this ex parte appeal, we think Biel I compounds are effective antispasmodics for the treatment of spasms associated with peptic ulcer in the stomach and duodenum; we also think that these compounds do not display such activity in the remaining portion of the intestines, because of the emphasis on peptic ulcer and the fact that the duodenum is but a small portion of the total intestines (approximately 1/25, the duodenum being 8–10 inches, the small intestines 20 feet, and the large intestines 5 feet).

duodenum and that the methyl-piperidyl ring form of compound is an antispasmodic only in the lower intestinal tract, it would not be obvious under the conditions of 35 U.S.C. 103 that the ethyl-pyrrolidyl ring form of compound would be an antispasmodic in the intestines, as disclosed in his application.

[1] The rejection here is under 35 U.S.C. 103. The rejection is that the differences between the subject matter as a whole and the specific teachings of Biel I and III in view of the general teachings of the ancillary references are such that the subject matter would be obvious to one of ordinary skill in the art. We think as a matter of law that 35 U.S.C. 103 requires that the specific teachings, as well as the general teachings, be evaluated as a whole for what they fairly teach.

[2] In the present case the claimed invention, considering the properties along with the structure, is clearly not obvious in view of the general teachings. It cannot be argued other than that these teachings are concerned only in a peripheral manner with the claimed invention. The Solicitor does not argue otherwise. The specific teachings, on the other hand, are closely concerned with the claimed invention. Absent any reason to the contrary, it is these teachings which a person of ordinary skill in the art would consider most pertinent and accord the most weight. The specific teachings, uncontradicted by the art of record, disclose that the ethyl-piperidyl form of compound performs as an antispasmodic in the stomach and duodenum and *will not perform as a lower intestinal antispasmodic*. As a matter of law and logic we think that it would not be obvious that the ethyl-pyrrolidyl form of compound would perform as an intestinal antispasmodic. Thus the Examiner erred in *ignoring* the specific teachings of the primary references, without citing other references containing specific teachings demonstrating that the specific teachings in Biel I and III could be ignored.

The Affidavits

The Board in its decision relied on certain evidence submitted by appellant as further establishing the obviousness of the claimed compounds. This evidence consisted of affidavits which the Board accepted as establishing that the compound of claim 13 was "4.8 times as potent as the corresponding piperidyl compound of Biel I." The Board found:

> • • • At the best, the compound of claim 13 may exhibit the same property to a somewhat enhanced degree. A mere improvement in the same property does not establish unobviousness of the claimed compounds. See *In re Lohr et al.*, 50 CCPA 1274, 794 O.G. 770, 317 Fed. (2d) 388, 137 USPQ 548, and *In re Riden et al.*, 50 CCPA 1411, 796 O.G. 863, 318 Fed. (2d) 761, 138 USPQ 112.

In its decision on appellant's petition for rehearing the Board elaborated further:

> • • • We can perceive nothing unexpected in finding that the claimed compounds have colonic antispasmodic activity, like the compounds of Biel III.
>
> Equally important is the fact that, despite the disclaimer by Biel, the ethyl substituted piperidyl compound of the Biel I patent has been shown by appellant to actually possess colonic antispasmodic activity. In short, the ethyl substituted compound of the reference actually exhibits the same type of activity as the compounds claimed by appellant in claims 6 and 13.

Appellant reasons the "discovery" (that the ethyl-piperidyl ring form of compound of Biel I does in fact possess intestinal antispasmodic properties) is his and the Board in effect used his own discovery against him.

The Solicitor in his brief does not dispute that the discovery set forth in the affidavits was used against appellant. Instead it is argued:

> • • • While appellant claims credit for this discovery, it might be noted that *the Examiner suspected such activity and required comparison* tests with the reference compounds (Br–6). Therefore, the true situation came to light, and as might be suspected, substitution of closely related groups results in a difference in potency rather than a change in activity. Thus, appellant's compounds do not have an activity which would be unexpected from the reference compounds. [Emphasis added.]

Prior to considering whether the Board erred in its use of the affidavit evidence, it must be decided whether the Solicitor's contentions are correct. We have examined page 6 of the appellant's brief cited by the Solicitor and do not find support for the Solicitor's statement that the discovery was a direct result of the Examiner's suspicions. At page 6 of his brief appellant argues:

> *Thirdly*, because the Examiner would not pay any attention to the teaching of the reference that the exactly corresponding piperidyl compounds of the prior art do *not* have intestinal antispasmodic activity, the appellant made and tested the closest representative one of them and presented actual comparative data as to the compound of claim 13 against the corresponding prior art compound having a piperidyl ring instead of the pyrrolidyl ring. In this test the appellant's compound was 480% as potent in decreasing intestinal spasm • • •.

Appellant argues throughout his brief that the Examiner *ignored* the specific teachings of Biel I and III. Additionally, he argues that the affidavits were submitted, in effect, as a last resort and that no affidavits were needed to overcome the rejection in view of the teachings in Biel I and III.

We think the record supports the finding that the Examiner *ignored* the statements in Biel I and Biel III, supra, which alleged the *methyl* and not the *ethyl* type of compounds were lower intestinal antispasmodics, and that the ethyl was effective in the stomach and duodenum. In his answer the Examiner stated:

> The argument that the "subject matter as a whole" under 35 U.S.C. 103 includes the compound and its utility is considered to be without merit. (In re Schmidt 130 U.S.P.Q. 404; In re Larsen 130 USPQ 209 at page 212, 2nd column). A bare compound will anticipate a claim to same regardless of the utility disclosed for it.
>
> The claimed compounds having been shown to be expected functional equivalents of the prior art, they are deemed obvious under 35 U.S.C. 103.

Ignoring the statement as to "anticipation,"[4] it is reasonably clear that the Examiner considered only the difference in *structures* between the claimed compounds and the prior art compounds.

Appellant was entitled to have differences between the claimed invention, *the subject matter as a whole*, and the prior art references of record evaluated. *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43. This the Examiner failed to do. We note that the Examiner's answer is dated December 13, 1961 and our decision in *Papesch* is dated March 20, 1963.

[3] A person of ordinary skill in the art would consider all of the teachings in Biel I and III as well as the general teachings in the

[4] There is no explanation for this statement in the record. It is clear from the record that there was no "anticipation" rejection, i.e., fully met in a single reference (35 U.S.C. 102(a)), before the Board nor was such a rejection presented or argued in this court. The claims stand rejected on the broader ground that the subject matter defined in the appealed claims is obvious under the terms of 35 U.S.C. 103.

other references. It is not believed that he would consider only the *structures* of the compounds or would disbelieve specific teachings and rely only on less helpful general statements.

[4] The record thus does not support the Solicitor's position that the Examiner *in fact* "suspected" that the compounds in Biel I possessed intestinal antispasmodic potency. Moreover, as a matter of law under 35 U.S.C. 103, the Examiner must substantiate his "suspicions"[5] on the basis of facts drawn from proper prior art. The issue to be resolved requires more than "suspicions"; it requires *facts*. As the Supreme Court recently stated concerning section 103:

> • • • the § 103 • • • condition [nonobviousness], when followed *realistically*, will permit a more practical test of patentability. The emphasis on nonobviousness is one of *inquiry*, not quality and, as such, comports with the constitutional strictures.
>
> • • • the § 103 condition • • • lends itself to several basic *factual inquiries*. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. [Emphasis added.] *Graham* v. *John Deere Co.*, — U.S. —, 148 USPQ 459, 466–67.[6]

[5] The provisions of section 103 must be followed *realistically* to develop the *factual background* against which the section 103 determination must be made. *All* of the facts must be considered and it is not realistic:

> • • • within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. *In re Wesslau*, 53 CCPA —, — F.2d —, 147 USPQ 391 at 393.

We now return to the question of whether the Board erred in its use of the affidavit evidence. The record shows that appellant was unable to convince the Examiner that the specific teachings in Biel I and III must be considered. He then conducted experiments testing the potency of the compound of claim 13 and an ethyl-piperidyl ring form of compound from Biel I as an intestinal antispasmodic. The resulting data, demonstrating that the Biel I compound did in fact possess potency but that the compound of claim 13 was 4.8 times as potent as Biel I, was submitted in an affidavit. The Examiner and the Board reasoned that this evidence established that appellant's compounds were merely more effective than the Biel I compound as a colonic intestinal antispasmodic.[7] This reasoning ignores the critical fact that the prior art teaches that the compound in Biel I was antispasmodic for the stomach and duodenum.

[6] It is clear that the affidavit evidence is not prior art under 35 U.S.C. 103 and may not be used alone or in combination with prior art references to support a rejection under that section. *In re Lunsford*, 53 CCPA —, — F.2d —, — USPQ —. We think the Board erred in its use of the affidavit evidence.

[5] We distinguish between "suspicions," "hunches," etc., and statements of fact concerning the state of the prior art, advanced by the parties during prosecution about which there is no disagreement or challenge.

[6] The Supreme Court continues in its opinion, recognizing other considerations relevant to the inquiry under section 103:

> Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy. See Note, Subtests of "Nonobviousness," 112 U. Pa. L. Rev. 1169 (1964).

[7] While the Board refers to colonic antispasmodic activity, the affidavits cited by the Board show tests made concerning the ileum, which is ⅔ of the small intestine.

[7] Moreover, the record shows that this is not the type of case under 35 U.S.C. 103 where affidavits are needed.[8] The prior art taught that the ethyl-piperidyl form of compound was effective as an antispasmodic for the stomach and duodenum. Appellant therefore did not have to submit evidence that the potency of the claimed compounds was unexpectedly superior to the potency of the prior art compounds in the intestines. He was entitled to rely on the fact that the most specific teachings cited by the Examiner, uncontradicted by the art of record, led away from what appellant claimed.

[8] The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, did not participate.

[8] The Board also expressed dissatisfaction with the data presented in the affidavits. As we do not rely on that evidence, we need not consider the Board's comments.

REISSUES

SEPTEMBER 6, 1966

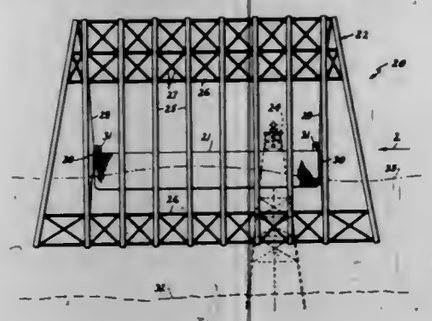
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,073
MOBILE SELF-ERECTING MARINE PLATFORMS

Ivan W. Mangone, Houston, Tex., assignor to Offshore Structures & Service Co., Houston, Tex., a partnership

Original No. 2,968,930, dated Jan. 24, 1961, Ser. No. 539,960, Oct. 12, 1955. Application for reissue Oct. 8, 1965, Ser. No. 495,768

6 Claims. (Cl. 61—46.5)



1. In a mobile self-erecting marine platform, the combination of an upstanding marginal framework having a substantially rectangular plan when erected and defining a rectangular opening at the center thereof, said framework comprising a pair of complemental half-sections of a U-shaped plan when erected, said half-sections having upper and lower edges and pairs of opposing side edges which are in abutment when the framework is erected, hinge means provided on said opposing side edges at said lower edges of said half-sections whereby the same may be swung from their erected position outwardly and downwardly to a substantially horizontal travelling position wherein their lower edges are in abutment, a substantially rectangular buoyant platform member disposed in said opening and having its marginal edges spaced inwardly from said framework, winch means carried by said platform member, cables extending downwardly from said winch means to the lower edge portions of said half-sections adjacent said hinge means whereby said framework may be raised and lowered relative to the platform member with the latter having sufficient buoyancy to float the framework when the framework is raised, and cables extending from said winch means to upper edge portions of said half-sections whereby the same may be swung between their erected and travelling positions and whereby said platform member may be raised relative to the framework when the latter is erected.

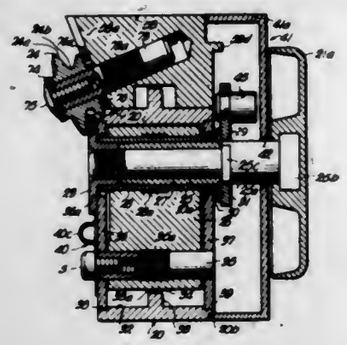
26,074
CAN OPENER *WITH IMPROVED SINGLE ACTION MECHANISM AND CUTTER MEMBER SUPPORT*

Robert E. McLean, Raytown, Mo., assignor, by mesne assignments, to Rival Manufacturing Company, a corporation of Missouri

Original No. 3,165,830, dated Jan. 19, 1965, Ser. No. 262,532, Mar. 4, 1963. Application for reissue Feb. 23, 1965, Ser. No. 455,355

12 Claims. (Cl. 30—9)

1. In a can opener, the combination of a main body having a cavity therein, a link member, means supporting said link member in said cavity on opposite sides thereof for pivotal movement about a fixed pivot axis, a feed wheel shaft journaled in said link member for rotation about an axis parallel with said pivot axis, a feed wheel mounted on one end of said shaft, a crank arm carried by said shaft, a pawl assembly connected with said main body and having means cooperating with said crank arm and operable to effect shifting of said link member between



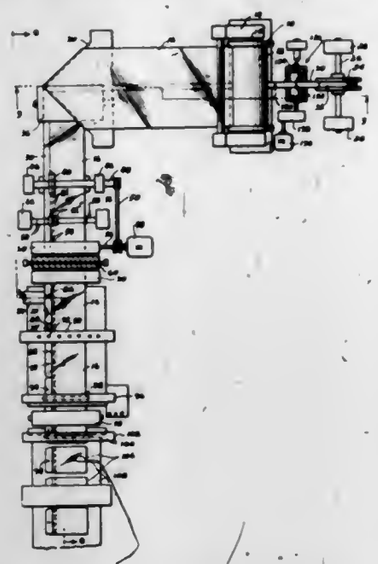
two end positions within said cavity in response to rotation of the feed wheel shaft, a cutter member, and means connecting said cutter member with said main body and supporting same so that in one of said end positions, said feed wheel is in can cutting relationship with said cutter member.

26,075
METHOD OF MAKING REINFORCED PLASTIC BAGS

Leonard E. Canno, New York, N.Y., assignor to Equitable Paper Bag Co., Inc., Long Island City, N.Y., a corporation of New York

Original No. 2,971,874, dated Feb. 14, 1961, Ser. No. 14,933, Mar. 14, 1960. Application for reissue July 2, 1962, Ser. No. 207,483

12 Claims. (Cl. 156—202)



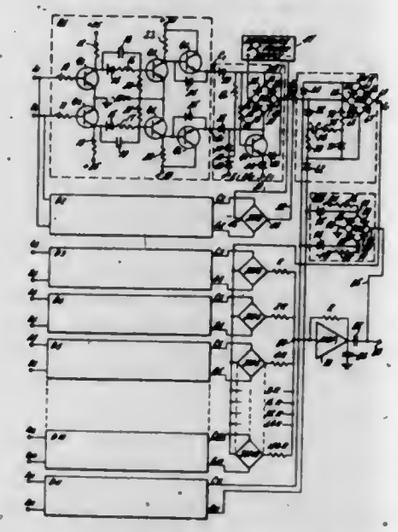
1. The method of making plastic bags, each of which has a top compartment sealed off from the remainder of the bag and with a reinforcing strip enclosed in the sealed-off compartment, which method comprises advancing a web of plastic film from a supply source and simultaneously advancing a continuous length of the reinforcing strip with the film web, folding the web of plastic film with the strip within the fold, sealing confronting faces of the web to one another immediately below the strip to form, within the fold, a compartment enclosing the strip and extending lengthwise of the strip, also sealing the confronting faces of the web together at regions spaced from one another lengthwise of the length of the web and strip and with said regions extending transversely of the folded web, and severing the web at said regions across the full width of the web and through the strip to form separate bags.

26,076
DIRECT CURRENT DIGITAL TO ANALOG DECODER

John M. Bentley, Glen Burnie, and James H. Brown, Severna Park, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Original No. 3,092,824, dated June 4, 1963, Ser. No. 130,430, Aug. 9, 1961. Application for reissue Dec. 13, 1963, Ser. No. 330,508

13 Claims. (Cl. 340—347)



1. A direct current digital to analog decoder comprising: a direct current reference voltage having outputs of both polarities; a polarity selecting switch means coupled to both outputs of said direct current reference voltage to produce the selected polarity on a single output thereof; an amplifier having an input and an output; a plurality of binary weighted resistors having output ends coupled in common to said amplifier input; a plurality of digit switch means having the inputs thereto coupled in common to said polarity selecting switch single output and their respective outputs coupled respectively to the input end of one each binary weighted resistor for selectively switching the direct current voltage of selected polarity to said resistors; and switch driver circuits each having an input to receive a digital binary register voltage signal and each having an output, the output of one switch driver circuit being coupled to said polarity selecting switch means and the outputs of the remaining switch driver circuits being coupled respectively to each one of said digit switch means to control the switching of said polarity selecting switch means, and said digit switch means in accordance with the digital binary voltage register signal combination whereby a direct current analog voltage is produced on the output of said amplifier of said digital binary voltage signal combination.

26,077
APPARATUS FOR GATHERING PLIOFILM SHEETING FROM A FIELD

Zelbert Gouker, Watsonville, Calif., and Richard C. Storkan, Los Gatos, Calif.; said Gouker assignor to said Storkan

Original No. 3,181,455, dated May 4, 1965, Ser. No. 361,401, Apr. 21, 1964. Application for reissue Apr. 7, 1966, Ser. No. 544,659

11 Claims. (Cl. 100—97)



1. Apparatus for gathering Pliofilm sheets from a field over which they lie as a fumigating cover comprising a wheeled vehicle drawn along such field adjacent one edge of such sheet, a puller on said vehicle and drivingly connected to a wheel thereof for receiving one end of such sheet for pulling the same from the field, a guide ring supported at the side of said vehicle adjacent said one edge of such sheet to receive one corner of the sheet for training the sheet into a loose narrow strand as it is pulled from the field, a guide grommet mounted on said puller between the latter and said guide ring for training the loose narrow strand coming from said guide ring into a more compacted strand as it enters said puller, and means on said vehicle for collecting said sheet material therein.

PLANT PATENTS

GRANTED SEPTEMBER 6, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,667
CRAB APPLE TREE
Albert J. Porter, Parkside, Saskatchewan, Canada, assignor to Inter-State Nurseries, Inc., Hamburg, Iowa, a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 487,345
1 Claim. (Cl. Plt.—34)

A new and distinct variety of crab apple tree, substantially as herein shown and described, characterized particularly as to novelty by its vigorous and hardy habits of growth, relative freedom from fire blight common to other varieties, a prolific annual blooming habit, attractive and relatively large white flowers which create a highly ornamental effect especially suitable for public plantings, and a sterile habit which minimizes its attractiveness to children because of the complete absence of fruit and also eliminates litter attributed to fallen fruit.

2,668
CAMELLIA PLANT
Herbert C. Swim, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California
Filed Sept. 22, 1965, Ser. No. 489,447
1 Claim. (Cl. Plt.—62)

A new and distinct variety of camellia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a moderately vigorous, upright-spreading and bushy plant habit, attractive, medium-sized, dark green, leathery and glossy foliage, a precocious flowering habit, with the flowers blooming well while the plant is still quite small and young, as compared with other *C. japonica* varieties, and a very floriferous habit, with the flowers borne both terminally and laterally on the stems, attractive, semi-double flowers of graceful, irregular form, a distinctive, attractive and bright general color tonality of the flowers corresponding to near Currant Red, with a glowing quality that is characteristic of *C. japonica* and *C. saluenensis* hybrids, a mid-season to late blooming period, and a habit of all flowers dropping cleanly as one flower.

2,669
ROSE PLANT
Andre Chabert, Paris, France, assignor, by mesne assignments, to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California
Filed Sept. 23, 1965, Ser. No. 489,772
1 Claim. (Cl. Plt.—18)

A new and distinct variety of rose plant intermediate of the floribunda and hybrid tea classes, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a more vigorous plant habit than other lavender flowered varieties, attractive, dark green, leathery, glossy, and mildew resistant foliage, good floriferousness, with flowers borne both singly and in small clusters on strong stems usually of medium length, quite double flower petalage, said flowers being of medium size and good form, and a distinctive and attractive bluish lavender general color tonality of the flowers.

2,670
CHRYSANTHEMUM PLANT
William E. Duffett, Barberton, Ohio, assignor to Orville O. Dunham, Niles, Mich.
Filed Aug. 19, 1965, Ser. No. 481,153
1 Claim. (Cl. Plt.—78)

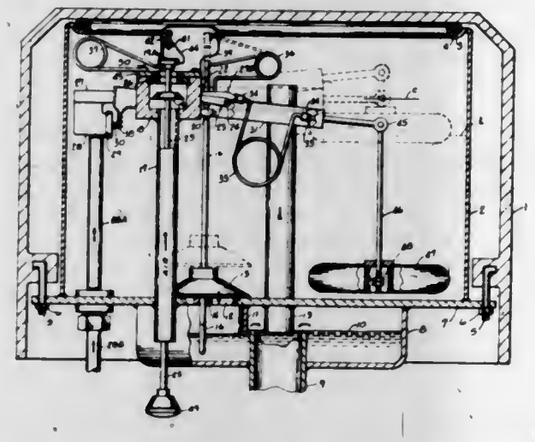
A new and distinct variety of chrysanthemum plant substantially as herein disclosed, characterized as to novelty by the strong orange yellow color of its blooms, the very double arrangement of its petals, and the shorter growth habit than its parent.

PATENTS

GRANTED SEPTEMBER 6, 1966

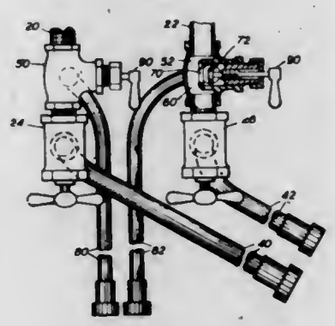
GENERAL AND MECHANICAL

3,270,351
TOILET FLUSHING PROCESS AND APPARATUS TO RESTORE HEIGHT OF WATER
Charles A. Adams, 614 Taylor St., Davenport, Iowa
Filed Aug. 31, 1964, Ser. No. 393,146
17 Claims. (Cl. 4—41)



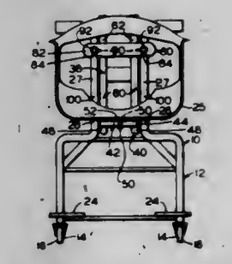
1. In cooperation with a vacuum controlled water storage tank, a water outlet in communication with a toilet bowl, a temporary water check valve for the outlet, a water service inlet valve, mechanical means adapted in one movement to lift the check valve to unseat it from the outlet and to close the service valve and in second movement to reseat the outlet valve and open the service valve, and a lost motion action in the mechanical means effective to delay reseating the check valve until after the service valve has opened.

3,270,352
PORTABLE LAVATORY PLUMBING SYSTEM
John M. Kerwin, 11022 Valley St., Omaha, Nebr.
Filed Nov. 14, 1963, Ser. No. 323,689
1 Claim. (Cl. 4—192)



In combination with hot and cold water lines each connected to a manually controllable valve, a clothes washer, hot and cold lines leading from said valves to said clothes washer, the provision of by-pass valves in said lines between said valves and the remainder of said lines, hot and cold water lines leading from said by-pass valves, a lavatory, faucet means for said lavatory having hot and cold fittings, means interconnecting said hot and cold lines from the by-pass valves and said hot and cold lavatory fittings, said lavatory having a drainage fitting, a drain pipe, a hose receiving pipe, means for connecting said hose receiving pipe to said drain pipe, a clothes washer hose disposed in operable relation to said hose receiving pipe, said means for connecting said hose receiving pipe and said drainage pipe comprising a Y fitting, a lavatory drainage hose connected to the drainage fitting of said lavatory, and in operable position with said opening of said Y fittings whereby said Y fitting receives drainage from said lavatory.

3,270,353
SECTIONAL WHEEL CHAIR ASSEMBLY
Calvin R. Berthelsen, Omaha, and Owen W. Berthelsen, Lincoln, Nebr., assignors to Century Mfg. Co., a corporation of Nebraska
Filed May 10, 1965, Ser. No. 454,380
5 Claims. (Cl. 5—81)

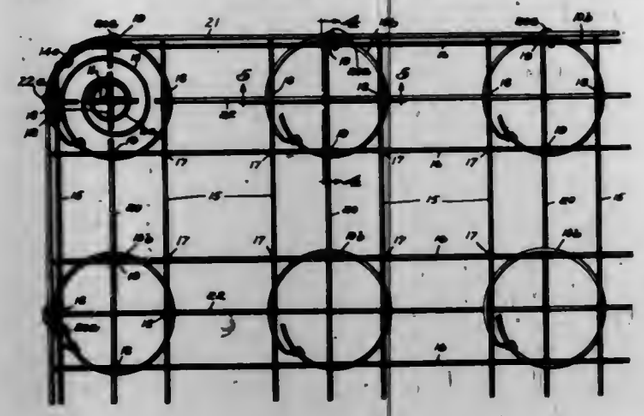


1. A sectional wheel chair assembly comprising a wheeled undercarriage, a seat, a seat-supporting lift frame having a first portion, means connecting said first portion to said seat, said seat lift frame having a second portion, first and second releasable rigid mutually interlocking means, means attaching said first rigid interlocking means to said first seat lift frame portion, means attaching said rigid second interlocking means to said carriage and said first and second interlocking means being so constructed that when said first and second interlocking means are interlocked, said first and second interlocking means are prevented from horizontally shifting with respect to each other sufficiently to substantially prevent horizontal shifting of said seat with respect to said carriage, third and fourth rigid releasable mutually interlocking means, means rigidly attaching said third rigid interlocking means to said seat lift frame whereby when said fourth rigid interlocking means is attached to a lift said seat-supporting lift frame can be lifted from said undercarriage, said third and fourth rigid interlocking means being so constructed that when they are interconnected substantially no horizontal shifting of said third and fourth rigid interlocking means with respect to each other is possible.

3,270,354
FURNITURE SPRING ASSEMBLY
Fred A. Ciampa and Angelo Serafini, East Boston, and Louis Mazzarella, Boston, Mass., assignors to Standard Box Spring Co., East Boston, Mass., a corporation of Massachusetts
Filed Jan. 7, 1965, Ser. No. 424,100
8 Claims. (Cl. 5—260)

1. A spring assembly for furniture comprising a plurality of spring coils arranged in longitudinal and transverse spaced rows, a set of longitudinal pairs of wires,

each pair overlying one of said longitudinal rows, a set of transverse pairs of wires each pair overlying one of said transverse rows and intersecting said longitudinal wires, said sets of wires being fixedly joined together at their intersections and each wire having crimps engaged with a coil intermediate adjacent intersections, a plu-

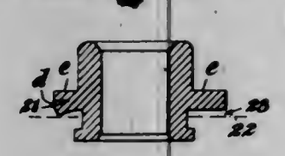


rality of longitudinal locking wires one passing through the crimps in the transverse wires engaged in each of said longitudinal rows of coils and a plurality of transverse locking wires one passing through the crimps in the longitudinal wires engaged in each of said transverse rows of coils.

ERRATUM

For Class 8—151 see:
Patent No. 3,271,102

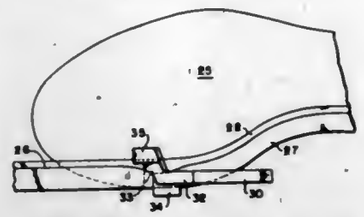
3,270,355
METHOD OF FORMING A PRESS NUT HAVING A SHROUDED SPIGOT
John Matthew Tildesley, Willenhall, England, assignor to Precision Screw & Manufacturing Company Limited, Willenhall, England, a British company
Filed Jan. 21, 1964, Ser. No. 339,253
Claims priority, application Great Britain, Feb. 12, 1963, 5,590/63; Feb. 27, 1963, 7,793/63; Aug. 9, 1963, 31,449/63
4 Claims. (Cl. 10—86)



1. A method of making a press-nut comprising a hexagonal flange having six flat edge portions and six apices and a spigot, which comprises indenting said flat edge portions of the flange by means of a chisel-like tool at positions located nearer the face of the flange from which said spigot projects than the opposite face and over substantially the entire circumferential length of each edge portion short of said apices, said indenting splitting the flange into two laminae of which the thinner is deformed to shroud the spigot and the thicker remains substantially undeformed.

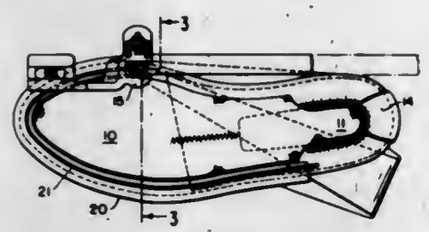
3,270,356
FEED FOOT FOR A RIB APPLYING MACHINE
John R. Hubbard, Saugus, Mass., assignor to Prime Manufacturing Company, Lynn, Mass., a corporation of Massachusetts
Filed June 11, 1965, Ser. No. 463,172
4 Claims. (Cl. 12—20)

1. A feed foot for rib-laying machines, comprising an elongated body of substantially rectangular cross section terminating at its outer end in an outwardly flaring flange which is downwardly inclined from the upper surface of the body and merges into a transversely disposed downturned flange-engaging pad, a rectangular flange-engaging pad carried by the body of the foot and separated from said transversely disposed pad by a slot inclined inwardly



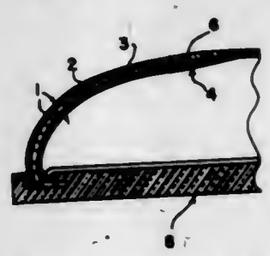
with respect to the plane of contact of the rectangular pad and located in advance of said flange-engaging pad, and a transversely extending blade in position to find and contact the fold vertex of the rib as determined by the inclined slot of the foot.

3,270,357
PROCESS OF MAKING WELT SHOES
Allan MacPherson, 14 Park Road, Brockton, Mass.
Filed Feb. 8, 1965, Ser. No. 430,823
3 Claims. (Cl. 12—142)



1. A process of making moccasin type shoes, comprising the steps of permanently cementing to the bottom of a lasted shoe a sole-shaped templet of material having edgewise stiffness and an inner body of yielding bottom filler consistency thereby setting off a marginal welt-receiving area and stiffening the enclosed area of the lasted shoe bottom, pulling the last, stitching a welt strip to the shoe bottom while the latter is supported by the cemented sole-shaped templet and while the welt strip is gauged progressively against the edge of the templet, and then incorporating the templet as a bottom filler into the permanent structure of the shoe by covering it with an outsole.

3,270,358
METHOD OF MANUFACTURING A SAFETY SHOE
George M. Milner, Waynesville, N.C., assignor to Ro-Search, Inc., Waynesville, N.C., a corporation of North Carolina
Filed Sept. 25, 1962, Ser. No. 226,122
2 Claims. (Cl. 12—142)



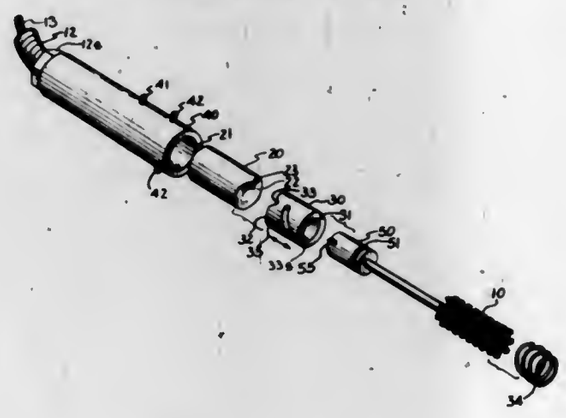
1. The method of manufacturing a safety shoe with an elastomeric sole molded and bonded and having a rigid toe cap positioned between the upper and lining of a vamp which includes the steps of placing a filler of elastomeric material at the rear edge of the toe cap between the upper and the lining before the sole is molded and bonded, and simultaneously curing said elastomeric material and molding and bonding the elastomeric sole to the vamp to produce a smooth stepless uninterrupted surface on the inside of the vamp.

3,270,359
METHOD OF SHOE PRODUCTION
Bernard Burshtyn, New York, N.Y. (1944 Unionport Road, Bronx, N.Y.)
Filed Apr. 23, 1963, Ser. No. 275,086
2 Claims. (Cl. 12—142)



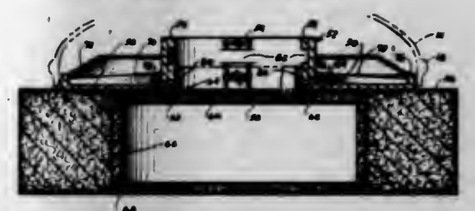
1. In the method of making a shoe, the steps which comprise securing together the marginal portions of a shoe upper lining and an innersole at least about the fore part, forcing a last between said upper lining and innersole, applying and cementing a stiffener sole of selective length from the heel toward the toe against the outer face of said innersole and across the width and along the margins thereof, pulling the shoe upper over the lining, turning and securing the margin of the shoe upper to the sole area, and cementing an outer sole in position.

3,270,360
ROTARY OSCILLATORY MOTION FROM CONTINUOUS ROTARY MOTION
Willis A. Kropp, Stamford, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed May 7, 1964, Ser. No. 365,623
7 Claims. (Cl. 15—22)



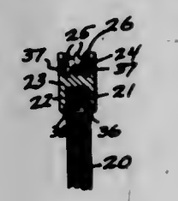
1. A mechanical transducer for converting continuous rotary motion to oscillatory rotary motion, in an electric toothbrush, said transducer comprising the combination of a continuous rotary driving mechanism, a cam member connected to said driving mechanism for continuous rotation of said cam member about an axis, a cam follower restrained against rotational movement and adapted to be displaced along said axis and engaging said cam member, said cam member displacing said cam follower linearly along said axis upon continuous rotation of said cam member, and a chuck member restrained against linear movement and having means for engaging said cam follower, the engaging means and said cam follower being adapted to oscillate said chuck member rotationally upon linear oscillation of said cam follower.

3,270,361
BASEBOARD SCRUBBING MACHINE
Nathaniel N. Okun, Cedarhurst, N.Y., assignor to The Cello Chemical Company, Baltimore, Md., a corporation of Maryland
Filed June 17, 1964, Ser. No. 375,756
8 Claims. (Cl. 15—98)



1. A tool for cleaning baseboards, said tool being designed for use on a floor scrubbing machine having a motor driven chuck and having a tank for detergent solution, said baseboard tool comprising a top plate having a hub with parts to detachably interlock with the chuck of a scrubbing machine, a cylindrical scrubber ring secured to the bottom of said plate, said ring having a diameter larger than that of the machine, the periphery of said ring being an upright cylinder having an axial dimension which is substantial and which is adequate for the baseboard to be cleaned, said ring being a body of fibrous material through which liquid will seep slowly, a disc closing the hollow inside of the ring somewhat below the top plate, said top plate having an opening over the disc, the arrangement being such that liquid supplied to the tool is thrown outward by centrifugal force above the disc to the inside of the ring and thence seeps outward and downward through the ring.

3,270,362
ELECTRICIAN'S FLEXIBLE CLEAN-OUT TOOL
Joseph J. Norton, Jr., 1711 Helmer St., Sioux City, Iowa
Filed Feb. 4, 1965, Ser. No. 430,302
2 Claims. (Cl. 15—104.3)

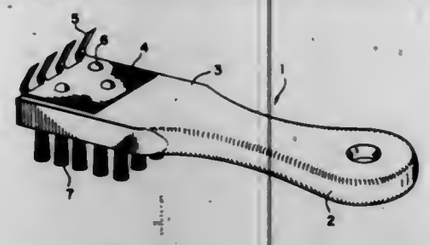


1. An electrician's flexible clean-out tool comprising an elongated flexible cable, a cutting device attached to one end of said cable, said cutting device including a plurality of peripherally arranged teeth, means for rotating said cable, said cutting device including an attaching member for attaching an electric cable thereto, said cutting device being substantially cylindrical and including a recessed annular portion for receiving a hooked member therein, said attaching member including an eyelet positioned centrally of said teeth.

3,270,363
CLEAT CLEANER
Robert E. Harris, Jr., 1350 Cleveland Heights Blvd., Cleveland Heights 21, Ohio
Filed Mar. 11, 1964, Ser. No. 351,038
5 Claims. (Cl. 15—237)

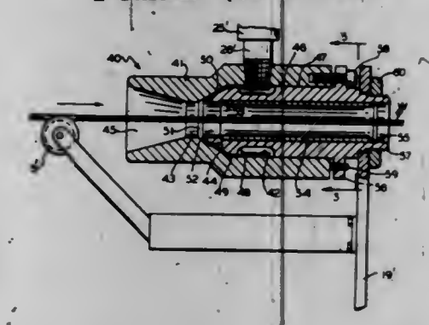
1. A device for cleaning the cleats and exposed bottom shoe area of shoes having cleats mounted thereon, such cleats being of the type having a base portion and a conical spike portion, said device comprising a handle, a plurality of laterally spaced tines projecting outwardly from one side of said handle, and means for securing said tines

to said one side of said handle, said tines being bent at an acute angle of approximately 65° from said handle, said tines having a perpendicular height as measured from said



handle of approximately 5/8 inch, and a spacing of approximately 5/16 inch between the adjacent side edges thereof.

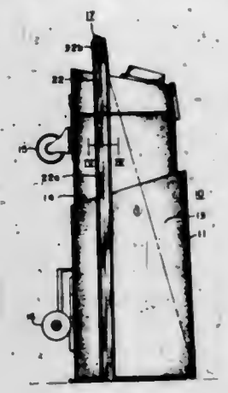
3,270,364
AIR WIPE DEVICE FOR WIRE
Maurice G. Steele, 312 N. George St., Rome, N.Y.
Filed Aug. 12, 1964, Ser. No. 389,163
2 Claims. (Cl. 15—306)



1. An air wipe device for wire, comprising: An outer body member having an axially extending passage therethrough, said passage having an enlarged cylindrical portion at one end and a restricted portion at the other end, an annular tapered female valve seat forming the wall of a portion of said passage connecting said enlarged and restricted portions, said passage at its restricted end tapering outward from said valve seat, an air inlet passage through the sidewall of said member communicating with the enlarged portion of the passage for receiving air under pressure; a tubular inner body member having a wire receiving axial passage therethrough and having an annular tapered male valve seat at one end aligned with the female seat and forming with said female seat a tapered annular orifice, the exterior of said inner body having a perimetrical portion closely fitting within the enlarged portion of the outer member passage and having on one side of said perimetrical portion an annular groove thereabout in communication with said air inlet passage, said perimetrical portion having axially disposed grooves therein communicating with said annular groove; an annular space between said outer and inner members communicating with said axially disposed grooves and said annular orifice; said outer and inner members being threadedly connected for securing the inner member within the outer member and for axially positioning the inner with respect to the outer member; and means for supporting the device for the wire to pass therethrough.

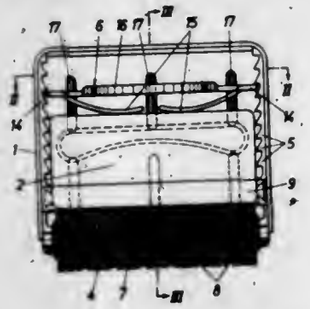
3,270,365
SUCTION CLEANER BUMPER
Robert S. Waters, Lexington, and John W. Gilliom, Mansfield, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1964, Ser. No. 353,747
1 Claim. (Cl. 15—325)

In a suction cleaner, a housing having a front wall, sloping side walls and a bottom wall, the distance between said side walls being greater at the bottom than at the top, a bumper effective as a carrying handle for said suction cleaner, said bumper comprising: a U-shaped member having a pair of curved legs immovably secured to said side walls, said U-shaped member further having a handle portion extending across said front wall and having a hand engaging surface, said curved legs extending forwardly beyond said front wall and downwardly toward said bottom wall whereby said hand engaging surface is disposed at right angles to a plane passing near the center of gravity of the suction cleaner, a resilient elongated member having diverging extensions, said U-shaped member having a cross section comprising a pair of L-shaped legs joined by a substantially



flat wall portion constituting said hand engaging surface, said L-shaped legs defining an outwardly facing opening therebetween for receiving said diverging extensions whereby said resilient member is detachably secured to said U-shaped member through coaction of said diverging extensions with said L-shaped legs, the points at which said bumper is secured to said side walls being intermediate said top and bottom walls and at a distance from said bottom wall whereby the outwardly extending surface of said resilient member extends beyond a plane passing through the lower edges of said side walls and perpendicular to the transverse axis of the cleaner.

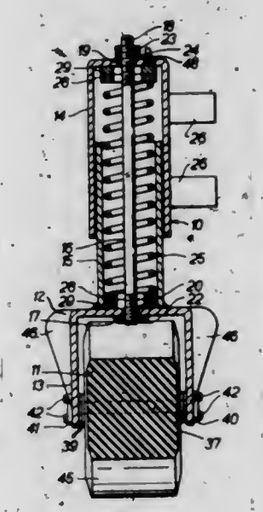
3,270,366
DEVICE FOR APPLYING CLEANING AND TREATING MATERIALS
Karl Maichen, 34 Bahnhofstrasse, Lauterach, Austria
Filed Oct. 23, 1964, Ser. No. 405,920
Claims priority, application Austria, Oct. 28, 1963, A 8,588; Apr. 9, 1964, A 3,092
5 Claims. (Cl. 15—559)



1. A device for applying cleaning and treating materials, comprising a container for holding a bar of the cleaning and treating material to be applied including a housing with an opening for the introduction of the bar of material to be applied, a cover for closing the housing when the device is out of use, said cover when applied leaving a vent opening in the container, a brush roller rotatably mounted in said housing and having a surface portion protruding therefrom, said brush roller being adapted to contact the bar of cleaning material to

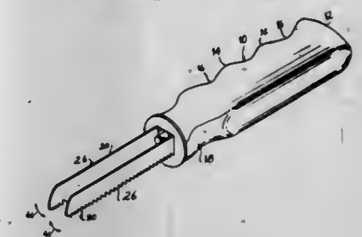
pick up particles therefrom and being rollable on a surface to be cleaned to apply the cleaning particles, ratchet teeth provided on two opposite walls of the housing and directed toward the roller, and a resilient bridge engageable with said bar of cleaning material and gripped between the teeth on opposite walls, said bridge including two resilient leaves snapped in behind a pair of opposed ratchet teeth and being connected to each other by at least one element formed of resilient material, the said leaves being further provided with resilient extensions projecting toward the brush for exerting a force on a bar of cleaning material toward said roller.

3,270,367
NO BOUNCE CASTER ASSEMBLY
Edward Loos, 503 E. 19th Ave., Vancouver, British Columbia 10, Canada
Filed Oct. 18, 1965, Ser. No. 497,434
4 Claims. (Cl. 16—19)



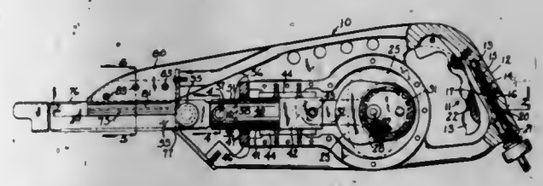
1. A caster adapted to support a heavy implement and to remain in rolling contact with a surface when supporting said implement, said caster comprising:
(a) a flanged plate having an upper surface and a lower surface;
(b) a wheel journalled for rotation between the flanges of said plate;
(c) an inner cylinder extending vertically upwardly from the upper surface of said plate and secured thereto;
(d) an outer cylinder having an upper end and a lower end telescoped over said inner cylinder, the lower end of said outer cylinder being adapted to be in end abutting relationship to said upper surface of said plate, said plate having a dimension greater than the diameter of said outer cylinder, said outer cylinder being normally urged away from said plate so that the lower end of said outer cylinder is spaced vertically from said upper surface of said flanged plate;
(e) a partially closed upper end on said outer cylinder defining a centrally located aperture;
(f) an axially extending rod secured to said plate and extending upwardly therefrom through said aperture;
(g) means cooperating with an end of said rod extending through said aperture to limit axial movement of said outer cylinder with respect to said inner cylinder;
(h) a compression spring in said inner cylinder bearing against said plate and said partially closed end of said outer cylinder to urge said outer cylinder away from said plate; and
(i) means on said outer cylinder to secure said outer cylinder to said implement.

3,270,368
FISH SCALING DEVICE
George L. Cook, Sr., and Russel H. Bloom, Atlanta, Ga., assignors to Julian B. Rozier, East Point, Ga.
Filed Oct. 7, 1964, Ser. No. 402,281
1 Claim. (Cl. 17—7)



A first scaling device comprising:
(a) a handle of a generally elongated cylindrical configuration having finger indentations thereon,
(b) said handle defining a hole of rectangular cross-section at one end thereof,
(c) two blades supported by said handle by having one end of each blade inserted into said rectangular hole on opposite sides thereof,
(d) means for supporting said blades in said handle comprising:
(1) a resilient cylindrically shaped tube disposed between said blades in said hole, and
(2) plug means wedged in said tube whereby said tube is forced against said blades,
(e) each of said blades having serrations on one side thereof with one edge of the serration being substantially perpendicular to the longitudinal axis of the blade and the other edge of said serration joining the outer end of one perpendicular serration near said handle to the inner end of another perpendicular serration away from said handle.

3,270,369
RECIPROCATING SAW
Orville William Mandell, Clinton, Conn., assignor to Jarvis Corporation, Guilford, Conn., a corporation of Connecticut
Filed Oct. 2, 1964, Ser. No. 401,075
9 Claims. (Cl. 17—23)

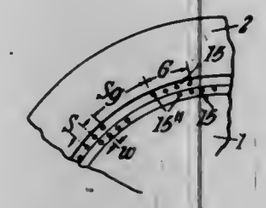


4. In a reciprocating saw, a housing, a ram at least partially enclosed within said housing, means for driving said ram in a reciprocating motion, said ram having a rectangular portion, and a round portion, said round portion extending forward of said rectangular portion and projecting partially from said housing and four flats positioned within said housing and forming guide means for preventing said rectangular portion from twisting during the use of said saw.

3,270,370
EXTRUDED PLASTIC NET
Frank Brian Mercer, Blackburn, England, assignor to Plastic Textile Accessories Limited, Blackburn, England, a British company
Filed Oct. 30, 1963, Ser. No. 320,031
Claims priority, application Great Britain, Nov. 6, 1962, 41,964/62
3 Claims. (Cl. 18—12)

1. In apparatus for continuously extruding integral plastic netting in tubular form comprising a pair of co-

axial, circular, relatively rotating die members each having a circumferentially extending series of cooperating complementary die orifices, and means for relatively rotating said die means to move the cooperative complementary die orifices into and out of registration one with the other during extrusion; the improvement which comprises die members wherein the circumferentially intending series of die orifices in each die member are arranged in spaced groups, the spacing between groups being at least as large as the arcuate extent of each

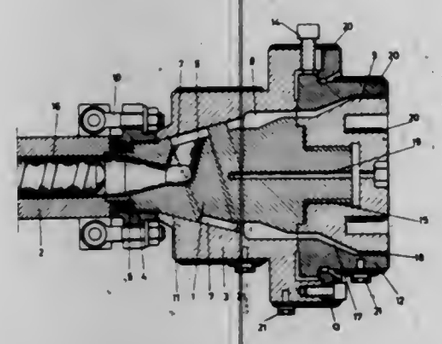


group in the series, and the spacing between orifices in each group being such, in relation to the orifice size, that plastic extruded through the grouped die orifices of one die member when passing in register with the complementary grouped die orifices of the other die member coalesce whereby the individual identities of the parallel and the crossing net strands merge to form bulk net intersections in which substantially no separation of individual strands persists.

3,270,371
AXIAL EXTRUDER HEAD WITH MANDREL FOR EXTRUDING HOLLOW PROFILES

Hans-Otto Schiedrum, Kelkheim, Taunus, and Kurt Worret, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Mar. 15, 1965, Ser. No. 439,739
Claims priority, application Germany, Mar. 18, 1964, F 42,356
4 Claims. (Cl. 18—14)

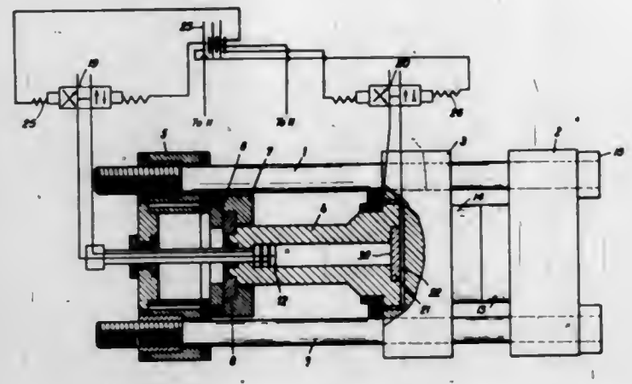


1. An axial extruder head with mandrel for extruding hollow profiles which comprises a mandrel carrier being directly connected to the extruder cylinder and carrying the housing of the extruder head by means of a conical fit, a channel system serving as passage for the material from the extruder to the orifice, said channel system beginning centrally in the mandrel carrier and leading at at least one position radially through the mandrel carrier to the exterior to at least one spiral channel between the mandrel carrier and the housing of the extruder head and finally ending in an annular channel for the distribution of the material between the mandrel and the housing of the extruder head.

3,270,372
EXTRUSION MOLDING MACHINE

Heinrich Hesse, Rheydt, Germany, assignor to Mannesmann-Meer Aktiengesellschaft, Monchen Gladbach, Germany, a corporation of Germany

Filed Aug. 21, 1963, Ser. No. 303,477
Claims priority, application Germany, Apr. 30, 1963, M 56,649
1 Claim. (Cl. 18—30)



An extrusion molding machine to process synthetic thermoplastic materials comprising

a frame with guide bars,
a tool plate fixedly mounted to the frame,
a stationary mold-half fixed on the tool plate,
a second tool plate mounted slidably on the frame,
a traversing mold-half on the slidable tool plate and a sliding shift cylinder, both mold-half and cylinder being mounted as a unit,
a source of electrical energy,
an hydraulic fluid supply,
a stationary shift piston fitted within the shift cylinder,
a supporting end plate attached to the frame at that point which is most remote from the stationary mold-half unit at full open position,
shift cylinder and traversing mold-half unit operating means,
in combination with a rotary mechanism mounted concentrically with respect to the shift cylinder to lock the mold halves together comprising
a bayonet mount abutting the supporting end plate and carried thereon,
a toothed abutment ring immovably fixed to the shift cylinder so as to slide therewith,
a notched bayonet ring disposed in the bayonet mount and rotatable relatively to the toothed abutment ring,
an actuating lever connected to the notched bayonet ring,
and hydraulic drive apparatus connected to the actuating lever to operate the rotary locking mechanism.

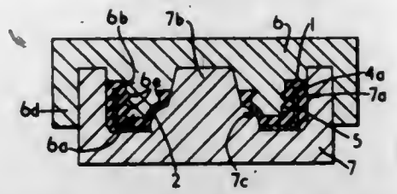
3,270,373
APPARATUS FOR THE MANUFACTURE OF REINFORCED SEALING OR PACKING RINGS

Ernest Thornton Jagger and Edward Ivison Hunter, Newcastle upon Tyne, England, assignors to George Angus & Company Limited, Newcastle upon Tyne, England

Continuation of application Ser. No. 177,076, Mar. 2, 1962. This application Apr. 23, 1965, Ser. No. 450,293
Claims priority, application Great Britain, Mar. 15, 1961, 9,446/61
4 Claims. (Cl. 18—36)

1. An apparatus for forming an annular U-section sealing ring of flexible and resiliently deformable material comprising: a female die having a central spigot, an annular flange, and a bottom, said spigot, flange and bottom forming sides of an annular U-section space in said female die; a male die having a bottom and an annular U-section projection extending outwardly from said

bottom, the dimensions of the U-section of the male die being smaller than the dimensions of the annular U-section space of the female die; said male die being designed to mate with the female die to form an annular U-shaped cavity having an inner limb, a bottom, and an outer limb, the said projection forming the inside of the U

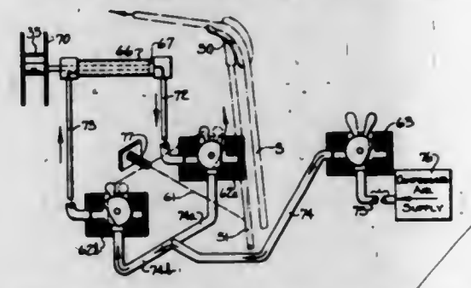


of the cavity and the said sides of the space forming the outside of the U-section cavity; and said male die having at least one circumferential groove on the outer side of its annular projection, said groove being positioned on the inner side of the outer limb of the cavity which is formed when the male member is mated with the female member.

3,270,374
CARD STOP MOTION

James H. Yon, Jr., Charlotte, N.C., assignor to Jett Mfg. Corp., Charlotte, N.C., a corporation of North Carolina

Filed Dec. 9, 1963, Ser. No. 329,004
8 Claims. (Cl. 19—.25)



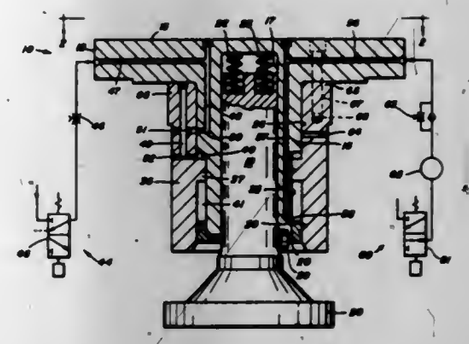
1. A stop motion for a carding machine comprising in combination, a movable sliver detector arranged to engage an advancing sliver formed by said carding machine, means on said carding machine for controlling the advance of said sliver, pneumatically operated means for actuating said control means, valve means including a movable element for operatively communicating said pneumatically operated actuating means with an associated source of fluid pressure, means for yieldingly urging said movable element against said sliver detector, said sliver detector with said movable element in engagement therewith being maintained in one position by said advancing sliver against said urging means to operate said pneumatically operated means with said fluid pressure through said valve means and actuate said control means for continuous advance of said sliver, said sliver detector with said movable element in engagement therewith being movable to a second position by said urging means upon the occurrence of a break or a reduction in tension in said sliver to operate said pneumatically operated actuating means with said fluid pressure through said valve means and actuate said control means to stop the advance of said sliver.

3,270,375
JOLTING MECHANISM FOR FOUNDRY APPARATUS

Lester C. Young, Cleveland, Ohio, assignor to Spo Incorporated, a corporation of Ohio

Filed Apr. 23, 1965, Ser. No. 450,351
13 Claims. (Cl. 22—45)

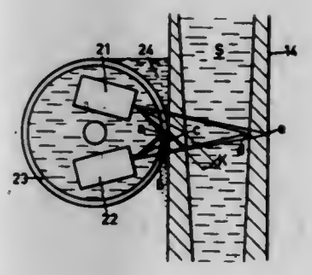
1. Apparatus for imparting a series of rapid blows to a device including a table member, a cylinder member connected to said table member and extending therefrom, a piston member cooperating with said cylinder member and movable between first and second positions with respect thereto, said piston member having a portion engageable with said table member, said cylinder and piston members defining first and second chambers, first port means for introducing gas under pressure into said first chamber in said first position of said piston member and causing said portion thereof to move away from said table member toward said second position, second port means for exhausting said gas under pressure in said first chamber to atmosphere in said second position of said piston member, third port means for introducing gas under pressure into said second chamber, movement of said piston member from said first to said second position causing further compression of said gas under pressure in said second chamber to a still higher degree and with exhausting of gas under pressure through said second port means said piston member is moved rapidly back toward said first position and said portion thereof imparts a blow to said table member.



3,270,376
METHOD AND APPARATUS FOR CONTINUOUS CASTING UTILIZING SOLIDIFIED SKIN THICKNESS DETERMINATIONS

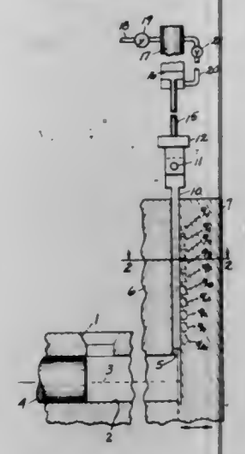
Armin Thalmann, Uster, Zurich, Switzerland, assignor to Concast A.G., Zurich, Switzerland

Filed Oct. 29, 1962, Ser. No. 233,723
Claims priority, application Switzerland, Nov. 4, 1961, 12,794/61
10 Claims. (Cl. 22—57.2)



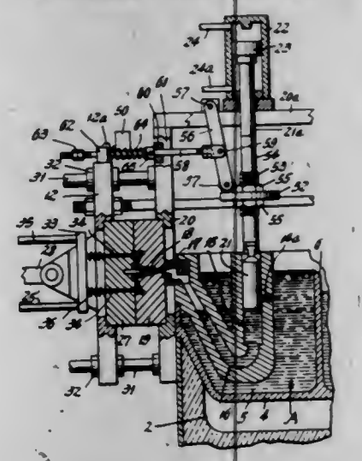
1. The method of continuous casting which comprises the steps of continuously casting molten metal into a mold, cooling said mold to solidify the metal along the periphery to form a strand having a solidified skin enclosing a molten core, withdrawing said strand from said mold in continuous manner, cooling said strand to progressively solidify the molten metal in said core, measuring the thickness of the solidified skin of the strand enclosing the molten core and controlling the casting process in accordance with said measurement of the skin thickness to maintain the skin thickness enclosing the molten core with sufficient material to withstand working operation according to the metal to be cast.

3,270,377
DIE CASTING MACHINE
Robert W. Parker, Erie, Pa., assignor to Parker White Metal Company, Fairview, Pa., a corporation of Pennsylvania
Filed Mar. 30, 1964, Ser. No. 355,655
7 Claims. (Cl. 22—68)



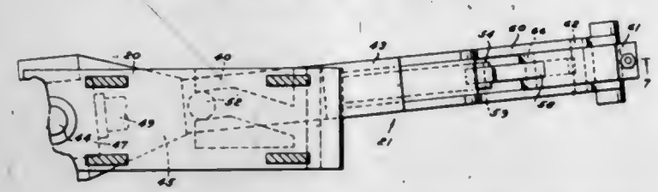
4. In a die casting machine, a stationary die, a movable die closed against the stationary die, a sprue between the dies, a plurality of cavities respectively fed from different sections of the sprue spaced along its length, a chamber in the stationary die communicating with one end of the sprue, means for forcing molten metal under pressure from the chamber into one end of the sprue, and means for producing a back pressure retarding movement of the metal along the sprue to compel sequential filling of the cavities under pressure.

3,270,378
DIE CASTING APPARATUS
Albert Madwed, Bridgeport, Conn., assignor to Automatic Casting Corporation, Bridgeport, Conn., a corporation of Connecticut
Filed Jan. 16, 1964, Ser. No. 338,084
9 Claims. (Cl. 22—70)



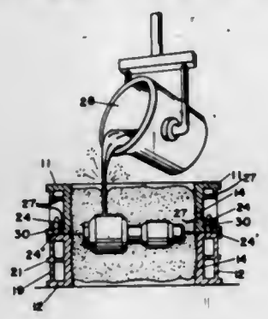
1. In a die casting machine having separable die parts and means for moving said die parts to closed position to form a die cavity and to open position for removal of a casting therefrom, a pot, a shot cylinder having a fill-port communicating with the pot, a gooseneck and nozzle connected with the shot cylinder, a shot plunger in the cylinder means for traveling the plunger from a starting position above the fill-port to close the fill-port and force molten metal from the cylinder through the gooseneck and nozzle into the die cavity and for returning the plunger to its starting position: the improvement comprising mechanical stop means for positively arresting the return movement of the plunger before it passes the fill-port and opens the same to the cylinder; and means actuated by the movable die part as an incident to the opening movement of the latter for causing said stop means to be rendered inoperative to arrest the plunger and hence permit movement thereof to starting position above the fill-port after the die parts have separated.

3,270,379
DIE CAST UNLOADER
Francis J. Sehn, Bloomfield Hills, and Maurice M. Clemons, Franklin, Mich., assignors to Press Automation Systems, Inc., Detroit, Mich., a corporation of Michigan
Filed Aug. 15, 1963, Ser. No. 302,353
3 Claims. (Cl. 22—94)



1. In combination a die casting unloader comprising a swinging arm mechanism adapted for direct mounting on a die casting machine, a die casting machine having tie bars extending in the direction of die movement in opening and closing, said swinging arm mechanism having a plane of operation substantially normal to the direction of die movement in opening and closing, said swinging arm movement including a jaw mechanism, means for actuating said jaw mechanism to engage the sprue of a die casting when the die casting machine is open and to extract it from one of the dies in a direction generally corresponding to the direction of die opening, and means for actuating said swinging arm mechanism to remove the die casting to a position outside of the machine and to release the same, said die casting unloader including a frame, said swinging arm mechanism including linkage pivotally connected to said frame, a fluid pressure cylinder for actuating said linkage, and a fluid pressure cylinder for actuating said jaw mechanism, said jaw mechanism and associated fluid pressure cylinder including means for converting piston movement of said associated fluid pressure cylinder to initially effect jaw closure and secondarily effect die casting extraction during successive portions of piston movement.

3,270,380
FOUNDRY FLASK
Russell W. Taccone, Erie, Pa., assignor to Taccone Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Feb. 2, 1965, Ser. No. 429,785
1 Claim. (Cl. 22—110)



A flask made up of a cope and drag each having integral walls extending completely therearound and defining an enclosure open at the top and bottom,

said walls comprising an inner wall and an outer wall,

said cope and said drag each having a top flange integrally attached to the top of said inner wall and extending outwardly therefrom,

a bottom flange integrally attached to the lower edge of inner wall and extending outwardly therefrom,

said outer wall of said cope and said outer wall of said drag each being integrally attached to the outer ends of the respective said flanges thereof whereby said inner walls, said outer wall and said flanges define a box like section forming said integral walls,

said drag having a locating pin attached to its said upper flange and extending outwardly therefrom,

a recess formed in said outer wall of said cope and plates attached to said inner wall and extending outwardly and attached to the marginal edges of said recess in said outer wall,

an opening in the lower of said plates and an opening in said bottom flange in vertical alignment with said opening and said bottom flange,

said cope being attached to rest on said drag with said bottom flange of said cope resting on said top flange of said drag and said locating pin extending through said openings.

3,270,381
PRODUCTION OF DUCTILE FOIL
Hugh R. Smith, Jr., Piedmont, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California
No Drawing. Filed Aug. 4, 1965, Ser. No. 477,298
6 Claims. (Cl. 22—200)

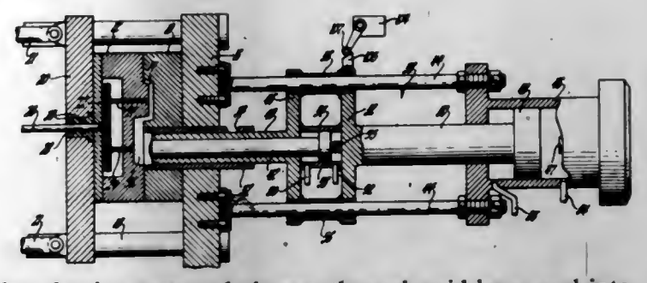
1. A process for the manufacture of dense ductile metallic foil by vacuum evaporation comprising, vaporizing a metal bearing coating material within a vacuum, condensing at least a portion of the metallic content of the vaporized coating material upon a substrate within the vacuum, maintaining the temperature of the substrate above a minimum substrate temperature of at least about 25 percent of the melting point of the condensed material in degrees Kelvin, and removing the condensed material from the substrate in the form of a dense ductile metallic foil.

3,270,382
SHELL MOULD PROCESS
Harold Garton Emblem, Grappenhall, and Earl Whiteway Fothergill, Liverpool, England, assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 5, 1963, Ser. No. 321,401
Claims priority, application Great Britain, Nov. 16, 1962, 43,525/62
10 Claims. (Cl. 22—196)

1. A method of making a shell mould which comprises applying to an expendable pattern alternately a coating of gel-forming acid-hydroylsed alkyl silicate solution and a coating of a gel-forming basic silicate ester material comprising an amino alkyl silicate, refractory material being suspended in at least one of the liquids used to form the coatings, the acid-hydrolysed solution and the basic silicate ester of the applied coatings each acting upon the other so as to cause the gelation of the other.

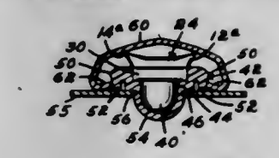
3,270,383
METHOD OF DIE CASTING
Harry D. Hall, Birmingham, David C. Salatin, Royal Oak, Don R. Sutherland, Mount Clemens, and Clayton J. Trible, Berkley, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 24, 1963, Ser. No. 289,903
10 Claims. (Cl. 22—200)

1. The method of die casting comprising the steps of moving by means of a plunger a molten metal mass into the cavity of die casting dies through a substantially non-restricted passage at a velocity such that a substantially solid front of the molten metal enters the die cavity, maintaining pressure on the molten metal by means of said plunger until substantially only a layer of the metal has solidified adjacent the said die cavity and passage walls to arrest the further application of pressure on the molten portions of the meal mass by said plunger, and



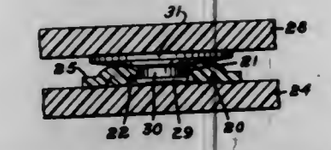
then forcing a second plunger through said layer and into the molten interior portion of the metal mass to maintain pressure on the molten portions of the mass until it has solidified.

3,270,384
MOLDING FASTENER WITH PENETRATING PRONGS
Stefan Bätz, Sindelfingen, Wurttemberg, Heinrich Overhoff, Lorrach, Baden, and Karl Stark, Sindelfingen, Wurttemburg, Germany, assignors to A. Raymond, Baden, Germany, a firm
Filed Jan. 20, 1964, Ser. No. 339,020
3 Claims. (Cl. 24—73)



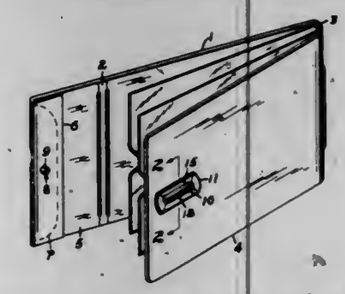
3. The combination of a fastening device, molding, and a support, said fastening device comprising a stud assembly and a socket element, said stud assembly comprising a shell element and a plug element, said shell element being formed of a hardened, resilient metal and including an arced substantially rectangular base having at least one prong extending from each corner of said base, said prongs defining continuations of the arc provided by said base, each of said prongs terminating in a sharp tip, said plug element being formed of a plastic material and comprising a foundation portion and an integral barrel portion extending from said foundation portion, said base of said shell element having a pair of arms extending therefrom in directions generally opposed to said prongs, and having means of engaging said barrel portion, said means having an aperture formed therethrough, said socket element comprising a support portion having an engagement aperture formed therein and a socket portion in the form of a closed end tube extending from said support portion and having its axis coincident with that of said engagement aperture, and having a pair of bar portions extending from said support portion in spaced substantially parallel relationship and a pair of engagement portions connecting said bar portions to provide a rectangular area, said engagement portions having a pair of leg portions extending therefrom, and said support having a support aperture formed therethrough, said socket portion having a part thereof engaged within said support aperture, said engagement aperture formed in said support portion having a diameter which, when said barrel portion is not inserted in said engagement aperture, is slightly less than the diameter of said barrel portion, an edge of each of said engagement portions engaging a part of said barrel portion, said foundation portion being in abutting relationship with said support adjacent said support aperture, and said molding being in the form of a channel providing a pair of wings in spaced opposed relationship, each of said wings engaging a leg portion extending from said foundation portion.

3,270,385
HEAT-SEAL FASTENER ASSEMBLY
Everett Melanson, Wakefield, Mass., assignor to United-Carr Incorporated, a corporation of Delaware
Filed Mar. 27, 1964, Ser. No. 355,348
1 Claim. (Cl. 24—216)



An assembly comprising in combination a support and a snap fastener socket, said socket having a base portion, a flange in the form of a pellicle of heat sealable material surrounding said base portion, an annulet extending from a surface of said base portion, and a thin inner wall integral with said base portion and defining an aperture in said base portion and co-operating with said annulet to provide a cavity capable of receiving a stud in snapping engagement with said socket, said flange being heat sealed to said support at its surface adjacent said annulet.

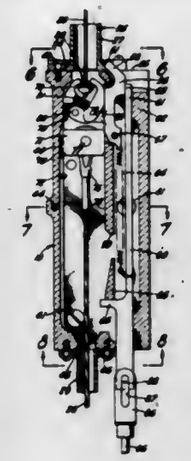
3,270,386
ADJUSTABLE FASTENER
Stuart T. Shears, Belmont, Mass., assignor to United-Carr Incorporated, a corporation of Delaware
Filed Oct. 3, 1963, Ser. No. 313,470
3 Claims. (Cl. 24—217)



1. A means for securing two overlapping panels in releasable, slidable relationship relative to each other comprising, in combination, a first panel having a snap fastener stud secured thereto and a second panel having a snap fastener socket secured adjacent an opening therein, said socket member being of generally oblong shape and including a metal housing having a generally flat base portion with upper and lower surfaces, side walls and end walls turned downwardly from said upper surface to provide a shallow recess adjacent said under surface, a resilient plastic insert conforming in size and shape to said recess overlying the entire under surface of said base, a pair of opposed, U-shaped runners formed as an extension of the side walls of said housing, portions of which overlie a substantial area of said insert to maintain the latter in said recess and other portions of which are secured to said second panel along edges defining said opening, and a pair of generally aligned oblong slots formed in and extending over a major portion of said base and said insert, said stud being seated in said slots in snap engagement with said insert and being freely movable along the length of said slots to allow for relative sliding adjustment of said panels.

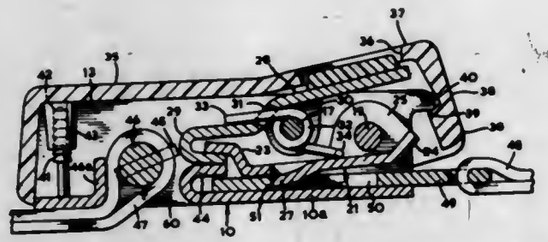
3,270,387
FLEXIBLE ENCLOSED CABLE OPERATING AND DISCONNECT MECHANISM
Wallace F. Ziegler, Glendale, and Norris D. Whitehill, Tujunga, Calif., assignors, by mesne assignments, to Walter Kidde & Company, Inc., a corporation of New York
Filed July 2, 1964, Ser. No. 379,780
11 Claims. (Cl. 24—230)

2. In a mechanism to sequentially operate and disconnect a tension actuated cable and enclosing sheath, the combination of: a latch having means for engaging and retaining the sheath, said latch movable between positions for retaining and releasing the sheath, release means mounted for engaging and locking said latch in the sheath-retaining position and movable to a position for permitting movement of said latch to release the sheath, a movable slide mechanism having releasable claw means for



grasping the cable, said slide mechanism movable through an adequate distance for operating the tension actuated cable, means for engaging said claw means and retaining the cable-grasping position thereof during said actuating movement and then releasing said claw means, and said slide mechanism engaging and moving said release means to release the sheath upon the actuating movement of said slide mechanism.

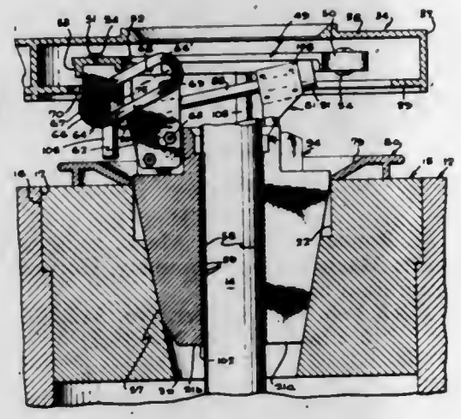
3,270,388
BUCKLE FOR A SAFETY BELT
Frederick H. Humphrey, Markham, Ontario, Canada, assignor to Alnwick Investments Limited, Nassau, Bahamas
Filed June 22, 1965, Ser. No. 465,976
10 Claims. (Cl. 24—230)



1. A buckle for a belt, said buckle comprising a base member; first and second level members; a catch member carried by said first lever member; means pivotably mounting said first lever member on and above said base member about a first pivot axis for movement of said catch member towards and away from said base member, said catch member when moved towards said base member being adapted to engage a catch engageable part of a tongue of a belt when the tongue is inserted between said base member and said first lever member and to disengage from the catch engageable part moved away from said base member; means pivotably mounting said second lever member on the side of said first lever member remote from said base member about a second pivot axis parallel to said first pivot axis; parts of said first and second lever members being coupled together at a point spaced from but on the same side of both of said pivot axes so that movement of the end of said second lever member on the other side of said second pivot axis towards said first lever member lifts the part of said first lever member carrying said catch member; spring means

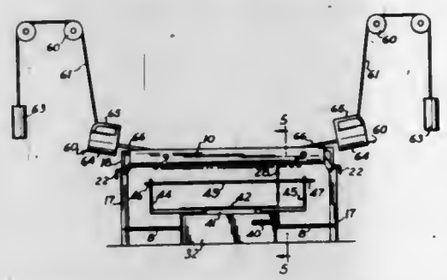
biasing said one end of said second lever member away from said base member and biasing said part of said first lever member towards said base member; a cap member having an opening therein; and means for securing said cap member fixed in position on said base member with said cap member positioned over said first and second lever members but with said one end of said second lever member being accessible through the opening in said cap member.

3,270,389
POWER DRIVEN WELL SLIP STRUCTURE
Guy W. Kingsbury, Long Beach, Calif., assignor to Abegg & Reinhold Co., Los Angeles, Calif., a corporation of California
Filed Mar. 15, 1965, Ser. No. 439,780
11 Claims. (Cl. 24—263)



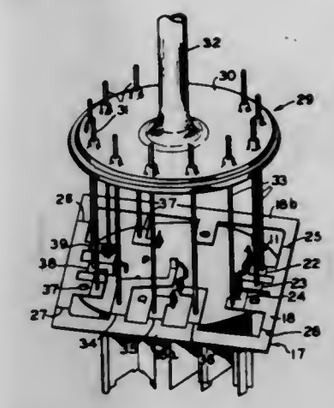
4. Slip apparatus comprising a carrier to be received above a well drilling rotary table, a plurality of slips supported from said carrier, and means suspending said slips movably from said carrier and including a hanger having a lower portion connected to and suspending one of the slips, and a guide connected to an upper portion of the hanger and mounting it and the suspended slip for retracting movement relative to said carrier along a longitudinal axis of the guide and for swinging movement about said axis.

3,270,390
DISPENSER
Forrest H. James, Jr., Opelika, Eldridge H. Cockrell, Auburn, and Thomas D. Nixon, Opelika, Ala., assignors to Diversified Products Corporation, Opelika, Ala., a corporation of Alabama
Filed Sept. 16, 1963, Ser. No. 308,975
7 Claims. (Cl. 25—41)



1. A dispenser for aggregate material comprising a trough for containing said aggregate material, spouts extending from said trough for feeding aggregate material from said trough, a vibrator for supporting containers to be filled in positions and for receiving said aggregate material from said spouts, and a relatively movable external vibrator including vibrator rods selectively positionable within said trough for vibrating said aggregate material therein.

3,270,391
ELECTRON DISCHARGE DEVICE ASSEMBLY AND METHOD FOR MANUFACTURE THEREOF
Francis R. Linehan, Owensboro, Ky., assignor to General Electric Company, a corporation of New York
Filed Aug. 31, 1964, Ser. No. 393,259
5 Claims. (Cl. 29—25.15)



1. In the manufacture of electron discharge devices having an insulating stem supporting a plurality of stem-leads of equal, predetermined length in parallel, axial relation thereon and an electrode cage including an electrode structure mounted on an insulating support, the electrodes of said electrode structure including connector surfaces extending through said insulating support wherein selected ones of said stem-leads are to be electrically connected to associated ones of said connector surfaces, a method of assembly comprising:

(a) cutting said stem-leads to an equal, predetermined length,

(b) forming a planar interconnecting plate into a configuration providing a plurality of interconnecting bands to be connected to the inner end of said selected ones of said stem-leads and to the electrode connector surface associated therewith and providing rupture seams delineating between said interconnecting bands and a peripheral portion of said interconnecting plate,

(c) supporting said interconnecting plate in a horizontal plane,

(d) supporting said stem with said stem-leads depending vertically therefrom and with each of said stem-leads vertically aligned with, and displaced from, said associated ones of said interconnecting bands,

(e) connecting said selected ones of said stem-leads and said interconnecting plate to a source of electrical energy to establish an electrical potential difference therebetween,

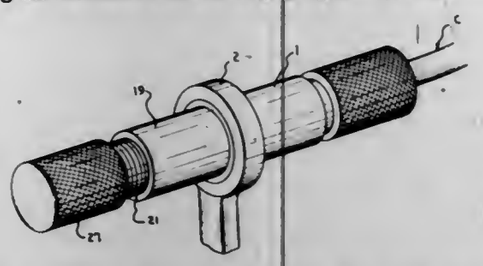
(f) moving said stem and said interconnecting plate relative to each other to bring said selected ones of said stem-leads into forging engagement with said associated ones of said interconnecting bands to effect a percussive weld therebetween, and

(g) removing said peripheral portions of said interconnecting plate by breaking said rupture seams.

3,270,392
COAXIAL CONNECTOR TOOL
Henry W. Demler, Lebanon, and George W. Ziegler, Jr., Carlisle, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 14, 1963, Ser. No. 315,787
16 Claims. (Cl. 29—33)

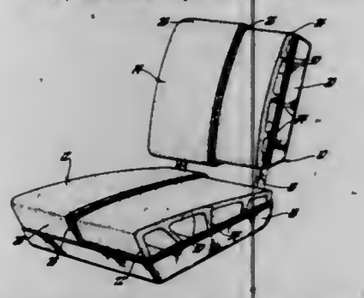
1. A device for applying coaxial connector members to a coaxial cable means comprising hollow body means, means on said body means to secure one end of said cable means to said body means, and means on said body means adjacent the end of said cable means to guide and apply

a connector member to a conductor means so that said connector member is mechanically and electrically secured thereto, wherein said securing means includes a chuck device having inclined jaw members, a sleeve member having an inclined surface engaging said jaw members,



means on said jaw members to bias said jaw members against said inclined surface, and means on said body means to move said chuck device and said sleeve relative to each other so that said chuck device is moved into a position engaging said cable means and another position disengaging said cable means.

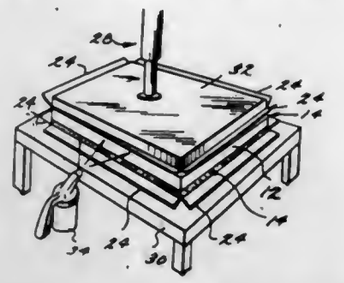
3,270,393
METHOD FOR FORMING RESILIENT PLASTIC SEAT ELEMENTS
John J. Levenson, St. Clair Shores, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Dec. 13, 1962, Ser. No. 244,475, now Patent No. 3,222,698, dated Dec. 14, 1965. Divided and this application Mar. 23, 1964, Ser. No. 353,951
6 Claims. (Cl. 29—91.1)



1. A method for making a vehicle seat cushion comprising extruding a resilient material through a die, said die being adapted to form a truss design in the extruded strip, transversely cutting the strip into desired seat width lengths, blanking the necessary openings for mounting said lengths, applying padding to the upper surface of said seat length extrusion, securing a seat cover over said extrusion and said padding, and attaching said extrusion to a seat frame by means of said mounting openings.

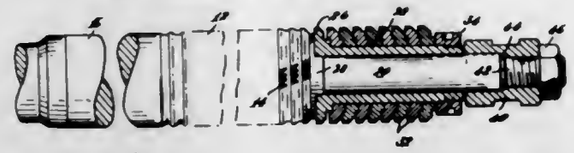
3,270,394
METHOD OF MANUFACTURING CUSHIONS
John A. Marsh and George W. Armfield, High Point, N.C., assignors to Marsh-Armfield, High Point, N.C., a corporation of North Carolina
Original application Mar. 19, 1964, Ser. No. 353,222. Divided and this application Aug. 19, 1965, Ser. No. 487,650
5 Claims (Cl. 29—91.1)

1. A method of assembling a cushion comprising a cover and a filler which includes a slab-like backbone member of resilient but somewhat stiff material and at least one batt of loosely-matted fibers overlying at least one side of said backbone member, the steps comprising: assembling in overlying relation and in the order stated a first cover part, a batt having generally the same configuration but of smaller outline than said first cover part so that marginal edge portions of the latter extend beyond the edges of said batt, a backbone member of generally the same configuration but of smaller outline than said first cover part, and a second cover part generally coextensive with said first cover part; compressing the assembly to a predetermined extent in a direction transverse to the direction of its major dimensions; applying an adhesive to the peripheral edges of the filler and to the inner



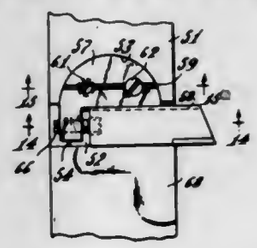
surface of the marginal edges of the cover parts; folding the marginal edges of the cover parts into overlapping relation against the peripheral edges of the filler whereby said marginal edges become bonded to each other and to the peripheral edges of the filler; and decompressing the assembly.

3,270,395
BROACH
Oliver W. Bonnafe, Hudson, Mass., assignor to The Lapointe Machine Tool Company, Hudson, Mass., a corporation of Maine
Filed Feb. 3, 1964, Ser. No. 342,295
8 Claims. (Cl. 29—95.1)



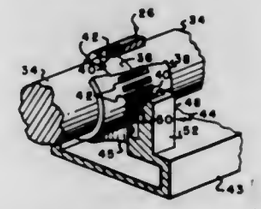
1. A broach comprising a support, a plurality of cutters, each cutter having peripherally thereof a plurality of radial teeth disposed at an angle to the axis of the support such that the teeth on successive cutters form helical rows of teeth lengthwise of the support, and means nonrotatably mounting the cutters on the support with the teeth on successive cutters in any helical row lengthwise of the support spaced axially by an amount corresponding to the lead of the helix divided by the number of helical rows of teeth.

3,270,396
BIT HOLDER
Thurston V. Williams, Wilton, N.H., assignor to The O.K. Tool Company, Inc., Milford, N.H., a corporation of New Hampshire
Filed Feb. 25, 1965, Ser. No. 435,278
2 Claims. (Cl. 29—105)



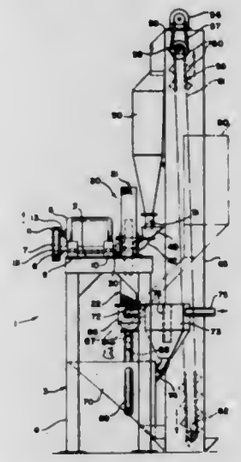
1. A tool comprising a carrier part movable in a predetermined direction, the carrier having a recess defined by a bottom and two sides, one side facing in said direction and the other side facing in the opposite direction, in said recess a bit bearing on one of said sides and a locator part bearing on the other of said sides, said bit and locator part having abutting surfaces to prevent movement of the bit relatively to the locator toward said bottom, a screw extending through the locator into engagement with said bottom to adjust the bit and locator relatively to said bottom, means for locking the locator in adjusted position, and means for adjusting said bit parallel to said bottom, said means including a screw threaded in one of said parts and bearing on the rear end of the bit.

3,270,397
AIR DRAFTING ARRANGEMENT
Robert M. Ingham, Jr., Norman E. Klein, and Richard V. Putnam, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Original application Aug. 14, 1963, Ser. No. 302,211. Divided and this application Oct. 23, 1964, Ser. No. 405,913
2 Claims. (Cl. 29—121)



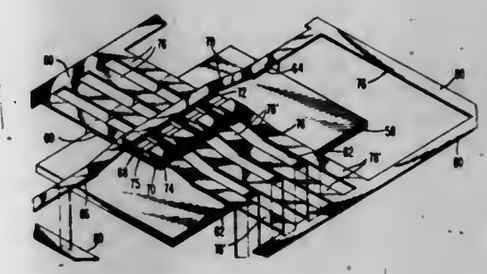
1. A drafting roll for a drafting system comprising: an elongated one-piece solid shaft member, a plurality of narrow annular grooves formed in said shaft member, a one-piece collar member telescoped over each of said narrow annular grooves, said collar members having an internal diameter substantially equal to the external diameter of said shaft member, a plurality of notches in the periphery of each of said collar members and an aperture in each of said notches providing communication with said annular groove.

3,270,398
METAL SHOT PRODUCING METHOD
Orald L. Stewart, Lakewood, Ohio, assignor to The Cleveland Metal Abrasive Co., Cleveland, Ohio, a corporation of Ohio
Filed May 7, 1965, Ser. No. 454,090
3 Claims. (Cl. 29—148.4)



1. A method of increasing the yield of fine metal shot from a single heat of metal comprising:
pouring a heat of molten metal and interrupting the stream to produce randomly sized metal shot particles;
segregating said shot into a plurality of groups by size;
crushing the shot of a selected size to form metal grit;
segregating said grit into a plurality of groups by size;
impacting at least one of said groups of grit against a target;
collecting said impacted grit and impacting it against a target again;
repeating said impacting until said grit is formed into the approximate shape of said shot, thereby supplementing the inventory of fine shot produced from said heat.

3,270,399
METHOD OF FABRICATING SEMICONDUCTOR DEVICES
Frederick F. Ohntrup, Plymouth Meeting, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 24, 1962, Ser. No. 189,752
4 Claims. (Cl. 29—155.5)



1. The method of fabricating semiconductor circuit assemblies comprising the steps of:
(a) providing a dielectric supporting member with a plurality of discrete parallel conductors and other conductors arranged in a repeating discontinuous pattern adjacent an edge portion of said dielectric supporting member thereby providing a strain relief build-up for conductors which are to be attached thereto,
(b) registering a plurality of semiconductors on certain ones of said parallel conductors in a desired pattern,
(c) conductively bonding said semiconductors to the conductors of said dielectric member while so registered,
(d) orthogonally registering a conductive element of a self-supporting conductive grid with the conductors bearing said semiconductors so that the element of said conductive grid extends at right angles to the conductors of said dielectric member, and in alignment with said strain relief forming conductors and meeting the latter conductors at a slight depthwise angle thereto,
(e) conductively bonding said semiconductors to the conductors of said grid and to said strain relief conductors so that the forces developed in connecting said assembly to a receptacle are distributed over said strain relief conductors and are not transmitted to said semiconductors, and
(f) encapsulating said assembly but leaving the ends of certain of said conductors of said dielectric member exposed for interconnection to a utilization device.

3,270,400
PROCESS OF MAKING NIOBIUM STANNIDE BODIES
Eugen J. Saur, 20 Jahnstr., Giessen, Germany
No Drawing. Filed Aug. 9, 1963, Ser. No. 301,167
3 Claims. (Cl. 29—155.5)

1. A method of making electromagnets, such as solenoids and the like, comprising the steps of preparing an elongated superconductor with a thin layer of Nb_3Sn and excess tin on a refractory metal base, electrically insulating the superconductor with an insulation capable of withstanding temperatures in the range of from at least 200° C. to about 800° C., winding the superconductor

into a solenoid, testing the solenoid to detect any loss of critical current in the wire, then heating the solenoid between 200° C. and the upper temperature limit of the insulation whenever a lowering of critical current capacity is indicated by the test for a time sufficient to restore at least a portion of the lost critical current capacity but less than the period required to consume all of the excess tin.

3. A method of making superconductive elements comprising the steps of preparing adjacent layers of niobium and tin, heating the layers at 900–1200° C. to form a diffusion layer of Nb_3Sn and excess tin, testing the resultant product for critical current, working the resultant product into a desired shape and retesting for critical current, and heating the superconductor between 200° C. and 600° C. whenever lowering of the critical current capacity is indicated, the heating being continued for a sufficient time and sufficiently low temperature to restore a substantial portion of the critical current without reacting all the excess tin.

3,270,401

METHOD AND APPARATUS FOR PRODUCING INSULATED ELECTRICAL CONDUCTOR

John Staley and Thomas E. Lewis, Louisville, Ky., assignors to Reynolds Metal Company, Richmond, Va., a corporation of Delaware

Original application Jan. 7, 1957, Ser. No. 632,809. Divided and this application Aug. 28, 1962, Ser. No. 226,194

8 Claims. (Cl. 29—155.57)



1. In a method of producing an insulated metal conductor by the operation of an electrolytic bath and an anodic element partially submerged in said bath and including electrically conductive means and isolating means, the steps comprising: introducing an elongated metal strip continuously into simultaneous contact with said bath and said anodic element, with said conductive means contacting one side of said strip over an area which is large in comparison with the cross-sectional area of said strip, said isolating means contacting the same side of the strip as said conductive means and preventing said bath from contacting either said conductive means or the portion of said strip in contact with said conductive means, and said bath contacting the other side of said strip; passing an electrical current from said both through the thickness of said strip to said conductive means, with substantially no electrical current flowing from said bath through said isolating means to said conductive means, thereby forming a thin coating of insulating material only on the portion of said strip which is not in contact with said conductive means or said isolating means; and withdrawing the insulated strip from said bath and from contact with said anodic element.

4. In a method of producing a completely insulated electrical coil, the steps comprising: producing according to claim 1 an insulated electrical conductor in the form of a single strip; and thereafter winding said conductor upon itself so that the uncoated portion of each turn is covered by the coated portion on the adjacent side of the next turn.

3,270,402

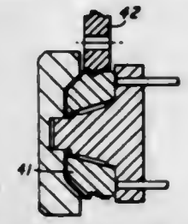
WHEEL MANUFACTURE

George Edward Adams and George Henry Whale, Coventry, and John Harry Arthur Hanson, New Cubbington, near Leamington Spa, England, assignors to Dunlop Rubber Company Limited, London, England, a British company

Filed Nov. 5, 1963, Ser. No. 321,453

Claims priority, application Great Britain, Nov. 7, 1962, 42,017/62

5 Claims. (Cl. 29—159.01)



1. Method of making a wheel having a load supporting disc part and a rim part as a seamless unitary structure which comprises pressing a substantially flat disc shaped blank by pressing operations to shape the radially outward zone of the blank to form the rim part, rolling the portion of the rim remote from the disc portion to a reduced diameter, pressing the reduced diameter portion of the rim axially toward the disc portion to form the axially outer surface of a lock-ring gutter adjacent to the disc portion, expanding the reduced diameter portion of the rim radially outwardly from said gutter wall and rolling the rim against a profile roller to its final rim and gutter form.

3,270,403

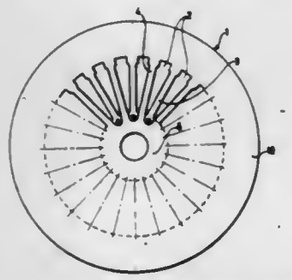
METHOD OF MAKING A SPOKED WHEEL

Johannes Hendrikus Bullens, Best, Netherlands, assignor to N.V. Metaalindustrie Caja, Acht (Eindhoven), Netherlands, a limited-liability company of the Netherlands

Filed June 14, 1963, Ser. No. 287,877

Claims priority, application Netherlands, June 18, 1962, 279,852

4 Claims. (Cl. 29—159.03)



1. A method of making a spoked wheel comprising cutting from a flat, circular metal plate a series of angularly spaced, radial directed, wedge-shaped pieces which, at their ends, are spaced from the periphery of the plate and from the center of the plate, thereby to define, between the resulting cutouts, a series of spokes joined at their outer ends to a continuous rim-forming annular portion and at their inner ends to a central portion destined to form a first hub-holder, severing the alternate spokes from said central portion to form eyes at inner ends of said alternate spokes, bending each of said spokes into a U-shaped cross-section along a length of the spoke between the opposite ends thereof, bending said annular portion into a U-shaped cross-section opening at one side and having a relatively short inner leg extending from the spokes perpendicular to the original plane of the plate and a relatively long outer leg also perpendicular to said original plane, then bending said outer leg against said inner leg to form a rim of generally U-shaped cross-section opening radially outward and having a double-wall at one half of the rim where a portion of said outer leg lies against said inner leg, bending said alternate spokes having eyes at their inner ends so that the latter are to one side of a plane extending through the center of said rim, forming a disk with a circular series of projections extending perpendicularly therefrom and being spaced apart by distances corresponding substantially to the width of said spokes at the inner ends thereof, engaging said inner ends of the spokes having eyes between successive projections of said disk, and securing said eyes to said disk so that the latter constitutes a second hub-holder.

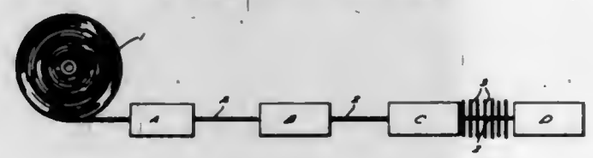
3,270,404

METHOD OF MAKING METALLIC SHELVING

Alfred E. O. Andreassen, Waterloo, Iowa, assignor to Chamberlain Corporation, Waterloo, Iowa, a corporation of Iowa

Filed Aug. 6, 1963, Ser. No. 300,271

8 Claims. (Cl. 29—160)



1. The method of making a metallic shelf structure, including the steps of

feeding and unrolling cross-bar stock from a supply coil,

severing cross-bar lengths from said stock in a manner to provide a projecting tongue on each end of a cross-bar,

placing each cross-bar on edge,

notching each cross-bar by downward pressure to provide spaced notches therealong with a widened saddle at the base of each notch,

placing wires in said notches on said saddles,

flattening the upper marginal portion of each cross-bar into a T-shape by downward pressure between said notches in a manner to cause said flattened portions to overlie the wires and anchor the same in said notches, and

riveting said tongues to shelf side members.

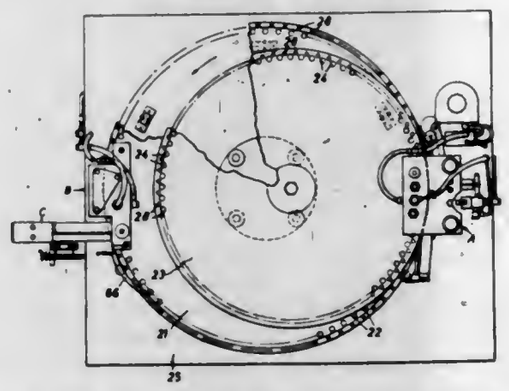
3,270,405

MACHINE FOR ASSEMBLING LIPSTICK COMPONENTS

Edward Webster, Poole, Dorset, England, assignor to Edward Webster Limited, Hampshire, England, a British company

Filed Oct. 25, 1963, Ser. No. 319,054

7 Claims. (Cl. 29—208)



1. A machine for assembling components of the type adapted to be slid and telescoped one into another comprising a first circular table having adjacent to its periphery a series of spaced holes to receive components, a first vertical axis about which said first table is rotatable, means for rotating said first table step-by-step about said first axis, a second circular table of a diameter smaller than the diameter of said first table wholly superimposed on said first table and having adjacent to its periphery a series of spaced holes to receive components, a second vertical axis offset from said first vertical axis and about which said second table is rotatable, means for rotating said second table step-by-step about said second axis, holes in the two tables registering at least one point after each angular step-by-step movement of the tables, and intermittently operating means actuating in synchronism with the tables to force a component in a hole in one of said tables into engagement with a component in a hole in the other of said tables at a point where said holes are in registry.

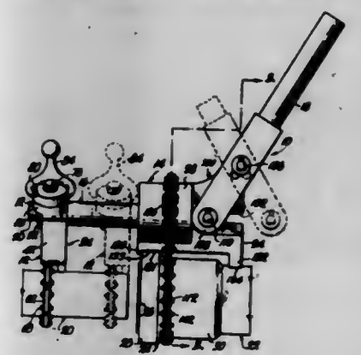
3,270,406

PIPE FITTING TOOL

William B. Gorman, 6607 N. Wayne, Kansas City, Mo., and John P. Gorman, 2527 Lee St., Simi, Calif.

Filed Mar. 1, 1965, Ser. No. 436,234

11 Claims. (Cl. 29—237)



1. A tool for telescopically joining a first section of pipe with a second section of pipe comprising:

a first assembly for gripping said first section of pipe;

a shaft reciprocably carried by said first assembly;

a second assembly operatively connected to said shaft for gripping the second section of pipe;

aligning means carried by said assemblies for maintaining said first and second sections of pipe in axial alignment, said aligning means including head means shiftably mounted on said shaft; and

means coupled with said shaft for reciprocating the same to thereby effect relative movement between said first assembly and said second assembly so that on reciprocation of said shaft said first section of pipe is telescopically joined with said second section of pipe.

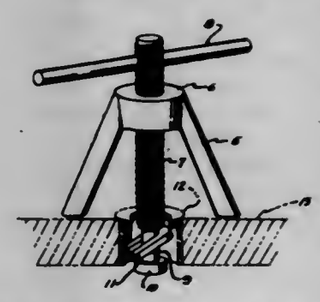
3,270,407

SCREW THREADED FREEZE PLUG PULL-OUT TOOL WITH WORK ENGAGING MEANS

Nat E. Araujo, 3837 S. Main, Fort Worth, Tex.

Filed Aug. 3, 1964, Ser. No. 386,871

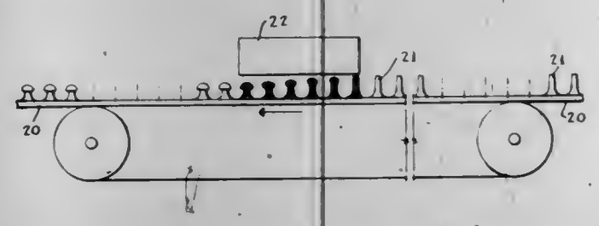
1 Claim. (Cl. 29—259)



A plug pull-out tool, for removing a plug from an engine block, with said plug having a hole drilled therein for receiving an end of said tool, said tool comprising

means to engage side walls of said hole, a V-shaped support to straddle the plug to be removed, said V-shaped support having a threaded opening extending through the apex thereof and bisecting the V, a screw in threaded engagement with said opening, a handle secured to the end of the screw extending outward from the apex of the V-shaped support, a reduced cylindrical portion extending axially from the end of said screw within the V-shape support, said means to engage the side walls of said hole, comprising a flat U-shaped member positionable on said reduced cylindrical portion in an inclined manner, a button head of substantially the same diameter as said screw secured to the outer end of said reduced cylindrical portion, adapted to retain said U-shaped member on said reduced portion, whereby the reduced cylindrical portion with the U-shaped member in an inclined position can be inserted in the hole of said plug, upon rotation of said screw said U-shaped member assumes a position at right angle to said cylindrical portion, and upon continuing rotating said screw will force the U-shaped member to bear against the walls of the hole and thereby remove the plug from the engine block.

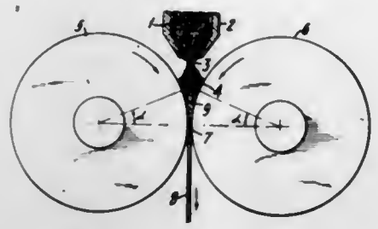
3,270,408
SEPARABLE INTERLOCKING FASTENERS AND METHOD OF MAKING THEM
Raymond N. Nealis, 11 Harvest Road, Levittown, Pa.
Application Aug. 13, 1962, Ser. No. 216,613, now Patent No. 3,191,255, dated June 29, 1965, which is a continuation of application Ser. No. 847,841, filed Oct. 21, 1959. Divided and this application May 4, 1965, Ser. No. 453,151
4 Claims. (Cl. 29—408)



1. The method of forming fastener units which comprises: providing a base sheet of flexible plastic material with upstanding integral, flexible elements and heating each element progressively in a direction from its end toward the base sheet to an extent to cause the material of the element to flow transversely and toward the base sheet so that the element is progressively shortened in length and the flowing of the material forming a mass of larger cross section than the cross section of the element and then cooling the mass, the mass forming a head on the element.

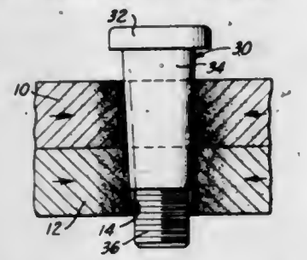
3,270,409
PRODUCTION OF FLAT SHAPES BY THE HOT ROLLING OF METAL POWDERS
Nicholas J. Grant, 10 Leslie Road, Winchester, Mass.
Filed Feb. 19, 1963, Ser. No. 259,651
13 Claims. (Cl. 29—420.5)

1. A method for continuously hot consolidating metal powders into wrought elongated flat shapes which comprises continuously gravimetrically feeding free flowing hot coarse metal powder of melting point above 1100° C. to the nip of a pair of rolls having an effective roll gap, said powder being fed at a temperature above the minimum recrystallization temperature of the metal and having a shape which insures free flowability and a relatively high apparent density at said temperature, continuously maintaining a reservoir of the free flowing hot metal powder against the metal drawn into the gripping zone of the rolls sufficient to continuously feed metal into the gripping zone, the surface characteristics of the rolls relative to the metal powder being such as to provide a gripping angle with the metal corresponding to a coefficient



of friction of at least 0.1, such that the cross-sectional width of the reservoir of the powder across the rolls at which the gripping zone begins is at least sufficient relative to the effective roll gap to provide a compaction ratio for effectively densifying the metal, and continuously hot rolling the metal powder into a wrougth metal shape.

3,270,410
METHOD OF PRESTRESSED FASTENING OF MATERIALS
Larry Salter, Palos Verdes Estates, and Franklin S. Briles, Rolling Hills, Calif., assignors to Briles Manufacturing, El Segundo, Calif., a co-partnership
Filed May 20, 1963, Ser. No. 281,550
3 Claims. (Cl. 29—446)

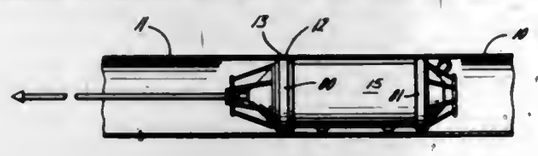


1. A method of prestressed fastening of layers of material which comprises the steps of: providing a tapered bore through the layers of material to be fastened; applying expansive force to the layers of material substantially uniformly and simultaneously throughout substantially the entire depth of the bore until the elastic limit of the material has been exceeded; relieving the expansive force; and providing an interference fit between a tapered fastening device and the tapered bore so as to prestress the layers of material under compression in the area surrounding the tapered bore.

3,270,411
METHOD FOR PREPARING AND GIRTH WELDING PIPE ENDS
Robert Thomas, Houston, Tex., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 22, 1963, Ser. No. 274,722
7 Claims. (Cl. 29—471.1)

1. In a method for welding together the adjacent ends of pipe joints which have been strung along a pipeline right-of-way in approximate end-to-end positions, the steps comprising
measuring adjacent ends of the pipe joints to determine if the diameter of any one of a pair of adjacent ends is sufficiently smaller than that of the other end of said pair that the ends cannot be satisfactorily welded together;

radially expanding the circumference of any such smaller end by applying sufficient expansive force thereto to exceed the yield of the metal of the smaller

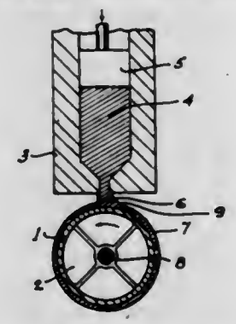


end until its diameter is such that it can be welded to said other end; and
then girth welding said ends together.

3,270,412
METHOD OF PRODUCING DISPERSOID STRENGTHENED MATERIAL
Milton B. Vordahl, Beaver County, Pa., assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
No Drawing. Filed June 7, 1962, Ser. No. 200,626
7 Claims. (Cl. 29—472.3)

1. A method of producing stable dispersoid strengthened base metal articles comprising:
(a) rolling the metal to foil;
(b) applying to the foil a coating of a stable dispersoid forming material selected from the group consisting of metal oxides, nitrides, borides, silicides, carbides, and sulfides which are stable and insoluble in the base metal at temperatures up to the maximum end use application temperature of the article;
(c) forming laminae by cutting the coated foil into desired lengths;
(d) stacking a plurality of laminae into a pack for rolling;
(e) rolling the pack to a reduced thickness;
(f) repeating the cutting, stacking and rolling steps until a unitary article is obtained wherein the laminae are welded together to form a continuous metal matrix and wherein submicron-sized particles of the stable dispersoid material are substantially uniformly distributed throughout the matrix volume.

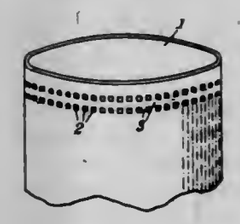
3,270,413
PROCESS FOR PRODUCING A DIFFUSIONLESS BOND BETWEEN METALS
Robert D. Watson, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation
Filed Dec. 2, 1963, Ser. No. 327,311
3 Claims. (Cl. 29—527)



1. A method of forming a leak-proof bond between aluminum and one of the metals of the group zirconium, zirconium alloys, uranium, and stainless steel comprising:
(a) forming a thin oxide layer on the surface of a tube of the metal to be bonded,
(b) heating the said tube to a temperature in the range 400° C. to 600° C.,
(c) rotating the tube on a mandrel slowly under the orifice of an extrusion die, and
(d) extruding an encircling built-up layer of aluminum onto the oxidized surface of the tube, said aluminum having been heated in the die prior to extrusion to a temperature of approximately 500° C.

2. A method of preparing tubes made of the metals of the group zirconium, zirconium alloys, uranium, and stainless steel for subsequent fabrication in the field comprising:
(a) forming a thin oxide layer on the surface of a tube of the metal to be employed,
(b) pre-heating the said tube to a temperature in the range 400° C. to 600° C.,
(c) extruding an encircling, built-up layer of aluminum onto the surface of the tube adjacent one end thereof, said aluminum having been heated prior to extrusion to a temperature of approximately 500° C., and
(d) cutting away a portion of the tube to leave an extending collar of aluminum, said collar being such that subsequent joining of the aluminum collar to another aluminum tube is readily achieved.

3,270,414
METHODS OF MAKING THIN REINFORCED TUBULAR DIAPHRAGMS AND IN DIAPHRAGMS MADE ACCORDING TO THESE METHODS
Pierre Plurien, Paris, Maurice Quenault, Palaiseau, and Roger Rigot, Paris, France, assignors to Commissariat à l'Energie Atomique, Paris, France, an organization of France
Filed Mar. 28, 1961, Ser. No. 98,917
Claims priority, application France, Mar. 30, 1960, 822,893
1 Claim. (Cl. 29—527)

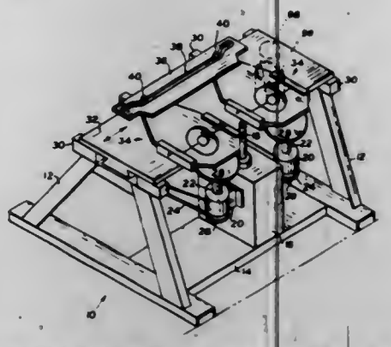


The method of making a thin-walled tubular diaphragm which comprises forming a thin-walled tube of a metal which is oxidizable so as to form thereon a strongly adhering oxide layer, mechanically forming stiffening projecting ribs on the outer face of the wall of said tube while leaving the inner face smooth, placing a conductor rod in said tube, said rod being electrically insulated from said tube, circulating an electrolyte through said tube and connecting said rod and said tube to the respective terminals of a direct current source so as to exert an electrolytic oxidizing treatment on the inner surface of said tube, said treatment being pursued until the whole thickness of the portions of said tube extending between these ribs is oxidized without the metal of these ribs being oxidized.

3,270,415
TRIMMING APPARATUS FOR MOLDED ARTICLES
Julius Lakatos, 647 Lincoln Ave., Maywood, N.J.
Filed Oct. 13, 1964, Ser. No. 403,613
10 Claims. (Cl. 29—558)

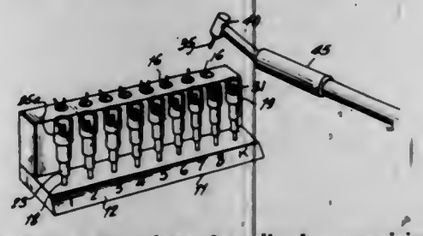
9. The method of trimming and finishing molded articles comprising the steps of:
(1) clamping an article to be trimmed in a holding means;
(2) advancing the holding means and article to a cutting apparatus to sever the article and unwanted portion thereof;

(3) moving the article through the cutting means in the way of the path of travel of the article;
(4) advancing the cut article to a finishing station;
(5) finishing the cut surface by advancing a rotating cutting tool to the cut surface of the article;



(6) returning the holding means to the clamping station; and
(7) unclamping the article from the holding means.

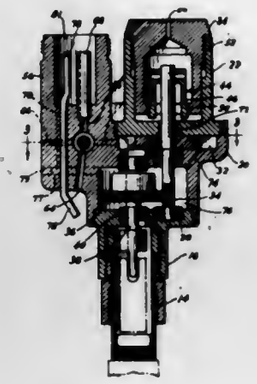
3,270,416
BURR DISPENSER
Anthony Massa, Staten Island, N.Y., assignor of one-half to Leo A. Feula, Staten Island, N.Y.
Filed July 2, 1963, Ser. No. 292,414
9 Claims. (Cl. 32—22)



1. A device of the class described comprising a base and a plurality of units mounted forward of said base; a first and a second of said units each being comprised of an element adapted to support the cutting end of a burr and a guide means having a cup-like depression for receiving a drill head and directing its burr receiving opening to receive the shank of a burr supported by said element, said guide means having a bore extending from said depression to receive and position a burr shank for entry into a burr receiving opening of a drill head biasing means urging said guide means away from said base, said guide means mounted for movement toward said base by a force applied to a drill head as a burr shank moves more deeply into a burr receiving opening.

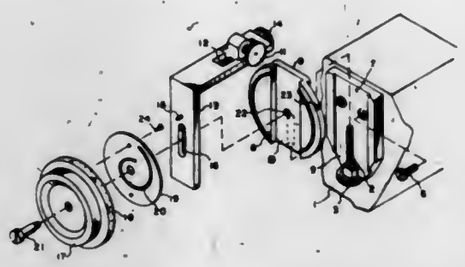
3,270,417
FLUID OPERATED DENTAL HANDPIECE
George H. Stram, Hellam, Pa., assignor to The Dentists' Supply Company of New York, York, Pa., a corporation of New York
Filed July 5, 1963, Ser. No. 292,873
19 Claims. (Cl. 32—26)

1. A grinding or cutting tool of the hand type comprising a housing, an elongated tubular member connected at one end to said housing, a drive shaft mounted for rotation within said member, means on the outer end of said shaft to connect a grinding or cutting tool thereto, a turbine shaft having a turbine rotor thereon and supported for rotation within said housing, and brake means comprising frictionally coengageable brake members respectively stationary and movable relative to said housing, the movable brake member being responsive to centrifugal force when rotated in direct response to the speed of said turbine shaft and said members being relatively adjustable so that when said turbine shaft revolves at a predetermined speed said movable brake member will be moved into frictional engagement with said stationary brake member and thereby maintain a predetermined constant speed controlled by braking friction corresponding to the relative adjustment of said members,



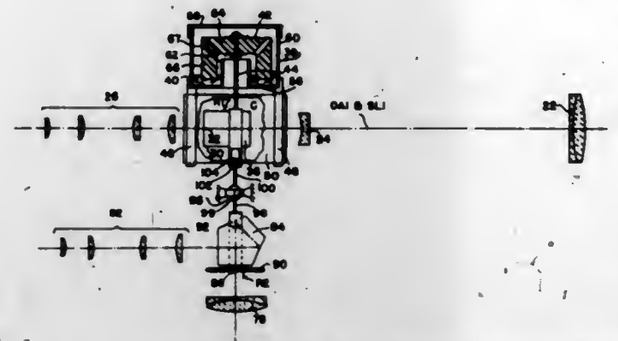
whereby when a tool on said drive shaft is placed under load the speed of said drive shaft is reduced sufficiently to effect separation of said brake members and thus permit the full power of the turbine to be applied to said drive shaft and tool carried thereby.

3,270,418
RIFLE SIGHT
Robert A. Simeone, 121 Linwood St., Milford, Conn., and Anthony B. Simeone, 100 Broadfield Road, Hamden, Conn.
Filed Apr. 21, 1964, Ser. No. 361,402
3 Claims. (Cl. 33—56)



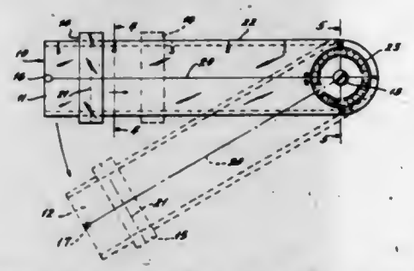
1. In a gun sight comprising a base plate adaptor to be secured to the receiver of the gun, a sight supporting member, means permitting vertical sliding of said member with respect to the base plate, said means including a rotatable cam member provided with a slot therein and a slot engaging projection on the sight supporting member, the improvement which comprises,
(a) the slot is in a form approximating an involute of the trajectory of a bullet of the particular gun caliber in air,
(b) a member slidable vertically in the base plate and carrying on its opposite face a groove in which the sight supporting member is slidably mounted for vertical movement,
(c) micrometric adjusting means connecting the base plate to the member sliding therein and capable of sliding the member vertically in accurately predetermined amounts,
(d) means for attaching the cam member to the member sliding in the base plate to form a unitary whole, and
(e) a direct reading linear scale on the periphery of the cam member.

3,270,419
OPTICAL LEVEL FOR BUILDERS
John H. Lowe, P.O. Box 924, Seaside, Oreg.
Filed Oct. 8, 1964, Ser. No. 402,436
18 Claims. (Cl. 33—73)



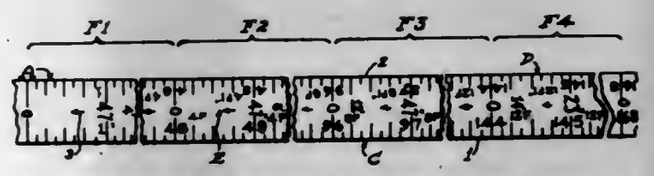
1. In a level for builders and the like, a refracting telescope having a relatively fixed optical axis; a reticle support tube having a longitudinal axis; a reticle in said support tube having a center lying on said longitudinal axis; means mounting said support tube for universal movement about a point lying on both the optical axis of the telescope and the longitudinal axis of the support tube, which point is offset axially from the center of said reticle; a float chamber vertically adjacent said support tube, said chamber including wall means for confining a body of liquid, with an outlet in said wall means opening towards said support tube; a body of liquid in said chamber at a level below said outlet; a float in said chamber supported by said body of liquid; and means extending through said outlet and interconnecting said float and said support tube so that movement of the former is transmitted to the latter and the longitudinal axis of the support tube is maintained in parallelism with the surface of said body of liquid.

3,270,420
GONIOMETER
Wayne A. Simril, 21 Somerset Downs, St. Louis County 24, Mo.
Filed Mar. 13, 1964, Ser. No. 351,685
1 Claim. (Cl. 33—75)



A goniometer for measuring the angle of curvature of the spine from an X-ray film comprising a pair of arms pivotally connected together adjacent to one end, said arms being at least semi-rigid and transparent and having their side edges beveled inwardly, slide members longitudinally movable along each arm for positioning each of the arms perpendicular to the lateral edge of the vertebrae defining the curved portion of the spine on an X-ray film of the spine, each of said slide members having a groove with undercut side portions receiving said arm, said undercut portions cooperating with said bevel surfaces to slidably secure said members on said arms with the inner side of the end portions of each member substantially in the plane of the inner side of its respective associated arm, each of the arms being provided with a longitudinal score line, said line intersecting at the pivotal attachment, said slide members being transparent and each provided with a transverse score line perpendicular to the score line of the associated arm, said transverse score lines in operative position being positioned along the edges of the vertebrae forming the curved portion of the spine, and protractor means fixedly positioned on one of the arms centered on the pivotal connection, said protractor means reading from 0–180–0 in increments with the 0 point being most removed from the associated slide and the 0–180 line being aligned with the score line on the arm, whereby the angle of curvature of the spine may be read between the 0 mark on the protractor and the intersection of the longitudinal score line of the other arm with the protractor.

3,270,421
CONSTRUCTION CALCULATING RULER
Orval Jones, 1209 Knickerbocker Drive, Sunnyvale, Calif.
Filed Mar. 7, 1963, Ser. No. 263,562
1 Claim. (Cl. 33—137)

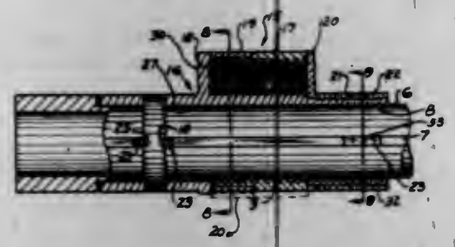


A construction calculating ruler comprising:
(a) a first scale disposed along an edge of the ruler and divided into inches and fractions of inches starting from zero and ascending in one direction, the inch markings being designated 1, 2, 3, 4, etc., up to the full length of the scale;
(b) a second series of scales each being divided into inches with each successive scale being termed a section, these sections being arranged end to end to form connected scales; the division into inches in each section being designated 1, 2, 3, 4, etc., up to the full length of the section and ascending in an opposite direction to said first scale; the inch numbers in the second series of scale sections being aligned transversely on said ruler with the inch numbers in said first scale; and
(c) base numbers in each section of said second series of connected scales for designating the total lengths of the sections measured from the zero marking in said first scale, all of the base numbers in a section being the same and differing in value from the base numbers in each of the other sections and referring to the different lengths of the members to be cut, the base numbers in each successive section being increased in ascending order when measured from the zero marking in said first scale;
(d) whereby any desired distance in inches on the first scale when transversely aligned with an inch marking in one of said second series of scales, such said designated second scale marking will have the base number associated therewith to indicate the length of the member to be cut and the aligned inch marking in the designated second scale indicating the number of inches to cut off from the member so that the length of the remaining portion of the member will equal the chosen distance on said first scale.

3,270,422
MICROMETER CALIPER
Robert L. Coope, 3946 W. Clarendon, Phoenix, Ariz.
Filed July 6, 1964, Ser. No. 380,250
3 Claims. (Cl. 33—165)

1. A micrometer caliper comprising a stationary frame having a head end and a foot end, a cylindrical bar extending from the head end of said frame, said bar having a partial thread formed on one side with its center eccentric relative to the center of said bar; a gaging blade

extending substantially radially from the head end of said frame; a longitudinal groove extending along said bar; indicia marked on said bar parallel to said groove to indicate measures of length of said bar; a sliding gage assembly having a head end and a foot end, a main body on said head end having an eccentrically disposed flange and a bore with a slidable fit on the bar of said stationary frame, a gaging blade supported on the head end of said main body and extending radially therefrom and aligned with the gaging blade on the head end of said stationary frame, a threaded boss at the foot end of said main body, a micrometer nut having an inner bore threaded to engage the partial threads on said stationary bar; a spring

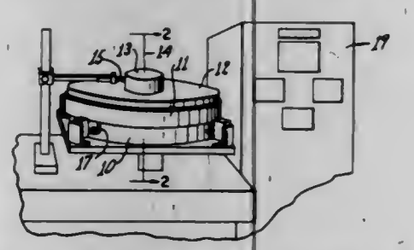


within said micrometer nut resiliently holding said nut in position on said head and urging said internal threads to operating contact with the partial thread on said bar; an adjusting nut on said boss on said body holding said micrometer nut slidably between said annular flange and the inner face of said nut; an adjusting nut having a face bearing against said micrometer nut to adjust pressure against said micrometer nut, a locking ring nut engaging said adjusting nut, a depth gage attached to said sliding gage assembly and adapted to slide in the longitudinal groove on said bar; a graduated ring on said threaded micrometer nut having an annularly arranged indicia on its outer surface.

3,270,423
POSITIONING DEVICE

Kirk E. Birrell, Bellbrook, Robert E. Esch, Kettering, and James M. Stemple, Springfield, Ohio, assignors to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware

Filed Sept. 30, 1963, Ser. No. 312,623
14 Claims. (Cl. 33—174)



1. A device for supporting a workpiece for rotation about an axis of rotation and for positioning said workpiece to position a central axis of the workpiece to coincide with said axis of rotation comprising,

a base,

a support,

bearing means cooperating between said support and said base mounting said support on said base for rotation about said axis of rotation,

drive means operatively connected to said support for rotation thereof on said base and about said axis of rotation,

a worktable carried by said support,

supporting means cooperating between said support and said worktable carrying said worktable on said support for adjustment of said worktable and a workpiece mounted thereon transverse said axis of rotation and for pivoting movement relative thereto, coupling means interconnecting said support and said worktable for simultaneous rotation thereof,

gaging means providing a gaging signal responsive to the position of the workpiece with respect to said axis of rotation,

first actuating means carried by said support operatively connected to said worktable and controlled by said gaging signal for adjusting the worktable and a workpiece carried thereby in a plurality of angularly related directions transverse to said axis of rotation,

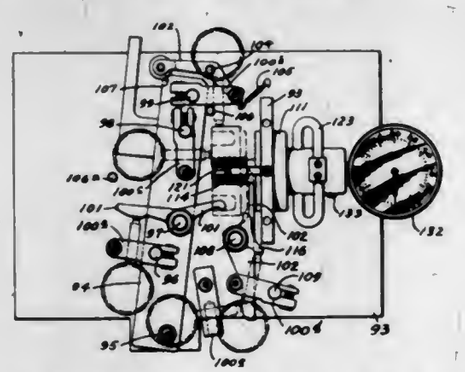
second actuating means carried by said support operatively connected to said worktable and controlled by said gaging signal for inclining the worktable and a workpiece carried thereby relative to said support and said axis of rotation, each of said actuating means including a pair of drive motors relatively spaced at ninety degrees about said axis of rotation and lying in a common plane perpendicular thereto,

and force transmitting means cooperating between each respective motor and said worktable for applying positioning forces to said worktable substantially radially to said axis of rotation while allowing relative movement transverse the direction of force application.

3,270,424
GAGE WITH FIXED SPACED GAGING ELEMENTS AND AN AXIALLY MOVABLE GAGING ELEMENT THEREBETWEEN

Paul W. Johnson, Bloomfield, Conn., assignor, by mesne assignments, to The Johnson Gage Company, Bloomfield, Conn., a corporation of Connecticut

Original application Aug. 5, 1959, Ser. No. 831,757. Divided and this application July 29, 1963, Ser. No. 299,684
10 Claims. (Cl. 33—174)

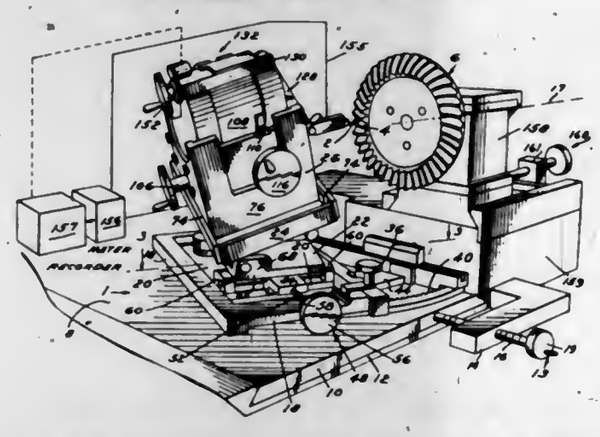


1. A gage for a test part with a groove having opposite surfaces and adapted to carry an indicator having a contactor comprising a frame member, an axially extending guideway carried by the frame member; operating means including an operating member mounted on the guideway for axial movement and having an axis, spring means propelling the operating member axially along the guideway, and manual means connected with the operating member to move the same against the spring means, gaging means to gage the groove of the test part including fixed gaging elements spaced from each other by gaps spaced apart circumferentially with respect to the axis by at least 90 degrees and secured to the frame member, each of the fixed gaging elements having gaging ridges at least at the edges of the gaps, the gaging ridges corresponding with the groove of the test part, each ridge havin a gaging surface to engage one flank surface of the groove of the test part and having an axis coaxial with the axis of the operating member, the gaging surfaces engaging the flank surface of the test groove facing in one axial direction, movable cooperating gaging elements located in each gap between the spaced gaging elements and coaxial with the axis of the operating member and connected with the operating member and movable thereby, and the cooperating gaging elements having at least one gaging means on the opposite side of a plane at right angles to a radial plane through one gaging means and including the axis, each gaging means being equally spaced from the axis and corresponding with the groove of the test part, each gaging means having a gaging surface to enage opposite surfaces of the groove; the spring means propelling the operating member in a direction to bring the gaging means into contact with opposite surfaces of the groove to be gaged, and indicator mounting means carried by one member and located to have an indicator contactor engage the other member for indicating the relative position of the members and the gaging means.

3,270,425
GEAR TOOTH FORM CHECKER

Earl J. Tishler, Dearborn, and Glen A. Weinert, Detroit, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Mar. 20, 1964, Ser. No. 353,497
15 Claims. (Cl. 33—179.5)



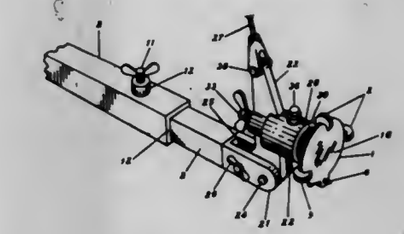
1. A gear checking mechanism comprising, in combination, a conically cut gear tooth form scanning apparatus for scanning the lengthwise curvature of a gear tooth cut by a conical cutter, and a test gear mounting member positioned adjacent said apparatus, said apparatus including a tooth form scanning device, a deviation responsive recording indicator adjustably mounted on said device and having a relatively deflectable pickup adapted to contact the surface of a tooth of a test gear mounted on said member, means for adjusting the position of said indicator and pickup relative to said test gear mounting member for movement through an arc simulating the actual arc of one lengthwise curvature of the test gear tooth, said latter means also being adjustable to effect an angular movement of said indicator pickup along an arc corresponding to a theoretically correct lengthwise curvature of the test gear tooth being scanned, and means responsive to deflection of said indicator pickup due to variations between the theoretically correct and actual lengthwise arcs of the test gear tooth upon movement of said indicator pickup lengthwise along the surface of the test gear tooth while adjusted for the theoretically correct arc for recording the variations between the actual and theoretically correct lengthwise curvatures of the test gear tooth.

3,270,426
ADJUSTABLE GAUGE AND TEMPLATE

William Fischer, Fullerton, and Virgil D. Rogge, La Habra, Calif., assignors to Chevron Research Company, a corporation of Delaware

Filed Nov. 12, 1963, Ser. No. 322,684
5 Claims. (Cl. 33—180)

1. An adjustable gauge for measuring the relative positions of two spaced apart pipe ends located in an adverse environment comprising a pair of end plates each including a face adapted for connection to a pipe end with the plate face tight against the pipe end, means connecting said end plates, said connecting means including adjustable means permitting variance of the distance and angle between said plate faces for connection to pipe ends disposed at various angles and distances relative to each other, selectively engageable means for locking said adjustable means against movement of said plate faces relative to each other after said plate faces are tightly connected to said pipe ends, releasable means separate

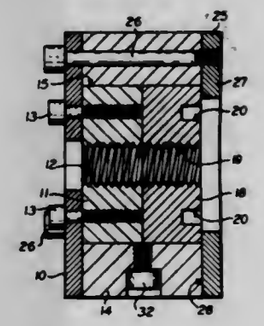


from said engageable means permitting said plate faces to move relative to each other for easy release from said pipe ends with said engageable means locked, means preventing rotation of said end plates relative to said connecting means about an axis perpendicular to the corresponding said plate face when said plate faces are being connected to and released from said pipe ends, and means for re-engaging said releasable means only in one position so that said plate faces may be restored to the relative position which they assumed when attached to said pipe ends.

3,270,427
THREAD GAGE SETTING OR CLAMPING DEVICE

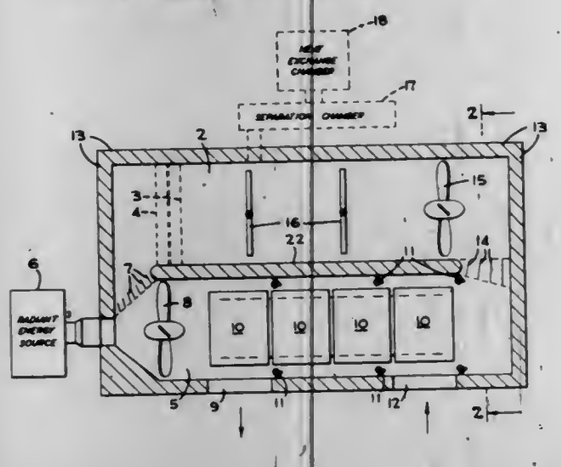
Stanley G. Johnson, West Hartford, Conn., assignor to The Johnson Gage Company, Bloomfield, Conn., a corporation of Connecticut

Filed Aug. 5, 1963, Ser. No. 300,020
5 Claims. (Cl. 33—199)



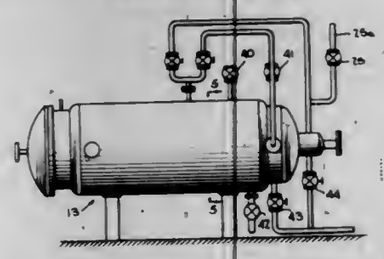
1. A thread gage setting and clamping device comprising a frame member, a cooperating member, each member having a screw thread of the same size and pitch and with their axes in axial alignment, mounting means carried by the frame member to mount the cooperating member thereon solely for rotation on the thread axis as a center, friction means carried by the frame member and engaging the cooperating member and applying a frictional drag of a fixed amount on the cooperating member against relative rotation with respect to the frame member and in all rotary positions, and the frictional drag being of the order of three inch pounds for a thread of a quarter of an inch in size and being progressively greater for larger diameters, and circumferentially spaced screw adjusting means carried by the frame member and engaging the peripheries of the two members.

3,270,428
METHOD OF AND APPARATUS FOR DEHYDRATING FOODS OR OTHER PRODUCTS
George C. W. van Olphen, 3720 Benton St., Santa Clara, Calif.
Filed Apr. 6, 1962, Ser. No. 185,743
9 Claims. (Cl. 34—4)



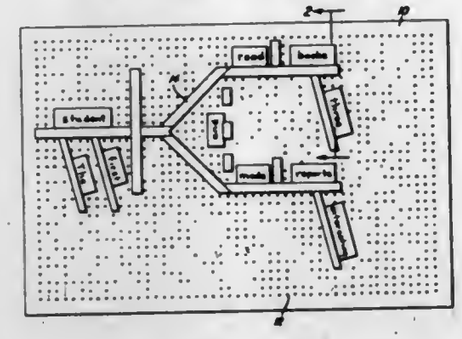
1. The method of dehydration of foods or other products which comprises the steps of supporting the product in the dehydration zone of a continuous conduit, at substantially atmospheric pressure applying microwave frequency radiant energy to the product to heat the same, blowing cold, dry air through the dehydration zone in an amount and at a temperature to maintain the radiantly-heated product below 32° F. whereby ice in the product will be sublimated and entrained in the air, then cooling and demoisturizing the air in an air-conditioning zone of the continuous conduit at a position removed from the dehydration zone, and finally returning the conditioned air to the dehydration zone.

3,270,429
APPARATUS AND METHOD FOR FINISHING FABRICS
Pietro Alberto, Biella, Italy, and Gerhard Moers, Aachen, Germany, assignors to Biella Shrunk Process, S.A.S., Biella, Italy, a limited partnership of Italy, and Gerhard Moers Maschinenfabrik, Aachen, Germany, a corporation of Germany
Filed Dec. 20, 1963, Ser. No. 332,170
Claims priority, application Italy, Jan. 5, 1963, 140/63
2 Claims. (Cl. 34—6)



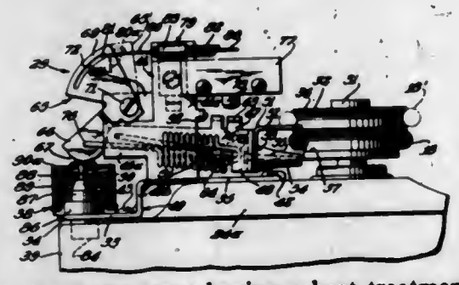
1. The method of treating wool fabric to obtain dimensional stability and permanent set comprising the steps of:
dehydrating the fabric to a point where less than 7% of the original moisture in the fabric remains,
immediately thereafter, passing dry steam under pressure at a controlled rate through said fabric to displace substantially all of the air held within said fabric,
subjecting said fabric to a dry steam environment having a pressure between approximately 13 and 30 pounds per square inch above atmospheric, and
maintaining said dry steam environment for a period of no more than substantially three minutes.

3,270,430
EDUCATIONAL AID
Patricia L. Hurst, 225 Clifton St., Oakland, Calif.
Filed Dec. 24, 1963, Ser. No. 333,079
6 Claims. (Cl. 35—35)



1. An educational aid for visually demonstrating sentence diagramming comprising a panel having a plurality of symmetrically arranged perforations therein, a plurality of strips of elongated relatively narrow construction for illustrating the components of a sentence diagram, each of said strips having a pair of projecting pegs on the back surface thereof for reception in the perforations of the panel, a plurality of cards having words thereon for use as various components of a diagrammed sentence oriented above the strips for illustrating the words forming the sentence components designated by the strips, each of said strips having a longitudinal recess on the inner surface thereof forming a groove when combined with the panel for receiving the linear edge of one of the cards.

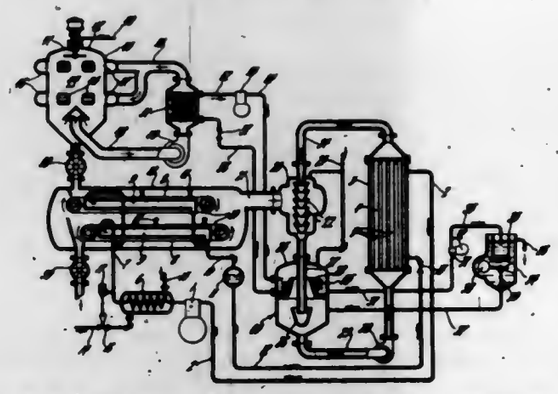
3,270,431
DRYER AND AUTOMATIC BELT SHIFTER
Samuel H. Schwartz, Deerfield, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed June 1, 1964, Ser. No. 371,709
20 Claims. (Cl. 34—48)



1. In a dryer apparatus having a heat treatment zone, a motor, a two-speed blower having a driving hub with two pulley grooves of different diameter, and a pulley belt connected to said motor and said blower drive hub to rotate said blower, a belt shifting mechanism comprising:
a frame having a base mounted adjacent the blower and outwardly extending mounting bracket means,
a first lever pivotally mounted to the mounting brackets and spaced a predetermined distance from said pulley belt,
pivot stop means mounted on said frame to limit the pivotal movement of said first lever,
a belt shifting member mounted on said first lever and having a pair of spaced legs extending a predetermined distance therefrom such that they overlap the pulley belt and are spaced apart such that the pulley belt moves freely therebetween,
said first lever stop means permitting the first lever to pivot a predetermined amount such that one of the belt shifting legs will contact the pulley belt and shift the pulley belt from one blower hub groove to the other blower hub groove,

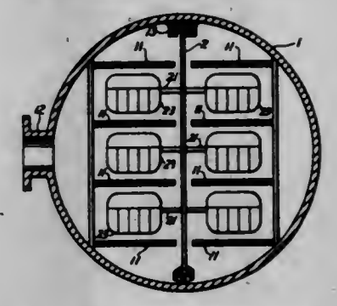
a spring lever pivotally mounted to said bracket means,
said spring lever having means to pivot said first lever,
a second lever pivotally mounted to the bracket means,
an over-center spring attached to the spring lever and the second lever,
said spring being connected to instantaneously pivot said spring lever when said second lever is pivoted a predetermined distance to thereby pivot the first lever, and
automatic means in communication with the dryer treatment zone to sense temperature changes therein and in communication with said second lever to automatically pivot said second lever in response to changes of temperature in said treatment zone.

3,270,432
APPARATUS FOR REMOVING SOLVENT FROM A SOLUTION
Carlo Barbareschi, Via San Gallo 40, Milan, Italy
Filed Mar. 1, 1963, Ser. No. 262,822
Claims priority, application Italy, Mar. 1, 1962, 4,069/62
1 Claim. (Cl. 34—92)



Apparatus for continuously removing solvent from a solution comprising,
(a) a pulverizer for the solution,
(b) a refrigeration circuit having a condenser and evaporator, means for circulating air over the evaporator and through said pulverizer,
(c) valve means for transferring frozen solution from said freezer,
(d) means including a chamber for receiving the frozen solution from said valve means and being adapted for the sublimation and the evaporation of solvent from the frozen solution,
(e) means for the recovery of the solute from said chamber means, and
(f) means for the recovery of the solvent, said solvent recovery means comprising,
(1) a condensing chamber in communication with said chamber means for receiving the vapors of the solvent,
(2) said condensing chamber also being in communication with a supply of recirculating, unfreezable liquid whereby the vapors and unfreezable liquid contact one another and a mixture of solvent crystals and unfreezable liquid is produced at an outlet of said condensing chamber,
(3) a pressure vessel communicating with the outlet of said condensing chamber and having the condenser of the refrigeration circuit in the pressure vessel in heat exchange relationship with fluids from the outlet of the condensing chamber whereby the positive heat utilized to change solvent crystals in said vessel back to liquid is equal to the negative heat surrendered by said condenser,
(4) separator means connected to said vessel for separating the unfreezable liquid from the liquid solvent formed by the heat exchange relationship,
(5) said vessel having a conical member with a hemispherical bottom to assist in separating the unfreezable liquid from the solvent crystals, and
(6) said condensing chamber having a series of vertically spaced funnel-shaped orifices through which the unfreezable liquid is passed downwardly therethrough.

3,270,433
FREEZE-DRYING APPARATUS
Wilhelm Nerge, Gartenstr. 42, Rodenkirchen, near Cologne, Germany; Ulrich Hackenberg, Alter Trasweg 9, Bensberg, Germany; and Horst Ehlers, 9 Perham St., West Roxbury, Mass.
Filed July 15, 1963, Ser. No. 295,617
Claims priority, application Germany, July 13, 1962, L 42,446
5 Claims. (Cl. 34—92)

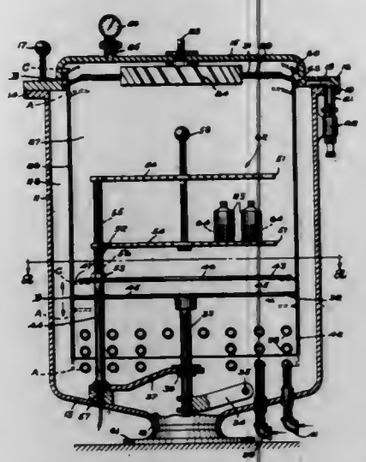


1. A freeze drying apparatus comprising an evacuable chamber adapted to receive a material to be freeze dried, a plurality of vertically adjacent radiant heater means positioned within said evacuable chamber, a plurality of heat conducting container devices removably positioned between said radiant heater means within said evacuable chamber, said container devices having base and cover portions in good heat transfer connection and adapted to receive radiant heat from said radiant heater means and to conduct the heat thus received to a material contained by said container devices, said container devices having open portions of substantial size which permit escape of water vapor from a material contained therein, and wherein said container devices comprise solid portions which interrupt all rectilinear paths between said heater means and the interiors of said container devices so as to completely shield the material contained by the container devices from direct radiant heat emanating from said radiant heater means.

3,270,434
FREEZE-DRYING APPARATUS
Ulrich Hackenberg, Bensberg, Harald Kamps, Brühl, and Helmut Rink, Bonn, Germany, assignors to Leybold Anlagen Holding A.G., Zug, Switzerland
Filed May 6, 1964, Ser. No. 365,533
Claims priority, application Germany, May 10, 1963, L 44,856
20 Claims. (Cl. 34—92)

1. An apparatus for the freeze drying of moisture containing material including in combination:
(a) an evacuable chamber comprising,
a demountable portion adapted to provide access into said evacuable chamber, an evacuable chamber internal portion adapted to contain the material to be dried,
evacuation means adapted to permit evacuation of said evacuable chamber,
heating means adapted to heat the material to be dried in said evacuable chamber internal portion,
condenser means positioned within said evacuable chamber and adapted to both freeze the material to be dried and condense moisture sublimating therefrom;

(b) divider means adapted to provide a closed gas circulation path between said condenser means and said evacuable chamber internal portion; and



(c) valve means having open and closed positions and adapted to isolate said condenser means from said evacuable chamber internal portion.

3,270,435
PAPERMAKING MACHINE
Rudolf A. Moravek, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed July 24, 1963, Ser. No. 297,452
4 Claims. (Cl. 34—117)

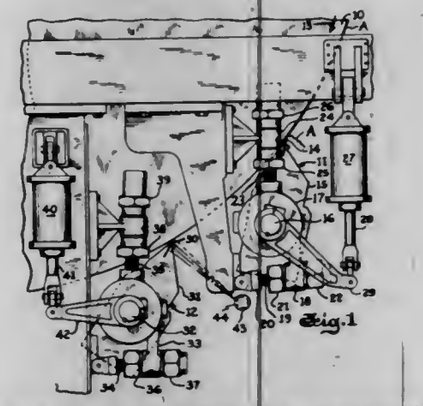
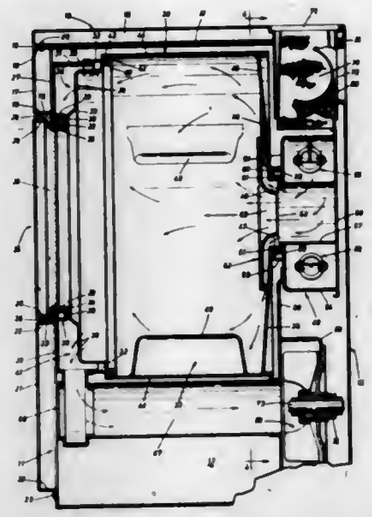


Fig. 1

1. In a papermaking machine, the combination of a heated rotatable drier drum for drying a web of paper on the surface of the drum, a pair of thin metal doctor blades for doctoring the paper web off the drum, means for moving each of said doctor blades into doctoring engagement with the exterior surface of the drum along spaced lines on the drum surface so that one blade constitutes a leader doctor blade and the other blade constitutes a follower doctor blade with respect to drum rotation, and means for spraying a cooling fluid on said follower doctor blade to prevent buckling of the blade as it is moved out of doctoring engagement with the drier drum.

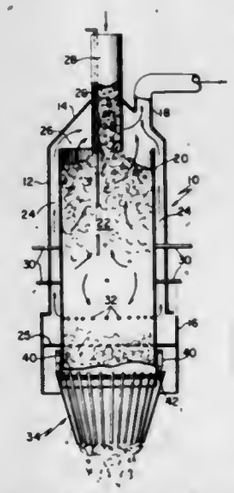
3,270,436
CLOTHES DRIER
Donald F. Fairgrieve, Toronto, Ontario, Canada, assignor to Fairgrieve & Son, Limited
Filed Aug. 26, 1963, Ser. No. 304,591
2 Claims. (Cl. 34—131)

1. In a clothes drier having a cabinet, a substantially cylindrical drum in said cabinet mounted for rotation about a horizontal axis and having co-axial openings in the ends thereof, the forward end of said drum being perforated to communicate with said cabinet, a door in one wall of the cabinet closing the front opening in said drum, a fixed air heating enclosure positioned at the rear of said drum and embracing a first opening therein co-axial with said rear opening in said drum, said enclosure having a second opening to permit entrance of air and communicating with said first opening, a housing enclosed exhaust fan positioned in said cabinet outside said drum, said housing having openings connecting said cabi-



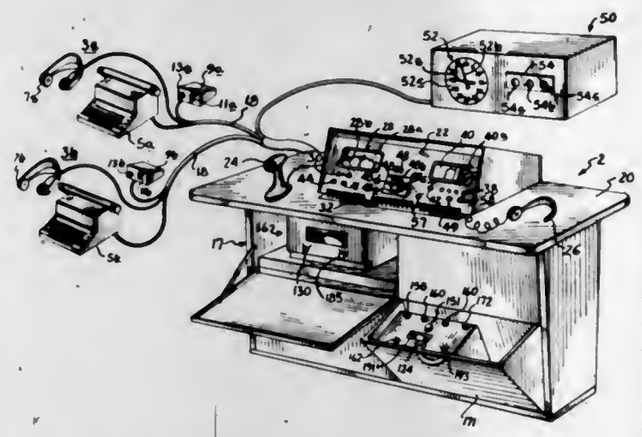
net with an exhaust duct and means positioned in said drum adjacent its rear opening for directing a portion of the incoming air towards the peripheral walls of said drum, said means comprising an open-ended frusto-conical member axially disposed of said first opening with its wall spaced from said drum but flaring towards its periphery terminating short thereof and a plurality of spacing members in said drum attached thereto and secured to said wall of said frusto-conical member.

3,270,437
CONTINUOUS OPERATION VEGETABLE MATTER ESSENCE EXTRACTION APPARATUS
Carlos Castillo Lara and Eduardo Antonio Castillo Cofino, both of 2nd Ave. A 13–34, Zona 1, Guatemala, Guatemala
Filed Apr. 22, 1963, Ser. No. 274,645
6 Claims. (Cl. 34—168)



4. Apparatus for the extraction of essence from vegetable matter by evaporation and comprising a vertically elongated evaporator vessel having a top portion arranged for the collection of vapor and entrained evaporated essence products, a vapor outlet from said top portion, cylindrical plate means coacting with and spaced from the walls of said vessel to form an interior vertically elongated material evaporation chamber having an opening at the bottom and an annular vapor riser and opening directly to said top collection portion of said vessel, annular plate means disposed in the lower portion of said vapor riser to seal the bottom thereof, a vegetable matter feed products inlet to the upper portion of said interior vertically elongated chamber, adjustable orifice means disposed across said bottom opening of said interior chamber and adapted to vary the discharge flow rate of the treated vegetable matter therefrom, said orifice means including a plurality of closely spaced lath-like members pivotally mounted intermediate their length to form a generally cone shaped structure adjustable to various slope angles from the highest where said orifice is fully open to the lowest where such orifice is fully closed, a ring tangentially contacting the inside of said members above said pivots, means for selectively positioning said ring vertically, control means receiving indications of feed product flow rate through said orifice and regulating said selective positioning means in accordance with a predetermined desired flow rate of feed product, steam nozzles in communication with said interior evaporation chamber arranged to introduce steam into said feed products, and a vapor outlet in the lower portion of said interior chamber directly in communication with said annular riser and in the lower portion thereof.

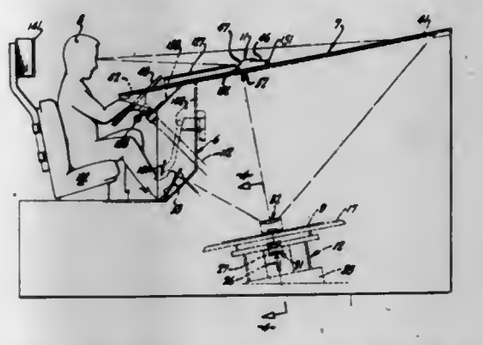
3,270,438
TESTING AND MONITORING APPARATUS
Bernard Ephraim, Chicago, Ill., assignor to Rich Engineering, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 12, 1963, Ser. No. 301,349
11 Claims. (Cl. 35—5)



1. Typewriter speed and rhythm indicating apparatus comprising: pulse generating means for generating a unidirectional pulse of standard width and amplitude each time the operator depresses a type key or spacer bar, averaging means for providing a measurement of the average area of the waveform of a series of pulses of the output of said pulse generating means over a given base period including only a small number of pulses at the lowest type rate to be measured, and indicating means for displaying said measurement in words per minute, for indicating the instantaneous variations in typing speed and rhythm.

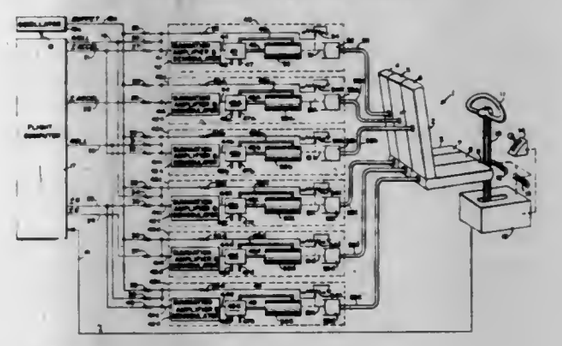
3,270,439
DRIVER TRAINING APPARATUS
Alvan F. Davenport, 3415 May Road, Richmond, Calif.
Filed Nov. 19, 1963, Ser. No. 324,643
12 Claims. (Cl. 35—11)

1. A driving simulator apparatus including an operator's seat comprising, an operator engageable steering control, a substantially horizontal screen positioned for viewing by the operator, scene means providing a road scene mounted for lineal and rotary displacement, miniature vehicle means representing the vehicle being driven mounted on said screen in fixed relation thereto, right angular projection lens means projecting the image of a portion of said road scene onto said screen, the center point of said image being projected at a point located directly beneath said vehicle means and said image rotating about said center point, masking means mounted on



said screen covering a portion of said image to the rear of said vehicle means, and motorized scene control means connected to said road scene means for advancing said scene means thereby causing said road scene image to move with respect to said fixed vehicle means and being connected to said steering control for manually controlled rotation of said road scene means for permitting the operator to track said vehicle means on said moving road scene image.

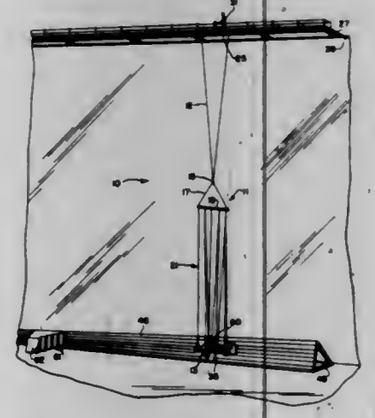
3,270,440
SEAT FOR FLIGHT MOTION SIMULATOR
Theodore Radosevic, Jr., North Canton, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Feb. 8, 1963, Ser. No. 257,204
1 Claim. (Cl. 35—12)



In a flight simulator
(1) an inflatable pilot's seat comprising,
  (a) a back cushion having rectangular inflatable air cells vertically arranged in edge to edge abutting relation, and
  (b) a bottom cushion having rectangular inflatable air cells arranged in edge to edge abutting relation and running from front to rear of the seat bottom,
(2) a control stick adjacent the seat capable of left and right movement and fore and aft movement,
(3) a pair of rudder pedals with one pedal on each side of the control stick,
(4) a T-frame mounted on the lower end of the control stick,
(5) a plurality of bellows operatively connected to the T-frame to create varying air pressure upon movement of the control stick,
(6) a bellows operatively connected to each rudder pedal to create varying air pressure upon movement of the rudder pedals, and

(7) a conduit from each bellows connected to at least one air cell in the seat to transmit the bellows pressure to the connected air cell thereby providing changes in seat pressure upon the pilot's body in response to movement of the controls to furnish the appropriate sensation associated with flight maneuvers resulting from such control movement.

3,270,441
REDUCED GRAVITY SIMULATOR
Donald E. Hewes, Newport News, and Amos A. Spady, Jr., Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 26, 1963, Ser. No. 304,749
14 Claims. (Cl. 35—29)



6. A reduced gravity simulator for a test subject, comprising:
an inclined plane walkway for the test subject so constructed and arranged to simulate a surface gravitational field less than that of the Earth's surface,
cable means for partially supporting the weight of said test subject so as to nullify a portion of the normal vertical gravity vector,
a plurality of elements to engage the head, torso, and extremities of said test subject, said plurality of elements each being connected to one end of said cable means,
means for securing the other end of said cable means angularly a distance above said walkway,
whereby said test subject while in partially supported condition may perform locomotive tasks along the plane of said walkway under simulated reduced gravitational conditions.

ERRATUM

For Class 35—35 see:
Patent No. 3,270,430

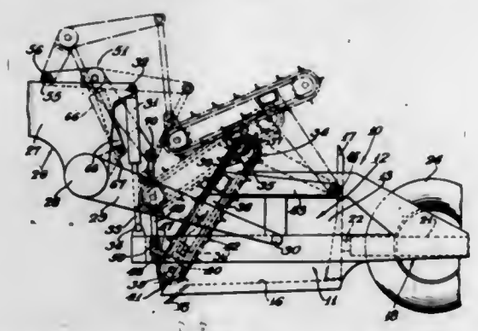
3,270,442
DECORATIVE COVER FOR WOMEN'S SHOES
Jack S. Liebmann, 420 Lincoln Road, Suite 206, Miami Beach, Fla.; Ralph Memole, 4911 Tyler St., Hollywood, Fla.; and Harold Barkowitz, 312 Alido Ave., Coral Gables, Fla.
Filed May 7, 1965, Ser. No. 454,052
9 Claims. (Cl. 36—2.5)

1. In a decorative cover for a woman's shoe of the type having a sole, a projecting heel and an upper defining a foot opening, the combination comprising, a flexible upper member shaped to conform to the outer surface of a woman's shoe when fitted thereon and having a toe end and a heel end and a foot opening, a flexible sole member in the shape of a woman's shoe, said sole member being integrally formed with a sole shank portion and a heel breasting member, means attaching said upper member to said sole member and said sole shank portion to provide a pocket therewith for receiving a woman's shoe, said upper member having an opening at its heel end for receiving in outwardly-projecting relation thereto the heel of a woman's shoe fitted in said pocket, and a heel cover member secured to said upper member in surrounding relation to the heel opening thereof, said heel cover member comprising an inner heel wall cover portion of a flexi-



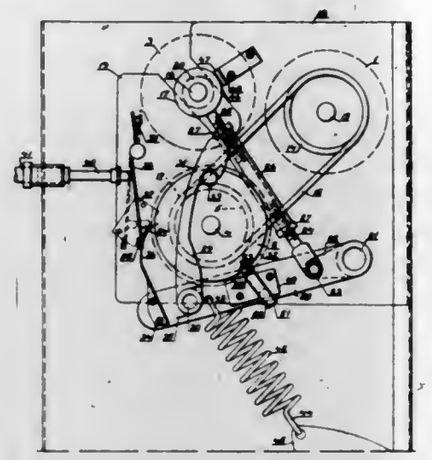
ble yet fairly stiff fabric, and an outer heel wall cover portion of a relatively supple fabric joined to said inner heel wall portion and together therewith forming a hollow member having upper and lower end openings adapted to be fitted over the heel of a woman's shoe in embracing relation with respect thereto and with the heel tip projecting outwardly of said lower end opening, said heel breasting member comprising an outer wall portion of said heel cover member.

3,270,443
EARTH SCRAPER WITH SELF-LOADING ENDLESS CONVEYOR
Edward D. Duke, Chicago, and Vernon E. Rezabek, Palatine, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 11, 1963, Ser. No. 329,845
8 Claims. (Cl. 37—8)



1. In a self-loading scraper having a mobile bowl including an open material receiving end, material ejector means on said bowl, a draft frame connected to said bowl including means for raising and lowering said bowl from and into material digging position relative to the ground, and an endless conveyor pivotally supported in an inclined position within said bowl whereby the lower end thereof may be raised and lowered relative to said open end; a raising and lowering mechanism for said conveyor comprising a lever having first and second arms, means pivotally connecting said first arm to said draft frame for hinging movement about a horizontal axis, means pivotally connecting said second arm to said first arm for hinging movement about a second horizontal axis, a fluid ram on said draft frame connected to said first arm, means connecting said second arm to said endless conveyor, means on said arms limiting the hinging movement of said second arm relative to said first arm whereby during the lowered position of said conveyor, said lower end may raise and lower with said second arm in response to the material conveyed to said bowl, and said ram being operable for raising and lowering said conveyor.

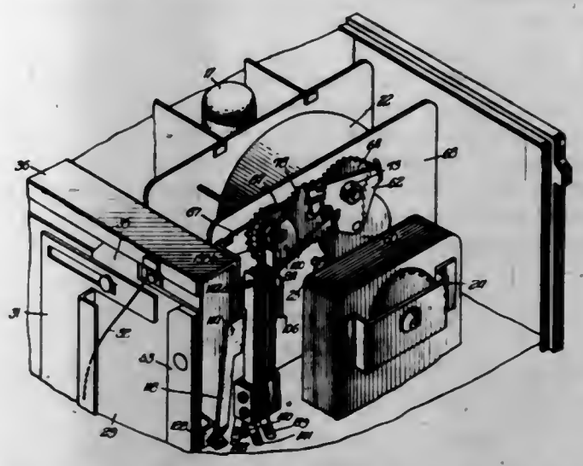
3,270,444
LAUNDRY MANGLES
Arne Wilhelm Stenestam and Karl Tage Schill, Hjo, Sweden, assignors to Hjo Fabriks AB, Hjo, Sweden
Filed Dec. 3, 1963, Ser. No. 327,590
Claims priority, application Sweden, Dec. 4, 1962, 13,030/62; Aug. 27, 1963, 9,326/63
5 Claims. (Cl. 38—49)



1. A laundry mangle comprising:
at least one driving roller;
a driven roller;
means supporting said driven roller parallel to said driving roller;
a shaft;
means supporting said shaft for rotation about an axis parallel to the axis of said driving roller;
a lever firmly connected at one end to one end of said shaft and extending radially outwardly of said shaft and adjacent said driving roller;
link means connecting said driven roller with said lever;
resilient means connected with said lever and tending to swing said lever in a direction away from said driving roller whereby said driven roller is moved into engagement with said driving roller;
an arm pivoted on the other end of said lever, said arm having a hooked end;
a disc;
a shaft supporting said disc adjacent said driving roller and for rotation concentric with the axis of said driving roller;
a pin carried eccentrically on said disc; and
means for swinging said arm into the path of movement of said disc when said disc is rotated, whereby said pin engages the hooked end of said arm and said lever is swung in a direction towards said driving roller thereby disengaging said driven roller from said driving roller.

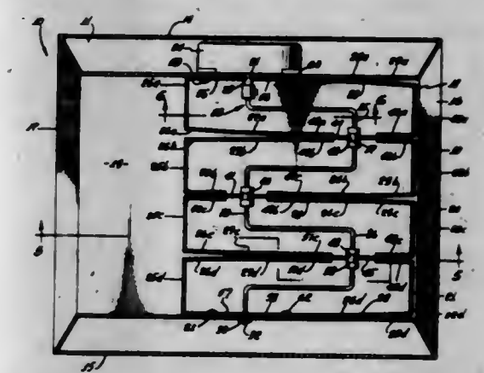
3,270,445
SLIDE CHANGING MEANS
Walter J. Hall, Chicago, Ill., assignor to Sawyers Research Development Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 320,766
17 Claims. (Cl. 40—36)

1. In a slide projector of the type including a slide changer movable between at least two opposite positions, an electric cycle motor for moving the slide changer, switch means connected with the motor so that actuation of the switch means causes energization of the motor when electric power is supplied thereto, the improvement which comprises, a movable switch actuating member for actuating said switch means and mechanical timing means adapted, after a timed cycle of operation, to move said member into a position for actuating said switch means, said timing means including timer-start means adapted to cooperate with means associated with the slide changer, when the latter is in one of its opposite positions, for initiating a timed cycle of operation of the timing



means, said switch means including a plurality of yieldably mounted contacts, and said timing means further including gear train means for sequentially closing said contacts in pairs at predetermined intervals of time.

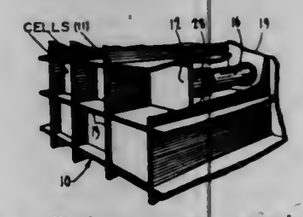
3,270,446
ANIMATED DISPLAY DEVICE
Benjamin P. Gurule, 3055 S. Union Ave., Los Angeles, Calif.
Filed Dec. 23, 1963, Ser. No. 332,421
4 Claims. (Cl. 40—36)



1. An animated display device which comprises housing means having an open forward end and an open rear end, a plurality of display units arranged generally in lateral sequence in the housing and cooperating to provide a pair of composite displays, one at the front and one at the rear of the housing, each of said units comprising a loop of generally flat panels hinged together in series, each panel loop having a forwardly facing display panel and a rearwardly facing display panel, said forwardly facing panels being arranged edge-to-edge with their hinged edges closely proximate each other and with the panels in generally co-planar relationship, the rearwardly facing panels being arranged edge-to-edge with their hinged edges closely proximate each other and with the panels in generally co-planar relationship, the remaining portions of the loops extending between said forwardly and rearwardly facing panels with the sides of adjacent loops closely adjacent to each other, driving means connected to the loops for shifting successive corresponding panels of the loops into generally forwardly and rearwardly facing co-planar relationships, respectively, to vary the displays, and means providing direct mechanical engagement between at least one pair of corresponding panels belonging to each adjacent pair of loops whereby the hinged panels of each loop will

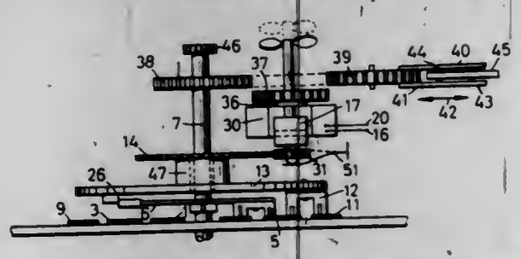
move in fully synchronized relationship with the panels of the adjacent loops, the panels hingedly connected within a panel loop so as to face the forward open end of said housing means having one panel fixedly attached to a member within said housing means which does not move within said housing means and another panel fixedly attached to a member within said housing means which is free to move within said housing means, and the panels hingedly connected within said panel loop so as to face the rear open end of said housing means having one panel fixedly attached to a member within said housing means which does not move within said housing means and another panel fixedly attached to a member within said housing means which is free to move within said housing means.

3,270,447
DISPLAY PANEL
Richard H. Langdon, Tarrytown, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 14, 1963, Ser. No. 323,804
13 Claims. (Cl. 40—52)



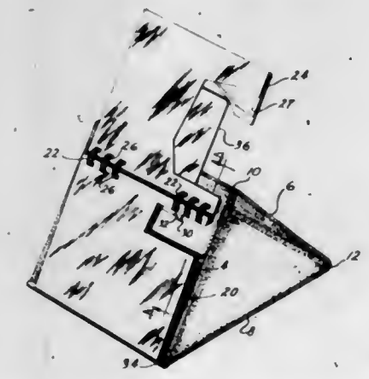
1. An image display screen comprising, in combination, a lattice of recessed cells each of which adjoins adjacent cells by common sidewalls in a plane and all being of a color having an attribute of low saturation and low brilliance; a reflector operable in each cell, means for moving each reflector from a first extreme position to a second extreme position, said first extreme position rendering each reflector to be shaded by the sidewalls of its respective cell, each reflector separately operable through a succession of progressively less shaded positions to said second extreme position in which it is substantially unshaded by the sidewalls of its respective cell, all such reflectors being of a color having low saturation and an attribute of high brilliance.

3,270,448
APPARATUS COMPRISING A TIMING MECHANISM AND AN INTERMITTENT SWITCHING MECHANISM
Walter Holzer, Drosteweg 19, Meersburg (Bodensee), Uberlingen (Bodensee), Baden, Germany
Filed Mar. 29, 1965, Ser. No. 443,590
4 Claims. (Cl. 40—78)



1. Drive mechanism for a picture-changing slide projector with adjustable time intervals comprising a timing mechanism having a slide slowly driven by gearing and carried by a rotating part, while contacting with an interrupted contact track on a printed circuit and with another contact track comprising conductive contact-segments on the same printed circuit, an intermittent switching mechanism having a rapidly rotating driving connection to a coaxially mounted, rotating part carrying a slide which slides on said interrupted contact track and on a circular track, both of which are conductive, a one-way slip clutch for mechanically connecting the rotating parts with each other during rotation and for electrically connecting them with the segments and with switches, a picture-changing mechanism having a crank and thrust rods, and a motor the rotor of which in one position drives through a gear the rotating part of the intermittent switching mechanism and also the picture-changing mechanism and in another position through gears the rotating part of the timing mechanism.

3,270,449
PHOTO DISPLAY DEVICE
Walter J. Robbie, Pittsfield, Mass., assignor to Eaton Paper Corporation, Pittsfield, Mass., a corporation of Delaware
Filed Sept. 1, 1964, Ser. No. 393,631
5 Claims. (Cl. 40—102)



1. A picture display case comprising a plurality of panels hinged together to be selectively folded into superposed relation and to be disposed in oblique angular relationship in an upright position on a supporting surface, a plurality of picture holders disposed on one of said panels and hinged for swinging movement through an upright arc, and a support tab slidable from a position coextensive with the said one panel to a position extending beyond the upper edge thereof and in the path of said arc, whereby two of said picture holders may be simultaneously supported in display position.

3,270,450
POINT-OF-PURCHASE MOTION DISPLAY
Paul L. Flum, 7449 Kingsbury Blvd., St. Louis, Mo.
Filed Sept. 8, 1964, Ser. No. 394,896
5 Claims. (Cl. 40—106.41)

1. For imparting horizontal reciprocative motion to a movable member of the type used in point-of-purchase displays, the apparatus comprising

a display backboard having mechanism including

a vertical guide defining a vertical centerline,

an arm pivotally mounted to said backboard spacedly below said guide and at the vertical centerline, said arm having an arc-describing portion extending above said pivot and below said guide for arcuate movement to both sides of the centerline,

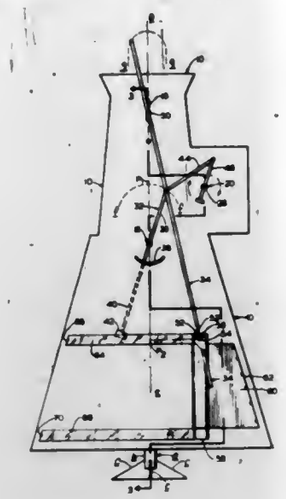
powered means coupled to arm to move said arc-describing portion reversingly in a predetermined arc to both sides of the backboard centerline,

an elongated member pivotally coupled at a point between its ends to said arc-describing portion of said arm and including

guide-engaging means confined within the vertical guide for vertical movement therealong, and

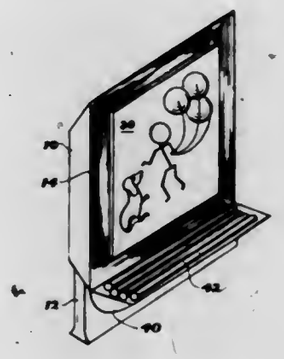
a suspension mount carried by said elongated member spacedly below the pivot mounting of said arm to said backboard,

whereby such movable member of the type used in pivot of purchase displays may be suspended from



said mount and by said mechanism be reciprocated horizontally across said backboard.

3,270,451
METHOD AND APPARATUS FOR EXHIBITING A DISPLAY
Christian James Bartleson, Edwin J. Breneman, and David L. MacAdam, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 21, 1963, Ser. No. 317,519
7 Claims. (Cl. 40—130)



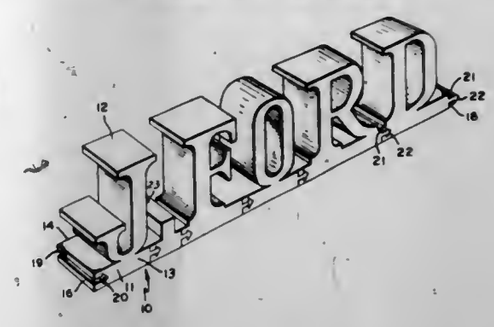
1. In a display for exhibiting a reflection-type color reproduction of a subject in an environment of ambient light having a given level of illumination so that it will appear as a back-lighted transparency, the combination comprising

(a) a substantially vertical support having a front surface on which said reflection-type reproduction is mounted and completely covers the same;

(b) means, including a light source, for uniformly illuminating said reproduction to a level of illumination substantially greater than said given level of illumination of said ambient light; and

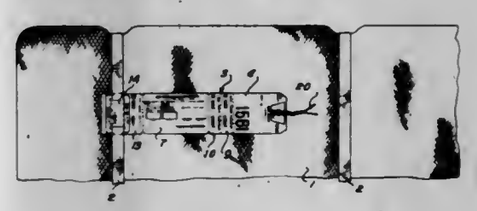
(c) a light trap means of a dark contrasting color completely surrounding said support to prevent light from said illuminating means which does not impinge upon said reproduction from being reflected back to an observer located in front of said support and thereby provide a dark contrasting border completely surrounding said reproduction.

3,270,452
SIGN WITH INTERCHANGEABLE CHARACTERS
Anthony N. D'Elia, 3555 Netherland Ave., Riverdale, N.Y., and Edward M. Stolarz, R.F.D. 2, Horton Drive, Yorktown Heights, N.Y.
Filed Feb. 2, 1966, Ser. No. 524,560
7 Claims. (Cl. 40—140)



1. A sign formed from a plurality of individual graphic metal components including letters, rigidly mounted in straight line relation, each component including a base section and a graphic character formed integrally with and extending upwardly from the base section and having a dimension extending in a direction longitudinally of the character substantially equal to the dimension in a direction extending transversely thereof said base having along one transverse edge thereof an undercut recess being formed along its opposed transverse edge with a projection shaped complemental to, and being received in said recess in an adjoining component, the shape and contour of said projections corresponding closely to the recesses as to effect a rigid straight line mounting and constituting the sole means for effecting the same.

3,270,453
COTTON BALE TAG
Joseph L. Mitchell, Mesa, Ariz., assignor to Texas Tag & Specialty Co., Wolfe City, Tex., a corporation of Texas
Filed July 13, 1964, Ser. No. 382,246
5 Claims. (Cl. 40—305)



1. A cotton bale or the like identification tag comprising, a pliable tag comprised of a plurality of sections severably attached together; means for attaching the pliable tag to a bale of cotton; a rigid tag having a raised central section with aligned passages through the ends thereof arranged to receive a bale tie band; and means for severably attaching the rigid tag to the pliable tag; the said sections and rigid tag having corresponding identification numerals thereon.

3,270,454
PUSHER HANDLE CONSTRUCTION FOR GROCERY CARTS
Gerald J. Lachance, North Brookfield, Mass., assignor to Armand A. Lachance, Auburn, Mass.
Filed Mar. 2, 1964, Ser. No. 348,600
6 Claims. (Cl. 40—308)

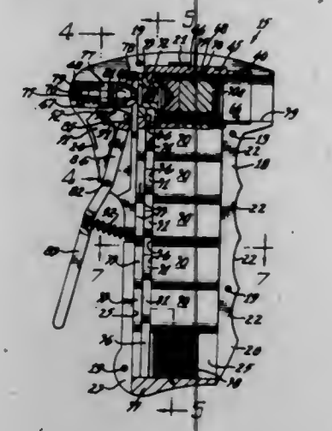
1. A pusher handle construction for a cart wherein said cart includes a basket, means forming a pair of narrow spaced loops on said basket, and a plastic tube ex-

tending between and held by said loops, said plastic tube having a transparent area, a removable printed member in the sube, the printing on the member appearing through the transparent area thereof, means holding the printed member in generally fixed position in the tube and securing the ends of the tube with respect to said



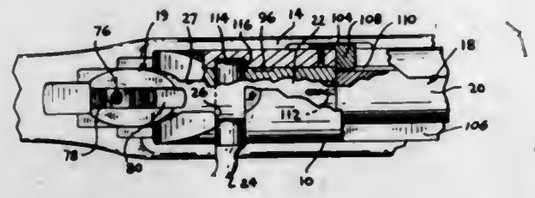
loops, said means comprising a non-circular tube within the first tube and means on the loops having mating portions engaging the ends of and securing said non-circular tube in non-rotative position with respect thereto, the printed member lying on and being generally confined by a non-circular surface of the non-circular tube.

3,270,455
SEMI-AUTOMATIC REPEATING FLARE PISTOL
Ronald B. Smernoff, Los Angeles, Calif. (5396 Park Ave., Garden Grove, Calif.), and Russell O. Stefan, Downey, Calif. (10950 Vulcan St., South Gate, Calif.)
Filed Dec. 28, 1964, Ser. No. 421,441
8 Claims. (Cl. 42—1)



5. A semi-automatic repeating flare pistol for firing projectiles from cartridges with relatively low powder charges, said pistol comprising a body including a handle and a cross-head formed on said handle; magazine means provided in said handle for confining a column of said cartridges and spring-biasing the same towards said head; projectile discharge barrel means on said head; a cartridge receiver rotatably mounted in said head concentrically with said barrel means and having a single central chamber which has a radial passage opening broadside from said chamber for receiving one cartridge at a time broadside from said magazine when said passage is in alignment with the latter, to align said cartridge co-axially with said barrel means; means on said body for detonating the powder charge in said cartridge and thus propel the projectile from said cartridge through and from said barrel means; and means for rotating said receiver a partial rotation about its axis to accomplish the discharge of said cartridge from said pistol, and for then rotating said receiver to its original position for receiving another cartridge from said magazine.

3,270,456
BREECH-BOLT MECHANISM FOR BOLT-ACTION FIREARMS
Carl H. Benson, New Haven, Conn., assignor to O. F. Mossberg & Sons, Inc., North Haven, Conn., a corporation of Connecticut
Original application Dec. 17, 1964, Ser. No. 419,061, now Patent No. 3,234,679, dated Feb. 15, 1966. Divided and this application Sept. 1, 1965, Ser. No. 484,213
3 Claims. (Cl. 42—16)



1. A bolt-action firearm having a receiver and an elongated breech-bolt supported in said receiver for reciprocal movement longitudinally into and out of breech-closing position, said breech-bolt comprising a forward portion confined to longitudinal movement and a rear portion rotatably connected to said forward portion for limited rotation relative thereto into and out of bolt-locking position, a bolt-handle fixedly mounted on said rear portion, said receiver having a longitudinal slot through which said bolt-handle passes when the breech-bolt is reciprocated longitudinally, a locking slot in said receiver disposed transversely of and opening into said longitudinal slot at its forward end to receive said bolt-handle when said rear bolt-portion is rotated into bolt-locking position, said longitudinal slot being opened at the rear end of the receiver such that said bolt-handle may travel rearwardly thereof when the breech-bolt is retracted, said longitudinal slot being shorter than the full rearward stroke of said breech-bolt, spring detent means interconnecting said forward and rear bolt-portions for preventing rotation of said rear portion when said breech-bolt is retracted in order to maintain alignment of said bolt-handle with said longitudinal slot in the receiver, the forward portion of said breech-bolt having a groove disposed longitudinally thereof and opening at the rear end of said forward bolt-portion, and a finger member mounted on said receiver and extending inwardly into said groove, said spring detent means being disposed in said rear bolt-portion for engagement in the end of said groove when said breech-bolt is unlocked and said finger member being disposed relative to said spring-detent means such that movement of said breech-bolt into breech-closing position causes said finger member to be engaged by said spring-detent means in order to release said rear bolt-portion for rotation relative to said forward bolt-portion.

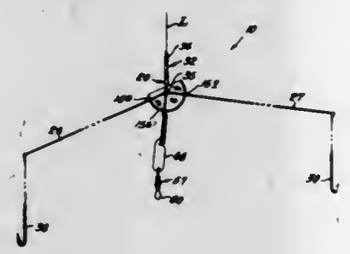
3,270,457
FISHING ROD AND ATTACHMENT THEREFOR
John Wells Austin, Rte. 1, Moselle, Miss.
Filed Sept. 24, 1964, Ser. No. 398,964
11 Claims. (Cl. 43—15)

1. An attachment for a fishing rod comprising a support member, a trigger means, the trigger means being mounted on the support means and movable between first and second positions, the trigger means extending away from the support member and including means located at a point remote from the support member for receiving a first portion of a fishing line, an arm means, the arm means being mounted on the support means at a point remote from the trigger means, the arm means extending away from the support means and including a portion remote from the support member which is movable between first and second positions, resilient means, the resilient means urging the arm means from the first position toward the second position, the trigger means including means for retaining the arm means in the first position when the trigger means is in the first position, means operative when the trigger means is in the first position for retaining a second portion of the fishing line a substantially different distance from the support means than the first portion, means for receiving a third portion of the fishing line mounted on the support means between the points of mounting for the arm means and the trigger means, the means for receiving the third portion of fishing line being substantially in alignment with the means on the trigger for receiving the first portion of fishing line, the means for retaining the second portion of the fishing



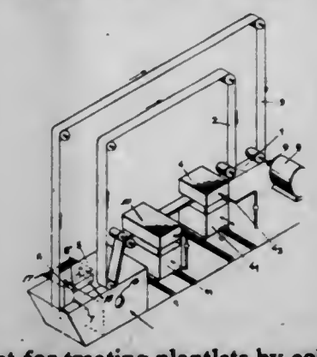
line being carried by the arm means and located between the means for receiving the third portion of fishing line and the trigger means when the arm means is in the first position, the trigger means being movable from the first position to the second position upon movement of the first portion of the fishing line therefrom in a direction away from the second portion, the means for retaining the arm means being rendered ineffective to retain the arm in the first position when the trigger means is moved from the first position to the second position whereby the arm means is released and is urged to the second position by the resilient means, and the arm means including means for pulling on the fishing line when the portion of the arm means is moved from the first position to the second position.

3,270,458
FISHING TACKLE
William R. McAfee, Rte. 1, Sanger, Tex.
Filed Jan. 4, 1965, Ser. No. 422,956
7 Claims. (Cl. 43—42.74)



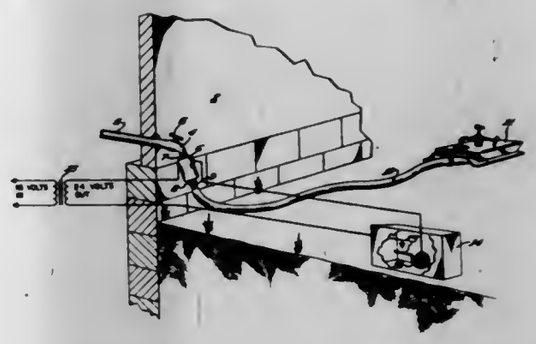
2. A fishing device including: a positioning plate; means supporting said positioning plate and permitting pivotal movement of said plate about a horizontal axis; a mass operatively associated with said positioning plate in any one of a plurality of adjusted positions relative thereto to hold said positioning plate in any one of a plurality of predetermined angular positions about said axis; and a plurality of spreader members extending outwardly of said positioning plate, said positioning plate having means for holding said spreader members in any one of a plurality of predetermined positions relative to said plate and said axis.

3,270,459
EQUIPMENT, MORE PARTICULARLY FOR TREATING PLANTLETS BY COLD SHOCKS
Jacques Georges Pottier, 123–125 Rue Notre-Dame-des-Champs, Paris, France
Filed Sept. 5, 1963, Ser. No. 306,742
Claims priority, application France, June 19, 1963, 938,675, Patent 1,361,644
8 Claims. (Cl. 47—1)



5. Equipment for treating plantlets by cold shock, comprising refrigerating apparatus, reheating apparatus, a water tank, and a pair of endless conveyor belts for carrying plantlets through the refrigerating apparatus and reheating apparatus in succession and then into said tank, the lengths of the belts extending through said apparatus being superimposed for holding the plantlets between them, the belts being separated from each other before the refrigerating apparatus and inside the tank to expose portions of the lower belt for receiving and removing the plantlets, and each belt being formed from a material of great thermal conductivity lined with hydrophilic material that engages the hydrophilic material of the other belt while passing through said refrigerating and reheating apparatus.

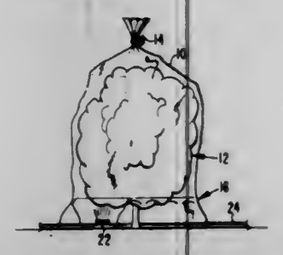
3,270,460
THERMOSTATICALLY CONTROLLED SPRINKLING SYSTEM
Joseph C. Wild, 7701 Modern Road, Minneapolis, Minn.
Filed Jan. 6, 1964, Ser. No. 335,898
2 Claims. (Cl. 47—2)



1. The method of preventing frost damage to garden plots by applying a continuous water cover thereto while mean outside temperatures are at or below frost level, said method comprising at least one sprinkler head in said garden plot, said sprinkler head being connected to a source of water pressure, said water being controlled by a valve energized by a thermostat, said thermostat being adjacent but beyond the range of the sprinkler head and its water discharge, electric switch mean cooperating with the thermostat to close and open the valve according to predetermined adjustments of the thermostat actuated by the mean outside temperature at the location of the same in the garden plot, and an electric circuit originating at a conventional source of electric current whereby the switch means cooperating with the thermostat is energized to

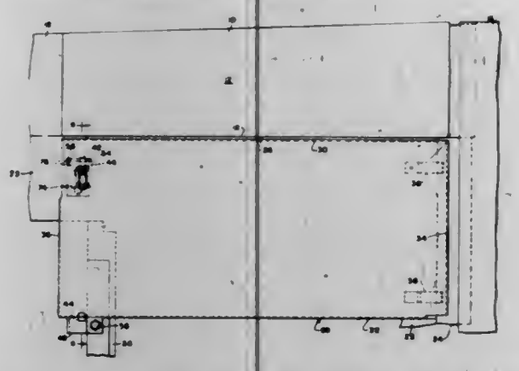
close or open the electric circuit as the temperature fluctuates between the high and low settings of the thermostat and its switch means.

3,270,461
PLANT PROTECTOR
Seeber T. Fowler, Rte. 2, Box 116, Citra, Fla.
Filed Aug. 3, 1964, Ser. No. 387,078
12 Claims. (Cl. 47—2)



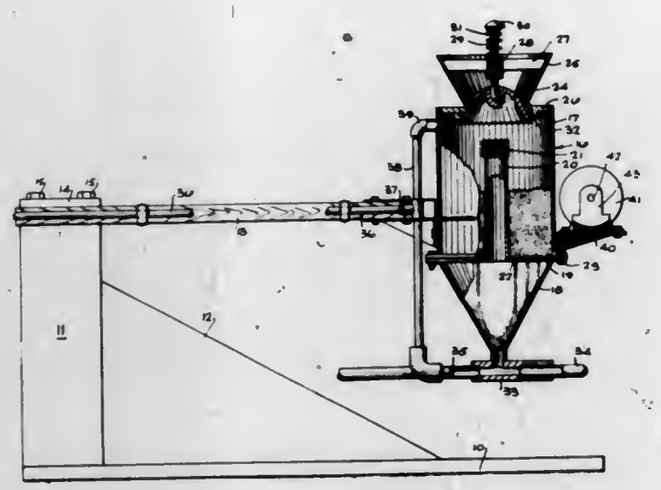
10. Means for protecting plants comprising a tube of flexible non-metallic material substantially impervious to water, said tube being open at both ends and being telescopically disposable over a vertically extending plant with one end of the tube next adjacent the ground and the other end of the tube disposed above the plant, the other end of the tube being sealable by gathering together the tube adjacent said other end thereof, means for engagement about the gathered portion of the tube to hold the same tightly gathered, said one end of the tube being redirected inwardly of the tube to provide a reentrant portion extending entirely about the tube and within the same, the reentrant portion being discontinuously sealed to the tube in a plurality of areas spaced apart circumferentially about the tube to provide a water inflatable bladder at said one end of the tube with said bladder having openings defined in part by the tube and facing toward the other end of the tube, and means for providing an upwardly directed discharge of water engageable at least in part with the inside of the tube to provide a flow of water downwardly along the inside of the tube and into said openings to inflate said bladder, said bladder when inflated being engageable with the ground to provide an air seal around the bottom of the plant enclosed by the tube.

3,270,462
CLOSURE MOUNTING
Richard D. Obadal, Cedar Falls, and John G. Johnson, Waterloo, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 2, 1964, Ser. No. 401,162
1 Claim. (Cl. 49—257)



In combination, frame structure having spaced apart upright front and rear members; a closure element spanning the members in a closed position and having front and rear portions respectively proximate to said members; means mounting the element for shifting between front and rear positions while closed, for outward swinging to an open position and for separation from the structure, comprising a retaining device forwardly engageable between the element front portion and the front member to sustain the element and to prevent outward displacement thereof in its front position and rearwardly disengageable upon movement of the element to its rear position, a lower part carried by the frame structure adjacent to the rear member and including an upwardly facing fore-and-aft guide, an upper part on the frame structure adjacent said rear member and having front and rear spaced apart downwardly facing recesses spaced apart according to the front and rear positions of the element, an upwardly biased, downwardly retractable upper pin carried by the element rear portion for upward engagement with the front recess when the element is in its front position and for downward retraction from said front recess and for upward engagement with the rear recess upon shifting of the element to its rear position, fore-and-aft slot means on the frame structure closely underlying the upper part and generally coextensive with the spacing of said recesses and receiving and guiding the retracted upper pin during shifting of the element, a lower pin coaxial with the upper pin and downwardly receivable in and fore-and-aft slidably sustained by the lower part, said lower part having a rear end portion vertically coaxial with the rear recess and in which the lower pin seats in the rear position of the element, said end portion, said recess and said pins providing a hinge about which the element is swingable towards its open position following shifting thereof to its rear position to disengage the retaining means, said lower pin being retained in seated relation to said end portion by the weight of the element as said element is swung toward its open position, said lower part having an open forward end enabling forward escape of the lower pin upon upward and forward rocking of the opened element to clear said lower part and to enable downward separation of the upper pin from the upper part and from said slot means so that the element is removable from the structure; and means for selectively retracting the upper pin from either recess.

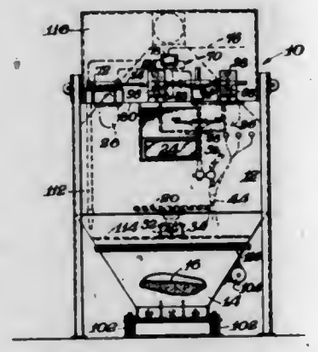
3,270,463
BLASTING MACHINES
Stewart Ives Ashworth, Studley, and Anthony Gerard Field, Redditch, England, assignors to Abrasive Developments Limited, Henley-in-Arden, England, a British company
Filed Oct. 15, 1963, Ser. No. 319,088
Claims priority, application Great Britain, Oct. 16, 1962, 39,054/62
19 Claims. (Cl. 51—8)



1. A blasting machine including a blasting nozzle and means to supply abrasive to the nozzle, said means including a container for abrasive, a sieve in the container

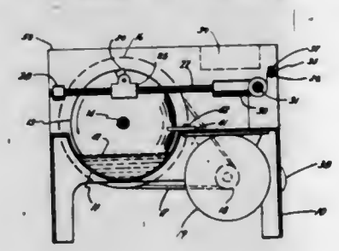
through which the abrasive passes as the container is vibrated, resilient means supporting the container for vibration, the container and the resilient means forming forming a system having a fundamental resonant frequency, driving means for applying power to the system to cause it to vibrate at or adjacent to its fundamental resonant frequency, said driving means comprising an electric motor mounted in the system and having a characteristic such that the speed of the motor varies inversely as the load applied thereto and a bob-weight connected to the motor to be rotated about a generally horizontal axis, control means to vary the power input to the electric motor to control the amplitude of the vibration of the system at said resonant frequency and thus to control the rate of flow of abrasive through the sieve and abrasive-conveying means connecting the container on the output side of the sieve to the nozzle.

3,270,464
ABRASIVE BLASTING APPARATUS
Joseph E. Bowling, Jr., Waynesboro, Pa., and Robert A. Murphy, Hagerstown, Md., assignors to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed Apr. 28, 1964, Ser. No. 363,100
20 Claims. (Cl. 51—15)



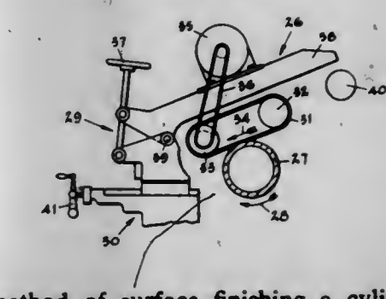
1. Abrasive blasting apparatus for machining work pieces comprising a housing, nozzles in said housing, air supply means connected to said nozzles for causing a flow of air therethrough, a work table in said housing disposed under said nozzles, an abrasive supply hopper under said work table for receiving abrasive material, vibrating means cooperating with said hopper for maintaining said abrasive material substantially level and in a constant state of agitation in said hopper, and abrasive return means connecting said hopper to said nozzles for ejecting said abrasive material from said nozzles and for recirculating said abrasive back to said nozzles after it falls into said hopper.

3,270,465
LAPPING MACHINES
John J. Decoulos, 18 Calumet St., Peabody, Mass.
Filed July 12, 1963, Ser. No. 294,596
3 Claims. (Cl. 51—98)



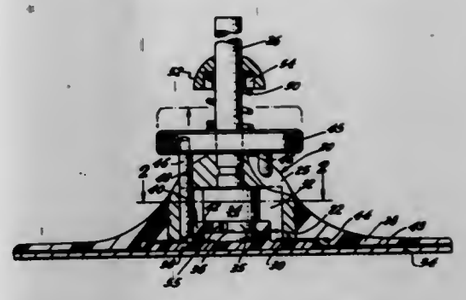
1. A lapping machine comprising a base, a trough mounted on said base, an abrasive mixture in said trough, a solid wheel having a peripheral and side surfaces mounted on a rotary shaft, means for supporting and rotating said shaft, the lower portion of said solid wheel being immersed and rotating in the abrasive mixture, whereby a film of abrasive mixture covers the peripheral and side surfaces of said solid wheel, means for controlling the thickness of said film of abrasive mixture, means for supporting material to be processed in contact with said film of abrasive mixture.

3,270,466
SHEET GLASS BENDING ROLL
John E. George and James T. Zellers, Jr., Charleston, W. Va., and Roger P. King, Waterville, and Alfred H. Miller, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Nov. 15, 1963, Ser. No. 324,110
3 Claims. (Cl. 51—289)



1. A method of surface finishing a cylindrical sheet glass bending roll including hard carbide particles imbedded in a matrix of relatively soft material with an endless abrasive belt trained over a pair of spaced pulleys and having diamonds adhered thereto to form an abrasive surface substantially harder than said carbide particles comprising, rotating the bending roll about its longitudinal axis, driving said endless abrasive belt in contact with said bending roll with the region of contact being between said spaced pulleys so as to uniformly cut through said carbide particles and matrix metal and cleanly remove the abraded material, and shifting said belt back and forth across the length of said roll to form on said roll a relatively smooth surface of undisturbed material free from an amorphous layer.

3,270,467
ABRASIVE DEVICE
Aleck Block, Los Angeles, and Joseph W. Purcell, Jr., Playa del Rey, Calif., assignors to Merit Products, Inc., Los Angeles, Calif., a corporation of California
Filed July 1, 1963, Ser. No. 291,701
16 Claims. (Cl. 51—358)



15. In an apparatus of the character described, means for mounting an abrasive disc member on a rotary drive member, comprising:

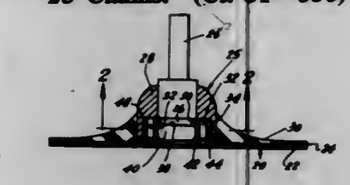
a first structure adapted to be mounted on said drive member, said first structure including a boss with an axially inwardly facing peripheral shoulder;

a second structure adapted to be united with the abrasive disc to enclose said boss and releasably engage said peripheral shoulder to resist axial separation of

the two structures, said hub structure being formed with a plurality of annularly disposed segments annularly separated from one another by gaps; and

means on said first structure positioned radially of said boss and extending through the gaps between adjacent pairs of annularly disposed segments to engage said second structure to cause the second structure to rotate with the first structure.

3,270,468
ABRASIVE DEVICE
Aleck Block, Los Angeles, and Joseph W. Purcell, Jr., El Monte, Calif., assignors to Merit Products, Inc., Los Angeles, Calif., a corporation of California
Filed July 1, 1963, Ser. No. 291,830
25 Claims. (Cl. 51—358)



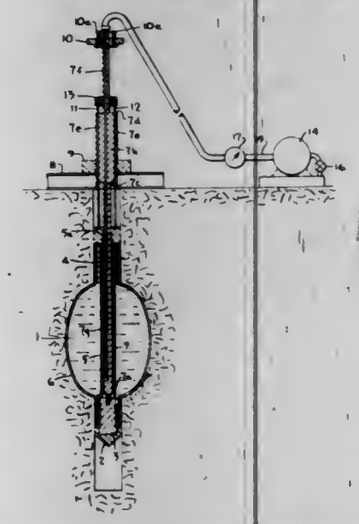
21. In an apparatus for the character described, means for mounting an abrasive disk member on a rotary drive member, comprising:

a first structure on said drive member for rotation with the drive member and forming a boss with an axially inwardly facing peripheral shoulder;

a second structure united with the abrasive disk to enclose said boss and releasably engage said peripheral shoulder to resist axial separation of the two structures, the second structure being provided with at least one radial projection; and

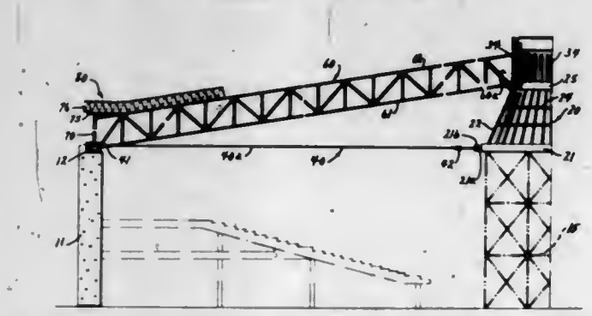
means on said first structure and positioned radially of said boss and responsive to the rotation of the drive member to engage the radial projection of said second structure and cause the second structure to rotate with the socket structure.

3,270,469
EXPANSIBLE, REMOVABLE GROUND ANCHORING DEVICE
Etienne Clément Debiton, Levallois-Perret, France, assignor to Centre Experimental de Recherches et d'Etudes du Batiment et des T.P., Paris, France
Filed Jan. 16, 1964, Ser. No. 338,065
Claims priority, application France, Jan. 28, 1963, 922,851
2 Claims. (Cl. 52—2)



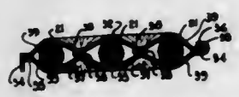
1. An anchoring device comprising an inflatable flexible vessel adapted to be connected to a fluid source, two opposite sheaths secured to said vessel and being movable in opposite directions towards each other when the vessel is inflated and, respectively, away from each other to deflate the vessel, guide means operable for guiding the sheaths during their movements and to limit the relative movement of the sheaths towards each other including a rigid elongated anchor pin connected to one of the sheaths and at least two rods parallel to the anchor pin and guided in the anchor pin and connected to the other sheath, a traction collar connected to the other end of said anchor pin, and a tension collar connected to the other ends of said rods, the collars abutting when the vessel is deflated, said collars, anchor pin and rods being operable to move apart said sheaths thereby to deflate the vessel when said collars are being moved together into the abutting position.

3,270,470
ROOF STRUCTURE AND METHOD OF ERECTION
John R. Wilkie, 8400 Petersburg Road, Vanderburgh County, Ind.; Boleslaw Szostak, 203 Green Valley Road, Greensboro, N.C.; Reginald B. Johnson, 1581 Stop & Shop Court, Owensboro, Ky.; and Frank D. Cain, Jr., 732 State St., Bowling Green, Ky.
Filed Nov. 26, 1962, Ser. No. 240,096
11 Claims. (Cl. 52—82)



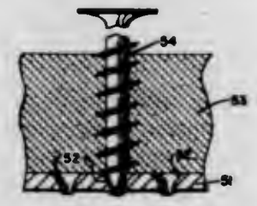
6. A roof structure comprising a series of support columns disposed in a circular pattern, a ring member slidably positioned on said support columns, a cage centrally disposed with respect to said support columns, and trusses and cables extending radially between said cage and said columns, said trusses being positioned above said cables.

3,270,471
POST-TENSIONING APPARATUS FOR PRESTRESSING CONCRETE
Karl H. Middendorf, Costa Mesa, Calif., assignor to The Prescon Corporation, a corporation of Texas
Original application Nov. 15, 1954, Ser. No. 468,762. Divided and this application Oct. 10, 1961, Ser. No. 144,112
2 Claims. (Cl. 52—223)



1. A post-tensioned prestressed concrete structural member having a concrete body portion having a flat bottom face, an elongated prestressing tendon for said concrete body portion embedded therein having a transversely flat body portion consisting of a plurality of closely transversely adjacent high tensile strength steel wires extending in parallelism longitudinally of said tendon and means for holding said wires in a single straight row in close side by side adjacency with said row extending transversely of said tendon parallel to the bottom face of said concrete body portion, consisting of clamping means frictionally gripping said wires adjacent opposite ends of said main body portion of said tendon and at longitudinally spaced intervals along the same therebetween, each of said clamping means consisting of duplicate paired sheet metal members, one member of each pair extending transversely across said wires in engagement therewith on one side thereof and the other member of each pair extending transversely across said wires in engagement therewith on the other side thereof, said paired members having means for holding the same assembled with said wires to connect said wires slidably with said clamping means for movement of said wires relative to said clamping means longitudinally of said wires independently of each other.

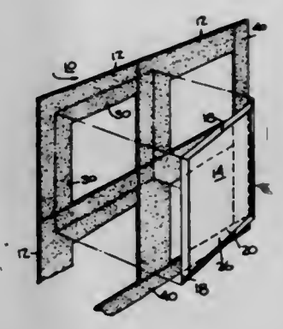
3,270,472
METAL STUD SYSTEM FOR SUPPORTING NON-LOAD BEARING CONSTRUCTION MATERIALS
Sam Gilbert, Los Angeles, Calif., assignor, by mesne assignments to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington
Filed Nov. 8, 1962, Ser. No. 236,343
2 Claims. (Cl. 52—348)



1. A system for erecting and supporting non-load bearing walls comprising a base provided with a web and flanges extending outwardly from opposite side edges of said web and including bendable cut out members, a sheet metal stud member engaging said base member and removably anchored thereto by said bendable cut out members, said sheet metal stud member including a flange provided with at least one flat surface having a plurality of foramen coextensive therewith to provide a plurality of trapping centers for screw points over said surface of said flange, each said foramen extending completely through said flange and being generally frustum-conical in cross-sectional configuration with the major base thereof being located at the said flat surface against which a wall covering member is adapted to be affixed, the inside surface of said foramen being relatively smooth and unbroken and having a length measured along the central axis thereof which is greater than the thickness of the sheet metal material from which said stud member is made and a wall covering member affixed to said flat surface of said stud member and a sheet metal screw insertable through said wall covering member and completely through a foramen.

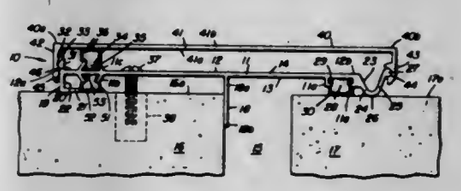
3,270,473
TILED WALL AND FLOOR SURFACE COVERING AND METHOD AND MEANS FOR APPLYING SAME
Irving Smith, Flushing, N.Y. (% Arrow Art Finishers, 1201 Evergreen Ave., Bronx 72, N.Y.)
Filed May 8, 1963, Ser. No. 278,889
1 Claim. (Cl. 52—390)

A tiled surface covering releasably adhered to a supporting surface, said covering comprising numerous square tiles arranged in ordered abutting fashion and a network composed of a multiplicity of identical thin flexible water-impermeable L-shaped elements for applying the square tiles to a supporting surface, each element being formed from sheet material and having two coplanar legs defining a right angle therebetween, said legs being of the same length and width and having pressure sensitive adhesive on both broad faces thereof, the length of each leg being the same as the length of an edge of a tile, said elements being similarly oriented and being releasably adhered to said supporting surface, each of the legs of the elements having a free end and a common end, the free ends of the legs of each element abutting the common ends of the legs of different adjacent elements whereby to align one set of legs of the elements in parallel columns and the other set of legs of the elements in parallel rows at right angles to the said columns so as to



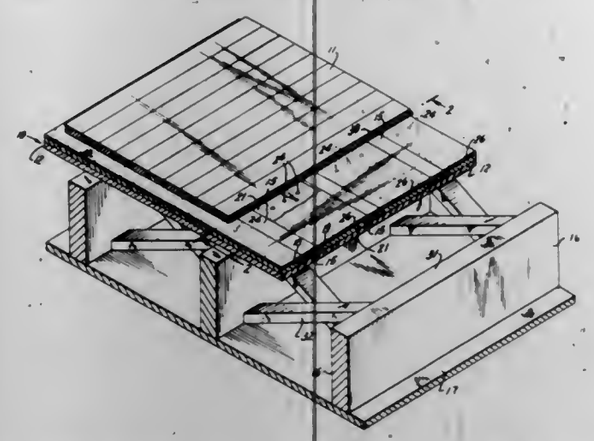
form ranks and files of hollow rectangles with the legs of the elements underlying the abutment zones between said tiles and with the abutting edges of the tiles disposed intermediate the edges of the associated legs to effect a water impervious seal.

3,270,474
EXPANSION JOINT COVER
Randolph W. Driggers, Doraville, Ga., assignor to Miscellaneous Manufacturing Corporation, Tucker, Ga., a corporation of Georgia
Filed Sept. 27, 1963, Ser. No. 312,213
7 Claims. (Cl. 52—395)



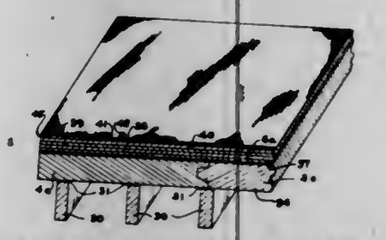
3. An expansion joint cover for first and second structural bodies which confront each other relatively movably across an intermediate zone to be covered: including a base and a cover therefor, said base comprising a rigid web secured to one only of said structural bodies against movement relative thereto and having a width sufficient to bridge said intermediate zone and extend in covering relation to a face of both of said bodies, said base having first and second walls coextensive with said web and extending angularly therefrom to be brought into facing relationship with the respective structural bodies and the said second wall being disposed to extend into contiguous relation with the second of said bodies while permitting substantially unrestrained lateral displacement of said body relative to said web, first wall structure extending outwardly of said web and first wall to define one outermost longitudinal edge of said base and having wall surfaces forming a latching member coextensive with said base, second wall structure integral with said second wall and extending outwardly of said web and second wall to define the opposite outermost marginal edge of said base, and wall means integral with said base for the support thereof on said one structural body; and said cover including a web adapted to cover said base, and first and second transversely opposed parallel edge walls coextensive longitudinally with said cover, one of said edge walls having surfaces interfitting with the said second wall structure of the base and the other of said edge walls having wall surfaces defining a latching member interfitting with said base latching member.

3,270,475
IMPACT NOISE ISOLATION FLOOR CONSTRUCTION
Michael J. Kodaras, 157 Brewster Road, Scarsdale, N.Y.
Filed Sept. 19, 1963, Ser. No. 310,030
1 Claim. (Cl. 52—480)



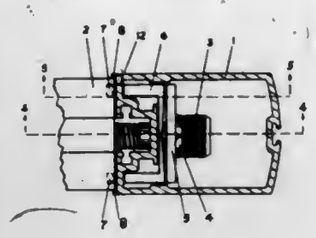
A prefabricated impact noise isolation sub-floor panel adapted to be secured to a building structure and to carry wood strip flooring, comprising a cushioning layer of relatively low density material and of dimensions substantially equal to that of the panel size, a plurality of nailing strips of rigid material arranged over said cushioning layer and bonded thereto in spaced parallel relation, a plurality of spacer strips of relatively higher density material than said cushioning layer arranged respectively between said nailing strips, and spacing said nailing strips one from the other, said nailing strips being formed with outwardly inclined beveled edegs and said spacer strips being formed with inwardly inclined beveled edges coacting with the associated edges of said nailing strips, the tops of said nailing strips extending beyond the top of said spacer strips and a dampening layer of compressible material arranged over said spacer strips between said nailing strips, whereby when conventional wood strip flooring is secured to the panel by nails driven into the nailing strips, and the spacer strips of the panels are secured to the building structure, any impact load imparted to the wood strip flooring will be absorbed by said cushioning layer, and as the nails which secure the flooring strips to the nailing strips are isolated by the spacer strips from the building structure, there will be no direct transmission of noise to the building structure.

3,270,476
INSULATING BOARD
Richard H. Enslen and Edward M. Jenkins, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Jan. 22, 1962, Ser. No. 167,582
4 Claims. (Cl. 52—516)



1. A roof covering comprising a roof base, a plurality of cellulosic fiberboards on said roof base, said fiberboards being juxtapositioned to form a relatively continuous surface, said fiberboards having a density between approximately 10–15 pounds per cubic foot, each fiberboard having a coating mixture of clay and an asphaltic substance integrally bonded to the upper major surface thereof, a built-up roof covering on said major surfaces of the fiberboards, said covering being adhered to the major surfaces by a bituminous composition.

3,270,477
DOOR STRUCTURES
Alex M. Johnston, Norwalk, Calif.
(4802 Pinehurst, Garland, Tex.)
Filed Jan. 11, 1965, Ser. No. 424,501
1 Claim. (Cl. 52—627)

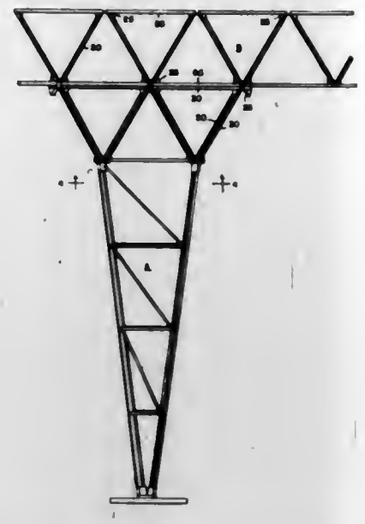


In a door structure including four separate members arranged into a rectangular framework surrounding a flat sheet, a mechanical corner joint between the square cut end of the horizontal member and the side of the vertical member, the horizontal member being provided with a longitudinally continuous recess to receive the edge of the flat sheet to a depth substantially less than the total height of the horizontal member, and such horizontal member including a longitudinally continuous partial cylinder, the vertical member including a surface which contacts the square cut end of the horizontal member, the outermost edges of said surface being provided with longitudinally continuous protrusions forming between them a recess which contains the square cut end of the horizontal member, and said surface of the vertical member being provided with a longitudinally continuous recess for receiving the edge of the flat sheet to a depth substantially less than the total width of that member, the innermost wall of the recess being provided with a slot which extends from the nearest end of the vertical member a distance slightly longer than the distance from the outermost edge of the horizontal member to the innermost wall of the partial cylinder in the horizontal member, the mechanical joining of the vertical and horizontal members being accomplished by the application of a bolt through a channel member which transfers the pressure created by the bolt from the center of the recess in the vertical member to the outside edges of the vertical member, such bolt passing then through the slot in the vertical member and threading into the longitudinally continuous partial cylinder in the horizontal member, and wherein the horizontal member includes a longitudinally continuous horizontal wall, and wherein the surface of the vertical member which contacts the square cut end of the horizontal member is provided with at least one integral rail locating protrusion formed from that wall by punching out a tab from the material of that wall, said tab being located in such a position as to protrude into the horizontal member adjacent the longitudinally continuous horizontal wall of the horizontal member when the horizontal member is located in vertical alignment with the end of the vertical member.

3,270,478
BUILDING CONSTRUCTION
Charles W. Attwood, 4118 S. Wayne Road, Wayne, Mich.
Filed Sept. 20, 1960, Ser. No. 58,874
19 Claims. (Cl. 52—648)

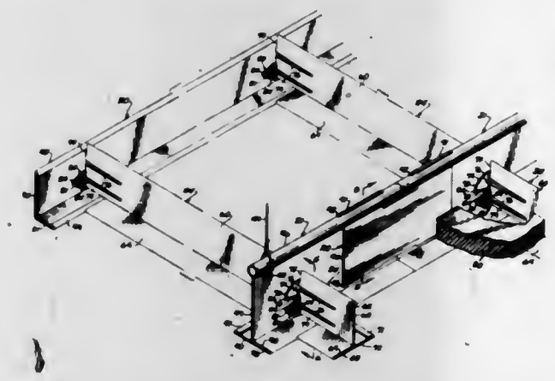
1. A building construction comprising a skeletonized structure consisting of a multiplicity of identical channel members bolted at their ends to identical junction plates

and arranged to form alternate erect and inverted square pyramids, the base members of the pyramids forming chords in parallel planes and the inclined edges forming web members or struts, each strut constituting an edge



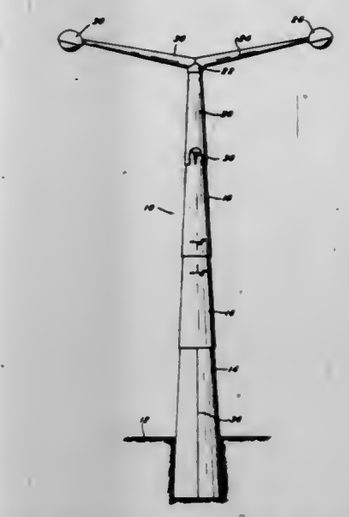
of two adjacent pyramids, all eight edges of which are of equal length and said channel members in the parallels planes being arranged with their open sides outwardly of the structure.

3,270,479
SUSPENSION GRID SYSTEM FOR A CEILING CONSTRUCTION
Roger N. Weinar, 129 San Clemente Drive, Oxnard, Calif.
Filed Aug. 9, 1963, Ser. No. 301,146
8 Claims. (Cl. 52—667)



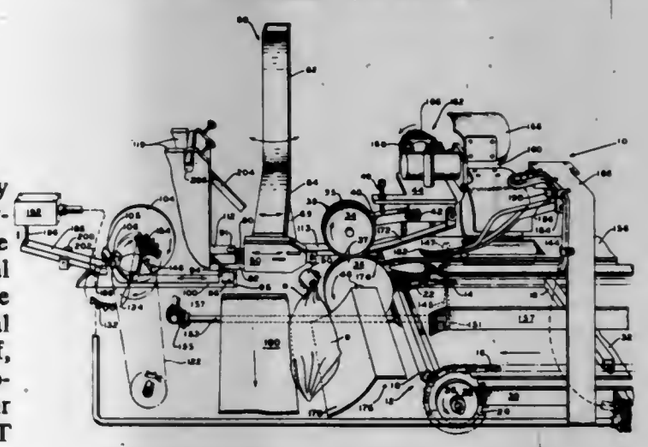
1. A grid for a ceiling, comprising a pair of generally horizontal and parallel spaced supporting bars each having a vertical web and at least one horizontal side flange extending longitudinally thereof, a generally horizontal supported T extending transversely of and bridging the space between said vertical webs and having a vertical web and a side flange extending longituidnally thereof, said web of each supporting bar having at least one supporting shoulder offset toward the other supporting bar and arranged at the corresponding end of said cross T but offset from the major axis of said supported T, and projections on the opposite ends of said supported T offset from said major axis thereof and in the normal unstressed condition of said supported T being out of engagement with said supporting shoulders, said projections engaged with said supporting shoulders thereby causing the grid to be under stress; the supported T being assembled by manually twisting said supported T about said major axis and thereafter releasing said supported T in position to effect engagement between said projections and supporting shoulders.

3,270,480
TAPERED SECTIONAL SUPPORT POLE
William Beecker, P.O. Box 735, Lansdale, Pa.
Continuation of application Ser. No. 198,679, May 29, 1962. This application Apr. 7, 1965, Ser. No. 448,562
5 Claims. (Cl. 52—726)



1. In a pole structure comprising a plurality of hollow overlapping tapered sections, each section overlapping the section therebelow by a distance between one hundred twenty percent and one hundred fifty percent of the greatest inside diameter on the overlapping section, each section being a tapered metal member having a butt-joint weld extending in a longitudinal direction thereof, said tapered sections having a thinner wall thickness than sections therebelow, and each section having a uniform taper so that a pole constructed thereof will have a taper corresponding to a true linear cone.

3,270,481
METHOD OF AND MECHANISM FOR CLOSING BAGS
Hans Gerd Rocholl, Salt Lake City, Utah, assignor, by mesne assignments, to Kwik Lok Corporation, Yakima, Wash., a corporation of Washington
Continuation of application Ser. No. 91,008, Feb. 23, 1961. This application Oct. 22, 1965, Ser. No. 502,665
17 Claims. (Cl. 53—14)



14. A method of closing the slack neck of a partially filled flexible plastic bag, said method including the steps of flattening said neck in a given plane, with said neck extending away from the filled portion of said bag, pinching and pulling a side edge of said flattened bag neck at two fixed positions spaced from each other along said edge, said pulling being in parallel directions away from and normal to said bag neck, progressively advancing the grip of said pinching and pulling step to successive bag neck portions as the latter are drawn through said

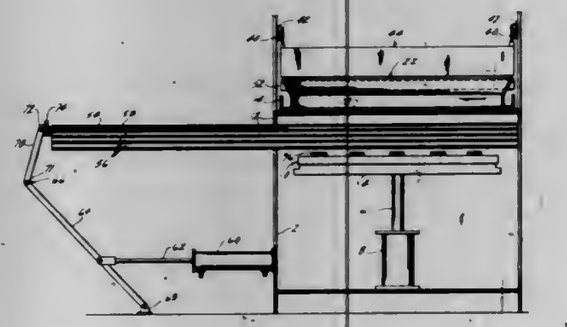
fixed positions so as to progressively draw a transverse section of said bag neck through said positions, and presenting a closure tab having a narrow edge opening, inwardly enlarged to form a closure aperture, with said opening lying abreast of and between said positions and close to said plane and facing the advancing bag neck section whereby the latter is progressively delivered through said opening and into said closure aperture, thus applying said closure tab to said bag neck and closing said bag.

3,270,482

METHOD AND APPARATUS FOR SKIN PACKAGING ARTICLES AND PACKAGES FORMED THEREBY

Herman G. Kraut, New Britain, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut

Filed Oct. 31, 1963, Ser. No. 320,260
22 Claims. (Cl. 53—30)



1. In the method of skin-packaging articles between an air-pervious substrate and a thermoplastic film, the steps comprising placing an article on the upper surface of an air-pervious substrate to form a packaging subassembly; supporting a length of thermoplastic film about its margins in spaced, generally parallel relationship above said packaging subassembly; supporting between said film and packaging subassembly a heat-resistant shield member dimensioned and configured to overlie substantially all of said packaging subassembly; directing heat downwardly into said film sufficient to heat said film to deformability, said shield member substantially shielding said packaging subassembly from the heat; withdrawing said shield member from its position between said heated film and packaging subassembly; and moving said packaging subassembly and heated film into contact while drawing vacuum through said substrate, said vacuum drawing said heated film downwardly about said article into a close-fitting sheath and into laminar contact with said substrate surrounding said article, said film being bonded to said substrate upon being drawn into laminar contact.

3,270,483

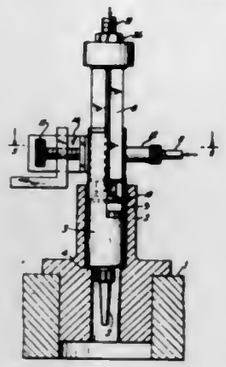
METHOD AND APPARATUS FOR ASSEMBLING SYRINGES

Loyd L. Smoyer and Jack D. Vail, Jr., Overland Park, Kans., assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 20, 1963, Ser. No. 310,361
4 Claims. (Cl. 53—43)

1. A method of inserting plungers into syringes having a round resilient barrel and being partially filled with a liquid which comprises squeezing the barrel of the syringe at a point above the level of said liquid whereby the shape of the barrel is deformed from its round to an oblong shape while simultaneously inserting the plunger into the barrel of said syringe, the air in the barrel of said syringe being allowed to escape through the passage created by said deformation of shape.

3. Apparatus for inserting plungers into resilient syringes which comprises a holder in which the lower part of the syringe barrel is inserted, means for bringing pressure against the outer surface of the barrel of the syringe in said holder at a point above the level of a liquid in said syringe said pressure being applied at right angles to the vertical axis of the barrel of the syringe, means to support the opposite side of the syringe at a point opposite the side of the syringe at which pressure is



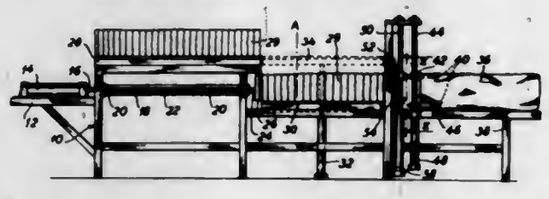
applied while said pressure is being applied thereby making it possible to change the cross-sectional shape of the barrel at the point where the pressure is being applied from round to oblong thus providing a passageway for the escape of air within the barrel of said syringe above the level of the liquid therein while pressure is being exerted on the syringe and the plunger is being inserted, and means to push a plunger for said syringe into the barrel past the point at which pressure is being applied.

3,270,484

MACHINE FOR COMPRESSING AND SUBSEQUENTLY PACKING COMPRESSIBLE ARTICLES SUCH AS PULP EGG TRAYS

Kurt Sandahl Sørensen, Bagsværd, Denmark, assignor to Skandinavisk Emballage Aktieselskab, Lyngby, Denmark

Filed Oct. 29, 1963, Ser. No. 319,709
10 Claims. (Cl. 53—124)



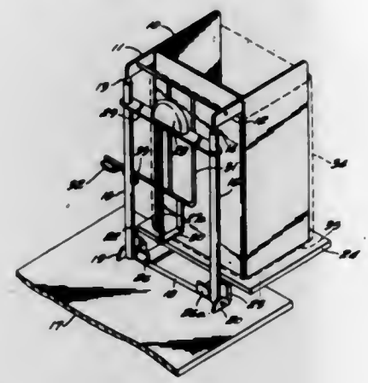
10. A machine for compressing and subsequently packing compressible material, said machine comprising in combination feeding means for feeding said material and having a delivery end, package holding means for holding a package in its open state, said package holding means being placed in spaced relationship to said delivery end of said feeding means and out of alignment therewith, transferring means for transferring said material from said feeding means to said package, said transferring means being movable between a first position in which said transferring means is approximately aligned with said feeding means and a second position in which said transferring means is out of alignment with said feeding means and is adjacent to the open end of said package, means for moving said material from said feeding means to said transferring means in said first position thereof, stop means movable between a package opening blocking position and a non-blocking position when said transferring means is in its second position, means movable towards said stop means in its blocking position and in a path substantially coincident with said material on said transferring means in the second position thereof as to compress said material against said stop means in its blocking position and to subsequently pack said compressed material by pushing it from said transferring means into said package when said transferring means is in its second position.

3,270,485

ARTICLE LOADER

Dale L. Knepper, 104 Willard Drive, Pickerington, Ohio

Filed Oct. 1, 1965, Ser. No. 492,249
16 Claims. (Cl. 53—255)



1. A loading device comprising
(1) a base member;
(2) a trough provided with an open end, said trough being adapted to be positioned horizontally for loading with articles and being adapted to be swung into a vertical position to make said open end the bottom;
(3) a telescopic assembly comprising an extensible member and a non-extensible member, said extensible member secured to said trough for simultaneous translational movement therewith, and said non-extensible member being swingably secured to said base member for simultaneous swingable movement with said trough;
(4) a gate member swingably mounted relative to said trough to swing, when said trough is in its horizontal position, from a vertical position where said member closes said open end to a horizontal position where said member does not obstruct said open end; and
wherein, in sequence, the trough may be loaded with articles, a sack may be slid over said trough from the open end thereof, the gate member may be swung against the bottom of the sack, the trough may be swung into a vertical position, and the trough may be lifted vertically away from said sack by extension of said telescopic assembly.

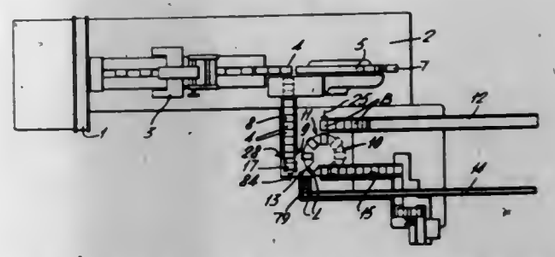
3,270,486

APPARATUS FOR PACKING ARTICLES OF RECTANGULAR BLOCK SHAPE IN BOXES HAVING SEPARATE LIDS

Charles Thomas Hall, Deptford, London, England, assignor to The Molins Organisation Limited

Filed Mar. 6, 1963, Ser. No. 263,216
Claims priority, application Great Britain, Feb. 8, 1963, 5,251/63
7 Claims. (Cl. 53—282)

1. Apparatus for packing articles of a rectangular block shape in boxes having separate lids, comprising a rotatable turret having pockets equally spaced around its axis of rotation to receive and hold box bodies, means for intermittently rotating said turrent in angular stages corresponding to the angular pitch of the pockets to move the pockets successively to different positions of rest, a pusher for feeding a body into a pocket at one rest position, means for feeding an article to a subsequent rest position, a further pusher arranged to push the article into said body after the turret has rotated to move said pocket to said subsequent rest position, and at a lid-applying position to which the loaded box body is brought by a further movement of the turret, means for applying to the filled box body a lid having a top panel and four side flanges constituting a skirt, said means comprising a lid carrier movable from a lid-receiving position to a lid-applying position, said carrier being pivoted at one end of a pivoted



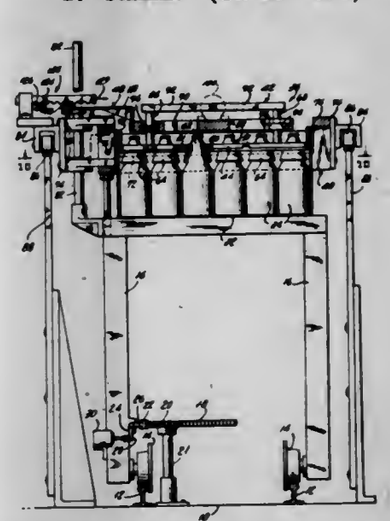
lever, a cam for causing a swinging movement of the lever to swing the carrier and bring a flange of the lid into contact with the box body at one side thereof so that part of the skirt of the lid slides over the open end of the box body at said side, whereby the lid top panel is disposed at an angle to the plane of the open end of the body, and means for thereafter swinging the lid through such angle comprising a further cam operable to rotate the carrier on its pivot at the lever end, whereby the remaining part of the skirt of the lid is slid over the remainder of the said open end to complete the fitting of the lid on the box.

3,270,487

MULTI-UNIT BOTTLE SET-UP MACHINE

Alexander S. Tchimenogiov, 422 N. 8th St., Fairview, N.J.; Louis J. Iocca, Jr., 46 Leonard St., Jersey City, N.J.; and Gilbert L. Offenhartz, 15 Parkview Drive, Millburn, N.J.

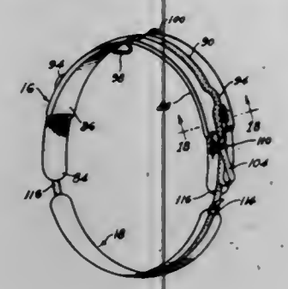
Filed Apr. 17, 1962, Ser. No. 188,124
13 Claims. (Cl. 53—393)



1. An automatic device that will enable a plurality of bottles in a case unit group to be processed while still partially within their case, comprising:
(a) a clamping means operable to be inserted into the case to grasp the bottles concurrently,
(b) a substantially saddle-shaped frame operable to fit on the outside of the case, and supporting the said clamping means such that when the bottles are held by the clamping means said frame permits a clear space directly over the necks of the bottles to be completely transversed from front to back for processing, and

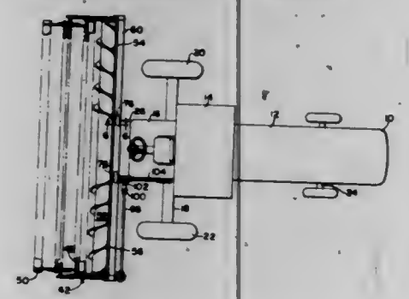
(c) means to separate said bottles from the floor of the case a predetermined distance, whereby said bottles may be presented for the process of cleaning, filling or capping.

3,270,488
LIGHTWEIGHT HARNESS
Willard C. Beach, R.D. 1, Glen Rock, Pa.
Filed Apr. 28, 1964, Ser. No. 363,118
4 Claims. (Cl. 54—39)



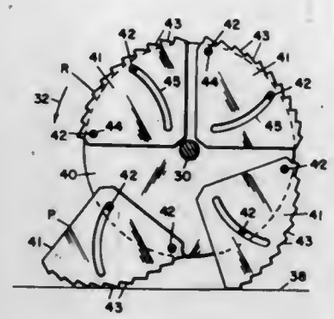
1. A lightweight saddle for a set of harness, said saddle being free of metal bracing and comprising a covering of a plurality of closely overlying plies of moisture-resistant textile fabric woven from synthetic resin filaments having high tensile strength, said covering being stuffed with material to provide desired cushioning characteristics and shape thereto, and loop means comprising a relatively narrow strip of multi-ply material similar to that from which said covering is formed and stitched longitudinally to the upper surface of said stuffed saddle covering, said strip being spaced from said upper surface of said covering at intervals to provide loops for guiding lines when extended therethrough and to connect reins and the like thereto, whereby said stuffing and stitching solely impart shape to said saddle, thereby rendering the same light in weight.

3,270,489
MOUNTING AND DISMOUNTING MEANS FOR AGRICULTURAL MACHINES
Glen W. Rohweder, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed July 15, 1963, Ser. No. 295,086
10 Claims. (Cl. 56—21)



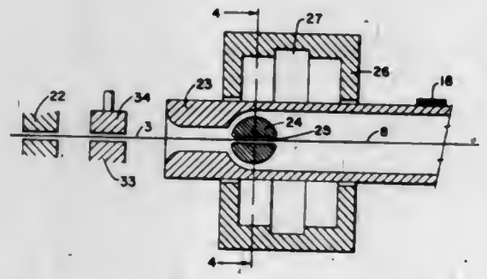
1. In a mobile agricultural machine having a fore-and-aft body including a vertically adjustable forward supporting and crop-feeding housing provided with a front end crop inlet opening, and a transverse header ahead of said housing and including a rear generally upright wall provided with a crop-transfer opening registrable fore-and-aft with the inlet opening, the improvement residing in means for mounting and dismounting the header on and from the housing, comprising: first and second structures rigidly secured respectively to the housing and header in proximity to the respective openings and including vertically connectible and disconnectible means having cooperative elements respectively on said structures enabling vertical connection and disconnection thereof upon opposite vertical adjustment of the housing; and additional disconnectible fastener means connectible between said structures when said elements are connected.

3,270,490
COTTON SCRAPPER
Walker R. Nisbet, San Angelo, Tex., assignor to A. R. Nisbet & Sons, Inc., San Angelo, Tex.
Filed Nov. 5, 1963, Ser. No. 321,554
6 Claims. (Cl. 56—28)



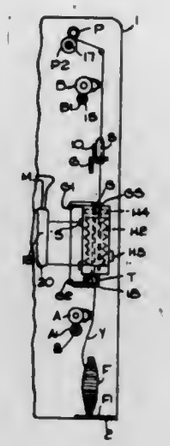
1. In a waste cotton salvaging machine, a picker head comprising a rotatable drum-like body consisting of a plurality of spaced parallel circular plates, a rotatable shaft having said plates mounted thereon, and sets of toothed sectors pivotally mounted between said plates for swinging movement from a retracted to a projected position and vice versa by gravity, said sectors in their projected position being engageable with the ground to pick up cotton therefrom.

3,270,491
APPARATUS FOR TWISTING YARN
Lambertus H. de Langen, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Original application Feb. 8, 1962, Ser. No. 171,901. Divided and this application Sept. 17, 1965, Ser. No. 496,222
Claims priority, application Netherlands, Feb. 13, 1961, 261,181
5 Claims. (Cl. 57—77.45)



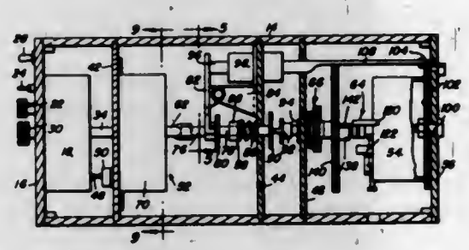
1. A twist apparatus comprising an elongated tubular body provided with a longitudinal thread passageway, means mounting said tubular body for rotation, a thread clamp supported within said longitudinal thread passageway for rotation with and for turning with respect to said tubular body, said thread clamp operating to grip thread passing through said tubular body only in one position of said clamp relative to said body, a bushing slidably supported by the external surface of said tubular body, means transposing sliding movement of said bushing into rotation of said thread clamp relative to the tubular body, and means for rotating said tubular body.

3,270,492
PRODUCTION OF YARNS
Sydney Fitton, Spondon, and Kishan Vallabhdas Vidhani, Arnold, Nottingham, England, assignors to The Hosiery and Allied Trade Research Association
Filed Aug. 21, 1962, Ser. No. 218,338
Claims priority, application Great Britain, Aug. 23, 1961, 30,361/61
11 Claims. (Cl. 57—157)



1. A process for crimping a thermoplastic filament, which comprises the sequential steps of submitting the filament to a shrinking treatment in which the molecular structure of the filament is modified, stabilizing the filament in its molecularly-modified condition, submitting the filament to a second molecularly-modifying treatment and physically distorting the filament to impart a crimp thereto.

3,270,493
TIME CONTROLLED LOCATING ALARM SYSTEM
Archie C. Wallace, Rte. 1, Box 10, Elmer, La.
Filed Apr. 23, 1965, Ser. No. 450,334
12 Claims. (Cl. 58—152)



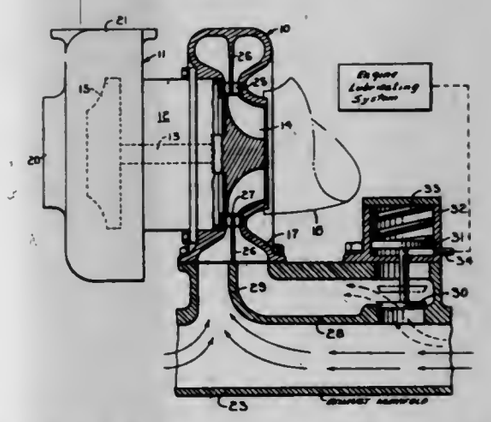
1. In combination with an alarm clock, a time controlled alerting mechanism comprising a mechanically settable timer, a timer setting motor, solenoid operated clutch means operatively connecting said motor to the timer for setting movement thereof, relay means responsive to alarm operation of the alarm clock for simultaneously energizing said motor and said clutch means, manually settable means operatively connected to the relay means for deenergization thereof in response to movement of the timer from a zero position by a predetermined amount, an alerting circuit, and switch means connected to said timer and the alerting circuit for sequentially energizing the alerting circuit and the relay means in response to approach of the timer to said zero position following deenergization of the relay means, whereby said alerting circuit is periodically energized for preset intervals spaced apart by a timing period predetermined by said manually settable means.

3,270,494
SNAP-EYE
Tracy S. Holmes, 649 Hightree Road, Santa Monica, Calif.
Filed Mar. 30, 1964, Ser. No. 355,755
4 Claims. (Cl. 59—86)



1. A snap shackle comprising in combination:
a pair of hook-shaped jaws disposed in side-by-side relation in a common plane facing in opposite directions and with abutting surfaces of distal portions normally in overlapping mutual contact to form a closed loop, said distal portions being tapered toward the distal ends thereof so that said abutting surfaces form a joint surface oblique and at an acute angle to said common plane;
interfitting projections and recesses formed in said surfaces of said jaws to prevent relative motion of said jaws along said joint surface;
hinge bearings formed in said jaws adjacent the proximal ends thereof, said bearings being aligned on a transverse axis in said common plane;
a hinge pin received in said bearings to permit relative swinging movement of said jaws by manual manipulation to separate said contacting surfaces, open said loop, and permit attachment or detachment of said shackle;
and means secured to said hinge pin for attaching said shackle to a line.

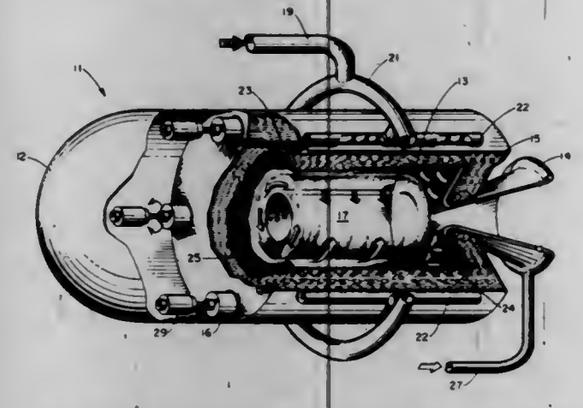
3,270,495
APPARATUS FOR CONTROLLING SPEED AND VIBRATION OF ENGINE TURBOCHARGERS
Donald H. Connor, Chillicothe, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Continuation of application Ser. No. 63,067, Oct. 17, 1960. This application Aug. 14, 1963, Ser. No. 302,074
5 Claims. (Cl. 60—13)



1. An engine turbocharger system comprising a turbocharger having a rotor arranged for rotation on a longitudinal axis in an annular housing, an engine manifold operatively connected to said turbocharger and terminating at said housing, said housing comprising an annular inlet for said manifold gases arranged in substantial perpendicular and surrounding relationship with respect to said axis for discharging gases onto said rotor and control means for preventing overspeeding of said rotor,

said control means comprising an annular partition in said housing arranged to extend in a substantial radial direction from and in surrounding relationship with respect to said axis to divide said inlet into first and second annular compartments, said first compartment arranged in constant communicating relationship with said manifold, a wall member arranged in said manifold to form a chamber therein in communicating relationship with said second compartment, means forming an opening in said wall member at a location spaced from the connection of said first compartment and the inlet toward some of the cylinder outlets in connection with said manifold, and valve means for opening or closing said opening for either permitting gases in said manifold to flow through said first compartment or through said first and second compartments.

3,270,496
GASEOUS VORTEX REACTOR FOR A ROCKET MOTOR
Frank E. Rom, Avon Lake, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 20, 1964, Ser. No. 353,635
10 Claims. (Cl. 60—35.5)

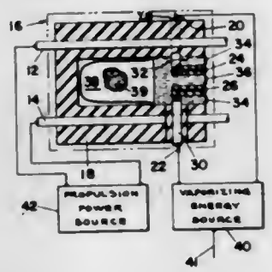


1. In a gaseous core nuclear reactor of the type wherein a light propellant is heated by diffusion through a heavy fissionable fuel; the improvement comprising
a hollow housing surrounding the reactor core and having a plurality of tangentially-formed slots therein, said slots forming a communication between the interior of said housing and said core, and
means for supplying a mixture of the propellant and fuel to said slots whereby said mixture is injected tangentially into the gaseous core to maintain the heavy fissionable fuel outwardly of the core center by centrifugal action.

3,270,497
ANTI-ICING ADDITIVES FOR HYDROCARBON FUELS
Emil A. Malick, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 18, 1962, Ser. No. 167,178
8 Claims. (Cl. 60—35.4)

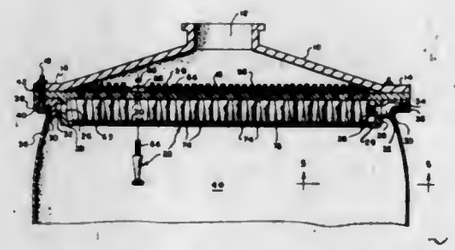
1. In the method of operating a jet engine which encounters subfreezing temperatures, said engine being equipped with a fuel supply system through which a liquid hydrocarbon fuel is passed to a combustion zone of said engine, said fuel supply system is subject to becoming plugged by ice formation at said subfreezing temperatures due to the presence of water in said fuel, and to prevent said plugging there is incorporated in said fuel from 0.01 to 3 volume percent of an anti-icing additive consisting essentially of a glycol ether having the formula $R(OCH_2CH_2)_xOH$ wherein R is selected from the group consisting of a hydrogen atom, methyl, ethyl, propyl, butyl, phenyl, and tolyl groups, when R is hydrogen x is an integer of from 2 to 4, and when R is other than hydrogen, x is an integer of from 1 to 4, and where in said method and in those instances when said additive as prepared has a pH outside the range of from 6 to 7 which can contribute to other malfunctioning of said fuel supply system and said engine, the improvement of: adjusting the pH of said additive from a value outside the range of 6 to 7 to a value within the range of from 6 to 7 prior to incorporating said additive in said fuel.

3,270,498
CONTROLLABLE VAPORIZING GAS ACCELERATOR
Aldo V. La Rocca, Villanova, Pa., assignor to General Electric Company, a corporation of New York
Filed Nov. 5, 1963, Ser. No. 321,540
3 Claims. (Cl. 60—35.5)



1. A device for producing thrust by the electrical acceleration of gas, comprising:
a store of non-gaseous material capable of being altered by electrical discharge at least partly to an ionizable gas;
a member having a porous surface connected with the said store to receive a coating of the said non-gaseous material;
vaporizing electrode means disposed in proximity to the said porous surface for controlled production of electrical discharges to controllably convert the said coating of non-gaseous material into an ionizable gas;
propulsion electrode means for producing an electrical discharge through the said ionizable gas for addition of energy thereto;
nozzle means for directing the said gas, to discharge the said gas to produce a thrust reaction.

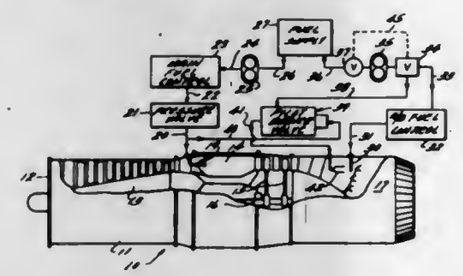
3,270,499
INJECTOR ASSEMBLY FOR LIQUID FUELED ROCKET ENGINES
William J. D. Escher, Woodland Hills, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 23, 1964, Ser. No. 339,825
9 Claims. (Cl. 60—35.6)



1. An injection system for a rocket thrust chamber including a combustion chamber comprising:
A. a first propellant manifold having a propellant inlet and an open side;

B. a backplate disposed across said open side and having a plurality of uniformly spaced apertures therein;
C. an injector nozzle removably mounted in each of said apertures and extending outwardly from said manifold and terminating in an outer end,
(1) a propellant passageway extending through each of said nozzles and opening into said combustion chamber and said first propellant manifold,
(2) each of said nozzles having an impervious flange on said outer end forming with said backplate a second propellant manifold;
D. a propellant inlet communicating with said second manifold; and
E. each of said flanges having faces spaced from corresponding faces on the flange of adjacent nozzles to form the only opening communicating with said combustion chamber and said second propellant manifold whereby the propellants from the first and second manifolds are mixed and react in said combustion chamber to form gaseous reaction products under high pressure.

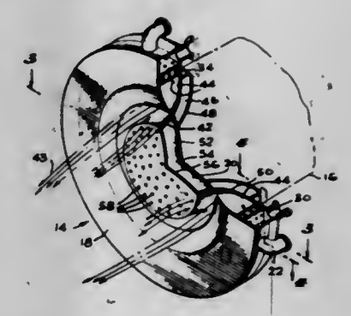
3,270,500
AFTERBURNER FUEL CONTROL
Raymond L. Williams, Evendale, Ohio, assignor to General Electric Company, a corporation of New York
Filed Feb. 27, 1964, Ser. No. 347,818
5 Claims. (Cl. 60—35.6)



1. A fuel system for an afterburning gas turbine engine comprising
a main combustion system including a combustor and conduit means for the delivery of fuel thereto,
an afterburner combustion system comprising
at least one afterburner nozzle and
an afterburner pilot nozzle,
means for selectively supplying fuel to said afterburner nozzle and stopping flow of fuel thereto, and
means for simultaneously supplying fuel to the afterburner pilot nozzle and igniting same when fuel is supplied to said afterburner nozzle and stopping flow of fuel thereto when the flow of fuel to the afterburner nozzle is stopped, said means initially supplying a substantially large amount of fuel to said afterburner pilot nozzle and then a lesser amount of fuel during continued operation of the afterburner nozzle.

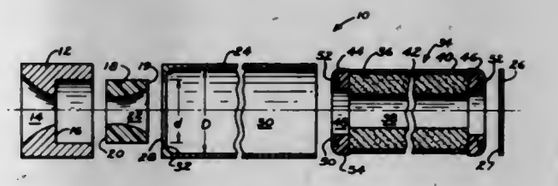
3,270,501
AERODYNAMIC SPIKE NOZZLE
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Thomas E. Cowell and Ira B. Madison
Filed Mar. 5, 1964, Ser. No. 349,781
10 Claims. (Cl. 60—35.6)

1. A method of providing thrust for a spike-free, shroud-free propulsion nozzle, comprising:
the step of expelling a first propulsion stream at a subsonic velocity in a selected amount from said nozzle;
the step of expelling a second propulsion stream at a supersonic velocity from said nozzle; and,
the step of directing said supersonic propulsion stream contiguous to said subsonic propulsion stream, to form said subsonic propulsion stream into the shape of an aerodynamic conical spike, and also forming an aerodynamic throat to increase the velocity of said subsonic stream to a supersonic level.



3. In a spike-free, shroud-free propulsion nozzle, the combination comprising:
a first injector constructed to eject a first propulsion stream at a subsonic velocity;
a second injector circumscribing said first injector and constructed to eject a second propulsion stream at a supersonic velocity; and,
structure to direct said second propulsion stream contiguous to said first subsonic propulsion stream to form said first propulsion stream into an aerodynamic conical spike.

3,270,502
GAS-GENERATING DEVICES
Bernard Silver, Alexandria, Va., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia
Filed Sept. 30, 1964, Ser. No. 400,479
11 Claims. (Cl. 60—35.6)

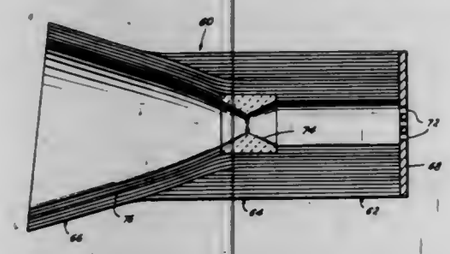


1. A gas-generating element comprising, in combination, a solid gas-generating grain and a heat-resistant, resilient member abutting against each end of said grain, one of said members having a passage extending therethrough from side to side thereof and one of said members having a recess disposed in the exposed side surface thereof.

3,270,503
ABLATION STRUCTURES
Andre J. Meyer, Jr., Houston, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 13, 1965, Ser. No. 425,364
6 Claims. (Cl. 60—35.6)

4. An ablation structure forming a rocket engine, said rocket engine having a combustion chamber portion, a nozzle portion, and an exhaust portion, said engine comprising:
a surface layer exposed to heat in said rocket engine and forming the inner surface of said rocket engine;
a plurality of outer layers arranged substantially parallel to said inner surface layer and integrally formed therewith;

means for allowing gases generated upon heating of said structure to readily vent towards said inner surface comprising threads of fiber arranged in a cellular fashion and disposed axially and circumferentially to



said engine axis, the spacing between adjacent threads being several times greater than the thickness of said threads; and

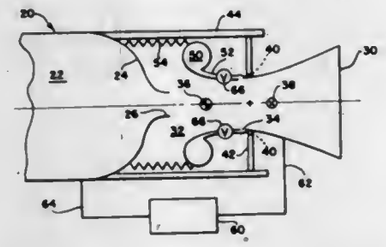
ablation material impregnated in the cellular area and in the area between the threads of successive layers.

3,270,504
AUTOMATICALLY DEPLOYING NOZZLE EXIT CONE EXTENSION
Donald R. Ward, Garfield Heights, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 20, 1965, Ser. No. 473,535
10 Claims. (Cl. 60—35.6)

1. An exit cone assembly comprising an exit nozzle for a rocket, an exit cone extension having a collapsed position in which it is in a telescoped relationship with said nozzle and an extended position effective to extend the length of the nozzle and increase the cross-sectional area thereof, means for moving the extension from its collapsed position to its extended position comprising a plurality of snap columns, operably connected between said nozzle and said extension, that are in a bent position in said collapsed position of the extension and are in a straight rigid position in said extended position of the extension.

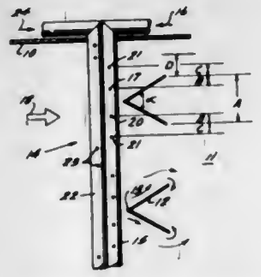
3,270,505
CONTROL SYSTEM FOR ROCKET VEHICLES
Norman L. Crabill and John M. Riebe, Newport News, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 21, 1964, Ser. No. 405,632
11 Claims. (Cl. 60—35.55)

1. A control system for an aircraft propelled by a reaction motor comprising: nozzle means for directing an exhaust stream; means for pivotally mounting said nozzle means; said mounting means located rearward of the center of gravity of said nozzle means; secondary injection means for introducing a jet of fluid into the exhaust stream flowing through said nozzle; and said secondary injection



means located for introducing the jet upstream of said means pivotally mounting said nozzle whereby the nozzle orientation is controlled by injecting a fluid into the rocket exhaust stream to establish reaction magnification and thrust vector control.

3,270,506
LIQUID-VAPOR FUEL INJECTOR FLAMEHOLDER
Donald W. Bahr, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 31, 1961, Ser. No. 149,023
15 Claims. (Cl. 60—39.72)

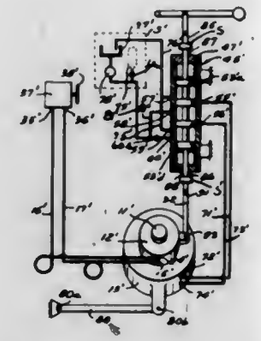


1. A wide range liquid-vapor fuel injector-flameholder for a reaction engine combustion chamber comprising, a V-gutter circumferentially disposed in said combustion chamber with its apex upstream, a first vapor spray bar extending substantially radially into the combustion zone closely adjacent the apex of the V-gutter and substantially perpendicular thereto, a first set of oppositely directed orifices in the spray bar oriented to spray vapor fuel substantially transverse to the air flow through the chamber, said orifices disposed at least one quarter inch inside the V-gutter trailing edge, said orifices providing a vapor pilot flame on the V-gutter, a second liquid spray bar backing and closely adjacent said first spray bar, a set of oppositely directed orifices oriented to spray liquid fuel substantially transverse to the air flow, said orifices for liquid being disposed at least one quarter inch outside of the V-gutter trailing edges to provide liquid fill flame adjacent said vapor pilot flame.

3,270,507
HYDRAULIC CONTROL SYSTEM
Jean Mercier and Bernard Mercier, 1185 Park Ave., New York, N.Y.
Filed June 16, 1965, Ser. No. 464,397
7 Claims. (Cl. 60—51)

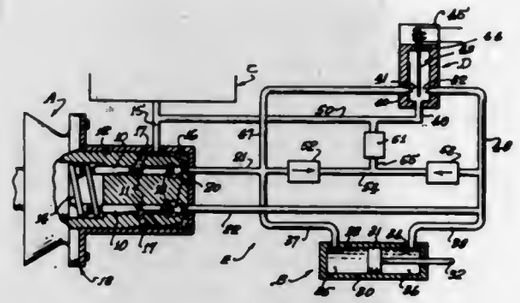
1. A hydraulic control system for effecting rotary movement of a shaft on each side of neutral position, comprising a hydraulic motor operatively connected to said shaft to rotate the latter, said motor having control ports, a valve having control ports connected to the control ports of said motor, said valve having a fluid pressure inlet port, and a return port, a source of fluid under pressure connected to said pressure inlet port, and adapted

to provide a constant source of pressure thereto, a reservoir connected to said return port, said valve having a movable valve member, resilient means reacting against said valve member normally retaining the latter in neutral position to block flow of fluid from said first pressure source through said control ports of said valve to said first hydraulic motor and to connect said pressure inlet port and return port of said valve, a control valve having a pair of control ports and a pair of operating ports, said valve having valve means controlling said ports, said valve means having a neutral position in which said operating ports are connected and said control ports are blocked and an operating position in which said control ports are connected respectively to the operating ports, a



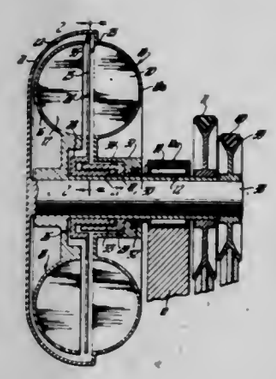
second source of fluid under pressure adapted to supply fluid under pressure only when actuated, said second source having a pair of ports connected respectively to said control ports of said control valve, said second fluid source ports selectively defining a pressure port and a return port, a second hydraulic motor operatively connected to said shaft, said motor having a pair of ports connected respectively to the operating ports of said control valve, and means opeartively connecting the ports of said second source to said first valve, to effect movement of said valve member to operative position, upon actuation of said second source, thereby to connect said pressure inlet port and said return port to said control ports of said first valve and to said first hydraulic motor.

3,270,508
ELECTRO-HYDRAULIC SERVO POWER CONTROL SYSTEM
Paul A. Smith, Tarzana, and Leonard N. Fox, Glendale, Calif., assignors to Crane Co., doing business as Hydro-Aire Division, Burbank, Calif., a corporation of Illinois
Filed Mar. 17, 1965, Ser. No. 440,480
5 Claims. (Cl. 60—52)



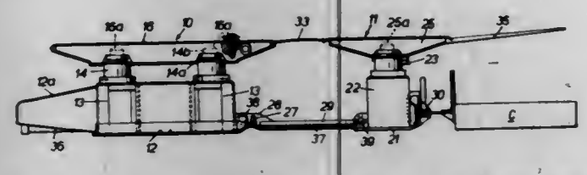
1. An hydraulic servo power system comprising, in combination: a reversible actuator having movable pressure responsive means and respective power chambers arranged for opposed fluid pressure action against said pressure responsive means; a servo valve having opposed control orifices, a second movable element between said orifices, and a remotely controlled servomotor acting upon said second movable element to vary the restriction of said orifices solely in response to command signals transmitted thereto; multiple pump means having two outlets independently receiving pressure fluid flows pumped by respective pump elements; and mutually isolated fluid delivery lines each connecting a respective pump outlet to a respective power chamber of said actuator and, in parallel, to a respective control orifice of said servo valve, whereby displacement of said second movable element toward one of said control orifices and away from the other will restrict escape of fluid from said one control orifice and correspondingly will increase the fluid pressure in the power chamber connected thereto, while permitting increased flow from said other control orifice and relieving pressure in the other power chamber so as to effect movement of the actuator toward said other power chamber, utilizing the full pressure and flow delivered from a respective pump outlet, said system having a power input requirement less than half that of an hydraulic servo power system of equal output capacity having a common path of flow from pump outlet to both power chambers of a reversible actuator.

3,270,509
ACCESSORY DRIVE MECHANISM
Keith H. Carpenter, Pittsford, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,855
6 Claims. (Cl. 60—54)



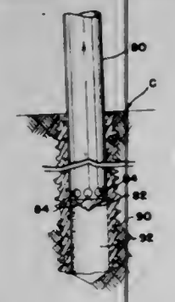
1. A hydraulic accessory drive unit for driving the accessories of an engine driven vehicle comprising an engine driven power input shaft, an impeller driven by said shaft, a turbine, a power delivery shaft for driving said accessories and driven by said turbine, open faced pockets in said impeller and turbine, respectively, and disposed in axial spaced relationship with the open faces facing each other, working fluid adapted to be circulated through said pockets in response to rotation of said impeller, a valve having a hub supporting a plurality of valve blades thereon, said valve blades extending upwardly into the space between said impeller and turbine, yieldable means connecting said valve to said impeller whereby said valve is caused to rotate with said impeller, said yieldable means normally biasing said valve to position said valve blades to permit unrestricted fluid flow between said impeller and turbine, magnetic means operable upon said valve tending to brake rotation of said valve, said yieldable means permitting relative rotation of said valve and said impeller in response to the brake effect of said magnetic means in a predetermined speed range of rotation of said impeller to progressively reduce the effective area of the path of fluid flow as the speed of rotation of said impeller increases throughout said predetermined speed range.

3,270,510
MINE ROOF AND LIKE SUPPORTS
Donald T. Walsh, Hindley, England, assignor to Gullick Limited, Lancashire, England, a British company
Filed Nov. 12, 1963, Ser. No. 323,008
Claims priority, application Great Britain, Dec. 5, 1962, 46,026/62
5 Claims. (Cl. 61—45)



1. A mine roof support comprising a rear unit and a forward unit, each of said units comprising a base, hydraulically extensible prop means on said base and a roof-engaging member mounted on the upper part of said prop means, the roof-engaging member of the forward unit having a forwardly extending extension member and a pivotal seating on its prop means whereby it can adjust itself to roof irregularities, at least one flexible elastic member positioned between opposed ends of the roof-engaging members of the rear and forward units, means at one end of said flexible elastic member hingedly connecting it to one of said roof-engaging members so that it can pivot towards and away from the roof and means at the other end of said flexible elastic member rigidly connecting it to the other of said roof-engaging members whereby said self-adjustment of the roof-engaging member of the forward unit is elastically controlled.

3,270,511
METHOD OF FORMING PILES
Ervin R. Colle, Haddonfield, N.J., assignor to Intrusion-Prepakt, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 10, 1963, Ser. No. 315,190
4 Claims. (Cl. 61—53.52)



1. A method of forming a concrete pile in the earth comprising sonically driving a hollow grouting mandrel into the earth to define the location and depth of a pile cavity, forcing a settable fluid hydraulic grout through said mandrel and radially outward from said mandrel as it is being driven into the earth, allowing the grout to commence setting, removing the mandrel to evacuate said cavity, and filling the evacuated cavity with a hardenable cement grout.

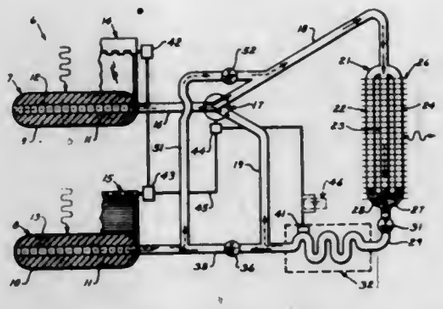
3,270,512
INTERMITTENT TYPE SILICA GEL ADSORPTION REFRIGERATOR
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of John Michael Frank Vickers and Ernest Romvary, Jr.
Filed Dec. 9, 1963, Ser. No. 329,331
11 Claims. (Cl. 62—2)

8. An adsorption type refrigeration system adapted for operation in a zero gravity environment, said system comprising:

first and second adsorber-generator vessels each containing a refrigerant-adsorbing substance and adapted to be exposed to solar radiation, one of said vessels containing refrigerant which has been adsorbed by the refrigerant-adsorbing substance, said refrigerant-containing vessel being exposed to solar radiation and the other of said vessels being shielded from solar radiation;

a condenser having an inlet for receiving refrigerant fluid and an outlet for discharge of said fluid;

an evaporator connected in fluid communication with the outlet of said condenser and adapted to evaporate refrigerant liquid introduced therein to thereby produce refrigeration by extracting heat from its environment, said evaporator having an outlet for the discharge of refrigerant fluid;

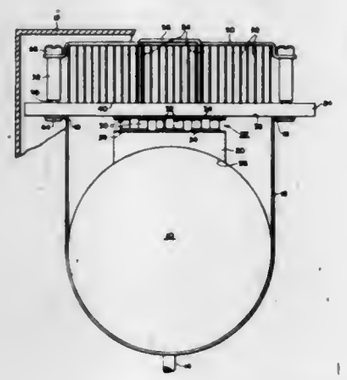


a conduit system including valve means for communicating the exposed adsorber-generator vessel with the inlet of the condenser and the other of said vessels with the outlet of the evaporator whereby refrigerant liberated from the exposed adsorber-generator will be circulated through the condenser and evaporator;

a porous wick occluding the outlet of said condenser for separating the liquid and gaseous phases of the refrigerant fluid whereby refrigerant liquid is communicated to the evaporator by wicking action; and

an automatic control means for periodically reversing the conditions of exposure and non-exposure of the adsorber-generator vessels to solar radiation and simultaneously actuating said valve means to reverse the connections of the adsorber-generator vessels with the condenser and evaporator.

3,270,513
THERMOELECTRIC WATER COOLER
Charles F. Ter Bush, Grove City, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 21, 1965, Ser. No. 465,342
7 Claims. (Cl. 62—3)



1. Thermoelectric water cooling apparatus comprising:

a thermoelectric module including a cold shoe, a heat sink, and an array of thermocouples sandwiched between said shoe and sink;

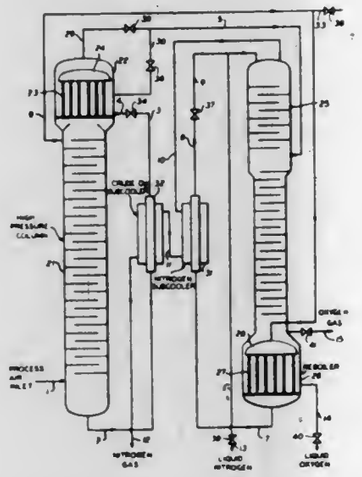
a water tank against which said shoe seats;

a tension band in saddle relation about said tank and having ends adapted to be pulled toward points on said sink outside of said thermocouple array;

fastener means for pulling said ends toward said sink points to place said band under tension; and

means for simultaneously applying a compressive force against the area of said sink aligned with said array, and in the direction of said array, as said fastener means are tightened.

3,270,514
SEPARATION OF GAS MIXTURES
Jeram S. Kamlani, Fairfield, Conn., assignor to Gas Equipment Engineering Corporation, Milford, Conn.
Filed Apr. 23, 1963, Ser. No. 275,009
1 Claim. (Cl. 62—29)



Apparatus suitable for separation of a gas mixture including a low boiling component and a high boiling component by liquefaction and fractionation comprising:

(a) a first fractionating column for fractionating the mixture at a relatively high pressure to provide an overhead vapor rich in the low boiling component and as bottoms a crude cut of the high boiling component in liquid state, a condenser for said first fractionating column for condensing by indirect heat exchange overhead vapor of said first fractionating column for use as reflux in said first fractionating column, means communicating said first fractionating column with said condenser for transfer of overhead vapor to the condenser for condensation, and means communicating the condenser with the said first fractionating column for transfer of condensate to said column for use as reflux therein;

(b) a second fractionating column for fractionation of crude cut produced in said first fractionating column to provide a second fractionating column overhead vapor rich in low boiling component and a second fractionating column bottoms rich in the high boiling component, a reboiler for the bottoms of said second fractionating column for reboiling of said bottoms by indirect heat exchange;

(c) conduit means interconnecting the bottom of the said first fractionating column with the condenser of the first fractionating column for transfer of first fractionating column bottoms to the condenser for indirect heat exchange with the overhead vapor transferred to the condenser;

(d) conduit means interconnecting said first fractionating column and said reboiler of the second fractionating column for transfer of overhead vapor of the first fractionating column to said reboiler for indirect heat exchange between said overhead vapor of the first fractionating column and bottoms in said second fractionating column;

(e) conduit means interconnecting the condenser of the first fractionating column and the second fractionating column for transfer of crude cut used in the condenser for condensing overhead vapor of the first fractionating column to the second fractionating column for the fractionation thereof in the second fractionation column;

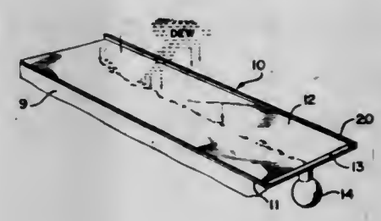
(f) means for supplying low boiling component in liquid state to the top of said second fractionating column for use as reflux in said second fractionating column;

(g) said conduit means interconnecting the bottom of the first fractionating column with the condenser being outfitted with a pressure reducing means for reducing the pressure of crude cut transferred through said conduit;

(h) said means for supplying reflux to the second fractionating column comprising conduit means interconnecting the reboiler of the second fractionating column with the top of said second fractionating column for transfer of liquid formed in the reboiler by condensation of the first fractionating column overhead vapor utilized therein, to the top of the second fractionating column, whereby said liquid is provided as reflux for the second fractionating column;

(i) said conduit means for transferring crude cut from the first fractionating column condenser to the second fractionating column being connected to the second fractionating column for introduction of said crude cut at an intermediate point over the height of the second fractionating column, the diameter of the second fractionating column below said intermediate point being less than the diameter of said second fractionating column above said intermediate point.

3,270,515
DEW COLLECTING METHOD AND APPARATUS
Maria Telkes, Falls Church, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,373
15 Claims. (Cl. 62—93)



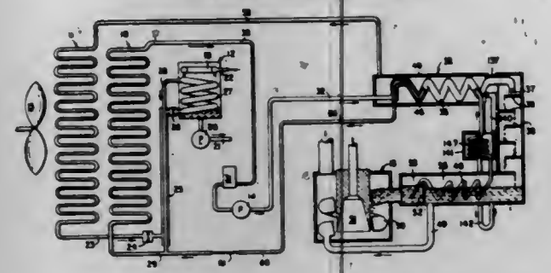
14. The method of collecting water from the atmosphere comprising the steps of

placing a sheet of material having a relatively high reflectivity and low absorptivity for radiation having wavelengths in the range of 0.3 to 2.0 microns and a relatively high emissivity for radiation having wavelengths in the range of 5 to 30 microns, on a supporting surface such that the plane of said sheet is inclined to said supporting surface;

directing the accumulation of condensation toward one area of said sheet; and

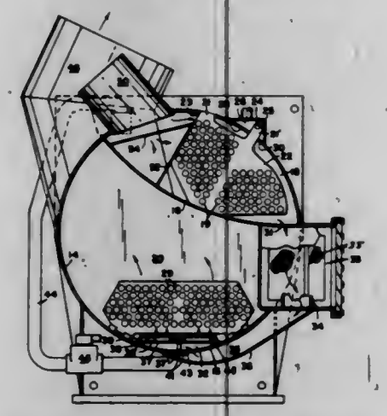
collecting said accumulated condensation from said one area.

3,270,516
ABSORPTION REFRIGERATION
Lowell A. McNeely, Indianapolis, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,803
7 Claims. (Cl. 62—101)



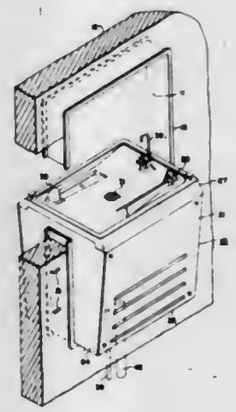
7. In a method of operating an absorption refrigeration system having an absorber, an evaporator, a generator, a condenser, a rectifier, and an analyzer, the steps comprising:
(A) evaporating refrigerant in said evaporator to cool a heat exchange liquid;
(B) absorbing refrigerant vapor formed in said evaporator in absorbent solution in said absorber;
(C) boiling weak absorbent solution in said generator to concentrate said absorbent solution and to form vapor;
(D) passing vapor formed in said generator through said analyzer in mass and heat transfer relation with weak solution passing from said absorber to said generator to enrich the refrigerant content of said vapor;
(E) passing vapor from said analyzer to said condenser in heat transfer relation with weak solution passing from said absorber to said generator, to further enrich the refrigerant content of said vapor by condensing absorbent therefrom;
(F) passing vapor from said rectifier to said condenser to condense said vapor;
(G) passing absorbent condensed in said rectifier in heat exchange relation with strong solution passing from said generator to said absorber to vaporize refrigerant from the condensed absorbent; and
(H) passing said refrigerant vapor formed from the condensed absorbent to the rectifier for subsequent passage to said condenser.

3,270,517
REFRIGERATION APPARATUS
William E. Clark, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,400
9 Claims. (Cl. 62—115)



6. The method of supplying refrigerant to an evaporator having a tube bundle assembled therein and including a compressor, a condenser and a refrigerant control means connected with said evaporator to form a closed circuit for the flow of refrigerant which comprises the steps of presenting relatively low pressure liquid refrigerant to an axial collection space beneath the tube bundle and directing refrigerant upwardly and outwardly from the space at a plurality of spaced locations to a chamber provided with a perforated cover so that liquid refrigerant flow continues upwardly over the tube bundle in a substantially uniform flow pattern.

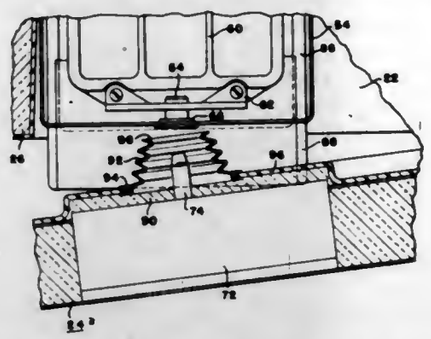
3,270,518
WATER COOLER STRUCTURE
George L. Fugere, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1964, Ser. No. 407,011
3 Claims. (Cl. 62—263)



1. In combination:
a building structure partition wall separating opposite side spaces;
means defining an opening in said wall of a size adapted to accommodate a water cooler cabinet in its lower part with the upper part of said opening being generally unobstructed;
a water cooler including said cabinet mounted in generally centered relation in said lower part of said opening, said cabinet including a sink top provided with a drainage outlet;
said cooler including a first bubbler disposed near an edge of said sink top in said one space;
a second bubbler disposed near an opposite edge of said sink top in said other space;
conduit means connecting each of said bubblers with a supply of cooled water in said cabinet; and
a waste water tube having one end connected to said sink outlet and the other end connectible with a sewer drain.

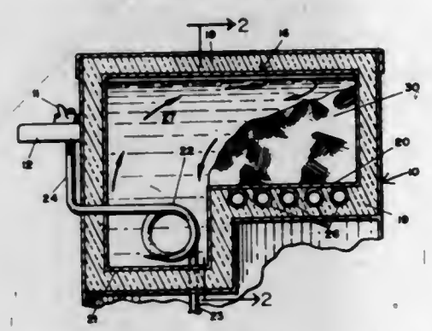
3,270,519
ICE MAKER WITH DOOR MOUNTED DRIVE MEANS
Ernest E. Pohl, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 1, 1964, Ser. No. 415,069
4 Claims. (Cl. 62—353)

1. A refrigerator including insulated walls and a door enclosing a compartment to be cooled, a mold located in said compartment, means for delivering liquid to be frozen to said mold, means for cooling the liquid in said mold below its freezing point, said mold having a front located adjacent the front of said compartment and a rear located adjacent the rear of said compartment, an electric drive motor and operating means driven by said motor fitted in and mounted on and bodily movable with said door, said operating means having a disconnectible mechanical connection with the front of said mold for



twisting said mold for ejecting the frozen liquid from said mold, said connection being disconnected when the door is open and connected when the door is closed.

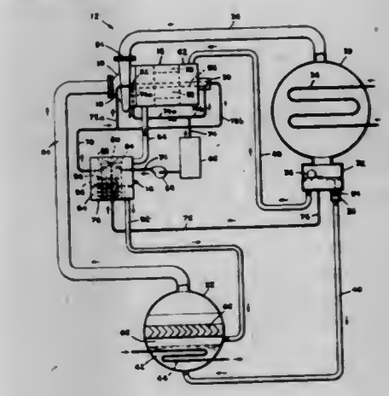
3,270,520
WATER COOLER FOR GOLF COURSES AND THE LIKE
Harvey N. Geisler, 591 NE. 5th St., Pompano Beach, Fla.
Filed Dec. 3, 1965, Ser. No. 511,397
2 Claims. (Cl. 62—395)



1. A continuous working absorption type refrigerator comprising a reservoir, having a stepped bottom wall, one portion of said bottom wall being elevated with relation to the remainder of said bottom wall forming a lower and an upper bottom wall portion, a heat transfer liquid substantially filling said reservoir, a coil for drinking water immersed in said heat transfer liquid in close proximity to said lower bottom wall portion and a plurality of cooling coils in substantial contact relation with said upper bottom wall portion whereby ice is formed in said reservoir above said upper bottom wall portion and convection currents are created causing said heat transfer liquid to flow across the upper portion of said reservoir to said ice, then downwardly along the ice to become chilled toward said lower bottom wall portion where said water coils are chilled and then upwardly in the reservoir to again flow in the direction of said ice.

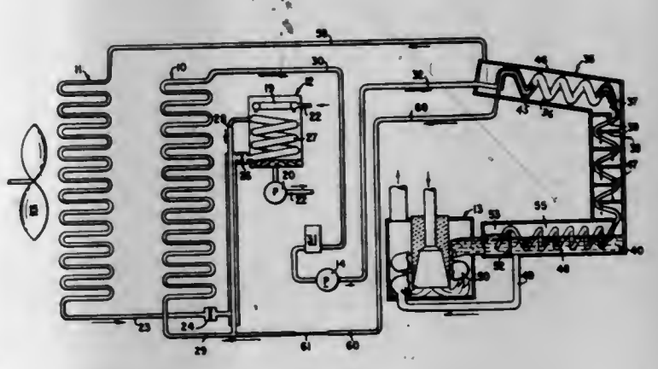
3,270,521
REFRIGERANT COOLED OIL COOLER SYSTEM
Raymond E. Rayner, Colonia, and Donald E. Chubb, Caldwell, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Sept. 8, 1965, Ser. No. 485,682
12 Claims. (Cl. 62—469)

1. A refrigeration system in which refrigerant is circulated between a high pressure side and a low pressure side comprising:
(a) a compressor driven by a motive means,
(b) a condenser means to receive the high pressure refrigerant and condense the same,
(c) an expansion device to expand the condensed refrigerant into a low pressure liquid,
(d) an evaporator to receive the low pressure liquid to evaporate the same, the gas being drawn into the compressor,
(e) an oil lubrication means to supply oil to and receive the returned oil from the motive means,
(f) an oil cooler disposed in the oil lubrication means,
(g) a coil means disposed in the oil cooler in communication with the oil lubrication means,
(h) a delivery line connected between the oil cooler and said system to deliver high pressure refrigerant to the oil cooler,



(i) spray means connected to the delivery line and disposed in the oil cooler, and to receive high pressure refrigerant from the delivery line for spray discharge therefrom in heat exchange relation with the coil means to cool the oil therein,
(j) a return line connected between the oil cooler and the low pressure side of said system to return refrigerant to said system,
(k) the coil means having the oil therein pass in an arcuate path of decreasing radius, and
(l) the spray means disposed inwardly of the coil means to spray the refrigerant radially outwardly thereof to effect counter-flow heat exchange therewith.

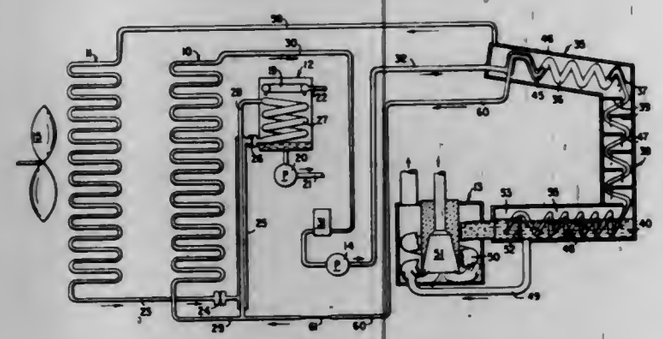
3,270,522
ABSORPTION REFRIGERATION
Lowell A. McNeely, Indianapolis, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,804
2 Claims. (Cl. 62—476)



1. An absorption refrigeration system comprising:
(A) an absorber for absorbing refrigerant vapor;
(B) an evaporator for evaporating refrigerant and providing a cooling effect;
(C) a generator for concentrating weak absorbent solution by vaporizing refrigerant therefrom;
(D) a condenser for condensing refrigerant vaporized in said generator;

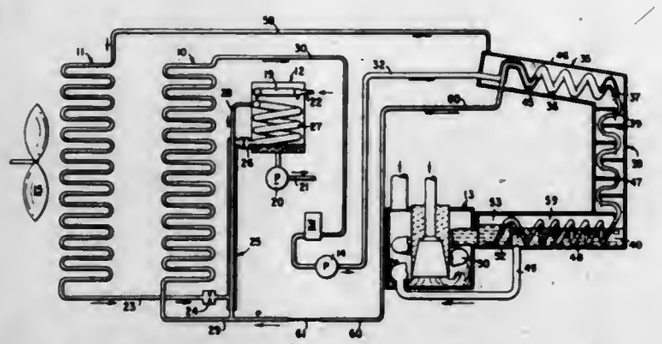
(E) a combined rectifier and heat exchanger comprising:
(1) first passage means connected to pass vapor formed in said generator to said condenser;
(2) second passage means connected to pass weak absorbent solution from said absorber to said generator;
(3) third passage means connected to pass strong solution from said generator to said absorber;
(4) said first, second, and third passage means being physically disposed with respect to each other so that the weak solution passing through said second passage means is in simultaneous heat transfer relation with both the vapor passing through said first passage means and the strong solution passing through said third passage means;
(F) an analyzer having surface therein for passing vapor and liquid in mass and heat transfer relation with each other;
(G) means for passing vapor from said generator to said first passage of said combined rectifier and heat exchanger through said analyzer in mass and heat transfer relation with weak solution passing through said analyzer from said second passage in said combined rectifier and heat exchanger to said generator; and
(H) means for passing condensate formed in the first passage of said combined rectifier and heat exchanger to said generator in heat exchange relation with strong absorbent solution passing from said generator to said third passage in said combined rectifier and heat exchanger, and means to pass vapor liberated from said rectifier condensate to said first passage of said combined rectifier and heat exchanger.

3,270,523
SOLUTION HEAT EXCHANGER ARRANGEMENT FOR ABSORPTION REFRIGERATION SYSTEM
Lowell A. McNeely, Indianapolis, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,805
1 Claim. (Cl. 62—495)



An absorption refrigeration system comprising:
(A) an absorber for absorbing refrigerant vapor;
(B) an evaporator for evaporating refrigerant and providing a cooling effect;
(C) a generator for concentrating weak absorbent solution by vaporizing refrigerant therefrom;
(D) a condenser for condensing refrigerant vaporized in said generator;
(E) a rectifier for passing vapor in heat exchange relation with relatively cool weak solution to enrich the refrigerant content of said vapor by condensing absorbent therefrom;
(F) an analyzer for passing vapor from said generator to said rectifier in mass and heat transfer relation with weak absorbent solution to enrich the refrigerant content of said vapor prior to its passage to said rectifier, said analyzer comprising:
(1) a vertically disposed tubular shell forming a vapor passage,
(2) a plurality of horizontally disposed vertically spaced plates disposed partially across said shell from alternate sides thereof,
(3) a helical heat exchange coil disposed in spaces between said plates and said vertically disposed shell, said heat exchange coil being connected to pass strong solution from said generator through said analyzer shell and toward said absorber,
(4) means to pass vapor from said generator to said analyzer,
(5) means to pass vapor from said analyzer to said rectifier, and
(6) means to pass condensate formed in said rectifier to wet the surface of the helical coil in said analyzer to provide heat exchange between strong solution passing through said heat exchanger and said condensate, thereby vaporizing refrigerant from said condensate in said analyzer and effecting mass and heat transfer between condensate wetting the surface of said coil and vapor contacting the wetted surface of said coil.

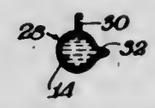
3,270,524
SOLUTION HEAT EXCHANGE ARRANGEMENT IN ABSORPTION REFRIGERATION SYSTEM
Lowell A. McNeely, Indianapolis, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,806
5 Claims. (Cl. 62—495)



1. An absorption refrigeration system comprising:
(A) an absorber for absorbing refrigerant vapor;
(B) an evaporator for evaporating refrigerant and providing a cooling effect;
(C) a generator for concentrating weak absorbent solution by vaporizing refrigerant thereform;
(D) a condenser for condensing refrigerant vaporized in said generator;
(E) a solution heat exchanger for passing strong solution from said generator to said absorber in heat exchange relation with weak solution passing from said absorber to said generator;
(F) a generator reservoir connected to receive weak absorbent solution from said solution heat exchanger and to pass said weak solution to said generator, said generator reservoir comprising:
(1) a substantially horizontal solution passage for storing weak absorbent solution passed to said reservoir from heat exchanger and passing it to said generator,
(2) a substantially horizontal vapor passage for passing vapors formed in said generator to said condenser, and

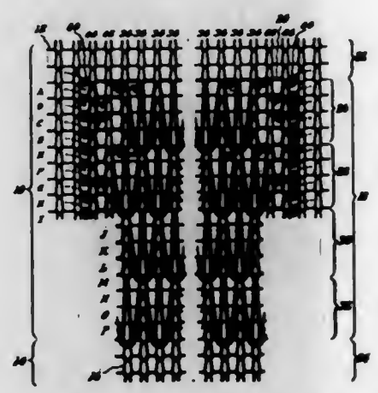
(3) a substantially horizontal heat exchanger disposed in said generator reservoir for passing strong solution from said generator in heat exchange relation with weak solution in said reservoir to boil said weak solution, said heat exchanger having a plurality of portions thereof submerged below the level of weak solution in said generator reservoir and said heat exchanger having a plurality of portions thereof above the level of weak solution in said generator reservoir and extending into said vapor passage so that boiling of weak solution in said reservoir wets the portions of said heat exchanger in said vapor passage to effect a mass and heat transfer between vapor in said vapor passage and weak solution in said reservoir.

3,270,525
PERFUME DISPENSING JEWELRY WITH FRANGIBLE PORTION
Robert S. Sellers, Huntington, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 28, 1964, Ser. No. 340,664
1 Claim. (Cl. 63—1)



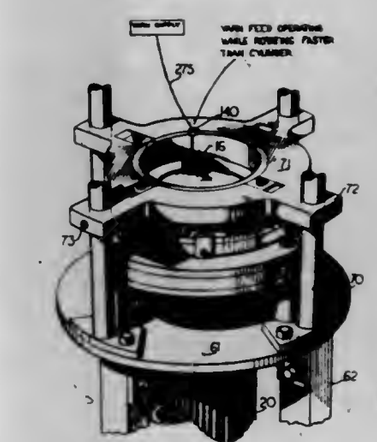
A disposable fragrance dispenser comprising a body having securing means thereon adapting said body to be worn on the person, said body comprising a small imperforate hollow container of rigid plastic containing perfume, said container having a protuberance means having a hollow interior communicating with the hollow of said container, said protuberance means being adapted to be cut off to provide a vent of from about 0.02 to 0.05 inch diameter, whereby said perfume will slowly escape in the form of vapor to permeate the air surrounding the wearer.

3,270,526
RUN-STOP BAND FOR HOSIERY
Vernon T. Stack and Thomas B. Reavis, Winston-Salem, N.C., assignors to Hanes Corporation, a corporation of North Carolina
Filed June 3, 1963, Ser. No. 284,967
1 Claim. (Cl. 66—172)



In a circular knit stocking having body yarn in connected courses forming continuous wales subject to the formation of runs, a run-stop band extending across the back of said stocking and bordering the heel thereof, said band having in each course thereof, within said band, an auxiliary yarn knit with said body yarn, said auxiliary yarn being a curl-type stretch yarn, selected wales of said band being composed of a plurality of successive plain stitches and of at least one tuck stitch, said tuck stitches in some wales being staggered with respect to the tuck stitches in other wales, the auxiliary yarn in each course of said band being knit with said body yarn in terminal plain stitches at each end of said band, the terminal plain stitches at each end of said band being disposed in the same wale, and the auxiliary yarn being trimmed close to said terminal stitches so that the trimmed ends of said auxiliary yarn curl and thereby contract toward the fabric to secure the auxiliary yarn within the run-stop band.

3,270,527
CIRCULAR KNITTING APPARATUS AND METHOD ADAPTED TO CONTINUOUS ROTATIVE KNITTING OF PARTIAL COURSES
Zephyr Monday, Mount Airy, N.C., assignor to U-Stretch Corporation, Mount Airy, N.C., a corporation of North Carolina
Filed Oct. 24, 1963, Ser. No. 318,707
32 Claims. (Cl. 66—141)



5. The method of operating a rotatable stitch cam in a circular knitting machine having a needle cylinder in continuous rotation which comprises the steps, during each revolution of the cylinder, of holding said stitch cam stationary at a fixed station while some predetermined number of needles pass through said station, then rotating said stitch cam around the axis of said cylinder at a speed exceeding the speed of said cylinder, positioning said predetermined number of needles with said stitch cam while said stitch cam is moving past such needles at such excess speed and bringing said stitch cam back to a fixed position at said station ahead of said needles.

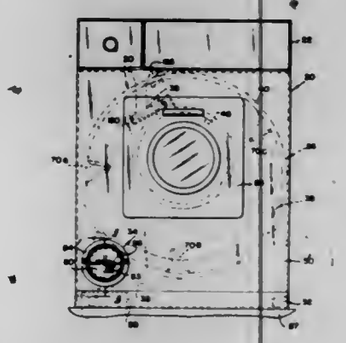
3,270,528
POCKET CIGARETTE LIGHTERS
Jerome Gevirman, 1025 5th Ave., New York, N.Y., and Lawrence T. Ward, Hester St., Portland, Pa.
Filed Dec. 4, 1964, Ser. No. 416,057
5 Claims. (Cl. 67—7.1)



1. A cigarette lighter comprising, in combination, a fuel tank, a valve housing in the tank, a spring pressed valve in the housing for normally closing the valve from passage therefrom of fuel, an internally threaded pocket

in the valve housing, an upper body member, a plug within a chamber of said body member and having a threaded outwardly projected and normally exposed end, whereby the fuel tank may be held by such plug with the tank in abutment with said body member, a hollow finger depending from the plug and adapted to depress and open the valve of the fuel tank when said tank is threaded upon the upper body member, a porous member in the plug and above its hollow finger, a second valve housing which is threaded in the plug above said porous disk, a spring pressed nozzle valve in said second valve housing, a cover for said upper body member pivoted on the latter, spring means acting upon said cover, a lift-lever carried by the cover and engaging the nozzle valve to lift the latter when the cover is raised, a friction wheel and a spring pressed flint carried by said upper body member, and manual means projected from said upper body member for rotating the valve housing to apply a compression force on said porous member and for releasing such force.

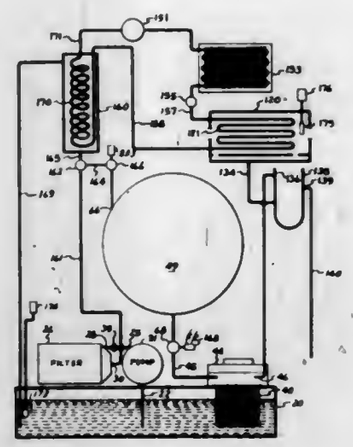
3,270,529
LAUNDRY EQUIPMENT
Lewis O. Engel, Euclid, Ohio, assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Feb. 25, 1964, Ser. No. 347,296
9 Claims. (Cl. 68—18)



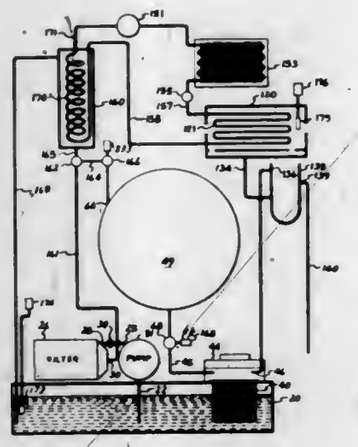
3. A receptacle for tumbling clothes or the like in a washer or dryer upon rotation of said receptacle in a predetermined direction, said receptacle having an essentially cylindrical wall, and baffle means for subjecting said clothes to a series of driving impulses at regularly increasing intervals including first, second and third clothes engaging baffles projecting inwardly from said wall, the circumferential spacing between said baffles in a direction opposite to said predetermined direction being such that said first and second baffles are spaced less than said second and third baffles, said second and third baffles are spaced less than said third and first baffles, said baffles extending essentially parallel to the axis of said receptacle essentially the full length of said receptacle.

3,270,530
DRY CLEANING MACHINE
Clifford F. Czech, Ripon, Wis., assignor to McGraw-Edison Company, Ripon, Wis., a corporation of Delaware
Original application July 31, 1963, Ser. No. 298,899, now Patent No. 3,250,097, dated May 10, 1966. Divided and this application June 30, 1965, Ser. No. 482,000
2 Claims. (Cl. 68—18)

1. In a clothes washing machine for use with volatile cleaning solvents, the combination comprising a clothes treating tub, a solvent reservoir for receiving solvent drained from said tub, means for circulating solvent from said reservoir, conduit means for conducting solvent from said circulating means to said tub for washing clothes in said tub, air circulating means including a solvent condenser and a heater for supplying dried heated air to said tub for drying the clothes, said air circulating means also including a blower for withdrawing air from said tub and a diverter valve for selectively directing air from said blower to exhaust and to said condenser, said condenser including a main air passage therethrough having a plurality of cooling fins therein and a by-pass channel of small cross section around said cooling fins for free passage of air upon blockage of the main air passage by the formation of ice on said cooling fins, and means for draining condensed solvent from said condenser to said reservoir.

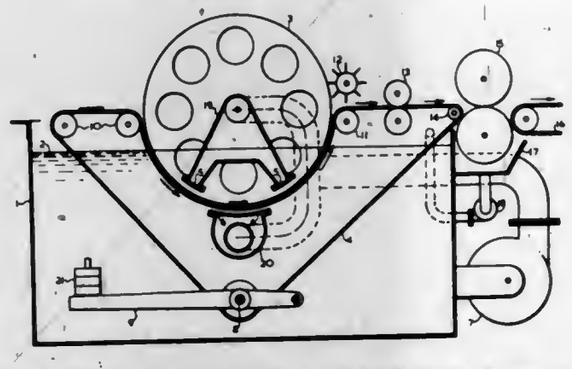


3,270,531
DRY CLEANING MACHINE
Clifford F. Czech, Ripon, Wis., assignor to McGraw-Edison Company, Ripon, Wis., a corporation of Delaware
Original application July 31, 1963, Ser. No. 298,899, now Patent No. 3,250,097, dated May 10, 1966. Divided and this application June 30, 1965, Ser. No. 482,002
2 Claims. (Cl. 68—18)



1. A clothes cleaning machine for use with volatile organic solvents comprising, in combination, a framework for supporting said machine, a clothes treating tub mounted on said framework, a solvent tank forming the base for said framework for receiving solvent drained from said tub and storing the same, pump means for circulating solvent from said tank, solvent filter means having a powdered filter material therein, a first conduit interconnecting the outlet of said pump means to said filter means, said conduit having means forming an orifice therein of smaller diameter than said conduit for reducing the formation of channels through said powdered material, a second conduit means for interconnecting said filter to an upper portion of said tub.

3,270,532
DEVICE FOR TREATING A MASS OF LOOSE FIBERS
Malcolm Chaikin, Maroubra, New South Wales, and Alexander Samson, Greenwich, New South Wales, Australia, assignors to Unisearch Limited, Kensington, New South Wales, Australia, a corporation of New South Wales
Original application Sept. 28, 1962, Ser. No. 226,932, now Patent No. 3,199,126, dated Aug. 10, 1965. Divided and this application Mar. 30, 1965, Ser. No. 443,795
Claims priority, application Australia, Oct. 18, 1961, 10,381/61
7 Claims. (Cl. 68—45)



1. A device for treating a mass of loose fibres, such as wool fibres and the like, comprising, in combination, a treatment liquid reservoir, an endless conveyor of a porous material permitting the passage of liquid therethrough, having an intermediate portion of its run submerged in the treatment liquid in said reservoir, and traveling along a path fixed with respect to said reservoir and the treatment liquid, and opposite end portions of its run disposed outside the treatment liquid; means, including a drum and said endless conveyor, effective initially to compress a layer of fibres on said conveyor in advance of transport of such layer through the treatment liquid; means, including said endless conveyor, effective to maintain such layer of fibres compressed on said conveyor during passage of such layer through the treatment liquid; means operable to direct a high velocity jet of treatment liquid through the layer of compressed fibres while the layer is being transported through the treatment liquid; and means, including said conveyor to maintain the fibers under a sufficient degree of compression to prevent entanglement of the fibers while they are being treated with the jet of treatment liquid and, effective only after emergence of the layer of compressed fibres from the treatment liquid on the endless conveyor, to release the pressure applied to the layer of compressed fibres.

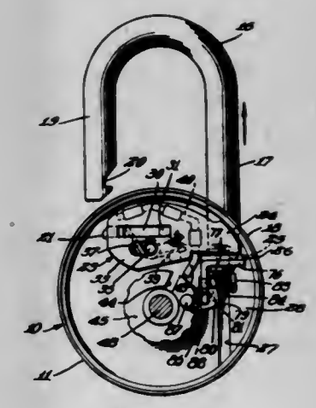
3,270,533
CONTROL FOR WRINGER ROLLS
Robert A. Brenner and Clifton A. Cobb, St. Joseph, and Carrol A. Orr, Stevensville, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Sept. 11, 1964, Ser. No. 395,687
7 Claims. (Cl. 68—244)

2. In combination,
a household clothes wringer,
compression rolls in said wringer,
a motor connected to drive said rolls,
an electrical circuit including said motor,
electrically actuated motor control means in said circuit capable of reversing the operation of the motor when triggered,
a microphone in the immediate vicinity of said wringer and connected in said circuit, and



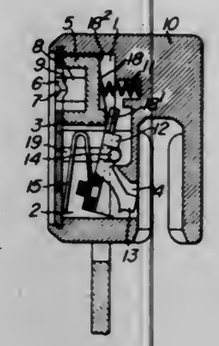
an amplifier in said circuit to trigger said motor control means in response to a sound picked up by said microphone.

3,270,534
PADLOCK
George P. Junkunc, Palos Heights, Ill., assignor to Junkunc Bros. American Lock Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 26, 1964, Ser. No. 406,360
5 Claims. (Cl. 70—25)



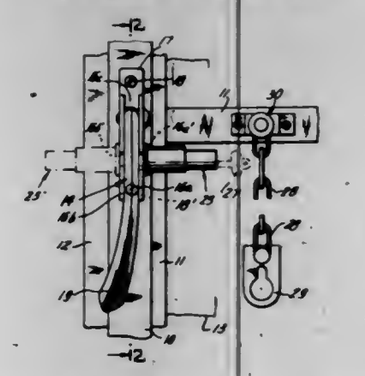
1. In a padlock, a casing, a shackle having parallel legs of unequal length, and guided for movement with respect to said casing on the long leg thereof, a latching notch on the short leg of said shackle, a rockable latch bolt housing rockingly mounted within said casing and having a latch bolt slidably mounted therein for engagement with said latching notch, permutation mechanism comprising a plurality of rotatable tumbler disks, a tongue projecting from said latch bolt housing for engagement with the peripheries of said disks to maintain the latch bolt housing in a latching position, slots in said disks opening to the peripheries thereof for receiving said tongue and accommodating release movement of said latch bolt housing, a dial knob and dial on the outside of said casing for turning one of said disks and effecting the successive turning of the other of said disks to align the slots therein to receive said tongue and accommodate the opening of the padlock, an upsetter pawl on the long leg of the shackle engageable with one of said disks upon outward movement of the shackle to misalign said slots and hold said latch bolt casing in operative latching position, and a spinning pawl yieldably mounted on the long leg of the shackle and positioned by the upsetter pawl as the tumbler disk engaged by said upsetter pawl is upset and the shackle is moved to its outer position to engage the disk having the dial knob secured thereto for spinning the dial knob and dial off the last number of the combination as said shackle is moved within the casing to lock the padlock.

3,270,535
LOCKABLE SLIDERS FOR ZIPPER-FASTENERS
Takeo Fukuroi, Uozu-shi, Japan, assignor to Yoshida Kogyo K.K., Tokyo, Japan, a corporation of Japan
Filed Oct. 28, 1964, Ser. No. 407,199
Claims priority, application Japan, Jan. 22, 1964, 39/2,821
3 Claims. (Cl. 70—68)



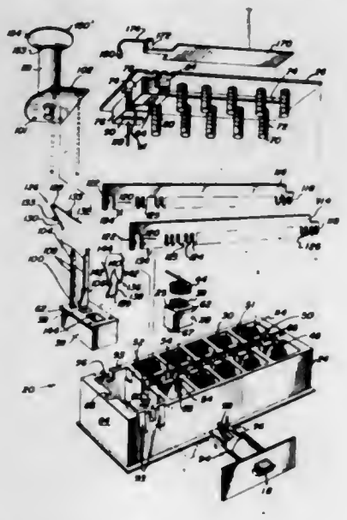
1. A lockable slider for a zipper fastener, the slider comprising a slider body having, formed therein, an upwardly opening forward bore and an upwardly opening rearward recess in communication with each other, a cylindrical cam element rotatably received in said bore and having a slanted annular cam face at the inner end and a key hole in the upper portion, a cover plate closing said forward bore and provided with a key hole formed in registration with said key hole of said cam element, the cover plate closing also said rearward recess, a lever member pivotally mounted in said rearward recess with the fore end in engagement with said slanted annular cam face, a resilient means for biasing the rear end of said lever member downwardly, and a locking pawl member formed on the rear end of said lever member for cooperation with a fastener chain, known per se, of said zipper fastener, when the rear end of said lever member has been moved to the downward limit of its movement in which the fore end of said lever member is held in engagement with the lowest point of said slanted annular cam face by force of said resilient means.

3,270,536
COMBINED CASEMENT WINDOW LATCH WITH LOCKING MEANS
Abraham Sprung, Flushing, N.Y.
(2200 Central Road, Fort Lee, N.J. 07024)
Filed June 2, 1965, Ser. No. 460,725
8 Claims. (Cl. 70—89)



1. A locking device for a hinged casement window having a sash swinging outwardly and closing against a jamb and having a striker plate mounted thereon, comprising a bracket mounted on the inside of said jamb and having a pair of spaced ears, a latch hingedly mounted between said ears and having a latching finger extending through said jamb to engage the striker plate and latch said sash, a handle carrying said finger swinging inwardly from said jamb and having a generally U-shaped portion located below said hinge, at least one of said ears being provided with an opening located adjacent said U-shaped portion, key-operated locking means on said one of said ears and having a locking element adapted to extend through said opening and into the space defined by said U-shaped portion whereby said handle is locked against movement for locking said window against said jamb.

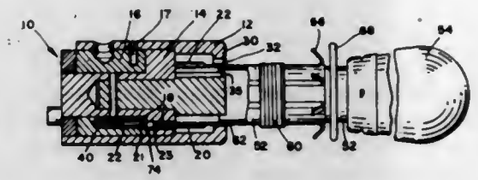
3,270,537
PUSH-BUTTON OPERATED COMBINATION LOCKS
Albert C. Sanowskis, 7321 S. South Shore Drive, Chicago, Ill.
Filed Sept. 10, 1964, Ser. No. 395,372
26 Claims. (Cl. 70—313)



1. In a button operated combination lock of the character described and having a plurality of buttons requiring the consecutive depression of a chosen sequence of said buttons to effect the change of said lock from an initial lock condition to an open condition, and including a lock controlling device coupled to said buttons and shiftable step-by-step in one direction to pass a latch controlling bolt therethrough to release the latch but only upon depression of the proper sequence of said chosen buttons and wherein depression of said buttons in other but the predetermined sequence serves to disable the lock controlling device; means for resetting the lock controlling device to the initial lock condition comprising, scissors lever means operable on the lock-controlling device, bolt-withdrawal means cooperable simultaneously with said scissors lever means to release said lock-controlling device for resetting and actuating means to operate simultaneously both the scissors lever means and said bolt-withdrawal means.

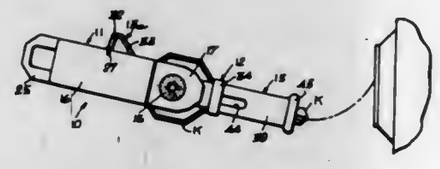
3,270,538
TAMPER-PROOF AXIAL TUMBLER LOCK
William J. Kerr, Glenview, Ill., assignor to Chicago Lock Company, Chicago, Ill., a corporation of Illinois
Filed June 11, 1965, Ser. No. 463,102
4 Claims. (Cl. 70—363)

1. A tamper-proof axial tumbler lock of the character described, and comprising a lock cylinder having an open front rim for insertion of a key therethrough, a front rotatable part and an annular sleeve-like rear stationary part disposed within said cylinder and presenting relatively slidable faces which meet each other on an interfacial plane normal to the axis of the cylinder, an annular series of longitudinally extending bores formed in said stationary part, arranged in circumferentially spaced relationship therearound and no less in number than four, a corresponding annular series of longitudinally extending bores formed in said rotatable part and similarly arranged therearound, said rotatable part being movable between a position wherein the respective bores of the two parts are in alignment and the lock is in its locked condition and a position wherein such bores are out of alignment and the lock is in its unlocked condition, a split tumbler for each pair of aligned bores including a driver pin slidable in the respective bore of the rotatable part and a follower pin slidable in the respective bore of the stationary part, and a helical spring disposed in each bore of the stationary part rearwardly of the associated follower pin and serving normally to urge the latter forwardly, certain of the springs being of substantially equal spring rate and at least one other of the springs having a spring rate of no less



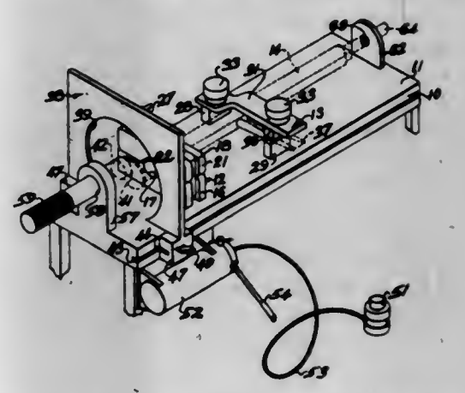
than twice the spring rate of each of said certain springs in order to render the lock more difficult to pick by use of a picking tool comprising a cylindrical shank shaped for insertion into the open front rim of the lock cylinder and provided in its outer periphery with an annular series of longitudinally extending open-ended grooves corresponding in number and position to the bores in the rotatable part of the lock and adapted upon insertion of the shank into said open front rim of the lock cylinder to register with the outer ends of the last mentioned bores, tumbler-engaging fingers corresponding in number to and longitudinally slidable in the grooves respectively, and means for frictionally holding the fingers in the various adjusted positions which they assume in their respective grooves in connection with normal use of the picking tool.

3,270,539
AUTOMATIC KEY REMOVER
Walter F. Hirsch, 6721 SW. 26th St., Miami, Fla.
Filed Nov. 23, 1964, Ser. No. 413,223
8 Claims. (Cl. 70—414)



1. An automatic key remover comprising, in combination, a housing member, an elongated opening in said housing member, a key guide member slidingly received in said housing opening, means constraining said key guide member to longitudinal movement with respect to said housing opening, a sliding sleeve member telescopingly received within said key guide member for in and out longitudinal movement with respect thereto, means limiting the longitudinal movement of said sliding sleeve member at inner and outer positions with respect to said housing member, means in said housing opening for yieldingly urging said sliding sleeve member to its outer limit position with respect to said key guide member, latch means for retaining said sliding sleeve member in withdrawn relation with respect to said key guide member against the urging of said urging means, said sliding sleeve member having a central slot of such width as to receive a flat key with the shank of the key projecting outwardly of the outer end of said sliding sleeve member, the outer end of said sliding sleeve member having abutment means for contact with outside portions of a key lock when the key is inserted within the lock by pushing upon said housing member, whereby said sliding sleeve member will be telescopingly received within said key guide member and said housing member opening.

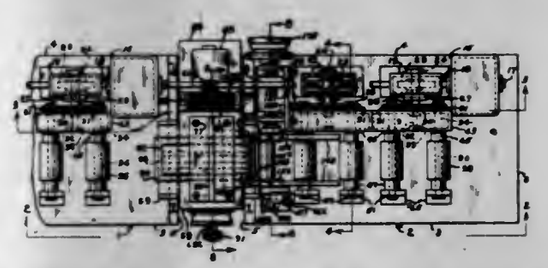
3,270,540
APPARATUS FOR STRAIGHTENING BENT ARTICLES
Arthur C. West, Drawer 752, Cleveland, Miss.
Filed July 30, 1963, Ser. No. 298,665
1 Claim. (Cl. 72—31)



Apparatus for straightening a bent cam arm of a bar for holding cotton picker spindles comprising:

(a) a supporting frame,
(b) means carried by said frame for detachably securing said bar to said frame,
(c) a backing member extending generally perpendicular to and connected adjustably to said frame and having a curved inner surface disposed to surround the cam arm of said bar at selected positions,
(d) an extensible power unit disposed for one end thereof to engage said inner surface of the backing member and the other end thereof to engage a portion of said cam arm to exert a straightening force against said cam arm,
(e) an upstanding bracket carried by said frame and extending parallel to said backing member, and
(f) a movable gauge member mounted for sliding movement at right angles to said bracket and having a recess therein in position to receive the cam portion of said arm when said cam portion is in proper position.

3,270,541
ROLLING, CUTTING, AND NOTCHING MACHINE
Paul Tishken, 13000 W. Eight Mile Road, Detroit, Mich.
Filed Nov. 4, 1963, Ser. No. 321,067
8 Claims. (Cl. 72—132)



1. A machine to initiate and progressively develop one or more desired contours extending longitudinally of flat, elongated stock material, following a path of travel through said machine, and to sever said stock into desired lengths and strike notches in one or more of said con-

tours in the course of said development, said machine including,

(a) a plurality of pairs of rollers, said stock passing between the rollers of each pair, each said pair of rollers being contoured to apply such contour to said stock, said pairs being disposed to sequentially receive and pass the stock to progressively develop said desired contours,

(b) a stationary die bed disposed along said path of travel in a position corresponding to a predetermined stage of contour development,

(c) a movable die bed, similarly disposed and actuable to move to and from the stationary bed.

(d) a first die holder mounted upon said stationary bed,

(e) a second die holder carried by the movable bed,

(f) an acting die carried by the second die holder,

(g) a passive die mounted on the first die holder,

(h) means to actuate the movable die bed to and from the stationary die bed to cause said dies to coact to sever and notch the stock at said predetermined stage,

(i) a first slideway formed on the stationary die bed, and said first die holder (d) being mounted on said first slideway for reciprocable sliding travel thereon,

(j) a second slideway formed on the movable die bed, and said second die holder (e) being carried on said second slideway, for reciprocable sliding travel thereon,

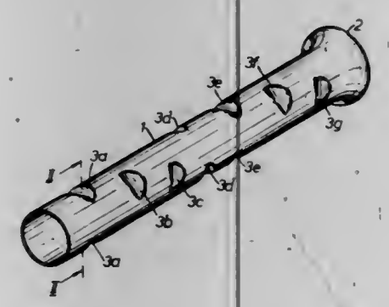
(k) means interconnecting said die holders to afford simultaneous sliding travel thereof on said slideways,

(l) drive means to advance die holders in said reciprocable sliding travel at the speed of and in the direction of stock travel concurrently with actuation of said means (h) to actuate said movable bed, and

(m) drive means to retract said die holders in said reciprocable travel,

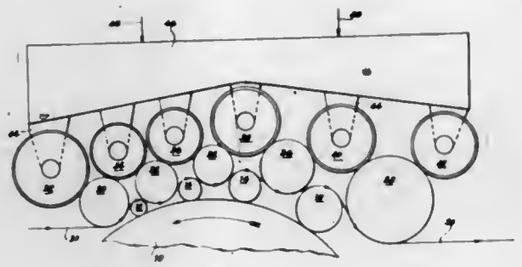
whereby said stock may be severed and notched at a suitable stage of contour development to afford minimum distortion of stock material.

3,270,542
TUBE-STRAIGHTENING TOOLS
William Horace Kennedy, 41 The Drive, Harefield Place, Uxbridge, Middlesex, England
Filed Feb. 28, 1964, Ser. No. 348,058
Claims priority, application Great Britain, Mar. 7, 1963, 9,140/63
5 Claims. (Cl. 72—160)



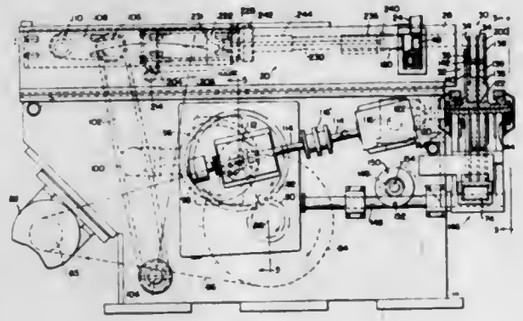
1. A tube-straightening tool comprising a hollow tubular member having an inner tubular surface, and a plurality of rounded projections on said inner surface, defined by corresponding spaced indentations of the tubular member and extending internally thereof, the crests of the said projections together defining a channel whose transverse width is substantially equal to the outer diameter of the tube to be straightened.

3,270,543
MACHINE FOR FLATTENING AND CURLING OF METAL STRIP
Natalis H. Polakowski, Wilmette, Ill., assignor to The McKay Machine Company, Youngstown, Ohio, a corporation of Ohio
Filed Aug. 17, 1964, Ser. No. 390,167
11 Claims. (Cl. 72—162)



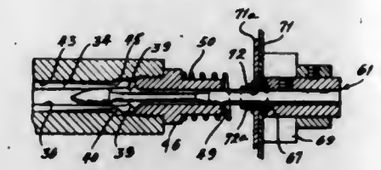
1. An apparatus for flattening and curling of metal strip comprising a set of flexing rolls, means for moving said strip through said apparatus whereby one surface of said strip passes through in engagement with said flexing rolls on one side thereof, a large back-up roll for said flexing rolls, said back-up roll engaging said flexing rolls on the opposite side thereof, a set of deflector rolls, each roll in said set of deflector rolls alternating with a roll in said set of flexing rolls, said deflector rolls engaging the opposite surface of said strip, and support rolls for engagement with said deflector rolls, and wherein the flexing rolls are mounted for free floating movement between the strip and the back-up roll.

3,270,544
CAN FORMING APPARATUS
Edward G. Maeder, Chesterfield County, and Guido Kraus, Chester, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,740
22 Claims. (Cl. 72—346)



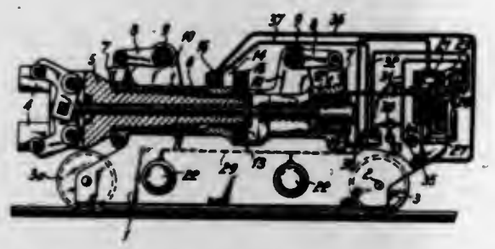
1. In combination: a generally horizontal cylindraceous drawing die construction having an entrance end and a discharge end; a blank feeder adjacent said entrance end; an indexing star wheel construction adjacent said discharge end, rotatable about a horizontal axis and having a plurality of circularly arranged radially outwardly directed, channel shaped drawn can receiving star cavities each of which is temporarily stationary and aligned with said die construction adjacent the top portion of said star wheel during the indexing stops; and a punch construction reciprocable into and out of said feeder, through both ends of said die construction, and into said temporarily stationary and aligned star cavity to deposit and gravitationally maintain a drawn can in said star cavity; and stripping means to strip said drawn can off said punch construction as said punch is reciprocated out of said star cavity.

3,270,545
FASTENING APPARATUS AND METHOD
Stanley F. Jackes, University City, Salvatore Strano, St. Louis, and Raymond T. Wheeler, Bridgeton, Mo., assignors to Jackes-Evans Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed July 16, 1963, Ser. No. 295,477
9 Claims. (Cl. 72—391)



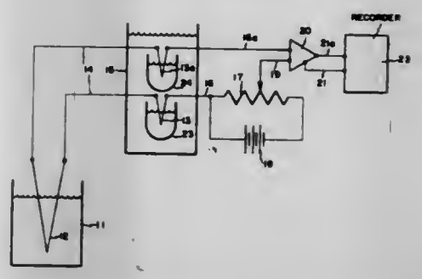
1. A tool combination for applying hollow grommets comprising a first tool including a frame, a cylinder mounted on the frame, a piston movable within said cylinder, a lever pivotally attached to the tool and movable with the piston, a fixed collet mounted on the tool, said collet having deflectable spring-like fingers on its outermost end, inwardly directed retaining means on the fingers adjacent to their outermost ends, a barrel slidably positioned on the collet in engagement with the lever and movable therewith in response to movement of the piston, said barrel having an active and an inactive position, and cooperating means on the inner surface of the barrel and the outer surface of the collet fingers to urge the fingers together as the barrel is moved over the collet toward its active positive to grasp firmly an elongated extension positioned in the collet, the collet fingers opening up and resuming their original position when the barrel is returned to its inactive position to release said elongated extension position in the collet, and a grommet positioning tool positionable on the opposite side of a work piece independently of the first tool comprising means for engaging one end of a hollow grommet, and said elongated extension being passable through a hollow gommet and an opening in a work piece, and adapted to be gripped in said collet.

3,270,546
DRIVES FOR FORGE TONGS
August Theodor Wuppermann, Leverkusen-Schlebusch, Germany, assignor to Hydraulik G.m.b.H., Duisburg, Germany
Filed Dec. 28, 1960, Ser. No. 78,901
Claims priority, application Germany, Dec. 28, 1959, H 38,265; Jan. 16, 1960, H 38,401
11 Claims. (Cl. 72—419)



1. In a forge tongs, in combination, at least one rotary component; hydraulic motor means operatively connected to said rotary component for rotating the same; a hydraulic pressure accumulator communicating with said motor means for driving the same, said hydraulic pressure accumulator including a cylinder, a piston extending transversely through said cylinder and engaging with its peripheral surface the inner surface of said cylinder so as to be slidably guided therein, and a piston rod extending from said piston slidably through an end of said cylinder to the exterior thereof; pump means rotating only in one direction communicating with the interior of said cylinder on one side of said piston for delivering liquid under pressure to the interior of said cylinder at said one side of said piston to displace said piston in said cylinder and increase the volume in said cylinder on said one side of said piston; gas pressure means communicating with the interior of said cylinder on the other side of said piston for supplying gas under pressure to the interior of said cylinder at said other side of said piston, the volume in said cylinder at said other side of said piston decreasing during operation of said pump means to supply liquid under pressure to the interior of said cylinder on said one side of said piston; motion transmitting means carried by said piston rod at the exterior of said cylinder for movement with said piston rod; and control means located in the path of movement of said motion transmitting means and cooperating with said pump means to terminate the supply of liquid under pressure to said one side of said piston in said cylinder when the volume in said cylinder on said other side of said piston has been decreased to a predetermined extent.

3,270,547
THERMOCOUPLE CALIBRATION SYSTEM
Arthur L. MacRitchie, Morristown, and George E. Conklin, North Plainfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,403
2 Claims. (Cl. 73—1)

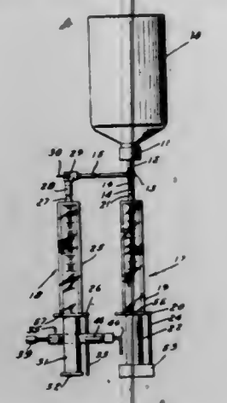


1. A method for calibrating thermocouples which comprises immersing the hot junction of a thermocouple to be tested in an accurately known temperature standard, immersing the cold junction in a second, accurately known temperature standard, thereby generating an electric potential signal corresponding to the differential temperature of the said standards; passing the said generated electrical potential signal through a potentiometric meter; introducing a reference electrical potential signal in said potentiometric meter, said reference electrical potential signal having a value corresponding to that produced under the same temperature differential by a standard thermocouple of the same type as the said thermocouple being tested; taking the electrical difference between said generated electrical potential signal and said reference electrical potential signal; amplifying the resulting electrical potential difference signal and then recording the said electrical potential difference signal.

3,270,548
CALIBRATING SYSTEM FOR PROPORTIONING SYRINGE
Jacob P. Marbach, 17736 Kinzie St., Northridge, Calif.
Filed July 20, 1964, Ser. No. 383,842
6 Claims. (Cl. 73—1)

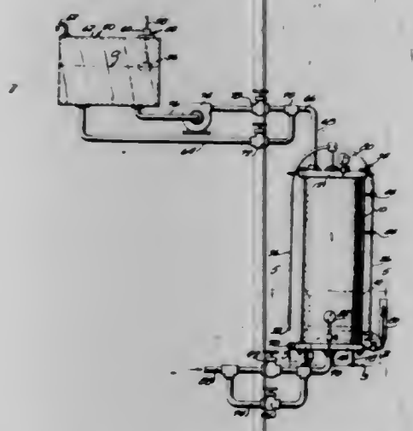
1. A method of calibrating a proportioning syringe having a plunger and a setting rod thereon from a master syringe comprising placing a predetermined precise amount of liquid in said master syringe, passing said precise amount of liquid to said proportioning syringe

and displacing the plunger thereof by a corresponding amount, temporarily securing said plunger to said setting rod at a location wherein said setting rod is in setting engagement with said proportioning syringe, then



supporting said plunger and said setting rod in a fixed location and fastening a handle jointly to adjacent ends of said plunger and said setting rod to anchor them firmly together in calibrated relationship.

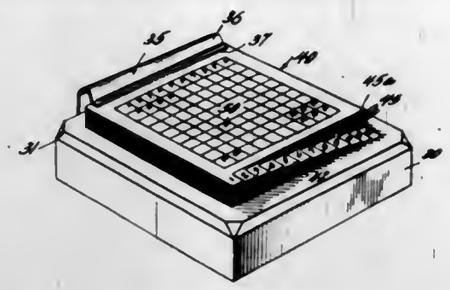
3,270,549
FLUID METER CALIBRATING DEVICE
William R. Martin, 1627 Beach Drive SE., St. Petersburg, Fla.
Filed Aug. 14, 1964, Ser. No. 389,749
7 Claims. (Cl. 73—3)



1. A device of the character described, comprising a closed cylinder having first and second ends, a piston working in said cylinder, a piston rod fixed to the piston and working through said first end of the cylinder, a vented oil reservoir, an oil transfer pipe leading from the reservoir through said first end, and providing for an oil cushion in the transfer pipe and in the cylinder between said first end and the piston, an external oil displacement gauge operatively connected to the piston rod, and a gas input pipe leading into the cylinder through said second end of the cylinder between the said second end of the cylinder and the piston, said input pipe being adapted to be connected to a meter-equipped source of gas under pressure.

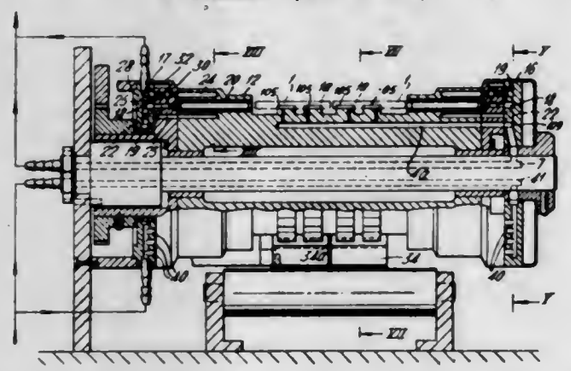
3,270,550
IMPACT TOOL TESTER
Ernst Sussman, Biery's Bridge Road, Bethlehem, Pa.
Filed May 13, 1963, Ser. No. 279,982
5 Claims. (Cl. 73—11)

1. A testing device for measuring and calibrating the intensity of a blow delivered by an impact tool, said device comprising, in combination, a heavy rigid anvil-like metal base, a pad of pressure-sensitive impression-transferring sheets disposed upon said base, clamping means for detachably securing said pad to said base, a multiplicity of similar areas on each of said sheets upon which the impact delivering head of said tool may be applied and the tool actuated to deliver the blow, indicia correspondingly designating the said areas on all of said sheets, markings thus being impressed upon the surfaces



of said sheets in downward succession through the pad through such number of sheets as determined by the force of the blow, each of said sheets provided with a protruding tab, the tabs being numbered successively from top to bottom of the pad, all whereby the number of the last sheet showing an impression yields a measure of the effective impact of the tool.

3,270,551
ARTICLE TESTING DEVICES
Konrad Schmalz, Bremen-Hemelingen, Germany
Filed Apr. 7, 1964, Ser. No. 357,908
Claims priority, application Great Britain, Apr. 9, 1963, 14,117/63
8 Claims. (Cl. 73—38)

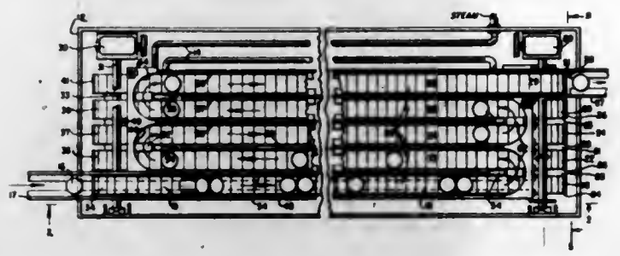


1. A device for testing articles, such as cigarettes, having a substantially air-impervious wrapper of generally tubular form enclosing an air-pervious filler, comprising a testing chamber having an open end, means for bringing an article to be tested to a loading position in alignment with said chamber and adjacent said open end thereof, and means for applying suction to said chamber so that atmospheric pressure urges any article at the loading position into said chamber, said testing chamber having restricted end portions so shaped that when an article of correct size is placed in said chamber, the wrapper engages the walls of said chamber adjacent the ends of the article, said chamber being of greater cross-section between said end portions so that an annular space surrounds the article, the suction means being connected to said space.

3,270,552
CONTAINER PROCESSING BATH
Hugh L. Davis, Glen Ellyn, Ill., assignor to Chase Products Company, Broadview, Ill., a corporation of Illinois
Filed Sept. 25, 1963, Ser. No. 311,564
13 Claims. (Cl. 73—41.2)

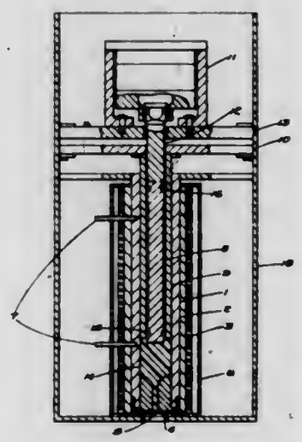
1. Container processing apparatus which comprises, a longitudinally extending, water containing tank having heating means disposed therein, first and second looped

conveyer belts, each having an upper reach disposed for providing a planar transporting surface for materials disposed thereon, means for driving said belt reaches to motion in opposite directions, a planar end plate disposed above said reaches toward an extreme and thereof corresponding to the direction of motion of said first reach, said



end plate comprising a curvilinear surface concave in the direction of motion of said second reach, said concave surface embracing said reaches, and a fixed transition plate disposed between reaches, whereby material placed on said first reach is moved laterally to said second reach by said curvilinear surface upon passage of said first reach under said end plate.

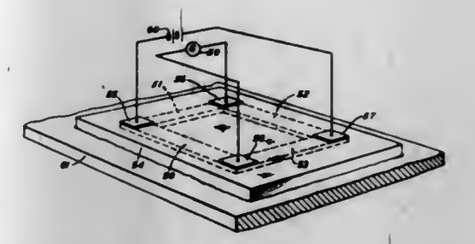
3,270,553
RHEOMETER
Richard L. Ballman, Granby, and Albert W. Wotring, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,695
5 Claims. (Cl. 73—56)



1. A capillary extrusion rheometer which comprises: a housing defining an extrusion chamber; a capillary die disposed in one end of said chamber restricting the outlet thereof; a plunger disposed to reciprocally move in said chamber consisting of: a first member having a surface adapted to slidably engage the walls of said chamber, and a second member concentrically disposed within said first member; means for driving said first and second members in unison relationship; and force measuring means engaging said second member.

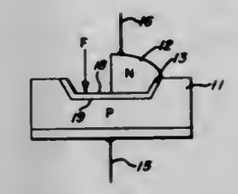
3,270,554
DIFFUSED LAYER TRANSDUCERS
William G. Pfann, Far Hills, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 4, 1961, Ser. No. 80,672
1 Claim. (Cl. 73—88.5)

A piezoresistive strain gage comprising a semiconductor base layer having a piezoresistive diffused layer formed integrally therewith, said diffused layer having a geometry in the plane of the gage of four elongated strips joined end to end to form a parallelepiped and four electrical contacts attached to said diffused layer at the ap-



proximate intersection of the strips, said contacts connected in a Wheatstone bridge circuit such that the piezoresistive effects in opposite arms will add.

3,270,555
STRESS SENSITIVE TUNNEL DIODE TRANSDUCER
Wilhelm Rindner, Lexington, Mass., and Roger F. Nelson, Mountain View, Calif., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Sept. 24, 1963, Ser. No. 311,013
3 Claims. (Cl. 73—88.5)

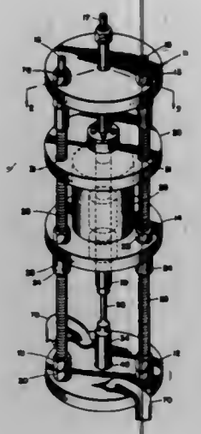


1. A tunnel diode transducer comprising a first layer of semiconductor material of a first conductivity type, a second layer of recrystallized semiconductor material of opposite conductivity type on said first layer and forming a rectifying junction therewith, a metallic alloyed dot on said second layer and of the same conductivity type as said second layer, said alloyed dot covering only a portion of said second layer so as to expose only a portion of the surface thereof, a metal base layer on said first layer, ohmic contacts on said alloyed dot and base layer, and means engaging a restricted area of said exposed surface of said second layer for applying concentrated stress to a restricted volume of the second layer and thereby altering the negative resistance characteristic of said junction.

3,270,556
EXPLOSIVELY ACTUATED TENSILE TESTING DEVICE
Erik K. Henriksen, Downey, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Oct. 10, 1963, Ser. No. 315,142
7 Claims. (Cl. 73—95)

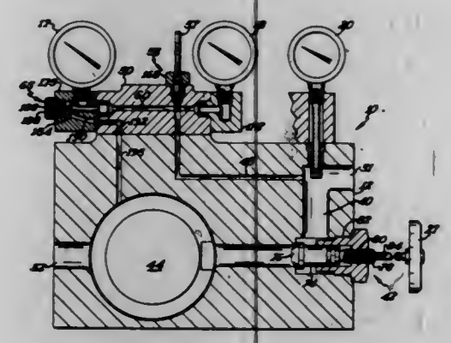
1. A device for testing materials under conditions encountered in explosive forming comprising frame means for securely holding an elongated specimen to be tested, said frame means having movable and stationary members, means for securing one end of the specimen to a movable member and the other end of the specimen to a stationary member to symmetrically dispose the specimen with respect to said frame means, explosive means axially disposed in said frame means intermediate said movable and stationary members, and shield means substantially

surrounding said explosive means so that upon detonation of said explosive means, said movable member will be



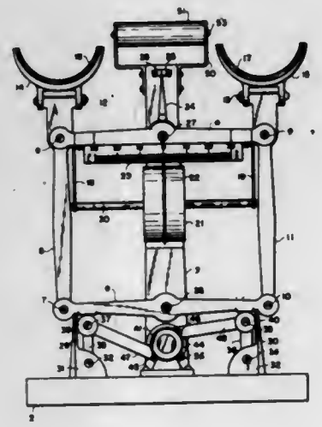
moved away from said stationary member to subject the test specimen to a selected strain rate.

3,270,557
HYDRAULIC CIRCUIT TESTER
Samuel B. McClocklin, Owatonna, Minn., assignor to The Owatonna Tool Company, Owatonna, Minn., a corporation of Minnesota
Filed Mar. 26, 1964, Ser. No. 355,049
11 Claims. (Cl. 73—168)



1. A portable hydraulic circuit tester comprising, a casing having a continuous passageway therethrough, a manifold mounted on said casing and having inlet and outlet ports therein connected to the ends of said continuous passageway in said casing, said ports being adapted to be connected to a hydraulic circuit to be tested whereby fluid under pressure developed in the circuit flows through the tester and back to the circuit, a chamber included within said casing as a part of said continuous passageway, a positive displacement meter positioned in said chamber including shaft means extending through said casing from said chamber and being caused to rotate with flow of a fluid through said chamber, an indicator mounted on said casing and connected to said shaft means to operate in accordance with the rotation of said shaft means and flow of the fluid through said chamber, load varying means positioned in said passageway upstream of said chamber, a second passageway included in said casing and connected to said inlet port, said second passageway having a substantially smaller fluid capacity relative to the capacity of said passageway of said continuous passageway, a high pressure gauge connected in said second passageway, an additional small capacity passageway connected to said high pressure gauge, a low pressure gauge connected to said additional low capacity passageway, pressure responsive valve means included in said additional passageway and adapted upon the presence of a high pressure in said second passageway to isolate the low pressure gauge from said second passageway, and a relief passage included in part in said pressure responsive valve and in part in said casing and adapted to connect the low pressure gauge to said chamber whenever a low pressure gauge is isolated from said second passageway.

3,270,558
CHIROPRACTIC BALANCE
William M. Barret and Clarence H. Clement, Shreveport, La., assignors to Engineering Research Corporation, Shreveport, La., a corporation of Louisana
Filed Dec. 12, 1962, Ser. No. 244,110
3 Claims. (Cl. 73—172)

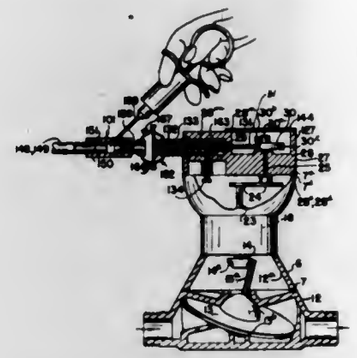


1. A pivoted beam balance for determining the presence and extent of a vertebral subluxation comprising: a horizontally disposed upper beam which is free to turn about a horizontal spindle positioned at the midpoint of said upper beam, a horizontally disposed vertically aligned, lower beam which is free to turn about a horizontal spindle positioned at the midpoint of said lower beam, two rigid rectilinear vertical links each connected by spindles to like ends of said upper beam and said lower beam, said links extending upwardly beyond said upper beam and terminating at their upper ends in ankle cups, a supporting structure to maintain said spindles associated with said beams in spaced and substantially vertical alignment, means for progressively controlling the arcs through which said beams may swing and for locking said beams in their horizontal positions, a pointer attached to one of said beams which registers with a stationary mark on said supporting structure when said beams are in their horizontal positions, a horizontally disposed member attached below one of said beams and along which a weight with index may be moved laterally, and a graduated scale for indicating the lateral position of said weight.

3,270,559
REMOTE METER READING DEVICE
Vernon E. Gleasman, 3808 Kirkwood Road, Cleveland Heights, Ohio, and Claude H. Gleasman, West Leyden, N.Y.
Filed Mar. 7, 1963, Ser. No. 263,575
17 Claims. (Cl. 73—272)

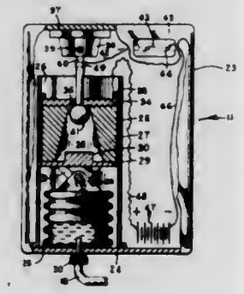
1. A remote meter reading device, comprising
(a) a transmitter unit including an actuating member movably responsive to and generally proportional to a quantity measured,
(b) a receiver unit including a counting register, and
(c) a signal transmittting element connecting the transmitter unit and the receiving unit,

(d) said transmitter unit including a signal transmission means for transmitting in response to movement of said actuating member a signal from said transmitter unit to said register for recording on said register the total quantity measured,
(e) said actuating member being a rotatable drive shaft, and
(f) a fluid meter volumetric measuring base and base connector thereon,



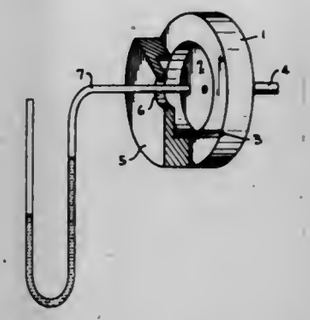
(g) said measuring base usually having a metering head joined thereto by a base connector and held connector respectively thereon, such as found in a water meter,
(h) said transmitter unit having a transmitter unit housing sitting on and secured to said base connector in place of said head,
(i) said transmitter unit housing having a surface located remote from said base and shape differently than said base connector.

3,270,560
CRITICAL CONDITION INDICATOR
Leonard H. Caveny, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Feb. 19, 1964, Ser. No. 345,971
1 Claim. (Cl. 73—344)



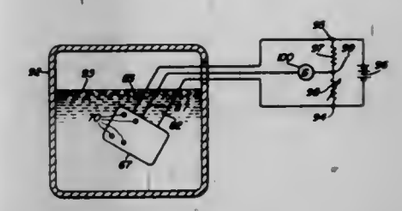
A critical condition indicator for use within a solid propellant rocket motor having a solid propellant therein provided with a central cavity comprising a temperature sensor that is positioned within the cavity within the solid propellant, an indicating assembly positioned externally of the rocket motor, fluid conducting means connecting the temperature sensor to the indicating assembly, said indicating assembly including a movable contact having a frusto-conical shaped cavity therein, a fixed contact positioned within said cavity, actuating means communicating with said fluid conducting means and connected to said movable contact and an inactive electrical circuit between said movable and fixed contacts that is activated when said movable contact is in engagement with said fixed contact.

3,270,561
FLUID PRESSURE RATIO SENSOR
Gary L. Smith, Liberal, Kans., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 24, 1964, Ser. No. 362,534
4 Claims. (Cl. 73—388)



1. A device for measuring the ratio of a second pressure to a first pressure comprising:
(a) first means having no moving parts for establishing a third pressure which is inversely proportional to said first pressure,
(b) second means having no moving parts for causing said third pressure to be directly proportional to said second pressure,
(c) said first means including a body having a circular cavity therein, and
(d) fourth means for introducing a first fluid flow under said first pressure tangentially in said circular cavity.

3,270,562
SOLID STATE HYDROSTATIC PRESSURE GAUGE
Henry Ehrenreich, Arlington, Mass., and Gunther E. Fenner, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 7, 1964, Ser. No. 336,309
16 Claims. (Cl. 73—398)

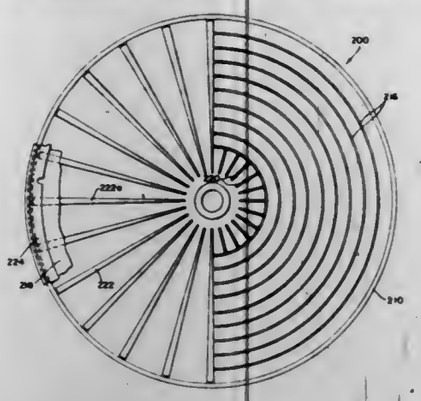


1. A hydrostatic pressure sensor comprising: a body constituted essentially of a direct electron transition semiconductive material and an indirect electron transition semiconductive material, said materials being present in said body in predetermined relative concentrations by molecular weight that cause said body to exhibit first and second conduction band edges having substantially equal energy levels; and, means responsive to variations in the electrical resistivity of said body to provide an indication of changes in hydrostatic pressure exerted on said body independent of the orientation of said body.

3,270,563
APPARATUS FOR ANALYZING FOR PARTICLE SIZE DISTRIBUTION
Thomas D. Sharples, Lansdale, Pa., assignor to Pennsalt Chemicals Corporation, a corporation of Pennsylvania
Filed Oct. 2, 1963, Ser. No. 313,365
12 Claims. (Cl. 73—432)

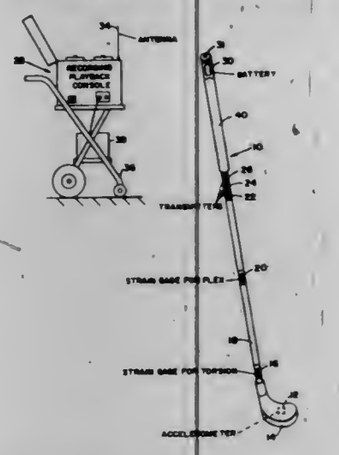
1. An apparatus for assisting in the analysis of particle size distribution comprising a spindle, means to drive said spindle, suspension-receiving chamber means mounted on

the spindle, the chamber means having fixed walls and partitions of different configuration on opposite sides of



the spindle and means to indicate the unbalance of the spindle.

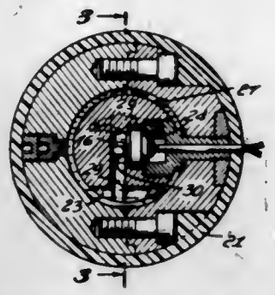
3,270,564
ATHLETIC SWING MEASUREMENT SYSTEM
James W. Evans, 1718 Laverne Drive, Huntsville, Ala.
Filed May 18, 1964, Ser. No. 368,000
22 Claims. (Cl. 73—432)



1. An athletic swing measurement system comprising:
(A) A hand held athletic club having a gripping portion and further comprising:
(1) an impact region adapted to strike a playing object;
(2) A handle region intermediate said gripping portion and said impact region;
(B) movement sensing means supported by at least one of said regions and responsive to motion of said athletic club for providing at least one electrical signal which is a continuous function of an element of movement of at least a portion of said one of said regions throughout periods of said motion;
(C) indicating means responsive to an input signal for registering a plot of input signal versus time;
(D) electrical signal transmission means responsive to at least one output of said movement sensing means for providing an input signal to said indicating means.

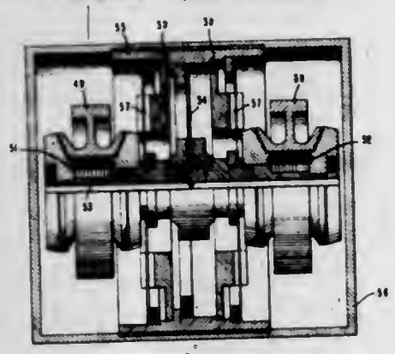
3,270,565
OMNIDIRECTIONAL ACCELERATION DEVICE
Wilbur W. Hawley, Santa Ana, David H. Geipel, Fullerton, and Willis D. Longyear, Newport Beach, Calif.; granted to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457(d)
Filed Dec. 26, 1962, Ser. No. 247,136
3 Claims. (Cl. 73—497)

1. An accelerometer for determining the magnitude of acceleration forces from all directions comprising,
a spherical housing responsive to omnidirectional acceleration forces,
a spherical chamber within said housing filled with a liquid,
a pair of oppositely disposed pressure sensors attached to said housing and extending into said chamber for measuring the static pressure of said liquid at op-



posite ends of said chamber, whereby the average pressure at said pair of pressure sensors is linearly proportional to the magnitude of said acceleration forces, and
a sphere in said chamber smaller than said chamber and attached to said housing for compensating for changes in volumetric expansion of said liquid and said housing caused by changes in temperature.

3,270,566
INERTIAL SENSOR
Eugene Cenitch and John E. Lundberg, Endwell, and Robert A. Watson, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 31, 1962, Ser. No. 198,912
14 Claims. (Cl. 74—5.6)

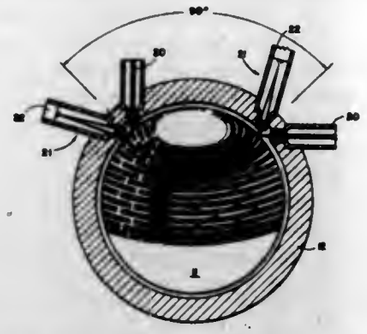


1. A gyroscopic device, comprising:
a rotor mounted for rotation about a shaft;
vibratable stressed members attached to said shaft, and extending outwardly thereof;
base reference means connected to the outer ends of said members;
drive means for maintaining the members in a vibrating state; and
means operatively related to said vibratable members for sensing and indicating the frequency of vibration of said members whereby the changes in frequency of vibration noted serve to identify corresponding changed force conditions externally imposed upon said base reference means.

3,270,567
CONTROL APPARATUS
William M. Crampton, White Bear Lake, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 11, 1961, Ser. No. 137,288
14 Claims. (Cl. 74—5.6)

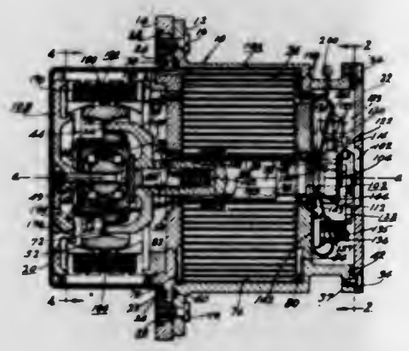
5. In apparatus of the class described: a support; a substantially spherically shaped rotor universally supported by said support and adapted to rotate about a spin axis;

and means for measuring relative rotation between said rotor and said support about an axis at an angle to said spin axis, said measuring means comprising a plurality of coded latitude lines on said rotor, said lines each hav-



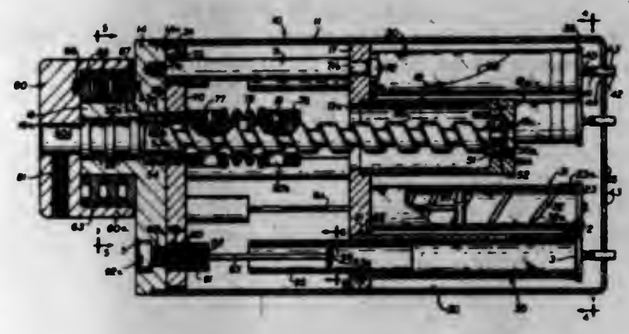
ing a characteristic coding arrangement of radiative and non-radiative portions arranged about a portion of rotor periphery and a non-coded portion on the remaining rotor periphery, and the coding on one line being adjacent a non-coded portion of the adjacent lines.

3,270,568
GYROSCOPE APPARATUS
Joseph J. Moravek, Bethpage, and Rocco N. Figalora, Plainview, N.Y., assignors to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York
Filed July 20, 1964, Ser. No. 383,774
11 Claims. (Cl. 74—5.12)



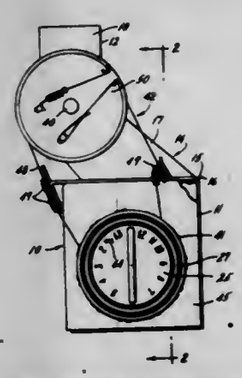
1. An impulse-driven gyroscope comprising:
a supporting frame;
a rotatable gyro element supported for rotation on said frame;
a drive shaft journalled in said frame for both rotational and axial motion with respect to said frame;
clutch means driven in rotation by rotation of said shaft and movable by axial motion of said shaft into and out of driving engagement with said gyro element, thereby to permit rotation of said gyro element by said shaft when said shaft is in a first axial position and to permit rotation of said gyro element free of said clutch means when said shaft is in a second axial position;
coil spring means comprising a coil spring around said shaft, and having its inner end releasably connected to said shaft for driving said shaft in rotation as said spring unwinds and for releasing from said shaft when said spring is spent;
release spring means urging said shaft toward said second axial position; and
stop means on said shaft abutting a portion of said coil spring means when said coil spring is tightly wound to prevent said shaft from moving from said first to said second axial position, said stop means being clear of said portion of said coil spring means when said coil spring is spent to permit said shaft to move to said second axial position in response to said release spring means, whereby said clutch means is disengaged only when said coil spring is spent.

3,270,569
DRIVE DEVICE
Nelson Berman, New Hyde Park, and Hugo Seiden, Brooklyn, N.Y., and Joseph R. Roy, Wapping, Conn., assignors to JFD Electronics Corporation, Brooklyn, N.Y., an organization of New York
Original application Apr. 18, 1962, Ser. No. 188,458. Divided and this application Feb. 9, 1965, Ser. No. 441,397
6 Claims. (Cl. 74—10.2)



3. Drive shaft stop device comprising a fixed support having bearing means, a shaft turnably supported by said bearing means, a knob on said shaft, a plate on said support opposing and spaced from said knob, a plurality of discs turnably mounted on said shaft between said knob and said plate, each said disc having a part-circular groove, each said disc having circumferentially spaced pins extending perpendicularly thereto and in circumferential alignment with the ends of said slot, said discs being arranged with the pins of one disc extending into the slots of the neighboring disc, said knob and said plate respectively having a corresponding groove and corresponding pins such that such corresponding pins extend into a slot and the disc pins extend into such corresponding groove, said pins being circumferentially slidable in said slot.

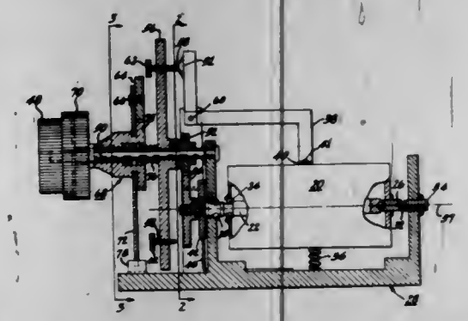
3,270,570
DRIVE SYSTEM
Donald C. Stouffer, Philadelphia, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,476
14 Claims. (Cl. 74—10.5)



1. A drive system for two associated tuners, one tuner having a rotatable VHF station selector and adjustable VHF fine tuning elements carried thereby, the other tuner having a rotatable UHF tuning shaft, said system comprising a first member connected to the VHF station

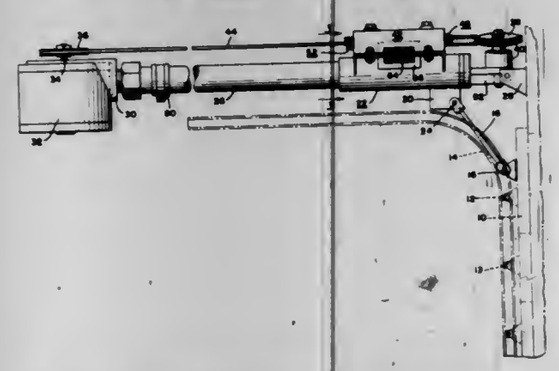
selector and rotatable to drive the latter for placement in selectible operative positions including a UHF switching position, a second member drivingly connected to the UHF tuning shaft and rotatable to drive the latter for UHF coarse tuning, a third member mounted for rotation with respect to the first and second members, motion transmitting means between the third member and the VHF tuning elements to drive the latter for effecting VHF fine tuning, speed reduction means between the third member and the second member to rotate the latter and thereby drive the UHF tuning shaft for effecting UHF fine tuning, and means for disabling the motion transmitting means in response to placement of the VHF selector in the aforesaid UHF switching position.

3,270,571
TELEVISION TUNER
Marvin A. Leedom, Warminster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,275
9 Claims. (Cl. 74—10.41)



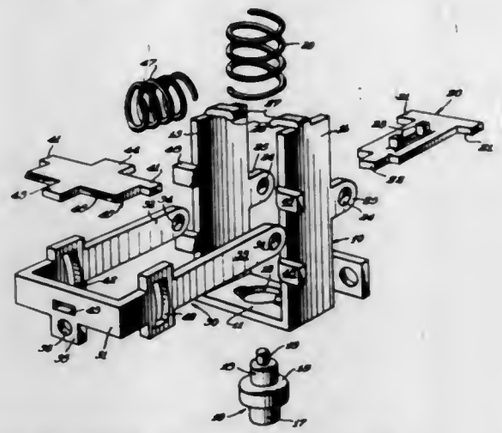
1. A television tuning mechanism comprising in combination:
a tuner including a chassis member and a control shaft:
detent means for providing a plurality of stop positions coupled to said control shaft;
means for mounting said tuner for rotation relative to the axis of rotation of said detented control shaft; and
means for rotating said tuner chassis member with respect to the detented control shaft in any of said stop positions.

3,270,572
DOOR OPERATING MECHANISM
Wilbur J. Zimmerle and James E. Whelan, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 1, 1964, Ser. No. 400,776
4 Claims. (Cl. 74—89.22)



1. An operator assembly for opening and closing a garage door or the like comprising, an elongated track, drive means supported adjacent one end of said track, a driven pulley operatively associated with said drive means, garage door connectible carriage means slidably supported on said track for movement longitudinally thereof in opposite directions therealong, differential pulley means on said carriage means, a continuous belt passing over said drive pulley and said differential pulley means to be driven thereabout by said drive means, said differential pulley means rotatable upon passage of said belt therearound to effect a resultant reaction on said carriage means operative to cause relative movement of said carriage means to and fro on said track member at a reduced speed with respect to that of said drive pulley, said carriage means including a fixed base portion slidably supported on said track member, a movable base portion slidably supported on said fixed base portion, and spring members on either side of said base portions compressible upon relative movement between said base portions for damping impact between said carriage means and said track at the limits of the travel of said carriage means.

3,270,573
SNAP ACTION SWITCH
Samuel H. Schwartz, Deerfield, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Mar. 29, 1963, Ser. No. 269,113
9 Claims. (Cl. 74—97)

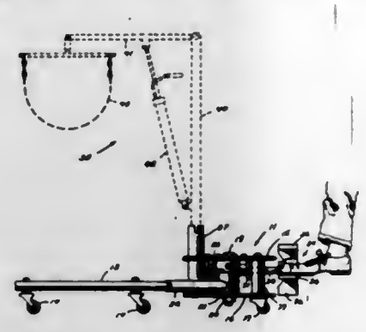


1. A motion translation device comprising:
a frame,
an actuating lever and a main lever both pivotally connected to said frame and having free ends extending outwardly from said frame,
a toggle pivotally connected to the free end of said main lever and having a free end positionable on each side of a straight line intersecting the pivotal axes of said main lever and toggle,
means limiting the degree of pivotal movement of said toggle relative to said main lever and said main lever relative to said frame,
resilient means interconnecting the free ends of said toggle and said actuating lever,
and means for positioning the free end of said actuating lever on each side of a line intersecting the spring connection point on said toggle and the pivotal axis of the toggle irrespective of the pivoted position of said toggle and irrespective of the pivoted position of said main lever.

3,270,574
ADJUSTABLE BASE UNIT FOR INVALID LIFTS
Gilbert I. Stewart and Kenneth H. Teeter, Higgins Lake, Mich.; said Stewart assignor to said Teeter
Continuation of application Ser. No. 189,602, Apr. 23, 1962. This application May 10, 1965, Ser. No. 454,268
2 Claims. (Cl. 74—98)

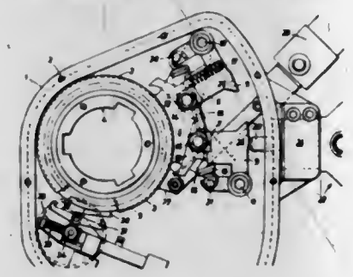
1. In an adjustable base unit for invalid lifts, the combination comprising:
(a) a base unit frame for invalid lifts;

(b) a pair of spaced-apart post pivot members provided on said base unit frame, each of said post pivot members provided with a gear segment arm extending therefrom, said gear segment arms spaced apart from but extending toward each other;
(c) an outrigger leg support member mounted on each of said post pivot members for selective pivotal movement toward and away from each other, each of said outrigger leg support members extending from said post pivot member away from said gear segment arms;



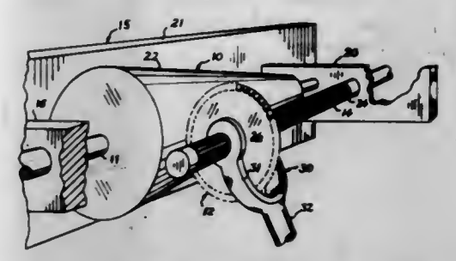
(d) worm gear assembly actuating means positioned on said frame intermediate said gear segment arms and in operative engagement therewith for selectively accomplishing corresponding and symmetrical pivotal movement of said leg support members toward and away from each other; and
(e) a vertical mast stub connector provided on said base unit frame, said stub connector adapted to supportingly engage an invalid lift assembly.

3,270,575
DEVICES FOR PERFORMING ROTATIONAL MOVEMENTS
Bror Sigurd Olsson, Mariestadsvagen 22, Johanneshov, Sweden
Filed Nov. 9, 1962, Ser. No. 236,576
Claims priority, application Sweden Nov. 14, 1961, 9,575/61; Oct. 29, 1962, 11,596/62
5 Claims. (Cl. 74—142)



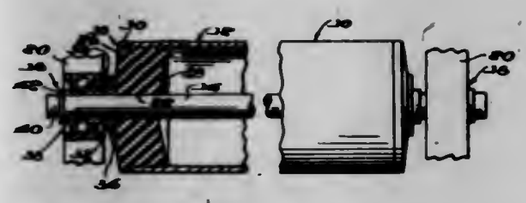
1. A device for imparting to a rotatable member stepwise rotational movements between two definite end positions and for providing an increased initial torque, said device including a gear wheel operable for actuating said rotatable member, two pawl means, one for driving said gear wheel in a clockwise direction of rotation and the other for driving the same in a counter-clockwise direction of rotation, an actuating member operative for imparting different directions of rotation to said gear wheel by actuating either of said pawl means, support means mounting said pawl means tiltably about a journal point each, said support means being journalled concentrically to said gear wheel and being rotatable in opposite directions about the same axis as the latter, each of said pawl means being actuatable by said actuating member at different distances from their journal points thereby providing different torques and different velocities for said rotatable member.

3,270,576
FRICTION DRIVE TRANSMISSION
David G. Goldwasser, 558 Orme Circle NE., Atlanta, Ga.
Filed Feb. 10, 1964, Ser. No. 343,645
5 Claims. (Cl. 74—191)



1. In a friction drive transmission having a conical driving member, a driven member allowing relative motion between the driven member and the driving member only as the driven member moves longitudinally along the driving member, said driven member comprising a central web, a plurality of support tabs extending radially outward from said central web, and a plurality of rollers, each of said rollers being rotatably mounted between adjacent tabs for rotation about an axis transverse to the said relative motion between the driven member and the driving member.

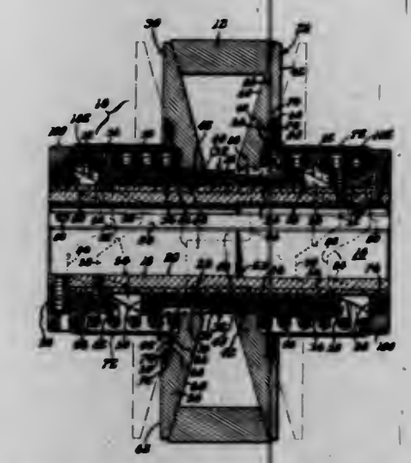
3,270,577
IDLER ROLLERS AND METHOD OF MAKING THE SAME
William N. Poundstone, Morgantown, W. Va., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1964, Ser. No. 416,571
3 Claims. (Cl. 74—230.4)



1. An idler roller assembly comprising,
a shaft supported for rotation by bearing means located on the end of said shaft,
a tubular roller having a cylindrical external surface and first and second end portions having cylindrical internal surfaces,
a pair of annular resilient support members coaxially positioned within said tubular roller end portions and constructed and arranged to fix said tubular roller to said shaft in coaxial and nonrotatable relation therewith,
said annular support members each having in its undistorted condition a substantially frusto conical concave first end wall and a substantially frusto conical convex second end wall,
said annular support members positioned on said shaft and within said tubular roller end portions with said support member concave end walls facing each other,
stop means to limit inward axial movement of said annular resilient support members relative to said tubular roller end portions, and
retaining means secured to said shaft to retain said annular support members from moving axially outwardly on said shaft after said annular resilient support members have been distorted by axial forces applied to move said annular resilient support members axially inwardly on said shaft,

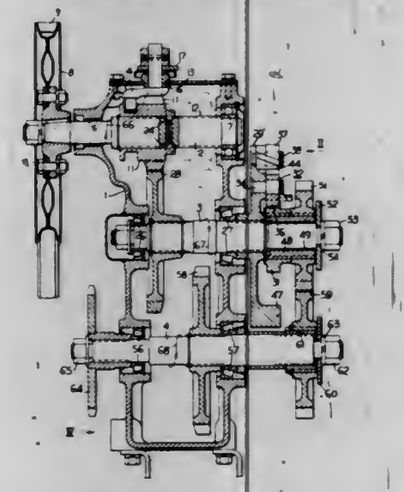
said annular resilient support members each being in axial shear between said tubular roller and said shaft.

3,270,578
MOTION CONTROL SHEAVE
Howard W. Leadbeater, Glenside, Pa., assignor to Universal American Corporation, New York, N.Y., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,663
4 Claims. (Cl. 74—230.17)



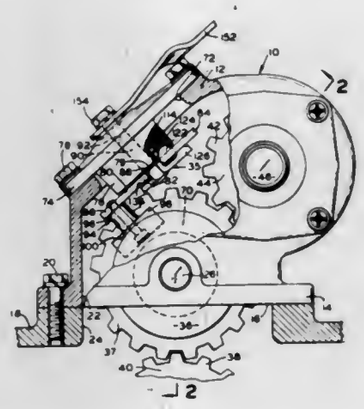
1. In a motion control sheave, the combination comprising a cylindrical hub, interlocking cam members slidably fitted in series relataion over said hub, a pair of said cam members being fixed relative to each other, and another pair of said cam members being disposed between said fixed cam members and being axially shiftable relative to each other, a pair of conical sheave flanges mounted respectively upon said axially shiftable cam members facing each other to provide a V-shaped annular groove therebetween, and means yieldably biasing said flanges axially toward each other, said hub and fixed cam members on one hand and said axially shiftable cam members on the other hand being provided with engaging surfaces respectively of a plastic polymer and an oil impregnated material.

3,270,579
TRANSMISSION
Paul A. Whisler, La Porte, Ind., assignor to Allis Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Feb. 6, 1964, Ser. No. 342,888
9 Claims. (Cl. 74—325)



1. In a transmission, the combination of relatively rotatable power input and output shafts, a selectively engageable and disengageable gear train and a torque limiting device operatively interposed between said shafts; and auxiliary gearing independent of said torque limiting device operable to establish and interrupt a driving connection between said shafts upon disengagement of said gear train.

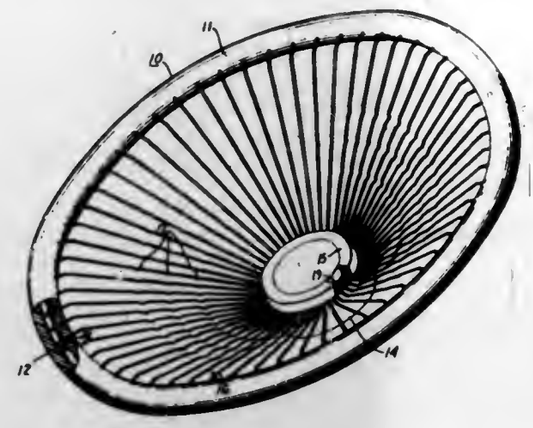
3,270,580
GEAR SHIFT LOCKING DEVICE
Robert W. Wagner, Chelsea, Mich., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Dec. 9, 1963, Ser. No. 328,877
15 Claims. (Cl. 74—475)



1. A shifting mechanism operative to impose a shifting force upon a shiftable member having first and second positions comprising in combination,
(a) a support means disposed in a stationary position relative to the shiftable member,
(b) a shifting element engageable with the shiftable member and operative to induce a shifting force thereto,
(c) said shifting element having first and second positions corresponding to first and second positions of said shiftable member and being rotatable between said first and second positions,
(d) locking means carried by said support means and engageable with said shifting element in its first and second positions for locking the latter alternately in said positions,
(e) an actuating means,
(1) for maintaining said locking means in locking engagement with said shifting element,
(2) for urging said locking means out of locking engagement with said shifting element,
(3) for rotating said shifting element to its first and second positions,
(f) said actuating means being engageable with said locking means and said shifting element,
(g) and means carried by said support means and mounting said shifting element and said actuating means for rotational movement relative to each other and relative to said support means.

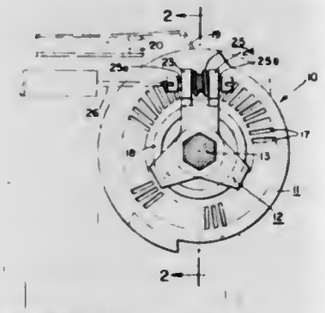
3,270,581
STEERING WHEEL CONSTRUCTION
Rodger E. Geller, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 318,207
7 Claims. (Cl. 74—552)

1. Steering wheel structure, comprising a rim portion, multiple wiring means extending radially and axially offset to one side from said rim portion, and a central hub portion having a covering thereon, said hub portion including a specific continuous radially serrated edging that receives inner ends of said wiring means in equally spaced



and uniformly distributed intervals rather than in isolated clusters subject to fitting of said covering thereto.

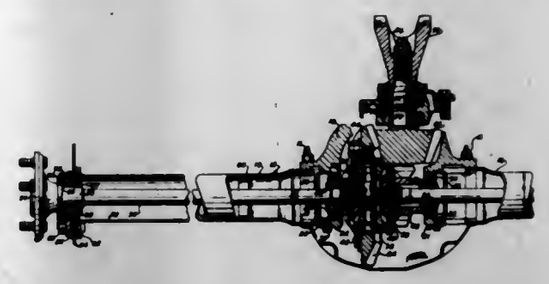
3,270,582
MECHANICAL DEVICE
Lewis Ellsworth Barth, Langhorne, Pa., assignor to Automatic Timing & Controls, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1964, Ser. No. 335,577
8 Claims. (Cl. 74—568)



1. A cam assembly comprising:
(a) a first member having a cam surface portion and also having a plurality of thread-engaging means formed on a substantially flat-side surface portion thereof, said other portion being substantially transverse to said cam surface portion, and
(b) a second member which includes gear means disposed so that only a small portion of its threads are pressed forcefully against said thread-engaging means at any time, said second member being constructed to cause rotation of said first member when said gear means are rotated.

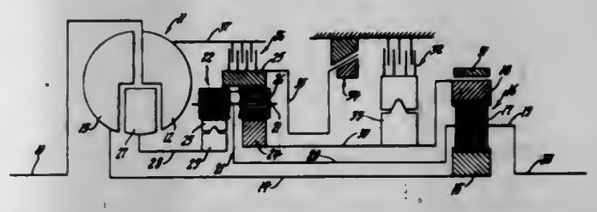
3,270,583
AXLE HOUSING ASSEMBLY
William E. Rudnicki, Detroit, and James M. Benson, Warren, Mich., assignors to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,816
3 Claims. (Cl. 74—607)

1. An axle shaft and housing assembly comprising an axle shaft, a drive flange on one end of said shaft, said drive flange being adapted to accommodate a connection with a wheel drum, an axle shaft housing, said axle shaft being received within said housing, a rigid flange plate secured to the end of said housing, a wheel brake mounting plate, said flange plate being secured to one side of said mounting plate, a bearing adapter, said bearing adapter, said mounting plate and said flange plate being bolted together with the bearing adapter on the other side of said mounting plate whereby bearing loads in a direction transverse to the axis of said axle shaft are transmitted through



said flange plate to said axle shaft housing, a bearing recess formed in said bearing adapter, and bearing means within said adapter for journaling the outboard end of said axle shaft.

3,270,584
TRANSMISSION
Jack W. Qualman, Ann Arbor, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 27, 1963, Ser. No. 312,192
5 Claims. (Cl. 74—677)

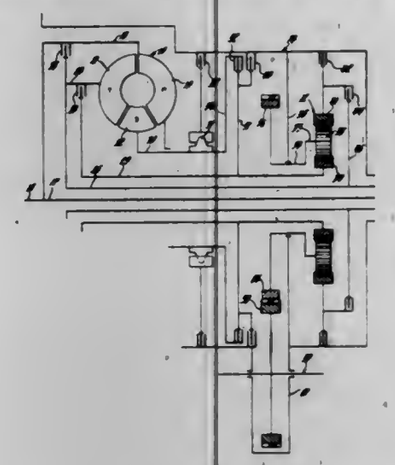


1. In a transmission of the type having a hydrodynamic torque transmitting device and first and second planetary gearing units, said hydrodynamic device including an engine driven impeller and a first turbine and a reaction member, said first planetary gearing unit including a planet carrier supporting a planet pinion gear in mesh with a ring gear and a sun gear, said second planetary gearing unit including a planet carrier supporting a planet pinion gear in mesh with a ring gear and first and second sun gears, respectively, means connecting said turbine to said first gear unit sun gear for driving the same, a power delivery shaft, means connecting the carriers of both gear units to said power delivery shaft for rotation therewith, means connecting the ring gear of said first gear unit to one sun gear of said second gear unit for rotation therewith, means operatively connecting said reaction member of said hydrodynamic device to a sun gear of said second gear unit whereby said last-mentioned sun gear provides a reaction point for said reaction member and brake means effective when engaged for preventing rotation of one of said second gear unit sun gears in at least one direction of rotation.

3,270,585
TRANSMISSION
William G. Livezey, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 359,894
20 Claims. (Cl. 74—677)

5. In a transmission the combination of
(a) an input member, an output member, a hydrodynamic torque converter comprising a pump connected to said input member, a turbine and a stator, a planetary gear set comprising a sun gear, a ring gear and a planet carrier rotatably supporting planetary pinions in mesh with said sun gear and said ring gear,

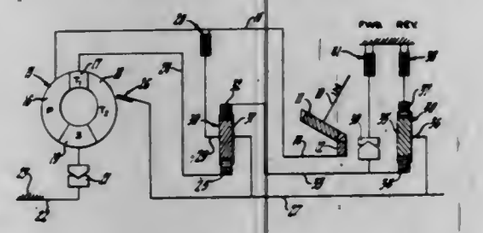
(b) an input power take-off shaft connected to said input member and extending centrally through said hydrodynamic torque converter and said planetary gear set, a first sleeve shaft connected to said turbine, said first sleeve shaft being received on said input power take-off shaft and extending through said planetary gear set to provide a turbine power take-off, a second sleeve shaft received on said first sleeve shaft and connected to said sun gear,



(c) a one-way brake connected to said stator, a first brake effective when engaged to ground said one-way brake, a first clutch effective when engaged to connect said turbine to said second sleeve shaft, a second brake effective when engaged to ground said ring gear,

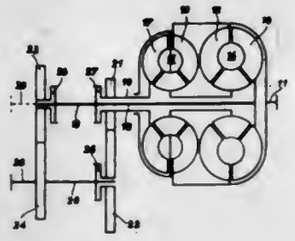
(d) and drive means operatively connecting said output member to said planet carrier.

3,270,586
TRANSMISSION
Robert M. Tuck and James J. Mooney, Jr., Indianapolis, and James A. Mitchner, Martinsville, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation of application Ser. No. 55,895, Sept. 14, 1960. This application May 13, 1965, Ser. No. 455,441
70 Claims. (Cl. 74—677)



1. In a transmission; a stationary housing; input means; output means; a torque converter having a pump driven by said input means, a first turbine, a second turbine and a stator; means connecting said stator to said housing to limit rotation in one direction to provide a reaction; a reduction and a reverse planetary gear set each having a carrier member with planetary pinions meshing with a sun gear member and a ring gear member; first drive connecting means for drive connecting said first turbine to said sun gear member of said reduction gear set; second drive connecting means for drive connecting said second turbine to said output means; both of said carrier members being connected to said output means; drive connection means between said ring gear member of said reduction gear set and said sun gear member of said reverse gear set; brake means to prevent reverse rotation of said ring gear member of said reduction gear set engaged for forward drive; reverse brake means for holding said ring gear member of said reverse gear set for reverse drive; and a drive clutch directly connecting said input means to one of said members of said reduction gear set.

3,270,587
FOUR-SPEED HYDROMECHANICAL COMPOUND TRANSMISSION
Franz Geray, Friedrichshafen, Germany, assignor to Maybach Motorenbau G.m.b.H., Friedrichshafen, Germany, a firm of Germany
Filed Oct. 26, 1964, Ser. No. 406,972
Claims priority, application Germany, Nov. 6, 1963, M 58,798
5 Claims. (Cl. 74—732)

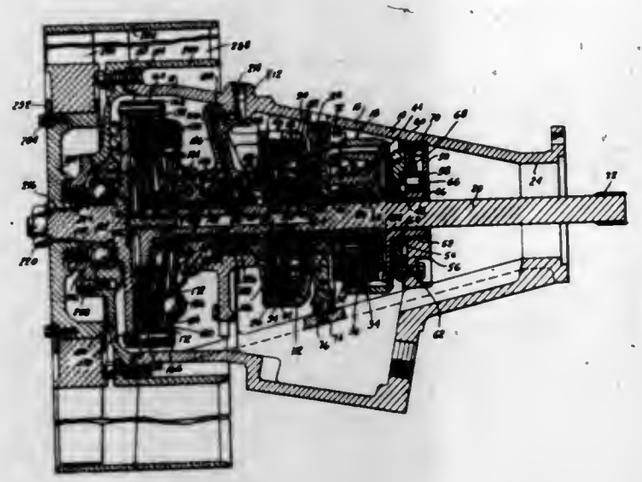


1. A four-speed hydromechanical compound transmission for vehicles, including:
two juxtaposed coaxially placed controllable hydrodynamic torque converters,
each of said converters having an impeller,
means for jointly driving said impellers,
two concentric shafts,
each of said converters having a turbine wheel, the turbine wheel of one of said converter being mounted on one of said shafts, the turbine wheel of the second converter being mounted on the second of said shafts,
one of said converters being capable of high-torque conversion for starting, the second converter having a high efficiency over a broad range at high speeds,
a countershaft,
a first spur gear pair having a gearwheel mounted on one of said concentric shafts, said first spur gear pair having a second gearwheel mounted on said countershaft,
a second spur gear pair having one gearwheel mounted on the second concentric shaft, said second spur gear pair having a second gearwheel mounted on said countershaft,
one gear wheel of each of said spur gear pairs being rotatable on the respective shaft and the other gearwheel of each of said spur gear pairs being made fast on the respective shaft,
a clutch operatively interposed between each of said gearwheels which are rotatable on the respective shafts, and the respective shaft for selectively clutching said gearwheels to the respective shafts, and
clutch means operatively interposed between said concentric shafts for clutching and declutching said concentric shafts.

3,270,588
MULTIPLE SPEED COOLING FAN DRIVE MECHANISM
Glen L. Bowen, Detroit, and Robert W. Lemon, Farmington, Mich., assignors to G. L. Bowen & Co., Oak Park, Mich., a corporation of Michigan
Filed Nov. 4, 1963, Ser. No. 321,183
14 Claims. (Cl. 74—750)

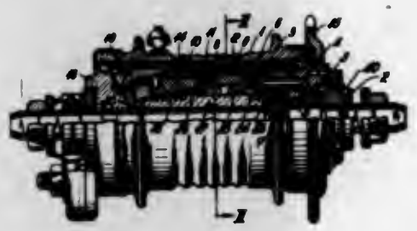
1. In a multiple speed drive mechanism for an engine cooling fan, a power input shaft, a power output shaft adapted to be connected to a bladed fan, a planetary gear unit comprising a sun gear element, a carrier element, a

ring gear element and planet pinions rotatably mounted on said carrier element in meshing engagement with said sun gear element and said ring gear element, said power input shaft being connected to one element of said planetary gear unit, a second element of said planetary gear unit being connected to relatively stationary portions of said mechanism, a direct drive clutch structure comprising a rotary drum connected to said power output shaft, means including a selectively engageable low speed clutch



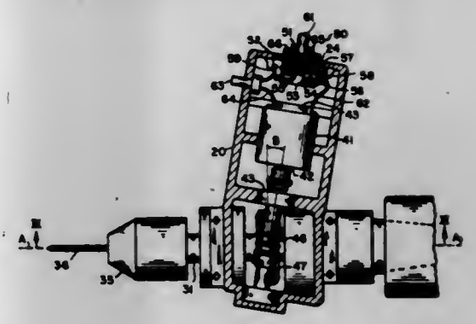
for drivably connecting a third element of said planetary gear unit to said drum, spring means carried by said drum for engaging said direct drive clutch structure, fluid pressure operated servo means disposed within said drum for overruling the action of said spring means in response to a pressure build-up therein whereby said direct drive clutch is released.

3,270,589
DUAL SPEED HUB WITH AUTOMATIC SPEED SHIFT
Hans Joachim Schwerdhöfer, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed Apr. 16, 1963, Ser. No. 273,329
Claims priority, application Germany, Apr. 19, 1962, F 36,604
10 Claims. (Cl. 74—750)



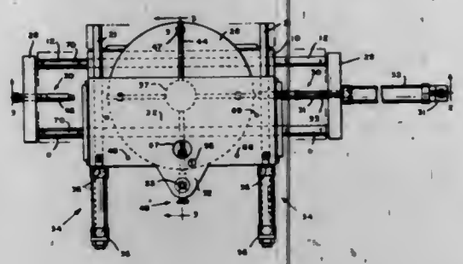
1. In a multiple speed hub, in combination:
(a) a stationary shaft, having an axis;
(b) hub shell means supported on said shaft for rotation about said axis in a forward direction and a backward direction, said hub shell means defining a cavity therein;
(c) driver means supported on said shaft for rotation about said axis is said directions;
(d) a multiple speed transmission connected to said driver means for rotation therewith, said transmission including first and second transmission members operatively connected for rotation, said first transmission member rotating at a lower speed than said second transmission member;
(e) first ratchet coupling means interposed between said first transmission member and said hub shell means, and second ratchet coupling means interposed between said second transmission member and said hub shell means, said first and second ratchet coupling means being mounted in said cavity for selectively transmitting the rotation of said transmission members to said hub shell means when the corresponding tranmsission member rotates in said forward direction at a speed equal to the speed of said hub shell means,
(1) said second ratchet coupling means including a pawl member and a ratchet member engageable by said pawl member, the members of said second ratchet coupling means being respectively connected to said second transmission member and to said hub shell means;
(f) a control member mounted in said cavity for rotation about said axis said pawl member being movable relative to said control member between a blocking position in which said control member holds said pawl member out of engagement with said ratchet member, and an unblocking position in which said control member permits engagement of said pawl member with said ratchet member;
(g) first connecting means interposed between said pawl member and said control member for jointly rotating said control member with said pawl member when said driver means rotates in said forward direction; and
(h) second connecting means interposed between said shaft and said control member for impeding movement of said control member and thereby shifting said pawl member between said positions thereof when said driver means rotates in said backward direction.

3,270,590
LATHE DRILL ATTACHMENT
William H. Schneider, 3217 Mount Troy Road, Pittsburgh, Pa.
Filed Mar. 30, 1964, Ser. No. 355,544
9 Claims. (Cl. 77—6)



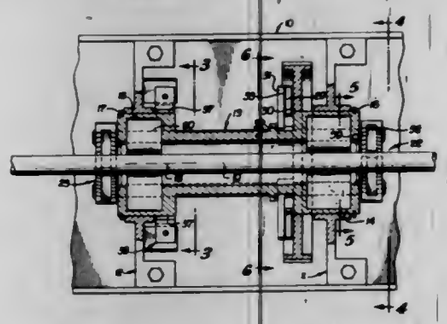
1. A lathe drill apparatus comprising: a housing, bearing means mounted within said housing and defining an axis of rotation, a shank member shaped to be cooperatively received by a socketed tool holding part of a conventional machine lathe, said shank member being securely attached to said housing and extending outwardly therefrom coaxially with said axis of rotation, for mounting said housing on a lathe, an output shaft supported by said bearing means, drill holding mechanism operatively mounted on said output shaft for supporting a drill coaxially with said shank member, a motor totally supported by said housing, said motor having a motor shaft, and speed reduction gear transmission means operatively connected between said motor shaft and said output shaft.

3,270,591
SPACING TABLE
Alpheus Winter IV, Fairfield, Conn., assignor to Winter Products, Inc., Fairfield, Conn., a corporation of Connecticut
Filed July 9, 1963, Ser. No. 293,702
10 Claims. (Cl. 77—64)



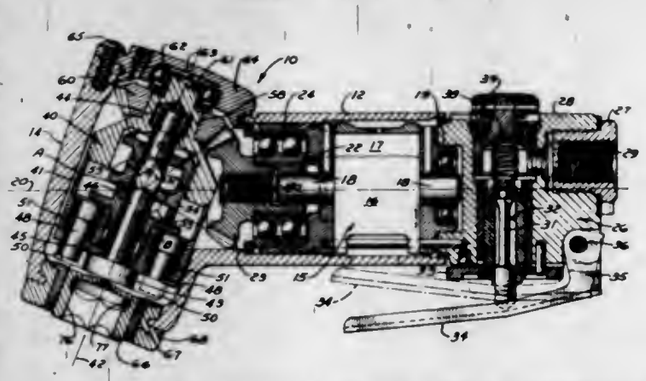
1. In a spacing table, a base plate; an intermediate plate mounted on said base plate for longitudinal movement; a top plate mounted on said intermediate plate for transverse movement along a path at right angles to the path of movement of said intermediate plate; turret means removably mounted for rotation on said intermediate plate beneath said top plate; rods containing adjustable stop means extending radially from said turret means in spaced transverse planes; and separate abutment means fixed to said base plate and said top plate for cooperation with the adjustable stop means in said spaced planes.

3,270,592
UNIVERSAL SUPPORTING AND DRIVING APPARATUS FOR PIPE SUBJECTED TO THREADING
Howard N. Behnke, South San Gabriel, Calif., assignor to Collins Machinery Corporation, Monterey Park, Calif., a corporation of California
Filed Jan. 3, 1964, Ser. No. 335,587
5 Claims. (Cl. 77—73)



1. In apparatus of the character described, the combination comprising
(a) a centrally hollow carrier having a horizontal central axis of rotation and a first bearing structure by which the carrier is supported for rotation;
(b) a series of elongated pivot members defining pivot axes circularly spaced about said central axis and extending parallel thereto, the carrier supporting the members to pivot relative thereto and about said pivot axes;
(c) a first set of work gripping jaws having driven connection with the pivot members at one end of the carrier;
(d) a second bearing structure supporting the carrier for rotation and at a location axially spaced from said first bearing structure, and a second set of work gripping jaws having driven connection with said pivot members adjacent the opposite end of said carrier;
(e) levers extending in the space between said first and second bearing structures and operatively connected with the pivot members so as to simultaneously pivot the members and both sets of jaws, the jaws of both sets being located to simultaneously grip work projecting through the hollow carrier as the pivot members are rotated by said levers;
(f) a drive rotor rotatable clockwise and counterclockwise about said central axis;
(g) and links operatively connected with the rotor and levers to transmit rotary drive from the rotor to said levers so as first to pivot the pivot members relative to the carrier to carry the both sets of jaws into rotary driving engagement with work projecting axially from within the carrier hollow, and thereafter to rotate the carrier about said central axis.

3,270,593
POWER OPERATED HAND TOOL OF THE ROTARY IMPACT TYPE
Frank A. Kaman, Prospect Heights, Ill., assignor to Skil Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,449
2 Claims. (Cl. 81—52.3)



1. A power operated hand tool of the rotary impact type comprising, a housing including a handle portion having a longitudinal central axis and a head portion having a longitudinal central axis, rotary motor means in said handle portion extending longitudinally of the latter, a first bevel gear driven by said motor means at one end thereof and being disposed adjacent one end of said handle portion, which bevel gear has its axis of rotation co-axial with said axis of the handle portion and has its maximum diameter no greater than the diameter of the rotary motor means, the apex of the cone containing the pitch surface of said first bevel gear being disposed outwardly of said one end of the handle portion, rotary impact clutch means including a cylindrical hammer in said head portion extending longitudinally of the latter, which impact clutch means has an input end and an output end, a second bevel gear defining said input end and being disposed adjacent one end of said head portion, which second bevel gear has its axis of rotation co-axial with said axis of the head portion and has its maximum diameter no greater than the diameter of said impact clutch means, the apex of the cone containing the pitch surface of said second bevel gear being disposed intermediate said input and output ends and being coincident with said first mentioned apex, said first and second bevel gears being in meshing engagement with their respective axes of rotation intersecting at the point defined by both of said apexes, the portions of the last mentioned axes between the intersection thereof and respective gears defining an angle in the range of 68°, said output end being defined by a driving member having a socket opening at the other end of said head portion and being substantially contained within the latter, said handle portion being in close confining relation with said motor means and first bevel gear and said head portion being in close confining relation with said impact clutch and second bevel gear, said handle portion being elongated along the longitudinal central axis thereof and being of a size such that a substantial portion of the same can be received between the

fingers and palm of a human hand, said head portion being elongated along the longitudinal central axis thereof and being of a size such that said output end is in general alignment with the extremities of the knuckles of a human hand grasping the tool in the manner set forth.

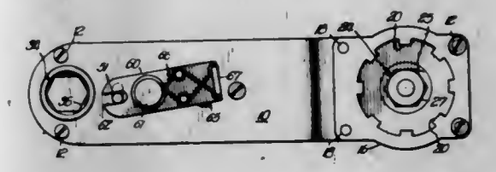
3,270,594
PREDETERMINED TORQUE RELEASE WRENCH
Bosko Grabovac, Altadena, Calif., assignor to Torque Controls, Inc., El Monte, Calif., a corporation of California
Filed July 29, 1964, Ser. No. 385,850
5 Claims. (Cl. 81—52.5)



1. In a torque wrench having a hollow body and having a work-engaging member rotatably mounted on the body, said work-engaging member being operatively connected to a swingable arm inside the body extending longitudinally of the body, means cooperative with the swingable arm for predetermined resistance to swinging movement of the arm away from a normal position, said cooperative means comprising:
a pressure member mounted inside the body with a leading end directed towards the arm and freely movable axially of the body towards and away from the swinging end of the arm, said leading end having a central projection;
spring means urging the pressure member towards the arm; and
a shoe having a transverse face in abutment with both said leading end and said projection thereof the pressure member to receive pressure therefrom,
the shoe being pivotally connected to the arm at the swinging end thereof to constitute therewith a toggle linkage in endwise abutment against the pressure member, the linkage being movable with knee action for longitudinal extension of the linkage to retract the pressure member in response to a load of a predetermined magnitude on the work-engaging member,
the hollow body confining the knee action of the linkage to limit the tilting of the shoe in response to the load,
the shoe being bistable with two opposite normal starting tilt positions depending on the direction of the initial load on the arm when the wrench applies a torque through the work-engaging member, said two opposite starting tilting positions being symmetrical with respect to the longitudinal axis of the hollow body,
said shoe being tiltable from a normal tilt position to a position of greater tilt in response to the load of predetermined magnitude with consequent retraction of the pressure member.

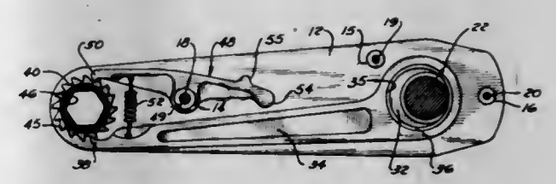
3,270,595
OFFSET DRIVE ATTACHMENT WITH REVERSING MEANS
Emery L. Hall, Hinsdale, and John A. Blachowski, Park Ridge, Ill., assignors to Skil Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 14, 1964, Ser. No. 403,835
8 Claims. (Cl. 81—54)

3. In an offset drive attachment of the type having an elongated body with a driven member rotatably mounted in one end thereof and a cylindrical output member rotatably mounted in the other end thereof, which output member includes an exterior annular series of teeth, the improvement which comprises a pair of drive pawls each connected to said driven member by cam means so that both pawls are oscillated upon rotation of the driven member, said drive pawls being arranged and adapted for engagement with said teeth so that upon their oscillation one of the drive pawls is operable to rotate the output member in one direction and the other drive pawl is operable to rotate the output member in the opposite direction, resilient means urging both drive pawls into engagement with the teeth, a dual action stop pawl movably



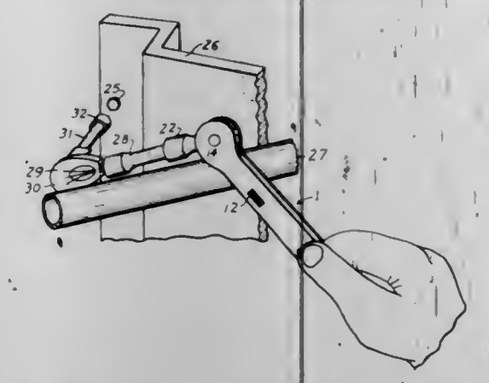
mounted on said body between said drive pawls, said stop pawl being movable to one position in which it engages said other pawl for holding the latter out of engagement with the teeth and the same time engages said teeth to cooperate with said first drive pawl to rotate the output member in said one direction, and said stop pawl being movable to a second position in which it engages said one drive pawl to hold the latter out of engagement with the teeth and at the same time engages the ratchet teeth for cooprating with said other drive pawl to rotate the output member in said opposite direction.

3,270,596
OFFSET DRIVE ATTACHMENT FOR TOOLS HAVING ROTARY DRIVING MEMBERS
Emery L. Hall, Hinsdale, and Richard H. Kocian, Rolling Meadows, Ill., assignors to Skil Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,773
8 Claims. (Cl. 81—54)



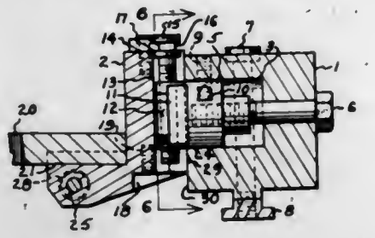
1. An offset drive attachment for a tool of the type having a rotary driving member, said attachment comprising, an elongated body, a driven member rotatably mounted in one end of the body and adapted to be driven by said driving member, said driven member including a cam surface eccentric with respect to the axis of rotation of the driven member, an arm carried by said body for movement in a plane perpendicular to said axis, said arm having drive pawl means associated with one end thereof and having the other end thereof engaged with said cam surface so that rotation of said driven member brings about oscillating movement of the drive pawl means, a ratchet wheel adapted to engage a rotary member for driving the same, which ratchet wheel is rotatably mounted in the other end of said body and has teeth engaged by said pawl means, stop pawl means carried by the body and engaged with the ratchet wheel teeth to prevent rotation of the ratchet wheel in one direction, and means carried by the body for holding said drive pawl means in engagement with the teeth on the ratchet wheel so that upon rotation of the driven member the ratchet wheel is rotated in a direction opposite said one direction.

3,270,597
MULTI-ANGLE RATCHETING WRENCHES
Ted Neff, 20975 Shamrock, San Bernardino, Calif., and Cyrus L. Wing, Rte. 3, Greenfield, Ohio
Filed Sept. 14, 1965, Ser. No. 487,209
1 Claim. (Cl. 81—177.9)



A tool comprising in combination, an elongated handle, a revolving turret member on the handle, means for latching the turret member in a fixed position, a square female connector means integral with said turret member, and a ratchet attachment having two square male connector means; said handle having one end in the form of a bifurcated head and formed by three laminated sections held together by four rivets, a pair of the outer laminae being longer than the central lamina to form the bifurcation, said turret member being multiple-slotted around a section of its outer periphery and journalled in a cavity formed by said bifurcation, a rectangular slot in the central lamina opening into said cavity, a cross slot in each outer lamina that opens into the rectangular slot of the central lamina, said latch means comprising a shiftable rectangular pin in the slot of the central lamina having one end to engage any one of the multiple slots in the turret member for the purpose of holding the turret member in a selected position, said pin engaging a spring which constantly urges the pin into engagement with one of the turret slots, said pin having laterally extending arms which extend through said cross slots on both sides of the handle and wherein their outer ends protrude to form finger tabs for shifting said pin out of engagement with said turret member against the urging of said spring, said female connector means comprising a square-shaped recessed cavity at the outer end of a short arm extending integrally from one side of the turret member, the longitudinal axis of which is in alignment with the longitudinal axis of said handle when the turret member is latched in the central slot, said female connector means being for the purpose of cooperating with and receiving one of the two male connector means on the ratchet attachment in any one of four facing directions, said female connector means also being for the purpose of receiving a similar male connector means on an extension bar as an alternate choice, in which case the first male connector means on the ratchet head may be attached to the opposite end of said extension bar instead of directly to the female connector on the turret member and in any one of four different facing directions in the same manner as it may be connected directly to the turret member, the second square male connector means on the ratchet attachment extending outwardly from one side of said ratchet attachment at a 90° angle in relation to the first male connector means, said second male connector being for the purpose of receiving directly a socket tool, or for receiving an extension bar having a female connector means of complementary cross section, in which case the socket tool may be attached to the opposite end of the extension bar instead of directly to the ratchet attachment, thereby providing in the combination tool a facility for reaching and turning a work piece or fastener from many selectable single or double-angles of variable lengths that otherwise would be inaccessible to ordinary tools.

3,270,598
SKIVING TOOL HOLDER
Lawrence J. Mailloux, Detroit, Mich., assignor to Screw Machine Tool Company, Detroit, Mich.
Filed July 13, 1964, Ser. No. 382,127
3 Claims. (Cl. 82—36)

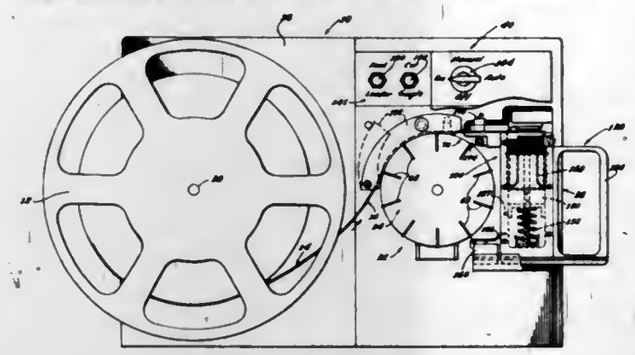


1. A tool holder including,
(a) a block to mount a tool carrier, and adapted to mount upon a tool machine, said block having at least one plane face, and being formed with
(b) a recess opening in said face,
(c) a nut having a portion rotatably received in said recess, and having a portion protruding from the recess,
(d) a slide formed on said protruding portion
(e) a tool carrier mounting a cutting tool and having at least one plane face, and being formed with
(f) an elongated slideway, extending along said face and recessed therein to slidably interlock with said slide (d) and mount the carrier thereon, said slideway being open at each end thereof,
(g) locking means interengaging the nut and the block, and actuable to draw said nut inwardly of said recess, and thus draw said carrier into rigid metal-to-metal engagement with said block, abutting said plane faces, said locking means being actuable to release said elements from said rigid engagement to afford sliding travel of the carrier on said slide, and rotative actuation of said nut in said recess,
(h) a screw extending into and along said slideway, and threadedly engaging said slide (d)
(i) restraining means removably secured to said carrier, to engage an end portion of said screw (h) and resist movement of said screw along its longitudinal axis relative to said carrier, whereby rotation of said screw effects travel of said screw through said nut, and travel of said carrier on said slide to dispose said carrier to position a cutting tool in desired relation to a workpiece,
(j) means carried by said block and actuable to effect said rotation of said nut (c) and associated carrier to dispose a cutting edge of said tool in a desired relation to the axis of rotation of a workpiece.

3,270,599
FILM CUTTER WITH PHOTOCELL INSPECTION AND STOP MEANS
Leroy C. Kleist, Ogden, Ill., assignor to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware
Filed Sept. 24, 1963, Ser. No. 311,020
16 Claims. (Cl. 83—63)

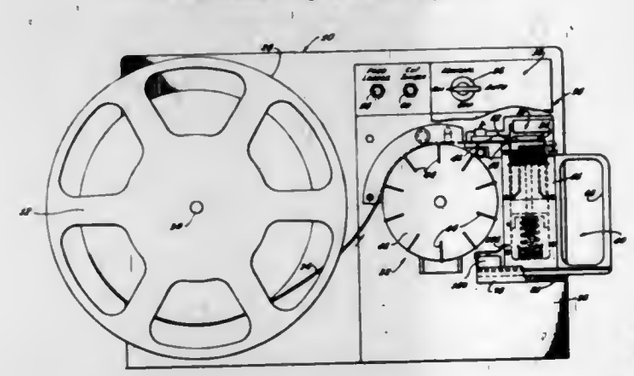
1. In combination for cutting a strip of film into a plurality of film cards,
means for advancing the film strip,
stop means operatively coupled to the advancing means for momentarily interrupting the advance of the film strip each time it has been advanced through a predetermined increment,

cutting means operatively coupled to the film strip and positioned for engaging and cutting the film into film cards,
means disposed adjacent said film strip for inspecting said film strip for defects, said last means being operatively interconnected with said stop means for



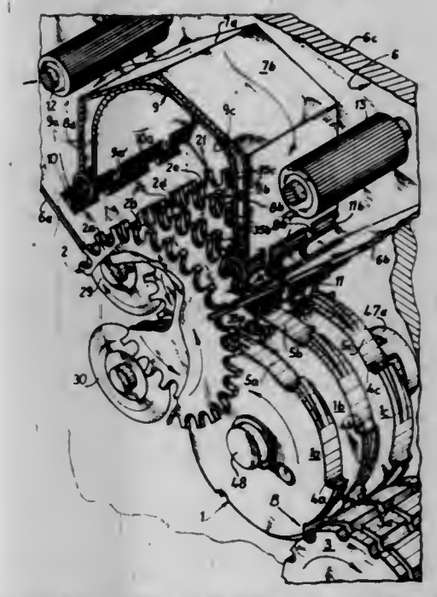
stopping the advance of said film strip whenever it is defective,
and means operatively coupled to said film-advancing and stop means for obtaining the effective operation of said film-inspecting means only when the advance of the film strip has been momentarily interrupted by the stop means.

3,270,600
FILM CUTTER
Kenneth H. Love, Urbana, Ill., assignor to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware
Filed Sept. 27, 1963, Ser. No. 312,199
24 Claims. (Cl. 83—94)



24. In combination for cutting a strip of film into a plurality of film cards and for stacking the cards in a stacked relationship,
means for intermittently advancing the film strip,
means operatively coupled to the advancing means for obtaining an interruption in the advance of the film strip after the film strip has been advanced through each successive increment,
cutting means operatively coupled to the film strip and responsive to each interruption in the advance of the film strip for engaging and cutting the film into film cards,
a capsule including an opening in one end for receiving said cards,
retaining means on the capsule adjacent said opening, the retaining means being constructed and positioned to retain a stack of cards in said capsule, the retaining means being normally disposed in a first position to retain the cards in the capsule and being movable to a second position to provide for a passage of cards into and out of the capsule,
means for securing said capsule adjacent said cutting means, said securing means including means movable between first and second positions and operative in the first position to move said retaining means to the second position to permit cards to pass through the opening in the capsule and being movable to the second position to provide for a removal of the capsule from the securing means, and
means on said cutting means for inserting the resultant cards through the opening in said retaining means and into the capsule simultaneously with the engagement of the film by the cutting means for the purpose of performing the cutting operation.

3,270,601
APPARATUS FOR MANIPULATING ROD-LIKE MATERIAL
Bernhard Schubert, Hamburg-Lohbrugge, Germany, assignor to Hauni Werke Korber & Co., KG, Hamburg, Germany
Original application Nov. 14, 1963, Ser. No. 323,694. Divided and this application Oct. 6, 1965, Ser. No. 493,319
Claims priority, application Germany, Nov. 17, 1962, H 47,424
11 Claims. (Cl. 83—102)

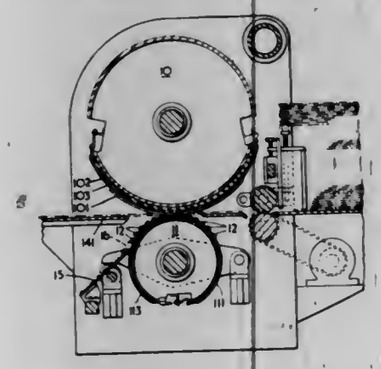


1. An apparatus for staggering an array of rod-like sections wherein the sections are disposed in rows and wherein each section of one row is in substantial axial alignment with one section of each other row, comprising a feed conveyor having a plurality of equidistant holding means each arranged to receive a plurality of axially aligned sections; a receiving conveyor having a plurality of equidistant holding means each arranged to receive a single section; drive means for moving said conveyors at different speeds and in directions substantially at right angles to the axes of said sections; a transfer conveyor disposed between said first mentioned conveyors and comprising a plurality of transfer elements, one for each section in a holding means of said feed conveyor and each comprising a plurality of holding means, the holding means of said transfer elements being staggered with reference to each other and said transfer elements having portions of different length extending from a first transfer station at which the holding means of said transfer elements receive seriatim the foremost axially aligned sections from consecutive holding means of said feed conveyor to a second transfer station at which the holding means of said receiving conveyor receive sections seriatim from the holding means of said transfer elements; and drive means for moving said transfer elements substantially at right angles to the axes of said sections at such

a speed that all axially aligned sections are transferred from a holding means of said feed conveyor into the holding means of said transfer elements while a section moves with said feed conveyor through a distance which is less than the distance between the centers of two consecutive holding means on said feed conveyor.

9. As a novel article of manufacture, a transfer conveyor for rod-like articles comprising a pair of rotary disks having fixed parallel axes; coupling means comprising a bolt secured to one of said disks and a substantially radially extending slot provided in the other disk and receiving a portion of said bolt; drive means for rotating one of said disks whereby the other disk rotates with said one disk; and peripheral holding means provided on said disks.

3,270,602
APPARATUS FOR CUTTING CARDBOARD AND ANALOGOUS FLEXIBLE MATERIAL
Kenneth Kirby, Keith Roland Tallett Kirby, and Colin Walter Kirby, Walsall, England, assignors to Kirby's (Engineers) Limited, Walsall, England, a corporation of Great Britain and Northern Ireland
Filed Jan. 21, 1965, Ser. No. 426,813
Claims priority, application Great Britain, Jan. 28, 1964, 3,520/64; Oct. 20, 1964, 42,656/64
7 Claims. (Cl. 83—102)



1. Rotary apparatus for cutting cardboard and analogous flexible sheet material incorporating a positively driven die carrying roller, cutting rule attached to the periphery of the roller in the pattern of the cutting desired to be effected, an impression roller, in the nip between which and the die carrying roller the sheet material to be cut is passed and protuberant arcuate members with intermediate upstanding knife edged portions fixed on one of the said rollers at those places on the periphery which will correspond with the location of the waste resulting from the performance of a cutting operation so that during the performance of a cutting operation the protuberant elements will bite into the waste with a resilient progressive rolling action as cutting proceeds and carry away the waste material impaled thereon as the die carrying and impression rollers recede in the course of a cutting operation.

3,270,603
TUBE CUTTING MECHANISM
Thane E. Hawkins and Donald J. Castor, Meadville, Pa., assignors to Talon, Inc., a corporation of Pennsylvania
Filed Feb. 18, 1964, Ser. No. 345,622
12 Claims. (Cl. 83—127)

1. Mechanism for cutting tubing, including in combination,

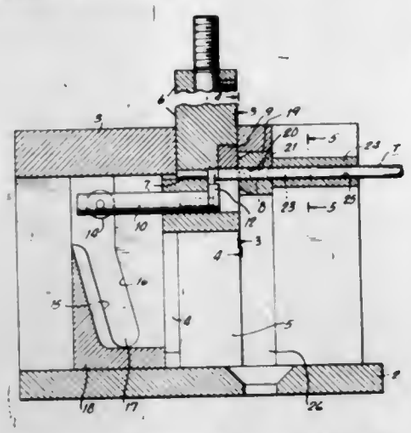
a stationary mandrel over and around which the end of a continuous length of tubing to be cut is adapted to be disposed and which acts as an internal cutter,

an external cutter arranged circumferentially around the tubing to be cut and said stationary mandrel,

means movable relative to said mandrel for stripping a cut length of tubing therefrom,

a floating mandrel arranged directly opposite said stationary mandrel and in alignment therewith which is also adapted to be disposed in the tubing to be cut, and which is adapted to act as an internal cutter,

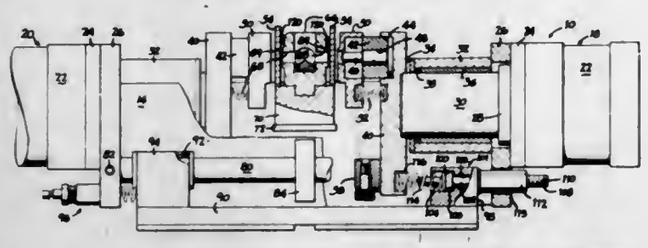
means arranged within the tubing to be cut reardwardly of said floating mandrel which cooperates with the interior wall of said tubing for urging and positioning the floating mandrel toward and against the end of said stationary mandrel,



an external cutter arranged circumferentially around the tubing to be cut and the floating mandrel therein, and

means for actuating said first external cutter together with said stationary mandrel and the stripping means transversely to the axis of the tubing to be cut whereby a predetermined length of tubing is cut from the end of the continuous length tubing due to the cooperation of the first external cutter and the end of the stationary mandrel with the second external cutter and floating mandrel.

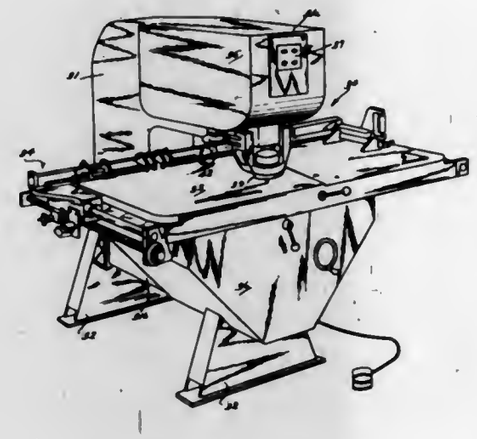
3,270,604
FORCE APPLYING FABRICATING DEVICES
Edward J. Waltonen, Southfield, Mich., assignor to Wes Industries, Inc., Royal Oak, Mich., a corporation of Michigan
Filed July 1, 1964, Ser. No. 379,541
9 Claims. (Cl. 83—140)



1. In a force applying fabricating device, frame means, workpiece fabricating means carried by said frame means and including force applying means and force resisting means spaced from said force applying means for cooperation therewith to fabricate a workpiece; spaced shaft means unitarily supporting said frame means and said workpiece fabricating means; suspension means upon which the combination of said spaced shaft means, said frame means and said workpiece fabricating means are suspended for relative movement thereto; resilient biasing means interposed between said suspension means and the combination of said workpiece fabricating means, said frame means and said spaced shaft means urging said force resisting means in a direction opposite to the direction of movement of said force applying means upon actuation thereof; whereby upon actuation of said force applying means to forcibly engage the workpiece between said force resisting means and said force applying means, the combination of said workpiece fabricating means, said

frame means and said shaft means move responsive to said resilient biasing means in substantial unison relative to said suspension means in a pressure balancing manner to contact the workpiece first by said force resisting means and second by said force applying means to thereby manufacture a finished workpiece of improved precision.

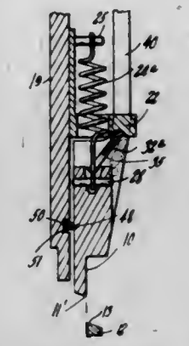
3,270,605
PUNCHING MACHINE WITH DETACHABLE TOOL HOLDER
Arthur K. Schott, Clarence, Kenneth J. Bartha, Tonawanda, and Charles Lee Rovoldt, Getzville, N.Y., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Original application Nov. 1, 1960, Ser. No. 66,639, now Patent No. 3,225,636. Divided and this application Apr. 19, 1965, Ser. No. 449,253
19 Claims. (Cl. 83—522)



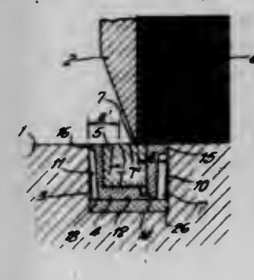
1. A punching machine including a stationary frame having a bed, a movable ram carried by said frame and adapted to be selectively driven toward and from said bed, and a single upper tool support, said bed and said tool support being adapted to support selectively replaceable relatively-reciprocable cooperating punch and die tool means both in the direction of reciprocation and in accurate alignment, a pair of connections having separate axes fixedly securing said tool support to said frame, at least one of said connections including means by which the same is readily individually detachable, and said means being operative when reattached to guide the tool support into the position where said accurate alignment of said tool means is present.

3,270,606
CUTTING BLADE ASSEMBLY
Charles M. Schott, Jr., Gloucester, Mass., assignor to Gloucester Engineering Co., Inc., Gloucester, Mass., a corporation of Massachusetts
Filed Feb. 19, 1965, Ser. No. 433,960
13 Claims. (Cl. 83—579)

1. A knife assembly including first and second substantially edge-aligned blades mounted by mounting means on supports to move relative to each other along a first path to cut material lying across said path, said mounting means for said first blade constructed and positioned relative to the edges of said blades so that cutting resistance force in the direction of said path, exerted on the edge of said first blade by the material being cut, will produce a turning moment on said first blade tending to rotate its edge toward the edge of said second blade, said mounting means constructed and arranged to permit rotation of the body of said blade in response to said turning moment to thereby increase the lateral force exerted by the edge of said first blade toward the edge of said second blade in proportion to the cutting resistance encountered by said first blade, said mounting means including positioning means adapted to maintain said blade substantially in a given position under non-cutting conditions.



3,270,607
HOLDER FOR A STICK FOR A GUILLOTINE-TYPE PAPER-CUTTER MACHINE
Ignaz Oesterreicher, VII. Schottenfeldg. 85/8, Vienna, Austria
Filed Sept. 30, 1963, Ser. No. 312,788
Claims priority, application Austria, June 25, 1963, A 5,106/63
6 Claims. (Cl. 83—658)

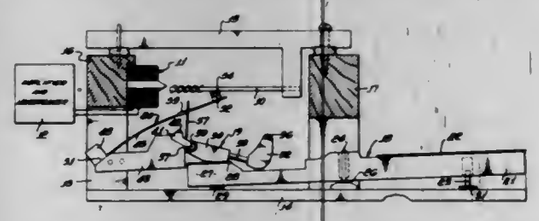


1. A stickholder comprising a member having a base wall and a pair of opposing side walls which define within said member a hollow recess for a rectangular stick, said recess being open opposite said base wall, one of said side walls being thicker than the other of said side walls to provide unequal distances between the vertical center line of a stick disposed in said recess and the outer surfaces of said side walls, the outer surfaces of said side walls sloping downwardly toward said bottom wall, and a bending recess defined in the upper surface of said base wall adjacent to said one side wall.

3,270,608
PIANO ACTION
Harold B. Rhodes, Anaheim, Calif., assignor of one-half to R. H. Osbrink
Continuation of application Ser. No. 225,917, Sept. 24, 1962. This application Oct. 21, 1965, Ser. No. 506,431
35 Claims. (Cl. 84—237)

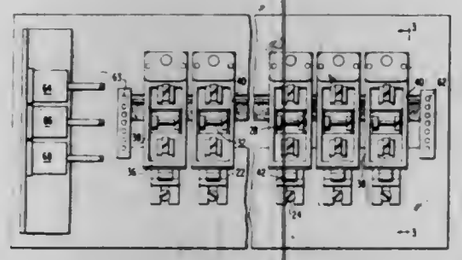
1. A musical instrument of the piano type, which comprises support means, a vibratory tone generator mounted on said support means, an elongated piano key, fulcrum means on said support means and operably associated with an intermediate part of said key to mount said key for pivotal movement about a first horizontal axis, said fulcrum means dividing said key into an outer portion adapted to be struck by a pianist and an inner portion adapted to move upwardly upon striking of said outer portion, a hammer having a first portion adapted to strike said tone generator to set the same into vibration, said hammer also having a second portion, and means to pivotally connect said hammer to said support means for

pivotal movement of said hammer about a second horizon axis generally parallel to said first horizontal axis, said second horizontal axis being so located that said second portion of said hammer is operably engaged by said inner portion of said key, said second hammer portion and said inner key portion being shaped to effect pivotal movement of said first hammer portion into engagement with said tone generator upon said upward movement of said inner key portion, said second hammer portion and inner key portion being so shaped relative to each other that upon said upward movement of said inner key portion the distance between said second horizontal axis and engaged areas of said second hammer portion and inner



key portion becomes progressively smaller only until said first hammer portion is spaced a predetermined small escapement distance from said tone generator, said second hammer portion and inner key portion also being so shaped relative to each other that said distance between said second horizontal axis and engaged areas of said second hammer portion and inner key portion does not diminish substantially during movement of said first hammer portion through said escapement distance into engagement with said tone generator whereby a braking action occurs at said engaged areas during movement of said first hammer portion in both directions through said predetermined small distance.

3,270,609
STRING ACTUATED COMBINATION ACTION
Paul A. Klann, P.O. Box 2398, Waynesboro, Va.
Filed Nov. 24, 1965, Ser. No. 509,516
4 Claims. (Cl. 84—370)



1. A string actuated combination action for an organ comprising;

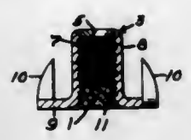
(a) a plurality of stop tablets, each tablet being pivotally mounted on a support means for movement from one position to another position,

(b) string guide means on each movable stop tablet and on the support means adjacent the stop tablet,

(c) a plurality of strings, the strings being secured at one of their ends to the support means and selectively threaded in engagement with the string guide means for each stop, and

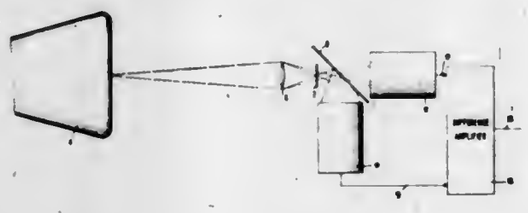
(d) pulling means attached to the other end of each string to pull selected ones of the strings and thereby actuate selected stops in accordance to the position of the string on the guide means of the stop tablets.

3,270,610
SEALED HOLLOW FASTENER MEMBERS
Edward A. Knowlton, Winchester, Mass., assignor to United-Carr Incorporated, a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,256
2 Claims. (Cl. 85—32)



1. A sealed fastener member comprised of a tubular extension having an aperture throughout and internal walls formed by said aperture which are threaded and primer coated and a cured thermally-expanded foam vinyl pellet seated within and bonded to the internal walls of said tubular extension sealing said fastener member.

3,270,611
APPARATUS FOR MONITORING RELATIVE CONTRAST
Herbert L. Gelernter, Briarcliff Manor, Louis A. Kamentsky, Katonah, and Robert J. Potter, Ossining, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 24, 1961, Ser. No. 133,678
7 Claims. (Cl. 88—14)



2. An apparatus for monitoring the relative contrast between data on a data-bearing document and the area surrounding the data comprising, in combination:

a source emitting radiant energy in two different and non-coextensive wave length bands;

a lens element utilizing its varied refraction character to coaxially focus the energy in the first of said wave length bands at a point on the document and defocus the energy in the second of said wave length bands in an area on the document surrounding said point;

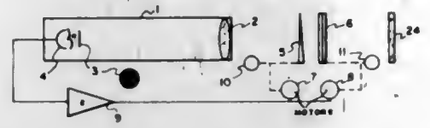
a beam splitting element directing substantially all of the energy in said first wave length band and substantially none of the energy in said second wave length band along a first path after passage through the document, and directing substantially all of the energy in said second wave length band and substantially none of the energy in said first wavelength band along a second path after passage through the document;

means in said first path receiving the energy passing through said document in said first wave length band and producing a first electrical signal proportional thereto;

means in said second path receiving the energy passing through said document in said second wave length band and producing a second electrical signal proportional thereto; and

means comparing said first and second signals to provide a signal indicative of the relative contrast between said point and the area surrounding said point.

3,270,612
SERVO NULLED AUTOCOLLIMATOR HAVING A PAIR OF ROTATABLE WEDGES
Philip Wardham Collyer, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Nov. 7, 1962, Ser. No. 236,024
3 Claims. (Cl. 88—14)



1. In a polarized light autocollimating system for monitoring rotations of a reflecting surface about two orthogonal axes which system includes means for producing at least one beam of polarized light, the plane of polarization of which rotates, means for collimating said beam and the beam being aimable at the reflecting surface and being reflected back therefrom in a beam striking the said means for producing collimation, the improvement which comprises

(a) polarizing analyzing means having polarizations totaling four and comprising pairs of polarizing means polarized at right angles to each other in each pair and at 45° to each other between pairs,

(b) said means for collimating said beam further causing the reflected beam from the reflecting surface to be imaged on the analyzing means,

(c) radiation detecting means transforming radiation into four electrical signals in phases at 90° to each other, a pair of the signals, 180° to each other, being derived from the reflected beam through one pair of said polarizing analyzing means and the other pair derived from the other pair of polarizing analyzing means,

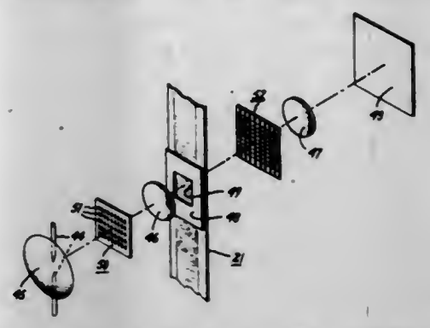
(d) two transparent wedges, the respective tapers of said wedges being initially substantially at right angles to each other and positioned transverse to the collimated beam so that the beam, before and after reflection from the reflecting surface, passes therethrough,

(e) means for rotating the wedges independently through limited arcs θ_1 and θ_2 respectively, the axes of rotation being parallel to the collimated beam and the arcs being less than about 30°, each means being actuated by one of said pairs of signals from the detecting means, and

(f) electronic resolving means connected to move through the same angles as the two wedges and provided with input A.C. voltages and output circuits, one giving a signal proportional to $\sin \theta_1 + \cos \theta_2 - 1$ and the other an output signal proportional to $\sin \theta_2 + \cos \theta_1 - 1$, whereby the outputs from the resolving means indicate the amount of rotation of the reflecting surface about the two axes.

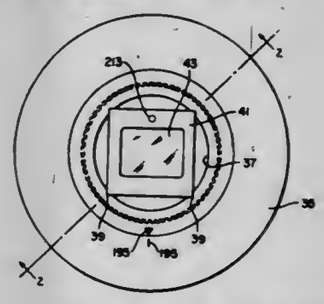
3,270,613
COLORED LIGHT PROJECTION SYSTEM
William E. Glenn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 1, 1963, Ser. No. 320,894
12 Claims. (Cl. 88—24)

1. An optical system for projecting colored light representative point-by-point of the color information contained in a light modulating medium in the form of deformations which diffract light corresponding to one color to be projected in a given direction and diffract light corresponding to the remaining colored light to be projected in a direction normal to said given direction comprising a filter color mask interposed in the path of light controlled by the medium and comprising a first plurality of spaced parallel filter strips of said one color and extending in the direction of diffraction of said one color and a plurality of spaced filter strips of the color of said remaining colored light and extending in the direction of diffraction of said remaining colored light and optically overlying



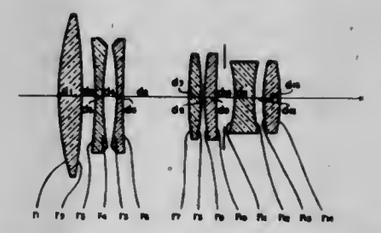
said first plurality of filter strips, the overlying areas of said filter strips forming opaque areas, said system providing light source and focusing means for focusing undiffracted light impinging on said medium on said opaque areas.

3,270,614
SOUND SYSTEM FOR PICTURE SLIDES
Morris Paull, Rochester, N.Y., assignor to Atron Corp., Rochester, N.Y., a corporation of New York
Original application May 4, 1962, Ser. No. 192,479. Divided and this application Feb. 15, 1965, Ser. No. 432,739
9 Claims. (Cl. 88—28)



1. A hub for holding a picture slide and an annular sound record in predetermined relation to each other, characterized by the fact that said hub is of generally circular shape and has a central opening with notches in the periphery thereof for making a tight press fit with and frictionally retaining the corners of a picture slide mount, and that said hub also has a circumferentially extending groove for receiving the inner marginal edge of an annular sound record engaged in and guided for rotation by said groove.

3,270,615
THREE COMPONENT ZOOM LENS FOR PHOTOGRAPHIC MINIATURE CAMERAS
Takashi Higuchi, Hodogaya-ku, Yokohama-shi, Japan, assignor to Nippon Kogaku, K.K., Tokyo, Japan, a corporation of Japan
Filed July 11, 1962, Ser. No. 209,024
Claims priority, application Japan, Aug. 15, 1961, 36/28,904
3 Claims. (Cl. 88—57)



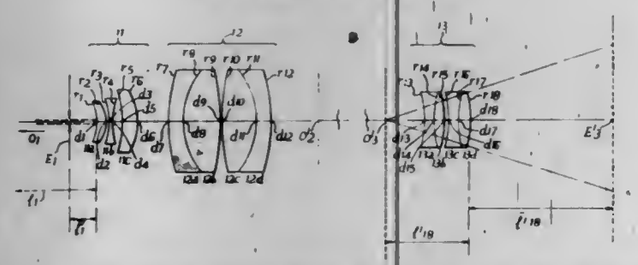
1. A zoom lens comprising three components of which the first is a positive movable component of focal length

f_1, the second is an immovable negative component consisting of a plurality N up to three biconcave airspaced negative lens elements, the second component having a focal length of f_2, and the third is a positive movable component of focal length f^3, and consisting of two positive lens elements, a negative lens element and a positive lens element air spaced in that order, the second component is spatially fixed between the first and third mechanically movable components, the lens array satisfying the following conditions:

$$0.5f_1 \leq r_1 \leq 1.1f_1$$
$$0.2f_1 \leq f_2 \leq 0.5f_1$$
$$0.9|f_3| \leq f_3 \leq 1.8|f_2|$$
$$1.2Nf_3 \leq r_3 \leq \infty$$
$$0.4N|f_2| \leq r_4 \leq 1.5N|f_2|$$
$$0.9f_3 \leq |r_{11}| \leq 1.8f_3$$
$$0.5f_3 \leq r_{12} \leq 1.3f_3$$
$$l = d_{3S} - d_{1L}$$
$$m = f_1 - d_{1S} + \frac{f_2(d_{2S}-l)(b_{3S}+l-f_3) - f_2f_3(b_{3S}+l)}{(d_{2S}-l)(b_{3S}+l-f_3) - f_3(b_{3S}+l) - f_3(b_{3S}+l-f_3}$$

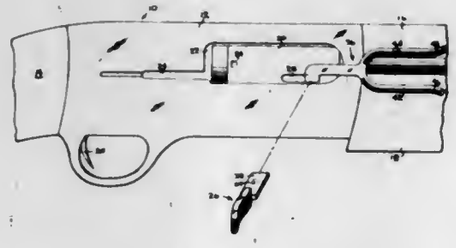
where $r_{subscript}$ is the radius of curvature of the successive surfaces of the lens elements, the subscripts increasing in the order of location of the respective surface from the object to the image side of the zoom array, m is the distance through which the first component is movable, l is the distance through which the third component is movable, d_{1S} the air spacing between the principal planes of the first and second components, d_{2S} the air spacing between the principal planes of the second and third components, both d_{1S} and d_{2S} being taken at the component positions at which the overall focal length of the zoom array is the shortest, d_{1L} and d_{2L} the air spacings between such principal planes when the third component has moved the distance l and the first component the distance m, and b_{3S} is the distance between the third component and the image point formed by the object point at infinity by the first, second and third components when each is at its position for the minimum overall focal length of the zoom lens array.

3,270,616
THREE COMPONENT LENS SYSTEM HAVING EXTERNAL ENTRANCE AND EXIT PUPILS
Harold Horace Hopkins, Barnet, England, assignor to Communications Patents Limited, London, England
Filed Oct. 4, 1962, Ser. No. 228,370
Claims priority, application Great Britain, Oct. 12, 1961, 36,612/61
3 Claims. (Cl. 88—57)



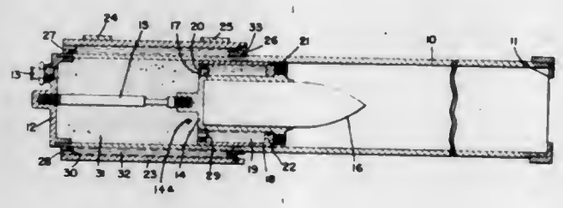
1. An optical lens system in which both the entrance pupil and the exit pupil are external to the system, comprising first, second and third lens components arranged in sequence along the optical path through the lens system from object viewed to image plane, and said first and second lens components being spaced apart by a distance less than said second and third lens components are spaced apart, the first lens component having a positive equivalent focal length, the second lens component having a positive equivalent focal length, the third lens component having a negative equivalent focal length, the lens system as a whole having an equivalent focal length which is positive and numerically smaller than the equivalent focal length of each of the three lens components individually, a real image being formed between the second and third lens components, a virtual image of this real image being formed by the third lens component between the real image and the third lens component, the said first, second and third lens components in their relative spacings are together such that the distance of the said real image, formed between the second and third lens components, from the principal plane of the second lens component is less than the distance of said real image from the principal plane of the third lens component, the separation between the principal planes of the second and third lens components being at least three times as great as the separation between the principal planes of the first and second lens components, said entrance pupil being spaced from said first lens component by a distance greater than one half said equivalent focal length of the lens system.

3,270,617
SHELL CATCHER ATTACHED TO THE RECIPROCABLE BOLT OF A FIREARM
Ralph V. Seymour, 110 Birch Road, Springfield, Ohio, and Carl E. Bullard, Rte. 1, Mechanicsburg, Ohio
Filed Mar. 22, 1965, Ser. No. 441,433
15 Claims. (Cl. 89—33)



1. In combination; a firearm having an opening through which a spent shell is ejected and also having a reciprocable bolt therein operable for ejecting the spent shell upon the rearward movement of the bolt, and a shell catcher mounted on said bolt so as to travel with said bolt and positioned on said bolt so as to be adjacent said opening when said bolt is moved rearwardly and operable to catch and retain said spent shell as it is ejected from said opening.

3,270,618
CONTROLLED RECOIL WEAPON
Albert M. Stott, Southampton, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed June 30, 1964, Ser. No. 380,119
4 Claims. (Cl. 89—43)

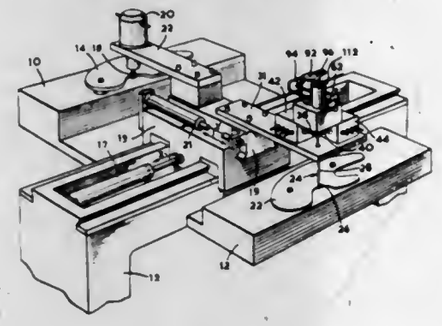


1. In a weapon having a slidable carrier therein for supporting a projectile,

a barrel supporting said carrier and having at its muzzle end a shoulder for stripping said carrier from said projectile and ignition means at its breech end,

said carrier comprising a movable housing and a projectile supporting member having an outwardly extending flange engaging said housing, said housing having inwardly extending flange means engaging said member and longitudinally spaced from said flange to define a chamber between said housing and member, one of said flange and flange means having orifice means extending therethrough and normally closed by blow-out disk means and buffer fluid in said chamber for dissipating energy in the moving carrier when said carrier strikes said shoulder at the end of its travel.

3,270,619
CONTROL SYSTEM
Lincoln S. Magor, Galt, Ontario, Canada, assignor to Mimik Limited, Galt, Ontario, Canada
Filed June 2, 1965, Ser. No. 460,682
9 Claims. (Cl. 90—13.5)



1. In a control for hydraulically operated machines wherein the relative movements between a tool and a workpiece correspond to relative movement between a tracer and a pattern to be reproduced, comprising:

means for controlling such relative movements;

a stylus mounted to form the operative part of said tracer and arranged to contact and be deflected by said pattern;

said stylus being connected to said means for controlling relative movements so that when deflected, said relative movements are controlled so that the resultant relative movement between said tracer and the pattern, is substantially in the direction of said deflection;

means rotatably mounted on said tracer head for biasing said stylus in a predetermined direction, relative to said means;

orientation control for said biasing means;

means responsive to the amount of deflection of such stylus from a neutral position operable:

in response to said deflection exceeding a predetermined amount for causing said orientation control to rotate said biasing means in one direction; and

in response to said deflection being less than a predetermined amount for causing said orientation control to rotate said biasing means in the other direction;

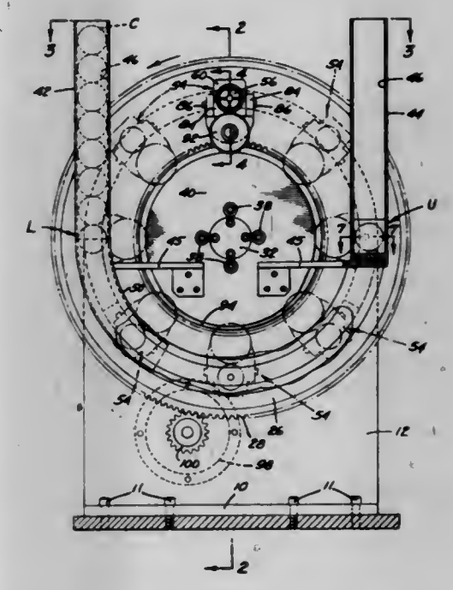
wherein a spool valve is mounted adjacent said stylus; said spool valve having a spool relatively slidable in a sleeve in a range of movement on each side of a median location therein;

means are provided responsive to movement of said spool on one side of said median location, for moving said orientation control in one direction, and responsive to movement of said spool on the other side of said median location for moving said orientation control in the other direction;

and means are provided mechanically coupling said stylus to said valve designed and constructed so that:

movement of said stylus to greater than a predetermined deflection causes said spool to move to said one side of said median location, and movement of said stylus to less than a predetermined deflection causes said spool to move to said other side of said median location.

3,270,620
MACHINE FOR SHAVING EMBOSSED LETTERS ON BOTTLE CLOSURES
Herman E. Wegner, Riverside, Calif., assignor, by mesne assignments, to Alcan Aluminum Corporation, New York, N.Y., a corporation of New York
Filed Apr. 20, 1965, Ser. No. 449,573
11 Claims. (Cl. 90—15)



1. A machine for shaving a thin layer from the surface of raised lettering embossed on the sides of a bottle closure, comprising:

a continuously rotating spindle carrier having at least one spindle journaled thereon, said spindle having an expanding chuck to receive and hold a bottle closure;

a loading station, including means for loading closures onto said chuck;

an unloading station spaced an angular distance from said loading station;

means for driving said spindle carrier;

a rotatable milling cutter mounted adjacent said spindle and movable therewith as the spindle revolves with said carrier;

said milling cutter being movable toward and away from said chuck between a first position wherein the cutter is spaced radially outwardly from a closure mounted on the chuck, so as to clear the same, and

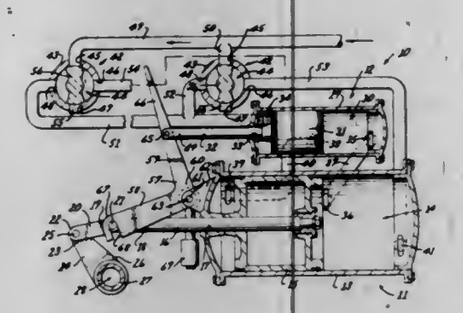
a second position wherein the cutter takes a light shaving cut on the surface of said lettering as said closure rotates with said spindle;

said milling cutter being normally held at said first position as said spindle and chuck pass said loading and unloading stations;

means for moving said milling cutter from said first position to said second position and then back to said first position as the spindle revolves from said loading station to said unloading station; and

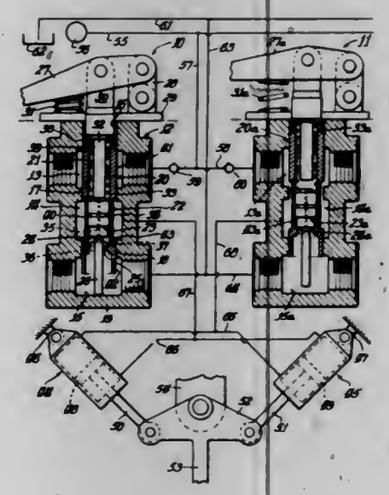
means for removing the shaved closures from said chuck as the latter passes said unloading station.

3,270,621
HYDRAULIC ACTUATOR AND LOCKING MECHANISM
Ernst J. De Ridder, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Continuation of application Ser. No. 272,687, Apr. 12, 1963. This application Apr. 30, 1964, Ser. No. 363,744
16 Claims. (Cl. 91—44)



1. In combination, a first piston and cylinder arrangement, said first piston being movable to one position thereof, a second piston and cylinder arrangement, said second piston being movable to one position thereof, said first piston when moved to a said one position thereof locking said second piston from movement when said second piston is in said one position thereof, and fluid pressure means for moving said pistons, said fluid pressure means first moving said second piston one position thereof before it is adapted to move said first piston to said one position thereof.

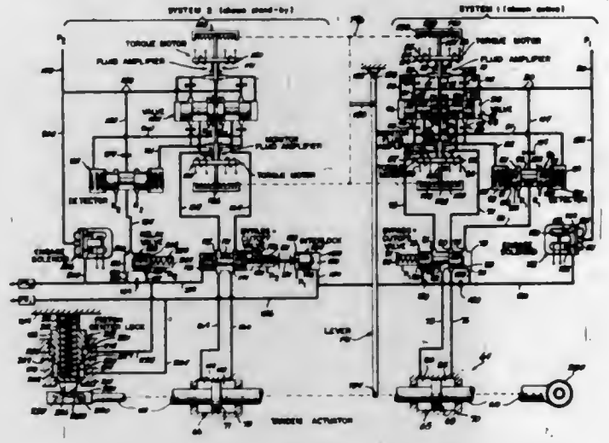
3,270,622
CONTROL VALVE FOR SWINGING A BOOM
William T. Stephens, Auburn, Ind., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Mar. 23, 1964, Ser. No. 353,735
8 Claims. (Cl. 91—186)



1. A hydraulic mechanism provided with a source of constant fluid pressure and a sump for the operation of a work member, the combination of:
(a) a first control valve, comprising a housing having first, second and third fluid chambers therein, said first and second fluid chambers normally being in fluid communication with each other and port means operably communicable between said second and third fluid chambers; a combination outmetering and relief valve operable in said housing comprising: a spool valve adapted to provide a valve head at its lower end, a valve seat operably associated with said valve head, a spring urging said valve head into engagement with said valve seat, a reaction surface at the lower end of said spool valve serving as a means for unseating said valve head when the pressure buildup exceeds the predetermined value of said spring,
(b) a second control valve having the same components as said first control valve,
(c) first and second cylinders provided with first and second pistons, respectively, operably connected with respect to said work member,
(d) a first fluid conduit interconnecting the piston side and the rod side of the said first and second cylinders respectively,
(e) a second fluid conduit interconnecting the rod side and the piston side of the said first and second cylinders respectively,
(f) a third fluid conduit interconnecting said third annular chambers of the said first and second control valves,
(g) a fourth fluid conduit interconnecting said first fluid chambers of the said first and second control valves,
(h) a pair of check valves in said fourth fluid conduit one each for each of said first fluid chambers,
(i) a fifth fluid conduit interconnecting the said source of constant fluid pressure and the said fourth fluid conduit,
(j) a sixth fluid conduit interconnecting the said sump and the said third fluid conduit,
(k) a seventh fluid conduit interconnecting said second fluid chamber of the said second control valve and the said first fluid conduit,
(l) an eighth fluid conduit interconnecting said second fluid chamber of the said first control valve and the said second fluid conduit,
(m) a manual means pivotally connected with respect to said first control valve for reciprocal operation of said combination outmetering and relief valve therein, whereby when said manual means is depressed to a certain degree the said valve head is unseated and fluid communication between said first and second annular chambers of the said first control valve is closed and fluid communication is established between the said second and third fluid chambers of the said first control valve, and fluid by way of said second fluid conduit is free to drain from the rod side and the piston side of the said first and second cylinders, respectively, by way of: the said eighth fluid conduit, the said second and third annular chambers of the said first control valve by means of the said port, and thence by way of the said third and sixth fluid conduits into the said sump whereby the said source of constant fluid pressure is exerted at the piston side and the rod side of the said first and second cylinders, respectively, which thereby causes said work member to swing in one direction; the flow of fluid from the said source of constant fluid pressure being by way of the said fifth and fourth fluid conduits, the said first and second fluid chambers of the said second control valve, and the said eighth and first fluid conduits; and
(n) a manual means pivotally connected with respect to said second control valve for reciprocal operation of the said combination outmetering and relief valve therein whereby when said manual means of said second control valve is depressed to a certain degree, the same sequence of events occur as those with respect to the operation of the said first control valve, except in reverse thereof, whereby the said work member is caused to swing in the other direction.

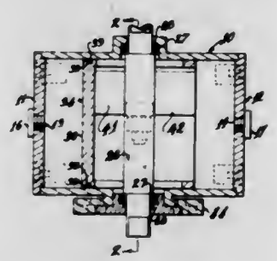
3,270,623
FLUID POWERED SERVOMECHANISM OF A REDUNDANT, MONITOR TYPE
Kenneth D. Garnjost, Buffalo, N.Y., and Herbert A. Whitney, Clifton, N.J., assignors to Moog Inc., East Aurora, N.Y., a corporation of New York
Filed Apr. 13, 1964, Ser. No. 359,120
10 Claims. (Cl. 91—387)

1. In a fluid powered servomechanism, the combination comprising means arranged to create a first pressure in response to a command input signal, a movable valve member driven by said first pressure, means for producing a force responsive to the position of said valve member, and monitor means including a motor for receiving



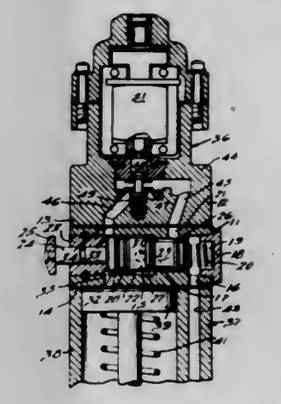
the same signal and arranged to create a monitoring pressure as a measure of the difference between said force and the output of said motor.

3,270,624
OSCILLATORY ACTUATOR
Franklin J. Blaney, Pittsburgh, Pa., assignor to Golden Anderson Valve Specialty Company, Inc., a corporation of Pennsylvania
Filed Sept. 25, 1964, Ser. No. 399,318
5 Claims. (Cl. 91—418)



1. An actuator for converting fluid pressure to oscillatory motion comprising:
(a) a cylinder,
(b) an actuator shaft extending transversely through said cylinder and disposed for oscillation relative thereto,
(c) a piston mounted for longitudinal movement within said cylinder,
(d) there being at least one elongated opening through said piston extending longitudinally of said cylinder in position to receive said shaft whereby said piston is adapted for movement relative to said shaft,
(e) means to introduce and exhaust fluid selectively adjacent opposite ends of said cylinder to move said piston selectively in opposite directions,
(f) angularly spaced arms extending outwardly from said shaft, and
(g) longitudinally spaced detents carried by said piston in position to engage outer portions of said arms and limit relative movement of said piston and said outer portions of said arms whereby said outer portions of the arms move with said piston to impart oscillatory motion to said shaft.

3,270,625
FLUID MOTOR AND PRESSURE RESPONSIVE VALVE
Andrew B. Huntington, Royal Oak, Daniel B. Abbott, Clawson, and Edwin P. Brinkel, Royal Oak, Mich., assignors to Ross Operating Valve Company, Detroit, Mich., a corporation of Michigan
Original application Sept. 12, 1963, Ser. No. 308,546. Divided and this application Sept. 7, 1965, Ser. No. 505,201
5 Claims. (Cl. 91—426)

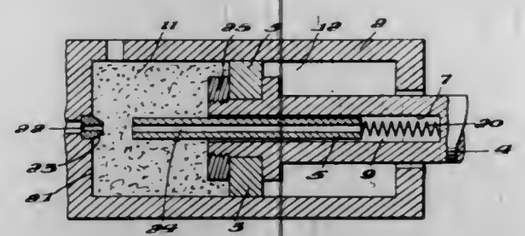


1. In combination with a system having a fluid motor, a supply port, and a control valve having inlet and working ports and movable between positions connecting and disconnecting said supply port and fluid motor, a lockout valve comprising a housing, a spool slidably mounted in said housing between open and lockout positions, first and second ports in said housing connected respectively to said supply port and control valve inlet port, an exhaust port in the lockout valve housing, the valve spool when in its lockout position disconnecting said first and second ports and connecting said second port and exhaust port, means biasing said spool toward its lockout position, pressure-responsive means connected to said control valve working port for overcoming said biasing means and holding said spool to its open position, the spool when in its open position connecting said first and second ports, and means on said spool for selectively shifting said spool to its open position.

3,270,626
FLUID-POWERED LINEAR ACTUATORS
Farel Bradbury, Square Root, 32 Church St., Hampton, England
Filed June 29, 1964, Ser. No. 378,911
Claims priority, application Great Britain, July 1, 1963, 26,088/63
4 Claims. (Cl. 92—113)

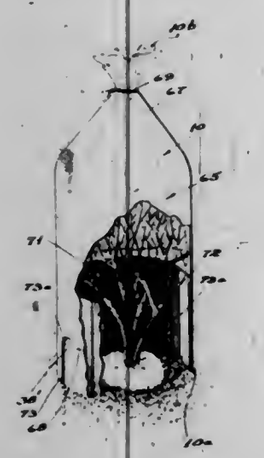
1. A linear actuator of the displacement type comprising a cylinder member and a coacting piston-and-rod member defining a hydraulic fluid chamber therebetween, means in one end face of said chamber defining at least one bore opening through said end face into said chamber and extending longitudinally in a direction parallel to the actuator axis, an open-ended generally-tubular probe freely-slidably mounted in said bore and capable of being substantially fully received therein, the end of said bore and said probe defining a probe pocket therebetween means for admitting pressurized hydraulic fluid

into said chamber disposed in the opposite chamber end face through which hydraulic fluid can be fed into and through said open-ended probe, and means for admitting hydraulic fluid to said chamber and for exhausting it therefrom on advance and withdrawal of the actuator re-



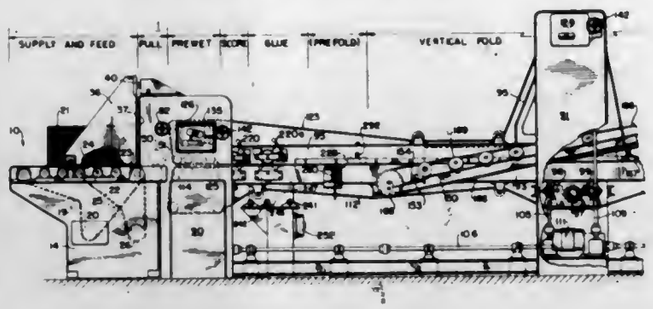
spectively, so that in operation the kinetic energy of admitted pressurised fluid is transmitted through the generally-tubular probe to said pocket there to create a pressure which tends to force said probe from said bore to encircle said pressurised fluid admission means and bear upon the opposed chamber end face.

3,270,627
METHOD OF MANUFACTURE OF PLANT SHIPPER AND SHELTER
Larry J. Budd, Elmhurst, Ill., assignor to Pallet Devices, Inc., Des Plaines, Ill., a corporation of Illinois
Filed Sept. 22, 1965, Ser. No. 489,368
11 Claims. (Cl. 93—1)



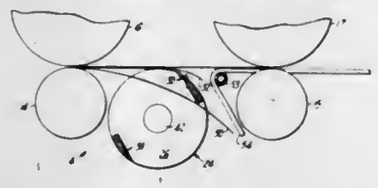
1. In a method of manufacturing a plant container comprising the steps of
cutting a shelter wall blank from corrugated paperboard material and providing transversely extending score lines at spaced intervals along the length of the wall blank,
folding the wall blank and disposing opposite ends in lapped relationship,
securing the opposite ends to form a generally flat-shaped corrugated tube,
providing a blank of waterproof paper and folding the blank disposing and securing the opposite ends of the paper blank in lapped relation to form a flat-shaped paper tube having a length greater than the length of the corrugated tube,
telescoping the generally flat-shaped corrugated tube inside of the flat-shaped paper tube and securing the tubes in assembly together, and
wrapping unsupported areas of the paper tube around the corrugated tube to compact the container for shipment and for storage.

3,270,628
UNIVERSAL BOX FOLDING MACHINE
Everett W. Clem, Shrewsbury, Mass., assignor to Specialty Equipment Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Sept. 20, 1962, Ser. No. 224,951
56 Claims. (Cl. 93—52)



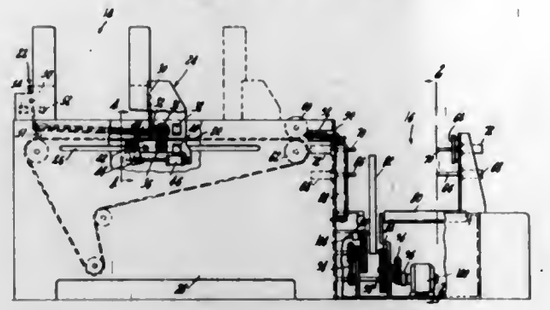
1. In a feed control system for a universal box folding machine of the type having a feed means for box blanks, a conveying and folding section arranged to receive box blanks from said feed means, and drive means for said feed means and said conveying and folding section, the improvement characterized by
(a) said drive means comprising a single, coupled drive system for said feed means and said conveying and folding section, and
(b) said drive means including a selectively engageable clutch means coupled to said feed means, whereby
(c) operation of said feed means may selectively be discontinued independently of operation of said conveying and folding sections to accommodate one-at-a-time conveyance of blanks through the machine during set-up, adjusting and like operations.

3,270,629
ENVELOPE ATTACHING MACHINES
Archibald H. Welch, Banford, Conn., assignor to converters, Incorporated, West Hartford, Conn., a corporation of Connecticut
Filed Feb. 14, 1964, Ser. No. 345,024
10 Claims. (Cl. 93—61)



1. In a machine for conveying envelopes forwardly in succession along an elongated path with the envelope panels extending transversely of the path and the envelope flaps folded forwardly from adjacent the trailing edges of the envelopes into contiguous relationship with the envelope panels, an apparatus for successively unfolding the flaps as the envelopes are conveyed along the path comprising; a rotor mounted adjacent the envelope path with its axis extending transversely thereof and having at least one transversely extending blade radially spaced from its axis; and drive means for rotating the rotor so that the tangential velocity of the blade as it rotates through a position adjacent the path will have the same direction as but less magnitude than the velocity of the envelopes, said drive means being synchronized with the movement of the envelopes such that as the blade rotates through said position an envelope closure flap will overtake the blade for insertion of the blade between the envelope panel and flap and upon continued movement of said envelope and rotor the flap will be unfolded by the blade from the envelope panel.

3,270,630
MATERIAL HANDLING APPARATUS
Robert H. Frappier, East Greenwich, and John F. O'Rourke, Jr., Cranston, R.I., assignors to Bostitch, Incorporated, East Greenwich, R.I., a corporation of Rhode Island
Filed Aug. 21, 1963, Ser. No. 303,558
1 Claim. (Cl. 93—93)

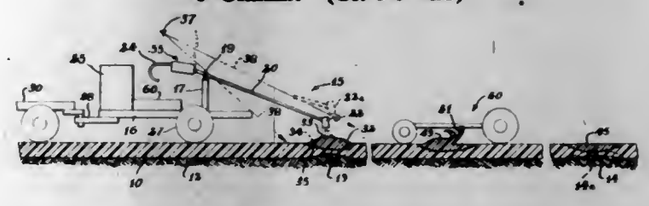


Stacking apparatus for handling sheet-like articles comprising a hopper,
feed means for transferring articles to said hopper serially for assembly in a stack,
ejection means including first and second endless drive elements disposed below said hopper and offset from one another in vertical and horizontal directions,
each said drive element having an upper run and a lower run,
a vertical disposed pusher element secured between said drive elements at similar run positions so that operation of said drive elements moves said pusher element through said hopper along a first path at one level and returns said pusher element to its starting point along a second path at a lower level,
and means to operate said drive elements to advance said pusher element through said hopper to transfer an entire stack of articles from said hopper,
first and second auxiliary support structures movable into and out of said hopper for providing auxiliary support for articles being fed into said hopper,
said first auxiliary support structure being disposable in spaced relation to the base of the hopper so that the movement of said ejection means in said hopper does not interfere with said first auxiliary support structure and said second auxiliary support structure being disposable at a point between said first auxiliary support structure and the base of said hopper,
and means to control the positions of said first and second auxiliary support structures.

3,270,631
METHOD OF APPLYING SEAL COAT PAVING MIXTURES
Harry C. Bower, Annapolis, Md., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Apr. 18, 1963, Ser. No. 273,858
3 Claims. (Cl. 94—23)

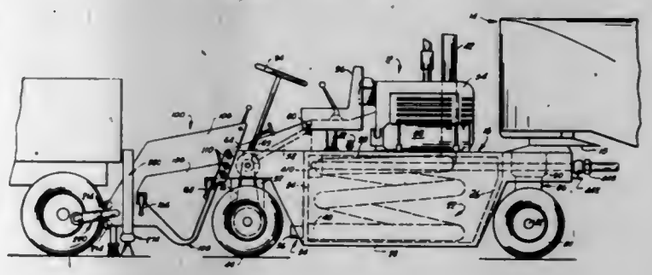
1. The method of repairing worn and eroded road surfaces which comprises
(A) heating a densely-graded siliceous aggregate to a temperature from about 325 to about 375° F.;
(B) intimately mixing the heated aggregate with a cationic emulsion of from about 70 to about 75% by weight of an asphalt, characterized by a viscosity in the range from about 600 to about 6000 poises at 140° F. and emulsified in water with the aid of a cation-active emulsifier thermally stable up to about 350° F., sand emulsion, having dispersed therein from about 1.0 to about 10.0% by weight thereof, of a light petroleum hydrocarbon distillate boiling between about 300 and about 600° F. (ASTM D–86);
(C) spreading the resulting mixture at a temperature of about 200° F. over the surface to be repaired; and
(D) compacting the spread mixture at temperatures between about 190 and 130° F.

3,270,632
METHOD FOR FLUXING ASPHALT SURFACES
Donald L. Schultz, 18150 Violet Road, Lansing, Ill.
Filed May 20, 1963, Ser. No. 281,705
6 Claims. (Cl. 94—23)



1. The method of removing humps from asphalt pavement comprising, positioning high capacity burner means in visually observable close proximity to the pavement, directly a flame from the burner means onto the pavement portion to be removed, said burner means being unshielded whereby an operator remote from the high heat zone observes discoloration in the surface to control the application of heat in accordance with predetermined color change until a portion of one of the constituents of the pavement portion to be removed ignites, removing the burner means from close proximity to the pavement, and scraping the heated area to remove the hump from the pavement.

3,270,633
UNIVERSAL BITUMINOUS PAVING MACHINE
John H. Holland, Norman, Okla., assignor to J. H. Holland Company, Norman, Okla., a corporation of Oklahoma
Filed Jan. 14, 1963, Ser. No. 251,169
7 Claims. (Cl. 94—44)



1. An asphaltic paving machine for spraying a coat of asphalt on a prepared roadbed, spreading a layer of aggregate over the coat of asphalt and compacting the aggregate in to the asphalt, the machine comprising, in combination:
chassis means having a front end and a rear end defining the longitudinal length thereof;
an asphalt supply tank carried by the chassis;
front support roller means connected to and supporting the front end of the chassis means, rear support roller means connected to and supporting the rear end of the chassis means, the support roller means constituting a transversely extending, compacting roller means for uniformly compacting the roadbed as the machine passes thereover, at least one of the support roller means being pivotally connected to the chassis means such as to be steerable for guiding the movement of the machine;
steering means operatively conected to the steerable roller means for guiding the machine over a desired path;

a prime mover mounted on the chassis means and operatively connected to at least one of the support roller means for driving the roller means and propelling the machine;

an aggregate receiving and spreading hopper means connected to the front end of the chassis means, the hopper means having a large opening in the top for receiving aggregate from a dump truck and an elongated, relatively narrow opening in the bottom extending transversely of the chassis for spreading a layer of aggregate on the ground in advance of the front support roller means;

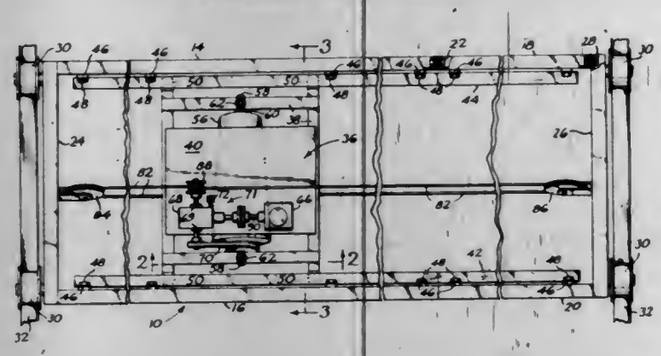
asphalt spraybar means for coating the ground with asphalt connected to the machine and disposed transversely of the chassis and in front of the elongated, relatively narrow opening;

pump and conduit system means operatively interconnecting the asphalt supply tank and the asphalt spraybar means for supplying asphalt under pressure to the spraybar means; and,

means connected to the front of the hopper means for engaging and pushing a dump truck as the truck dumps its load of aggregate into the hopper,

whereby as the machine is driven forward, aggregate can be supplied to the hopper, the ground will be coated by asphalt from the spraybar means, a layer of aggregate will be deposited from the hopper onto the fresh asphalt, and the compacting support roller means will immediately press the aggregate into the asphalt due to the weight of the machine and the weight of the asphalt and aggregate transported thereby.

3,270,634
FINISHING MACHINE
John A. Borges, Oregon City, Oreg., assignor of one-third to Henry Walder and one-third to Walter W. Kenworthy
Filed Dec. 31, 1962, Ser. No. 248,448
4 Claims. (Cl. 94—45)



1. In apparatus for finishing an elongated concrete deck comprising:

an elongated framework proportioned to be positioned over a deck and extending transversely thereof,

means whereby the framework may be advanced over the deck by moving the framework laterally, and

elongated track means extending longitudinally of and supported on said framework, the improvement comprising:

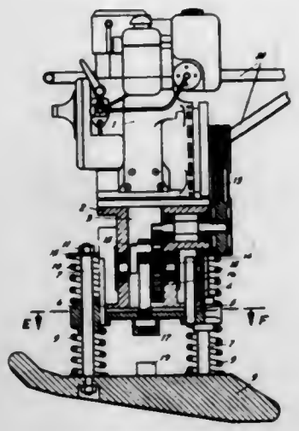
a rotatable finishing member of frustoconic form,

rotatable means journaling said finishing member with the member rotatable about its axis and with said axis disposed above said deck and extending transversely of said track means,

said means journaling the finishing member being supported on said track means for movement in either of opposite directions along a path paralleling said track means, and

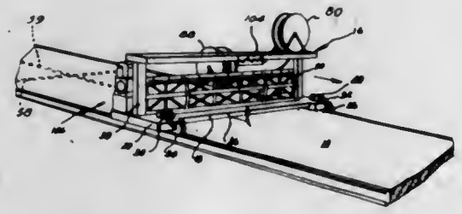
power means for rotating said finishing member in either of opposite directions.

3,270,635
MANUALLY GUIDED, MOTOR DRIVEN TAMPING DEVICES
Heinrich Kestel, Munich, Germany, assignor to Hermann Wacker and Peter Wacker, both of Munich, Germany
Filed Sept. 15, 1964, Ser. No. 396,495
Claims priority, application Germany, Nov. 15, 1963, W 35,641
5 Claims. (Cl. 94—49)



1. A manually guided, motor driven tamping device for compacting earth, concrete and the like, said device comprising a motor, a guided cylinder defining a housing, said motor being supported upon said housing, a gear transmission and a crank disposed in said housing and operatively connected to said motor, a reciprocating system comprising a guiding cylinder open at the top and slidingly receiving said guided cylinder and a connecting rod having one end linked to said crank and having its other end pivotally connected to said guiding cylinder by means of a wrist pin, a plurality of sleeves arranged circumferentially around the lower end of said guiding cylinder, a tamping foot disposed below said guiding cylinder and having a plurality of guide pins extending upwardly therefrom, one through each of said sleeves for sliding movement therein, and biasing springs associated in pairs with said guide pins, one above and one below each said sleeve, each spring of a pair having one end biased against one said sleeve, the other ends of the springs above said sleeves being biased against the upper ends of said guide pins, and the other ends of said springs below said sleeves being biased against said tamping foot.

3,270,636
METHOD AND APPARATUS FOR FORMING JOINTS IN CONCRETE
Lee Worson, Long Beach, Calif., assignor to Edoco Technical Products, Inc., Long Beach, Calif., a corporation of California
Filed Dec. 8, 1961, Ser. No. 158,003
3 Claims. (Cl. 94—51)



1. Apparatus for embedding lateral joint forming means in an elongated section of uncured concrete comprising:

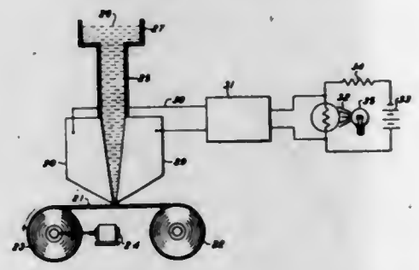
a frame movable longitudinally with respect to said concrete;

an elongated, rotatable transversely oriented tool having a groove forming portion operable to form a lateral groove through the aggregate of said concrete, said tool further having an insertion portion operable to hold and insert joint forming means into said concrete along said lateral groove;

a pair of support means vertically slidably carried by said frame at opposite ends of said tool and mounting said opposite ends of said tool thereto; and

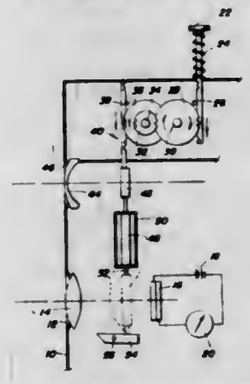
a pair of fluid actuated means carried by said frame and alternately operative upon said pair of support means to effect end-to-end rocking of said tool to thereby facilitate formation of said groove and insertion of lateral joint forming means by said tool.

3,270,637
ELECTROVISCOUS RECORDING
Harold E. Clark, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 3, 1963, Ser. No. 313,675
13 Claims. (Cl. 95—1)



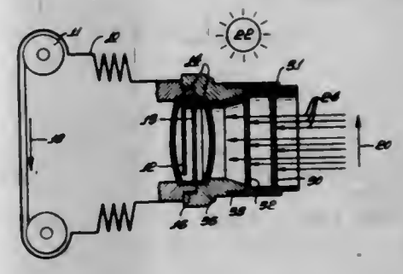
1. Image reproducing apparatus comprising liquid containing means adapted to contain electroviscous liquid and having an aperture therein, means to move an image recording member past said aperture, means to maintain liquid under pressure within said containing means for inducing liquid flow through said aperture onto said recording member, at least one pair of electrodes at said aperture, and circuit means to selectively apply a voltage between said electrodes to overcome said maintained pressure and inhibit the flow of said electroviscous liquid therethrough thereby forming a liquid pattern on said image recording member.

3,270,638
PHOTOMETRIC SYSTEM
Robert D. Anwyl and Dean M. Peterson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 22, 1963, Ser. No. 296,806
9 Claims. (Cl. 95—10)



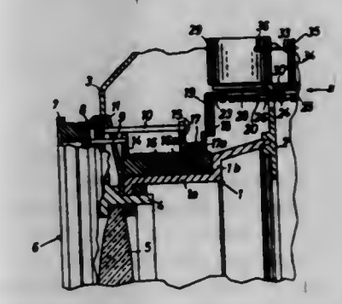
1. In a camera of the type having means including a photocell for sensing scene brightness and means for controlling the exposure in accordance with the output of said photocell, a phototropic element being movably mounted to a position covering at least a part of said photocell, said phototropic element being sensitive mainly to energy of a particular wavelength, so that in operation the camera will give greater exposure to scenes which are highly illuminated by said particular wave length, than it will to scenes which are illuminated by radiation of other wave lengths.

3,270,639
LIGHT INTENSITY CONTROL SYSTEM
Maurice W. Windsor, Redondo Beach, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 17,976, Mar. 28, 1960. This application Aug. 6, 1963, Ser. No. 301,935
4 Claims. (Cl. 95—10)



1. In combination with a photographic camera having a lens and normally accommodating a photographic film, means supported by the camera and being free of mechanically moving parts for automatically regulating the intensity of light impinging on the photographic film, said means comprising a photochromic means that is progressively responsive to the intensity of certain wavelengths of light received by the camera to automatically regulate the intensity of certain other wavelengths of light lying within the spectral sensitivity range of the film, that are applied to the film, and means carried by the camera for absorbing light energy transmitted through said photochromic means which is of wavelengths different from said certain other wavelengths and lying within the spectral sensitivity range of the film.

3,270,640
MANUALLY SETTABLE CAMERA WITH LIGHT-RESPONSIVE MEANS FOR AIDING IN THE SETTING OF THE CAMERA
Wilfried Hofmann and Alfred Winkler, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Mar. 5, 1964, Ser. No. 349,566
Claims priority, application Germany, Mar. 9, 1963, A 42,551
15 Claims. (Cl. 95—10)



13. In a camera, in combination, a pair of manually operable means for respectively setting the aperture and exposure time of the camera; totalizing screw means including a pair of plastic rings in threaded engagement with each other; support means supporting said rings for rotation about the optical axis and restraining one of

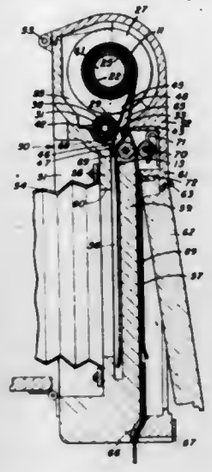
said rings against axial movement while freeing the other of said rings for axial movement; a pair of motion transmitting means respectively connecting said pair of manually operable means with said pair of rings for turning the latter in response to actuation of said pair of manually operable means, said totalizing means automatically positioning said axially movable ring in an axial position determined by the combination of the settings provided by said pair of manually operable means; light-responsive means for indicating to the operator when the camera has been properly set according to the lighting conditions; and third motion transmitting means cooperating with said axially movable ring and said light-responsive means for actuating the latter in response to axial movement of said axially movable ring for indicating to the operator when the camera has been properly set according to the lighting conditions.

3,270,641
REMOTE INSPECTION DEVICE AND THREADED MEMBER USED THEREIN
Norman R. Gosselin, Marblehead, Mass., assignor to Iota-Cam Corporation, Lynn, Mass., a corporation of Massachusetts
Filed July 1, 1963, Ser. No. 291,777
19 Claims. (Cl. 95—11)



1. An inspection device comprising an elongated snake-like member which has a distal end for inspecting a remote area and a proximal end at which the device is controlled, the snake-like member incorporating at least one flexible bundle of elongated light-conducting fibers extending between said two ends, an adjustment mechanism supported by said snake-like member at a point spaced from said proximal end, said adjustment mechanism having at least one component adapted to move relative to the body of said snake-like member to control said inspection, an elongated, flexible, torque-transmitting cable extending from said proximal end to said mechanism along said flexible bundle of fibers and supported by said snake-like member, a reaction block means located near said mechanism and fixed longitudinally to the body of said snake-like member, said reaction block means threadably engaged with cooperating means on said flexible cable to enable the latter to apply an adjustment force to said movable component, the portion of said torque-transmitting cable engaged with said block means being restrained by said block means from longitudinal movement in the absence of rotation of said cable, connector means drivingly connecting the respective end of said flexible cable and said movable component of said adjustment mechanism, and means at the proximal end of said device adapted to rotate said flexible cable.

3,270,642
PHOTOGRAPHIC PRODUCT AND APPARATUS
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 13, 1963, Ser. No. 308,902
9 Claims. (Cl. 95—13)

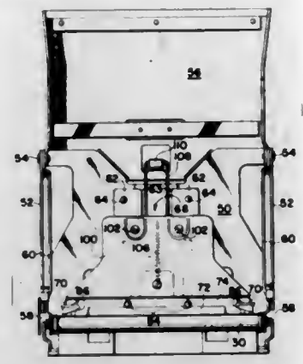


1. A composite product for use in image-transfer photography, comprising:
an elongated strip having a leading end portion,
at least predetermined spaced areas on one face of said strip being image receptive,
a plurality of sheets, one corresponding to each of said image-receptive areas,
each sheet being individually hingedly secured to said face of said strip adjacent the leading edge of the corresponding image-receptive area and extending therefrom toward said leading end portion of said strip,
each said sheet being provided with an image-receptive area facing outwardly from said strip and arranged upon inversion of said sheet about its hinge connection with the strip for conjoint processing in substantially face-to-face relationship with its associated image-receptive area on the strip,
one of each associated pair of image-receptive areas being photosensitive,
said strip being wound upon itself in the form of a hollow, multi-layer coil with said leading end portion outermost,
a fluid container at least a portion of which is housed within the hollow interior of said coil,
and fluid applicator means connected to and in fluid communication with said container and located radially outwardly from the periphery of said coil in position to apply fluid from said container to selected portions of said strip and sheet assembly upon unwinding of the latter from said coil.

3,270,643
PHOTOGRAPHIC APPARATUS
Burleigh Fernald, Stratham, N.H., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 360,861
13 Claims. (Cl. 95—13)

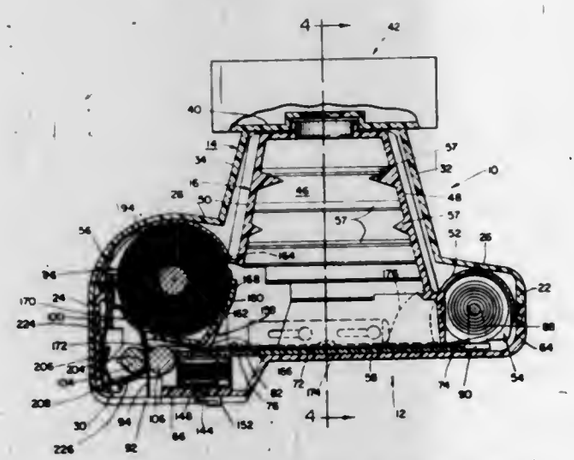
1. Processing apparatus for use with a film unit of the type including a photosensitive sheet, a second sheet and a contained processing liquid adapted to be released under pressure and spread between said sheets as the latter are advanced through pressure-applying means, said apparatus comprising, in combination:
(a) a pair of elongated, pressure-applying members having an entrance area into which said film unit is advanced with said sheets in superposed relation and lying substantially in a first plane defined by said entrance area;

(b) an elongated guide member positioned closely adjacent said entrance area and including end portions having first surfaces adapted to be positioned in said first plane; and
(c) edge-engaging means extending angularly across said first plane on each side of said guide member and urged toward engagement with outer lateral edge portions thereof;



(d) the distance between the intersections of said edge-engaging means with said first plane being less than the width of said film unit, whereby marginal edge portions of said film unit are deformed out of said first plane by said edge-engaging means while the central portion is maintained in said first plane by said first surfaces of said end portions and said entrance area of said pressure-applying members.

3,270,644
CAMERA STRUCTURE
Patrick L. Finelli, Sudbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 16, 1964, Ser. No. 383,197
5 Claims. (Cl. 95—13)

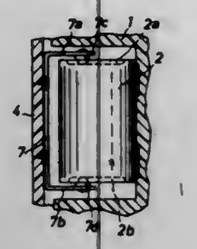


1. A camera means comprising, in combination:
a housing including forward and rear sections joined to one another for movement with respect to one another between open and closed positions;
said forward housing section including forward, side, end and intermediate walls defining a first recess at one end of said housing open at the rear for receiving and holding a coil of a photosensitive sheet and a second recess open at the rear and separated from said first recess by said intermediate wall, said second recess including a first portion substantially deeper than said first recess adjacent said intermediate wall and a second portion shallower than said first portion located to the side thereof opposite said first recess for holding a coil of a second sheet;
exposure means mounted on said forward housing section at the forward end of said first portion of said second recess;
guide means mounted on said forward housing section at the rear of said first portion of said second recess for engaging the lateral edges of a section of said photosensitive sheet to support said section of said photosensitive sheet in position for exposure to light transmitted by said exposure means through said first portion of said second recess;
said rear housing section cooperating with said forward housing section in the closed position of said housing sections to define first and second chambers separated by said intermediate wall and a passage between said chambers at the rear of said intermediate wall for allowing movement of said photosensitive sheet from said first chamber into exposure position within said second chamber;
means on said rear housing section for supporting said photosensitive sheet against said guide means in position for exposure in the closed position of said housing sections;
said housing sections including portions cooperating in said closed position to define an opening in the rear of said housing communicating with said second portion of said second recess and through which said photosensitive sheet and said second sheet can be withdrawn in superposition from said housing; and
means mounted on said forward housing section for movement with respect to said forward housing section between operative and inoperative positions, the last-mentioned means including means cooperating with said housing sections for holding said last-mentioned means in said operative position thereof when said housing sections are in said closed position and being movable into said operative position when said housing sections are in said open position;
said last-mentioned means in said operative position cooperating with said housing sections to divide said second chamber into first and second subchambers comprising, respectively, said first and second portions of said second recess and joined by a passage through which said photosensitive sheet is movable from exposure position within said first subchamber into superposition with said second sheet within said second subchamber;
said last-mentioned means being constructed, when in said operative position, to retain said coil of said second sheet within said second subchamber and prevent admission of light into said first subchamber from said second subchamber and, when in said inoperative position, to permit loading of a coil of said second sheet into said second portion of said second recess.

3,270,645
CAMERA STRUCTURE FOR HANDLING FILM CARTRIDGES
Dieter Engelsmann and Siegfried Zobel, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Oct. 21, 1964, Ser. No. 405,543
Claims priority, application Germany, Oct. 31, 1963, A 44,440
8 Claims. (Cl. 95—31)

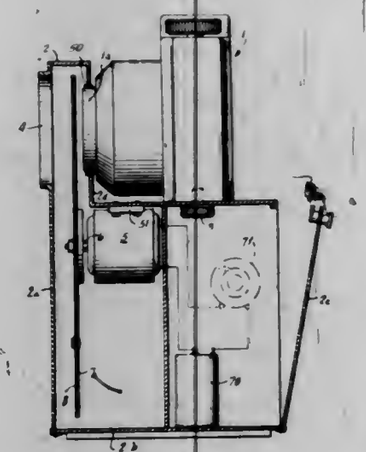
1. In a camera, in combination, a film cartridge, a camera housing formed in its interior with a cartridge chamber for receiving said film cartridge, said housing including a wall movable in a predetermined direction into engagement with the remainder of said housing for closing said chamber thereof and displaceable in opposite direction away from the remainder of said housing for giving access to said cartridge chamber, and a pair of

means respectively carried by said wall and said film cartridge, one of said means including a springy engaging member movable into engagement with the other of said means in a direction transverse to said predetermined direction for releasably connecting said film cartridge to said wall when said wall is moved into engagement with



the remainder of said housing, said pair of means maintaining said releasable connection while said wall is displaced away from the remainder of said camera housing in said opposite direction so that said film cartridge is displaced out of said chamber when said wall is displaced in said opposite direction.

3,270,646
CAMERA ATTACHMENT AND CAMERA
Albert W. Wilson, Hout Bay, Cape Province, Republic of South Africa, assignor to Trenel Finance Corporation, Panama, Panama, a corporation of Panama
Filed Apr. 14, 1964, Ser. No. 359,799
13 Claims. (Cl. 95—36)



1. A camera for taking high speed exposures comprising:

(a) a housing;

(b) a compound lens system disposed within the housing;

(c) a motor secured to the housing and having a motor shaft;

(d) front plate mounting means disposed on the motor shaft;

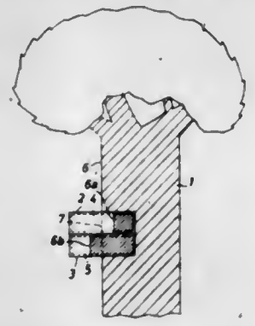
(e) rear plate mounting means disposed on the motor shaft; and

(f) an opaque rotatable disc having at least one radial slot mountable on the mounting means and movable between the front plate mounting means and the rear plate mounting means;

said front plate mounting means being disposed so that when the disc is mounted thereon it is disposed between the lenses of the compound lens system and said slot of the disc is optically aligned with the lenses and the light sensitive film of the camera once during each rotation of the disc, the opaque disc interrupting passage of light from the lenses to the light sensitive film during the remainder of each rotation;

said rear plate mounting means being disposed so that when the disc is mounted thereon, it is disposed approximately at the focal plane of the camera, and said slot of the disc is optically aligned with the lenses and the light sensitive film of the camera once during each rotation of the disc, the opaque disc interrupting passage of light from the lenses to the light sensitive film during the remainder of each rotation.

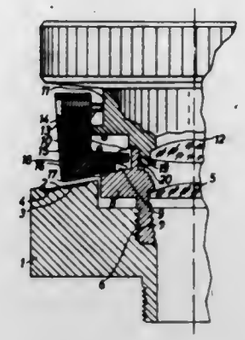
3,270,647
OBJECTIVE-FOCUSING APPARATUS
Franz Jakob, Unterhaching, Munich, and Joachim Spatz, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed June 10, 1964, Ser. No. 374,115
Claims priority, application Germany, June 21, 1963, A 43,383
17 Claims. (Cl. 95—44)



1. In an objective-focusing apparatus, in combination, a pair of identical crossed prisms located adjacent each other but on opposite sides of an optical axis of the apparatus and situated approximately in a plane which is the equivalent of the focal plane of the objective which is to be focused, so that when the contour of a given subject is seen through the crossed prisms, the contour will only appear to be uninterrupted when the prisms are precisely situated in the focal plane of the objective for the subject; and a pair of photosensitive transducers respectively situated behind said crossed prisms and respectively being identical insofar as their electrical properties and sizes and positions relative to said prisms are concerned and the outline of said pair of transducers in a plane normal to said optical axis being substantially identical in size and shape to the outline of said pair of crossed prisms in a plane normal to said optical axis.

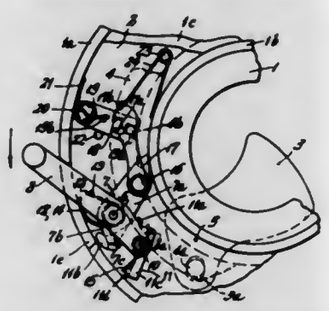
3,270,648
OBJECTIVE ASSEMBLY FOR PHOTOGRAPHING DEVICES
Dieter Engelsmann, Unterhaching, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed June 10, 1964, Ser. No. 374,092
Claims priority, application Germany, June 14, 1963, A 20,131
10 Claims. (Cl. 95—45)

1. An objective assembly for a photographic device comprising, in combination; a camera body; main objective means; first mounting means mounting said main objective means on said camera body movable along a helical path coaxial with the optical axis of said main objective means so that the focal distance of said main objective means may be adjusted by turning of said main objective means; first indicator means located partly on said camera body and partly on said main objective means for indicating the focusing position of said main objective means; auxiliary objective means; second mounting means detachably mounting said auxiliary objective means on said main objective means movable along a path coaxial with said optical axis, said auxiliary objective means when mounted on said main objective means moving together with the same; auxiliary focusing means turnable relative to said auxiliary objective means and having a coupling portion engaging said main objective means in a predetermined angular position relative thereto for rotation together therewith, whereby turning of said auxiliary focusing means will result in movement of said main objective



means together with the auxiliary objective means attached thereto along said helical path, focusing the objective assembly composed of said main and auxiliary objective means; and second indicator means located partly on said camera body and partly on said auxiliary focusing means for indicating the focusing position of the combined objective assembly.

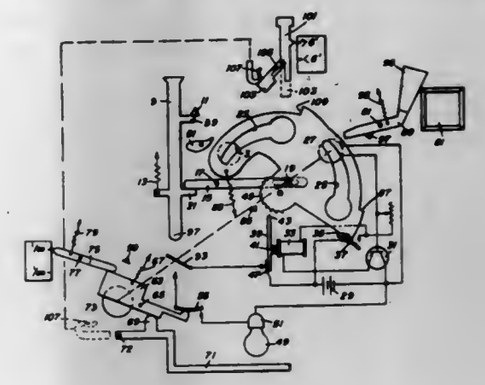
3,270,649
PHOTOGRAPHIC SELF-COCKING SHUTTER
Franz W. R. Starp, Calmbach (Enz), Germany, assignor to Alfred Gauthier G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed July 12, 1963, Ser. No. 294,678
Claims priority, application Germany, July 19, 1962, G 35,510
8 Claims. (Cl. 95—63)



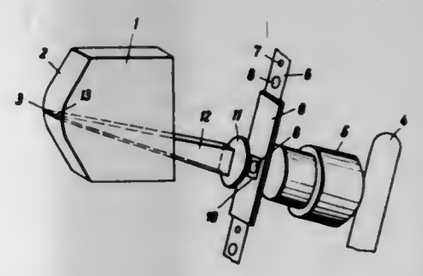
1. A photographic self-cocking shutter comprising a cocking and release lever pivotally mounted to pivot about an axis; a driving member pivotally mounted to pivot about the same axis; a pivotally mounted engagement pawl connected to said lever and engaging said driving member to move the same during the cocking movement of said lever, first means engageable with said engagement pawl for automatically releasing said driving member when said lever reaches a predetermined point in its cocking movement; shutter blades and second means connected thereto to move the same between an opened position and a closed position; and a crank connected to said driving member and to said second means to actuate said second means.

3,270,650
AUTOMATIC EXPOSURE CONTROL SYSTEM
Paul J. Ernisse, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 20, 1963, Ser. No. 303,320
6 Claims. (Cl. 95—64)

1. In a camera having a film-exposing aperture, a manually operable camera actuating device, and light-sensitive means including a photo-responsive cell for producing an output varying in accordance with scene brightness, the improvement comprising: a diaphragm blade means normally maintained in a first position and released for movement in one direction only toward a second position by the operation of said actuating device, said blade means having therein a pair of elongated slits of continuously varying width, said slits being positioned, respectively, in covering relation to said aperture and said photo-responsive cell to form proportionally varying exposure masks for said aperture and said cell at all times during the movement of said blade means; and threshold means responsive to said output and movable to a position engaging said blade means for stopping the movement of said blade means intermediate said first and second positions, the movement of said blade means toward said second position varying the exposure of said photocell until such time as the output of the photocell reaches a predetermined value.



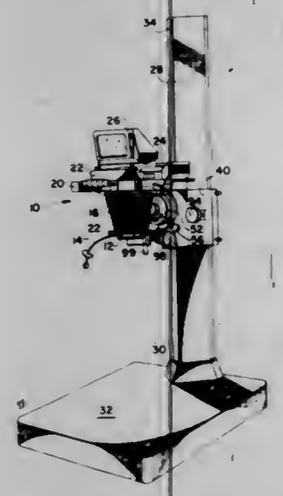
3,270,651
METHOD OF COPYING CINEMATOGRAPH FILMS IN COLOUR OR BLACK AND WHITE
Günter Wetzel, Berlin-Steglitz, and Günter Feller, Berlin-Lankwitz, Germany, assignors to Union Tonfilmmaschinenbau-Gesellschaft mit beschrankter Haftung, Berlin, Germany
Filed Aug. 7, 1962, Ser. No. 215,395
Claims priority, application Germany, Aug. 11, 1961, U 8,252
1 Claim. (Cl. 95—75)



A method of copying a continuous strip of film having image-bearing frames separated from each other by a small space comprising concentrating light from a constant light source into an area not wider than the space between frames, continuously moving the film and photosensitive copy material past the area for copying the image of the film on photosensitive copy material, directing a substantially opaque control tape, having a plurality of apertures of varying size defined at spaced locations along the length thereof through a path intersecting the light from the light source, and shifting said control tape for varying the aperture size aligned with the light source and thus the light to said area in accordance with the scene on the film to be copied in timed relationship to the film advance in a manner to provide a continuous beam of

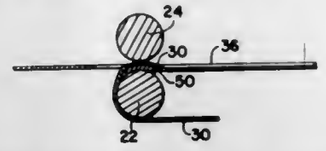
light to the area through a selected aperture at times when the image-bearing film is adjacent the area and to intercept the light with the opaque portion of the control tape only when the space between frames of the film is aligned with the area.

3,270,652
PHOTOGRAPHIC APPARATUS SUPPORT
Paul B. Mason, Magnolia, and Leon Rubinstein, Natick, Mass., and Arthur J. Sable, Saratoga, Calif., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Original application Nov. 24, 1961, Ser. No. 154,655, now Patent No. 3,143,941, dated Aug. 11, 1964. Divided and this application June 3, 1964, Ser. No. 372,222
3 Claims. (Cl. 95—86)



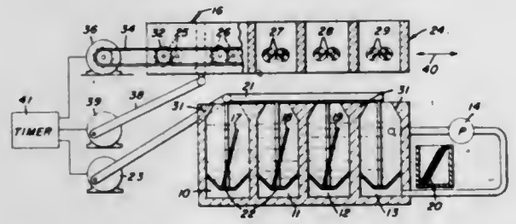
1. A support structure for adjustably holding photographic apparatus in a selected vertical position, said structure comprising, in combination:
(a) a unitary, one-piece support column extending vertically from an anchored position at its lower end and having a substantially V-shaped horizontal cross section, whereby said column has a forwardly disposed vertical edge at the vertex of the V, and two rearwardly disposed vertical edges;
(b) a mounting bracket including a plate-like section positioned adjacent a portion of the forwardly disposed surfaces of said column, whereby said bracket has a rearwardly disposed surface facing said column and a forwardly disposed surface facing away from said column, and having a pair of flanges extending rearwardly past said rearwardly disposed edges;
(c) first and second wheels mounted one upon each of said flanges for rotation about first horizontal axes;
(d) a third wheel mounted upon a forwardly disposed portion of said mounting bracket for rotation about a second horizontal axis;
(e) said second axis being parallel to and lower than said first axes;
(f) said first, second and third wheels being in rolling engagement with each of said rearwardly disposed edges and said forwardly disposed edge, respectively, during vertical movement of said mounting bracket with respect to said column; and
(g) means for rigidly securing said photographic apparatus to said forwardly disposed surface of said mounting bracket, to extend horizontally therefrom above said second axis, whereby the weight of said apparatus exerts a turning moment on said mounting bracket urging said first and second wheels against said rearwardly disposed edges and said third wheel against said forwardly disposed edge.

3,270,653
COMPOSITE PHOTOGRAPHIC FILM ROLL
Albert J. Bachelder, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Nov. 14, 1963, Ser. No. 323,686
10 Claims. (Cl. 95—89)



1. A composite photographic product adapted to be employed in photographic apparatus having a pair of pressure-applying members, said product comprising, in combination, first and second strips of flexible sheet materials, means for advancing said first and second strips between said pressure-applying members in superposition, said strips being urged by said pressure-applying members into frictional engagement with one another, and means associated with at least one of said strips and movable therewith to a position between said members, and effective to separate the latter in such manner as to release said frictional engagement during a preselected portion of the advancement of said strips, the release of said frictional engagement allowing one of said strips to be advanced independently of at least a portion of the other of said strips.

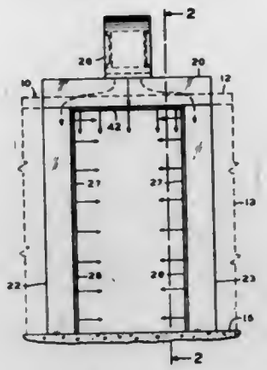
3,270,654
ROLLER TRANSFER PROCESSING MECHANISM
Harold D. Russell and Charles F. Amering, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 6, 1964, Ser. No. 342,991
12 Claims. (Cl. 95—89)



1. A roller transfer mechanism useable in a photographic film sheet developing processor, comprising:
a series of adjacent tanks for containing processing fluids;
a plurality of pairs of rollers in a frame moveably positioned over said tanks, said pairs collectively being selectively driveable to present film sheets to each of said tanks and receive film sheets from each of said tanks;
means for sequentially moving the frame to position said pairs of rollers to deliver a film sheet received from one tank to an adjacent downstream tank and for returning the frame to a receiving position; and
means for timing the motion of the frame in accordance with the process timing requirements.

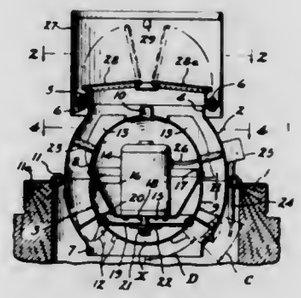
3,270,655
AIR CURTAIN DOOR SEAL
Howard P. Guirl and James N. Guirl, both of 911 Craig Drive, Kirkwood 22, Mo.
Filed Mar. 25, 1964, Ser. No. 354,607
4 Claims. (Cl. 98—36)

1. In an air curtain seal for an oven:
(a) a compartment having an opening,
(b) means at opposite sides of the opening directing an air flow into and generally across the opening at the top part of the opening, and directing an air flow outwardly of and generally across the opening at the lower part of the opening, and
(c) blower means supplying air to the air-directing means,



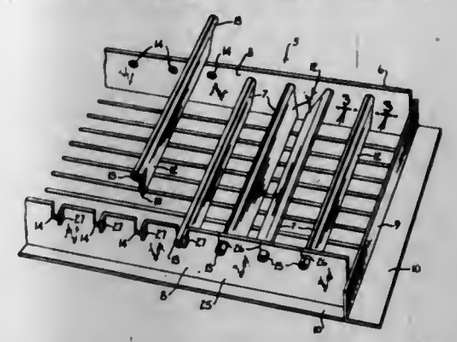
(d) the air-directing means being adjusted to vary the amount of air so that the air flow is the greatest at the top and bottom of the opening and diminishes regularly therebetween.

3,270,656
VENTILATOR WITH AIR DISCHARGE MEANS
Loren Cook, Berea, Ohio, assignor to Loren Cook Company, a corporation of Ohio
Filed Apr. 27, 1964, Ser. No. 362,682
10 Claims. (Cl. 98—43)



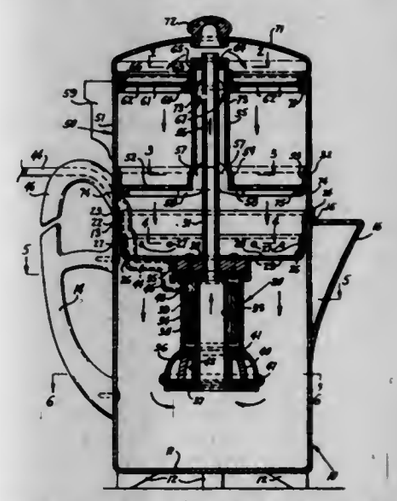
1. A ventilator comprising first and second semispherically-shaped parts, the first part of which terminates in an outlet opening and the second part of which terminates in an inlet opening, means for connecting the enlarged end portions of said parts together to form an outer casing, a stationary inner casing having a substantially semispherically-shaped portion which is spaced from the outer casing and an end portion which is arranged in substantially axial alignment with the outlet end of the first part of the outer casing, a motor, means associated with the inner casing for supporting said motor, an impeller having a central portion and an outwardly inclined body portion, a plurality of air driving blades having their root portions secured to the outwardly inclined portions of said impeller and leading edges arranged in close proximity to the inlet portion of the second part of the outer casing, a plurality of air turning vanes arranged between and connected to the outer casing and to the inner casing and arranged at a substantial distance from the air driving blades to form a plenum chamber between the inner and outer casings and the air driving blades and the air turning vanes, a shaft driven by said motor which is operatively associated with said impeller, a support, and fastening means secured to the connecting means for the enlarged parts of the outer casing and said support for holding the ventilator in place.

3,270,657
AIR OUTLET HAVING ANGULARLY ADJUSTABLE LOUVERS
Richard C. Jaye, 1025 Richards St., Watertown, Wis.
Filed Mar. 10, 1965, Ser. No. 438,526
5 Claims. (Cl. 98—110)



3. A one-piece vane for a louvered air outlet or the like, of the type having an elongated blade portion and coaxial trunnions projecting lengthwise from the ends of the blade portion and receivable in apertures in a pair of opposite frame members to mount the vane for angular adjustment, said vane being characterized by:
(A) the blade portion of the vane being hollow and comprising a pair of flatwise adjacent sheet metal wall elements integrally connected with one another around a substantially sharp bend which extends along one longitudinal edge of the blade, said wall elements having free marginal edge portions at the opposite longitudinal edge of the blade that are resiliently flexible toward and from one another; and
(B) each of said trunnions comprising an endwise projecting integral protuberance on each of said wall elements laterally spaced from the first designated longitudinal edge of the blade, the two protuberances at each end of the blade being opposite one another and having complementary substantially arcuate curvatures in transverse section, the resilience of the wall elements permitting the opposite protuberances to be converged so that the trunnion that they cooperate to provide can be inserted into an aperture and can dilate under resilient bias into a snug fit in the aperture whereby the vane is frictionally held in any position of angular adjustment.

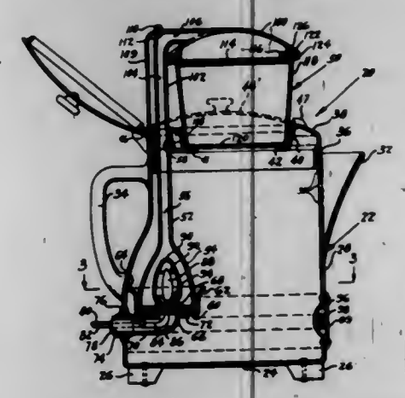
3,270,658
COFFEE MAKER
Antonio Tavera, Rte. 1, Box 1386, Elk Grove, Calif.
Filed Oct. 9, 1963, Ser. No. 315,019
8 Claims. (Cl. 99—295)



1. In a coffee maker the combination of a pot having an annular top rim, a heating unit comprised of an open topped circular casing having a perforated bottom and

a flange seating on said rim, an insulating plate secured to said bottom, a depending tube secured to said plate and extending into said pot, said plate and bottom having openings therein, a stem in communication with said tube extending to the top of said casing, a first heating coil surrounding said tube, insulating means mounting said first coil, a shell surrounding said coil to protect the same from fluid in the pot, an outwardly flared lower portion on said shell, an insulating member including a bottom insulating plate in said flared portion, a second heating coil in said insulating member, sealed conductive means for supplying electric current to said first and second coils, a coffee containing cartridge having openings communicating with said pot, water in said pot being circulated through said cartridge, tube, and stem, and a cover for said pot and casing.

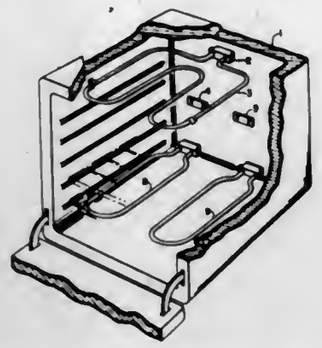
3,270,659
PREPACKED COFFEE CONTAINING CARTRIDGE
Antonio Tavera, Rte. 1, Box 1386, Elk Grove, Calif.
Filed May 20, 1964, Ser. No. 368,888
19 Claims. (Cl. 99—295)



1. In combination, a percolator including a bottom, an upstanding side and an open top, a lid closing said open top of said percolator, said lid having an opening therein, a tubular percolator stem means having a flared lower end and including portions defining a longitudinal bore having an open upper end, a plate underlying said flared lower end of said percolator stem means, said plate having at least one perforation therein, a heating coil disposed within said flared lower end of said percolator stem means, and a washer member overlying said plate and movable between a first position wherein it rests on said plate and seals said perforations therein and a second position wherein it is spaced above said plate, a cartridge including a receptacle having an imperforate dome-shaped top, means carried by said dome-shaped top for supporting a quantity of coffee therewithin, said last-mentioned means including portions defining at least one opening in communication with said opening in said lid of said percolator, a tubular cartridge stem means including portions defining a longitudinal bore having an open upper end communicating with said receptacle above said quantity of coffee and an open lower end aligned with, and in communication with, said open upper end of said bore in said percolator stem means, and breather means including portions defining a vent communicating with the interior of said receptacle above said quantity of coffee.

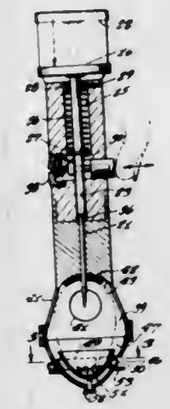
3,270,660
COOKING OVEN
Edmund H. Filipak, Lexington, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 23, 1964, Ser. No. 384,657
8 Claims. (Cl. 99—340)

1. In an oven, a plurality of heating elements including top and bottom heaters, said bottom heater being constructed and arranged to be changed in location in said oven, the bottom heater comprising a plurality of open work heating elements widespread in location when moved to its lowest level in said oven and closely grouped and lying parallel to and directly below said top heater when moved upwardly nearer to said top heater, the spac-



ing between said top heater and said bottom heater in its upper position being sufficiently small that a food article sandwiched between said heaters has both surfaces simultaneously broiled when said heaters are energized and means for holding an article of food substantially equidistantly between said top and said bottom heaters.

3,270,661
EGG COOKING DEVICE
Alois Juvan, 5953 Madison St., Brooklyn, N.Y.
Filed June 7, 1965, Ser. No. 461,784
3 Claims. (Cl. 99—343)

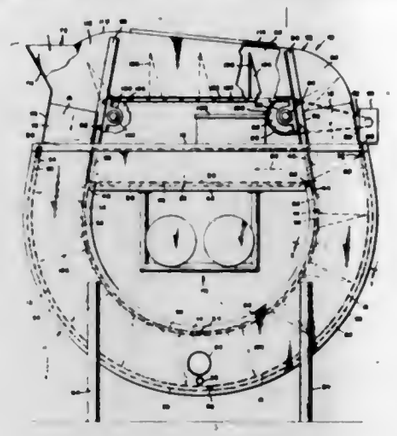


1. In an egg cooking device the combination of a cylindrical main body element and an end cap element, a longitudinal central opening through said main body element, said end cap element being removably mounted on one end of said main body element, an enlarged cavity formed within said end of said main body element and said end cap mounted thereon for receiving an egg therein, a prong slidable within said central opening, a temperature gauge at one end of said prong, the opposite end of said prong being slidable into and out of said cavity, and openings in the wall around said cavity to allow entry of water therein.

3,270,662
CRAB COOKING APPARATUS
John F. Flodin and Allan T. Flodin, Sunnyside, Wash., assignors to Flodin, Inc., Sunnyside, Wash., a corporation of Washington
Filed Apr. 26, 1965, Ser. No. 450,935
6 Claims. (Cl. 99—404)

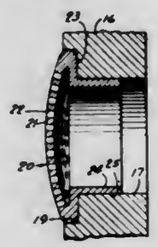
1. A continuous cooking apparatus, comprising: (a) a lower section having generally semi-circular, spaced apart inside and outside walls and also having side walls

to define a generally U-shaped cooking tank; (b) a generally horizontally disposed circulating flume interconnecting and opening into the upper portions of said cooking tank; said circulating flume having a bottom wall connected to said inside wall of said cooking tank (c) an upper section including frame members and conveyor sprocket means supported on said frame members above said cooking tank; (d) a continuous conveyor means sup-



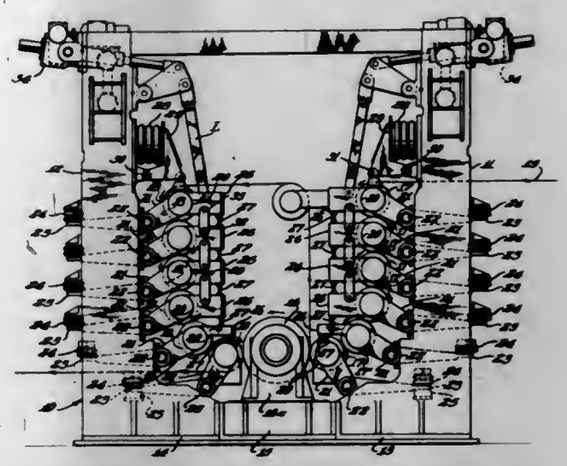
ported on and driven by said sprocket means and extending through said cooking tank, said conveyor having spaced apart continuous chain means with unobstructed space therebetween which contact and move on said inside wall and also having upstanding flight panels attached to and generally equispaced on said chain means; and (e) heating oil jacket means adjacent to said inside and outside walls and also adjacent the bottom wall of said circulating flume.

3,270,663
SCREEN PLATE FOR PULP PRESS AND THE LIKE
Lester M. Koelsch, Pittsfield, Mass., assignor, by mesne assignments, to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Nov. 30, 1964, Ser. No. 414,521
7 Claims. (Cl. 100—117)



1. In a screen particularly adapted for dewatering presses,
- a screen plate in the form of a relatively thick walled cylinder having an inner peripheral wall and having a plurality of relatively large diameter perforations leading radially through the wall thereof, uniformly spaced throughout the area of said screen plate,
- a plurality of relatively thin walled screen inserts inserted in said perforations from the inner peripheral wall of said cylinder,
- each screen insert having a thin walled convex face extending inwardly of the inner peripheral wall of said cylinder having a plurality of uniformly spaced perforations leading therethrough and having a collar extending from said face fitting within a respective perforation in said screen plate from the inside thereof and positioning said convex face to extend inwardly of the inner peripheral wall of said screen plate.

3,270,664
CALENDER STACK
Dirk J. Veneman and Hugo F. Budzien, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed June 22, 1964, Ser. No. 376,694
6 Claims. (Cl. 100—162)

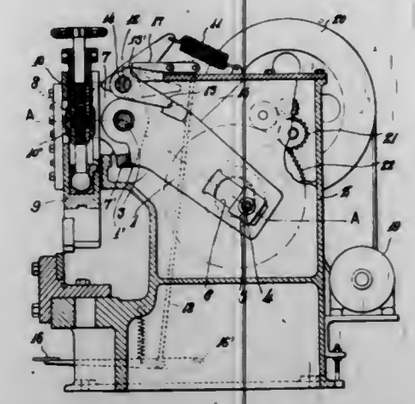


1. A calender roll assembly comprising in combination:
- a king roll,
- a first set of calender rolls on one side of said king roll,
- a second set of calendar rolls on the opposite side of said king roll,
- said first and second sets of calender rolls including a pair of horizontally opposed calender rolls engaging said king roll in diametrically opposed relation with respect to each other,
- a next adjacent pair of calender rolls spaced outwardly of and above said horizontally opposed calender rolls and having calendering nips therewith,
- a vertical stack of calender rolls supported on said next adjacent calender rolls,
- bearing support means mounting said first and second sets of calender rolls for movement toward and from each other,
- and pressure applying means for each set of calender rolls applying pressure to the uppermost of said calender rolls of each set of calender rolls for forcing said horizontally opposed calender rolls toward said king roll to direct diametrically opposed deflection forces thereon.

3,270,665
MACHINE PRESS
Shozo Shiokawa, 28 Sone-Nishimachi, 2-chome, Toyonaka, Osaka-fu, Japan
Filed July 10, 1964, Ser. No. 381,663
Claims priority, application Japan, July 15, 1963, 38/38,439
1 Claim. (Cl. 100—282)

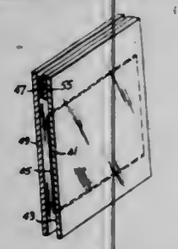
A machine press comprising a vertically movable ram member, a ram linking plate pivotally coupled to said vertically movable ram member, a main shaft mounted in a fixed position on said press and on which said ram linking plate is pivotally mounted and from which said ram plate extends in one direction toward said pivotal coupling, a lever having one end pivotally mounted on said main shaft and extending from said main shaft in substantially the opposite direction from the direction the ram linking plate extends from said main shaft, drive means coupled to the other end of said lever for pivoting said lever around said main shaft, said drive means including a gear wheel having its center positioned between the ends of said lever, said gearwheel having a shaft about which said gearwheel rotates, said lever having a

slot therein, a crank on said gearwheel shaft and sliding in said slot, said slot extending in the direction of the length of said lever and pawl means coupling said ram



linking plate and said lever and engaging said lever at a point substantially on the opposite side of said main shaft from the coupling of said ram linking plate and said ram.

3,270,666
STENCIL WITH BARRIER LAYER BETWEEN THE STENCIL AND THE ADHESIVE
David Breverman, Los Angeles, Calif., assignor to Mark-Fast Marking System, Inc., Los Angeles, Calif., a corporation of California
Filed Sept. 8, 1964, Ser. No. 394,796
11 Claims. (Cl. 101—128.2)

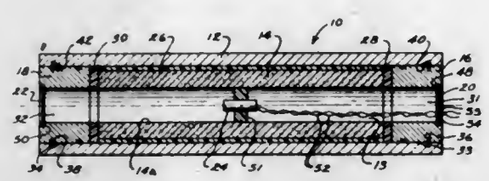


1. A stencil sheet assembly comprising a single-ply sheet of stencil material which contains an oil, said stencil sheet having a carbonizing material on a first area of one face thereof constituting its back face, the sheet being adapted for striking on its front face within the confines of the area on its back face to convert it into a stencil and simultaneously make a carbon copy via said coating of carbonizing material, said sheet having a barrier layer of material at a second area of the back face and a layer of pressure-sensitive adhesive on the barrier layer spaced from the carbonizing material, and a backing sheet attached to the stencil sheet by said adhesive, the barrier layer preventing migration of oil from the stencil sheet to the adhesive.

3,270,667
PLANOGRAPHIC PRINTING PLATES AND METHOD OF MAKING SAME
Glenn H. Perkins, West Peru, Main, assignor to Oxford Paper Company, Rumford, Maine, a corporation of Maine
No Drawing. Continuation of application Ser. No. 41,800, July 11, 1960. This application May 14, 1963, Ser. No. 280,440
12 Claims. (Cl. 101—149.2)

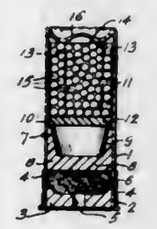
4. A planographic printing plate comprising a base and a coating thereon, said coating consisting essentially of the insoluble reaction product of a composition consisting essentially of deacetylated chitin, a cross-linking agent capable of reacting with at least one of the group of reactive —OH and —NH_2 of the deacetylated chitin molecule, and an inorganic pigment, said coating being capable of holding both water and greasy ink and having thereon an olephilic image.

3,270,668
WELL-TREATING APPARATUS
Bernard Silver, Alexandria, Va., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia
Filed Dec. 29, 1964, Ser. No. 421,896
5 Claims. (Cl. 102—20)



1. In combination with a well bore, a well-treating apparatus including a neutral-thrust gas generator adapted to be lowered into said bore, said gas generator comprising
(a) a tubular cylindrical casing having a combustion section therein,
(b) a solid propellant grain mounted within said combustion section,
(c) ignition means mounted within said combustion section to ignite said grain,
(d) apertured means at each end of said casing to provide flow communication between said combustion section and the external atmosphere contiguous to each end of said casing, and
(e) means to obturate each of said apertured means to effect prevention of moisture from entering said casing and to effect build-up of a predetermined pressure within said combustion section, the obturation means being ejected upon attainment of said predetermined pressure within said combustion section.

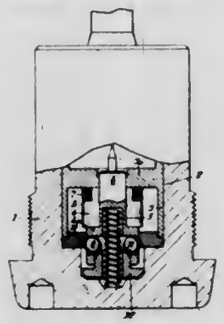
3,270,669
SHOTSHELLS
David Norman Atkins and Francis Hamnet Garland McCaffrey, Brownsburg, Quebec, and George David Taylor, Lachute, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada
Filed Mar. 12, 1965, Ser. No. 439,369
Claims priority, application Canada, June 16, 1964, 905,257
6 Claims. (Cl. 102—42)



1. A shotshell comprising in combination a cup-shaped metallic head having a central aperture, a primer cap mounted in said aperture, a tubular casing securely held by the side wall of said metallic head and extending beyond said wall and, within said tubular casing, a powder charge adjacent said primer cap, an outward-facing cup-shaped resilient thermoplastic wad adjacent said powder charge and telescopically received within said casing, an outward-facing cup-shaped resilient thermoplastic shot container adjacent said wad and also telescopically received within said casing pelletized shot within said container and an end closure contiguous with said shot,

the base portion of said shot container being adapted to progressively engage with the cup portion of said wad upon initiation of said powder charge, thereby causing lateral expansion of said wad and thus forming a gas-tight seal against the inner wall of said casing.

3,270,670
IMPACT FUZES FOR SPINNING EXPLOSIVE PROJECTILES AND MORE PARTICULARLY BASE-DETONATING FUZES OF THE TYPE EQUIPPED WITH A MECHANICAL AUTO-DESTRUCTION DEVICE
William Guerne, Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland, a society of Switzerland
Filed Feb. 18, 1964, Ser. No. 346,061
4 Claims. (Cl. 102—79)

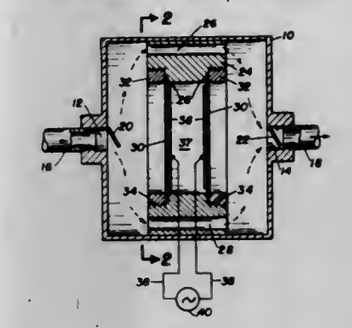


1. An impact fuze for a spinning propectile which comprises, in combination, a fuze case fixed with respect to said propectile and having a longitudinal axis of rotation, a firing pin slidable longitudinally in said case in the direction corresponding to firing in response to the stopping of said projectile by an obstacle, spring means in said fuze case operatively connected with said firing pin for urging it longitudinally with respect to said case in said direction, locking means for yieldingly preventing said firing pin from moving in said direction as long as the speed of revolution of said projectile is above a given value, said locking means comprising, on the one hand, a surface of said fuze case of revolution about said axis, said surface having generatrices oblique to said axis and converging in said direction, and, on the other hand, adapted to cooperate with said surface by sliding engagement therewith, rounded centrifugal members guided in said firing pin radically and transversely to said axis, whereby an inward movement of said centrifugal members toward the axis of said fuze case takes place when the speed of revolution of said fuze case about said axis drops below said given value, and an inertia part slidable longitudinally in said firing pin and having a surface thereof, of revolution about said axis and converging in the same direction as said first mentioned surface, in engagement with said centrifugal members, whereby said inertia part is pushed longitudinally in a direction opposed to the first mentioned direction with respect to said fuze case in response to a movement of said centrifugal members toward said axis.

3,270,671
CARTRIDGE WAD AND PROCESS FOR THE MANUFACTURE THEREOF
Benjamin K. Daubenspeck and Edward A. Rickey, Stratford, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
No Drawing. Filed Apr. 29, 1965, Ser. No. 452,007
7 Claims. (Cl. 102—95)

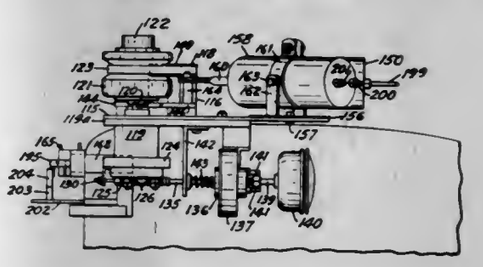
1. In a shotshell cartridge wherein a basewad is positioned at the rear end thereof, said basewad comprising an individually molded structure coherent under firing conditions and consisting essentially of a mixture of 30–60% of asbestos fibers and 70–40% of wood fibers held together by a wax binder means to form a compact mass of sufficient density and strength to prevent gas leakage and rupture upon firing.

3,270,672
PUMP APPARATUS
Robert M. Haines, Crystal Lake, Donald L. Klass, Barrington, and Thomas W. Martinek, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif, a corporation of California
Filed Dec. 23, 1963, Ser. No. 332,485
13 Claims. (Cl. 103—1)



1. A pump comprising a vessel having communicating inlet and outlet openings, a flexible diaphragm exposed to the interior of said vessel, an electrostrictive transducer, comprising an electrostrictive liquid confined between two spaced members having opposing surfaces, adapted to be deformed upon the application of an electric field thereto and cause movement of said diaphragm upon the deformation thereof, and means for applying a transient electric field to said electrostrictive transducer.

3,270,673
FLUID PRESSURE SYSTEM AND CONTROL MEANS THEREOF
Harry L. Peterson, 5032 34th Ave. S., Minneapolis, Minn.
Original application July 14, 1961, Ser. No. 124,095, now Patent No. 3,135,095, dated June 2, 1964. Divided and this application Aug. 12, 1963, Ser. No. 301,497
7 Claims. (Cl. 103—24)



1. In a fluid pressure system for use in supplying fluid pressure to the steering system of outboard motors and the like, said fluid pressure system comprising
a fluid pump mechanism,
a longitudinally reciprocating operating member connected with said pump mechanism for operating the same,
a driven rotary shaft,
means drivingly interrelating said driven rotary shaft with said reciprocating member to reciprocate the latter,
a variable speed expansible and retractable pulley unit adjustably mounted on said driven rotary shaft for shifting movement relative thereto and for rotation therewith, said variable speed pulley being normally urged to the retracted position,

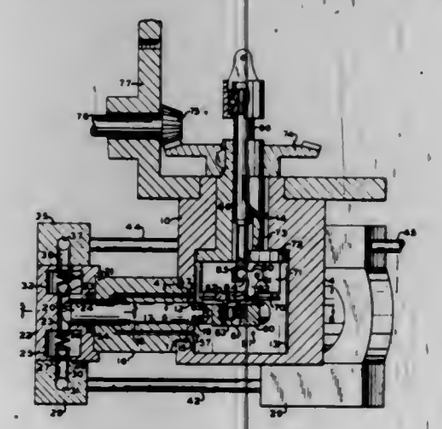
an endless belt drivingly connecting said variable speed pulley unit with a drive shaft of a rotary motor of the type having a manually operable throttle control,

means for varying the tension of said belt comprising a shiftable idler pulley mechanism engaging said belt and being selectively shiftable to variously adjust the tension of said belt,

means for shifting said idler pulley mechanism including at least one piston and cylinder fluid pressure motor connected with said idler pulley mechanism and being operable to cause shifting movement thereof, said fluid pressure motor being connected in communicating relation with said pump mechanism and reeciving fluid under pressure therefrom,

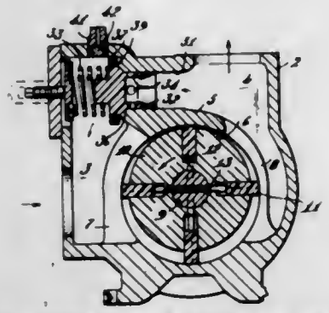
and a valve control mechanism interposed in fluid controlling relation with respect to said fluid pressure motor and having a shiftable actuator element disposed in obstructing relation with respect to the throttle control of the rotary motor, said actuator element being shiftable by the throttle control of the rotary motor during movement of the throttle control whereby said idler pulley mechanism will be shifted to vary the tension of said belt in response to changes in speed of the rotary motor.

3,270,674
VARIABLE DISPLACEMENT PUMP
Robert L. Allen, Atlanta, Ga., assignor to Georgia Tech Research Institute, Atlanta, Ga., a corporation of Georgia
Continuation of application Ser. No. 703,898, Dec. 19, 1957. This application May 31, 1963, Ser. No. 284,492
2 Claims. (Cl. 103—38)



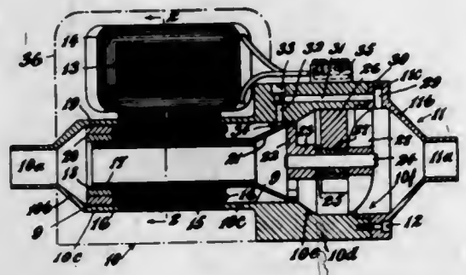
1. A variable-displacement metering pump including a hollow body defining an operating chamber containing a lubricant, a central rotary power shaft, a piston driving head in said chamber for rotation by said shaft, driving means movably mounted with respect to said head and transversely displacable with respect thereto to be moved in an orbital path of varying radius in response to rotation of said shaft, a pump piston housing mounted on said body and defining an open ended piston bore communicating at its inner end with said operating chamber, a pump casing mounted on said housing and defining a pump cavity, a piston mounted for reciprocation in said piston bore and having a pumping head extending into said pump cavity, means for reciprocating said piston commensurate with the orbital movement of said driving means and responsive to the radius of such movement, together with means to transversely displace said head during rotation of said shaft, said pump piston housing being counterbored from its outer end inwardly for a distance at least as great as the maximum stroke of the piston and providing lubrication clearance space between the piston and the pump piston housing, intercommunicating means for circulating lubricant from said operating chamber to said piston at said clearance space and thence back to said operating chamber, and sealing means about the pumping head of the piston at the juncture of said pump piston housing and said pump casing for sealing the piston and the pumping chamber against the escape of lubricant and pumped fluid along the piston.

3,270,675
ROTARY SLIDING-VANE PUMP
Mustafa J. Ajam, Amherst, N.H., assignor to Williams & Hussey Machine Corporation, Milford, N.H., a corporation of New Hampshire
Original application June 28, 1963, Ser. No. 291,478. Divided and this application Sept. 15, 1964, Ser. No. 396,697
3 Claims. (Cl. 103—42)



1. A pump comprising a housing having inlet and outlet chambers, means for pumping fluid from the inlet chamber to the outlet chamber, a by-pass from the outlet chamber to the inlet chamber, a relief valve in the by-pass which opens in response to pressure in the outlet chamber, an air inlet in the inlet chamber, and a closure which normally closes said inlet and which opens at a predetermined temperature so that, when the pump reaches said temperature, it is cooled by air drawn through the inlet and circulated through the pump.

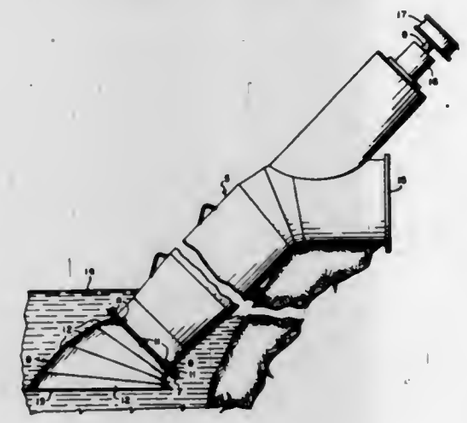
3,270,676
PUMPS
Stanley John Penman, Smethwick, England, assignor to L. W. Penman Engineering Limited, Smethwick, England, a British company
Filed Mar. 27, 1964, Ser. No. 355,161
Claims priority, application Great Britain, Apr. 11, 1963, 14,488/63
3 Claims. (Cl. 103—87)



1. A pump for liquids comprising, in combination:
(a) a casing having an axis and defining an inlet, a rotor chamber, an impeller chamber, and an outlet, said inlet, said outlet, and said chambers being axially aligned and jointly constituting a straight-line flow path through said chamber;
(b) a stator winding mounted on the outside of said casing and surrounding said rotor chamber;
(c) a liner tube axially extending in said rotor chamber and having two axial end portions;
(d) a rotor winding mounted on said liner tube in said rotor chamber;

(e) a first bearing in said casing, one of the end portions of said liner tube being journaled in said bearing;
(f) a first apertured spider member on the other end portion of said liner tube;
(g) an impeller spindle coaxially fastened to said spider member and extending in said impeller chamber, said impeller spindle having two axial end portions, one of said end portions being fastened to said first spider member;
(h) impeller means mounted on said spindle in said impeller chamber for axially driving liquid along said path;
(i) a second bearing in said impeller chamber and rotatably receiving said spindle, the other end portion of said impeller spindle intermediate said end portions being received in said second bearing; and
(k) another apertured spider member radially interposed between said casing and said second bearing in said impeller chamber.

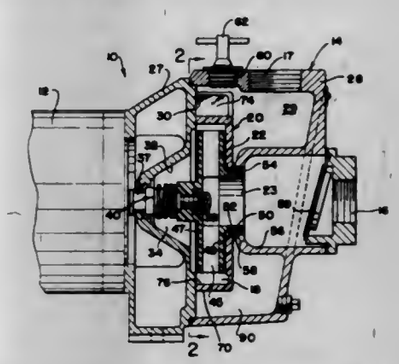
3,270,677
INTAKE BELL FOR DIAGONAL FLUID PUMPS
James Marlin Eller, P.O. Drawer E, Deerfield Beach, Fla., and James David Eller, Deerfield Beach, Fla. (3535 NW. 3rd Ave., Boca Raton, Fla.)
Filed Sept. 29, 1965, Ser. No. 491,313
3 Claims. (Cl. 103—89)



1. An angled axial flow pump having a propeller and provided with an angularly-arranged elongated cylindrical barrel, the pump having a lower intake and an upper horizontally disposed outlet end, an intake bell fixed to the lower end of the pump, the bell being downwardly tapering to a relatively wide intake side, the lower end of the bell being disposed in substantially parallel relation to the surface of the water, the bell being formed of a plurality of progressively larger segments welded together, the intake end of the bell and the body of the bell being on a true circle whereby the water being pumped by the propeller has an even velocity distribution immediately ahead of the propeller to form a uniform liquid flow to the pump.

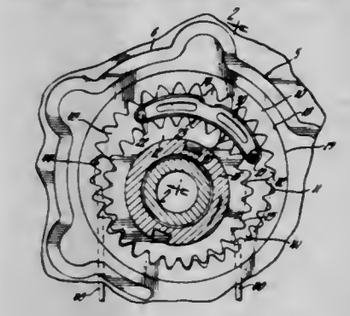
3,270,678
SELF-PRIMING CENTRIFUGAL PUMP
James A. La Monica, Salem, Ohio, assignor to Crane Co., New York, N.Y., a corporation of Illinois
Filed June 30, 1964, Ser. No. 379,121
2 Claims. (Cl. 103—113)

1. A self-priming, axial feed, centrifugal pump comprising
a casing having an axially extending fluid inlet opening and an outlet opening in the upper portion thereof,
a rotatable impeller within the casing having an intake eye at its axis connected to the inlet opening,
a single volute vane member surrounding the impeller so as to define a continuously expanding volute passageway outwardly of the periphery of the impeller which diverges increasingly radially outwardly in the direction of impeller rotation,
a cutwater at the narrowest part of said passageway and a discharge opening approximately 360° therefrom each located substantially in a vertical plane through the impeller axis,
a recirculation chamber between the vane member and casing outwardly of the volute passageway extending from the discharge opening and to about 270° in the direction of impeller rotation,



an elongated closure projecting outwardly from and integral with the vane member considerably wider circumferentially than it is radially and defining a priming passage having an inlet mouth opening axially into the recirculation chamber between 180° and 270° from said discharge opening and having,
a discharge port at the end of said priming passage opening into the volute passageway at a location closely adjacent one side of said enclosure so as to be circumferentially offset in a direction of continuously decreasing area of said volute passageway whereby an optimum relationship is achieved between suction power at the port and air-free recirculated fluid at the mouth of the priming passage.

3,270,679
PUMP ASSEMBLY
Darrel R. Sand, Plymouth, and Arlan M. Connell, Livonia, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,256
8 Claims. (Cl. 103—126)



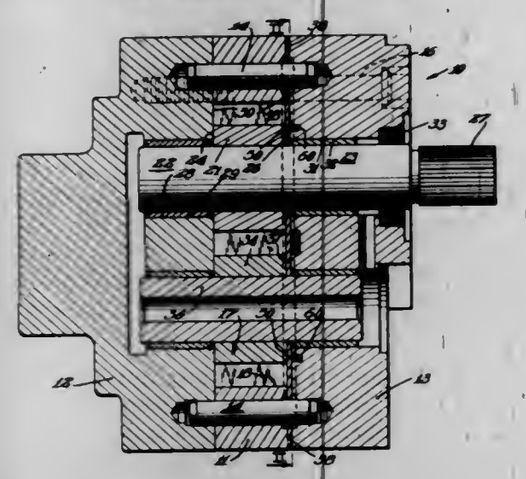
1. A pump comprising in combination a housing, an external gear meshing with an internal gear and located eccentrically within said internal gear to provide a generally crescent-shaped space between said gears, said housing enclosing said gears and defining with said gears a pumping space, a pair of spaced support members extending transversely of said pumping space, a resilient support member seated on said spaced support members, respectively, a partition carried by said resilient support member dividing said pumping space into intake and pressure delivery chambers, said resilient support member and

said partition extending transverse of said pumping space and being in contact with said housing, said partition also being in contact with the ends of the teeth of both gears and having curved extremities for providing contact surfaces with said spaced support members, respectively.

3,270,680
PRESSURE LOADED GEAR PUMP

Beldon L. Rich, Kokomo, Ind., assignor to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana

Filed Dec. 17, 1964, Ser. No. 419,064
16 Claims. (Cl. 103—126)



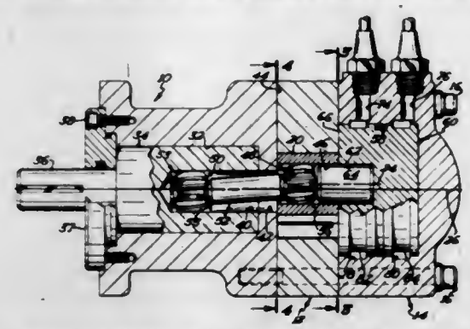
1. A gear pump comprising,
a housing having a pumping chamber including an inlet and an outlet,
rotary gears for pumping fluid from the inlet to the outlet,
said casing having a wall on one side of said chamber opposite the adjoining side faces of the gears characterized by a relief recess opposite said pumping chamber and a sealing surface outwardly of said relief recess,
an end plate interposed between said gears and said wall having a sealing face on one side thereof for engaging the side faces of the gears and a motive face on the other side thereof to form a wall of said relief recess,
said end plate having at least one opening opposite the outlet side of the pump for conducting fluid at pump generated pressure into said relief recess, and
an elongated sealing member having its opposite ends clamped between said sealing surface and said motive face at spaced apart points on the inlet side of the pump and having an intermediate section curved through said relief recess on the outlet side of the pump,
thereby to partition the relief recess into a pressure control zone communicating with said opening to load a corresponding area of said motive face with discharge pressure, and
a reduced pressure zone on the inlet side of the pump.

3,270,681
ROTARY FLUID PRESSURE DEVICE

Lynn L. Charlson, Minneapolis, Minn., assignor to Germane Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Nov. 18, 1964, Ser. No. 412,100
14 Claims. (Cl. 103—130)

1. In a fluid pressure device, fluid inlet and outlet means, an internally toothed ring member defining the outer wall of a chamber, a cooperating externally toothed star member disposed eccentrically in said chamber, one of said members being capable of orbital movement about the axis of the other of said members with the teeth of said members intermeshing in sealing engagement to form expanding cells on one side of the line of eccentricity and contracting cells on the other side of said line during relative movement between said members, one of said members being rotatable about its own axis relative to said other member at a slower speed than said orbital movement during relative rotation between said members, valve means operatively connected to the orbiting one of said members so that its rotational speed is the same as the orbiting speed of said one of said members, said valve means defining fluid passage means which com-

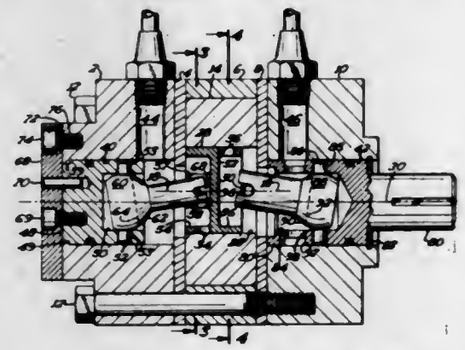


prise fluid supply means only on one side thereof in communication with said fluid inlet means and fluid exhausting means only on the other side thereof in communication with said fluid outlet means, said valve means being indexed with reference to the position of said star member relative to said ring member so that upon rotation of said valve means said fluid supply means communicate with said expanding cells, a drive shaft rotatably mounted relative to one of said members, and intermediate shaft means having one end thereof operatively secured to one of said members for common orbital and rotary movement therewith and the other end operatively connected to said drive shaft for common rotary movement with said drive shaft.

3,270,682
ROTARY FLUID PRESSURE DEVICE

Lynn L. Charlson, Minneapolis, Minn., assignor to Germane Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Jan. 22, 1965, Ser. No. 427,379
6 Claims. (Cl. 103—130)



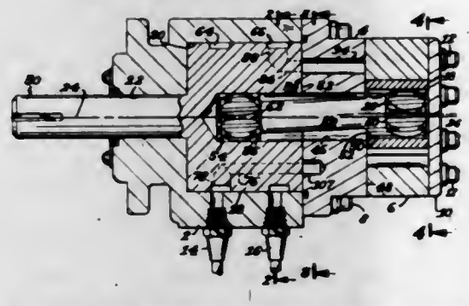
1. In a fluid pressure device, a casing, fluid inlet and outlet means, an internally toothed ring member defining the outer wall of a chamber, a cooperating externally toothed star member having fewer teeth than said ring member disposed eccentrically in said chamber and being capable of orbital movement about the axis of said ring member, the teeth of said members intermeshing in sealing engagement to form expanding cells on one side of the line of eccentricity and contracting cells on the other side of said line during relative movement between said members, said star member having a concentric bore and being rotatable about its own axis in the opposite

direction and at a slower speed than said orbital movement during relative rotation between said members, a spool member rotatably disposed in said star member bore, spool anchoring means for allowing said spool to follow said orbital movement of said star member but preventing rotational movement of said spool relative to said ring member during operation of said device, a plurality of circumferentially arranged ports in said spool member comprising a first series of circumferentially arranged fluid feeding ports communicating with said fluid inlet means and a second series of ports being arranged alternately relative to said first series of ports a fluid tight partition in said spool member separating said first series of ports from said second series of ports, a series of passages in said star member which extend from spaces between the teeth thereof to said bore thereof, said series of star passages upon relative movement between said star and spool members being sequentially communicable with each of said plurality of spool ports to effect communication between said inlet means and the expanding cells on one side of said line of eccentricity and between said outlet means and said contracting cells on the other side of said line of eccentricity.

3,270,683
PORTING ARRANGEMENT FOR BALANCING VALVE OF FLUID PRESSURE DEVICE

Hugh L. McDermott, Minneapolis, Minn., assignor to Char-Lynn Company, Minneapolis, Minn., a corporation of Minnesota

Filed Aug. 4, 1965, Ser. No. 477,207
10 Claims. (Cl. 103—130)

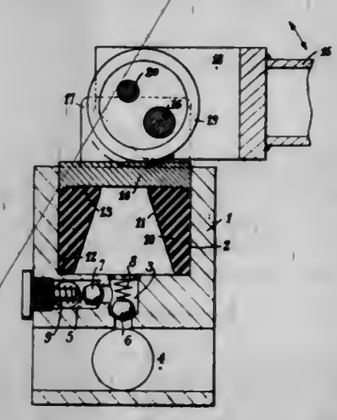


1. A rotary fluid pressure device comprising a casing, fluid inlet and outlet means, an internally toothed ring member, a cooperating externally toothed star member having fewer teeth than said ring member disposed eccentrically relative to the axis of said ring member, one of said members having rotational movement about its own axis and one of said members having orbital movement about the axis of the other of said members with the teeth of said members intermeshing in sealing engagement to form expanding cells on one side of the line of eccentricity and contracting cells on the other side of said line during relative movement between said members, first and second relatively movable valve elements having respective first and second slidably engaging surfaces with one of said valve elements being movable in synchronism with one of said movements of one of said members, said first valve element having a plurality of passages communicating with said expanding and contracting cells and having passage openings defined in said first surface arranged circumferentially relative to the axis thereof, said second valve element having ports having openings defined in said second surface arranged circumferentially relative to the axis thereof, said ports including a first group of ports having constant fluid communication with said inlet means and a second group of ports having constant fluid communication with said outlet means, said first valve element passage openings being registerable with at least a portion of said second valve element port openings during relative movement between said members to direct fluid from said fluid inlet means to said expanding cells and to direct fluid from said contracting cells to said fluid outlet means, and a plurality of circumferentially arranged fluid pressure balancing recesses in said first valve surface having openings in said first surface which are alternately and symmetrically arranged relative to said passage openings and are equal in number to said passage openings.

3,270,684
PISTON MACHINE

Jean Pasquali, 6 Rue du Square, Bois d'Arcy, France; Yvon Pranthois, 74 Ave. de la 2ème D.B., Argentan, France; and Marcel Dordain, 23 Rue des Capucins, Argentan, France

Filed Dec. 3, 1963, Ser. No. 327,618
Claims priority, application France, Dec. 11, 1962, 918,233, Patent 1,352,188; June 10, 1963, 937,553, Patent 1,352,188
3 Claims. (Cl. 103—148)



1. A piston machine comprising a cylinder provided with a bottom having suction and delivery orifices, a piston slidably mounted in said cylinder, and a pad of elastic material of relatively great thickness in which a frustoconical cavity having its large end opening toward said bottom is formed, said pad being slidably fitted in said cylinder between said piston and said bottom, wherein said cavity is also open at its small end adjacent to said piston and slightly rounded edges are provided between the frustoconical surface of said cavity and the end faces of said pad.

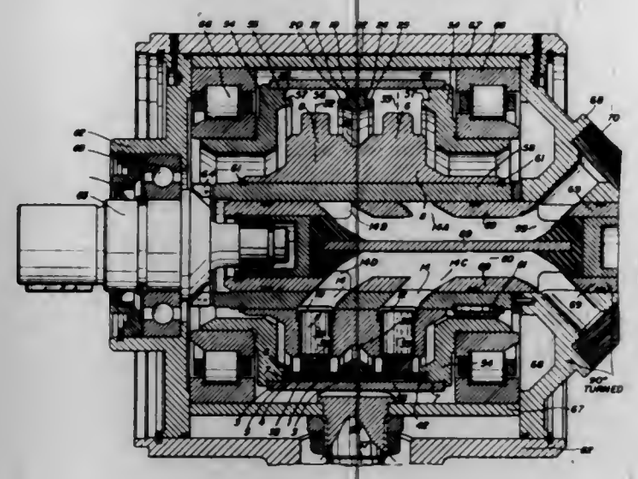
3,270,685
ROTARY RADIAL PISTON MACHINE

Karl Eickmann, 2420 Ishiki Hayama-machi, Kanagawa-ken, Japan

Filed July 3, 1963, Ser. No. 292,629
Claims priority, application Germany, July 4, 1962, B 67,901
15 Claims. (Cl. 103—161)

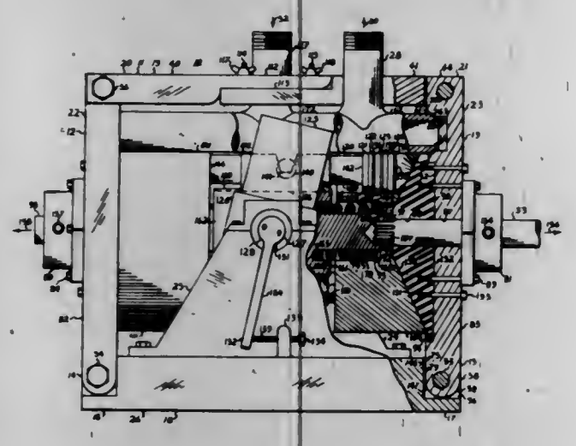
1. A rotary fluid machine comprising, in combination, a casing; at least one rotor rotatably mounted in said casing and formed with angularly spaced radial bores constituting cylinders; pistons reciprocable in each of said cylinders to vary the effective volumes of the cylinders to displace fluid relative to said cylinders; guide means surrounding said rotor and reciprocating said pistons upon rotation of said rotor; said guide means having an eccentricity relative to the rotor axis to define the piston strokes; said cylinders being arranged in at least two groups with the cylinders of each group having their axes in a respective common diametric plane through said rotor, said planes being spaced axially of said rotor; said rotor having at least two external annular radial ribs each centered axially on a respective one of said diametric planes, the axial widths of said ribs being less than the diameter of the associated bores; said guide means being formed to provide radially inwardly opening annular grooves arranged to have said ribs extend at least partially thereinto; said bores being

formed through said ribs to provide extended guide surfaces for said pistons, with resultant axial slotting of said ribs at angularly spaced locations each centered on a respective cylinder axis; the cylindrical surface of said rotor



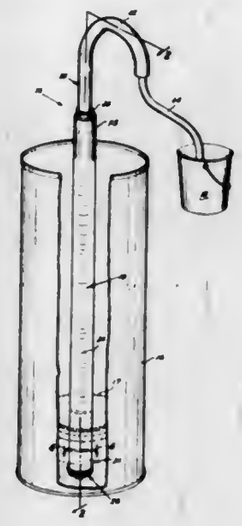
being formed, between axially adjacent ribs, to have said guide means move at least partially close to it; whereby the effective piston stroke is increased substantially relative to the rotor diameter; and fluid inlet and outlet means communicating with said bores.

3,270,686
PUMP AND RELEASABLE HOUSING THEREFOR
Tom H. Thompson, Daytona Beach, Fla., assignor to Daytona Thompson Corporation, Daytona Beach, Fla., a corporation of Florida
Filed Feb. 13, 1964, Ser. No. 344,740
17 Claims. (Cl. 103—162)



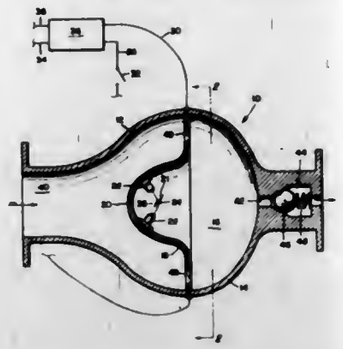
1. In a pump, a housing comprising an elongated base having end portions, upstanding members having lower end portions, one said upstanding member being a cylinder head for the pump, pivotal connecting means for attaching said lower end portion of said one upstanding member to one said end portion of said base, connecting means for attaching said lower end portion of the other said upstanding member to the other said end portion of said base and for maintaining said other upstanding member in rigid upright spaced position, selectively releasable means attached to said one upstanding member above said lower end portion thereof for maintaining said one upstanding member in rigid upright spaced position, a shaft extending through said one upstanding member, a cylinder block rotor within said housing cooperating with said one upstanding member, said shaft including an end portion releasably connected to said rotor, said one upstanding member being adapted to pivot outwardly to expose the cylinders of said rotor upon release of said selectively releasable means and after disengagement of said shaft end portion from said rotor.

3,270,687
HAND PUMP
Siebolt Hettinga, 734 Washington, Pella, Iowa
Filed July 13, 1964, Ser. No. 382,103
4 Claims. (Cl. 103—178)



1. A hand operated pump comprising:
(a) a first tubular member having an inlet end and an opposite end connected together with a passage means,
(b) first valve means including a check valve having a movable center portion and a peripheral portion and a seat member for holding the peripheral portion of the check valve in a sealed relation with the inlet end of the first tubular member, said seat member coacting with the center portion of the check valve to permit the flow of a flowable material into said inlet end,
(c) a second tubular member having an inlet end and an outlet end connected together with a passage means, said second tubular member being slidably telescoped within the first tubular member,
(d) second valve means including a check valve having a movable center portion and a peripheral portion and a seat member for holding the peripheral portion of the check valve in a sealed relation with the inlet end of the second tubular member, said seat member coacting with the center portion of the check valve to allow the flow of the flowable material into the second tubular member, whereby on movement of the second tubular member out of the first tubular member the flowable material is moved through the first valve means into the first tubular member and on movement of the second tubular member into the first tubular member the flowable material is moved from the first tubular member through the second valve means into the second tubular member for discharge from the opposite end thereof,
(e) stop means on said second tubular means for limiting the movement of the second tubular means into the first tubular means, and
(f) hose means slidably positioned in said second tubular member, said hose means being movable relative to said second tubular member to vary the effective length of said second tubular member.

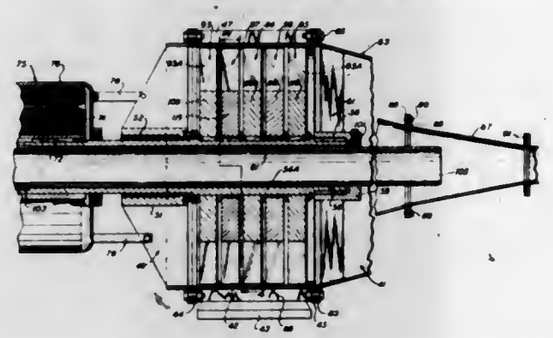
3,270,688
SPARK PUMP
Donald K. Skoog, Mountainside, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 3, 1964, Ser. No. 408,529
3 Claims. (Cl. 103—255)



1. A pump comprising:
a pumping chamber defined by a wall and a plate;
said plate having at least one continuously unobstructed opening therethrough for allowing fluid to be pumped to enter said chamber;
said wall having an outlet for discharging pumped fluid from said chamber;
at least two electrodes disposed in said chamber in spaced relation to one another to form a gap to be jumped by a spark for pumping;
electrical means for forming a spark across said gap to generate energy for pumping; and
means for directing said pumping energy in one direction.

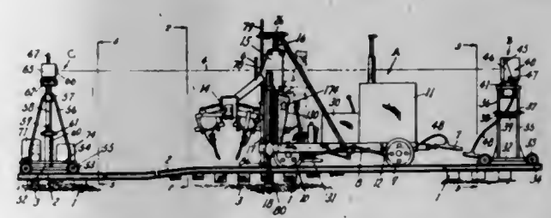
2. The apparatus of claim 1 wherein said directing means is a parabolic portion of said plate with the open end of said portion facing said outlet.

3,270,689
MATERIAL MOVING APPARATUS
Robert N. Dolphin, Vancouver, British Columbia, Canada, assignor to Mat-Mo Holdings Ltd., North Burnaby, British Columbia, Canada, a corporation of British Columbia
Filed Mar. 16, 1964, Ser. No. 352,234
1 Claim. (Cl. 103—263)



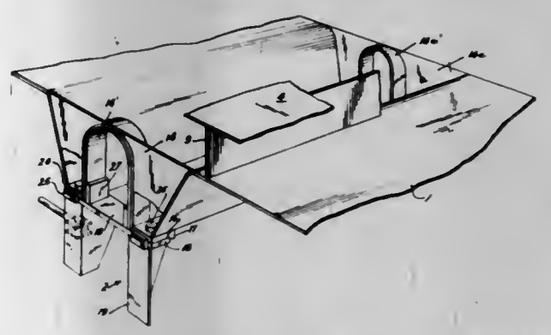
Apparatus for educing flow of solid, semi-solid and fluid materials comprising a base, a cylindrical housing on the base, bearing means supported by the housing, a tubular drive shaft extending through the housing and supported by the bearing means, an eductive tube extending through the tubular drive shaft and beyond each end of the housing, means adapted to provide relative rotation between the eductive tube and the drive shaft, a plurality of turbine rotors fixed to the drive shaft at spaced intervals thereon, a plurality of turbine stators fixed to the housing and interposed between the spaced turbine rotors, a conical shroud affixed at its large end to the cylindrical housing, said eductive tube extending through the housing and the shroud and beyond the diminished end of the shroud, a tapering venturi throat surrounding the extending end of the eductive tube, the relative diameters of the eductive tube and the venturi throat being such that air flow directed through the shroud and the throat by the turbine rotors and stators educes a flow of materials through the eductive tube to be discharged from the venturi throat.

3,270,690
RAILWAY TRACK GRADING APPARATUS
Charles J. Derler, Ludington, and Merlin J. Applegate, Grand Rapids, Mich., assignors, by mesne assignments, to Jackson Vibrators, Inc., Ludington, Mich., a corporation of Illinois
Filed June 4, 1962, Ser. No. 199,720
5 Claims. (Cl. 104—7)



1. In a control system for a railroad ballast tamper having jacks and rail hooks for shifting the position of the track, the combination comprising, a first carriage having a light source visible at said tamper, a light sensor coupled to said tamper and mounted to be held at a predetermined dimension from said track, a baffle supported on said tamper between said light source and said light sensor, said baffle having a slot disposed transversely to said dimension and being mounted relative to said track so that said slot moves parallel to said dimension as the jacks shift the track, said sensor including a plurality of light responsive cells disposed parallel to said dimension and facing said light source, and a circuit coupling said cells so that a circuit output is obtained whose direction and magnitude is determined by where the light passing through said slot from said source strikes said sensor.

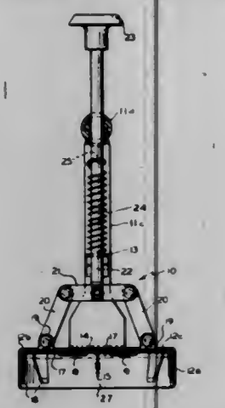
3,270,691
LOCOMOTIVE TRUCK
Fritz Zoellner, Munich-Allach, Germany, assignor to Krauss-Maffei A.G., Munich-Allach, Germany
Filed June 26, 1962, Ser. No. 205,415
13 Claims. (Cl. 105—199)



1. In a railway vehicle of the type in which the trucks are free to swivel with respect to the vehicle body without a centric connection between the body and the trucks, in combination, a vehicle body; a truck adapted to extend at least in part beneath said body; an arrangement for swivelly coupling said body to said truck, said arrangement comprising a first component rigidly secured to and extending downwardly from said body, a second component positioned in the truck beneath said first component for rotative movements with respect to the truck about a vertical axis, and means detachably securing said

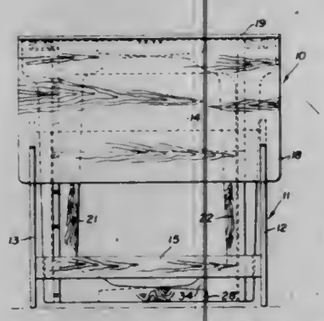
second component to said first component so that each thereof shares all rotative movements of the other, said first and second components defining between themselves a substantially horizontally extending channel open at opposite ends thereof, said first and second components including portions defining respectively upper and lower boundaries of said channel; and operating means for said vehicle mounted on said truck and including an elongated portion extending through said channel so that without interfering with said operating means said body and said first component may be lifted with respect to said truck and said second component when said components are disconnected from each other.

3,270,692
DOUGH CUTTING AND FORMING DEVICE
William F. Cummins, Sr., W. Lake Road, De Ruyter, N.Y.
Filed June 2, 1964, Ser. No. 372,036
8 Claims. (Cl. 107—68)



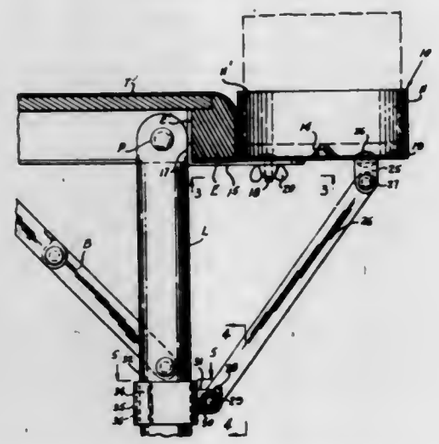
2. In a dough cutter, a shell having an open end, a knife mounted transversely in said shell with its knife edge facing the open end thereof, a wing member swingably mounted in the shell on each side of said knife and movable from a normal position substantially perpendicular to the knife to an extended position substantially parallel to the knife each wing having dough gripping means thereon, and means for moving said wings from normal to extended position.

3,270,693
FOLDING TABLE
Herman H. Lind, 1900 E. 30th St., Cleveland, Ohio
Filed Jan. 28, 1965, Ser. No. 428,809
10 Claims. (Cl. 108—16)



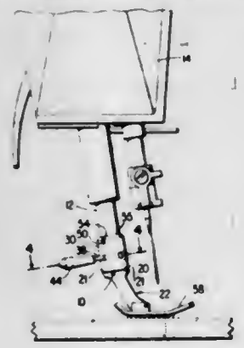
1. A folding table comprising a stationary frame assembly, a pair of legs hingedly connected to said stationary frame assembly adjacent opposite sides thereof, each of said legs being generally U-shaped and comprising a top section for supporting the top of the table and a bottom section adapted to engage the surface supporting the table, with one of said legs when folded lying flat against said stationary frame assembly and the other of said legs when folded lying flat against said one leg, a top member hingedly connected to said stationary frame assembly, said top member when unfolded being generally horizontally disposed and supported by said unfolded leg members, said table top when folded hanging downwardly over said other leg when folded thereby to provide a compact folded table, means for retaining each of said legs in their unfolded position supporting said top, said retaining means comprising a pair of flexible retaining members mounted on said top, with each of said legs being provided with an opening through which a curved leading end portion of a respective retainer member extends when said legs are moved to a support position generally normal to said stationary frame assembly and said top, said curved leading end portions of said resilient retaining members retaining said legs in such position.

3,270,694
COMBINATION ASH AND BEVERAGE TRAY FOR CARD TABLES
Hampton K. Wallace and Adele B. Wallace, both of 124 Fitzgerald Drive, Travis AFB, Calif.
Filed Jan. 12, 1965, Ser. No. 424,953
5 Claims. (Cl. 108—26)



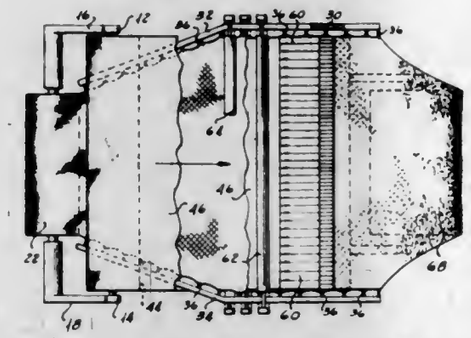
1. A combination ash and beverage tray for card tables, comprising a receptacle, a plate having an upturned end secured to the underside of said receptacle, adapted to engage the underside of the depending edge of a card table, a link pivoted at one end to the underside of said receptacle, a clamp adapted to engage the leg of a card table, and means pivotally connecting the other end of said link to said clamp.

3,270,695
SCREWLESS-TYPE PRESSER-FOOT CLAMP
Roger J. Ross, Rockaway, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 11, 1964, Ser. No. 343,977
4 Claims. (Cl. 112—240)



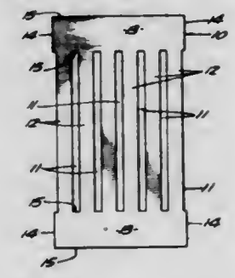
1. In a sewing machine having a presser-bar including a sleeve engaging portion and a corresponding presser-foot, means for releasably clamping the presser-foot to the presser-bar comprising a sleeve mounted upon the sleeve engaging portion of said presser-bar, said sleeve engaging portion having a vertical shank engaging slot and a clearance slot extending transversely to the vertical shank engaging slot, means connecting the sleeve to the presser-bar for biasing the sleeve for turning movement upon said sleeve engaging portion, said presser-foot including an elongated shank, said elongated shank being adapted to fit into the vertical shank engaging slot, said shank having an indent therein, said sleeve having a pair of aligned locking pin receiving bores transverse to the longitudinal axis of the sleeve, and a locking pin adapted to slip into the pin receiving bores and through the clearance slot whereby said sleeve biasing means exerts a force which urges the locking pin into engagement with said indent thereby locking the presser-foot to the presser-bar.

3,270,696
METHOD OF MAKING A PUFFED FABRIC
Alvin N. Lowenstein, Elizabeth, N.J., assignor to McGregor-Doniger Inc., New York, N.Y., a corporation of New York
Filed Oct. 11, 1963, Ser. No. 315,579
2 Claims. (Cl. 112—262)



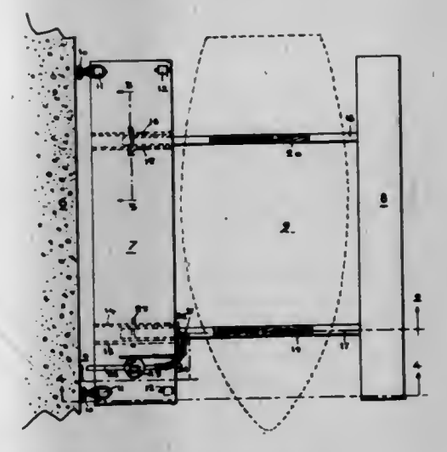
1. A continuous method of making a puffed fabric including the steps of feeding a two-way stretchable fabric through a stitching zone, stretching said fabric in the direction of feeding in the course of said feeding operation, concomitantly stretching said fabric in a direction transverse to the direction of feeding in the course of said feeding operation as it passes through said zone, feeding a relatively inextensible face fabric through said zone together with said stretchable fabric and securing said fabrics together in said zone with stitching extending both in the direction of feeding and transversely thereto.

3,270,697
METHOD FOR FORMING A PIPE CENTERING DEVICE
James R. Solum, Los Angeles, Calif., assignor to B & W Incorporated, Torrance, Calif., a corporation of California
Filed Oct. 2, 1962, Ser. No. 227,805
4 Claims. (Cl. 113—116)



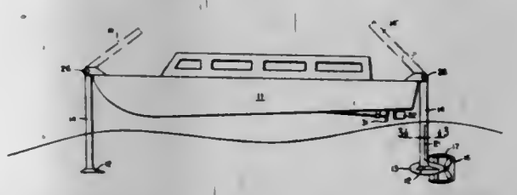
1. A method of forming a centralizer having a pair of spaced cylindrical collars and a plurality of circumferentially spaced and outwardly bowed staves extending between said collars, comprising the steps of: forming a flat blank having a pair of spaced panels and a plurality of spaced ribs extending between and integrally joined to said panels, forming each of said panels into a cylinder having abutting ends and each of whose axis is substantially aligned with the other, said ribs extending longitudinally between said cylinders, confining said panels to their cylindrical shape and urging said panels axially toward each other and forcing said ribs outwardly by means of internal dies into engagement with mating confining dies for forming the profile of the centralizer staves, and joining said abutting ends of each cylinder for forming the cylindrical collars.

3,270,698
FLOATING DRY DOCK
Marcel R. Fort, Plantation, Fla. (1600 NE. 126th St., North Miami, Fla.)
Filed Feb. 25, 1965, Ser. No. 435,251
7 Claims. (Cl. 114—45)



1. A floating dry dock comprising
(a) a first pontoon,
(b) said pontoon carrying securing means for connecting said dry dock to a dock,
(c) said pontoon also providing docking means for a boat,
(d) a second pontoon spaced from said first pontoon by a plurality of arms,
(e) said arms hingedly connected to the first pontoon,
(f) said arms rigidly connected to said second pontoon, and
(g) means for filling and emptying said second pontoon.

3,270,699
HYDROFOIL CRAFT
Vannevar Bush, 304 Marsh St., Belmont, Mass.
Filed Mar. 4, 1965, Ser. No. 437,146
24 Claims. (Cl. 114—66.5)



1. In a submerged hydrofoil craft, the combination including completely submerged depth sensing means and means to sense vertical accelerations of at least one foil, means to supply fluid under pressures determined by depth and by vertical accelerations of said one foil, control mechanisms to vary the lift coefficients of said one foil, means to actuate said mechanisms in response to

fluid pressure variations resulting from depth variations and vertical accelerations of said one foil, and means to cause outward fluid flow through the depth sensing means to prevent fouling thereof.

3,270,700
SHIPBOARD INSTALLATION OF ELONGATED PRESSURE VESSELS
Harold B. Kohn, Yonkers, and Morgan Chuan-Yuan Sze, Garden City, N.Y., Harold L. Cook, Jr., Bellaire, Tex., Herbert C. Secord, Little Cheverells, Markyate, Herts, England, and Øystein Arvesen, Haslum, Norway, assignors to Vehoc Corporation, a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,179
8 Claims. (Cl. 114—74)



8. In the shipboard installation of elongated substantially cylindrical vessels containing refrigerated pressurized natural gas, each vessel being disposed vertically in a hold on a deck structure and being rounded at its lower end, underlying installation means comprising

(a) a flat annular balsa pad on the deck structure under each vessel;

(b) a cylindrical wooden shear plug located on the deck structure and extending closely through and eccentrically up from each pad in slideable rotatable engagement therewith;

(c) a secondary barrier comprising

(i) a first foamed insulating layer covering the deck structure between the pads,

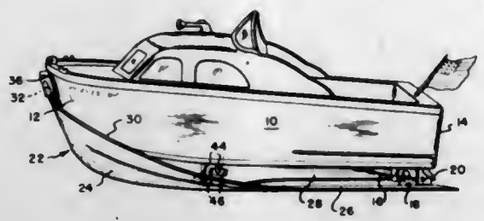
(ii) a double ply wooden wall covering the first foamed insulating layer and the pads between the upper portion of the shear plugs, and

(iii) a continuous film of polytetrafluoroethylene extending between the plies of said wall and closely capping the upper portion of each shear plug, and

(d) an annular wooden support bowl disposed on the secondary barrier closely about the capped portion of each shear plug and formed with a concave seat receiving the rounded lower end of the associated vessel in mating ball-and-socket engagement.

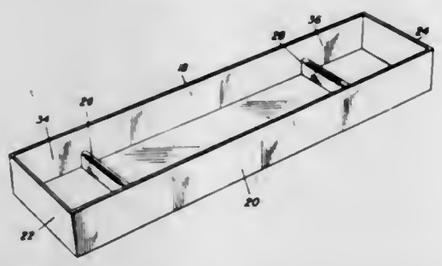
3,270,701
STABILIZED WATERCRAFT AND STABILIZER FOR MINIMIZING PITCHING AND WAVE SHOCK OF SMALL CRAFT
Joseph Kubas, 514 Eskridge Way, Olympia, Wash.
Filed Oct. 9, 1964, Ser. No. 402,781
7 Claims. (Cl. 114—121)

1. In a boat including a hull having a bow, a bottom and a propeller at the stern, a stabilizer for stabilizing the boat against pitching, side dipping and for minimizing wave shock action during the running of the boat, said stabilizer comprising a rigid sheet structural member fitting the bow and bottom of the boat and extending from the upper portion of the bow to the stern of the boat, means for securing the upper forward portion of the stabilizer member to the bow of the boat, resilient means



for securing the stabilizer member to the hull at approximately the mid-portion of the bottom of the boat, said last mentioned means being adapted to hold the stabilizer member in spaced relation to the bottom of the boat in one position of said means and to permit the nesting of the stabilizer member against the bottom of the boat in another position of said resilient means.

3,270,702
SHIP STABILIZER COMPRISING WEIRS
Sheldon B. Field, Floral Park, N.Y., assignor to John J. McMullen Associates, Incorporated, New York, N.Y., a corporation of New York
Filed July 30, 1964, Ser. No. 386,187
5 Claims. (Cl. 114—125)

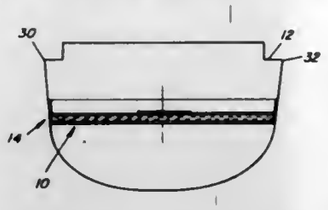


1. A ship stabilizer comprising an elongated containing means partially filled with a liquid body, the top surface of which is in a free surface condition, said containing means having a bottom, sides and a longitudinal axis, said containing means including two upstanding weir means each mounted off-center toward opposite ends within said containing means, said weir means having a height less than that of said sides, said weir means disposed substantially perpendicular to said longitudinal axis and contacting said sides and said bottom of said containing means, and that portion of said containing means between said two weir means comprising a substantially unobstructed flume.

3,270,703
SHIP STABILIZER COMPRISING SURFACE COVERING MEANS
Sheldon B. Field, Floral Park, N.Y., assignor to John J. McMullen Associates, Incorporated, New York, N.Y., a corporation of New York
Filed July 30, 1964, Ser. No. 386,285
5 Claims. (Cl. 114—125)

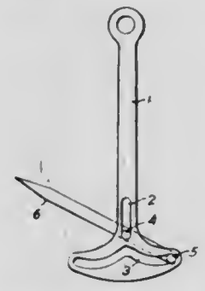
1. A stabilization system for a vessel comprising an elongated tank having its longitudinal axis arranged perpendicular to the roll axis of the vessel, a first liquid body partially filling said tank to a predetermined level which is spaced below the top of said tank, said tank being substantially free of liquid transfer damping structure, said first liquid body having a distributed mass which when alone in said tank oscillates at a natural fundamental

frequency substantially removed from a 90° phase lag of the vessel rolling frequency, a second liquid body which is immiscible with said first liquid body floating on the top, exposed surface thereof, the upper surface of said second liquid body being spaced below said top of said tank, said second liquid body being viscous and having a mass sufficient to dampen the fundamental transfer of said first liquid body so that the first and second liquid



body combination collectively transfers in oscillation with a fundamental frequency equal to the fundamental frequency of said ship roll and the phase oscillation of said first and second liquid body combination being such that there is as successive accumulation of liquid at that end region of said tank which is rising, each accumulation being sufficient to oppose the rise so that the vessel is stabilized.

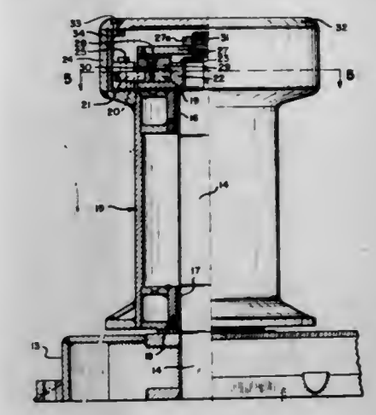
3,270,704
ANCHOR
Stig Johan Bruno Ekberg, Hasselbyvagen 78, Spanga, Sweden
Filed Dec. 7, 1964, Ser. No. 416,392
Claims priority, application Sweden, Dec. 9, 1963, 13,612/63
4 Claims. (Cl. 114—208)



1. An anchor comprising a shank, a pair of movable flukes located one on each side of the shank, the lower part of said shank having a first slot extending along the symmetry axis of the shank and a second slot located below said first slot and having two branches located one on each side of said symmetry axis, each of said branches making an angle with said axis in the proximity thereof, a first pin movable in said first slot, and a second pin movable in said second slot, said pins being rigidly connected to both flukes.

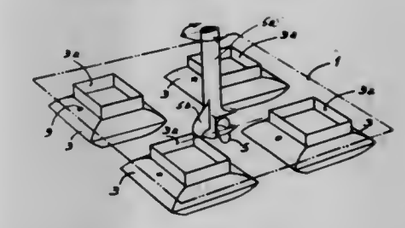
3,270,705
BOLLARDS
Karl A. Roeggen, Omagaten 47B, Kristiansund N., Norway
Filed Oct. 22, 1965, Ser. No. 501,072
8 Claims. (Cl. 114—218)

1. In a bollard for a ship including a stationary member and a post member rotatably mounted thereon round which a line, hawser or rope may be wound, in which the post is rotatable in one direction but locked against rotation in the other direction by means of a ratchet mechanism including ratchet teeth and cooperating pawls operable in such a manner that they engage the ratchet teeth and prevent relative movement between the pawls and ratchet teeth, the improvement in which the ratchet teeth are carried by one of said members and the pawls are carried by the other member, and brake means acting on a portion of the ratchet mechanism to normally prevent rotation of the post member in said other direction but



adapted to permit its rotation in that direction on the application of a predetermined force tending to rotate the post member of the bollard when held by the ratchet mechanism.

3,270,706
SELF-PROPELLING BARGE
Jacques Muller, La Garenne-Colombes, France, assignor to Rellumit, Inter, S.a.r.L., La Garenne-Colombes, France, a corporation of France
Filed Oct. 9, 1964, Ser. No. 402,896
Claims priority, application France, Oct. 18, 1963, 951,002
1 Claim. (Cl. 115—35)



A barge comprising a rigid rectangular platform, a plurality of square floats secured to the undersurface of the platform at each of the corners thereof respectively, corresponding sides of said floats extending parallel to each other, each of the side walls of each float being substantially elliptical in contour tapering outwardly from the top and bottom edge of each side wall to the center line of each side wall, said center line extending parallel to the major axes of the ellipse, a propeller shaft extending vertically through said platform and centrally located between said floats, a propeller mounted at the lower end of said shaft on an axis at right angles thereto, a rudder secured to the lower end of the propeller shaft and movable therewith and means to rotate said shaft through an angle of 360°.

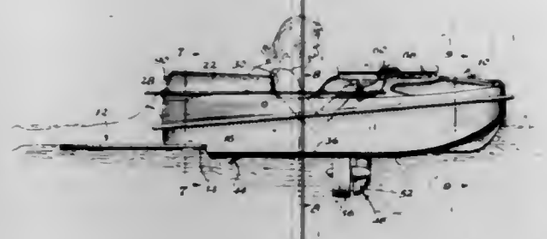
3,270,707
AQUATIC DEVICE
Frank G. Rozanski, Perry, N.Y., assignor to Aqua-Dart, Inc., Perry, N.Y.
Filed Nov. 6, 1963, Ser. No. 321,791
5 Claims. (Cl. 115—70)

1. An aquatic vehicle comprising, in combination,

a hull having a rearwardly disposed, generally horizontal deck and a generally horizontal bottom, a pair of vertical fin members extending forwardly at the rear of said hull along the opposite sides of said deck and presenting forwardly facing abutment surfaces adjacent their forward ends,

a control board hingedly secured to the rearward end of said hull,

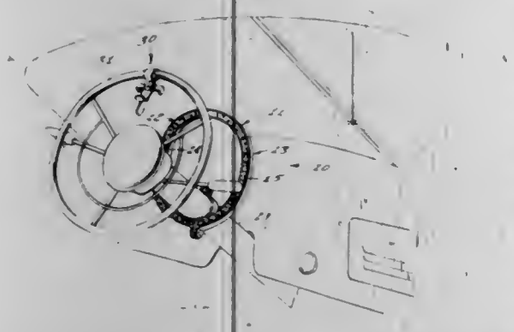
said fins projecting rearwardly of said hull in overlying relation to the forward end of said control board to



limit upward pivotal movement thereof to a position disposed generally parallel to and substantially coplanar with said bottom of hull,

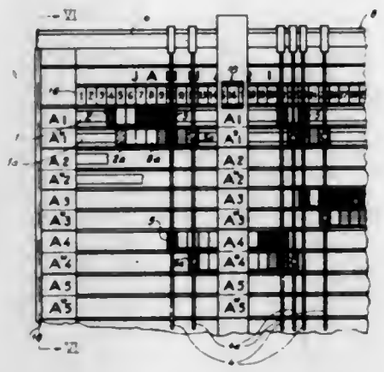
and propulsion means carried by said hull.

3,270,708
STEERING WHEEL TURN INDICATOR
Joseph A. Freed, 849 Beck St., Bronx, N.Y. 10459
Filed Aug. 23, 1965, Ser. No. 481,461
2 Claims. (Cl. 116—31)



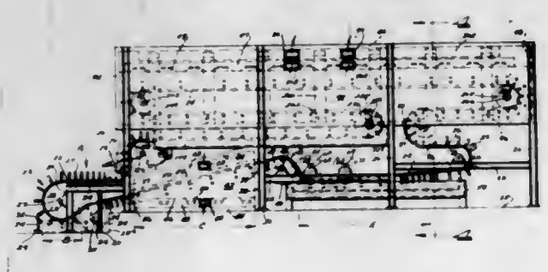
1. In a steering wheel turn indicator the combination of a transparent main body of ellipsoidal configuration comprised of a right and left body element, each of said body elements having a semi-ellipsoidal bowed portion between opposite ends, each of said body elements having one of their said ends pivotally secured together, a semi-circular ring component adjacent the other of said ends on each said body element, said semi-circular ring components together forming a ring when said body elements are assembled together to form said main body; said ring having a central opening for receiving an automobile steering post therethrough, each said ring component comprising a semi-circular portion between opposite ends formed into lugs supporting nut and bolt means for frictional securement of said ring around said automobile steering post, and radial indication means on said main body, said radial indication means comprising a pair of side walls, a bottom wall and an upper wall between an intermediate part of said side walls, said walls forming each said semi-ellipsoidal bowed portions, said walls enclosing a semi-ellipsoidal pocket, a removable semi-ellipsoidal dial within each of said pockets, numerical designations on said dials, an opening through said upper walls over each said numerical designation, and an associate member secured to an automobile steering wheel, said member comprising a clamp, a slide lever and turn lever, said clamp having an extension with an arrow imprinted thereupon for radially aligning said member with one of said numerical designations to indicate to a driver the directional angle of the automobile front wheels.

3,270,709
DEVICE FOR ORGANIZING AND PLANNING VARIOUS ACTIVITIES
Arthur Berge, Wennerbergsgatan, Stockholm 6, Sweden
Filed Jan. 23, 1964, Ser. No. 339,713
Claims priority, application Sweden, Feb. 1, 1963, 1,106/63; May 29, 1963, 5,980/63
8 Claims. (Cl. 116—135)



1. A device for indicating and displaying the coordination of different types of operations comprising, a support structure, a plurality of linearly arranged first display means supported on said structure defining a first axis, each of said display means representing one of said operations, a second plurality of linearly arranged display means supported on said structure defining a second axis representing a time scale perpendicular to said first axis, a plurality of runner means supported on said support structure in alignment with each of said first display means for movement parallel to said second axis, means carried by certain of said runner means for imparting distinguishing visual characteristics thereto, a plurality of indicator rod means supported on said support structure for movement parallel to said second axis and extending perpendicularly thereto, and pointer means supported on said rod means for movement axially of said rod means and pointing in a direction parallel to said first axis.

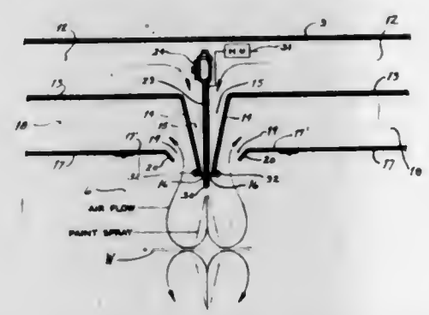
3,270,710
DIP-COATING MACHINE
John R. Johnson and Robert M. Smith, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Continuation of application Ser. No. 835,360, Aug. 21, 1959. This application Sept. 5, 1962, Ser. No. 224,591
4 Claims. (Cl. 118—56)



1. A machine for coating glass bottles with a plastic material, comprising in combination a bottle loading station, a first dipping tank for containing a bath of a liquid primer material, a first oven chamber, a radiant heater defining a tunnel-like heating zone, a second dipping tank for containing a bath of a liquid plastic coating material, a detearing device, a second oven chamber, a cooling chamber, a bottle unloading station, a pair of parallel

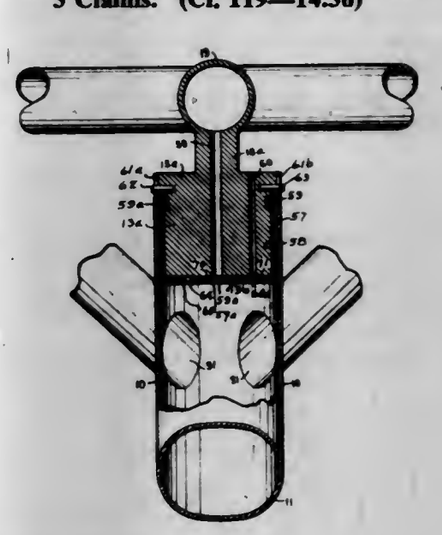
endless carriage chains, a plurality of rotatable bottle-carrying chucks, means for mounting said chucks for carriage intermediate said carriage chains, means, including a plurality of pairs of sprockets, defining an endless path for movement of said carriage chains, said defined endless path extending through the machine for carrying said chucks in succession past said first dipping tank for dipping bottles on said chucks in said bath of primer material, through said first oven for preheating the primed bottles, through said radiant heater zone for externally heating bottles on said chucks, past said second dipping tank including an initial, downwardly inclined travel for dipping bottles on said chucks into the said coating material by introducing them into said plastic material with their axes inclined to the surface of the bath and then gradually uprighting the articles to a vertical full dip position in the bath, and a subsequently, upwardly inclined travel for gradually removing dipped bottles from said coating fluid and including a span of travel above said body of coating fluid sufficient to allow excess coating material to drain from the bottles, past said detearing device while continuously moving the articles from an inclined upright position to an inverted position and coincident with said inverting movement said detearing device drivably engaging said chucks thereby continuously rotating the bottles axially for smoothing the coating on the dipped bottles during their said inverting movement heating means mounted at the terminal end of said inverting movement for applying heat to the coatings on the bottles as they complete their said inverting movement, said path then extending through said second oven for fusing the applied coating on the bottles, and through said cooling chamber, and drive means operatively connected for continuously driving one of said pairs of sprockets for continuously moving said carriage chains.

3,270,711
ELECTROSTATIC COATING SYSTEM
Charles Leach, St. Louis, Mo., assignor, by mesne assignments, to Glasser Products Corporation, a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,899
13 Claims. (Cl. 118—627)



10. In an electrostatic coating system having an enclosure with a top wall, side walls and end walls, and means for conducting therethrough an article to be coated, the improvement comprising air-circulating means for removal from said system of dust, foreign matter, undeposited coating materials, and the like, comprising means provided on opposite sides of, and within, said encolsure in opposed, transversely aligned relationship for defining nozzle-like openings, means for directing air through said nozzle-like openings for collision of the air masses emitted by aligned nozzle-like openings whereby through the impact of collision the air will be returned in the general direction of the emitting nozzle-like opening, and passage-forming means provided laterally of said nozzle-like openings for receiving the returning air for discharge.

3,270,712
MILKING MACHINE CLAW
Paul R. George, Sr., Cambridge City, Ind., assignor to Golay & Co., Inc., Cambridge City, Ind.
Filed July 29, 1964, Ser. No. 385,960
3 Claims. (Cl. 119—14.36)



1. For a milking machine,

a member receiving milk and having an approximately constant internal vacuum pressure;

a milk discharge line leading from said member;

tube means within which pressure cyclicly varies between atmospheric and vacuum;

means providing a surface within said member through which a passageway leading from said tube means opens;

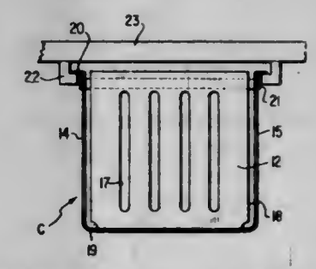
a passageway leading from the atmosphere and opening through said surface;

a flexible diaphragm disposed across said surface and covering the openings of both of said passageways; and

said diaphragm being carried toward and away from said passageways, alternately closing off and opening them under differential pressures set up on opposite sides of the diaphragm, providing an admittance of atmospheric air to said member in accordance with milk flow into said discharge line;

said diaphragm having an opening to one side of said passageways to transmit said atmospheric air therethrough.

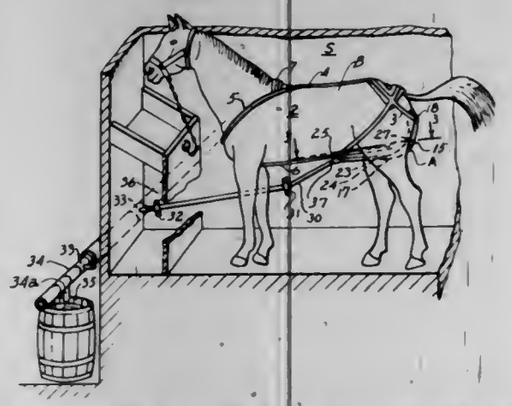
3,270,713
SMALL ANIMAL CAGE
Jeanette L. Rubricius, 85—35 Midland Parkway, Jamaica, N.Y.
Filed Sept. 17, 1964, Ser. No. 397,107
2 Claims. (Cl. 119—17)



2. A small animal cage comprising a unitary body of relatively rigid sheet material having an apertured quadrangular bottom wall panel through which animal wastes are adapted to pass and apertured side wall panels integral with said bottom panel and rising therefrom at approximately right angles, said bottom wall panel joining each of said side wall panels in a smoothly contoured curve, the length of each of said side walls being shorter

than the corresponding edges of said bottom, whereby adjacent edges of said side wall panels are spaced from each other to provide elongate slots, said sheet material being adapted to maintain the cage in a box-like form, when said side walls are positioned generally normal to the plane of said bottom wall panel, said slots terminating at their lower ends in openings in said bottom wall panel; flanges on the upper ends of a pair of opposed side wall panels extending outwardly therefrom and adapted to rest upon L-shaped supporting rails for suspension therefrom.

3,270,714
SYSTEM FOR COLLECTING URINE FROM PREGNANT MARES
John C. C. Gandier, Dorval, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 2, 1965, Ser. No. 436,594
4 Claims. (Cl. 119—95)



1. An apparatus for automatically collecting feces-free urine from a plurality of female quadrupeds which comprises a conducting receptacle mounted on each quadruped, said receptacle having a body including a receiving mouth and a delivery end remote therefrom, means for retaining said receptacle in collecting position on the quadruped, a flexible and elastic pipe connected to said delivery end thereof, a fixture to one side of the place normally occupied by the quadruped to guide said pipe in a downward direction therefrom, a common pipe leading in a downward direction to a common receptacle, and a connection between said flexible and elastic pipe and the common pipe.

3,270,715
NON-SLIP TEMPLATES
Donald F. Dreher, P.O. Box 56, East Brookfield, Mass.
Filed Dec. 1, 1964, Ser. No. 416,961
4 Claims. (Cl. 120—41)

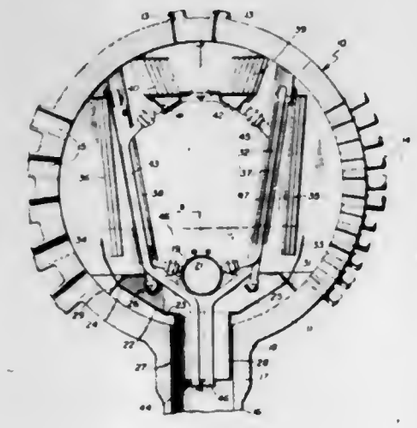


1. A template comprising a planar-formed body section of durable material, shaped and apertured in the manner dictated by its purpose, and having each of its surfaces specializedly modified in its affinity for a contacting element, such modification consisting of one of those described respectively as being made

(a) frictionally affinitatious by means of attachment of an elastomeric composition to said surface,
(b) relatively nonaffinitatious frictionally, but pressurably keyable, to a contacting element by means of roughening said surface, or
(c) inherently nonaffinitatious by means of a surface coating comprising a chemical complex containing an inorganic radical,

said complex being of the order identifiable as silicone or Teflon, said coating means (c) being limited to one surface of said template, and said modifications oppositely disposed so as to permit conjunctive utilization when said elements are opposedly in contact respectively therewith, thereby permitting said template to be held reliably in the desired position with minimal application of holding force.

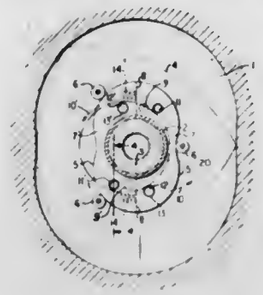
3,270,716
STEAM GENERATING UNIT
Max H. Kuhner, Oakham, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 12, 1965, Ser. No. 449,683
1 Claim. (Cl. 122—459)



A steam generating unit, comprising

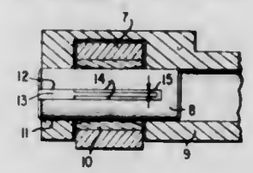
(a) a steam-and-water drum containing steam-separating apparatus, including a number of steam condensers receiving cold feed water and bringing it into heat exchange relationship with steam,
(b) a feed water pipe extending through the drum in the lower portion thereof and connected to the condensers,
(c) a plurality of downcomers extending from the bottom of the drum,
(d) a tray residing in the lower portion of the drum and spaced from the inner surface of the drum under the discharge end of the condensers, the tray being of substantial capacity to receive cold feed water as it leaves the said ends of the condensers and to prevent it from contacting the drum in the area of its junction with the downcomer and having an upper edge normally above the water level in the drum, and
(e) a sleeve extending downwardly from the bottom of the tray a substantial distance into each downcomer concentrically thereof, the said sleeve being spaced from the associated downcomer to form an annular space between the inner surface of each downcomer and the outer surface of its sleeve, so that relatively hot water flows from the drum through the space and mixes with relatively cold feed water flowing from the tray and the sleeve, the mixing taking place in the downcomer a substantial distance from the junction of the downcomer and the drum, the said steam separating apparatus including a drier carton having an underlying tray from which extends a downwardly extending pipe, the lower end of the said pipe extending through said sleeve a substantial distance into the said downcomer.

3,270,717
ROTARY-PISTON INTERNAL COMBUSTION ENGINE OF TROCHOIDAL CONSTRUCTION
Johannes Gassmann, Altbach, near Esslingen (Neckar), and Richard Ehrhardt, Stuttgart-Unterturkheim, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Oct. 9, 1961, Ser. No. 143,843
Claims priority, application Germany, Oct. 13, 1960, D 34,498
19 Claims. (Cl. 123—8)



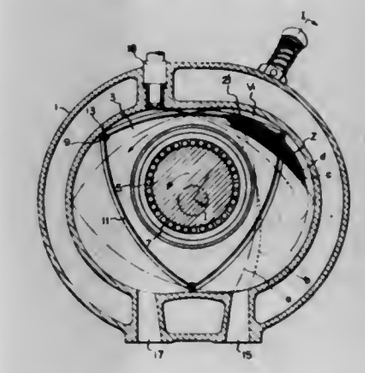
1. A rotary piston internal combustion engine of trochoidal construction comprising drive shaft means including eccentric means, polygonal piston means carrying out a rotary movement about said eccentric means as internal envelope form within an epitrochoidally-shaped housing, and means for imparting to said piston means a rotary movement about said eccentric means including a plurality of guide parts, cam means arranged at said guide parts and guide roller means, said guide parts being movably arranged at one of the two parts consisting of said piston means and said engine housing and said guide roller means being disposed at the other of said two parts, and pressure means elastically yieldingly pressing said guide parts with the cam means thereof against said guide roller means.

3,270,718
ROTARY-PISTON INTERNAL COMBUSTION ENGINE
Johannes Gassmann, Altbach, near Esslingen (Neckar), Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 21, 1961, Ser. No. 154,009
Claims priority, application Germany, Mar. 28, 1961, D 35,757
20 Claims. (Cl. 123—8)



1. A rotary-piston internal combustion engine of trochoidal construction having a housing with an internal epitrochoidally shaped surface, comprising output shaft means including eccentric means, polygonal piston means adapted to carry out rotary movements about said eccentric means with the outer contour thereof approximating the internal envelope of the epitrochoidally-shaped surface of said housing, and means for imparting to said piston means said rotary movements including at least one trochoidally-shaped cam track rigid with one of the two parts consisting of said housing and piston means and bearing a predetermined relationship to the epitrochoidally shaped surface of said housing, and guide roller means for guiding the other part along said cam track, and guide roller means effectively providing an elastic yieldingness in the radial direction thereof and including bearing bolt means, bushing means for supporting said guide roller means on said bearing bolt means, said bearing bolt means being constructed as spring means provided with means limiting the spring path thereof.

3,270,719
PRESSURE REDUCING DEVICE FOR DIESEL TYPE ROTARY ENGINES
Yoshitsugu Hamada, Nishinomiya-shi, Japan, assignor to Yanmar Diesel Engine Co., Ltd., Osaka, Japan, a corporation of Japan
Filed June 5, 1962, Ser. No. 200,170
Claims priority, application Japan, July 25, 1961, 36/37,512
1 Claim. (Cl. 123—8)

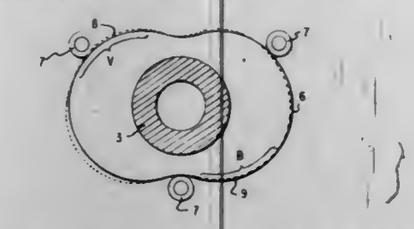


A decompression device for providing decompression control in a diesel type rotary internal combustion engine comprising a housing having axially spaced end walls and a peripheral wall interconnecting said end walls to define between said walls a cavity with the inner surface of said peripheral wall having a two-lobed epitrochoidal profile, a rotor received in said cavity and supported for rotation with respect to said housing, said rotor having axially spaced end faces provided with end seal means for sealing engagement with said end walls and an outer surface with three circumferentially spaced apex portions provided with edge seal means for sealing engagement with the peripheral wall inner surface of the housing to divide the space between said inner surface and the outer surface of the rotor into three working chambers, and corner pins at the apex corners of the end faces of the rotor for holding said end face seal means and edge seal means, a suction port and an exhaust port each formed in said peripheral wall; said decompression device comprising a bore in one of said end walls, a normally closed control valve mounted within said bore and which, when actuated, provides communication between atmosphere and said cavity, said bore being located in an area of said end wall surface which is defined by three curved lines, namely, the line of rotor profile at the instant when the suction port in the engine housing has been closed by the rotor, the line of rotor profile at the instant when the volume of said working chamber under compression has been reduced during compression stroke to preferably one quarter of its maximum value, and the locus of the axis of the corner pin of the rotor.

3,270,720
ROTARY PISTON INTERNAL COMBUSTION ENGINE
Richard Ehrhardt, Stuttgart-Unterturkheim, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Mar. 2, 1964, Ser. No. 348,730
Claims priority, application Germany, Mar. 9, 1963, D 41,086
12 Claims. (Cl. 123—8)

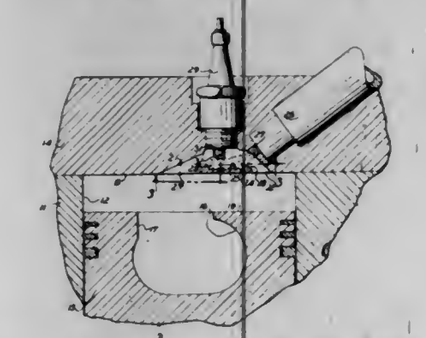
11. In a rotary piston internal combustion engine of trochoidal construction having an envelope provided with an internal cam surface which together with the lateral

parts thereof defines an interior space through which extends an eccentric shaft on the eccentric of which is rotatably supported a polygonal piston the rotational speed of which held at predetermined ratio to the rotational



speed of the eccentric shaft by means of a transmission, the improvement essentially consisting of means in said transmission for equalizing non-uniformities in the piston mass to improve the uniformity in angular velocity of the piston.

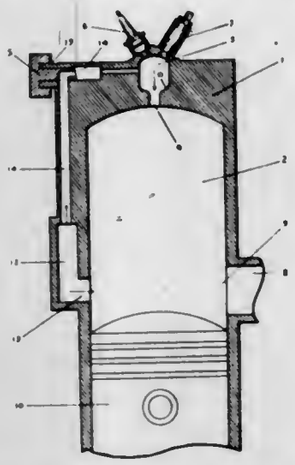
3,270,721
INTERNAL COMBUSTION ENGINE COMBUSTION CHAMBERS
Laszlo Hideg, Dearborn Heights, Thomas M. Sebestyen, Taylor, and Aladar O. Simko, Detroit, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,321
20 Claims. (Cl. 123—32)



1. An internal combustion engine comprising, a cylinder, a piston member reciprocating in said cylinder, a cylinder head member enclosing said cylinder to form a combustion chamber, a cavity formed in one of said members, said cavity opening through a throat into the squish area between said piston and said cylinder head members, said cavity having sufficient volume to promote a squish induced air transfer from said squish area into said cavity as the piston member approaches its top dead center position, a fuel impingement surface in said combustion chamber communicating at one side with said squish area and at another side with said throat for causing a portion of the squish induced air transfer to traverse said fuel impingement surface, a fuel injection nozzle having at least one discharge orifice disposed to deposit a substantial portion of its fuel spray upon said fuel impingement surface during injection, the squish induced air transfer across said fuel impingement surface being adapted to sweep the deposited liquid fuel into said cavity, and an ignition device positioned in the path of the swept fuel particles and contiguous to said fuel impingement surface for igniting the fuel particles.

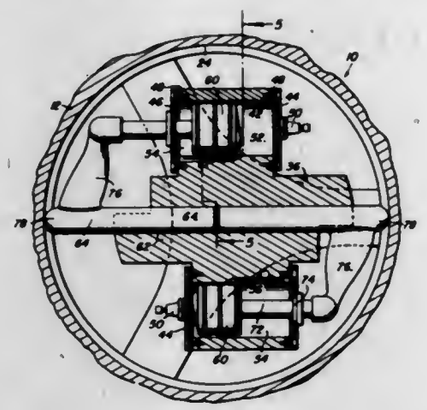
3,270,722
METHOD OF CONDITIONING LIQUID FUELS
John Springer Bernard, 2060 East 4800 South St., Salt Lake City, Utah
Filed Apr. 22, 1964, Ser. No. 363,059
3 Claims. (Cl. 123—32)

1. The method of conditioning and igniting fuel for combustion in a cylinder of an internal combustion engine, comprising the sequential steps of introducing free-oxygen bearing gas directly into a conditioning zone within said cylinder; passing a portion of said gas from said conditioning zone through a restricted orifice and into the combustion zone of said engine; increasing the pressure of said gas by compression while concomitantly spraying into said conditioning zone liquid fuel in an amount stoichiometrically in excess of the pressured free-oxygen bearing gas within said conditioning zone; completing said spraying action and detaining said sprayed fuel within said conditioning zone during the compres-



sion period, thereby allowing a portion of said sprayed fuel to transform from the liquid into the vapor state; igniting said fuel vapor within said conditioning zone after said spraying action, said ignition occurring in the presence of insufficient free-oxygen bearing gas to permit a complete combustion within said conditioning zone thereby leaving residual liquid fuel droplets therein; and flowing said residual liquid fuel droplets laterally into the gas stream ejected from said conditioning zone as said gases are forced through said restricted orifice by the increased pressure caused by the ignition.

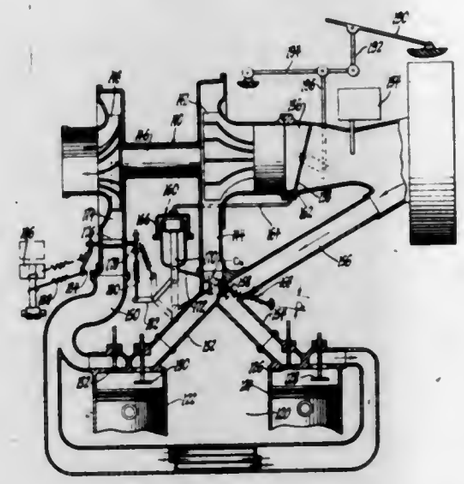
3,270,723
SELF-SUPERCHARGING ROTARY ENGINE
Peter Maroney, 133 Boulder Road, Solvay, N.Y.
Filed Dec. 18, 1963, Ser. No. 331,488
8 Claims. (Cl. 123—43)



1. A rotary engine comprising a stator, a circular cam track stationarily mounted in said stator, a rotor disposed in said stator and eccentrically in said cam track and mounted for rotation about a rotor axis parallel to the cam track axis, a pair of cylinders carried by said rotor on opposite sides of said rotor axis, said cylinders being parallel, the axes of said cylinders being displaced from the axis of rotation of said rotor, guide means in said rotor having a slide axis intersecting said rotor axis parallel to said cylinders, a piston assembly for each cylinder, said piston assembly including a piston and a

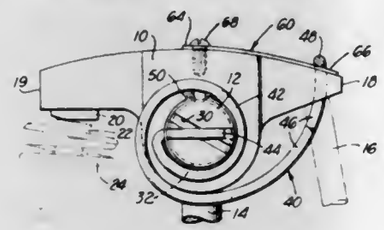
guide member fixedly secured thereto, said piston and guide members being parallel and being respectively slidably received in said cylinder and in said guide means, and a cam follower on said guide member movably engaging said cam track where intersected by said slide axis.

3,270,724
SPLIT ENGINE WITH TURBOCHARGER
John Dolza, Fenton, Mich., assignor to Fiat S.p.A., Turin, Italy, a corporation of Italy
Filed July 19, 1963, Ser. No. 296,211
7 Claims. (Cl. 123—59)



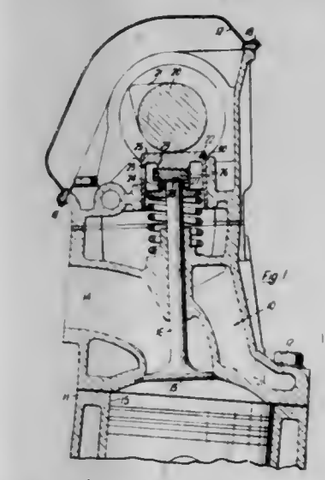
1. An internal combustion engine comprising first and second sets of cylinders, first passage means for supplying a combustible mixture to all of said cylinders under high engine output conditions and for supplying only air to said second set of cylinders under low engine output conditions whereby in said latter instance only said first set of cylinders is operative to supply power, common exhaust passage means for both sets of cylinders, a turbocharger including a compressor disposed in said first passage means and a turbine disposed in said exhaust passage means, and a valve in said exhaust passage anteriorly of said turbine for controlling the energy of the gases impinging upon said turbine.

3,270,725
SPRING FOR BIASING A ROCKER ARM AND MOUNTING THEREFOR
Marion Lee Thompson, 2734 Eastvale, Rolling Hills, Calif.
Filed Dec. 2, 1964, Ser. No. 415,392
6 Claims. (Cl. 123—90)



1. In combination, an engine rocker arm assembly, a push rod, and a spring for torque biasing the rocker arm into substantially continuous engagement with the push rod, which combination comprises: a shaft; a rocker arm pivotally mounted on the shaft, the ends of the shaft protruding beyond the rocker arm; aligned, transverse slots formed in the axially outwardly facing surfaces of the protruding ends of the shaft; a reciprocally movable push rod abutting on the underside of the rocker arm adjacent one end of the rocker arm and adapted to pivot the rocker arm on the shaft; a spring having a pair of parallel coils spaced apart from each other and adapted to produce a torque; a first, substantially straight leg extending from each of the coils, each of said legs being adapted to be received in a transverse slot in an opposite end of the shaft; a second leg extending from each of said coils, said second legs being disposed substantially parallel to each other; and a transverse yoke interconnecting the second legs and adapted to overlie and abut on the rocker arm above the abutment of the push rod thereon, said yoke being in torque biasing engagement with the rocker arm so as to cause the rocker arm to follow the push rod in its reciprocal movement.

3,270,726
VALVE TAPPET
John Lee Cotton, Flitwick, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,953
Claims priority, application Great Britain, Nov. 14, 1964, 46,479/64
6 Claims. (Cl. 123—90)



1. A valve tappet comprising a cup member adapted to fit over the end of a valve stem and having a transverse threaded bore, a threaded plug carried for screw adjusting movement in said bore and having a flat surface along one side adapted to contact the end of the valve stem, said surface lying at an angle with respect to said bore, whereby axial adjustment of said plug in said bore to any of a plurality of positions wherein said flat surface may contact said valve stem, adjusts the effective length of said valve tappet.

3,270,727
VALVE ROCKER ARM MOUNTING
Robert L. Nance, Oak Park, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 29, 1965, Ser. No. 510,228
10 Claims. (Cl. 123—90)

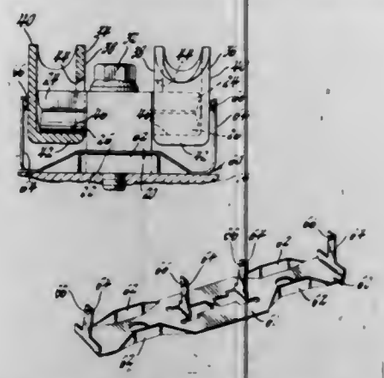
1. Valve gear for an internal combustion engine and comprising

a plurality of T-shaped supports secured to said engine in linearly spaced relation, each said support including a leg portion and a pair of oppositely extending arms,

a pair of rocker arms retained on the extending arms of each support for rocking motion in separate planes and

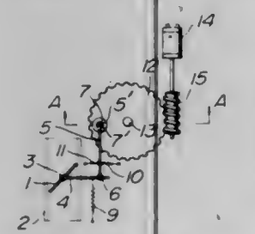
a unitary retainer means extending between and engaging at least two of said supports to at least par-

tially position them, said retainer means including a plurality of resilient fingers engaging said rocker



arms at their outer ends to retain said rocker arms in position on said supports.

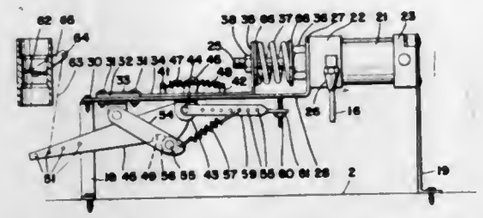
3,270,728
DEVICE FOR DRIVING AUTOMOTIVE VEHICLES AT CONSTANT SPEED
Akira Mizuno, 60 Shinmeicho, 7-chome, Kariya-shi, Aichi-ken, Japan
Filed Dec. 17, 1963, Ser. No. 331,304
Claims priority, application Japan, Dec. 26, 1962, 37/58,885
7 Claims. (Cl. 123—102)



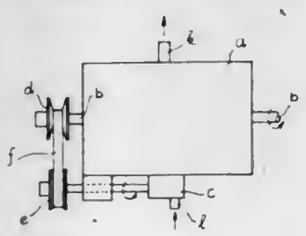
1. Apparatus for driving an automobile vehicle at a selected speed, which comprises a throttle valve for controlling the speed of said automotive vehicle, an electromagnet, means to selectively energize said electromagnet, a plate of ferromagnetic material having a rest position when the electromagnet is deenergized adjacent to and out of contact with said electromagnet and mounted for displacement in either of two opposite directions, said electromagnetic being mounted for displacement from said rest position to a position of contact with said plate when said electromagnet is energized and from said position of contact back to said rest position when said electromagnet is deenergized, said electromagnet being held in fixed relation to said plate when said electromagnet is in an energized state, a linkage directly and continuously connecting said electromagnet both when in said energized state and when in a deenergized state to said throttle valve, and means to selectively displace said plate together with said electromagnet when said electromagnet is in said energized state to move said plate together with said electromagnet to operate said linkage and thereby change the opening of said throttle valve.

3,270,729
AUTOMATIC THROTTLE CONTROL FOR AIR COMPRESSORS AND THE LIKE
Edward J. Swatek, Jr., 14 Mapleton Drive, Bedford, Ohio, and Norman J. Polcyn, 7112 Alice Ave., Cleveland 5, Ohio
Filed Mar. 11, 1964, Ser. No. 351,133
6 Claims. (Cl. 123—103)

1. An automatic throttle control for internal combustion engines, said control comprising an air cylinder, a piston in said cylinder, a piston rod extending from said cylinder, a frame member secured to one end of said cylinder, a slide operatively connected to said piston rod and movable along said frame member, a compression coil spring interposed between said frame member and said slide, a lever operatively connected to said slide and mounted for pivotal movement on said frame member, and means for resiliently maintaining said lever in at least two different pre-selected positions, said means comprising a member mounted for pivotal movement relatively to said frame member and having a cam follower thereon, said lever being provided with recesses defining the pre-selected positions of the lever, and into which said cam follower is adapted to snap.

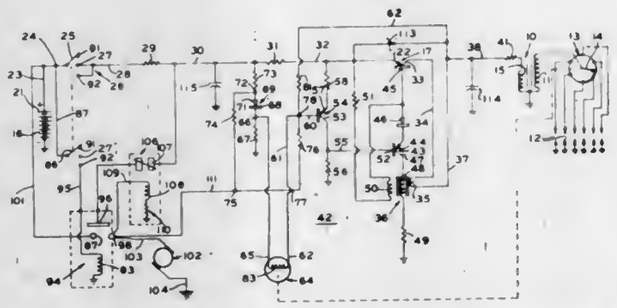


3,270,730
INTERNAL COMBUSTION ENGINES
Seamus Gearoid Timoney, 9 Hume St., Dublin, Ireland
Filed Nov. 3, 1964, Ser. No. 408,617
Claims priority, application Great Britain, Nov. 14, 1963, 45,025/63
7 Claims. (Cl. 123—119)



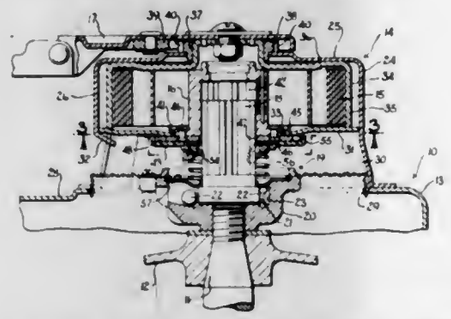
1. An internal combustion engine comprising in combination, an engine power shaft driven by the engine cylinder air charging means driven from the engine power shaft through a variable speed drive unit permitting controllable alteration of the speed of the air charging means while output power is being delivered by the engine, and means for automatic variation of the engine cylinder compression ratio in response to the engine load condition or the engine cylinder pressure, or both.

3,270,731
IGNITION SYSTEM
Laurence F. Mieras, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 387,002
8 Claims. (Cl. 123—148)



1. An ignition system for an internal combustion engine comprising, an ignition coil having a primary winding, an electrical storage battery, a solid state switching device coupled to said electrical storage battery and said primary winding of said ignition coil for controlling the energization of said primary winding, a current limiting resistor in circuit with said solid state switching device for limiting current through said solid state switching device, and means coupled to said electrical storage battery and said current limiting resistor for disabling said current limiting resistor from its current limiting function during engine starting operations only when the electrical load coupled to said electrical storage battery during starting operations reduces the terminal voltage of said battery below a predetermined value and for retaining said current limiting resistor in circuit to perform its current limiting function if the terminal voltage of said battery during starting operations is above said predetermined value.

3,270,732
SPRING STARTER FOR INTERNAL COMBUSTION ENGINE
Joseph R. Harkness, Germantown, Wis., assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 12, 1964, Ser. No. 389,025
6 Claims. (Cl. 123—179)



1. In a spring starter for an internal combustion engine of the type wherein one end of a starter spring is attached to a rotatable torque applying member that must be held against rotation in one direction while the spring is wound up, and the released energy of the wound up spring imparts starting torque to the crankshaft of the engine through a drive train including said torque applying member and the rotatable driving element of a unidirectional clutch which has a driven element connected with the engine crankshaft, and wherein engagement of the clutch entails some rotation of its driving element in said direction relative to the driven element of the clutch, the improvement which comprises:

(A) holding means operable to prevent rotation of the torque applying member while the spring is wound up;

(B) lockout means for said holding means to normally maintain the latter inoperative, said lockout means comprising

(1) a lockout member which is loosely mounted on the driving element of the clutch for free axial sliding movement to and from an operative lockout position with respect to said holding means,

(2) and yieldable biasing means acting upon the lockout member to yieldingly hold it in its lockout position;

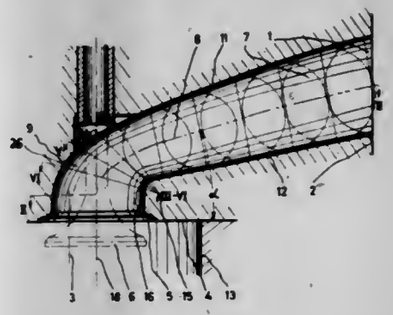
(C) means providing a lost motion but positive driving connection between the driving element of the clutch and the torque applying member by which the latter can be rotated in non-driving relation to the driving element a limited extent in said direction by the starter spring as winding thereof is commenced;

(D) and means defining an impositive torque transmitting connection between the driving element of the clutch and the torque applying member through which said non-driving rotation of the latter by the starter spring is translated into rotary movement of the driving element of the clutch to engage the clutch before the lost motion is taken up in the connection between the torque applying member and the driving element of the clutch, said last named means including

(1) a drive plate connecting the lockout member in driving relation with the driving element of the clutch,

(2) and interengaging cam means on the torque applying member and the lockout member cooperating with said drive plate to translate said initial non-driving rotary movement of the torque applying member by the starter spring into clutch engaging rotary movement of the driving element of the clutch, said cam means being operable after such engagement of the clutch but before all of the lost motion is taken up in the driving connection between the torque applying member and the driving element of the clutch to move the lockout member to its inoperative position to thus render the holding means operative to prevent further rotary movement of the torque applying member by the starter spring while the latter is wound up.

3,270,733
CYLINDER FOR AN INTERNAL COMBUSTION ENGINE
Walter Steidler, Mannheim-Feudenheim, Germany, assignor to Motoren-Werke Mannheim AG Vorm Benz ABT. Stat. Motorenbau, Mannheim, Germany
Filed Dec. 17, 1965, Ser. No. 514,520
Claims priority, application Germany, Jan. 5, 1965, M 63,700
2 Claims. (Cl. 123—188)



1. A cylinder for an internal combustion engine, comprising a cylinder body, inside surface portions of said body defining a substantially cylindrical working space therein, a cylinder head closing said working space at one axial end, first portions of said cylinder head defining a lateral surface thereof directed outwardly, second portions of said cylinder head defining an inside surface thereof bounding said end of said working space, third portions of said cylinder head defining an inlet duct portion extending towards said working space from said lateral surface, fourth portions of said cylinder head defining a valve chamber to which leads said inlet duct, and fifth portions of said cylinder head defining an annular valve seat and a circular valve port encircled by said valve seat, opening into said working space at said inside surface, and in communication with said valve chamber, said valve seat and said valve port being disposed eccentrically with respect to the axis of said working space, and the cylinder having the following features:

mish, symmetrical body tapering towards said working space,

(b) when viewed in an axial direction of said working space, the centre line of said inlet duct portion is of bent form and a first surface portion of said valve chamber, which surface portion is radially outer with respect to the axis of said working space, extends tangentially of the inner periphery of said valve seat,

(c) when viewed in a radial direction of said working space transversely of said duct, the centre line of said inlet duct portion is approximately a straight line and extends at an angle of about 15° with respect to said inside surface,

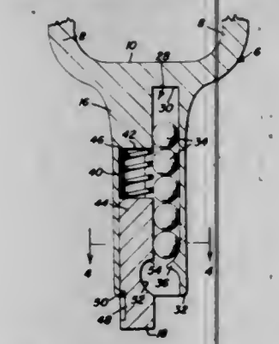
(d) when viewed in said axial direction, the width of said inlet duct portion in the vicinity of said valve chamber is less than the internal diameter of said valve seat,

(e) second and third surface portions of said valve chamber, of which said second surface portion faces said valve port and said third surface portion is disposed opposite to said second surface portion, extend arcuately from said inlet duct portion to said valve port, merge with surface portions of said valve port, and become increasingly spaced apart as they approach said valve port,

(f) sections taken through said valve chamber and on planes passing through a common point in the region of the centre of an arc of said third surface portion and containing lines which extend perpendicularly to the centre line of said valve chamber and parallelly to said inside surface, have approximately elliptical contours of which the major axes extend substantially perpendicularly to the working space axis, and

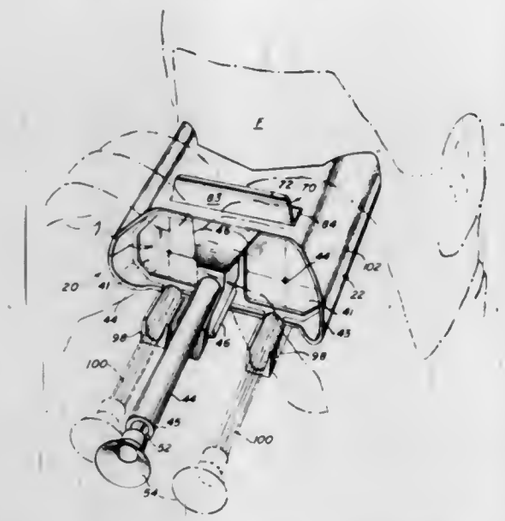
(g) when viewed in said axial direction, a tangent to the centre line of said inlet duct portion at a first location in the vicinity of said valve chamber extends through a second location between the inner periphery of said cylinder body and the axis of said valve port.

3,270,734
TOY CATAPULT WITH PELLET MAGAZINE
Ira A. Clements, P.O. Box 376, Hamlin, Tex.
Filed July 18, 1963, Ser. No. 295,993
4 Claims. (Cl. 124—20)



1. A toy slingshot comprising, in combination, a fork equipped with a pellet casting sling and having a handle, said handle being hollow, said hollow portion closed at the upper end and open at the lower end, a portion of the wall adjacent the open lower end being provided with an enclosed inwardly projecting V-shaped projection, said projection being rigid and constituting first a pellet detent and secondly a deflector, one lengthwise portion of the hollow in the handle defining an elongated storing and dispensing magazine for pellets, a cooperating opposed parallel lengthwise portion of said hollow portion being substantially circular in cross-section and defining a plunger-accommodating cylinder, a plunger slidable in said cylinder, a coil spring confined in said cylinder, engaging a closed end of said cylinder and also a cooperating end of the plunger and normally projecting a manually actuable end of the plunger to a ready-to-use position, said plunger and a cooperating portion of the handle having coacting elements to limit the outward projection of the operable end of the plunger, and the peripheral surface portion of the plunger which normally opposite said detent having a notch defining and providing clearance pocket.

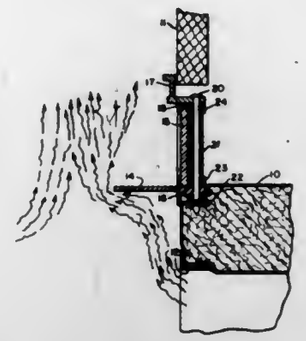
3,270,735
SIMULATED BINOCULARS WITH A PROJECTING DEVICE
Victor Petrusek, 14611 Halsted St., Harvey, Ill.
Filed Aug. 6, 1964, Ser. No. 387,662
3 Claims. (Cl. 124—26)



2. A toy gun of binocular-style configuration comprising, a plastic housing having a pair of fixed sighting tube formations arranged side by side, each tube having an eyepiece end and an objective lens end, a gun barrel rigid on the housing and projecting forwardly from between said objective lens ends, said barrel having an inner end opening into said housing, for receiving the inner end of a shaft therein from said barrel, a shaft having an enlarged inner end, spring means carried in said housing aligned with said barrel and adapted to be compressed by said inner end of the shaft for cocking the gun, and trigger means operable from exterior of the housing, for releasably latching the shaft in the barrel with said spring means compressed, said trigger means movable to release the shaft whereupon the potential energy of the compressed spring can propel the shaft from the barrel, each of said objective lens ends having like aiming means for target sighting through the eyepiece ends of the tubes by merging of said aiming means into a single such means visible to the viewer for aiming.

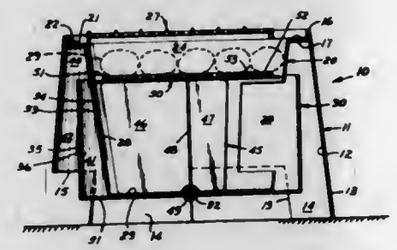
3,270,736
BUILT-IN OVEN
Eugene J. Barnett, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 28, 1964, Ser. No. 371,051
3 Claims. (Cl. 126—19)

1. An oven construction adapted to be built into a surrounding cabinet structure having a front wall surface and comprising, an oven compartment liner adapted to be countersunk in said cabinet with an oven door opening in a plane substantially in alignment with said front wall surface, said door opening having an upper edge surface, a planar heat deflector ledge having upper and lower planar surfaces and positioned along the upper edge surface of said door opening with its planar surfaces extending outward from said door opening, a spacer panel of material having a relatively low thermal conductivity and comprising upper and lower edge surfaces and positioned with its lower edge surface above the upper planar surface of the ledge and coextensive there-



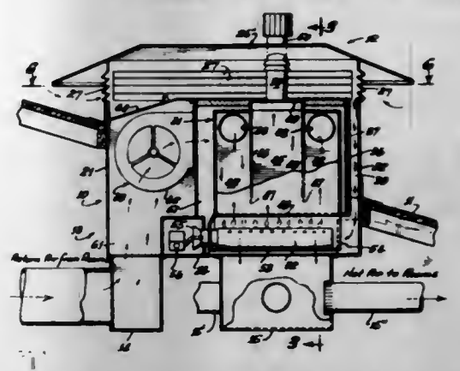
with, and a trim member extending along the upper edge surface of said panel and adapted to be in contact with the front wall surface of the surrounding cabinet.

3,270,737
COOKING STOVE
Conrad S. Horine, 629 Echo St., Anaheim, Calif.
Filed Apr. 1, 1964, Ser. No. 356,522
4 Claims. (Cl. 126—25)



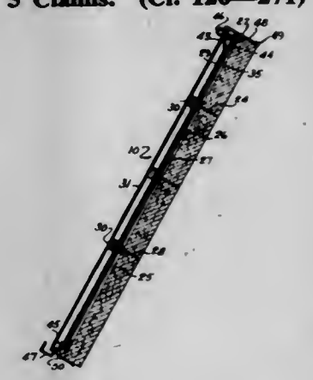
1. A generally circular cooking stove having a central axis of symmetry, and comprising: an outer shell having an interior peripheral wall; an inner guide having an outer and an interior peripheral wall, its interior peripheral wall forming an upwardly opening cooking region, the outer shell and the inner guide being joined at a joint which is substantially fluid-tight, the inner guide also having a plurality of inlet ports therethrough; an outer guide extending upwardly between the outer shell and the inner guide, and spaced therefrom so as to leave a clearance for air flow; the shell, guides, and walls being surfaces of revolution concentric on said axis, the interior peripheral wall of the outer shell and the outer peripheral wall of the inner guide forming on each side of and with the outer guide a passage which is a volume of revolution concentric on said axis which is open at its two lower ends and closed at its upper extreme, and which opens into said cooking region through the inlet ports; a fuel support grid in said cooking region above the inlet ports, said grid being adapted to support fuel to be burned for cooking, using air from the inlet ports for combustion, the inner guide and grid being exposed to each other, whereby radiation from fuel on the grid heats said inner guide, and the inner guide radiates energy to heat the outer guide, both guides thereby serving to heat air which passes through the inverted passage and inlet ports to the cooking region, said inlet ports lying between the grid and the outer guide whereby radiated energy from fuel on the grid passes through the inlet ports and impinges on the outer guide to heat the same and thereby to heat air flowing through said inverted passage.

3,270,738
RECESSED ROOF-MOUNTED HEATER
Rodney A. Nielsen, 3007 Green Lane, Redondo Beach, Calif.
Filed Feb. 4, 1963, Ser. No. 255,965
5 Claims. (Cl. 126—110)



4. In an air-conditioning apparatus, in combination: a building including a roof having an opening therein; a main housing including lateral upright walls extending through said opening, fitted to the margins thereof, and sealed to said roof, said housing having an upper portion projecting above said roof and provided with apertures for intake and discharge of external air from atmosphere outside said building into said upper housing portion, said housing having a lower portion projecting beneath said roof into an upper area within said building; an air-conditioning means within said housing and extending into said lower portion thereof; means within said housing for directing said external air to said air-conditioning means for affecting the operation thereof and for then returning it to external atmosphere; air distribution and intake ducts communicating with said lower housing portion, for circulating in heat-transfer relation to said air-conditioning component, a body of air which thereby becomes conditioned; and means within said housing for directing said body of air past said air-conditioning means in a circulation path separate from that of said external air, said apparatus including an insulating jacket surrounding at least three sides of said air-conditioning means and spaced from the side walls and an end wall of said housing, thereby defining air passages communicating at their upper ends with said atmosphere intake apertures, and communicating at their lower ends with said air-conditioning means.

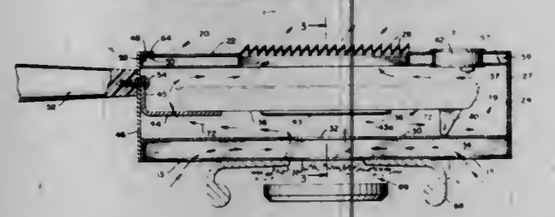
3,270,739
SOLAR HEATER
Harry E. Thomason, District Heights, Md.
(7354 Walker Mill Road SE., Washington, D.C. 20027)
Original application July 29, 1960, Ser. No. 46,213.
Divided and this application Aug. 31, 1965, Ser. No. 484,132
5 Claims. (Cl. 126—271)



1. A solar heat collector mounted in an inclined position and comprising a frame including an insulating base, a heat collecting sheet attached to the base in

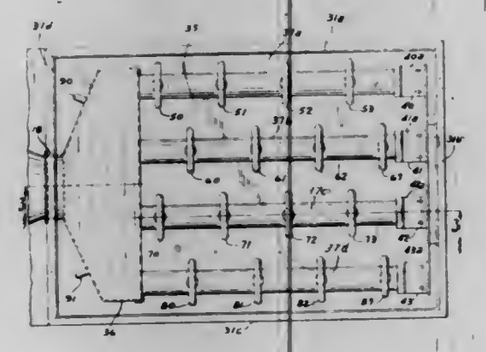
spaced relation thereabove, a first transparent sheet attached to said frame and suspended above said heat collecting sheet, means attached to the upper end of said frame for introducing small streams of liquid onto the inner surface of said heat collecting sheet to gravitate along the inner surface of said sheet, and collection means attached to the lower end of said frame to collect said liquid.

3,270,740
OVEN
Milton Koos, Jr., New York, N.Y., assignor to Arthur Tamaroff, Forest Hills, N.Y.
Filed Oct. 27, 1964, Ser. No. 406,743
7 Claims. (Cl. 126—275)



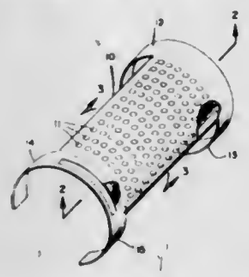
1. A portable-type oven for use above a gas flame to rapidly heat food products, comprising a housing including a base plate, said base plate including a central gas inlet aperture and air inlet holes, a baffle plate supported in said housing above said base plate, said baffle plate being attached at its periphery to the interior of said housing and including an aperture in registration with said gas inlet aperture, a tray for supporting said food products supported above said baffle plate, gas outlet means in the top of said housing, said tray and baffle plate being positioned within said housing with respect to said base plate whereby all of the gas and air entering through said base plate flows through said baffle aperture and around substantially the entire periphery of said tray and over the top thereof prior to exit through said gas outlet means.

3,270,741
SNOW MELTER
Joseph J. Petlak, 3 Lincoln Drive, Wallingford, Conn.
Filed Sept. 30, 1964, Ser. No. 400,519
3 Claims. (Cl. 126—343.5)



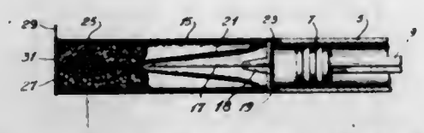
1. In a snow and ice melting machine, a chamber having side and bottom surfaces, a plurality of manifold ducts supported near the bottom surface of the chamber, said ducts being arranged substantially parallel to each other, means positioned within said chamber for distributing gases to each of said ducts, a plurality of gas-expelling pipes coupled to each of said ducts, each of said pipes being constructed in a T configuration with the vertical portion of the T coupled to respective duct and the cross-bar portion of the T having open ends, said cross-bar portion further being bent downward at regions in proximity to the respective open ends to point said open ends toward said bottom surface, at least one fluid outlet in said side surface, a portion of the outlet being located in the chamber at a level between the open ends of the last-mentioned pipe and the bent regions thereof for inhibiting any fluid in said chamber from entering the corresponding duct, and pressure-relief ducts coupled to said manifold ducts, said relief ducts extending at least partially up to the height of said side surface and having weighted covers hinged to provide flap valves.

3,270,742
BANDAGE HOLDER
Abraham F. Costa, 1139 Roy Ave., San Jose, Calif.
Filed Nov. 17, 1964, Ser. No. 411,936
3 Claims. (Cl. 128—171)



1. In a bandage holder of the class described, the combination of a body member, said body member having inwardly turned side flanges, a bandage positioned against said body member having the side portions thereof compressed and inserted under said flanges, said body member having a plurality of perforations therethrough facing the side of said bandage that is against said body member to provide ventilation to said bandage and supporting means attached to the end portions of said member for holding said body member and said bandage against the wounded limb of the wearer.

3,270,743
HYPODERMIC INJECTION SYRINGE
Pierre Gingras, Pierrefond, Quebec, Canada assignor to Leeming-Miles Pharmaceuticals Inc., Montreal, Quebec, Canada
Filed May 29, 1963, Ser. No. 284,139
3 Claims. (Cl. 128—215)



1. A protective assembly for the needle of a hypodermic syringe having a piston cylinder, made of plastic material, adapted to contain the substance to be injected and from one end of which said needle projects, said assembly comprising:

(a) a plastic cylindrical envelope having an open end adapted to snugly fit over the end of said cylinder from which said needle projects;

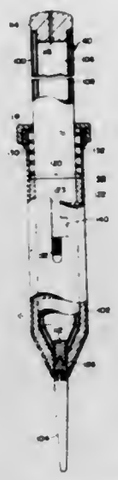
(b) a protective substantially conical plastic inner cover within said envelope housing said needle and having the wide end thereof integrally joined to said open end of said envelope;

(c) a wad of absorbent material filled with antiseptic liquid disposed at the other end of said envelope;

(d) cord means for pulling said wad out of said envelope, and

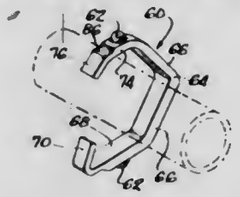
(e) removable cap means closing said other end of said envelope comprising a circular flat disc of plastic material fitting over and heat-sealed to said other end of said envelope; said disc having a finger grip member radially projecting therefrom whereby it may be peeled off said envelope by pulling on said member.

3,270,744
CRYOGENIC SURGICAL PROBE
Kurt Katz, Pittsburgh, and Edward F. Federmann and Anthony J. Venturino, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 27, 1963, Ser. No. 326,550
3 Claims. (Cl. 128—303.1)



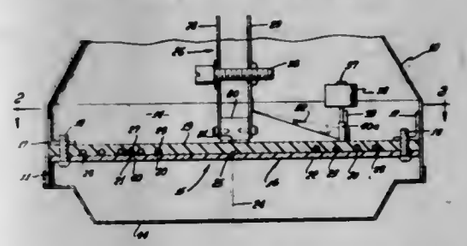
1. A surgical probe comprising a vessel having a chamber for containing coolant means, a sleeve member having an extended tip portion, said sleeve member telescoped over said vessel in sliding engagement, spring means, said spring means being disposed between said sleeve member and said vessel, urging said vessel into thermal communication with said extended tip portion, said extended tip portion being cooled to a predetermined temperature when coolant is added to said chamber, and means for sliding said vessel relative to said sleeve member, to overcome the urging effect of said spring means and cause thermal communication between said vessel and said extended tip portion to be interrupted when it is desired to raise the temperature of said extended tip portion.

3,270,745
HEMOSTATIC CLIP CONSTRUCTIONS
Ernest Charle Wood, Los Angeles, Calif., assignor of one-third to Rene G. Le Vaux and one-third to Peter B. Samuels
Filed June 11, 1963, Ser. No. 287,133
4 Claims. (Cl. 128—325)



1. A hemostatic clip comprising a strip of nontoxic material, said strip defining arm portions having opposed faces, a single protuberance formed on the outer surface of each of said arm portions at intermediate points along the lengths of the respective arm portions, one arm portion being longer than the other arm portion, said strip defining a V-shaped configuration which includes a central fold, said arm portions extending angularly from said fold and then bending into an approximately parallel relationship with said protuberances being formed on the parallel portions of said arms, an end member formed on each of said arm portions, said end members being bent toward each other and being parallel to each other, one of said end members formed on said one arm portion being directed inwardly toward the central fold of said V-shaped portion thereby defining a recess with said one arm portion, and the other end member comprising an outwardly directed end member formed on the other of said arm portions adapted to be received in said recess when said arm portions are clamped together, and wherein said end members are bent when said arm portions are clamped together with the end members being thereby pressed against each other.

3,270,746
HIGH-PERFORMANCE ELECTROTHERAPEUTIC TREATMENT HEAD
William Denis Kendall, Los Angeles, and Frank A. Yarger, Sylmar, Calif., assignors to Dynapower Systems Corporation, Los Angeles, Calif., a corporation of Delaware
Filed Aug. 26, 1963, Ser. No. 304,468
1 Claim. (Cl. 128—404)



In electrotherapeutic treatment head structure, a metallic shell having a longitudinal axis, spaced apart primary and secondary coils, the primary coil having a high voltage input connection, insulative tubular sheathing about the primary coil, dielectric means carried by said shell and supporting both coils to extend about said axis, and a capacitor carried by said dielectric means generally rearwardly of said coils within the shell and electrically connected across the secondary coil, the capacitor having two generally parallel plates with edge portions attached to said dielectric means to prevent their relative displacement, major portions of the plates extending freely away from said edge portions to flex toward and away from each other, and a non-conductive fastener carried by said major portions of the plates in spaced relation to said plate edge portions to hold said major portions of the plates at adjusted separation, said fastener extending between the plates for attachment thereto, the secondary coil having more turns than the primary coil and both primary and secondary coils comprising circular cross section wire.

3,270,747
FOUNDATION GARMENT
Concetta Cuozzi, 443 Granite Springs Road, Yorktown Heights, N.Y.
Filed June 11, 1964, Ser. No. 374,305
6 Claims. (Cl. 128—528)



1. A foundation garment, such as a girdle, panty-girdle, and the like, comprising in combination a torso-encircling panel for encompassing that portion of the female torso known as the hips, and at least a portion of the waist and the thighs, said torso-encircling panel extending to the rear of the garment, and being of such dimensions thereat to enable said panel to encompass at least a portion of that part of the torso known as the derriere;

the dimensions of said torso-encircling panel being defined at least in part by an edge disposed at the rear of the garment; said edge being of curvilinear configuration, and corresponding generally with the contour of said derriere; a supporting panel disposed rearwardly of the garment to encompass a substantial portion of said derriere; said torso-encircling panel and said supporting panel being positioned in overlapping relationship with respect to one another, and said supporting panel being connected to said torso-encircling panel at least along only a portion of said edge, enabling said panels to be relatively movable with respect to one another; and support assemblies connected to said supporting panel for transmitting tensile forces substantially only thereto.

3,270,748
FOUNDATION GARMENT
Concetta Cuozzi, Yorktown Heights, N.Y., assignor to Corde de Parie, Inc., New York, N.Y.
Filed Oct. 30, 1964, Ser. No. 407,748
8 Claims. (Cl. 128—528)

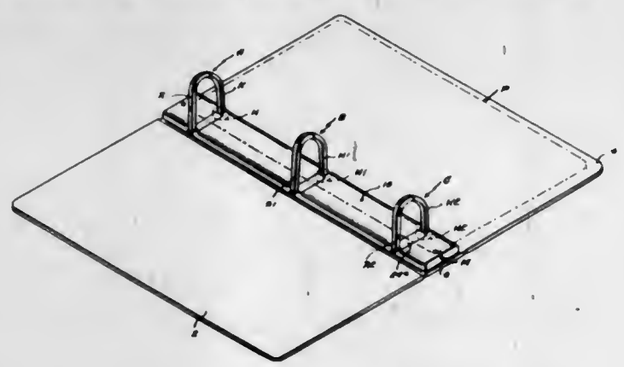


1. A foundation garment, such as a girdle, panty-girdle, and the like, comprising in combination a torso-encircling panel for encompassing those portions of the female torso known as the waist, hips and at least a portion of the thighs; the dimensions of said torso-encircling panel at the rear of the garment being chosen to enable said panel to encompass at least a portion of that part of the torso known as the derriere; the dimensions of said torso-encircling panel being defined by an edge disposed at the rear of the garment;

a supporting panel disposed rearwardly of the garment to encompass a substantial portion of said derriere; said torso-encircling panel and said supporting panel being positioned in overlapping relationship with respect to one another, and said supporting panel being connected to said torso-encircling panel at least along only a portion of said edge, enabling said panels to be relatively movable with respect to one another; a waist portion control assembly; said supporting panel being connected to said waist portion control assembly only along a portion thereof, enabling said supporting panel and said waist portion control assembly to be disposed in overlapping relatively movable relationship with respect to one another along another portion of said panel; and support assemblies connected to said supporting panel for transmitting tensile forces substantially only thereto.

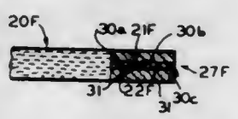
3,270,749
LOOSE LEAF BINDER AND BACKING CONSTRUCTION FOR NOTEBOOKS
James P. O'Connell, 3 Rosemont St., Malden, Mass.
Filed Oct. 23, 1965, Ser. No. 503,671
9 Claims. (Cl. 129—24)

1. A loose leaf notebook construction for loosely holding sheets of notebook paper formed with ring apertures therein, said notebook comprising front and back cover members, binding means for connecting the cover members in hinged relationship, a rigid backing structure secured at the inside of the binding means and including a slotted base and a retaining cap, a plurality of binder rings having annularly shaped tongue extremities engaged in the slotted base and adjustably supported by means of the said retaining cap and each of said rings including a pair of flexible ring sections held under tension and normally acting to move away from one another, said flexible ring sections being supported for limited flexing movement by said retaining cap and each pair of flexible ring sections including a slotted receiver ring section and a keying ring section, the slotted receiver section being formed at its underside with a conically recessed seating surface and the keying ring section being shaped with a conical surface which mates with the conical recessed surface, said keying ring section having a web portion extending



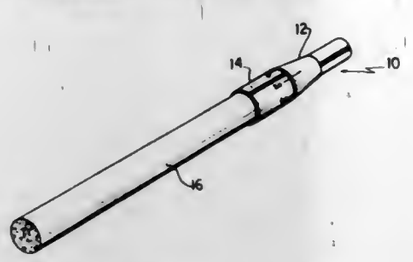
upwardly from the conical shaped surface and supporting thereon a key portion which is defined by angular surfaces coinciding with the said angular surfaces of the receiver section, said keying portion being further formed with stepped abutment surfaces which are adapted to lie within the slotted receiver portion in a fully engaged position of the ring sections, a locking insert member fixed in the receiver section and presenting an abutment surface which normally lies in locking relationship with a corresponding abutment surface of the key portion to hold the ring sections in a locked position, and said locking insert member being yieldably supported for movement downwardly into a release position for disengaging the ring sections.

3,270,750
ADJUSTABLE-FILTER CIGARETTE
Robert A. Campbell, 167 N. Ridgeland Ave., Oak Park, Ill.
Filed Sept. 16, 1960, Ser. No. 56,377
3 Claims. (Cl. 131—10)



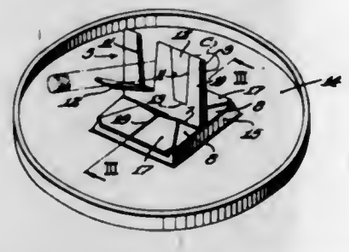
1. In a cigarette, the combination of an elongated cylindrical body filled with tobacco for the major portion of its length, a cylinder of crushable filter material at one end of said body, said cylinder having an axial bore extending the full length thereof and a removable plug of filter material normally substantially filling and closing said bore, whereby upon removal of said plug, smoke may pass from the ignited tobacco directly to the mouth of the user without filtering, the smoke being fully filtered when the cigarette is smoked with said plug in position, said bore being provided interiorly with normally inoperative, pressure sensitive self sealing adhesive means, said adhesive being non-adherent to said plug, but operative for self adhering sealing engagement upon digital crushing closure of said bore to fasten and retain opposed parts of said bore together in closed relationship, after removal of said plug, to reestablish full filtering of the smoke.

3,270,751
SMOKING DEVICE
Richard C. Tucker, Newtown, Conn., assignor, by mesne assignments, to Delcron Products, Inc., New York, N.Y., a corporation of New York
Filed Mar. 16, 1964, Ser. No. 352,285
5 Claims. (Cl. 131—198)



1. A smoking device arranged to be inserted between a source of smoke and a smoker, an end piece body forming on one end a smoke chamber which is adapted to receive smoke from said source and on the other end a peripheral wall forming a recess, a front piece having on one end a smoke withdrawal chamber from which a smoker may withdraw the smoke products and on the other end thereof a plug fitting into said recess of said end piece, said end piece having a smoke passage communicating with said smoke chamber and an air passage formed as an enlarged blind hole which reduces the thickness of said peripheral wall at said hole to provide direct communication from said blind hole to the surrounding air, said plug arranged with a plurality of pairs of orifices, each pair of which is disposed to be alignable with said two passages, and means for relatively moving said plug to align any one of said pairs with said two passages to meter a predetermined ratio of air to smoke from said passages to said withdrawal chamber.

3,270,752
DISPOSABLE HOLDER FOR SMOKER'S ARTICLES
Joseph J. Dorrance, 401 N. Wabash Ave., Chicago, Ill.
Filed Feb. 18, 1964, Ser. No. 345,635
6 Claims. (Cl. 131—240)



2. A disposable smoker's article blank which is adapted to be assembled with an ash tray and comprising:

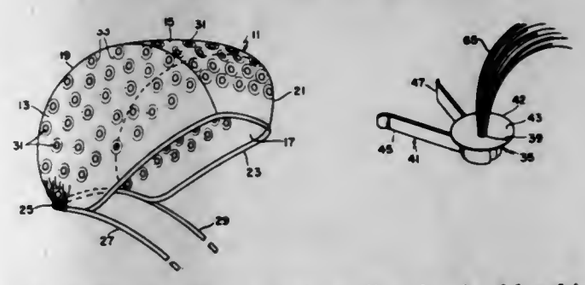
a panel of generally rectangular outline;

parallel scorings adjacent opposite edges of the panel and defining marginal flanges including said edges;

a score line parallel to said scorings and centrally between the same, dividing the area between said scorings into a pair of congruent foldable body panel sections;

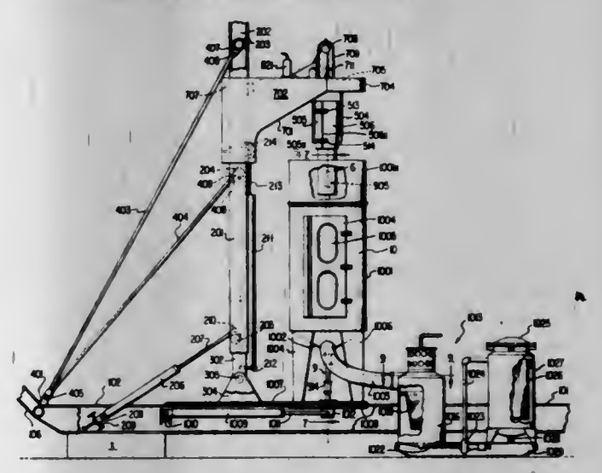
and said blank having at least one smoker's article notch extending across said score line and within said panel sections, said panel sections being foldable toward one another and the marginal flanges being bendable into oppositely projecting relation angularly to said sections whereby to provide a base supporting said folded body panel sections upright with the article-receiving notch at the upper end portion thereof, said blank having material partially severed therefrom in forming the notch and providing a tongue having its opposite ends hingedly connected to said sections adjacent to said scorings, said tongue having substantially the same outline dimensions as said notch and having portions foldable toward one another at said score line, to provide a tongue which is bendable out of the notch on said hinge connection to open the notch, whereby the tongue then extends laterally from the notch to provide a rest for a smoker's article engaged in the notch.

3,270,753
APPARATUS FOR SELECTIVELY TREATING HAIR
Loveda Cook, Warsaw, Ind., and Victor N. Farhi, 4124 Fairfield Ave., Fort Wayne, Ind.
Filed Mar. 4, 1963, Ser. No. 262,713
8 Claims. (Cl. 132—9)



1. A protective cap for hair styling in the bleaching and dyeing of strands of hair, comprising a pliable transparent material formed in the shape of a head covering having a series of spaced indentations which may be selectively pierced to form perforations through which strands of hair can be pulled therethrough, a reinforcing ring surrounding each indentation so that each perforation is strengthened to resist destruction of the perforation around the circumference thereof and, said indentations being formed so that they can be manually snapped out by an operator over portions of hair as required.

3,270,754
APPARATUS FOR EMPLOYING FLUID JETS TO REMOVE MATERIAL FROM ARTICLES
R. E. Moeller, Robert G. Love, and Forrest C. Pittman, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Sept. 22, 1964, Ser. No. 398,267
11 Claims. (Cl. 134—110)



1. A portable apparatus for removing material from the interior of open ended articles, said apparatus comprising:

skid means;

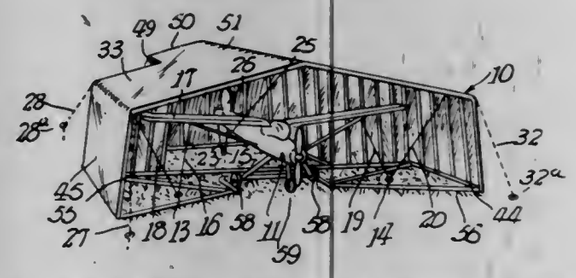
tower means;

pivot means connecting said tower means with said skid means whereby said tower means may be pivoted toward said skid means;

tower securing means adapted to releasably secure said tower means in a generally upright position;

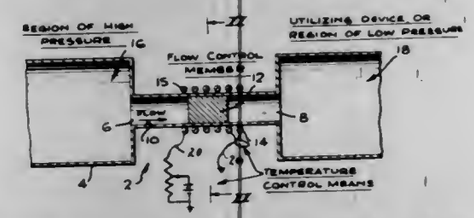
holding means for supporting an article with an open end thereof facing downwardly;
elevating means carried by said tower means for raising and lowering said holding means along a generally vertical and stationary axis;
drive means for rotating said holding means about a generally vertical axis; and
fluid discharging means adapted to remain stationary while entering the open end of an article which is being lowered and direct fluid jets against material to be removed from said article.

3,270,755
PORTABLE HANGAR
Louis W. Horvath, 3306 Hutchens Ave., Huntsville, Ala.
Filed July 25, 1963, Ser. No. 297,527
1 Claim. (Cl. 135—1)



A portable hangar, comprising a dismantleable frame having a general T shape in plan and arranged to enclose an aircraft, a flexible covering for said frame, and means for connecting said frame to the three spaced tie-down rings of a landing field, said frame including a base portion adapted to contact the ground, said base portion including bracing members arranged to define an aircraft wheel access space.

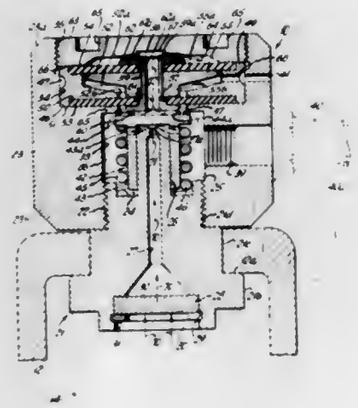
3,270,756
FLUID FLOW CONTROL VALVE
Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Siegfried Hansen
Filed Apr. 9, 1963, Ser. No. 271,822
10 Claims. (Cl. 137—13)



1. In a valve, the combination comprising: a flow control member positioned to block the path of flow of a selected fluid through said valve, said member being constructed of material whose crystal structure contains apertures through which molecules of said selected fluid can flow, and whose aperture size varies in response to temperature change; and means to change the temperature of said flow control member to change the size of said apertures to vary the impedance of said flow control member to the flow of molecules of said selected fluid through said apertures.

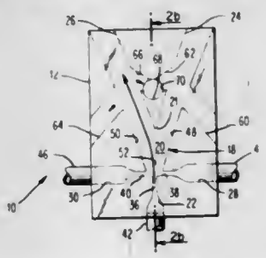
3,270,757
DUAL DIAPHRAGM PRESSURE REGULATOR
Alfred Engler, 1037 NE. 88th St., Miami, Fla.
Filed Oct. 1, 1963, Ser. No. 312,985
9 Claims. (Cl. 137—64)

1. A device for first stage regulation of the pressure of a compressed air tank, comprising means forming a hollow housing having an axis and an inlet on said axis for connection to said tank, first and second flexible diaphragms respectively extending in spaced parallel relation across the interior of said housing transversely to said axis to divide it into a first chamber on the side of said first diaphragm adjacent said inlet, a second chamber on the side of said second diaphragm remote from said inlet, and an intermediate chamber between said diaphragms, said second flexible diaphragm being of substantially greater flexible area than said first diaphragm, said first chamber having an outlet, air communication means between said first and second chambers, said housing having a passage between said intermediate chamber and the outside of said housing, an axial piston in said intermediate chamber connected to said diaphragms so that their axial movements are in unison, said inlet comprising a post



having an axial passage therein extending perpendicularly into said first chamber from the bottom surface of said first chamber and having a nozzle outlet at the end thereof, valve means comprising a hollow lower portion slidably received on said post and a transverse head portion extending outwardly past said hollow portion to define the flange on the under side of said head and being movable between a valve opened position and a valve closed position whereby the under side of said head abuts said nozzle outlet to prevent the air from flowing out of said outlet, biasing means for biasing said valve means to the valve open position wherein the top surface of said transverse head abuts said first diaphragm, said valve means being moved to said valve closed position by the flexing action of said diaphragms in response to an increased air pressure in said second chamber.

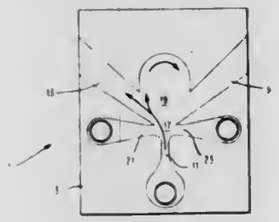
3,270,758
FLUID AMPLIFIERS
Peter Bauer, Bethesda, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,741
2 Claims. (Cl. 137—81.5)



1. A fluid amplifier comprising a supply orifice, two control fluid inlets and at least two output channels, a dividing element between said channels, said dividing element having an apex facing the supply orifice, conduit

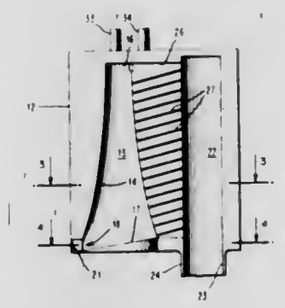
means disposed in said dividing element connection with each of said two output channels downstream of said apex, said conduit means connecting said output channels with each other and in common to the ambient atmosphere for eliminating excess fluid in either one of said output channels due to pressure build-up.

3,270,759
FLUID DEVICE
Edwin R. Phillips, Westport, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 7, 1963, Ser. No. 286,396
1 Claim. (Cl. 137—81.5)



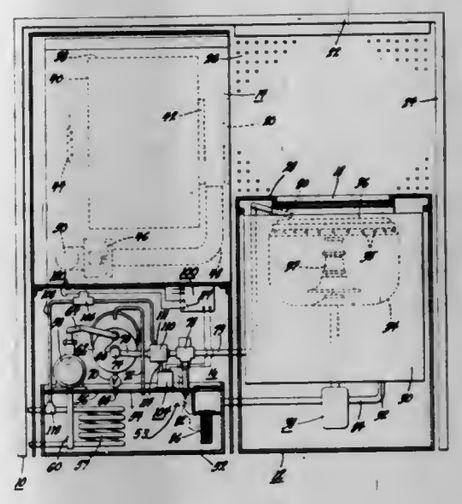
A fluid device comprising an inlet for supplying power fluid, a pair of outlets, a pair of control inlets for directing said power fluid to a selected outlet, and a vortex chamber all leading from a common mixing chamber, said vortex chamber being disposed intermediate said outlets and in alignment with said inlet to receive power fluid therefrom, said vortex chamber being dimensioned to create a vortex movement of fluid therein with a portion of said fluid being directed to said selected outlet to maintain said fluid at said selected outlet after the application of fluid from said control inlets has terminated, said control inlets being disposed at substantially right angles with respect to said inlet and said vortex chamber, said outlets being angularly disposed away from said inlet on opposite sides of said vortex chamber and between said vortex chamber and said control inlets.

3,270,760
PNEUMATIC MULTIPLIER (VERY HIGH GAIN AMPLIFIER)
Robert G. Williamson, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,819
7 Claims. (Cl. 137—81.5)



1. A tapered chamber, means for introducing fluid into said chamber in amounts gradually increasing from one end of said tapered chamber to the other, control means communicating with said chamber for initiating a vortex movement of said fluid at said one end of said chamber which in turn effects an increasing vortex movement of said fluid throughout said chamber.

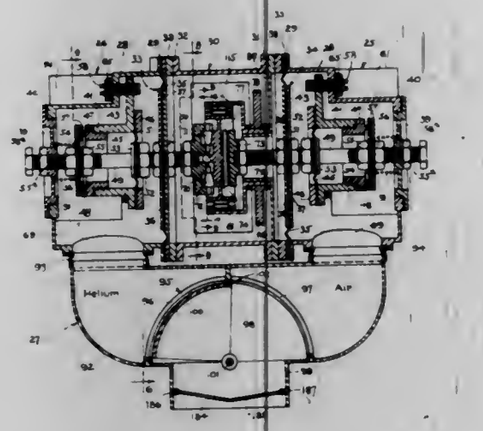
3,270,761
DRY CLEANING APPARATUS
Nelson J. Pansing, Clayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 31, 1963, Ser. No. 299,016
2 Claims. (Cl. 137—88)



1. In combination:
(a) means forming a container adapted to contain a dry cleaning solvent such as perchlorethylene or the like for dry cleaning clothes,
(b) means forming a substantially closed sump means containing a predetermined level of dry cleaning solvent therein and having a top wall, said top wall having first and second relative humidity sensing ports,
(c) means including a water cooling line in said sump means below said predetermined level for cooling said dry cleaning solvent,
(d) means including a solvent supply conduit connected in supply relationship to said container for effecting the circulation of dry cleaning solvent between said sump means and said container,
(e) means for supplying water to the dry cleaning solvent being supplied to said container including a mixing means in said solvent supply conduit having a water inlet and an outlet, a water supply conduit having one end connected to said water cooling line and its other end connected to the water inlet of said mixing means, and valve means in said water supply conduit openable for passing a regulated amount of water to said mixing means for entrainment into the solvent being supplied to said container,
(f) and control means for controlling said valve means, said control means including an inverted cup-like sniffer box supported on said top wall of the sump means and having a closed top and an open bottom positioned over said first and second relative humidity sensing ports, said sniffer box having a partition therein between said first and second ports for separating said sniffer box into a sensing chamber and a vapor flow inducing chamber, said partition being spaced from said closed top to form a passageway interconnecting said chambers, a standpipe in said vapor flow inducing chamber having one end connected to said first port, a relative humidity sensing element in said sensing chamber in vapor flow intercepting relationship between said second port and said passageway, and aspiration means including nozzle means in said standpipe having an inlet end connected to the outlet of said mixing means to supply a bleed sample of solvent to said standpipe whenever solvent is being circulated to said container thereby to induce a stream of vapor through said sensing chamber from above

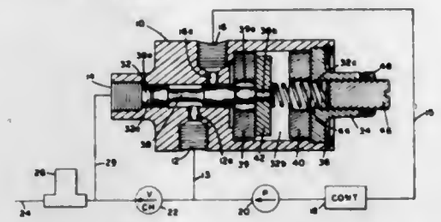
said predetermined level of dry cleaning solvent in said sump means for sampling the relative humidity of the vapor of the dry cleaning solvent in said sump means, said relative humidity sensing element effecting a control signal in response to the relative humidity sensed to open said valve means when the relative humidity of said stream of vapor is below a predetermined value.

3,270,762
MULTIPLE SUPPLY, BALANCED VALVE, PRESSURE REDUCING VALVES, AND THE LIKE
Thomas A. Banning, Jr., 5500–5520 S. Shore Drive, Apt. 1408, Chicago, Ill.
Application May 5, 1961, Ser. No. 107,948, which is a division of application Ser. No. 563,306, Feb. 3, 1956, now Patent No. 3,217,730, dated Nov. 16, 1965. Divided and this application Oct. 5, 1965, Ser. No. 493,156
7 Claims. (Cl. 137—98)



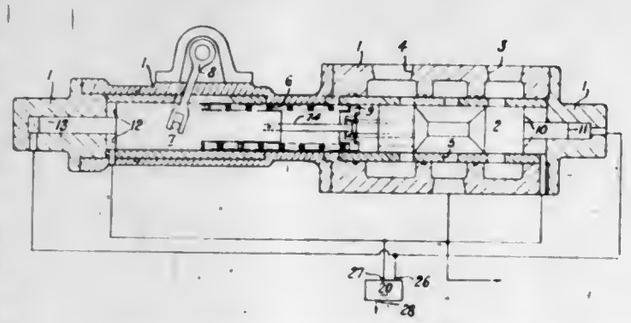
1. A multiple balanced pressure-reducing and delivering and proportion-controlling valve unit; comprising in combination a pair of pressure reducing valve units, each including a reduced-pressure gas-receiving chamber, and a control valve opening into such chamber, and including adjustable delivered-reduced-pressure regulating means, together with a common delivered-reduced-pressure control unit between the delivered-pressure, reduced-pressure regulating means of the two valve units; said control unit being constituted to cause each of the pressure reducing valve units to deliver gas into its gas-receiving chamber at the same reduced pressure as the other pressure reducing valve unit; together with a gas reduced-pressure receiving manifold in proximity to both of the valve units, and having its end portions in communication with the proximate chambers; together with a common delivered gas proportioning valve element located in the central portion of the manifold, and dividing the manifold into separated portions communicating with the respective reduced-pressure gas-receiving chambers; wherein said proportioning valve includes a mixed gas delivery opening in the manifold at the location of the proportioning valve element; and wherein said proportioning valve includes a circular arcuate partition extending across the central portion of the manifold and having its end portions connected to the manifold wall at the sides of said mixed gas delivery opening, a segmental arcuate movable valve element journalled for rotary movement about an axis coaxial with the partition, an arcuate mask plate between the proximate opposing surfaces of the partition end of the valve unit; together with means constituted to rock the movable valve element about its axis, to selected angular positions.

3,270,763
PRESSURE RESPONSIVE VALVE
Heinz Kiefer, Ulmenweg 1, Eltorf, Germany
Filed Sept. 25, 1963, Ser. No. 311,538
2 Claims. (Cl. 137—108)



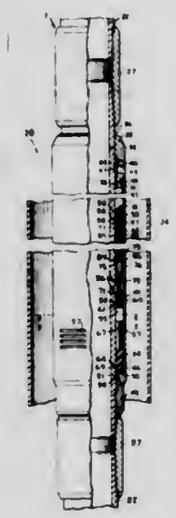
1. A pressure responsive valve comprising, in combination: a body having a fluid pressure sensing aperture connectable to a source of fluid under pressure and an axial bore extending from said aperture; a fluid inlet and outlet opening in said body connecting to said bore; a piston member slidably disposed in said bore in relation to said inlet and outlet and effective to normally cover one of the openings and to preclude any fluid intercourse between said aperture and the openings, said piston member being axially movable in said bore to control fluid flow communication between said inlet and outlet; magnetic snap action means including a magnetic member secured on and movable with said piston and a pair of magnetically responsive members disposed spaced apart on opposite sides of said magnetic member; a spring member arranged in said bore and bearing, at one end, against said magnetic member and extending through one of said magnetically responsive members, said spring providing an opposing force against said piston member in opposition to the fluid under pressure; said magnetic snap action means being effective for establishing a magnetic force for facilitating an impact-like axial movement of said piston member when the fluid pressure within the bore exceeds the opposing force of the spring member and the magnetic force exerted upon said piston to establish, suddenly, fluid flow communication between said inlet and outlet and to suddenly return said piston to its normal position cutting off said fluid flow communication when the forces acting upon said piston member exceed the fluid pressure within said bore.

3,270,764
PRESSURE CONTROL VALVE FOR USE WITH MINE WINDERS
Colin McFadyen, Mufulira, Northern Rhodesia, and Bernard E. Shaw, Paisley, Scotland, assignors to Fullerton, Hodgart & Barclay Limited, Paisley, Scotland, a corporation of Great Britain and Northern Ireland
Filed Oct. 16, 1962, Ser. No. 230,956
5 Claims. (Cl. 137—116.3)



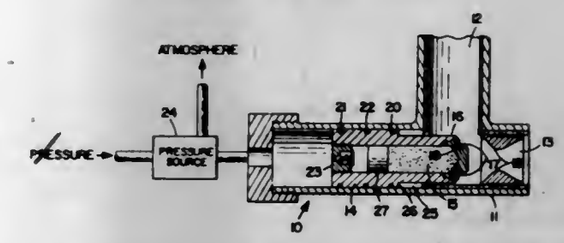
1. A control valve comprising a first casing, first port means formed in said first casing for the passage of a pressure medium through said casing, a first valve member axially movable within said casing to a position in which the flow of said pressure medium through said casing is permitted and to a position in which the flow is prevented, said valve member having one end face thereof of stepped construction, an actuating member axially movable within said casing, said actuating member having one end face thereof of stepped construction, means connecting the non-stepped end faces of said valve member and said actuating member in spaced relationship, said connecting means comprising resilient means urging said members apart and adapted to be compressed to allow said members to be moved together, force imparting means connected to said actuating member for axially moving said actuating member and said valve member within said casing, means selectively imparting said pressure medium to any number of the step faces of said stepped end faces of both of said members when said valve member is in a position permitting the flow of said pressure medium through said casing, the impinging of said pressure medium on said stepped end faces urging said members together by compressing said resilient means, said valve member thereby moving toward said actuating member to said position in which the flow of said pressure medium through said casing is prevented, the pressure necessary to move said valve member to the position in which the flow is prevented being dependent upon the number of step faces on which said pressure medium is permitted to act.

3,270,765
GAS LIFT VALVES
James D. Waters, Houma, La., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed June 8, 1962, Ser. No. 201,022
8 Claims. (Cl. 137—155)



1. A gas lift valve comprising: a tubular body adapted for connection in a tubing; a sleeve disposed about said body to define a flow passage between said body and said sleeve, said body and said sleeve having ports therein communicating with said flow passage and with the interior of said body and the exterior of the sleeve respectively; annular port seat means disposed in said flow passage between the ports of said body and the ports of said sleeve and having a plurality of circumferentially spaced flow ports therein; an annular valve carrier member disposed between said body and said sleeve and having a plurality of circumferentially spaced longitudinally extending valve members thereon each engageable with one of said flow ports to prevent fluid through said passage between said ports of said body and said ports of said sleeve; and a pair of coaxially aligned annular bellows disposed in said flow passage, one end of each of said bellows being sealingly connected to one end of said flow passage, the other end of each of said bellows being sealingly connected to said annular valve carrier member, said annular valve carrier member and said bellows enclosing within the bellows a fluid pressure charge which expands the bellows and urges said annular valve carrier member toward said annular port seat means whereby said valve members on said valve carrier member are biased into engagement with said flow ports; said spaced depending valve members permitting free passage of fluid between the outer sides of the pair of bellows whereby the fluid pressure within the passage between the bellows and the annular port seat means acts on said bellows to cause movement of said valve members to open position when said fluid pressure exceeds the pressure of the charge confined within the bellows.

3,270,766
AUTOMATICALLY VISCOUS SEALED FLUID AMPLIFIER
William C. Stone, 1901 Alexander Drive SE., Huntsville, Ala.
Filed Sept. 18, 1963, Ser. No. 309,904
8 Claims. (Cl. 137—246.22)

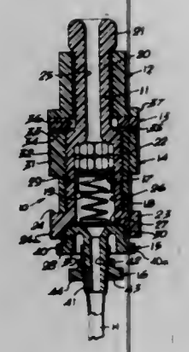


1. A value disposed for controlling the flow of hot gases therethrough comprising:
(a) a housing having a longitudinal bore therethrough including an exit portion at a first end of said bore and an inlet disposed in normal relation to and in communication with said bore;
(b) a hollow piston slideably mounted in said bore and having a male seat thereon for sealing engagement with said exit portions, said hollow piston provided with a chamber containing a viscous seal means, and said seat of said hollow piston having passage means therethrough and in communication with said piston chamber;
(c) a floating piston concentrically carried in said hollow piston chamber to effect flow of said viscous seal means through said passage means;
(d) a pressure source secured to a second end of said bore in communiaction with said hollow piston and said floating piston for causing relative movement therebetween, whereby said seat of said hollow piston is moved into sealing engagement with said exit portion of said housing and movement of said floating piston effects extrusion of said viscous seal means through said passage means for retention between said seat and said exit portion to enhance the seal therebetween for preventing flow of the hot gases through said exit portion.

3,270,767
FAUCET CONNECTOR
Walter Franz Hirsch, 6271 SW. 26th St., Miami, Fla.
Filed Jan. 2, 1964, Ser. No. 335,311
4 Claims. (Cl. 137—268)

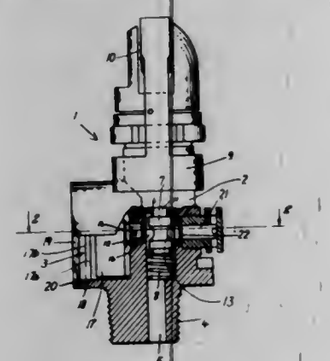
1. In a faucet connector, the combination comprising, a body member having an elongated, tubular nozzle portion at one end and an increased diameter portion at the other end, said increased diameter portion having a cylindrical inner chamber coaxial with and communicating at one end with the opening at the inner end of said tubular nozzle portion, the outer end of said nozzle having integrally formed therewith a head portion of increased external diameter, a resilient sleeve member circumjacent said nozzle portion and movable axially therealong, said

sleeve member having an internal diameter less than the outer diameter of said head portion, screw means for forcing the outer end of said sleeve member in expanded disposition over said nozzle head portion, and means for connecting a hose to said body member and in communication with the other end of said chamber, said screw means comprising an exterior screw thread formed along the outside of said increased diameter portion of said body member, an actuating thumb-nut threadedly re-



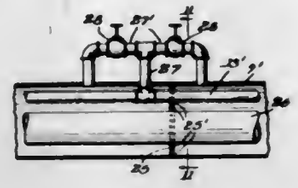
ceived on said screw thread and providing an annular shoulder facing said sleeve member, and an annular washer circumjacent said nozzle portion between said sleeve member and said annular shoulder, said annular shoulder of said thumb-nut being formed with a central, coaxial groove, and a coaxial annular projection on said washer of greater height than the depth of said groove for minimizing the frictional contact between said washer and said shoulder.

3,270,768
VALVE AND PRESSURE GAUGE ASSEMBLY
Frank G. Kamowski, East Orange, N.J., assignor, by mesne assignments, to The Fyr-Fyter Company, a corporation of Delaware
Filed Mar. 7, 1963, Ser. No. 263,457
3 Claims. (Cl. 137—327)



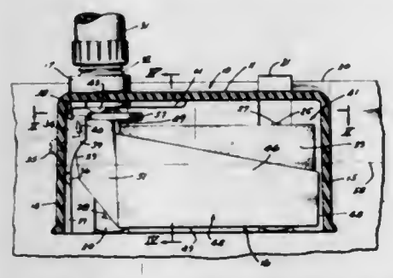
1. A valve and pressure gauge assembly comprising a valve body having a main discharge passage therethrough, means forming a cross passage intersecting said main discharge passage, means forming a pressure gauge recess in said valve body about one end of said cross passage, means forming a threaded surface in the wall of at least one end of the cross passage, a pressure gauge, a threaded inlet pipe for the pressure gauge, the pressure gauge positioned in said recess with its inlet pipe threadedly engaged in said cross passage and providing a support for the pressure gauge, means forming a tool engaging surface on the pressure gauge inlet pipe, and removable closure means for the other end of the cross passage whereby a tool may be introduced through said other end of the cross passage into contact with said tool engaging surface to turn the inlet pipe into threaded engagement with the wall of the cross passage.

3,270,769
VACUUM INSULATING SYSTEM FOR JACKETED PIPING SYSTEMS
Edward W. Kaiser and Edward B. Kaiser, both of 2114 West Lake Ave., Glenview, Ill.
Filed Mar. 30, 1965, Ser. No. 443,960
4 Claims. (Cl. 137—375)



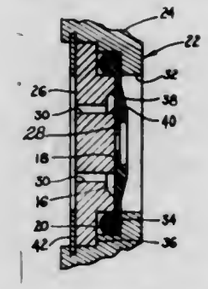
1. A jacketed piping system comprising in combination a casing line and a matter transporting pipe line supported within the casing line in spaced relation to the walls thereof forming a flow way between the casing line and the matter transporting pipe line throughout their lengths, the flow way being divided into separate compartments throughout its length:
(a) a vacuum pipe line within and disposed longitudinally of the casing line;
(b) branch pipes extended from the vacuum pipe line at intervals throughout its length connected to and selectively communicable with adjacent compartments of said flow way;
(c) vacuum creating means connected to the casing line communicating with said flow way; and
(d) means positioned between the vacuum creating means and the vacuum pipe line communicating therewith and operable to maintain a vacuum of predetermined degree in and throughout the vacuum pipe line.

3,270,770
FLOAT CONTROLLED VALVE ASSEMBLY
Robert M. Wilson, Battle Creek, Mich., assignor to Dare Products, Incorporated, Battle Creek, Mich., a corporation of Michigan
Filed Nov. 29, 1963, Ser. No. 326,787
10 Claims. (Cl. 137—434)



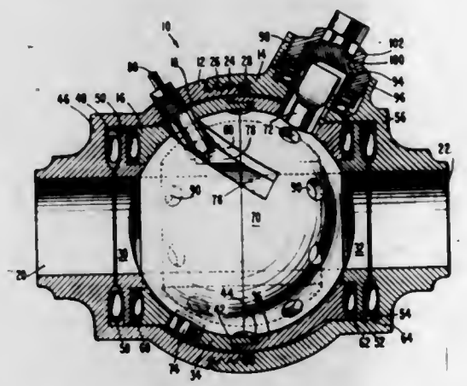
1. A float valve assembly for watering tanks and the like, comprising a box-like member having a top, sides, ends, and an exposed open bottom, with the upper portion of said box-like member being vented, said box-like member having an inlet connection into same through said top adjacent but spaced from one end of same, said inlet connection being connectable to one end of a supply line for liquid under pressure, a valve seat encircling the other end of said inlet connection inside of said box-like member, pivot means at the end of and inside said box-like member adjacent said inlet connection, a sealing valve member for sealing on said valve seat, means pivotally mounted on said pivot means at the end of said box-like member, means for mounting said sealing valve member in fixed position on said pivotally mounted means for movement in unison with same to and from said valve seat, a float, and means for mounting and supporting said float on said pivotally mounted means wholly within said box-like member, the portion of said float supporting means adjacent the open bottom of said box-like member serving as a shield for said float and having a smooth outer surface.

3,270,771
RESILIENT DISC CHECK VALVE
David Luke Morgan, Shelton, Harold F. Snider, Orange, and Frank Vincent Mingrone, Milford, Conn., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 11, 1963, Ser. No. 287,005
8 Claims. (Cl. 137—525.3)



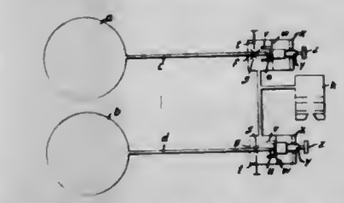
1. A resilient valve element comprising a disc-shaped portion having a central opening, the thickness of said portion varying inversely with the radial distance from said opening, one side of said portion presenting a flat surface; an integral flexible annular lip extending radially inward from said portion at said opening, one side of said lip being an extension of said flat surface and extending outwardly from said surface and an integral bead at the periphery of said disc-shaped portion.

3,270,772
BALL VALVE UNIT
Jozef M. Rakus, P.O. Box 1749, Washington, D.C.
Filed Aug. 23, 1965, Ser. No. 481,503
9 Claims. (Cl. 137—553)



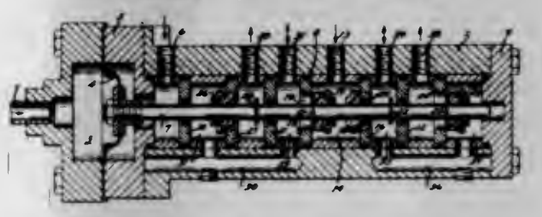
1. A valve unit comprising a housing, said housing being provided with an exterior wall and a spherical chamber disposed between an inlet port and an outlet port, a spherically shaped hollow valve member rotatably positioned within the spherical chamber of said housing, a rotating means attached to said valve member and extending through said housing, a tubular member extending diametrically through said hollow valve member and communicating with the inlet and outlet ports when said valve member is rotated to a first position and blocking the inlet and outlet ports when said valve member is rotated to a second position, said tubular member and said hollow valve member forming an annular chamber within the interior of said valve member, and a valve position indicating means attached to said housing and contacting said tubular member establishing a means to display the relative degree of valve opening between the first position and the second position.

3,270,773
CLOSABLE INLET DEVICES FOR ADMITTING GAS INTO HIGH VACUUM CONTAINERS
Curt Brunnée, Bremen, Germany, assignor to Atlas Mess- und Analysentechnik G.m.b.H., Bremen, Germany, a corporation of Germany
Filed Feb. 11, 1963, Ser. No. 257,459
Claims priority, application Germany, Feb. 13, 1962, A 39,454
2 Claims. (Cl. 137—561)



1. In a mass spectrometer having a gas storage tank and a high vacuum ion source, the improvement comprising a closable inlet device interconnecting said gas storage tank and said ion source,
said closable inlet device comprising a capillary tube having a first end operatively connected with said gas storage tank,
a second end of said tube comprising an outlet means to said high vacuum ion source,
a throttle means disposed immediately adjacent and interconnected only with said second tube end of said tube without interconnection of a high vacuum pump between said throttle means and said second tube end, and
valve means operatively associated with said outlet means for movement into positions seating against and closing said outlet means.

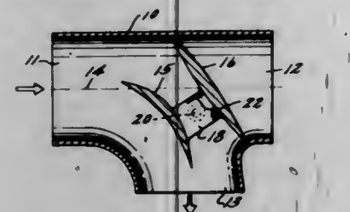
3,270,774
MULTIPLE VALVE
Robert B. Stuart, 936 Calimesa Blvd., Calimesa, Calif.
Filed Feb. 5, 1965, Ser. No. 430,595
4 Claims. (Cl. 137—596.18)



4. A multiple valve comprising a body,
a rod within the body and positioned on the longitudinal center line of the body,
actuating means connected to said rod to move said rod lengthwise within said body,
said body having a pressure chamber therein and a pair of walls defining the ends of said chamber,
one of said walls having a fluid opening therein,
said body having a pressure inlet port extending into said chamber,
said body having a second chamber therein adjacent the first named pressure chamber and a port extending from the second chamber,
said body having a third chamber therein adjacent the second chamber and a port extending from the third chamber,
said body having a fourth chamber therein adjacent the third chamber, and a by-pass duct extending from the second to the fourth chambers,
said rod extending through each of said chambers,
spool valves slidably mounted on said rod, one of said spool valves controlling fluid flow between the first and second chambers, and another spool valve controlling fluid flow between the third and fourth chambers,

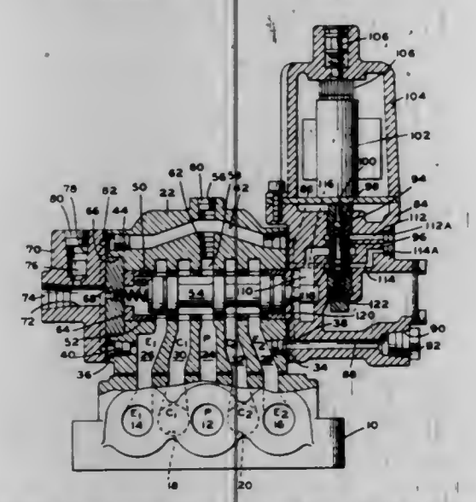
one of said spool valves being seated in the fluid opening in one of said walls,
and separate fixed pickup shoulders on said rod engageable with each of said spool valves to unseat the spool valves on longitudinal movement of said rod.

3,270,775
DIVERTER VALVE ASSEMBLY
Edgar D. Alderson, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 9, 1963, Ser. No. 271,721
6 Claims. (Cl. 137—609)



1. A diverter valve assembly comprising,
a conduct for the passage of fluid therethrough, and having an inlet,
said conduit being bifurcated to provide two outlets therefrom,
a pair of valve doors spaced from each other throughout their length to provide flow therebetween and disposed in the conduit at said bifurcation,
a separate member joining said doors to form a unitary movable structure therewith,
a fixed pivot connected to said separate member,
means to rotate said structure as a unit so rotation of said doors and member together opens and closes said outlets alternately,
said pivot connecting said member being disposed between said doors and downstream of the net pressure vector of all the forces acting on the doors,
whereby a positive torque is exerted on said doors in their respective closed positions.

3,270,776
SOLENOID VALVE CONSTRUCTION
William Carls, % Numatic Inc., Highland, Mich.
Filed June 10, 1965, Ser. No. 462,885
4 Claims. (Cl. 137—625.64)

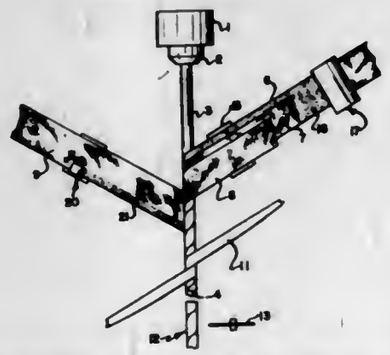


1. For use in a multi-purpose valve of the spool and sleeve type:
(a) a main valve housing with two end faces having a main axial bore between said faces with spaced pressure, exhaust and work ports and passages extending from said ports laterally of said bore to a surface of said housing, said housing having also an axial passage extending between said end faces with a lateral passage connecting said axial passage and a pressure port at said bore, said housing having also a short axial passage from each end face extending inwardly to respective exhaust passages, and
(b) an end housing located respectively at each end face of said main valve housing, each end housing having a common passage connecting the axial passages of said main valve housing terminating respectively at each end face.

3,270,777
INCORPORATION OF CARBON BLACK IN MIXTURE OF ALPHA-METHYL STYRENE:ACRYLONITRILE RESIN AND GRAFT COPOLYMER OF STYRENE AND ACRYLONITRILE ON POLYBUTADIENE
Mortimer S. Thompson, North Woodbury, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Original application Dec. 19, 1958, Ser. No. 781,434, now Patent No. 3,111,501, dated Nov. 19, 1963. Divided and this application July 15, 1963, Ser. No. 295,607
2 Claims. (Cl. 138—118)

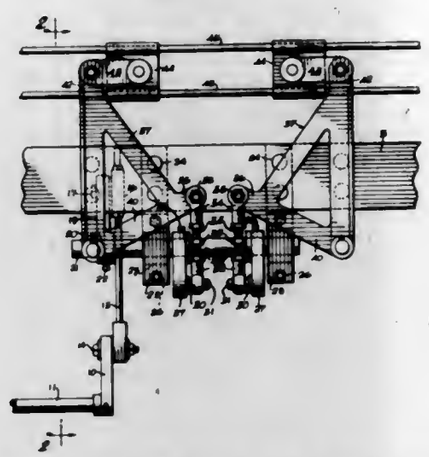
1. A thermoplastic gum plastic composition comprising a separately prepared mixture of from 68% to 85% of (A) and correspondingly from 32% to 15% of (B), the said (A) being a resinous copolymer of alpha-methyl styrene and acrylonitrile, said copolymer containing from 65 to 75 parts of alpha-methyl styrene and correspondingly from 35 to 25 parts of acrylonitrile per 100 parts of said copolymer, and the said (B) being a graft copolymer made by copolymerizing from 50 to 40 parts (per 100 parts of graft copolymer) of a monomeric mixture of styrene and acrylonitrile, the ratio of styrene: acrylonitrile being from 65:35 to 75:25, in an aqueous emulsion containing correspondingly from 50 to 60 parts of polybutadiene rubber, the said polymers (A) and (B) being the sole polymers present in the said separately prepared mixture, the said mixture of (A) and (B) being further blended with a separately prepared premix of from 5 to 10 parts of butadiene-acrylonitrile copolymer rubber, containing from 12 to 40% of acrylonitrile and correspondingly from 88 to 60% of butadiene, with from 2 to 3 parts of carbon black, the amount of said premix being sufficient to provide from 2 to 3 parts of carbon black per 100 parts of the total mixture, the said percentages, parts and ratios being by weight, and the said composition being characterized by resistance to weeping and by good physical properties at elevated temperatures.
2. A pipe made from the composition of claim 1.

3,270,778
FLEXIBLE PAPER TUBE
William A. Foll, 3475 Doris Road, Cleveland, Ohio, and Albin M. Hancik, 2021 Clarence Ave., Lakewood, Ohio
Filed Aug. 14, 1963, Ser. No. 302,055
7 Claims. (Cl. 138—144)



1. A spiral wound flexible, bendable paper tube capable of absorbing oil comprising an inner ply of biaxially creped kraft paper, a coating of adhesive on the exterior surface of said inner ply, an intermediate ply of biaxially creped kraft paper, an exterior ply of biaxially creped kraft paper lap seamed to itself, and adhesive securing together the lapped portions only of said exterior ply.

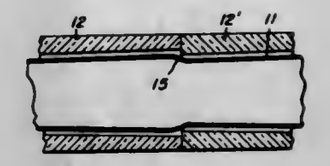
3,270,779
SHUTTLE DRIVING MECHANISM
Henry Dyer, 136 N. 15th St., Prospect Park, N.J.
Filed Apr. 15, 1965, Ser. No. 448,317
7 Claims. (Cl. 139—138)



1. A shuttle driving device for power looms of the type having a transverse batten lay beam, a shuttle batten in spaced parallel relation above the batten lay beam and a rotary drive shaft extending outwardly of one end of the loom and disposed in spaced parallel relation with respect to the batten lay beam and shuttle batten, comprising, in combination, a rocker shaft journalled in spaced parallel relation with respect to and below the batten lay beam, an elongated main lever perpendicularly fixed at one end to said rocker shaft and extending to the rear of the lay beam, a pair of relatively short elongated front levers each perpendicularly fixed at one end to said rocker shaft and extending to the front of the lay beam, a pair of picker levers, each having upper and lower and sidewardly offset pivotal bearing portions, the lower pivotal bearing portions of said picker levers each being journalled with respect to the front of said lay beam for independent transverse swinging motion with respect thereto, adjustable link means interconnecting said sidewardly offset pivotal bearing portions of said picker levers with one each of the other ends of said front levers for transmitting oscillatory motion therebetween, and adjustable crank means interconnecting said other end of said main lever with the rotary drive shaft of the loom for imparting oscillatory rocking motion to said rocker shaft.

3,270,780
COMPOSITE HEAT EXCHANGER TUBE STRUCTURE
Paul H. Kydd, Scotia, N.Y., and George J. Mullaney, Seattle, Wash., assignors to General Electric Company, a corporation of New York
Filed Apr. 26, 1963, Ser. No. 275,880
10 Claims. (Cl. 138—148)

3. A composite tube construction comprising:
(a) longitudinally-extending impermeable metallic means for containing a fluid confined therein for transportation under pressure therethrough,
(1) said containing means being in the shape of a right circular cylinder and having sufficient wall thickness and strength to withstand the internal fluid pressure without additional external support at temperatures below and approaching the operating temperatures for said composite tube,
(b) ceramic means for simultaneously protecting said containing means and supporting the internal fluid pressure transmitted thereto by said containing means at operating temperatures after the expansion of the containing means thereagainst during temperature increase thereof to the operating temperatures,

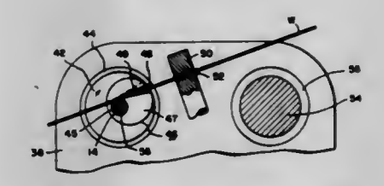


(1) said protecting and supporting means having an opening therethrough of circular cross-section encircling said containing means,
(2) said containing means and said protecting and supporting means having a total cold radial clearance therebetween at least as great as and substantially equal to the differential radial expansion of said containing means and protecting and supporting means during heating thereof to the operating temperatures.

ERRATUM

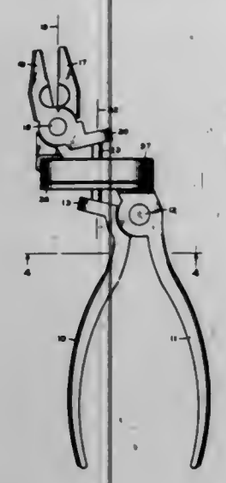
For Class 139—138 see:
Patent No. 3,270,779

3,270,781
METHOD AND APPARATUS FOR FORMING AND ATTACHING FILAMENT SUPPORT MEMBERS
William L. Brundige, West Caldwell, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 17, 1963, Ser. No. 281,293
8 Claims. (Cl. 140—71.5)



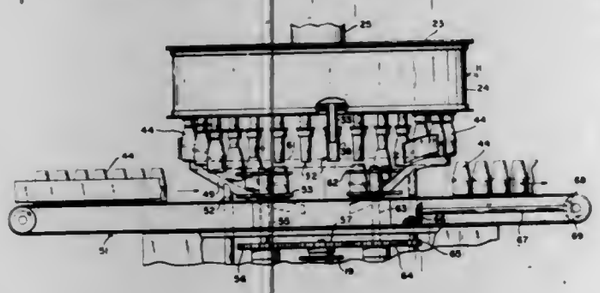
1. The method of forming and mounting a wire support member on an elongated incandescible filament comprising,
immobilizing at least that portion of the filament to which the support member is to be attached,
positioning a length of wire that is substantially straight and longer than that required for the support member transverse and tangent to said filament so that the latter contacts an intermediate portion of said length of wire,
wrapping a portion of said wire located adjacent to and on one side of said filament tightly around the latter and simultaneously bending the corresponding portion of said wire located on the other side of said filament into an arcuate loop to thereby form the intermediate portion of said length of wire into a support member of predetermined curvature and size that is disposed and anchored in encircling spaced-apart relationship with said filament, and then
trimming the ends of the formed support member to remove the excess end sections of said length of wire.

3,270,782
WIRE-TWISTING HAND TOOL
Leon R. Klang, Hickman Ave., and Ralph R. Twitchell, Rte. 4, both of Fulton, Mo.
Filed Mar. 25, 1964, Ser. No. 354,556
14 Claims. (Cl. 140—123)



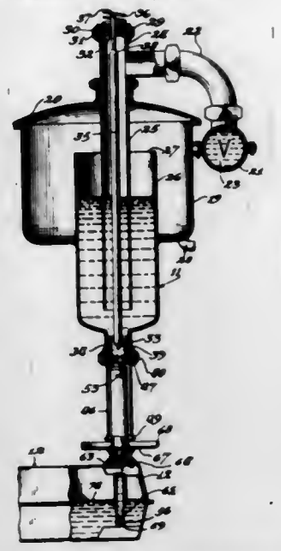
1. A hand tool comprising:
(a) a pair of pivotally interconnected handles,
(b) a pair of pivotally interconnected jaws,
(c) means interconnecting one handle with one jaw so as to open or close the jaws upon pivotal action of the handles, and
(d) swivel means offset from the longitudinal axis of the jaws and interconnecting the other handle with the other jaw so that translatory cranking movement of the handles causes rotation of the jaws.

3,270,783
CONTAINER FILLING METHOD AND APPARATUS
Harley Roland Hughes, Summit, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Oct. 16, 1963, Ser. No. 316,668
15 Claims. (Cl. 141—1)



1. In a method of filling an open top otherwise airtight container with predetermined volume of flowable particulate product wherein a filling tube depending from and open to a reservoir of said product is inserted into the container through said open top, the steps of peripherally sealing the container substantially air tight with said filling tube by relatively axially moving said container and tube until the container rim surrounding said opening peripherally engages an annular external surface of said tube in airtight relation while introducing product from the reservoir through the tube into the container until the inserted tube is filled to a predetermined level, and then separating the container from the tube and permitting the remaining contents of the tube to discharge into the container.

3,270,784
METHOD AND APPARATUS FOR DISPENSING FOAMABLE LIQUIDS
Robert J. Mistarz, Northbrook, Ill., assignor to Chicago Stainless Equipment Corporation, a corporation of Illinois
Filed Feb. 4, 1963, Ser. No. 258,372
9 Claims. (Cl. 141—2)



1. A liquid dispensing device, comprising: a measuring receptacle for said liquid; means forming an overflow portion on said receptacle to limit the liquid contained therein to a predetermined maximum level; an exit conduit from said receptacle having a flow orifice therein; a supply conduit to said receptacle having a discharge end within said receptacle and an elevated portion above the receptacle; a vacuum breaker means in said supply conduit communicating with the atmosphere; means for flowing liquid through said supply conduit into said receptacle, the liquid level in said receptacle being beneath said overflow portion; and a member movable between two positions, in one position to restrict flow through said orifice and simultaneously open said vacuum breaker means to cause a further liquid portion to flow from said conduit into said receptacle, and in another position to permit free flow through said orifice, said further liquid portion serving to fill said receptacle substantially to said overflow portion.

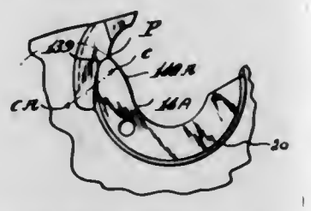
3,270,785
PORTABLE MOTOR-DRIVEN SAW
Kermit A. Molitor, 712 Hemitt, Bremerton, Wash.
Filed Oct. 28, 1963, Ser. No. 319,394
10 Claims. (Cl. 143—43)



1. In a portable motor-driven saw of the character described, a portable motor housing having a rigid arbor housing projecting outwardly at a fixed attitude therefrom, an arbor extending in a fixed rotatable position through the arbor housing from the motor housing, the end of said arbor housing having a collar member rotatably keyed thereon so as to be continuously free to turn about the arbor, said collar member having means fixed thereon which define a slideway that extends along a line coincident with a radius of the arbor, a shield member which defines a guard and a planar guide for a disc blade mounted on the arbor, and which is equipped with

bracket means that are slidably engaged on the slideway, said planar guide being so positioned in relation to the arbor that its base lies in a plane extending normal to the aforementioned line, means defining limits for the slideway at points relatively remote from and relatively adjacent to the base of the planar guide, and resilient means urging the shield member to move into a position in which the bracket means abuts that slideway limit disposed relatively adjacent to the base of the guide.

3,270,786
SHANKS FOR INSERTED TOOTH SAWS AND ASSEMBLIES OF SAME
Victor A. Kolesh, Holden, and Walter E. Lamlein, Leominster, Mass., assignors to Simonds Saw and Steel Company, Fitchburg, Mass., a corporation of Massachusetts
Filed Aug. 18, 1965, Ser. No. 480,742
1 Claim. (Cl. 143—151)



An inserted tooth saw comprising a circular saw body, sockets formed about the periphery of said body, inserted tooth cutter bits for the saw, and shanks replaceably holding said bits in said peripheral sockets, each of said shanks comprising

a flat metal body of a general C-shape including rear and forward ends and an intermediate portion,

said body formed with flat swageless parallel sides affording it uniform thickness throughout, said thickness being 0.020 inch plus or minus 0.010 inch thicker than the saw body, whereby it extends not more than about 0.015 inch laterally beyond the saw body on each side, the thickness of said shank body further being dimension between the thickness of the saw body and the width of the body of said bits at the front face thereof,

the inner and outer margins of said shank body along the major intermediate portion thereof being formed as corresponding arcs respectively of an inner and relatively smaller circle and of an outer relatively larger and substantially concentric circuit, the radius of said inner margin being 45% to 60% of the outer margin radius, the smaller arc defining the gullet space in the installed position of the shank in the saw socket,

the trailing end of the shank body having a bit-engaging rear part and a gullet-entering front part, the marginal edges of said parts joining at the outermost contact point of the shank and the bit when assembled,

said rear part comprising approximately a quadrant of a circle centered within the shank body and having a radius equal to about half the difference in length of the radii of the shank outer and inner margins,

said front part of said trailing end of the shank body projecting convexly into the gullet space from said shank and bit contact point and merging reversely into the concave margin of said space as an arcuate segment of a circle, the locus of the center of which and the length of radius of which being correlatively such that the full circle of which the segment is a part is defined within the initial overall circumference of the saw plate,

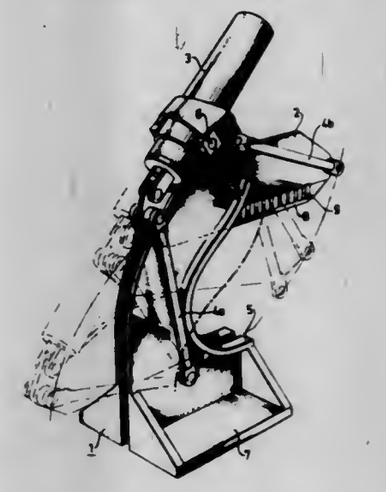
said center locus further defined as ranging from a point within the shank body to a point rearwardly and inwardly from the end of the shank body and said segment radius further defined as ranging from about 50% of the difference between the inner and outer radii of the shank to a radius increased correspondingly with the rearward inward positioning of the locus but still describing a cricle within the confine of the saw plate circumference,

said rear and front part of said shank trailing end defining a chip dispersal shoulder adapted to propel chips impinging thereupon from the cutting edge of the bit in different paths relative to and outwardly into the gullet space with avoidance by said shank thickness of jamming and compacted collection thereof in the region of the bit and shank junction and with consequent prevention of friction and rotative pressure on the bit and shank by such chip collection,

the forward end of said shank extending in the installed positon thereof substantially to the front end of the corresponding saw plate socket and being shaped to conform generally with and to serve as a rearward extension of the adjacent outer edge of the saw plate portion immediately forward of the particular socket wherein the shank is installed, and

said shank having only a single transverse through aperture, in the intermediate portion of the shank body, for engagement by and coaction with an installing and removing tool.

3,270,787
HYDRAULICALLY OPERATED DEVICE FOR CUTTING TREES, LOGS AND THE LIKE
Dick Lennart Rehnström, Skelleftea, Sweden, assignor to Fabriks AB Forslund & Co., Skelleftea, Sweden
Filed May 14, 1964, Ser. No. 367,922
Claims priority, application Sweden, May 16, 1963, 5,431/63
6 Claims. (Cl. 144—34)



6. An apparatus for cutting trees, logs and similar objects comprising in combination

(a) a frame member consisting of two substantially symmetrical halves that are maintained a fixed distance apart,

(b) a cutting member that is disposed in the plane passing between the symmetrical halves of said frame member,

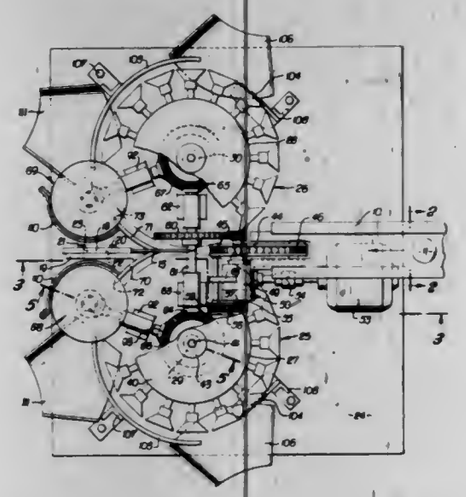
(c) a hydraulic power means comprising a cylinder portion and a piston portion that is attached to one extremity of said cutting member,

(d) the cylinder portion of said hydraulic power means being pivotally mounted on said frame member so that said cylinder portion can swing at least a limited distance in the plane passing between the symmetrical halves of said frame member,

(e) a first pivotable link having one end attached adjacent to the same extremity of said cutting member to which said piston portion is attached and the other end of said link being attached to said frame member, and

(f) a second pivotable link having one end attached adjacent to the other extremity of said cutting member and the other end of said link being attached to another portion of said frame member.

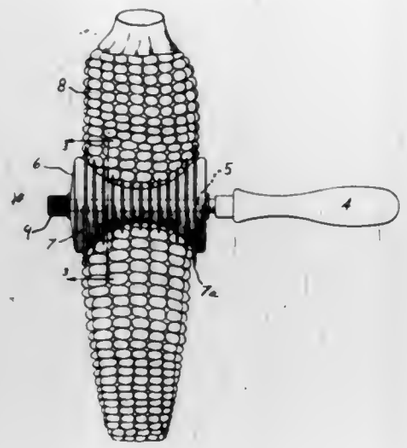
3,270,788
FRUIT ORIENTING, HALVING, AND CORING MACHINE
Theodore Armstrong, Torrance, Calif., assignor, by mesne assignments, to Pacific Preserving Co., Gardena, Calif., a corporation of California
Filed Sept. 3, 1963, Ser. No. 305,991
9 Claims. (Cl. 146—52)



4. In apparatus for coring substantially spherical fruit having a core axis extending through its seed cell: a pair of fruit holders; means determining separate circuitous paths of movement of the holders, said paths having substantially parallel runs in which the holders are opposed to each other, said paths converging in advance of the start of said parallel runs and diverging from the end of said parallel runs; means for feeding fruit between the holders in advance of said parallel runs with the core axes perpendicular to the said paths; said holders having provisions for centering the seed cells relative to the holders; a cutting knife located between said paths at the parallel runs; a pair of rotary knife devices for the holders respectively; means for moving the knife devices in paths having runs substantially paralleling the paths of said holders respectively; said knife devices each having operative fruit cutting parts located both above and below the position of the seed cell determined by said holders.

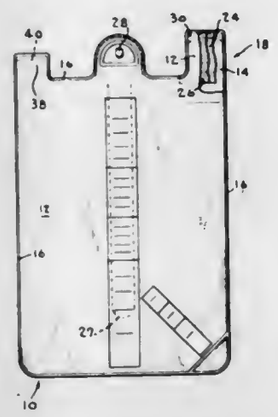
3,270,789
CORN TENDERIZER
John Majeske, 2835 Garrett Road, Drexel Hill, Pa.
Filed Feb. 11, 1964, Ser. No. 343,971
3 Claims. (Cl. 146—203)

1. A device for treating corn in situ on the cob, comprising an elongated handle, an axle-like shaft extending lengthwise from said handle, an integral concave-spool-like member of varying cylindrical cross section rotatably mounted on said shaft with its axis substantially in alignment with the handle, said member having its minimum cylindrical cross section at the mid-region of its length and its maximum cylindrical cross section at its ends, whereby it is contured to embrace a portion of the curved surface of an ear of corn when the latter is held at right angles to the axis of the shaft and handle, and a plurality of radially disposed kernel-piercing teeth formed integrally on the concave surface of said spool-like member



and configured to pierce the kernels, while leaving their hulls in place, as the said member rotates when passed along an ear of corn held at right angles to the handle.

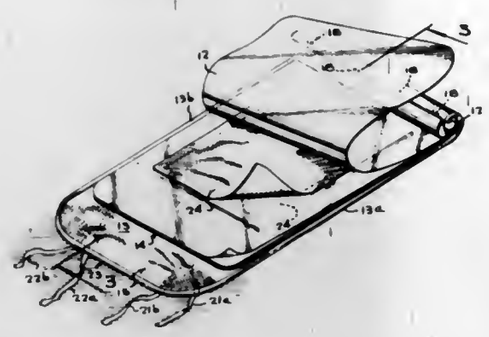
3,270,790
DETACHABLE TUBE TO BAG CONNECTOR MEANS AND METHOD OF MAKING SAME
James L. Clark, Whitefish Bay, Wis., assignor, by mesne assignments, to Plastronics, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 9, 1964, Ser. No. 350,329
2 Claims. (Cl. 150—1)



1. Outlet means for a container, said container including sheets of synthetic resin forming opposite walls of said container, first and second relatively thin flat strips of like material forming rectangular integral extensions of said opposite walls of said container, said strips having opposite side edges and an end edge;

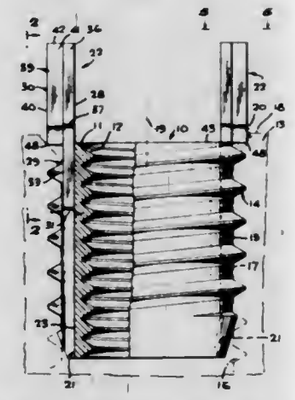
resilient, foam synthetic resin inserts considerably thicker than said strips positioned in an abutting face-to-face relationship between, co-extensive with and secured to said first and second strips, said pair of foam strips and said first and second plastic strips being sealed together along the outer periphery of said side edges and said end edge to form a peripherally sealed extension of said sheets, said end edge being readily severable to provide an access opening between the abutting foam plastic faces, said faces frictionally engaging a tube adapted to be inserted therein after severance of said sealed end edge.

3,270,791
FABRIC STORAGE DEVICE
Nancy R. Harris, 200 Poplar Lane, Richmond, Va.
Filed Apr. 1, 1964, Ser. No. 356,399
5 Claims. (Cl. 150—52)



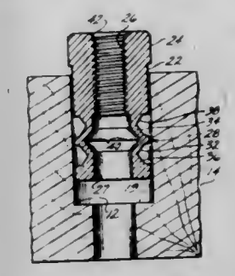
1. A device adapted to be rolled into a cylindrical configuration for storing fabric articles and the like comprising, an elongated cylindrical core member, a plurality of stacked superimposed co-extensive thin flexible sheets adapted to be separated for the insertion and retention of substantially flat articles therebetween, a flexible cover member superimposed with one side of the stack of sheets, the cover having a pair of marginal edges and first and second end edges, the first cover end edge being substantially co-extensive with a first edge of the sheets, the second end edge extending beyond the peripheral extent of the stack of sheets to provide an overlap, the first cover end edge having an extension underflap folded about a fold line and positioned between the stack of sheets and the cover, means fixedly securing the first edge of the co-extensive sheets and first cover end edge to the core member, the securing means comprising elongated fasteners projecting through the underflap and the stack of sheets and terminating in the core member, and tie means mounted to the overlap of the cover whereby the tie means are adapted to secure the device in a cylindrical configuration.

3,270,792
THREADED ELEMENT WITH CARRIER PART DEFORMING LOCKING KEY
Robert Neuschotz, Beverly Hills, and Cullen E. James, Southgate, Calif., assignors to Newton Insert Company, Los Angeles, Calif., a corporation of California
Filed Apr. 20, 1964, Ser. No. 361,085
3 Claims. (Cl. 151—23)



1. An element comprising a body having external threads disposed about an axis and adapted to be screwed into a passage in a carrier part, and having additional threads for attachment to another member, said body having a groove formed therein and extending generally axially through said external threads, a key received in said groove and adapted to be driven axially relative to said body to a locking position to lock the element in said carrier part, said key having an axially inner first portion received and frictionally retained in the groove at the location of some of said external threads and which is thin enough radially to avoid interference thereby with screwing of said element into said passage, said key having a second portion projecting axially outwardly beyond said groove and accessible for engagement by a tool to drive the key axially within the groove, said second portion forming a locking projection which extends radially outwardly farther than said first portion to cut into the material of said carrier part when the key is driven axially, said groove having an outwardly narrowing dovetail shaped radially inner portion containing and slidably retaining and confining said first portion of the key and having a radially outer portion which is located outwardly beyond and does not contain said first portion of the key, said outer portion of the groove being defined by essentially parallel approximately radially extending opposite side walls positioned to receive said locking projection circularly therebetween in said locking position thereof, said side walls being spaced apart far enough to leave clearance space circularly between said locking projection and said side walls at each point through the entire radial extent of said projection, equal to at least about one-third of the width dimension of said projection circularly about said axis at that point, said locking projection having opposite side surfaces extending substantially parallel to said side walls of the groove and being located for reception approximately midway between said side walls so that said clearance space forms two approximately equal width gaps at opposite sides of the projection, said projection having an axially inner end tapering axially to an essentially sharp cutting edge which extends essentially radially outwardly with respect to said axis, said second portion of the key having a radially inner portion which forms essentially a continuation of said first portion of the key but is slightly narrower than said first portion and wider than said projection.

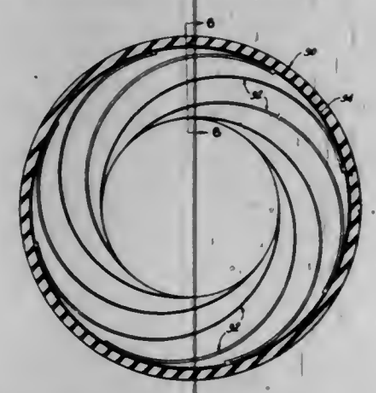
3,270,793
THREADED INSERT
Anthony P. Polmon, 126 Southwest Road, Waterbury, Conn.
Filed Oct. 5, 1964, Ser. No. 401,570
5 Claims. (Cl. 151—41.72)



1. A threaded insert adapted to be permanently installed in a member of yieldable material having a cylindrical opening which has an inner end against which said insert can abut, said insert comprising inner and outer generally cylindrical portions the diameter of which permit the insert to be slidably received in said opening, said outer portion defining a threaded segment and having a segment which has a plurality of radially protruding circumaxially spaced teeth each of which teeth extends generally parallel to the axis of said insert to permit the same to be pressed to its opening and to help prevent turning movement thereof relative to said member, a circumferentially continuous annular portion of

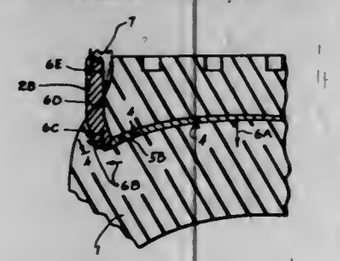
said insert between said inner and outer portions and having an external diameter substantially equal to that of said outer portion, said annular portion having a plurality of radially protruding circumaxially spaced teeth each of which is axially aligned with a tooth in said outer portion, inner and outer annular wall circumferentially continuous portions of frusto-conical shape integrally connected at their larger ends to said annular portion and at their smaller ends to said inner and outer portions respectively, each of said conically shaped wall portions having a thickness which permits said wall portions to be collapsed axially under a predetermined compressive stress whereby said annular portion can be urged radially outwardly into engagement with said member.

3,270,794
TIRE COOLING
Frank O. Skidmore, 2513 3rd St., Cuyahoga Falls, Ohio
Filed Dec. 15, 1964, Ser. No. 418,515
14 Claims. (Cl. 152—153)



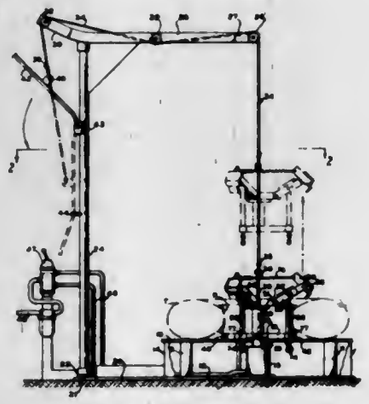
1. In combination,
a standard one-piece drop center rim, said rim having a closed flat well and substantially horizontal bead receiving flanges extending laterally from the well and integral therewith,
tire bead retaining flanges extending substantially vertically from the edges of the bead receiving flanges and integral therewith,
a radially inwardly projecting wheel secured to the well of the rim,
a pneumatic tire having a tread and sidewalls mounted in fluid tight relation on the rim and secured by the tire bead retaining flanges, and
means operatively mounted within the fluid tight cavity defined by the tire and the rim to effectively agitate the fluid providing pressure to the tire during rotational operation thereof to transfer heat generated at the tread to the sidewalls and the rim.

3,270,795
NON-SKID TIRES
Joel B. Guin, 148 E. 48th St., New York, N.Y.
Filed Jan. 29, 1965, Ser. No. 428,917
5 Claims. (Cl. 152—211)



1. In combination:
an automobile tire;
a series of springs around the periphery of the tire, each spring being made of a durable material, imbedded in and running diagonally across the tread and deflectable toward the center of the tire when said tread is depressed inward; and
multiple non-skid studs, one attached near each of the ends of said springs, made of strong durable material, and movable outward beyond the periphery of said tire to impinge on the road surface in proportion as the mid-portion of said springs is deflected inward by the depressing of the tread toward the tire center.

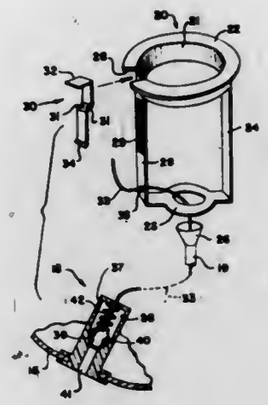
3,270,796
BEAD BREAKER FOR TIRES
Duel R. Smith, Carrollton, Ga.
Filed Mar. 4, 1965, Ser. No. 437,053
6 Claims. (Cl. 157—1.2)



1. A tire bead breaker including a tire supporting platform, a bead breaker head mounted for bodily movement to and from a position vertically over said platform, means for vertically moving said head when vertically over said platform toward said platform, power means within said supporting platform releasably engageable with said head when said head is lowered toward said platform, said head including a relatively fixed member releasably engageable with said platform and a relatively movable member releasably engageable with said power means and tire engaging arms interengaging said relatively movable member and said relatively fixed member pivotally movable in response to relative movement therebetween.

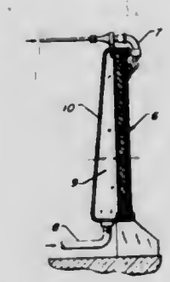
3,270,797
EMERGENCY FUEL CONTAINER FOR AUTOMOTIVE VEHICLES
John W. McLeod, 1300 Lafayette E., Detroit, Mich., and Roger L. Champoux, 31102 Schoolcraft, Livonia, Mich.
Filed Aug. 7, 1964, Ser. No. 388,239
2 Claims. (Cl. 158—46.5)

1. An emergency fuel container for a vehicle fuel tank having a narrow filler neck comprising a bag-like container, formed of a thick, flexible fuel-impervious sheet material, of a size considerably smaller than said tank but normally larger than the filler neck thereof, for insertion into said tank through said neck; a tube having a narrow end opening into said container and an upper end arranged for opening into said tank filler neck for receiving fuel when the tank is normally refueled; a bracket comprising an upper ring snugly fitted into and frictionally held within the upper end of said filler neck, a lower ring spaced below said upper end and centered in the filler neck, means rigidly interconnecting the two rings, and the upper end of said tube being connected to said lower ring in an upwardly opening position; said bracket further including a slider member, slidably secured to the bracket between the rings and having an upper end arranged at the upper ring, said slider member being arranged for sliding upwardly and downwardly relative to the filler neck; a normally closed valve formed in said container for communicating the interior of the container with the interior of the tank; and a cord connected to the valve for opening same



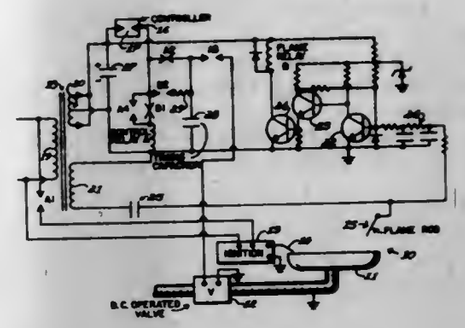
when the cord is pulled, the upper end of said cord being secured to the lower end of said slider member, wherein manually caused upward sliding of said slider member will pull said cord for opening said valve, thereby permitting fuel within the container to flow through the valve into said tank.

3,270,798
CATALYTIC RADIANT HEAT TREATING APPARATUS
Richard J. Ruff, deceased, late of Detroit, Mich., by National Bank of Detroit, executor, Detroit, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Original application Sept. 19, 1961, Ser. No. 139,226. Divided and this application Nov. 19, 1964, Ser. No. 412,869
5 Claims. (Cl. 158—99)



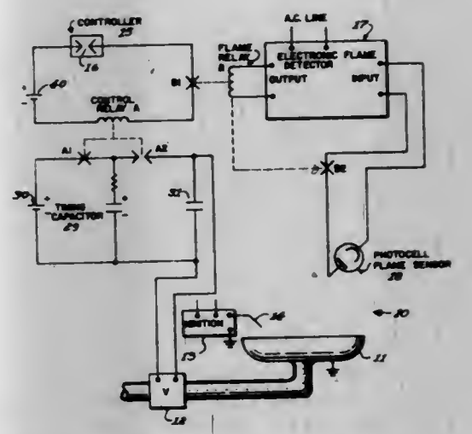
1. In a catalytic radiant heating apparatus adapted to provide high temperature radiant heating in the infrared range above 850° F., the combination of a thin metallic element of at least one gas permeable metal alloy gauze having a noble metal catalytic coating of substantially uniform thickness thereover, at least one pervious gas distributing and heat reflective uncoated metal alloy gauze of substantially equal mesh size as the coated gauze in direct contact with the back of and coextensive with said catalytic element without intervening media therebetween, and confined manifold means having air and fuel supply inlet means thereto encompassing the backside of said gas distributing gauze.

3,270,799
BURNER CONTROL APPARATUS
Balthasar H. Pincksers, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 7, 1964, Ser. No. 416,280
9 Claims. (Cl. 158—128)



1. Burner control apparatus for use with a direct ignition fuel burner installation having electrically energizable fuel flow control means, comprising;
a timing capacitor,
means adapted to institute charging of said timing capacitor upon a need for operation of the burner installation,
means responsive to a given charge being accumulated on said capacitor to interrupt the charging of said capacitor and to connect said capacitor to the electrically energizable fuel flow control means as the sole source of energizing voltage therefor,
and means responsive to the establishment of flame at the burner installation to maintain the charge on said capacitor.

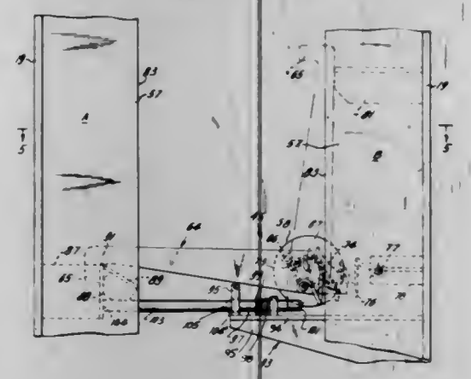
3,270,800
BURNER CONTROL APPARATUS
Fred T. Deziel, Bloomington, and Balthasar H. Pincksers, Edina, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 7, 1964, Ser. No. 416,320
7 Claims. (Cl. 158—128)



1. A direct ignition burner control for use to control the direct ignition of a main fuel burner, comprising;
a timing capacitor adapted to accumulate a charge of electrical energy,
means responsive to a need for operation of the main fuel burner effective to connect said capacitor to electrically energizable means which is adapted to cause fuel to flow to the main burner, to thereby energize said electrically energizable means as the sole source of electrical energy and for a short trial for ignition period determined by the discharge time of said timing capacitor,

and flame detecting means effective upon the establishment of flame at the main fuel burner to maintain a charge of electrical energy at said timing capacitor and thereby maintain fuel flow.

3,270,801
AUTOMATIC HOLDBACK DEVICE
Philip Richter, Bethlehem, Lawrence B. Smith, Allentown, and Francis J. Luipersbeck, Northampton, Pa., assignors to Fuller Company, Catasauqua, Pa., a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,692
10 Claims. (Cl. 160—213)



6. A latching mechanism for retaining a movable member in fixed position with respect to a second member, said latching mechanism comprising a pivoted latch arm having a hook end, carried by one of said members, a complementary retaining member carried by the other member adapted to be engaged by the hook end of the latch arm, control means carried in part by said other member and operatively engaging said latch arm when said members are moved into juxtaposition to effect pivoting movement of said latch arm for engagement of the hook end of the latch arm with said retaining member, and resilient means normally retaining said pivoted latch arm in unlocked position, one end of said resilient means being in fixed position with respect to the member carrying the latch arm, on one side of the pivotal axis of said latch arm and the other end of said resilient means being connected to said latch arm at a point, which in one pivotal position of said latch arm, will be on one side of a line between the pivotal axis of the latch arm and said fixed end of said resilient means, to react against said latch arm, to urge the latter in one rotational direction toward unlocked position during one portion of the pivotal movement of the latch arm by said control means and in the second pivotal position of said latch arm, will be on the other side of said line, to urge said latch arm in an opposite rotational direction toward locked position, during another portion of the pivotal movement of said latch arm by said control means.

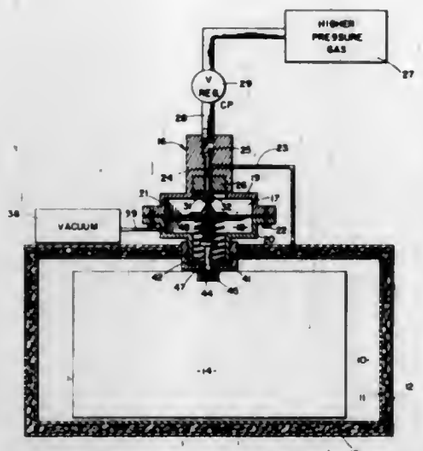
3,270,802
METHOD AND APPARATUS FOR VARYING THERMAL CONDUCTIVITY
Jay G. Lindberg, Downey, Calif., granted to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457(a)
Filed Jan. 10, 1963, Ser. No. 250,567
8 Claims. (Cl. 165—2)

4. A method for regulating heat flow comprising the steps of interposing a gas permeated insulating material between a region having relatively high temperature and a region having relatively low temperature,

transferring heat from the region having relatively high temperature to the insulating material,

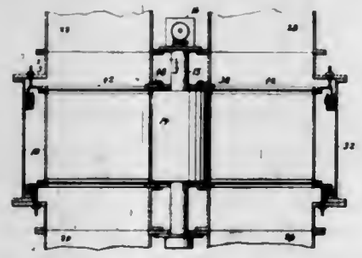
transferring heat from the insulating material to the region of relatively low temperature,

sensing a quantity having a known relation to the amount of heat transferred in one of said transferring steps, and



varying the composition of the gas permeating the insulating material in response to the sensed quantity.

3,270,803
SEALING ARRANGEMENT FOR ROTARY HEAT EXCHANGER
Noel D. Hazzard, Wellsville, N.Y., assignor, by mesne assignments, to Combustion Engineering, Inc., a stock corporation of Delaware
Filed Dec. 21, 1961, Ser. No. 161,062
5 Claims. (Cl. 165—9)



1. Rotary regenerative heat exchange apparatus having a rotor including a cylindrical rotor shell and a central rotor post spaced apart to form a compartment therebetween, a mass of heat absorbent material carried in said compartment, a housing surrounding said rotor in spaced relation to provide an annular space therebetween, apertured end plates at opposite ends of said housing adapted to direct a heating fluid and a fluid to be heated through spaced portions of the rotor, said end plates comprising an annular rim aligned with the end of the rotor and formed with a diametral portion that provides spaced apertures for the flow of said fluids, an upright annular channel positioned in the annular space adjacent an end of the rotor, an annular flange carried by said annular rim adapted to extend into the space between sides of said channel member, means for adjusting said rim axially with respect to the end of the rotor, and a mass of meltable material carried in said channel solidly encasing the end of the annular flange positioned therein.

3,270,804
COMBINATION DEHUMIDIFYING, REFRIGERATION COOLING AND HEATING UNIT
Howard L. Paulus, Scottsdale, Ariz.
(3026 E. Northern Ave., Phoenix, Ariz. 85028)
Filed May 18, 1964, Ser. No. 368,056
1 Claim. (Cl. 165—48)

A combination dehumidifying, refrigeration cooling, and heating unit comprising in combination:

(A) a cabinet having,

(B) a bottom,

(C) a front panel,

(D) a back panel,

(E) side panels,

(F) and a top,

(G) an intermediate lateral partition extending between said sides forming,

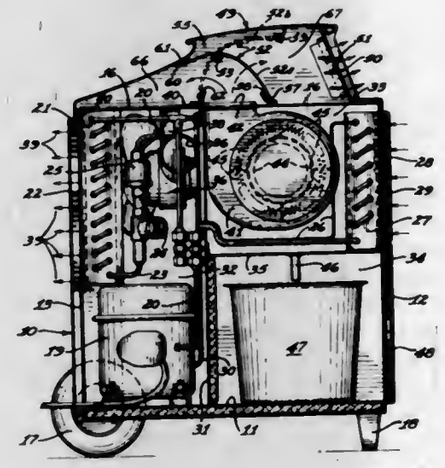
(H) a compressor and condenser compartment at the rear of said cabinet,

(I) a cooling and heating air compartment at the front of said unit,

(J) and a condensate compartment below said cooling and heating air compartment,

(K) a condenser in the upper rear portion of said compressor and condenser compartment having an exhaust grill in said back panel,

(L) an evaporator in the front portion of said cooling and heating air compartment having an evaporation air intake grill in the upper portion of said front panel,



(M) a bolwer in said cooling and heating compartment having a blower suction air intake adapted to draw air through said evaporator,

(N) a heating coil between said evaporator and said blower suction air intake,

(O) a top on said unit over said compressor and condenser compartment and said evaporator compartment having a discharge outlet from said blower,

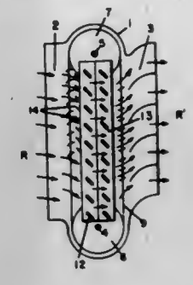
(P) an air directing cover on top of said unit,

(Q) a cooling and heating air discharge grill in the front of said air directing cover located above and behind said evaporator air intake grill,

(R) and an air flow directive valve movably mounted in said cover to one position to direct air discharged from said blower discharge outlet out through said cooling and heating discharge grill and movable to another position to direct air discharge from said blower discharge outlet into said compressor and condenser compartment out through said condenser.

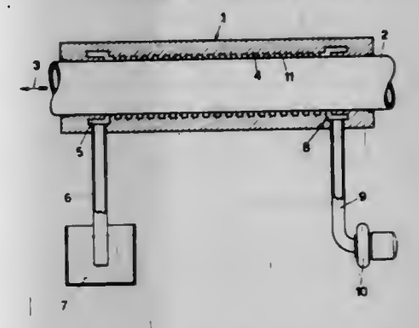
3,270,805
AIR MOVING DEVICES AND AIR CONDITIONERS
Ernst A. Glucksman, 13 Dalia Road, Haifa, Israel
Filed Dec. 11, 1964, Ser. No. 417,842
14 Claims. (Cl. 165—122)

1. A heat exchange apparatus including endless belt means supporting blades having a fixed inclination relative to the straight portions of said belt means, motor means for operating said belt means, duct means having an upstream entrance and a downstream exhaust and forming a substantially straight passageway between said entrance and said exhaust, substantially at right angles to both said straight portions of said belt means, fixed air guiding vanes inside said passageway to cause said blades to establish an air flow substantially transversely through



both said straight portions of said belt means, and heat exchange structure arranged inside said passageway between said straight portions of said belt means.

3,270,806
COOLING DEVICE FOR EXTRUDED GOODS OF THERMOPLASTIC MATERIALS
Geo Borrini, Milan, Italy, assignor to Amut S.p.A., Novara-Veveri, Italy, a company of the Italian Republic
Filed July 15, 1964, Ser. No. 382,817
Claims priority, application Italy, Oct. 4, 1963, 20,374/63
2 Claims. (Cl. 165—156)

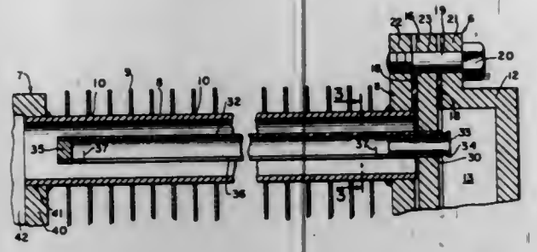


1. A device for cooling a heated body in a plastic state comprising a member having an inner longitudinal bore, said heated body being advanced longitudinally through said bore, said member having a cavity opening into said bore and extending around said bore and longitudinally thereof, supply means for supplying a cooling fluid in liquid form to said cavity, and a vapor pump for advancing the cooling fluid through said cavity in a direction opposite to that of the advancement of the heated body while establishing a negative pressure of the fluid in said cavity, said fluid being introduced into said cavity from said supply means in a liquid state at a temperature at which the fluid will vaporize under its negative pressure and the heat of said heated body and be withdrawn from a cavity by said vapor pump in a vapor state, said bore being substantially the same size and shape as that of the heated body such that as said heated body is advanced through the bore, the heated body contacts the member at the inner bore under the influence of the negative pressure of the cooling fluid.

3,270,807
HEAT EXCHANGER HAVING DISTRIBUTION TUBE INTERNAL FLOW DIRECTORS
Paul E. Steadman, 10813 Woodhaven Drive, Fairfax, Va.
Filed May 1, 1964, Ser. No. 364,144
7 Claims. (Cl. 165—174)

1. In a heat exchanger, a supply header and a condensate header arranged in spaced relation, heat conduction tubes extending between said headers, a header plate in said supply header having a series of openings aligned with said heat conduction tubes, said header plate being

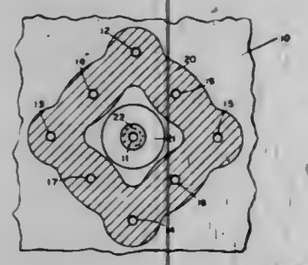
arranged in sealing engagement with said heat conduction tubes, and synthetic plastic distribution tubes each having one end mounted in said openings and provided with discharge passages to supply said heat conduction tubes uniformly throughout their length upon expansion of said synthetic plastic tubes.



3,270,808
METHOD FOR INCREASING SUBTERRANEAN FORMATION PERMEABILITY
Robert R. Harvey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,864
6 Claims. (Cl. 166—9)

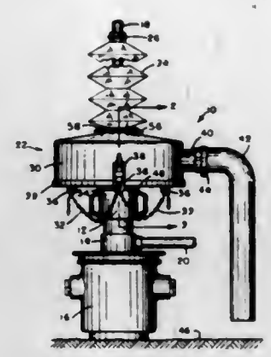
1. A process for the recovery of oil from a subterranean formation comprising injecting flood water into said formation through an input well, displacing oil in said formation, directing the displaced oil toward an output well and recovering said displaced oil from said output well, said flood water having present therein a compound selected from the group consisting of quebracho, pyrocatechol and hydroquinone in an amount sufficient to increase the water permeability of said formation.

3,270,809
MISCIBLE DISPLACEMENT PROCEDURE USING A WATER BANK
Carl Connally, Jr. and Frank R. Scauzillo, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Sept. 11, 1963, Ser. No. 308,162
13 Claims. (Cl. 166—9)



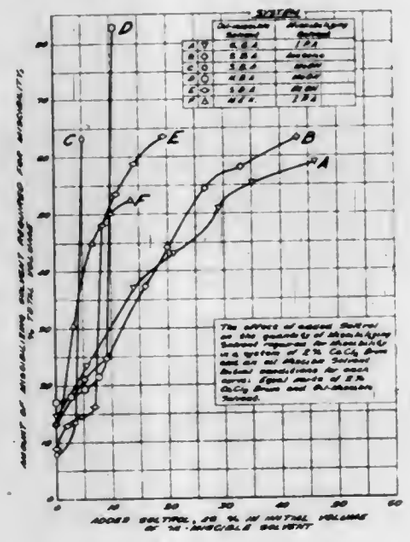
1. A method for recovering oil from a subterranean reservoir penetrated by a plurality of wells comprising the steps of:
   (a) forming in the reservoir a continuous bank of water in spaced relationship about a central well by injecting water into the reservoir through a plurality of surrounding wells, and
   (b) producing oil from the reservoir through wells other than the wells being used for injecting the bank of water;
   (c) injecting a miscible displacement fluid through the central well into the reservoir behind the bank of water, and
   (d) driving the miscible displacement fluid radially outwardly through the reservoir from the central well and producing oil from the wells in the reservoir surrounding the bank of water.

3,270,810
POLISHED ROD PROTECTOR AND BLOW DEFLECTOR
Leslie A. Johnston, 1225 E. 18th St., Tulsa, Okla.
Filed Feb. 13, 1963, Ser. No. 258,294
5 Claims. (Cl. 166—84)



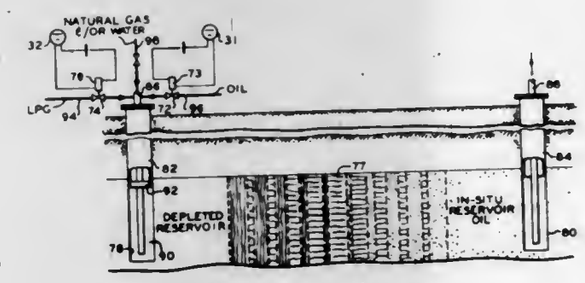
1. A polished rod protector for use with an oil well pumping system having a polished rod reciprocated through a stuffing box, said stuffing box positioned a distance above the surface of the earth comprising:
   a hollow bonnet member supported to said stuffing box, said bonnet member having an opening in the top and bottom surfaces thereof to receive said polished rod, said bonnet member having an exhaust opening therein; and
   a bellows member affixed at its lower end to said bonnet member at said upper opening in said bonnet member, said bellows member receiving said polished rod therein, said bellows member affixed at its upper end to said polished rod.

3,270,811
MISCIBLE DISPLACEMENT PROCESS FOR PETROLEUM RESERVOIRS CONTAINING BRINE AND OIL
William K. Meyer, Pittsburgh, and Joseph J. Taber, Indiana Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,500
6 Claims. (Cl. 166—9)



2. In a method for recovery of oil from a petroleum reservoir containing brine and oil by introducing into the reservoir through an injection well a sequence of solvents and displacing the solvents through the reservoir toward a producing well by injecting water into the reservoir, said solvents being such that a first injected solvent is miscible with the reservoir oil and substantially immiscible with the reservoir brine, and a second solvent is miscible with the first solvent and with water, the improvement of injecting as first and second solvents liquids which in an aqueous mixture have a binodal peak less than 20 percent of the second solvent and which in an aqueous mixture have a binodal peak less than 55 percent of the second solvent in the total volume of liquids when the mixture contains a volume of the reservoir oil in a concentration of about 25 percent of the volume of the first injected solvent.

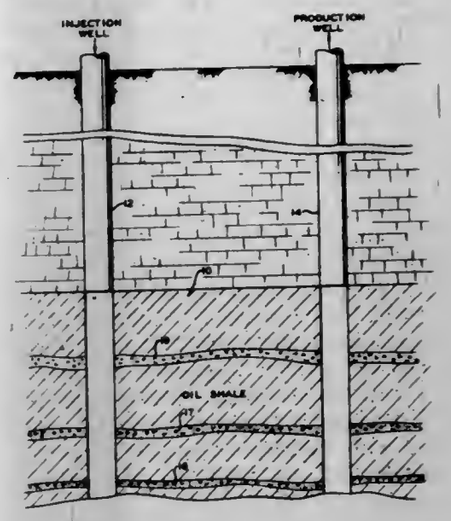
3,270,812
PROGRAMMING
Ralph E. Gilchrist and Richard H. Langenheim, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 16, 1962, Ser. No. 173,715
4 Claims. (Cl. 166—9)



2. A method for miscible displacement of a fluid from an underground reservoir penetrated by an injection well and a production well comprising the steps of:
   injecting a first displacement fluid into said injection well;
   alternately injecting a second displacement fluid;
   generating a plurality of constant interval electrical pulses;
   counting said pulses and actuating a switching relay once for a first predetermined number of said pulses to change from one of said displacing fluids to the other; and
   counting said pulses and actuating said relay once for a second predetermined number of said pulses to change back to said one fluid.

3,270,813
IGNITION AND COMBUSTION OF CARBONACEOUS STRATA
Ralph E. Gilchrist, Bartlesville, Okla, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,198
8 Claims. (Cl. 166—11)

1. A process for igniting a carbonaceous stratum penetrated by a well which comprises the steps of:
   (a) fracturing said stratum to extend a fracture radially outwardly from said well using a non-aqueous fracturing fluid;
   (b) injecting into said fracture a mixture of a high temperature resistant propping agent in particulate form, "Thermit" pellets, and pellets of a starter material reactive with water, using a non-aqueous injection fluid;
   (c) following step (b) injecting water into said fracture so as to energize said starter material which then heats and ignites the "Thermit" pellets; and



   (d) feeding O_2-containing gas into said fracture so as to ignite the carbonaceous material in said stratum.

3,270,814
SELECTIVE COMPLETION CEMENTING PACKER
Cecil R. Richardson, Charles D. Manson, Jr., and Eugene E. Baker, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Jan. 23, 1964, Ser. No. 339,744
12 Claims. (Cl. 166—21)



12. A method for isolating and producing from a formation by expanding a packer on a tubing string having a baffle below the packer comprising dropping a ball down the tubing to lodge on a seat in the packer, pumping fluid down the tubing to increase the pressure on the ball, breaking the seat to uncover a filling port for expanding the packer and to allow the ball to drop to the baffle, pumping fluid down the tubing and into the packer through the filling port, closing the filling port in response to fluid pressure in the packer when the packer is expanded, pumping fluid down the tubing to increase the pressure on the ball to break the baffle and pump the ball out of the tubing string, pumping cement down the tubing to cement the packer in the well, and opening production ports in the packer communicating between the formation and the tubing.

3,270,815
COMBINATION HYDRAULIC-EXPLOSIVE EARTH FORMATION FRACTURING PROCESS

Oliver Osborn, Lake Jackson, and Frank D. Patrick, Freeport, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,057
3 Claims. (Cl. 166—36)

1. A process for producing fractures in an earth formation which comprises:

(a) introducing a hydraulic fracturing fluid into an earth formation at a pressure sufficient to initiate fractures in said earth formation, said fracturing fluid consisting of a slurry of a liquid hydrocarbon having particulate light metal admixed therewith, said light metal particles becoming lodged in the fractures initiated by the hydraulic fracturing action,

(b) introducing an oxidizer solution into the fractured formation thereby displacing the hydrocarbon fracture fluid from contact with the light metal particles, said oxidizer solution forming an explosive composition with the light metal particles in the formation,

(c) introducing an explosive detonator adjacent the explosive composition, and

(d) initiating said detonator thereby to promote explosion of said explosive composition in the fractures of said formation further extending said fractures and promoting the permeability of said formation.

3,270,816
METHOD OF ESTABLISHING COMMUNICATION BETWEEN WELLS

Harold E. Staadt, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 19, 1963, Ser. No. 331,820
12 Claims. (Cl. 166—42)



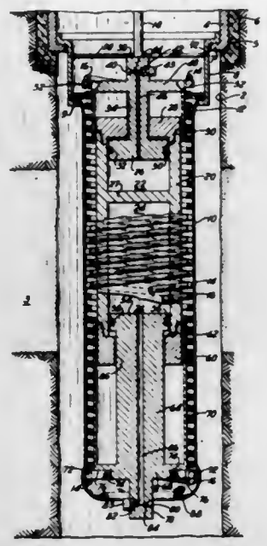
1. A method of establishing subsurface communication between first and second earth wells which are spaced apart by a predetermined distance, each of which penetrates a particular earth formation, comprising notching said formation of said first well along a predetermined depth range and in a vertically disposed plane which extends generally at an acute angle with respect to a line drawn between said first and second well and towards said second well with which communication is to be established, notching said formation of said second well in a vertically disposed plane at an acute angle with respect to said line drawn between said wells and which, if extended, would intersect an extension of the vertically disposed notch of said first well, and hydraulically fracturing said particular earth formation from both wells through said notches until said fractures meet.

3,270,817
METHOD AND APPARATUS FOR INSTALLING A PERMEABLE WELL LINER

John Papaila, Kiskiminetas Township, Armstrong County, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Mar. 26, 1964, Ser. No. 354,837
9 Claims. (Cl. 166—46)

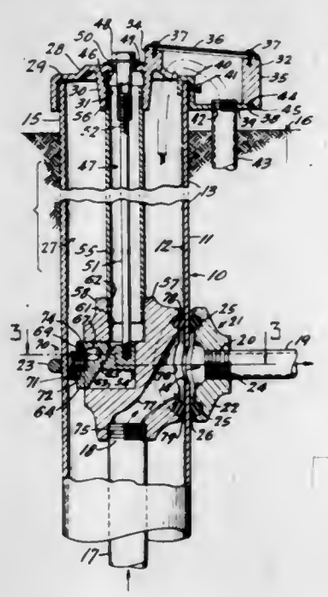
3. A method for arresting the movement of formation particles around a well bore penetrating an unconsolidated formation comprising inserting in the well bore at the level of the formation an expansible permeable tubular liner containing a helical spring subjected to both tensional and torsional forces to constrict the spring and reduce its diameter sufficiently to permit the passage of the spring and liner through the well bore, positioning the spring and liner in the well bore adjacent the formation, first gradually releasing the tensional force exerted upon the spring to shorten the spring and increase its diameter, subsequently gradually releasing the torsional force exerted upon the spring to farther expand the diameter of the spring and thereby urge the liner to forceably engage the wall of the well bore in substantial conformity with the contours of the well bore.



3,270,818
PITLESS WELL ADAPTER ASSEMBLY

Kells L. Pugh, Jr., 1306 West St., Genoa, Ohio

Filed Feb. 19, 1964, Ser. No. 345,945
10 Claims. (Cl. 166—85)

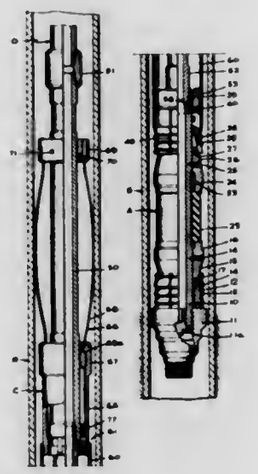


1. A pitless well adapter assembly for use in a well system including a vertical well casing having an interior surface, an exterior surface and a horizontal discharge opening, said adapter assembly comprising, in combination, a cap mountable on the upper end of such casing, support means depending from said cap, a coupler body secured to said support means, horizontal guide means on said coupler body, a vertical draw rod assembly having an uppermost end supported by said cap and a lowermost end secured to a vertical expanding block, a horizontal expanding block supported by said guide means, said vertical expanding block engaging said horizontal expanding block, and being effective upon vertical movement of said vertical expanding block to move said horizontal expanding block laterally in said guide means for engaging relationship with the interior wall of such casing, said coupler body having a conduit engaging bore in its lower portion and a discharge port positionable adjacent the horizontal discharge opening in such casing and defining a fluid passageway between such bore and such port.

3,270,819
APPARATUS FOR MECHANICALLY SETTING WELL TOOLS

Gordon E. Thrane, La Mirada, and Horace W. McZilkey, Jr., Los Angeles, Calif., assignors to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California

Filed Mar. 9, 1964, Ser. No. 350,235
11 Claims. (Cl. 166—124)



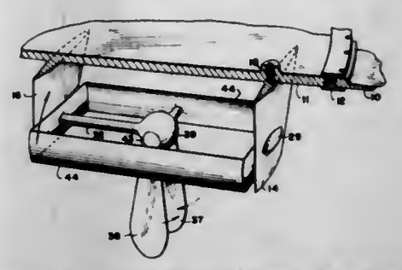
1. In well apparatus adapted to be set in a well bore: body means adapted to be secured to a running-in string for lowering the apparatus in the well bore; normally retracted means on said body means expandible laterally outwardly of said body means; spring means for shifting said normally retracted means laterally outwardly of said body means; a retainer engaging said normally retracted means to prevent expansion of said normally retracted means by said spring means; means releasably connecting said retainer to said body means to prevent relative shifting of said retainer from engagement with said normally retracted means, including a device threaded on said body means and movable upwardly on said body means and along said retainer in response to rotation of said body means to permit said body means to shift said normally retracted means longitudinally of said retainer to released position from said retainer.

3,270,820
PROPELLER FOR BOATS

Thomas J. Frazier, 2680 Ashford Road NE., Atlanta, Ga.

Filed Apr. 15, 1965, Ser. No. 448,326
4 Claims. (Cl. 170—135.21)

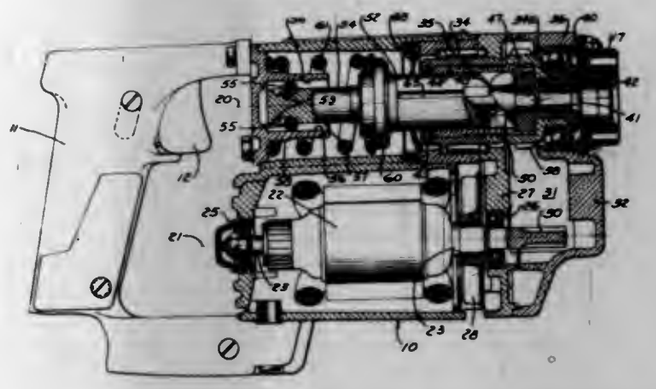
1. A boat propeller including a rotatable impeller mounting frame, means for rotating said frame, a pair of impellers, rotatably mounted on said frame for bodily rotation with said frame and for rotation on their own axes about a common axis normal to the axis of rotation of said frame and means for continuously rotating said impellers in equal and opposite directions as an incident to the continuous rotation of said frame.



3,270,821
POWER TOOL

Leon H. Bassett, Glenview, William A. Fouser, Chicago, Frank A. Kaman, Prospect Heights, and Frank C. Schrack, Chicago, Ill., assignors to Skil Corporation, Chicago, Ill., a corporation of Delaware

Filed Sept. 20, 1963, Ser. No. 310,347
13 Claims. (Cl. 173—123)



1. In a power tool, a housing, a sleeve mounted for rotation in said housing and having an actuating member fixedly mounted in the forward end thereof, a striker mounted for axial non-rotatable movement in the housing and having at least the forward portion thereof axially slidable in said sleeve toward and away from said actuating member, said striker being provided with at least one axially extending cavity communicating the space defined by said sleeve and said end of the striker with the interior of said housing, spring means for urging the striker forwardly in the housing, first cam means on the strking end of said striker, second cam means on said actuating member cooperating with said first cam means for effecting periodic rearward axial movement of the striker upon rotation of said sleeve, and said actuating member having a central opening co-axial with said striker for receiving a tool element to be struck by said end of the striker as the latter approaches its forward limit of axial movement in the housing.

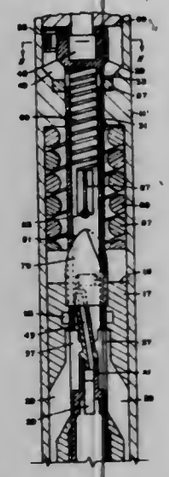
3,270,822
PERCUSSIVE UNIT FOR EARTH DRILLING

James M. Cleary, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 6, 1965, Ser. No. 511,870
29 Claims. (Cl. 173—137)

13. In rotary percussive earth drilling wherein a percussive unit and an earth drill are rotated and the drill is impacted against the earth by axial cyclic reciprocation of a hammer within the percussive unit, a power fluid-operated percussive unit comprising an elongated casing, an anvil surface slidably mounted in the lower

end of said casing, a piston-like hammer slidably mounted for reciprocating up and down movement in said casing above said anvil surface, said hammer having an upper surface and a first hammer passage communicating with said upper surface, said hammer having a lower surface and a second hammer passage communicating with said lower surface, a rotatable tubular valve passing longitudinally through said hammer, said tubular valve having a valve inlet passage adapted to pass fluid into said valve and a valve outlet passage adapted to pass power fluid from said valve, at least one first valve port located in said valve in a position to alternately pass said power



fluid from said valve inlet passage to said first hammer passage and to said second hammer passage as said valve is rotated, at least one second valve port located in said valve in a position to alternately pass said power fluid from said first and said second hammer passages to said valve outlet passage as said valve is rotated, and motion conversion means adapted to employ the reciprocating movement of said hammer to coordinate the axial position of said hammer with the circumferential rotative position of said first and said second valve ports during at least a portion of the reciprocating cycle of said hammer.

3,270,823
DRILL PIPE HANDLING APPARATUS
Alois A. Buehler, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 25, 1963, Ser. No. 318,876
6 Claims. (Cl. 175—85)

1. A drill pipe handling apparatus for a drill tower having a rotary head slidably supported thereon, comprising:

(a) an elongated tubular housing disposed wholly within the drill tower,

(b) means for movably connecting said housing to said drill tower,

(c) a first drill pipe supporting and gripping assembly connected to said housing and comprising:

(1) a pair of pivotally connected, coacting first jaws for engaging and holding a drill pipe,

(d) a second drill pipe supporting and gripping assembly connected to said housing in spaced relation to said first drill pipe supporting and gripping assembly,

(e) said second drill pipe supporting and gripping assembly comprising:

(1) a pair of spaced U-shaped plates secured to said housing,

(2) a third plate of inverted U-shape in cross section spaced below said pair of U-shaped plates,

(3) a pair of pivot pins extending through registered openings in each of said pair of plates and said third plate,

(4) tongs mounted on each of said pins between said pair of plates and connected to be pivotally moved by rotation of said pins,

(5) said tongs being constructed and arranged to engage and prevent rotation of a drill pipe,

(6) a pair of second jaws for engaging a drill pipe, said pair of second jaws being mounted on said third plate and including a second jaw on each of said pins for conjoined rotation with said pins so as to pivot to closed and open positions,

(7) each of said second jaws having a horizontal flanged portion for receiving the end of the drill pipe and supporting the weight thereof,

(8) said third plate and said second jaws being connected to said pins for slidable movement relative to said pins and said housing,



(9) fluid motor means connected to said second jaws to actuate said second jaws to open and closed positions and thereby rotate said pins,

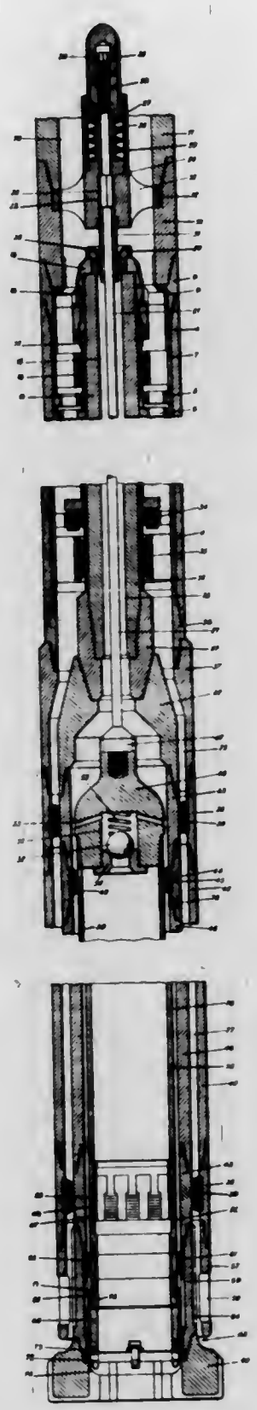
(f) a connecting rod disposed for slidable movement within said tubular housing,

(1) said connecting rod being connected at one end to said third plate and at the opposite end to said first jaws of said first drill pipe supporting and gripping assembly so that, upon release of the weight of the drill pipe from said second jaws, the first jaws are actuated to an open position, and

(g) fluid motor means connected to said drill tower and said housing for moving said housing and a drill pipe supported by the housing out of and into the drill tower so as to position the drill pipe into alignment and out of alignment with the rotary head.

3,270,824
TURBO-COREDRILL
Wladimir Tiraspolsky, Issy-les-Moulineaux, France, assignor to Turbodrill International Corporation, Schaan, Liechtenstein
Filed July 9, 1963, Ser. No. 293,741
Claims priority, application France, July 20, 1962, 904,580, Patent No. 1,339,585
6 Claims. (Cl. 175—107)

1. A turbo-coredrill including a turbine comprising a casing body, a set of stator blades fixed inside said casing body, a hollow shaft journalled in said body, and a set of rotor blades carried by said hollow shaft and cooperating with said stator blade set, a supporting rod axially extending through said hollow shaft and axially movable therein, means for selectively securing said rod to said turbine body preventing relative rotation thereto, said means being provided above said stator and rotor blades, said securing means including a seat fixed relative to said body having a noncircular bore, a corresponding noncircular rod portion defined on said rod selectively receivable within said bore, a large diameter guiding skirt forming a downward extension of the turbine body, a tubular member forming a downward extension of the turbine shaft, a core bit fixed to said tubular member,



a core barrel suspended from said supporting rod, and guiding bearings interposed between said tubular member and said skirt and also interposed between said tubular member and the core tube.

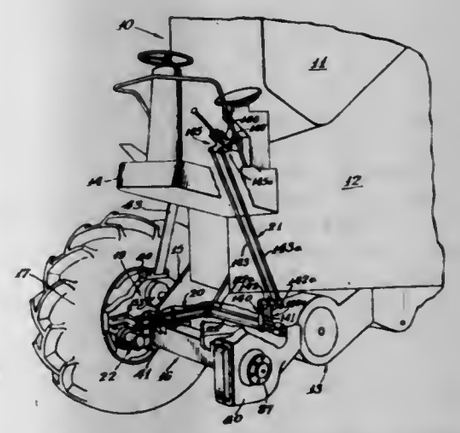
3,270,825
SPRINGLESS ADJUSTABLE SCALE STRUCTURE
Jacob L. Kleinman, Hotel Kimberly, 203 W. 74th St., New York 23, N.Y.
Filed Jan. 11, 1965, Ser. No. 424,526
18 Claims. (Cl. 177—217)

1. A scale structure comprising a casing, said casing having a base portion and a front section, said front section having a slot, a member having a pocket structure, the front portion of said pocket structure having a window opening, said member positioned normally within the said casing having its said front portion located within the said slot, a part of said front portion extending exteriorly of said slot and providing gripping means for moving the said pocket structure from its said normal position outwardly through the said slot to bring the said window opening into exposed position exteriorly of said casing, a



rotatable dial structure comprising a disk having numerals thereon, said dial structure carried by the said member having a portion of said disk located within the said pocket, said disk being rotatable on a horizontal plane parallel to the base section of said casing for bringing certain of its said numerals towards the said window opening, said pocket structure adapted to be reverted to its said normal position within the said casing, and means for holding the said pocket structure in desired position.

3,270,826
CHANGE SPEED TRANSMISSION FOR VEHICLE HYDROSTATIC DRIVE
Tommy A. Middlesworth, Hinsdale, John F. Reynolds, La Grange, and Jack B. Findlay, Downers Grove, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,593
9 Claims. (Cl. 180—6.48)



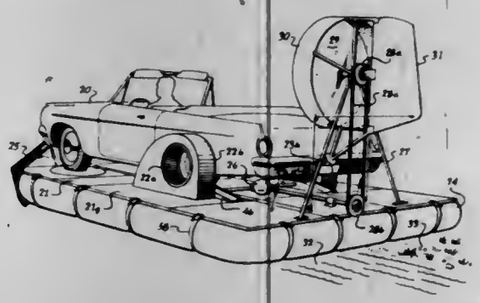
1. In a vehicle having a generally longitudinal support frame structure and a transversely extending wheel axle assembly fixedly mounted on said frame structure, the combination, comprising: a plurality of change-speed transmissions including a housing for each thereof: means detachably and non-rotatably mounting said transmission housings one each on an opposite end of said axle assembly; each of said transmissions including an input shaft, gearing mechanism operable for providing a plurality of selectable gear speed ratio drives therethrough, and an output shaft, and having said latter shaft extending therefrom on the side of the respective housing opposite that to which the proximate end of said axle assembly is mounted; a plurality of traction wheels detachably mounted one each on a respective one of said output shafts and constrained for rotation therewith; a plurality of hydraulic motors mounted one each on a respective one of said housings and being operatively connected to a respective one

of said input shafts and operative for driving said transmissions; a source of fluid pressure connected for operation of said hydraulic motors; control linkage means interconnecting said change-speed transmissions and having said linkage operative for selecting simultaneously for each of said transmissions each of the gear speed ratio drives available through each of said change-speed transmissions; and control valve means interconnected between said source of fluid pressure and said hydraulic motors and operative for individually controlling the speed and direction of drive of each traction wheel irrespective of the gear speed ratio selected by said control linkage means for the transmission connected to a respective traction wheel thereby to effect steering of the vehicle.

3,270,827
AMPHIBIOUS AUTOMOBILE GEM KIT

Peter J. Mantle, Pasadena, Calif., assignor to Vehicle Research Corporation, Pasadena, Calif.

Filed May 13, 1963, Ser. No. 279,883
4 Claims. (Cl. 180—7)



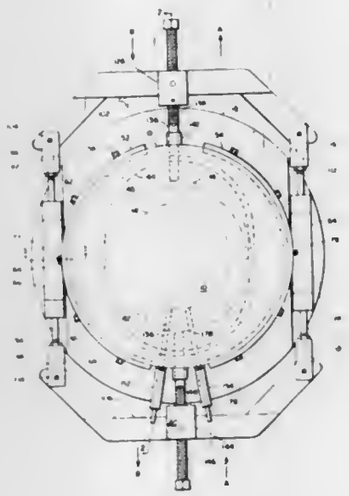
1. A kit for temporarily converting an automobile to an Amphibious Automobile Ground Effect Machine, said kit comprising one or more fans for providing a cushion of air beneath said amphibious automobile ground effect machine; means powering said fans with said automobile; an air propeller to provide thrust; means powering said air propeller with said automobile; a sectionalized platform, one section of said sectionalized platform so shaped that in combination with other sections of said sectionalized platform, said sectionalized platform, when assembled, can accommodate any make of automobile with wheels of said automobile fitting into ramps and troughs incorporated in sections of said sectionalized platform; rotatable discs in said sectionalized platform supporting said troughs; connecting means converting rotation of said rotatable discs to movement of a rudder; an inflatable tube so shaped that it conforms to the perimeter of said sectionalized platform, said inflatable tube and said sectionalized platform combining to form a plenum chamber wherein air pressurized by revolution of said fans comingles to support said amphibious automobile ground effect machine on a cushion of air; a second sectionalized platform depending from said first mentioned sectionalized platform, said second sectionalized platform so dimensioned that it forms an annular jet opening between the perimeter of said second sectionalized platform and the inner perimeter of said inflatable tube.

3,270,828
HYDRAULICALLY ACTUATED LOAD CARRYING APPARATUS

Robert J. McCracken, Port Jefferson, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 27, 1964, Ser. No. 355,515
7 Claims. (Cl. 180—8)

1. Compact load carrying apparatus comprising:
(a) platform means upon which said load is rested;
(b) base means for supporting said platform means;
(c) alternate means for supporting said platform means including a bottom plate, bearing means resting on said bottom plate, piston means resting on said bearing means, and a cylinder formed in said platform means in which said piston means is slidable;
(d) said bearing means being slidable with respect to each of said piston means and said bottom plate;
(e) means for pressurizing said cylinder with fluid under pressure to raise said platform means and base means thereby shifting support of said platform

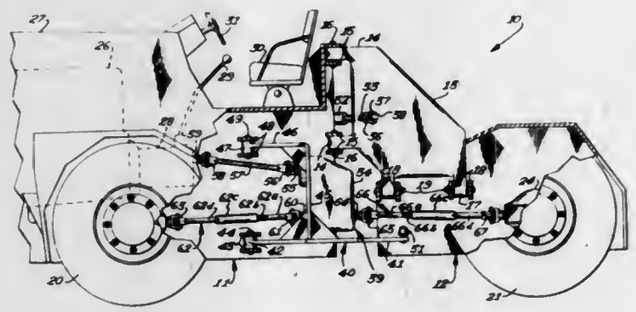


means to said alternate means including said piston means, bearing means and said bottom plate rendering the latter stationary; and
(f) means to slide said platform means and base means transversely on said bearing means when supported by said alternate means and to slide said bottom plate in the same direction when said cylinder is without fluid under pressure and said base means is stationary to move said apparatus transversely in a series of sequential short transverse steps as recited.

3,270,829
ARTICULATED VEHICLE

Douglas W. Steiger and Maurice J. Steiger, Red Lake Falls, Minn., assignors of one-half to Earl A. Christianson, Elbow Lake, Minn.

Filed Aug. 4, 1964, Ser. No. 387,391
9 Claims. (Cl. 180—51)



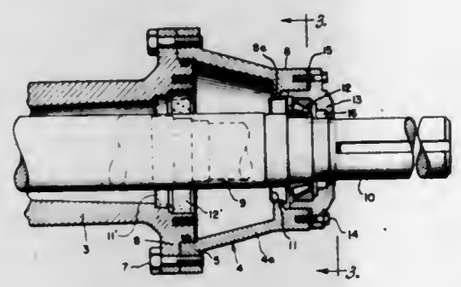
1. A power articulated vehicle comprising a front frame structure and a rear frame structure,
means pivotally connecting said frame structures together for pivoting movement therebetween about a substantially vertical axis,
each of said frame structures having driven ground engaging means for supporting the frame structures for travel over the ground,

one of the frame structures having a source of power for driving said ground engaging means,
drive transmitting means interconnected with the source of power and including a pair of elongate drive shafts each having one end thereof drivingly connected with said ground engaging means for one of said frame structures,
said drive transmitting means including an articulated drive connection between said drive shafts comprising an elongate support structure pivotally connected with said front frame structure for pivotal movement about a substantially vertical axis located forwardly of said pivotal axis between said frame structures, said support structure being pivotally connected with said rear frame structure at a point located rearwardly of said pivotal axis between said frame structures,
said articulated drive connection including a coupling mechanism mounted on said support structure and drivingly interconnecting said drive shafts,
and power means extending between and connected to said frame structures for selectively causing relative pivotal movement between said frame structures.

3,270,830
VEHICLE WIDE TREAD AXLE SUPPORT

Robert D. Barrett, Westchester, George J. Hamouz, Clarendon Hills, Lawrence I. Frisbie, La Grange, James K. Hirakawa, Chicago, and Edward C. Harnach, Jr., La Grange Highlands, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey

Filed June 29, 1964, Ser. No. 378,905
2 Claims. (Cl. 180—88)

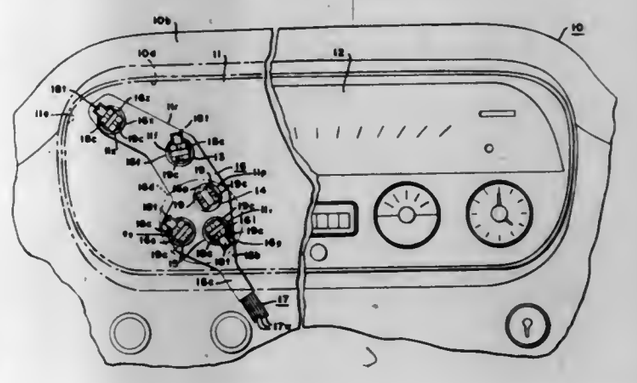


1. In a vehicle comprising a body and an axle housing projecting outwardly from said body for selective reception of axles which are relatively short and long, said housing having an outboard end portion, the combination of: housing extension mounting means on said housing outboard end portion, a first bearing assembly mounting means on said housing outboard end portion, a bearing assembly mountable on the bearing assembly mounting means to receive and journal the shorter of said axles received by the axle housing, an axle housing extension having outer and inner end portions and having an opening therethrough and fashioned with a frustoconical shape therebetween, said inner end portion being detachably secured by said housing extension mounting means to mount the housing extension on the axle housing with the outer end portion of the extension disposed outwardly from the outboard end portion of the axle housing, an axle housing cap having an axially extending aperture therethrough, said axle housing cap having an integral, circumferentially and axially inwardly extending wall for supportably mounting said bearing assembly therein to receive and journal the longer of said axles when the housing extension is mounted on the axle housing and when the longer axle is disposed in the axle housing, said axle housing cap including a radially outwardly extending flange, and means detachably securing said latter flange to the outer end portion of said housing extension.

3,270,831
DASHBOARD SUBASSEMBLY

Robert C. Woofter, Cortland, Ohio, and William C. Luscombe, Canandaigua, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application July 8, 1960, Ser. No. 41,677, now Patent No. 3,174,576, dated Mar. 23, 1965. Divided and this application Apr. 9, 1964, Ser. No. 358,588
9 Claims. (Cl. 180—90)



1. For a vehicle having electrical wiring means such as insulated conductors, grouped wires as a harness and the like as well as a dashboard means to carry instrumentation, accessories and the like a pre-connected combination illumination and instrumentation-accessory panel, comprising, a body portion of insulating material having an elongated predetermined configuration adapted to fit on one side of the dashboard means, a channel-like guide portion for the wiring means extending integrally and laterally on one side of said body portion, a plurality of lamp socket means also completely integral with said body portion of insulating material and having predetermined positioning thereof established by said body portion, terminal means provided in each of said lamp socket means for mounting and interconnection between energizable illuminators such as light bulbs and bare ends of the wiring means directly on said body portion prior to attachment of said body portion to the dashboard means, at least one additional socket portion integral with said body portion of insulating material, and at least one combination clip and terminal means provided in said additional socket portion which maintains both retention and establishment of electrical energization of an individual piece of instrumentation, accessories and the like.

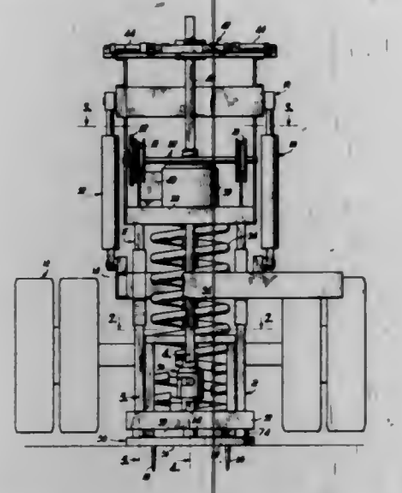
3,270,832
APPARATUS FOR GENERATING SEISMIC IMPULSES USED IN GEOLOGICAL EXPLORATION

Charles C. Williams, Wichita, Kans., assignor to Imperial Industries, Inc., Dallas, Tex., a corporation of Kansas

Filed Dec. 9, 1963, Ser. No. 328,849
11 Claims. (Cl. 181—.5)

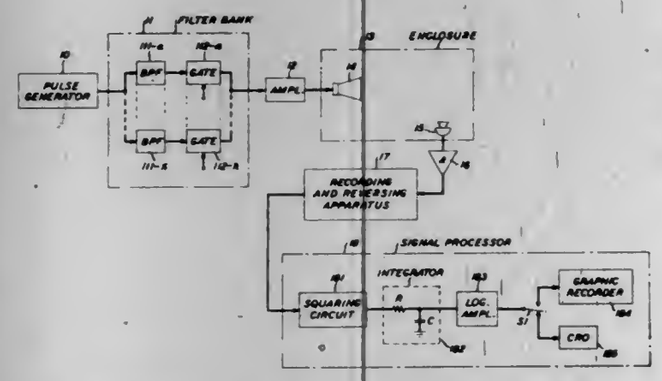
1. Apparatus for generating a sonic impulse employed in seismic geological exploration comprising:
a generally flat coupling plate adapted to be positioned during use with one major face thereof in substantially horizontal, flat engagement with the ground and entirely supported thereby;
an upright frame assembly;
a hammer reciprocable in said frame assembly and disposed to impactively engage the plate; and

structure carried by the frame assembly and operably coupled with the hammer for driving the hammer into impactive engagement with the plate, the mass of the frame assembly being greater than the mass of



the hammer and the mass of said hammer being substantially greater than the mass of said plate, whereby the recoil of the hammer and frame assembly after said impactive engagement is kept to a minimum.

3,270,833
METHOD OF AND APPARATUS FOR MEASURING ENSEMBLE AVERAGES AND DECAY CURVES
Manfred R. Schroeder, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 10, 1964, Ser. No. 417,364
9 Claims. (Cl. 181—.5)



1. Apparatus for measuring automatically the sound decay characteristic of an enclosure which comprises

a source of an impulse of energy having a predetermined frequency range and a relatively short time duration,

means for introducing a selected frequency sub-band of said impulse into said enclosure at a first predetermined point,

means for detecting at a second predetermined point within said enclosure the sound resulting from said radiated impulse to derive an output signal representative of the impulse response of said enclosure,

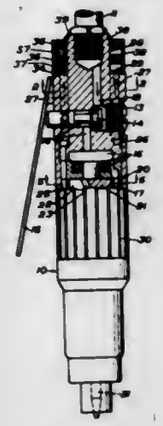
means for reversing the direction of said output signal to obtain a reversed direction signal,

means for raising said reversed direction signal to the second power to produce a squared signal,

means for integrating said squared signal, thereby to generate a decay curve signal,

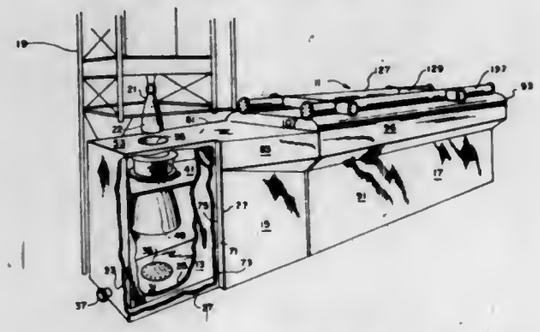
and means for deriving a visual record from said decay curve signal.

3,270,834
PNEUMATIC TOOL HAVING EXHAUST NOISE REDUCING MEANS
Sven-Åke Bratt, Trollbacken, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Sept. 10, 1965, Ser. No. 486,317
8 Claims. (Cl. 181—36)



1. In a pneumatic tool a generally cylindrical housing, a rotary air motor mounted within said housing, a cylindrical external surface on said housing with one end thereof terminating in an annular shoulder radially outwardly of said surface, air exhaust passages longitudinally disposed within the housing connecting the outlet side of said air motor with the end of said external surface adjacent said shoulder, a sleeve extending from said shoulder in substantially parallel spaced relation to said external surface, opening means in said sleeve communicating directly with the atmosphere at the end of said sleeve opposite to said shoulder, a plurality of noise reducing rings of relatively rigid porous material mounted in axially stacked relation between said external surface and said sleeve for supporting said sleeve around said surface and for reducing the noise of the exhaust air issuing from said exhaust passages through said sleeve to the atmosphere, and means in said sleeve for keeping said rings axially spaced therein under the formation of a substantially annular expansion chamber for the exhaust air adjacent at least one of the axial faces of each ring in said sleeve for increasing the noise reduction therein.

3,270,835
DEVICE FOR SUPPRESSING SOUND AND HEAT PRODUCED BY HIGH-VELOCITY EXHAUST JETS
Fritz Kramer, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed June 16, 1964, Ser. No. 375,674
8 Claims. (Cl. 181—52)



1. A device for suppressing sound and heat produced by the exhaust jet of reactive propulsion engines comprising:

(a) a venturi-shaped passage for receiving an engine's exhaust jet upon issuance from the engine;

(b) said passage having an entrance end and an exit end for the exhaust jet;

(c) a walled deflector section;

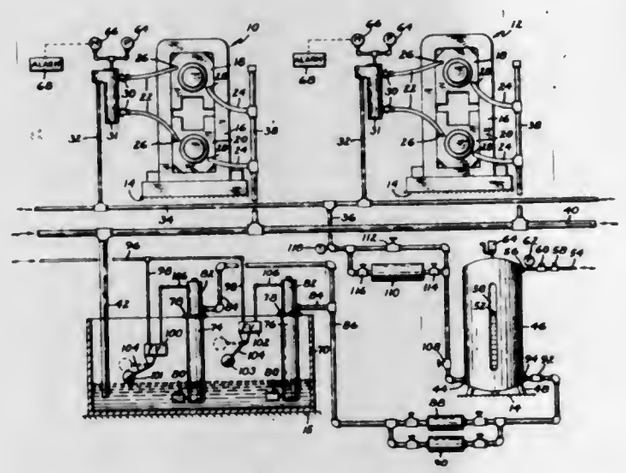
(d) the exit end of said passage opening into said deflector section;

(e) means for supporting a reservoir of water adjacent said entrance end of said passage;

(f) said means including a container having a periphery spaced from and extending around said entrance end of said passage;

(g) a communication between said water and said entrance end of said passage whereby said water may be pumped into said passage by force exerted by the exhaust jet.

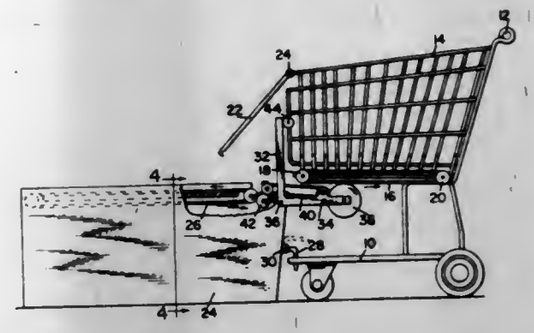
3,270,836
PRESSURIZED LUBRICATING SYSTEM
Samuel S. Rickley, West Boylston, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Feb. 6, 1964, Ser. No. 342,966
2 Claims. (Cl. 184—6)



1. A lubricating system for forcing a lubricant continuously through a bearing comprising: a closed tank containing a supply of said lubricant; feed piping leading from said tank to said bearing; a source of pressurized gas connected to said tank, whereby the pressure in said tank will force said lubricant continuously into said bearing; a sump tank for receiving lubricant from said bearing; and, a pump operated by said source of pressurized gas for forcing lubricant from said sump tank back into said closed tank, thereby maintaining the supply of lubricant in said closed tank at a relatively constant level.

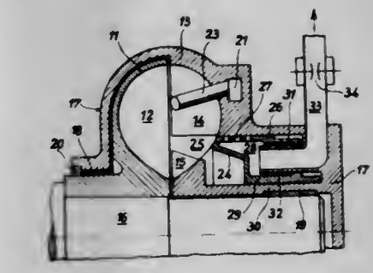
3,270,837
AUTOMATIC GROCERY CART
Armand A. Lachance, % American Metal Products Co., Southbridge St., Auburn, Mass.
Filed Sept. 9, 1964, Ser. No. 395,141
6 Claims. (Cl. 186—1)

1. The combination with a checkout counter including a power driven roll, means mounting the driven roll on a movable axis, means attached to said driven roll mounting means to move the latter and thereby the roll from an inoperative position to an operative position; of a grocery cart or the like including a lower wheeled frame, a basket mounted thereon in elevated condition with respect thereto, said basket including an openable forward wall and an endless belt comprising the bottom of the basket, and means on said cart for engaging said second-named means to move it together with the driven roll mounting means to cause the driven roll to move to operative position wherein it engages a run of said belt



to drive it in a direction to move articles placed thereon through the forward wall of said basket when open.

3,270,838
CONTROL OF THE BRAKE POWER OF A HYDRODYNAMIC BRAKE
Walter Schweizer, Friedrichshafen-Manzell, Germany, assignor to Maybach-Motorenbau G.m.b.H., Friedrichshafen, Germany, a firm of Germany
Filed Feb. 24, 1964, Ser. No. 346,981
Claims priority, application Germany, Mar. 14, 1963, M 56,105
12 Claims. (Cl. 188—90)



1. A core-less hydrodynamic brake comprising:

a stationary blade rim without a center guide core;

a movable blade rim to be braked without a center guide core;

said blade rims defining an annular fluid exchange gap therebetween and a fluid circuit chamber unobstructed in the direction transverse to said gap due to the absence of a center guide core;

fluid within said chamber; and

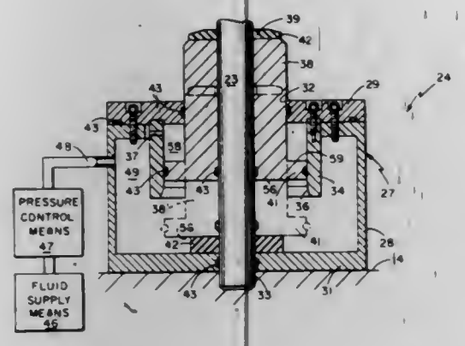
annular wall means operable to control the moment of the brake by moving into said stationary blade rim to change the profile of the circuit chamber including the location of the neutral fluid core formed by the circulation of said fluid within said chamber and to remove said fluid from the circuit.

3,270,839
DEVICE FOR PREVENTING MULTIPLE REBOUNDS OF AN IMPACTING MASS
Ralph S. Colby, Boxford, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Original application Dec. 28, 1961, Ser. No. 162,705, now Patent No. 3,209,580. Divided and this application Mar. 16, 1965, Ser. No. 452,959
18 Claims. (Cl. 188—96)

3. In combination with a means for supplying a propelling force to a mass to impact said mass, a means for preventing a multiple rebounding of said mass comprising:

(a) means for applying a neutralizing force to said mass prior to impact and thereafter, said means including; a fluid cylinder, and means for supplying

fluid to said fluid cylinder for developing a continuous pressure of predetermined value in said cylinder; and



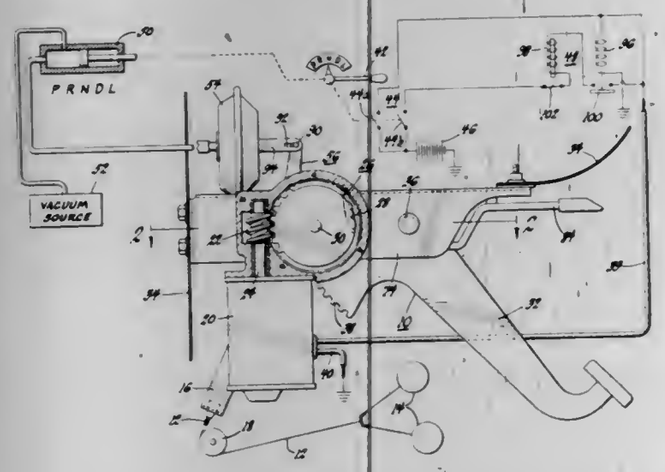
(b) damping means acting on said mass after impact for reducing the velocity thereof and bringing said mass to rest.

3,270,840

POWER OPERATED PARKING BRAKE HAVING AN AUTOMATIC TRANSMISSION CONTROL GEAR SHIFT RELEASE

James H. De Claire, East Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 12, 1964, Ser. No. 389,047
8 Claims. (Cl. 192—4)



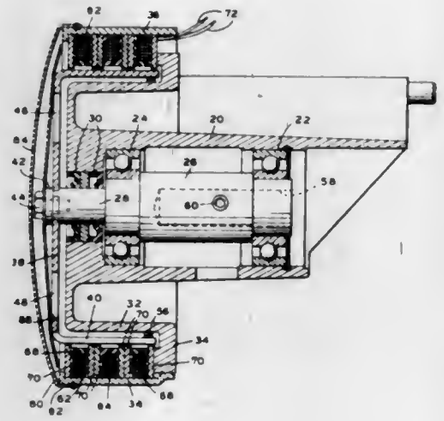
1. Parking brake mechanism for a vehicle having lever means for changing gears, said mechanism comprising: a pedal pendantly supported on a fixed portion of a vehicle and including a geared portion; power source means; connecting means between said pedal and a vehicle brake for transferring a force to hold the vehicle in a braked position; drive means including a pivotally supported gear connecting transferring force from said power source means to said pedal; pawl means held out of engagement with said geared portion during an actuating movement of the pedal and engaging said geared portion to maintain a relative position thereof after release of actuating movement; and brake releasing means for releasing said geared portion from an actuated position under one operating condition in response to a movement of the lever means for changing gears on the vehicle, said brake releasing means also including a pivotable lever for releasing said geared portion from an actuated position under a second operating condition.

3,270,841

MAGNETIC PARTICLE CONTROL UNIT

Richard Grau, Grand Rapids, Mich., assignor to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware

Filed Apr. 30, 1964, Ser. No. 363,931
4 Claims. (Cl. 192—21.5)



1. A coupling device for controlling the transmission of force between two relatively movable members comprising:

(a) a first housing member having a radially extending face wall terminating in an axially extending wall having a radial flange at its outer end,

(b) a cylindrical outer wall sealed on said radially extending flange to form an annular opening,

(c) a frictionally-engaged cover means peripherally engaged with said cylindrical outer wall overlying the radial face wall of said first member and said annular recess,

(d) a second member movable relative to said first member comprising a disc overlying said radially extending face wall of said first member having spaced axially extending fingers projecting into said annular opening,

(e) means forming a plurality of electromagnetic fields within said annular opening radially adjacent said fingers, and

(f) a charge of powdered magnetic material enclosed by said first member and said cover member to lie in the area of rotation of said fingers.

3,270,842

CAM OPERATED CLUTCHES FOR LAWN MOWER

Ross E. Pinto, Torrance, Calif., assignor to Roman Industries, Los Angeles, Calif., a corporation of California

Filed Mar. 27, 1964, Ser. No. 355,268
1 Claim. (Cl. 192—48)

In a dual clutch construction for a lawn mower, comprising:

(a) a clutch shaft rotatably supported on the lawn mower and having first mower drive means fixed thereto;

(b) an annular driven element co-axially received on said shaft;

(c) main radial and thrust bearing means mounting said element on said shaft for rotation relative thereto in a plane substantially fixed and normal relative thereto;

(d) a first annular clutch element co-axially received on and keyed to said shaft to one side of said driven element for axial movement and against rotational movement relative to said shaft, said first clutch element being frictionally engageable with one side of

said driven element upon axial movement thereagainst;

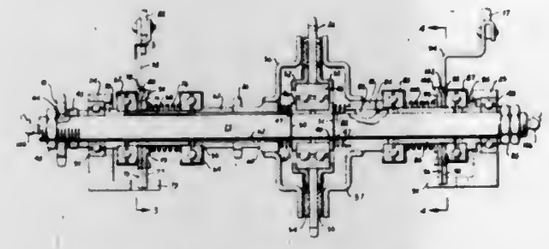
(e) a second annular clutch element, having second mower drive means fixed thereto, co-axially received on said shaft to the other side of said driven element for axial and rotational movement relative to said shaft, said second clutch element being frictionally engageable with one side of said driven element upon axial movement thereagainst;

an improved means for selectively engaging either one or simultaneously engaging both of said clutch elements with said driven element, comprising:

(1) first and second annular cam disks rotatably received around said clutch shaft, respectively, to either side of said driven element for axial movement on said shaft towards and away from said driven element;

(2) first and second thrust bearing means interposed, respectively, between said first clutch element and cam disk and said second clutch element and cam disk;

(3) first and second resilient compression means interposed, respectively, between said first thrust bearing means and cam disk and said second thrust bearing means and cam disk to resiliently urge said respective thrust bearing means and cam disks apart whereby movement of said first and second cam disks towards said driven element functions, respectively, to resiliently urge said first and second clutch elements into frictional engagement with said driven element;



(4) first and second annular cam actuating disks rotatably received around said clutch shaft with one side thereof in juxtaposition to one side of the respective first and second cam disks exteriorly relative to said driven element;

(5) first and second abutment elements fixed to said clutch shaft to either side of said driven element exteriorly relative to said respective first and second cam actuating disks;

(6) first and second bearing means interposed, respectively, between said first cam actuating disk and abutment element and said second cam actuating disk and abutment element to provide, with said abutment elements for the rotatable receipt of said cam actuating disks on said shaft and the maintenance of said cam actuating disks against axial movement on said shaft away from said driven element;

(7) mating recesses and protrusions on the juxtaposed sides of the cam disks and cam actuating disks, said recesses being adapted to be brought into and out of mating engagement by rotation of the cam actuating disks relative to the cam disks;

(8) means to simultaneously or independently selectively impart relative rotation to the juxtaposed cam actuating and cam disks; and wherein,

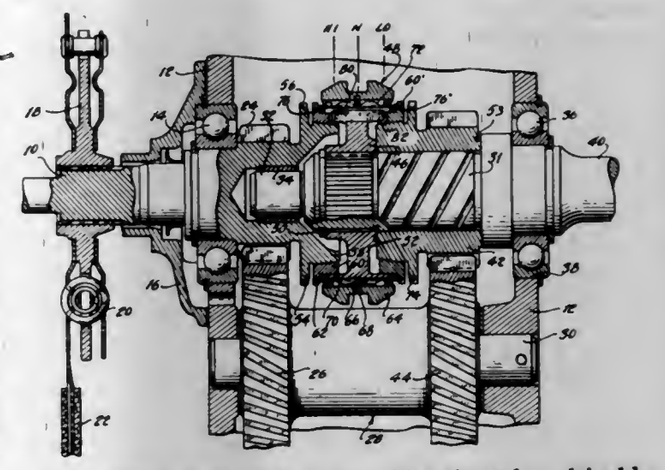
(9) relative rotation of the juxtaposed cam actuating and cam disks functions to move the cam disks axially on the clutch shaft towards said driven element.

3,270,843

SYNCHRONIZER CLUTCH ASSEMBLY

Peter G. Ivanchich, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed May 4, 1964, Ser. No. 364,526
5 Claims. (Cl. 192—53)



1. A synchronizer clutch assembly adapted to drivably connect a driving member with a driven member and comprising a synchronizer hub carried by one member, clutch teeth carried by the other member, a blocker ring situated between said clutch teeth and said hub, said other member and said blocker ring having cooperating friction clutch surfaces, a synchronizer clutch sleeve having internal clutch teeth drivably carried by said clutch hub, means for establishing a driving connection between said blocker ring and said hub while accommodating a limited degree of rotary lost motion therebetween, and yieldable spring means located between said blocker ring and said sleeve including a portion engageable with the teeth of said sleeve as the latter is shifted toward said other member whereby the teeth of said blocker ring are shifted rotatably relative to said hub into the path of motion of the teeth of said sleeve, the teeth of said sleeve engaging the teeth of said blocker ring to cause clutching engagement of said clutch surfaces, the ends of the teeth of said sleeve being tapered, said spring means including a circular spring element surrounding said blocker ring and compressible radially inwardly as it engages the tapered ends of the teeth of said sleeve.

3,270,844

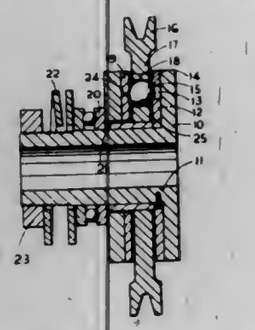
OVERLOAD CLUTCH OR TORQUE LIMITING DEVICE

Olaf John Barclay Orwin, Birmingham, England, assignor to Fisher & Ludlow Limited, Tipton, England, a British company

Filed July 24, 1964, Ser. No. 384,838
Claims priority, application Great Britain, July 30, 1963, 30,091/63
6 Claims. (Cl. 192—56)

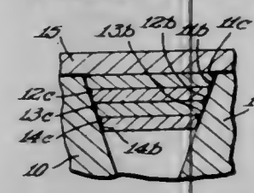
1. An overload clutch comprising a torque transmitting driving element and a torque transmitting driven element, a thrust member, means mounting the driving element, the driven element and the thrust member in side by side but axially spaced apart relation for relative rotational movement about a common axis of rotation, one of said elements having two axially directed opposite faces and being disposed between the other element and the thrust member, said other element and said thrust member having axially opposed mutually parallel plane faces each directed towards an adjacent one of the faces of the one element, said other element in the face thereof adjacent said one element having a plurality of circumferentially spaced torque transmitting openings having ball engaging mouths of circular configuration, said one element having

a plurality of slots extending therethrough between its axially directed opposite faces with one portion of each slot in register with one of said torque transmitting openings for one relative rotational position of said elements, a torque transmitting ball within each slot, each ball having a diameter which is greater than the diameter of the torque transmitting opening mouths and the thickness of the one element adjacent said slots so that each ball projects axially beyond each of said two axially directed faces of the one element in a position for engaging with said



opposed plane faces of the other element and the thrust member, each slot in the direction of its length being inclined to the direction of rotation of said one element so that part of each slot is out of register with the torque transmitting openings for all relative rotational positions of the elements, said other element and said thrust member being relatively axially movable on said mounting means, and spring means urging said other element and thrust member towards one another into thrust engagement with said torque transmitting balls.

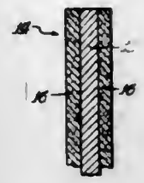
3,270,845
BAND CLUTCH
John Major Dodwell, Piedmont, Quebec, Canada (2619 N. 5th St., Niles, Mich.)
Filed July 9, 1964, Ser. No. 381,447
6 Claims. (Cl. 192—81)



1. A band for one-way V-pulley friction devices comprising an elongated thin spring metal strip, precurved into a generally flat radial spiral shape tapered in width along its length from adjacent its outer end to its inner end to provide a pair of progressively closer side edges for progressively deeper co-operation with the sidewalls of a V-pulley, securing means on the strip adjacent its outer end, said side edges being beveled at their radially innermost corners to conform to said V-pulley and being relieved at their outermost corners.

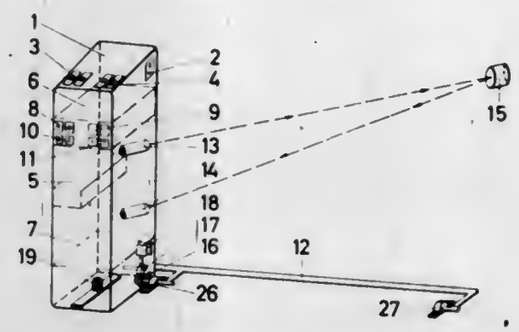
3,270,846
FRICTION MEMBER WITH FRICTION MATERIAL
Hanns F. Arledter, Ross, Ohio, and Carl R. Canfield, Jr., Decatur, and Daniel C. Gillespie, Maywood, Ill., assignors, by direct and mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois, and The Mead Corporation, a corporation of Ohio
Continuation of abandoned application Ser. No. 646,349, Mar. 15, 1957. This application Apr. 10, 1961, Ser. No. 104,499
15 Claims. (Cl. 192—107)

1. A friction member for a torque control device adapted to operate in oil comprising a metallic backing member and a resilient porous friction facing adhesively secured to the backing member, said friction facing comprising an interfelted fibrous paper sheet consisting essentially of from about 30% to about 70% by weight of at least one fibrous material selected from the group consisting of natural cellulosic fibers and synthetic organic fibers capable of withstanding 200° F., from about 5% to about



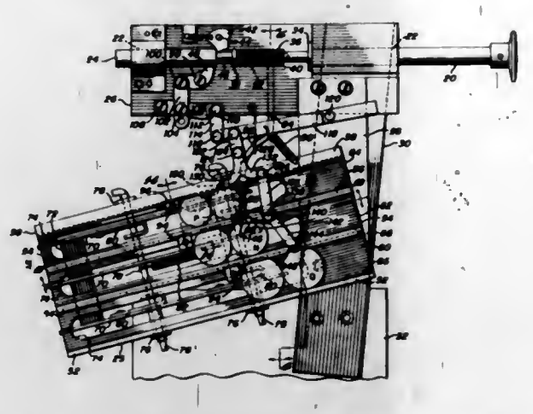
35% by weight of asbestos fibers, from about 10% to about 50% by weight of at least one inorganic filler material of a hardness of more than 3.5 mohs, and said facing further containing from about 10% to about 50% based on the weight of the paper of at least one cured thermosetting resin, said facing having a readily available air volume of at least 60%.

3,270,847
AUTOMATIC CAR PARKING-METER FOR GARAGES
Harry I. Å. Rudberg, 28 W. 44th St., Stockholm, Sweden
Filed Oct. 22, 1964, Ser. No. 405,766
Claims priority, application Sweden, Oct. 31, 1963, 11,983/63; Apr. 9, 1964, 4,365/64
3 Claims. (Cl. 194—1)



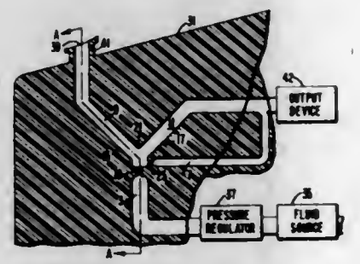
1. In an automatic parking meter for garages of the type having parking spaces each controlled by a meter and each having a closure blocking a car in the respective parking space until payment of the free registered on the associated meter: the improvement comprising a source of radiant energy associated with each parking space; a respective radiant energy responsive means operatively associated with each radiant source; the receipt of radiant energy from a source thereof by the associated responsive means being interrupted responsive to movement of a car into the associated parking space; a source of timing pulses; normally open circuit means connecting each responsive means to said source of timing pulses and operable, responsive to the interruption of radiant energy to a respective responsive means, to initiate delivery of timing pulses from said source thereof to the associated meter; first means operable periodically, for short time periods, to activate said sources of radiant energy; and second means operable periodically, during such short time periods, to close said circuit means; said first and second means operating in synchronism, and said first means, during each such short period, activating said radiant energy sources sufficiently in advance of closing of said circuit means to assure full energization of said radiant energy sources before closing of said circuit means.

3,270,848
COIN ACCUMULATOR
Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky.
Filed Oct. 19, 1964, Ser. No. 404,571
20 Claims. (Cl. 194—92)



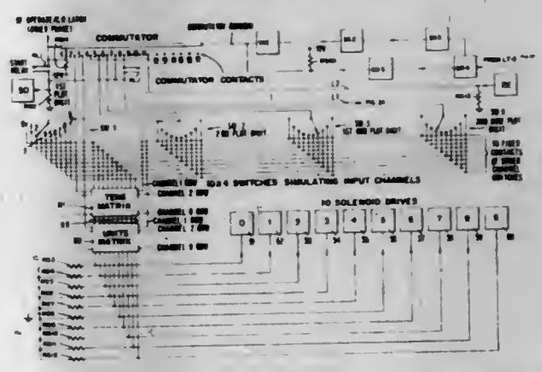
1. An accumulator of coins of different sizes, comprising in combination: an actuator movable from a normally inoperative position to an operative position; a shiftable latch member movable from an inoperative position in non-interfering relationship with movement of the actuator, to an operative position barring movement of the actuator to the operative position; a coin magazine comprising a plurality of coplanar runways, said runways each including an elongate inclined shelf to support the coins on edge in a common plane, and along which the coins may roll by gravity toward the lower ends of the shelves, the runways each having an open coin entry end receptive of coins deposited in the several runways; individually adjustable coin stops intermediate the ends of the runway; and means supported by accepted coplanar coins resting in edgewise contact upon the several inclined shelves, for holding the latch member in the inoperative position favoring unobstructed movement of the actuator to the operative position.

3,270,849
PNEUMATIC KEYBOARD INPUT DEVICES
Benjamin F. Griffin, Jr., Fairfax County, Va., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 18, 1961, Ser. No. 145,947
17 Claims. (Cl. 197—15)



1. A keyboard mechanism comprising:
(a) a keyboard having a key thereon,
(b) a bistable pure fluid switch having an input channel, a first channel connected with said input channel and terminating at an opening in said key, and an output channel connected with said input channel,
(c) the chamber formed by the intersection of said input channel, said first channel, and said output channel having a configuration whereby a fluid stream flowing through said input channel normally flows through said chamber and said first channel and whereby upon and subsequent to closure of said opening said fluid stream flows through said output channel,
(d) and a control signal channel terminating at an orifice in said chamber for deflecting said fluid stream back to said normal path of fluid flow through said first channel.

3,270,850
RECORDING DEVICE
Kenneth L. Smith, Bassett, Southampton, Julian Bowen, Winchester, and Terrence G. Bowker, Romsey, England, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 29, 1961, Ser. No. 134,687
2 Claims. (Cl. 197—19)

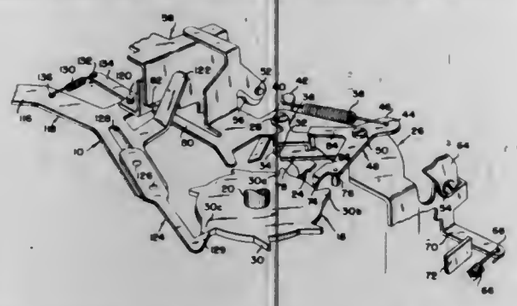


1. Apparatus operable under the control of digital signals representative of the values of a plurality of separate input variables for printing on a record medium the respective digital values of the input variables in assigned columns thereof as well as a distinctive graphical symbol for each said variable at a position on said record medium determinative of the value of the variable, comprising a first storage device storing the respective digital values of said variables; a typewriter type of printing device having a moving carriage, electrically operated numeral and symbol printing instrumentalities, and function controls including carriage space and tabulate devices; an emitter on said typewriter for emitting signals which manifest the displacement of the typewriter carriage; means under control of said first storage device and said emitter for controlling the sequential operation of said numeral printing instrumentalities and said function controls to print the respective digital values of said input variables in predetermined columns on said record medium; a second storage device; means under control of said first storage device and said emitter for entering the digital values stored in said first storage device in said second storage device; and means under control of said emitter and said second storage device for reading out the data stored in said second storage device in ascending order of magnitude and controlling the carriage tabulating and spacing controls as well as the symbol printing instrumentalities to print the graphical symbols representative of the respective variables at positions on said record medium manifestive of the values thereof.

3,270,851
TYPEWRITER
Arthur C. Goldsmith, La Fayette, and Anthony N. Paone, Syracuse, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Filed Aug. 8, 1963, Ser. No. 300,823
2 Claims. (Cl. 197—84)

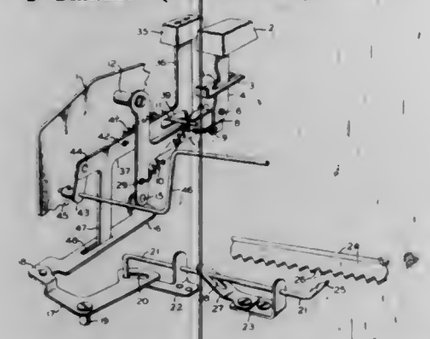
1. In combination in a typewriter or like machine: a carriage; a starwheel movable concomitantly with said carriage; an escapement operable to free the carriage for incremental movement in the letter space direction including a pivotally mounted dog rocker, a holding dog mounted on said rocker normally engaged by a tooth of and restraining the starwheel against movement; type key operated means for pivoting said dog rocker to disengage

the holding dog from the starwheel tooth and free the starwheel for rotation; and independent key operated means operable to pivot said dog rocker and disengage the holding dog and simultaneously position in the path of the starwheel restraining means effective to limit the movement of the carriage to a predetermined fraction of its normal letter space increment, comprising a pivotally



mounted actuator including dog rocker pivoting cam means, a starwheel tooth engageable dog fixed to said actuator, spring means biasing said actuator in a direction effective to hold said dog out of engagement with the teeth of the starwheel, and a key operated motion transmitting linkage effective to pivot the actuator against the bias of said spring and move said dog into the path of said starwheel.

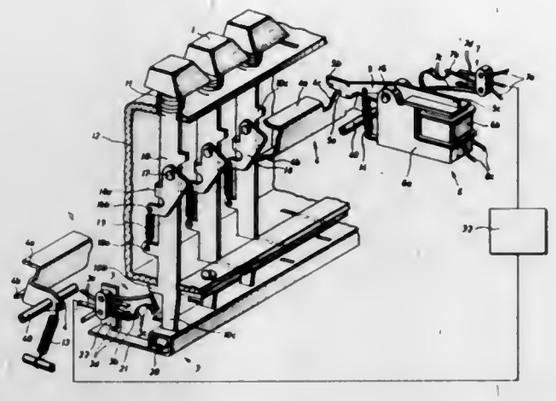
3,270,852
TYPEWRITER ERASURE MECHANISM
Robert Fondiller, 33 W. 63rd St., New York 23, N.Y.
Filed Feb. 4, 1963, Ser. No. 255,966
5 Claims. (Cl. 197—91)



1. In a typewriter, a ribbon vibrator, mechanism for shifting said vibrator, a carriage rack, mechanism for back spacing said carriage rack, a manually operable key, a first linkage coupling said shifting mechanism to said key for rendering said shifting mechanism responsive to the operation of said key, a second linkage coupling said back spacing mechanism to said key for moving said back spacing mechanism a character space interval plus an overtravel portion in response to the operation of said key, and locking means for maintaining said key operated, said locking means being arranged to permit the partial resetting of said key to relax said back spacing mechanism said overtravel portion.

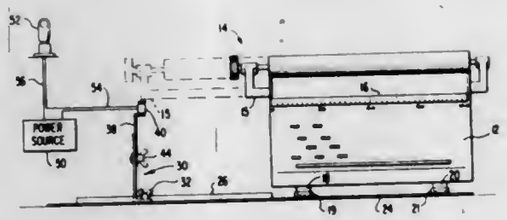
3,270,853
KEYBOARD APPARATUS HAVING MEANS TO CONTROL DURATION OF ACTUATION OF CIRCUIT
Heinz Gerjets, Hans Elsner, and Siegfried Wesselhöft, Wilhelmshaven, Germany, assignors to Olympia Werke A.G., Wilhelmshaven, Germany
Filed June 22, 1965, Ser. No. 465,984
Claims priority, application Germany, June 24, 1964, O 10,214
20 Claims. (Cl. 197—98)

1. Electric operation control apparatus, comprising, in combination, a set of selector members; a set of selector switches respectively operated by said selector members; a set of electrically operable means respectively connected with said selector switches; control means operable by each actuated selector member; a start switch actuated by said control means; and an electric timing device having an output connected with said selector switches and an



input connected with said start switch, said device being energizable under the control of said start switch for producing at said output a working impulse so that any electrically operable means whose correlated selector member and selector switch are actuated, is energized independently of said selector members.

3,270,854
VISIBLE MARGIN SIGNAL APPARATUS
Henry C. Baker, P.O. Box 102, Bradley, Maine
Filed Sept. 2, 1964, Ser. No. 393,935
2 Claims. (Cl. 197—187)



1. In combination with a typewriter having a movable carriage and a copy scale for designating letter spaces between left and right margin positions of the movable carriage, apparatus which is readily coordinated with the typewriter copy scale, without modification of the typewriter, to produce a visible signal at a desired right margin position for the movable carriage comprising

elongated base bar means including means for fixing the position of the elongated base bar means with relation to the typewriter so that longitudinal movement along the elongated base bar means coincides with movement of the movable carriage,

a base copy scale mounted on the elongated base bar means, the base copy scale including scale markings corresponding to the typewriter copy scale markings, with the base copy scale and typewriter copy scale being aligned longitudinally upon positioning of the elongated base bar means with relation to the typewriter,

means for coordinating scale markings of the base copy scale with the typewriter copy scale,

vertically-oriented switch support means mounted on the base bar means,

means for moving the switch support means toward and away from typewriter along the base copy scale longitudinally of the elongated base bar means to select a marking along the base copy scale corresponding to desired right margin position for the movable carriage,

indicator means attached to the switch support means for indicating the position of the switch support means along the base copy scale,

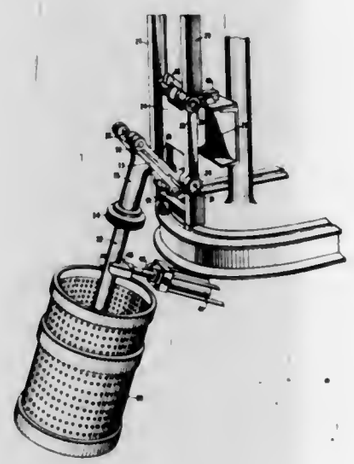
a switch held in fixed position by the switch support means, without interconnection with the movable carriage, so as to be mechanically actuated by the movable carriage at the selected marking along the base scale corresponding to the desired right margin position for the removable carriage,

means for adjusting the vertical position of the switch to contact the movable carriage upon movement of the movable carriage to the desired right margin position,

a source of electrical power, and

light means connected to the source of electric power through the switch so as to give a visible indication of desired right margin for the movable carriage upon mechanical contact of the movable carriage with the switch.

3,270,855
BARREL TREATMENT MACHINE FOR SMALL ARTICLES
Willard J. Harper, Colts Neck, and Paul A. Hauck, Freehold, N.J., assignors to Hanson-Van Winkle-Munning Co., Matawan, N.J., a corporation of New Jersey
Filed Apr. 8, 1964, Ser. No. 358,188
19 Claims. (Cl. 198—19)

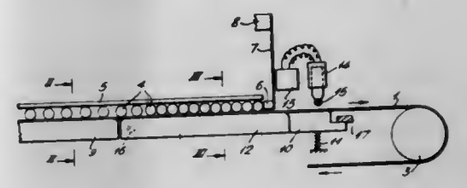


1. In a machine for the treatment of small articles in which a barrel through its shaft and shaft bearing is carried in a normal operative attitude by a carriage which is raised and lowered by an elevating mechanism and moved around horizontally by conveying mechanism to positions over treatment tanks into which the barrel is sequentially lowered throughout a cycle of treatments, the improvement comprising

(a) support means for the barrel shaft having pivotal connection to said carriage for permitting of a lowering movement of the barrel below normal operative attitude to present the open end of the barrel upwardly for loading, and

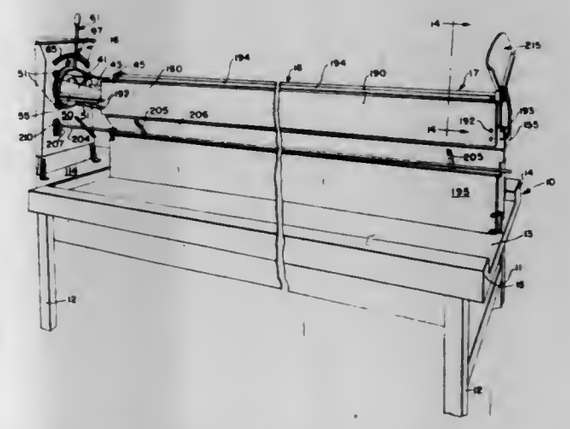
(b) detachable means between said carriage and support means for normally retaining the barrel in normal operative position.

3,270,856
ARTICLE ASSEMBLING APPARATUS
George Dearsley, Richmond, Va., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Jan. 28, 1964, Ser. No. 340,669
Claims priority, application Great Britain, Feb. 25, 1963, 7,525/63
9 Claims. (Cl. 198—31)



1. In a continuously moving conveyor, apparatus for conveying a stream of articles and for arresting at least part of the conveyed stream or articles, comprising support means pivotally mounted on a horizontal axis at one end and yieldably supported at the other end, endless movable member means for conveying a stream of articles thereon and being supported at least in part by the support means, rail means, extending along and parallel to said endless member, stop means adjacent the downstream end of the endless member means for arresting articles being conveyed, sensing means adjacent the stop means for sensing the number of conveyed articles arrested by the stop means, and actuating means responsive to the sensing means for urging the support means about its pivotally mounted end to disengage the endless member means from a number of adjacent conveyed articles upstream of the stop means.

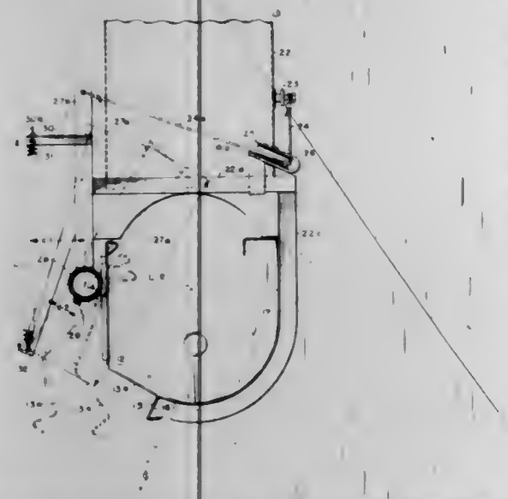
3,270,857
SCREW-CONVEYOR FEEDER
Raymond S. Wilkes and Alvin E. Klouda, Moline, and Etlar A. Henningsen, Geneseo, and Arnold B. Skromme, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,822
21 Claims. (Cl. 198—64)



1. A material feeding device comprising: a material container; an elongated substantially horizontal auger housing having an inner end adjacent the container and extending therefrom to an outer end, the housing further having side opening means therein; an auger in the housing; longitudinally spaced means supporting the housing for rotation thereof about its axis; adjusting means at the inner end of the housing for angularly and selectively

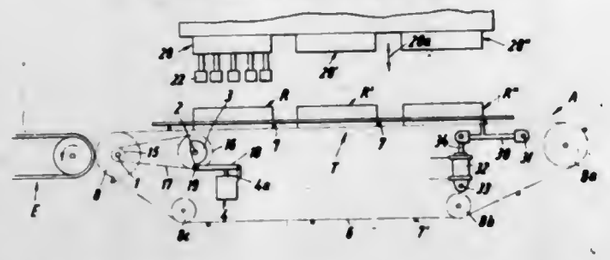
positioning the housing about its axis to effect the angular location of the side opening means; a latching device at the outer end of the housing for locking the latter end at any of a plurality of angular positions; a control element extending alongside the housing between the inner end closely adjacent the adjusting means and connected to the locking device whereby an operator may selectively lock the outer end at a selected angular position about the axis and may selectively adjust the inner end at the same or different angular positions to thereby vary the location of the side opening means at both ends; a faced member adjacent to and extending radially from the outer end and having an indicia bearing surface facing the inner end; and an indicator element operatively associated with the auger housing at the outer end and movable relative to the indicia bearing surface to thereby indicate the angular position of the outer end.

3,270,858
LATE OPENING, EARLY CLOSING GATE MECHANISM FOR BUNK FEEDER
Victor C. Fuhrwerk, Celina, and Paul A. Luthman, Maria Stein, Ohio, assignors to Avco Corporation, Coldwater, Ohio, a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,333
3 Claims. (Cl. 198—64)



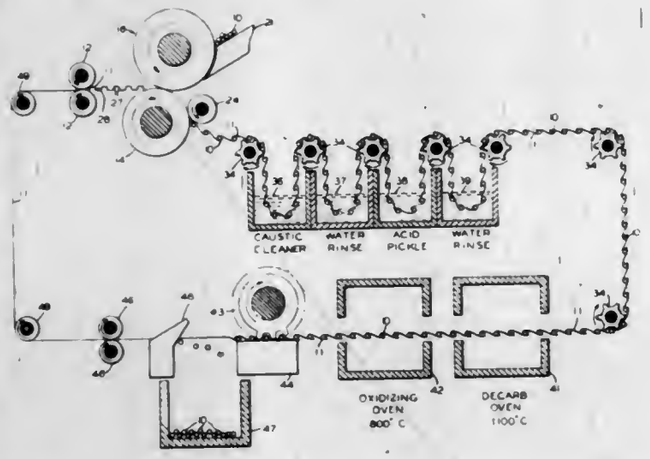
1. A cattle feeder comprising a longitudinally extending conveyor for conveying flowable feed along a series of adjacent coextensive feed bunks for depositing substantially equal amounts of feed in each bunk, said conveyor having a plurality of side gates mounted on longitudinally aligned pivots adjacent the sides thereof, a lever means for each gate fixed at one end to a respective one of said pivots, an arm extending approximately at right angles to said lever means, resilient means for each gate, each resilient means having an extensible longitudinal axis spaced from the axis of said pivots for maintaining each gate in normally closed position, each of said resilient means being connected to one end to a fixed point spaced from the axis of said pivots, the other end of each resilient means being connected to the end of a respective arm, whereby said resilient means is approximately parallel to said lever means, and means for independently actuating one of said lever means from the others of said lever means for opening said gates against the force exerted by said resilient means, said axes of said pivots and said resilient means approaching each other as each of said lever means is actuated to open said gates, said means for independently actuating one of said lever means from the other of said lever means including means for opening the first gate subsequent to the time the other gates are opened and closed prior to the time the other gates are closed.

3,270,859
APPARATUS FOR HANDLING BOTTLES AND SIMILAR CONTAINERS
Günter Bargel, Dortmund-Korne, Germany, assignor to Holstein & Kappert, Dortmund, Germany
Filed May 13, 1964, Ser. No. 366,984
12 Claims. (Cl. 198—110)



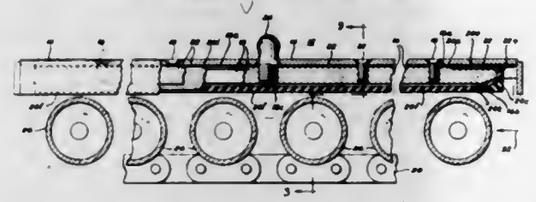
1. In an apparatus for transferring bottles and other types of containers into and out of crates and similar receptacles, in combination, a conveyor arranged to advance receptacles consecutively along an elongated path and toward a transfer station at which the receptacles receive a supply of containers or are relieved of their contents, said conveyor including motion transmitting means arranged to engage a receptacle while moving along said path and abutment means fixed to said conveyor for movement therewith along said path; drive means for continuously transmitting driving torque to said conveyor tending to continuously drive said conveyor in a predetermined direction; control means for regulating the speed of said conveyor in such a way that whenever a receptacle approaches the transfer station, the speed of the conveyor decreases; and arresting means located adjacent said path and intermittently movable into the path of said abutment means for preventing the movement of said conveyor in said predetermined direction against the action of said drive means when a receptacle reaches the transfer station.

3,270,860
METHODS OF AND APPARATUS FOR PROCESSING ARTICLES
Henry R. Siebach, Reading, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 9, 1963, Ser. No. 314,894
8 Claims. (Cl. 198—179)



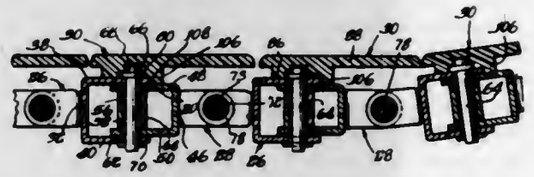
4. Apparatus for processing articles, which comprises:
means for corrugating a pliable carrier;
means for inserting articles into the corrugations of the corrugated carrier;
means for deforming the corrugations of the carrier in a manner such that each corrugation releasably secures an article therewithin;
means for advancing the carrier after insertion of the articles therein through at least one processing station; and
means for applying tension to said carrier after its emergence from said processing station to elongate the carrier and release the articles therefrom.

3,270,861
ARTICLE CONTROL DEVICE FOR ROLLER SLAT CHAIN CONVEYOR
Reginald A. Reed, Menomonee Falls, and Wilton C. Warner, Colgate, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,533
1 Claim. (Cl. 198—183)



The combination with a roller slat chain conveyor having its rollers individually rotatable about their longitudinal axes, of a device comprising an elongated, resilient member secured to a rigid form member to create a closed cavity therebetween, and means connecting said cavity to a fluid source to selectively effect a change in the volume of said cavity to cause said resilient member to assume an expanded position wherein it directly frictionally engages and closely conforms to the arcuate surfaces of said rollers to effect rotation thereof when they pass thereacross, and said resilient member being disengaged from said rollers in its unexpanded position.

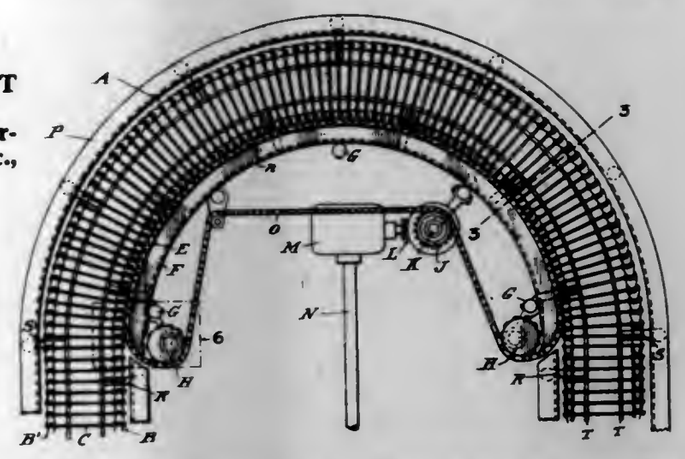
3,270,862
CONVEYOR PLATE STRUCTURE
Nathaniel D. Goldberg, 125 N. Racine Ave., Chicago, Ill.
Filed July 10, 1964, Ser. No. 381,867
11 Claims. (Cl. 198—189)



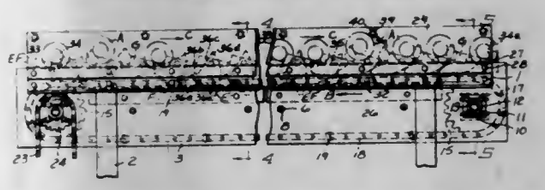
10. In a conveyor structure, a chain including a plurality of pivotally connected links, a plate member operatively connected to a first surface of a first one of said links, a depending element of said plate operatively engaging a second peripheral surface of said first link, a second link connected to said first link in such a manner that said depending element slidably engages said second link.

3,270,863
CONVEYOR DRIVING UNIT
Virgil E. Ackles, 15899 S. San Pedro St., Los Angeles, Calif.
Filed June 22, 1964, Ser. No. 376,894
1 Claim. (Cl. 198—203)

A mechanism for driving a link conveyor having a portion traversing a horizontal arc and having an arcuate inner margin with a multiple of spaced projections on said margin, comprising an endless sprocket chain having an arcuate run abutting said arcuate margin and engaged at intervals throughout its length with said projections, said sprocket chain also having a length connecting the ends of said arcuate run, means engaging said length of chain for driving the latter and thereby propelling said conveyor, a fixed arcuate rail slidably abutting the inner side of said arcuate run for holding said run in engagement with said projections, direction rollers at the ends of said arcuate rail around which said sprocket chain is passed, said direction rollers each embodying a concentrically mounted hub, stud-shafts on which said hubs are eccentrically mounted in fixed relation thereto, said stud-shafts being adapted to be turned to shift said direction rollers to adjust said sprocket chain longitudinally relative to said conveyor, and means for detachably securing said stud-shafts against rotation to releasably hold said hubs in fixed positions.

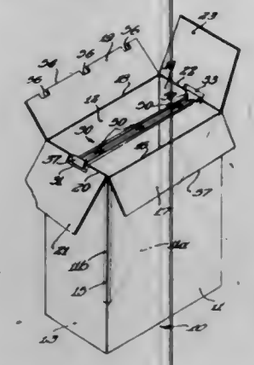


3,270,864
WORKPIECE CONVEYOR AND STORING UNIT
John G. Kay, Detroit, Mich., assignor to F. Jos. Lamb Company, Detroit, Mich., a corporation of Michigan
Filed Nov. 30, 1964, Ser. No. 414,748
12 Claims. (Cl. 198—219)



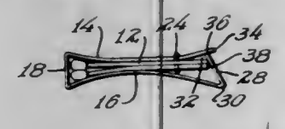
1. A conveying unit comprising a support structure including a pair of generally horizontally spaced saw-tooth tracks mounted thereon, each track having a series of successive bearing surfaces which incline downwardly and forwardly in the direction of travel of the workpieces through the unit, there being a stop surface extending upwardly from the front lower extremity of each bearing surface to the higher rear extremity of the next successive bearing surface, the stop and bearing surfaces on the two tracks being transversely aligned whereby a workpiece is adapted to roll successively down each pair of transversely aligned bearing surfaces, cam means associated with each pair of transversely aligned bearing surfaces and pivotally supported for rotation in a generally vertical plane, said cam means being eccentric about their pivot axes whereby they are adapted to orient themselves to a predetermined position in response to gravity, means on each cam means adapted when the cam means is rotated through a predetermined angle to lift a workpiece from the front lower extremity of one bearing surface and deliver it to the higher rear extremity of the next successive bearing surface and endless drive means having cam actuating means thereon which when the drive means are driven in one direction are adapted to engage said cam means successively and rotate them from their lifting position to their delivery position whereby the workpieces move forwardly along said tracks in a progressive succession.

3,270,865
DEXTEROUS HANGER BAR AND CONTAINER
Francis P. Brennan, 1057 Rolling Drive, Lisle, Ill.
Filed Mar. 16, 1965, Ser. No. 440,228
6 Claims. (Cl. 206—7)



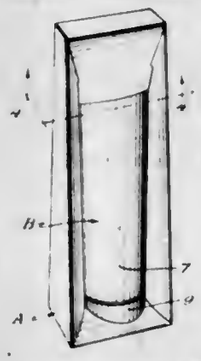
5. A corrugated container comprising,
front, rear and opposed side panels all disposed vertically, and corresponding front, rear and opposed flaps
said panels and said flaps having scorelines formed between each corresponding panel and flap,
said front and rear flaps and said opposed flaps arranged to fold into horizontal position to form a cover for the container,
said opposed flaps each being recessed adjacent a corresponding scoreline,
a cross bar extending between said opposed side panels and having mounting means engaging said side panels at the recessed portions of said flaps,
said cross bar having a plurality of L-shaped clips each including a leg spaced above said cross bar and all opening in a common direction,
one of said front and rear flaps having recesses formed therein through which said clips extend when said one flap is folded downward,
whereby said one flap will engage the hooks of hangers suspended on said cross bar,
and the other of said front and rear flaps having its margin received between said clip leg and said one flap,
thereby locking the hangers on the cross bar against inadvertent movement.

3,270,866
MATCH BOOK
Philip J. Schoenberger, 947 Bellows Ave., West St. Paul, Minn. 55118
Filed July 7, 1965, Ser. No. 470,001
7 Claims. (Cl. 206—29)



7. A match book cover in combination with a packet of matches comprising:
(a) a cover having a back portion and a front portion hingedly connected at one end to an intermediate portion to overlie said packet of matches,
(b) said back and front portions each being of a length greater than the length of said match packet,
(c) means securing said back cover portion to said packet of matches at a point spaced from the free end of said back portion to define a recess between said back portion and said packet of matches,
(d) free ends of said back portion and said front portion projecting beyond the end of said packet of matches,
(e) a flexible tab hingedly secured to the free end of said front cover portion adapted to be inserted into said recess to hold said cover closed,
(f) a strike plate secured in overlying relation of said cover.

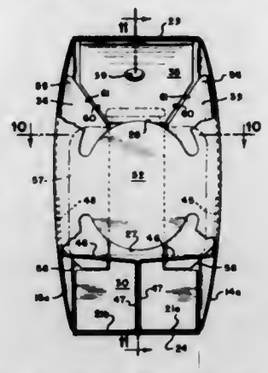
3,270,867
TUBE DISPLAY CARTONS
Russell J. Hennessey and Richard F. Gulliver, St. Paul, Minn., assignors to Waldorf Paper Products Company, Ramsey, Minn., a corporation of Minnesota
Filed Sept. 1, 1964, Ser. No. 393,604
12 Claims. (Cl. 206—45.14)



1. A carton adapted for use as a display for a collapsible tube having a flattened end and a neck end bearing a tube cap,
said carton comprising a generally rectangular back panel,
side walls hinged to opposite edges of said back panel and extending forwardly therefrom,
front liner panels hingedly connected to said side walls and converging rearwardly toward the back panel,
rear liner panels hinged to the rear edges of said front liner panels,
anchoring panels hinged to the rear edges of said rear liner panels and secured in face contact to said back panel,
the lines of connection between said front and rear liner panels being spaced apart a distance substantially equal to the diameter of the tube adapted to be displaced,
a top wall extending forwardly from the upper edge of said back panel,
a tube end retaining flap hinged to the forward edge of said top wall and adapted to be folded against the flattened end of the tube,
cooperable means on said retaining flap and on said liner panels for holding the flap locked in tube retaining position,
a bottom wall hinged to the lower edge of said back panel and extending forwardly therefrom,
a tube cap retaining flap hinged to the forward edge of said bottom wall and having a notched end adapted to straddle the tube cap, and
corner flaps holding said side walls and said bottom wall connected.

3,270,868
CURVED FRONT PANEL DISPLAY CARTON
Vincent R. Pantalone, Closter, N.J., assignor to Federal Paper Board Company, Inc., a corporation of New York
Filed June 11, 1964, Ser. No. 374,450
8 Claims. (Cl. 206—45.19)

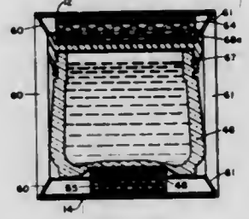
3. A rectangular display carton having a front wall with a window therein, a rear wall spaced therefrom and side walls having top and bottom closure flaps, the bottom flaps each having a central lengthwise score line dividing the flap into front and rear sections, and platform means for supporting an article in display position with respect to said window comprising a pair of strips, one projecting from the front section of each of the bottom closure flaps, the outer end portions of such strips each being glued to the inner surface of the respective side walls, and said strips having score lines causing the remainder thereof to be folded into rectangular position when the closure flaps from which they project are folded to closed position.



ERRATUM

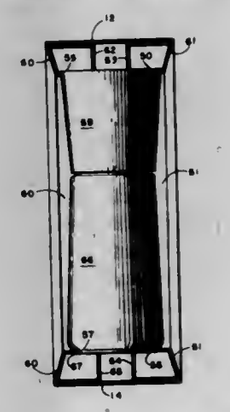
For Class 206—45.33 see:
Patent No. 3,271,357

3,270,869
DISPLAY PACKAGE FOR JARS AND THE LIKE
Robert V. Burt, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 12, 1964, Ser. No. 403,215
3 Claims. (Cl. 206—45.33)



1. A package for a jar comprising a frame, said frame being formed from a frame blank made of paperboard material and generally configured in the form of an elongated strip, said frame blank having two spaced parallel scores running longitudinally from one end of said elongated strip to the other end thereof, a plurality of transverse scores at intervals along the said frame blank and being substantially perpendicular to said parallel longitudinal scores thereby dividing the central portion of the frame blank into four panels including two side panels and two end panels, said side and end panels being alternatively spaced along said frame blank, a flap articulated to and extending beyond the panel at one end of said frame blank, an extending portion projecting laterally outwardly from each of the longitudinal scores which define the edge portions of the said panels, each of said extending portions being at least partially separated by angular relief cut-outs outwardly of each of said transverse scores, each of said extending portions having three score lines all of which are parallel to the parallel scores running longitudinally from one end of said elongated strip to the other, said three score lines dividing the extending portions into an inner area, an inner intermediate area, an outer intermediate area and an outer area, each of said extending portions being folded into a tubular support with the outer area of each extending portion being adhered to its adjoining panel so that each side and end panel has a pair of spaced substantially rigid tubular supports in parallel relationship alongside the longitudinal scores forming the upper and lower extremities of said side and end panels, said tubular supports being formed so that the outer intermediate area of each is in substantially abutting relationship, an aperture cut in both tubular supports extending from the end panels to form an opening therein, an adapter member shaped to conform to the configuration of each of said openings and being inserted therein so that one end of each adapter rests on the outer area of the tubular supports adhered to the end panels, a jar, a cap on said jar, said jar having a recessed base, said cap having a recessed top, said adapter members engaging the recess in the base of the jar at one end and the recess in the cap at the other end so that the cap and jar are firmly supported in spaced relation with respect to the end panels, said side and end panels being folded into a substantially rectangular frame by folding the said frame blank on said transverse scores so that the said tubular supports face inwardly and said cap and base of said jar are supported by said adapter members without obscuring the side surfaces of the jar and cap, said flap at one end of said frame blank being secured on the panel at the opposite end of said frame blank to complete the frame structure around said jar, said frame structure being overwrapped with a flexible and heat shrinkable plastic film, said film being heated and shrunk on said frame structure to impart greater rigidity to said frame structure and to retain said secured flap in the completed package.

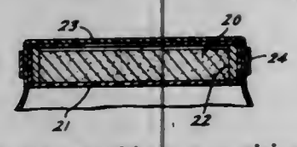
3,270,870
DISPLAY PACKAGE FOR BOTTLES AND THE LIKE
Robert V. Burt, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 12, 1964, Ser. No. 403,287
3 Claims. (Cl. 206—45.33)



1. A package for a bottle comprising a frame, said frame being formed from a frame blank made of paperboard material and generally configured in the form of an elongated strip, said frame blank having two spaced parallel scores running longitudinally from one end of said elongated strip to the other end thereof, a plurality of transverse scores at intervals along the said frame blank and being substantially perpendicular to said parallel longitudinal scores thereby dividing the central portion of the frame blank into four panels including two side panels and two end panels, said side and end panels being alternately spaced along said frame blank, a flap articulated to and extending beyond the panel at one end of said frame blank, an extending portion projecting laterally outwardly from each of the logitudinal scores which define the edge portions of the said panels, each of said extending portions being at least partially separated by angular relief cut-outs outwardly of each of said transverse scores, each of said extending portions having three score lines all of which are parellel to the parallel scores running longitudinally from one end of said elongated strip

to the other, said three score lines dividing the extending portions into an inner area, an inner intermediate area, an outer intermediate area and an outer area, each of said extending portios being folded into a tubular support with the outer area of each extending portion being adhered to its adjoining panel so that each side and end panel has a pair of spaced substantially rigid tubular supports in parallel relationship alongside the longitudinal scores forming the upper and lower extremities of said side and end panels, said tubular supports being formed so that the outer intermediate area of each is substantially perpendicular to the side and end panels, an aperture cut in both tubular supports extending from the end panels, said apertures being shaped to receive the cap and base, respectively, of a bottle, said apertures being cut to leave upstanding inner wall portions on the outer intermediate areas, said upstanding inner wall portions bearing against said cap and said base so that the cap and base are firmly supported in spaced relation to the end panels, said side and end panels being folded into a substantially rectangular frame by folding the said frame blank on said transverse scores so that the said tubular supports face inwardly and said cap and base of said bottle are supported in said apertures, said flap at one end of said frame blank being secured to the panel at the opposite end of said frame blank to complete the frame structure around said bottle, said frame structure being overwrapped with a flexible and heat shrinkable plastic film, said film being heated and shrunk on said frame structure to impart greater rigidity to said frame structure and to retain said secured flap in the completed package.

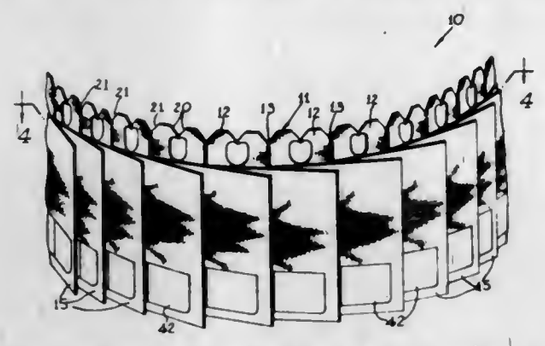
3,270,871
PACKAGE
Rosalie Pushkin, 917 Oak St., Bellmore, N.Y.
Filed Sept. 5, 1963, Ser. No. 306,841
1 Claim. (Cl. 206—46)



An enclosure for an object comprising, a cylindrical annulus around said object, a sheet of flexible material covering one end of said annulus and wrapped around the outer periphery of said annulus and folded inwardly over the object, a second sheet of flexible material covering the opposite end of said annulus on the top of said object and wrapped around the outer periphery of said annulus and over the wrap formed by the first sheet, a second annulus having an inner diameter equal to or greater than the outer diameter of the first annulus and twice the combined thicknesses of the first and second sheets of the flexible material, said second annulus surrounding the inner annulus and the wrapping sheets of material concentrically.

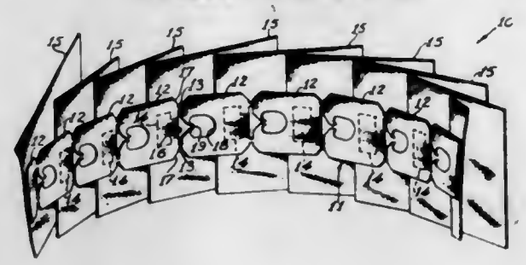
3,270,872
MULTI-CLOSLURE LABEL-BEARING STRIP
Floyd G. Paxton, P.O. Box 2098, Yakima, Wash.
Filed Apr. 20, 1965, Ser. No. 449,574
2 Claims. (Cl. 206—56)

1. In a multi-closure label-bearing strip, wherein the closures each have a bag confining mouth and a narrow opening located in a longitudinal side edge of said strip and communicating with said mouth for admitting a bag neck into the latter, the structure comprising: a multiple of closures of transversely stiff, thin sheet material comprising polystyrene or the like, arranged consecutively with their transverse edges in closely spaced relation; a pair of transversely spaced webs integrally connecting with each consecutive pair of closures in frangible areas of union located between opposite ends of said webs and said closely spaced edges of said consecutive closures, said frangible areas being spaced far enough apart lengthwise of said strip and being sufficiently restricted in the cross-sectional dimension thereof, measured transversely of said strip, that compressive forces applied in the plane of said strip from opposite directions respectively to said consecutive closure and through said closures to opposite ends of said pair of webs, without causing said closures to buckle, will cause the material of said strip to substantially simul-



taneously crack in said frangible areas of union at the opposite ends of said pair of webs and thus separate said webs from said closures and said closures from each other; and a multiple of rectangular stiff, thin, flat labels, the area of each of which is substantially larger than that of a closure, a corner portion of each of said labels being affixed to one of said closures so as not to overlie said mouth or edge opening of said closure, and so as not to overlie the transverse edge of said closure which will be located at the end of said strip when said closure becomes the endmost closure of said strip, each label being feathered in overlapping relation with the labels affixed to adjacent closures.

3,270,873
BAG CLOSURES AND INDIVIDUALLY ATTACHED LABELS UNITED IN STRIP FORM
Floyd G. Paxton, P.O. Box 2098, Yakima, Wash.
Filed Apr. 20, 1965, Ser. No. 449,575
2 Claims. (Cl. 206—56)



1. A matrix in strip form for consecutively producing a series of bag closures each of which carries a stiff label substantially larger than said closure, said matrix comprising a strip of relatively thin and stiff but springy flat sheet plastic material, said strip being weakened at regularly spaced longitudinal intervals along a transverse line normal to the side edges of said strip by means eliminating the material of said strip bordering said transverse line, with the exclusion of a pair of narrow webs located on said line, said means including a hole bordering on said line and having opposite extremities located on said line, said webs being readily frangible upon the imposition of a moderate amount of traction to said strip from opposite sides of said line, said strip having, adjacent to each of said holes, an internal aperture which communicates in one direction with said hole through a narrow passageway, said strip also having a blank space in the opposite direction from said aperture, said strip also including a series of labels, each of which has an end portion thereof glued to said strip in one of said blank spaces

so that said label extends symmetrically with said strip away from the aperture adjacent said blank space, whereby the separation of said strip along a given line as aforesaid, converts the portion of said strip adjacent said line having said aperture into a bag closure having a label glued thereon as aforesaid, with the end portion of said closure having said aperture extending forwardly from said label and thus being accessible for use in applying said closure to the neck of a plastic bag.

3,270,874
POLYSTYRENE MULTI-CLOSURE STRIP SCORED FOR SEPARATION INTO INDIVIDUAL CLOSURES
Frank E. Hilton, Milwaukie, Oreg., assignor, by mesne assignments, to Kwik Lok Corp., Yakima, Wash., a corporation of Washington
Filed Aug. 27, 1965, Ser. No. 483,122
2 Claims. (Cl. 206—56)



2. In a multi-closure strip, wherein the closures each has a bag-neck-confining mouth and a narrow opening located in a longitudinal side edge thereof and communicating with said mouth for admitting a bag-neck therein, said mouths and openings being symmetrical with respect to first transverse axes across said strip,

the structure comprising:

a plurality of closures of .035 inch thick polystyrene material arranged in side-by-side relation in said strip,

the opposite edges of said strip being die cut to form notches therein,

said notches being arranged symmetrically relative to second transverse axes which are equally spaced from said first transverse axes and parallel thereto,

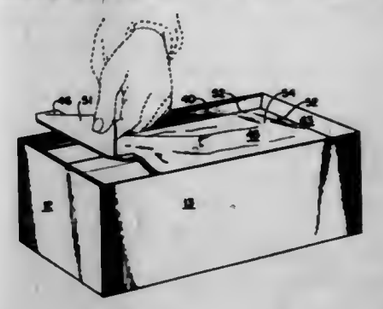
said second transverse axes defining the sides of adjacent closures,

said strip being scored to a depth of between .008 and .010 inch on the opposite surfaces thereof along each of said second transverse axes with a single, continuous score extending edge-to-edge to make said strip frangible along said second transverse axes, said scores an each said second axes being in register,

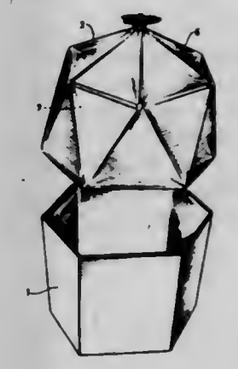
thereby to permit individual closures to be separated from said strip by bending said strip along said second transverse axes.

3,270,875
REMOVABLE COVER FOR DISPLAY PACKAGE
Robert V. Burt, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 3, 1965, Ser. No. 452,717
7 Claims. (Cl. 206—57)

1. In a package for holding sheet material in a stack, said package having side walls, end walls and a top having a relatively narrow rim element formed thereon, a relatively large central opening in said top defined by said narrow rim, a stack of sheet material in said package with the upper edge of the stack bearing against said narrow rim of said top and being retained in the package by said narrow rim, the improvement comprising a cover member interposed between said stack of sheet material and said narrow rim of package material, said cover member comprising a thin, relatively flexible closure sheet of plastic material and a relatively stiff border member adhered to said closure sheet to hold said closure sheet in place under said narrow rim of carton material and to maintain said closure sheet taut and neat in appearance when assembled in position beneath said rim element, said cover member being removable to expose the sheet material by pulling inwardly on the cover member to dislodge the border member from under said narrow rim element of the package.

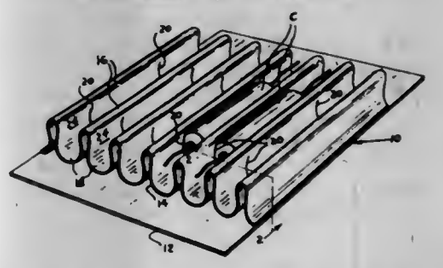


3,270,876
PACKAGE OF REGULAR AND MUTUALLY EQUAL TETRAHEDRONS
Anders Ruben Rausing, Blentarp, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company
Original application Apr. 8, 1963, Ser. No. 271,097. Divided and this application Nov. 16, 1965, Ser. No. 508,076
Claims priority, application Sweden, Apr. 13, 1962, 4,124/62
3 Claims. (Cl. 206—65)



1. A package of mutually equal tetrahedrons, said package comprising a stack of at least two layers with six tetrahedrons in each layer, said stack being completely surrounded by and the tetrahedrons being held in their relative positions by a flexible covering.

3,270,877
PACKAGE FOR COLUMNAR ARTICLES
Hanns E. Hecker, 100 Sanford St., Hamden, Conn.
Filed June 18, 1965, Ser. No. 464,972
4 Claims. (Cl. 206—72)



1. An article package of modular compartmented design for supporting a plurality of generally similarly-shaped columnar article individually in separated compartments against lateral and axial shifting therein, which comprises

(a) a generally flat backing strip of flexible sheet material;

(b) an undulated strip secured at spaced intervals to said backing strip to provide a plurality of article-receiving compartments formed by a repetitive series of peaks and troughs running transversely of the extent of said backing strip,

(1) said trough being wider than said peaks but narrower than the diameter of the columnar articles to be received therein, and

(2) the sidewalls of said troughs being slitted transversely at spaced intervals along their extent to form sling portions which are peripherally continuous with the trough walls, said sling portions corresponding lengthwise of said troughs to the axial length of the bodies of the columnar articles to be retained therein.

3,270,878
DISPLAY PACKAGES
Jerry B. Giesler, Lombard, Ill., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Aug. 5, 1965, Ser. No. 477,421
2 Claims. (Cl. 206—78)



1. A display package including:

(a) a pair of elongated paperboard panels in substantially superimposed relation,

(b) a score line extending across each of said panels parallel to the ends of said panels,

(c) said score lines being in registered relation,

(d) at least one of said panels having a window opening therein,

(e) one said score line intersecting said window opening,

(f) a transparent film secured to said one panel extending across said window opening,

(g) means securing said panels along areas of attachment with said film sandwiched between said panels,

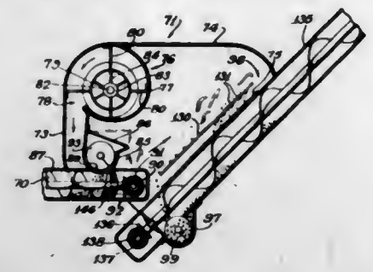
(h) an object having an outline size smaller than said window enclosed on at least one side by said film extending through said window,

(i) each said panel including an ear projecting beyond the periphery of the other said panel whereby said ears may be grasped to pull said panels apart and

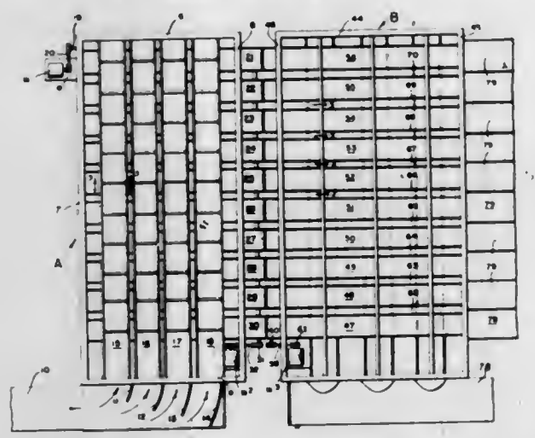
(j) the portions of said panels and film adjoining the edges of said panels intermediate said score lines and said ears being spacedly secured together in areas which are small relative to the area of contact.

3,270,879
PNEUMATIC INCLINED CURRENT SEPARATOR
Elof K. Karlsson, East Moline, Dwight B. Carlson, Rapids City, and Ernest M. Van Buskirk and Richard A. De Pauw, East Moline, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Jan. 10, 1963, Ser. No. 250,625
5 Claims. (Cl. 209—34)

1. A shelled corn cleaning unit comprising a hopper unit including a front vertical wall having an upper continuation rolled upon itself forming a cylinder internally of said hopper and extending across its upper front edge, said continuation terminating rearwardly of said front vertical wall such that the cylinder is not closed, a fan unit within said cylinder adapted to force air to the opening between the front vertical wall and the terminal edge of said continuation, a J-shaped sheet including a leg portion and a hook portion secured to the terminal edge of said continuation having said leg portion substantially parallel to said front vertical wall and said hook portion opening towards the rear of said hopper and terminating along a lip located relatively close to the bottom of said hook portion such that a shallow material trough is formed, a horizontal bottom wall connected to and extending rearwardly from said front vertical wall and forming in cooperation with said hook portion of the J-shaped sheet guide means for directing a stream of air beneath said trough, means for supply shelled corn to said trough, and means within said trough for spreading said shelled corn evenly across said trough such that it will spill evenly over its lip and fall through the stream of air.



3,270,880
SIZING, GRADING AND SORTING DEVICE FOR THIN SKIN VEGETABLES OR FRUITS
Kleber Dessic Brian, Pixley, Budd Jones, Visalia, and Harold Arthur O'Neal, Pixley, Calif., assignors of one-quarter to L. M. Clark, Earlimart, Calif.
Filed Aug. 20, 1963, Ser. No. 303,344
8 Claims. (Cl. 209—73)



1. In a sizing, grading and sorting device, the combination of a power belt feed thereto for products to be sized and graded, the first series of power belts at right angles to said power belt feed, fingers of progressive length extending over the power belt feed to remove products from said belt to said first series of power belts, photoelectric cells mounted above the series of power belts with means for adjusting the height of the photo-electric cell over said series of belts, and means controlled by said photo-electric cells for selectively discharging products from said series of belts.

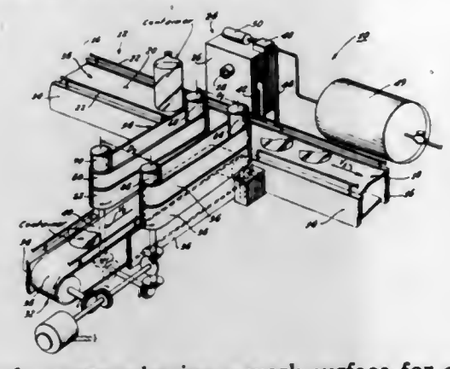
3,270,881
MATERIAL HANDLING SYSTEM
Fredrick L. Calhoun, Torrance, Calif., assignor to Electro-Dynamics Corp., a corporation of California
Filed Jan. 27, 1964, Ser. No. 347,989
16 Claims. (Cl. 209—74)

1. A device of the class described for transferring a workpiece from a first conveyor extending along a first path toward a first particular location to a second predetermined path extending toward a second particular location, said device including the combination of:

a separator disposed in proximity to said first conveyor for propelling the workpiece from the first conveyor along the second path,

a pair of counter-rotating belts disposed in proximity to said location,

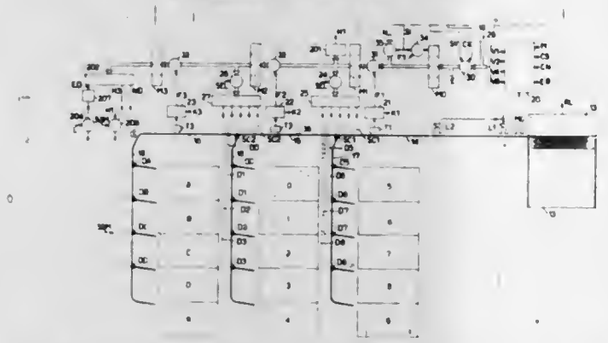
a pair of registering surfaces on said belts disposed on the opposite sides of the path to capture workpieces propelled from the separator and carry the workpieces along said path,



a second conveyor having a work surface for carrying the workpieces, said work surface being disposed adjacent the belts and at an angle thereto so as to gradually engage the workpieces as they are being carried by the belts, and

drive means interconnected with the belts and the conveyor for driving them whereby the two registering surfaces and the work surface will be moving together in the same direction at the same velocity.

3,270,882
DOCUMENT SORTER
Pier Giorgio Perotto, Torino, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Oct. 2, 1964, Ser. No. 401,028
5 Claims. (Cl. 209—74)



1. A document sorter comprising:

(a) a reading station for reading intelligence on documents,

(b) a branched sorting path divided into sections, each one including at least a portion of one or more branches and having associated therewith a distinct memory for storing intelligence,

(c) a plurality of pockets located along said path, each one having an entrance from said path,

(d) a pocket deflector located at the entrance of said pocket,

(e) means for actuating said pocket deflector for directing documents from said path into said pocket,

(f) a branch deflector located at each point of said sorting path where two or more branches diverge from a preceding branch,

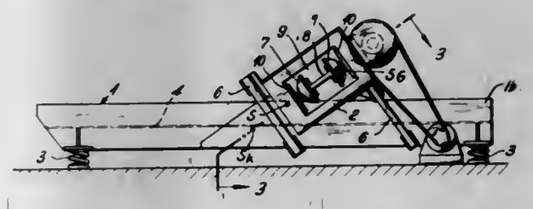
(g) means for actuating said branch deflector for directing documents from said preceding branch into one of said diverging branches,

(h) means fed by said memory for selectively operating the actuating means of the deflectors of the associated section according to the intelligence stored in said memory,

(i) means for conveying documents along said sorting path,

(j) and means for transferring said read intelligence from said reading station into said memory.

3,270,883
SHAKING MACHINE WITH U-SHAPED COUNTERMASS MEMBERS
Rudolf Teuteberg, Werner Nickel, and Friedrich Brenneis, Dortmund, Germany, assignors to Schuchtermann & Kremer-Baum Aktiengesellschaft für Aufbereitung, Dortmund, Germany, a corporation of Germany
Filed Apr. 3, 1963, Ser. No. 270,215
Claims priority, application Germany, Apr. 26, 1962, Sch 31,361
6 Claims. (Cl. 209—329)



1. A shaking machine comprising a spring mounted material handling member and a countermass member resiliently mounted on the material handling member, said material handling member including side members and a screen mounted within said side members, the countermass member being U-shaped disposed with one leg thereof on either side of the material handling member, and having a cross member extending across the material handling member, said side members terminating below said cross member, the legs of said U-shaped member being disposed in parallel relation and substantially in the direction of vibration, each of said legs having means defining a recess therein, a crossarm rigidly connected with said material handling member, the end portions of said crossarm projecting into the said recesses, storage springs disposed in said recesses and operatively interposed between said crossarm and said U-shaped countermass for transfer of vibration between the U-shaped countermass member and the crossarm of the material handling member, and means for imparting vibration to said material handling member and countermass.

3,270,884
DUAL VALVE, DUAL ELEMENT FLUID FILTER ASSEMBLY
Allen R. Bremer, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,063
4 Claims. (Cl. 210—90)

1. A two-stage fluid filter assembly comprising

a head section with an inlet passage and an outlet passage formed therein,

a bowl section removably attached to said head section,

primary filter means removably disposed in said bowl section to define a first annular space between an interior wall of said bowl section and an exterior surface of said primary filter means,

secondary filter means concentrically positioned within said primary filter means and removably disposed in said bowl section to define a second annular space between an interior surface of said primary filter means and an exterior surface of said secondary filter means,

said secondary filter means having an internal third space,

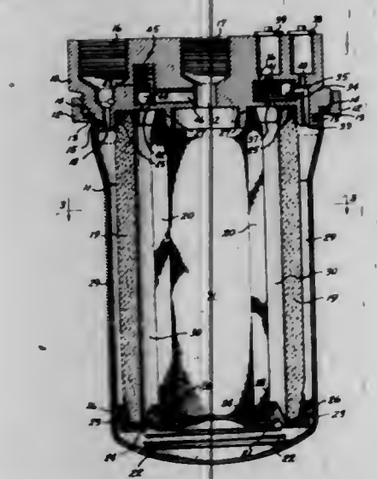
first internal passage means formed in said head section for allowing the passage of fluid from said inlet passage into said first annular space,

first by-pass valve means positioned in said head section and interconnecting said first annular space with said second annular space,

said first by-pass valve means being actuated by a predetermined fluid pressure differential across said primary filter means to by-pass fluid flow around said primary filter means,

second by-pass valve means positioned in said head section and interconnecting said second annular space with said third space,

said second by-pass valve means being responsive to a greater predetermined fluid pressure differential than said first by-pass valve means to by-pass fluid flow around said secondary filter means,



second internal passage means formed in said head section for conducting fluid from said third space into said outlet passage, and

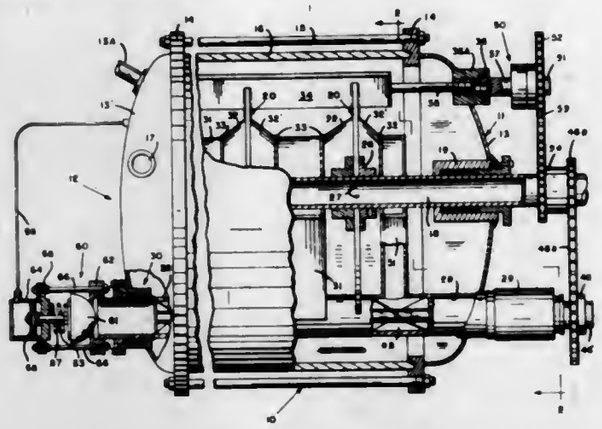
pressure sensitive indicator means positioned in said head section and being operatively connected to said first annular space through a restrictive flow passage means,

said restrictive flow passage means being adapted to smooth out fluid pressure surge conditions of relatively short durations to prevent inadvertent tripping of said indicator means,

said indicator means being responsive to a predetermined pressure increase in said first annular space due to contamination clogging of said primary filter means.

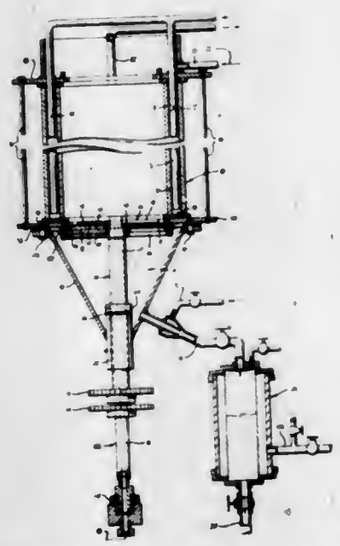
3,270,885
FILTER
Kenneth A. Anderson, Silvis, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,935
3 Claims. (Cl. 210—112)

1. In a pressure filter, a housing adapted to be partially filled with a slurry with super atmospheric pressure thereon; a hollow longitudinally extending shaft mounted for rotation within said housing; a plurality of hollow spaced filter leaves located along said shaft within said housing and fixed to said shaft for rotation therewith; communicating passage means between the interior of said leaves and the interior of said shaft; tubular means extending along the bottom of said housing, said tubular means being closed at one end and open at the other end, which open end extends through an end wall of said housing; chute means extending upwardly from said tubular means between adjacent filter leaves and to an elevation above that of the normal level of the slurry within said housing; scraper blade means adjacent each face of each filter leaf, above the level of slurry within said housing for scraping filter cake from said leaves and feeding it into said chute means; said scraper blade means being hingedly connected for movement relative to said filter leaves and said chutes, and means mounted for reciprocable movement in said housing, and means interconnecting said last mentioned



means with said scraper blade means to simultaneously move said scraper blade means into scraping relationship with both faces of at least one of said leaves; and valve means for closing the open end of said tubular means, said valve means including means for balancing it relative to the pressure within said housing.

3,270,886
APPARATUS FOR SEPARATING FINELY DIVIDED SOLID MATERIALS FROM LIQUIDS
Willard A. Sackett, Woodland, Calif., assignor to Spreckels Sugar Company, San Francisco, Calif., a corporation of California
Filed Apr. 25, 1963, Ser. No. 275,588
9 Claims. (Cl. 210—189)



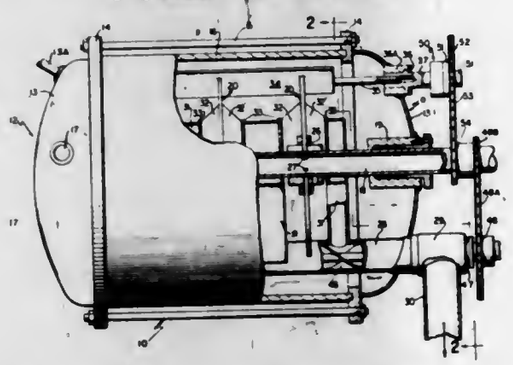
9. In an elongated column wherein a finely divided treating material is continuously circulated in contact with a liquid undergoing treatment, means to continuously supply finely divided treating material to said column, means to continuously supply liquid to be treated to said column, and means to continuously separate the finely divided treating material from the treated liquid at a predetermined controlled rate, said last named means comprising first rotary means having a discharge aperture therein, means to rotate said first rotary means so that said discharge aperture moves relatively rapidly across substantially the entire cross section of said elongated column, second rotary means having a metering aperture therein, separate means to rotate said second rotary means, said first and second rotary means being mounted at one end of said column for rotation in close proximity to one another about an axis coincident with the axis of said column, said rotary means serving to discharge spent finely divided treating material from said column, and means to control the relative rates of rotation of said first and second rotary means to achieve a relatively rapid movement of said discharge aperture adjacent said finely divided solid materials and a controlled metering of said finely divided solid materials through said discharge and metering apertures.

3,270,887
FILTER PRESSES FOR SEPARATING SOLIDS FROM LIQUIDS
Adam Juhasz, Almasfuzito, and Janos Konkoly, Mosonmagyarovar, Hungary, assignors to Almasfuzitoi Timfoldgyar, Almasfuzito, Hungary
Continuation of application Ser. No. 161,340, Dec. 19, 1961. This application Sept. 15, 1965, Ser. No. 490,771
6 Claims. (Cl. 210—225)



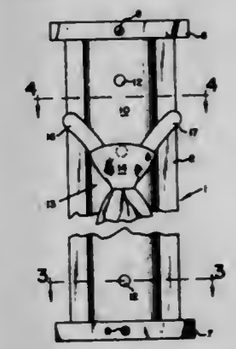
4. A filter press comprising a plurality of filter plates, filter cloths on both sides of said filter plates, filter frames disposed in alternation between said filter plates, means to support said filter plates and filter frames in contiguous relation, means defining expansible chambers carried by the filter frames, each expansible chamber having a pair of elastic side walls each of which confronts the filter cloth on an immediately adjacent filter plate and defines with that filter cloth a filter chamber, means spacing said side walls apart so as to enable them to stretch towards each other under the action of exterior pressure, means for admitting a slurry into said filter chambers through said filter frames, means for abducting a filtrate from beneath said filter cloths through said filter plates, and means for admitting and withdrawing a fluid pressure medium into and from said expansible chambers.

3,270,888
ROTARY LEAF FILTER
Kenneth A. Anderson, Silvis, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,895
5 Claims. (Cl. 210—327)



1. In a pressure filter, a housing adapted to be partially filled with a slurry with super atmospheric pressure thereon; a hollow longitudinally extending shaft mounted for rotation within said housing; a plurality of hollow spaced filter leaves located along said shaft within said housing and fixed to said shaft for rotation therewith; communicating passage means between the interior of said leaves and the interior of said shaft; tubular means extending along the bottom of said housing, said tubular means being closed at one end and extending through one end wall of said housing; chute means extending upwardly from said tubular means between adjacent filter leaves and to an elevation above that of the normal level of the slurry within said housing; scraper blade means adjacent each face of each filter leaf, above the level of slurry within said housing for scraping filter cake from said leaves and feeding it into said chute means; said scraper means being hingedly mounted for movement relative to said filter leaves and said chutes, and unitary means mounted for reciprocable movement in said housing, means interconnecting said last mentioned means with each of said scraper means so that the latter are movable into and out of scraping relationship with said leaves, said tubular means having means conveying the cake removed from said leaves to the exterior of said housing.

3,270,889
NECKTIE SUPPORTING RACK
Tassie P. Pochopien, 1454 Sheffield, Saginaw, Mich.
Filed Oct. 29, 1964, Ser. No. 407,290
3 Claims. (Cl. 211—13)

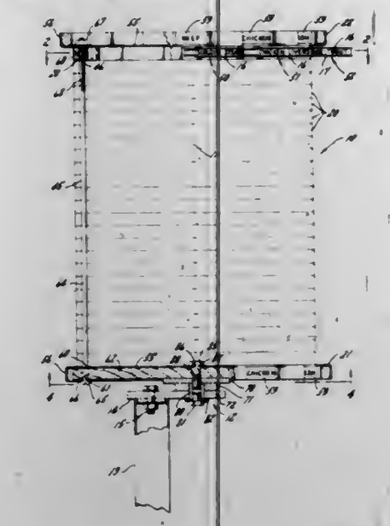


2. A rack for supporting a plurality of neckties each having a knot from which a pair of arms diverge laterally and rearwardly, each of said neckties having a projection located between said arms and extending rearwardly from said knot, said rack comprising an elongated body member having opposite side edges; an elongated support member mounted on said body and having its side edges located inwardly of the side edges of said body member, said support member being formed on the arc of a circle from one of its side edges to the other to provide a space between said body member and said support member, the arc of said support member being such that said support member is substantially tangential to a knot and to the diverging arms; a plurality of longitudinally spaced openings in said support member in communication with said space for reception of said projection; and means attached to said body member for supporting the latter in a substantially vertical position.

3,270,890
RACK
Edward C. Karp, Belvidere, Ill., assignor to Sanitary Scale Company, Belvidere, Ill., a corporation of Illinois
Filed Aug. 25, 1964, Ser. No. 391,991
10 Claims. (Cl. 211—58)

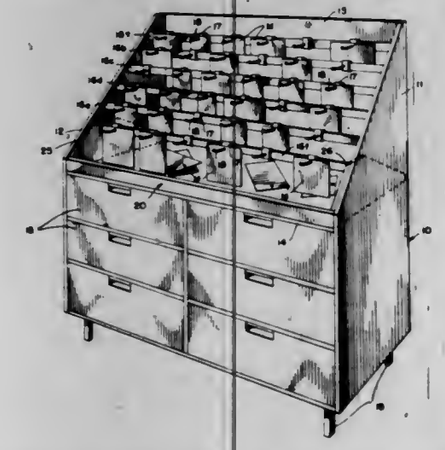
2. A storage rack for commodity information slugs or the like, comprising: a generally cylindrical body mounted for rotation about a substantially vertical axis, said body including a series of generally cylindrical modules superimposed one upon the other, each of said modules having a plurality of grooves extending into its periphery for receiving the commodity information slugs,

each of said grooves extending into a corresponding module substantially tangentially of a circle inscribed in the



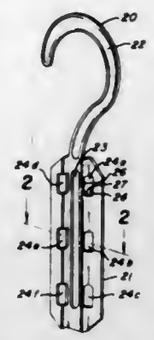
module about said axis, whereby rotation of said body about said axis tends to positively retain the slugs adapted to be seated in said grooves.

3,270,891
DISPLAY RACK WITH RECOVERY MEANS
George E. Briggs, Rockford, Ill., assignor to The Boye Needle Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 15, 1964, Ser. No. 359,849
1 Claim. (Cl. 211—59)



In a stepped display rack for packaged merchandise, a horizontally-extending base providing an open front for said rack, side panels extending upwardly above said base to enclose the ends of said rack, a plurality of horizontal bars for displaying said packaged merchandise, most of said bars extending between said panels and being carried thereby and being arranged in upwardly stepped, offset relation from the front to the rear of said rack, hanger means spaced along said bars for removably supporting a multiplicity of packaged merchandise, said hanger means including forwardly-extending pins having free forward ends for slidable insertion and removal of said packaged merchandise, whereby said merchandise is subject to accidental dislodgement from said hanger means, merchandise retrieval tray means carried by said base and extending beneath said merchandise displaying bars, the portions of said tray means in vertical alignment with each of said bars and the hanger means thereon being in open, unobstructed communication therewith, and means for slidably mounting said tray means so that said tray means is slidable outwardly from the front of said rack, whereby packaged merchandise accidentally dislodged from said hanger means can be recovered by sliding out said tray and thereby avoiding the chance of dislodging additional merchandise.

3,270,892
HANGER
Ralph E. Dennis, 2693 Fairfax Drive, Columbus, Ohio, and Ronald A. Bolin, 2087 Inchcliff Road, Columbus, Ohio
Filed Nov. 16, 1964, Ser. No. 411,387
10 Claims. (Cl. 211—113)



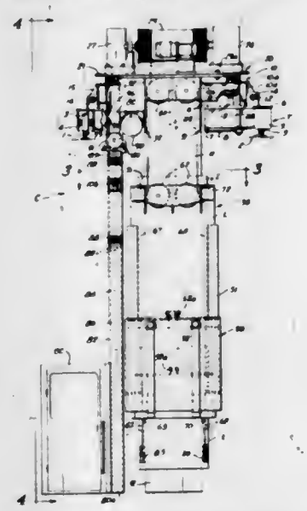
3. A coat hanger adapter for permitting of the hanging of a plurality of coat hangers on a horizontally extending rod wherein said hangers hang in substantially the same vertical plane, which hangers can be turned through an angle of 90° between a first vertical plane which includes said rod and a second vertical plane perpendicular to said first plane without changing the position of said adapter, said adapter comprising:

(a) a means for engaging a rod;

(b) a vertically corrugated sheet attached to and extending vertically downward from said hook;

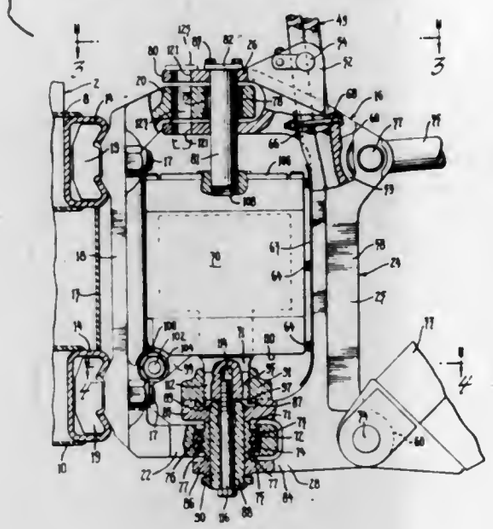
(c) at least one set of spaced, vertically arrayed openings in said sheet wherein each opening, if geometrically projected to the said planes perpendicular to each other, will effect, in each such perpendicular plane, a projected opening which is sufficiently wide to accommodate a coat hanger hook.

3,270,893
STACKER CRANE WEIGHING MECHANISM
Max J. Dechantsreiter, Milwaukee, Wis., assignor to Harnischfeger Corporation, West Milwaukee, Wis., a corporation of Wisconsin
Original application Dec. 24, 1964, Ser. No. 420,908. Divided and this application Nov. 10, 1965, Ser. No. 507,207
3 Claims. (Cl. 212—2)



1. An overhead travelling crane having a trolley frame adapted to be driven along rails in either direction, a plurality of load weighing cells on said trolley frame, a large support ring mounted on said cells, a turntable rotatably mounted on said ring on an anti-friction bearing ring assembly, a downwardly extending mast assembly secured to said turntable for rotation therewith, means to prevent horizontal movement of the support ring relative to the trolley frame to thereby prevent side loading of the load cells, and means to prevent upward movement of said support ring relative to said trolley frame beyond predetermined limits.

3,270,894
MATERIAL HANDLING APPARATUS
Brantford G. Elliott, Northville, and Max R. Saunders, Livonia, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich.
Filed Apr. 5, 1965, Ser. No. 445,366
15 Claims. (Cl. 212—66)



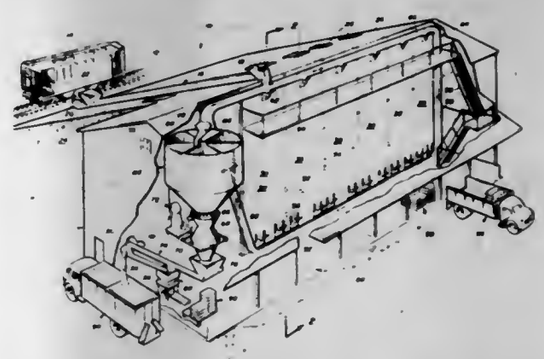
1. Material handling apparatus comprising: a support bracket having a pair of upper and lower, vertically spaced, parallel arms; a mast frame having a pair of upper and lower, vertically spaced, parallel arms each of which has vertically spaced inner and outer portions at the ends thereof; means pivotally connecting the upper and lower mast frame arms with the upper and lower support bracket arms, respectively, with the upper support bracket arm received beneath the outer portion and above the inner portion of its associated mast frame arm, and the lower support bracket arm received beneath the inner portion and above the outer portion of its associated mast frame arm; a rotary motor having a housing and a rotatable shaft projecting therefrom, means detachably connecting the motor housing to the support bracket between the inner portions of the mast frame arms such that the motor shaft is movable into coaxial relationship with the pivotal axis between the mast frame and support bracket; and coupling means detachably mounted on the inner portion of one of the mast frame arms having an opening coaxial with the pivotal axis between the mast frame and support bracket for receiving the motor shaft; the motor shaft and the opening in said coupling means being secured against rotation relative to each other when the shaft is received in the opening to couple the motor shaft to the mast frame independently of the pivotal connection between the mast frame and support bracket to cause the mast frame to pivot relative to the support bracket when the shaft is caused to rotate by said motor, whereby said motor is selectively removable from the support bracket and detachable from the mast frame independently of the connection between the mast frame arms and support bracket arms.

3,270,895
AERIAL LOGGING SYSTEM
Faye H. Stewart, 2765 Fairmont Blvd., Eugene, Oreg.
Filed Apr. 22, 1965, Ser. No. 450,081
9 Claims. (Cl. 212—71)



1. A load transporting system comprising in combination; a lighter-than-air vehicle including an areodynamic lifting surface, a loading device interconnected to said vehicle for applying a load thereto, means for controlling the relative distances between opposite ends of said vehicle and a horizontal plane passing through said loading device for controlling the attitude of said vehicle, and means to move said loading device in a direction to selectively apply the aerodynamic lifting force of said surface to said loading device.

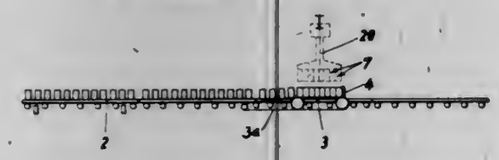
3,270,896
BULK BLENDING PLANT
Walter J. Sackett, Sr., 3700 Echodale Ave. Baltimore, Md. 21206
Filed Sept. 3, 1964, Ser. No. 394,155
15 Claims. (Cl. 214—2)



1. A bulk blending plant, comprising, a prismatic base structure having two of its sides defining a rear materials elevating slope and a forward materials discharging slope, a wall structure extending upwardly from the lowermost edge of said forward materials discharging slope to define a materials storage chamber with said forward materials discharging slope, means for dividing said materials storage chamber into a plurality of materials receiving storage bins, with said wall structure having receiving and discharging apertures provided therein for each said storage bin at its uppermost and lowermost portions, respectively, first means for elevating materials for storage in said storage bins, second means for receiving said elevated materials from said elevating means and for distributing selectively said elevated materials through said receiving apertures to said plurality of storage bins and for selectively receiving said plurality of stored materials discharged through said discharging

apertures in said wall structure, with said second means distributing, receiving, and elevating said materials simultaneously, means including an elevated compartmentized hopper for receiving said discharged selected materials from said second means to be blended together, means for selectively weighing selected compartmentized materials, and means for discharging and blending said weighed materials for further ultimate use.

3,270,897
APPARATUS FOR STACKING BRICKS
Hans Lingl, Fenningerstrasse 70, Neu-Ulm (Danube), Germany
Filed Apr. 26, 1962, Ser. No. 190,307
Claims priority, application Germany, Aug. 5, 1961, L 39,719
13 Claims. (Cl. 214—6)



8. Apparatus for automatically stacking bricks comprising in combination a support on which a plurality of bricks are arranged in rows with adjacent rows in engagement with each other laterally, a gripper assembly for lifting the rows of bricks in unison and for depositing them at a stacking station, said gripper assembly comprising a plurality of individual gripper members each including means for grasping a row of bricks by applying pressure to its outer ends to thereby press inwardly longitudinally thereof while being supported in a lateral direction by an adjacent row of bricks in order to prevent lateral buckling of said rows, and spreader means for separating said individual gripper members in said lateral direction after said rows have been lifted from said support, thereby moving the individual rows of bricks apart while suspended and before they are deposited at said stacking station.

3,270,898
VEHICLE PARKING SYSTEM
Heinrich Kuipers, Humboldtstrasse 74a, Dusseldorf, Germany
Filed July 30, 1964, Ser. No. 386,200
Claims priority, application Germany, July 31, 1963, K 50,393
18 Claims. (Cl. 214—16.1)



1. A system for parking a self-propelled vehicle in an elevated position above a base surface, said vehicle being of a type having wheels mounted on two or more axles, with the wheels on at least one axle being drive wheels, which comprises:

(a) A frame having a pair of parallel guide rail sections;

(b) Means for fixedly supporting said frame in an elevated position above the base surface;

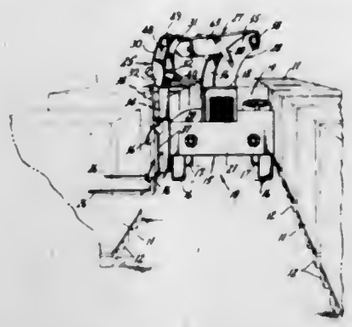
(c) A pair of parallel guide rails extending from the base surface up to said frame guide rail sections, and disposed so as to mate therewith;

(d) Means for supporting said guide rails so as to maintain their aforesaid mating relationship with the frame rail sections;

(e) Pairs of rolls for supporting the vehicle wheels, the number of said roll pairs corresponding to the number of axles on the vehicle, the rolls in each pair being disposed so as to contact the wheels on their corresponding axles and rotate in respense to the rotation of said wheels, said roll pairs being disposed between said guide rails and supported thereby at their extremities so as to be capable of motion along the guide rails; and,

(f) Means associated with the roll pair supporting the vehicle drive wheels for driving said roll pair in the guide rails in response to the rotation of said drive wheels, whereby the vehicle, supported by the roll pairs, can be driven up on the guide rails and onto the rail sections of the elevated frame under its own power.

3,270,899
LOAD HANDLING VEHICLE
Edwin C. Brown, Aurora, and Granville Woolman, Naperville, Ill., assignors to Baldwin-Lima-Hamilton Corporation, a corporation of Pennsylvania
Filed Apr. 17, 1964, Ser. No. 360,501
7 Claims. (Cl. 214—75)



1. A load handling vehicle comprising, in combination, a self-propelled chassis, a load carrying platform fixed on said chassis at one end thereof, a turntable mounted at the approximate center of said chassis for rotation about a vertical axis, an extensible boom mounted on said turntable for up and down swinging movement, and a fork assembly having tines and being mounted at the end of said boom for rotation about a generally vertical axis, said boom and turntable being proportioned to permit said fork assembly to be both positioned solidly against one end of said chassis with the tines extending therefrom as well as reversed so that the tines extend toward the turntable and overlie said platform, whereby a load can be handled as with a conventional fork lift truck and can also be lifted onto and off of said platform.

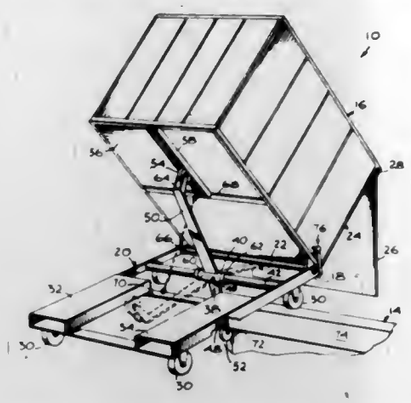
3,270,900
AUTOMATIC BIN DUMPING APPARATUS
Arthur Sherman, Los Angeles, Calif., assignor of one-third each to Robert Gentile, Sylmar, Calif., and Leslie Kazarian, Torrance, Calif.
Filed Dec. 31, 1964, Ser. No. 422,627
11 Claims. (Cl. 214—302)

1. Bin apparatus adapted for automatic dumping of its contents into receiving means associated with obstruction means comprising:

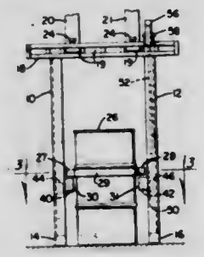
frame means adapted to be lifted and transported by fork-lift truck means or the like;

container means normally resting upon said frame means and pivotally secured to said frame means along a forward pivotal axis edge thereof, said container means having an openable front side; and

lever means pivotally mounted on said frame means and having a fulcrum axis parallel to and rearward of such forward pivotal axis, said lever means comprising a forward lever arm portion and a rearward lever arm portion extending in opposite directions from such fulcrum axis, said forward lever arm portion having a free end extending beyond said forward edge of said frame means and adapted to engage such obstruction means for travel limitation thereby, said rearward lever arm portion having a free end adapted for upward force transmission engagement with said container means at least initially rearwardly of said fulcrum axis.



3,270,901
TRANSPORTING AND DUMPING DEVICE
Thomas E. Ord, Aurora, Colo. (4210 Cook St., Denver, Colo.)
Filed Feb. 17, 1964, Ser. No. 345,460
19 Claims. (Cl. 214—314)

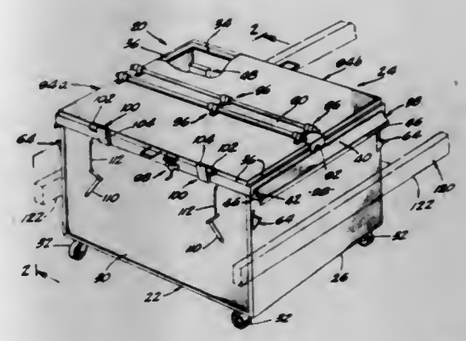


1. Apparatus for transporting and dumping containers comprising: a lifting frame including two spaced apart support members stationary with respect to each other; a sleeve bearing mounted adjacent each of said support members having an opening at its top; a rotatable split shaft in each of said sleeve bearings; and interengaging means supported adjacent at least one of said support members for engaging the end of a shaft for rotating it in its corresponding sleeve bearing.

3,270,902
TRASH BIN WITH FORK ARM LATCHING DOGS
Ernest R. Breault, 26009 E. 6th St., San Bernardino, Calif.
Filed July 6, 1965, Ser. No. 469,817
13 Claims. (Cl. 214—302)

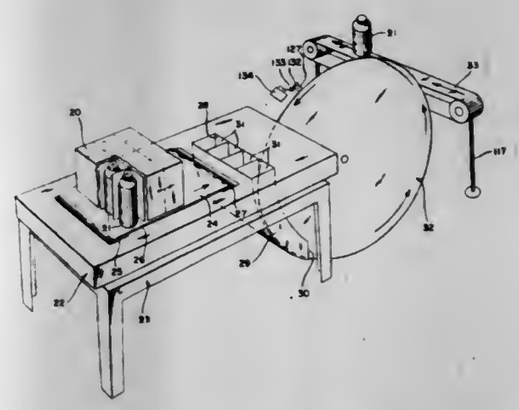
1. A trash bin for use with a service vehicle of the type having a trash receiver and a fork lift device with spaced fork arms for elevating said bin from its normal upright position of use to an inverted position of elevation over said trash receiver to empty trash from said bin into said receiver, said trash bin comprising:

a lower rectangular container adapted to be straddled endwise by said fork arms and including a bottom wall bounded by upstanding side and end walls, upper thrust shoulders at the ends, respectively, of said container having downwardly presented shoulder surfaces disposed for supporting engagement with said fork lift arms when said trash bin occupies its normal upright position, lower thrust shoulders at the ends, respectively, of said container below said upper thrust shoulders and having upwardly presented shoulder surfaces, means supporting said lower thrust shoulders on said container for movement in generally endwise directions of said container between inner retracted positions wherein



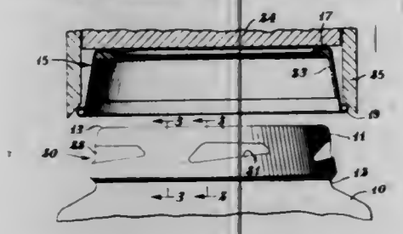
said lower shoulders are disposed to clear said fork arms for upward and movement of said arms across the ends of said container into supporting engagement with said upper shoulders, and outer extended positions wherein said lower shoulders are disposed for supporting engagement with said fork arms when said bin occupies said inverted position, means for normally retaining said lower thrust shoulders in their extended positions, and means for effecting retraction of said lower thrust shoulders to their retracted positions.

3,270,903
LIGHTWEIGHT CONTAINER HANDLING
George Willms, Kansas City, Mo., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Aug. 29, 1963, Ser. No. 305,340
17 Claims. (Cl. 214—308)



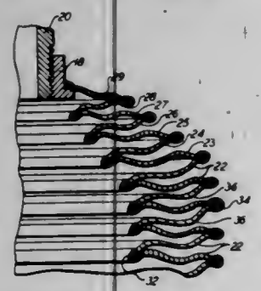
1. Apparatus for handling lightweight empty containers comprising a platform along which an open bottom carton of said containers is adapted to be moved toward an aperture, a magazine opening into said platform aperture for receiving a plurality of said containers from the carton, means for periodically delivering a plurality of said containers as a group from out of the magazine to a first conveyor means, and means for sequentially transferring said group of containers in order to a second conveyor means.

3,270,904
PRESS-ON TURN-OFF CAP
Charles N. Foster, Oak Park, Robert K. McElroy, Hinsdale, and John J. Curry, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 21, 1964, Ser. No. 369,092
20 Claims. (Cl. 215—43)



1. The method of capping and sealing a container with a cap, each of said cap and container having means thereon to cam said cap upwardly upon rotation thereof during removal from said container, comprising the steps of providing a cap having a depending flange portion around the marginal edges thereof, depositing a plastic-like material at least around said marginal edges of said cap interiorly thereof, pressing said cap onto said container with a generally vertical motion, and causing said plastic-like material to flow and set thereby forming a cam means for co-operating with cam means on said container to assist in camming said cap upwardly on relative rotation between said cap and container.

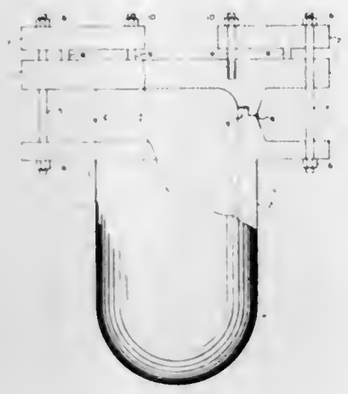
3,270,905
PRESSURE CONTAINER
Rolf Heinz Werner Kroekel, West Greenwich, R.I., assignor to Sealol, Inc., Warwick, R.I., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,038
3 Claims. (Cl. 220—3)



1. A substantially inextensible sheet metal pressure container of tubular cross section having a plaited outer-surface configuration with a plurality of peripherally extending creases alternately pointing inward and outward with radially extending outwardly bowed surface therebetween, said container being welded along each of said creases to secure together the edges of adjacent surfaces at said creases thereby establishing pressure resistant seams, said seams having a stress in tension in a direction generally parallel to the longitudinal axis of the sheet metal pressure container substantially beyond its yield point but less than its breaking point by subjecting the sheet metal pressure container to a pressure higher than its operating pressure.

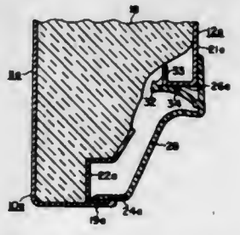
3,270,906
CLOSURE FOR PRESSURE VESSELS
Axel Christensen, Stamford, Conn., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 25, 1963, Ser. No. 311,518
4 Claims. (Cl. 220—3)

1. A pressure vessel with improved closure assembly comprising a vessel body, a cover extending over an opening in said body, a plurality of external closure bolts having terminal nuts and extending between said body and said cover, a plurality of levers, each of said closure bolts being attached to one of said levers, said levers pivoting on said cover and extending between said closure bolts and a plurality of tension bolts attached to said cover, each of said tension bolts being attached to one



of said levers by means cooperating with said levers, whereby said tension bolts are put under tension and whereby said tension bolts exert tension on said closure bolts through said levers, and an outer sealing weld at the interface between said body and said cover, said closure bolts being under tension whereby said weld is continuously maintained under compression when said vessel body is subjected to elevated internal pressure.

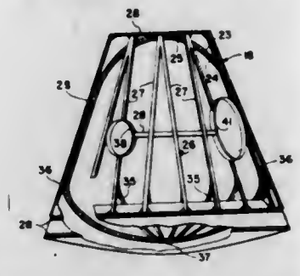
3,270,907
CABINET STRUCTURE
Anthony J. Swaneck, Jr., Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 9, 1964, Ser. No. 336,814
3 Claims. (Cl. 220—9)



3. A refrigerator cabinet comprising:
an outer shell,
an inner shell nested in said outer shell in spaced relation thereto and having a front access opening thereto providing a storage compartment.
said outer shell having a front edge portion extending inwardly toward said inner shell, and
said inner shell having a front edge portion disposed inwardly and rearwardly of said outer shell edge portion providing a gap therebetween,
a resilient flexible breaker strip disposed across said gap and having one edge provided with an adjacent front facing surface in contact with said outer shell front edge portion to limit forward movement of said breaker strip,
said outer shell front edge portion having a rearwardly extending flange disposed adjacent said breaker strip one edge to limit outward movement of said breaker strip,
said breaker strip further having a substantially V-shaped portion disposed at the opposite edge thereof and
a rearwardly arched portion connecting said one edge of said breaker strip to said V-shaped portion,

said V-shaped portion opening rearwardly and comprising;
a rearwardly protruding leg member disposed adjacent and substantially parallel to, an inner surface of said inner shell edge portion, and
a rearwardly outwardly extending tab member having an inwardly arched portion, and
said inner shell edge portion having an outwardly extending flange provided thereon,
said flange being disposed across said rear opening of said V-shaped member to contact said flexible tab member,
said V-shaped member being so disposed in relation to said inner shell edge portion that contact of said outwardly extending flange with said arched portion of said tab member provides a clamping force between said leg member and said inner shell edge portion.

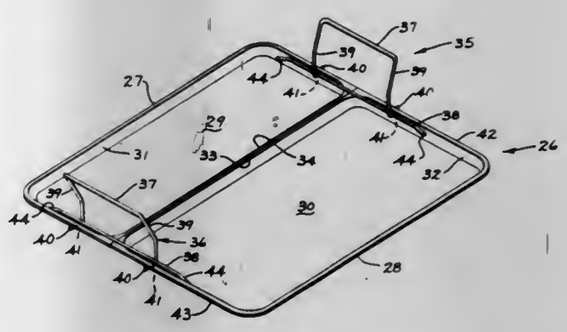
3,270,908
SPACE CAPSULE
Maxime A. Faget and Andre J. Meyer, Jr., Newport News, Robert G. Chilton, Seaford, Willard S. Blanchard, Jr., and Alan B. Kehlet, Hampton, and Jerome B. Hammack and Caldwell C. Johnson, Jr., Newport News, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Original application Oct. 16, 1959, Ser. No. 847,023, now Patent No. 3,093,346, dated June 11, 1963. Divided and this application Dec. 13, 1962, Ser. No. 250,974
3 Claims. (Cl. 220—15)



2. A capsule casing construction comprising an enclosure formed of two substantially parallel spaced thin metallic plates having a stiffening core material disposed therebetween, a framework composed of a plurality of rigidly interconnected vertical and horizontal beam members surrounding said enclosure, said vertical beam members being in supporting contacting relationship with portions of the outer one of said metallic plates, a continuous thin sheet of metallic material conformingly encircling said framework, said sheet being attached at spaced points to an intermediate one of said horizontal beam members along one entire horizontal plane thereof, clamps secured to said sheet for slidably connecting said sheet at selected points to said vertical beam members, and basket means for elastically supporting said enclosure within said framework, said basket means being formed of a plurality of metallic bands one end of each of which is commonly joined together exteriorly adjacent said enclosure and the other ends of which are rigidly secured to individual ones of said vertical beam members.

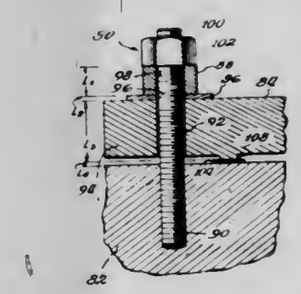
3,270,909
SECTIONAL FOOD TRAY
John D. Swartzbaugh and Blair E. Stentz, Murfreesboro, Tenn., assignors to United Service Equipment Co., Inc., Palmer, Mass., a corporation of Delaware
Filed Sept. 6, 1963, Ser. No. 307,099
6 Claims. (Cl. 220—23.4)

1. A food tray comprising, in combination, first and second rectangular tray sections, said first and second tray sections being movable between a separated position, and a connected position whereby said first and second tray sections are joined together along a parting line, each of said first and second sections having a flat bottom and a raised lip extending around the periphery of said bottom forming sides and ends thereon, an exterior surface on one side of first section which is complementary with a similar exterior surface on one side of said second tray section and a connecting means for securing said first and second tray sections in side-by-side relationship with said complementary exterior surfaces in abutment along said parting line, said connecting



means consisting of a pair of handles, each of said handles including spaced apart, slideable attachment members, and guide means in each of said tray sections for receiving said attachment members on each side of said parting line, said guide means extending normal to said ends of said tray sections whereby, when said tray sections are joined along said parting line, said attachment members may be slideably received by or removed from said guide means by movement normal to said ends of said tray portions.

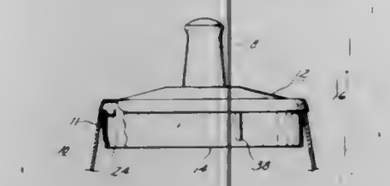
3,270,910
JOINT STRUCTURE
Dudley Lusk, Westmont, Ill., assignor to Chicago Bridge & Iron Company, a corporation of Illinois
Filed June 28, 1963, Ser. No. 291,454
4 Claims. (Cl. 220—55)



3. In combination with a flanged fitting mounted on a cryogenic vessel and subject to cryogenic temperatures, and a flanged member adjoining said fitting, a joint structure for joining said fitting to said member including at least one of the respective flanges thereof and having component parts subject to different degrees of thermal expansion under conditions of temperature change from ambient to cryogenic temperatures and compensated for differential changes in dimension caused by said conditions, and further comprising bolt means for bolting said flanges together and having a coefficient of expansion different from the coefficient of said one flange under said conditions, and compensating washer means having a further different coefficient of expansion under said conditions and interposed between said one flange and said bolt means, said washer means being dimensioned to

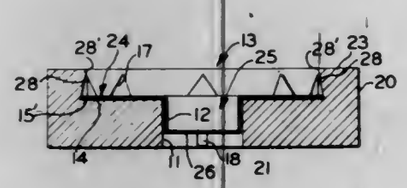
achieve a predetermined relationship by thermally induced changes between dimensions at ambient temperature and dimensions at a service temperature of the bolt means and the parts bolted together thereby.

3,270,911
COFFEE MAKER LID RETAINING MEANS
Kenneth L. Sacks, Allentown, Pa., assignor to General Electric Company, a corporation of New York
Filed Aug. 3, 1964, Ser. No. 387,046
7 Claims. (Cl. 220—55)



1. In a container having an open top and a lid with an annular skirt adapted to fit within the top, an improved means for retaining the lid in the top comprising a pair of closely spaced slots formed in said skirt, a flat, flexible irregularly shaped spring clip having end portions which extend through said slots into the interior of said skirt and having a middle portion which extends outwardly away from said skirt, said clip being formed such that when assembled to the lid the end portions are self-urged to engage the interior of said skirt and the middle portion of the clip is self-urged outwardly whereby the outermost surface of the middle portion is adapted to forcefully engage the inner surface of the container defining the open top.

3,270,912
ASH TRAY
Irwin H. Winkelried, 45 Van Ness Court, Maplewood, N.J.
Filed Oct. 8, 1964, Ser. No. 402,547
6 Claims. (Cl. 220—63)

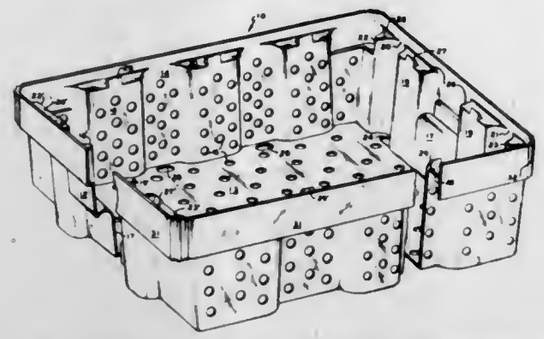


1. An ash tray, comprising,
a body having a top, bottom, and sides,
a cavity having a bottom and walls, and disposed within the top of said body,
a hole disposed in said body, within said cavity and centrally positioned with respect to said cavity and penetrating the bottom of said body,
a liner designed to hold the contents of said tray, and having a collapsible outer portion disposable on said cavity bottom and fitting snugly within said cavity walls, and having inner edges abutting said hole,
a cup portion made of sheet material and having a bottom and sides and fitting snugly into said hole and attached at its upper side edges in sealing relation to said hole-abutting edges of said outer portion, and
a tab disposed on the bottom of said cup portion in a manner such that, when said tab is pulled, said cup is withdrawn through said bottom hole and said outer portion is collapsed to enclose the contents of said tray.

ERRATUM

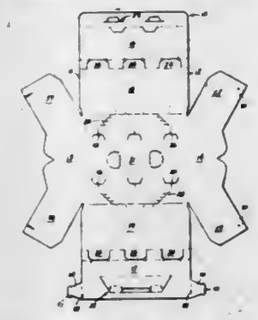
For Class 220—64 see:
Patent No. 3,271,653

3,270,913
NESTABLE AND STACKABLE CONTAINER
Orville J. Bridenstine, Caney, Kans., and William A. Keene, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,390
12 Claims. (Cl. 220—97)



1. A container adapted to be nested and stacked vertically with a container of identical shape, comprising: a pair of opposed first walls sloping inwardly toward each other from top to bottom; a pair of opposed transverse second walls sloping inwardly toward each other from top to bottom; a bottom wall connected to the lower edges of said first walls and said second walls to provide an open top structure; an inwardly and horizontally extending handle protuberance disposed in each wall of at least one said pair of opposed walls and opposite each other, each said protuberance terminating in an upper outwardly extending surface at a level intermediate the top and bottom of the wall in which it is disposed; and a pair of horizontally spaced apart substantially vertical and inwardly extending flutes disposed in each of said walls having a handle protuberance disposed therein, with one flute at each opposite end of said handle protuberance therein, the lower portion of each said flute being formed integral with the adjacent end of said handle protuberance therein, and each flute of one of said pair of flutes being wider horizontally than each flute of the other said pair of flutes.

3,270,914
WRAP-AROUND CARTON BLANK WITH END PANEL LOCK
Earl J. Graser, Monroe, La., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed July 17, 1964, Ser. No. 383,373
2 Claims. (Cl. 220—112)



1. In a wrap-around carton of the type having a bottom wall defined by inner and outer overlapping bottom panels and two end walls each comprising a set of two end walls flaps disposed generally perpendicular to said bottom wall, the improvement comprising the opposite end portions of said bottom wall each having a single locking tongue hingedly connected thereto intermediate

the length thereof, a slot in each set of end wall flaps, each said slot extending inwardly from the inner edge portion of each said end wall flap, each of said tongues having oppositely disposed shoulder portions, one of said shoulder portions of each of said tongue operative to be inserted in said slot of one end wall flap of one set and the other shoulder portion of said tongue operative to be inserted in the slot of the other end wall flap of said set.

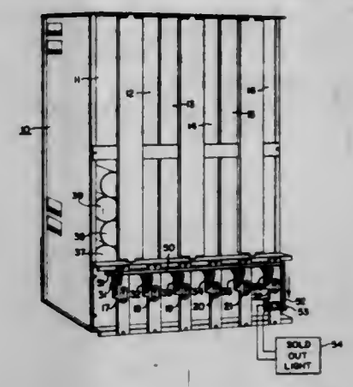
3,270,915
DISPENSING MEANS FOR PHARMACEUTICAL TABLETS
Jay Ronald Auer, Glenview, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
Filed Feb. 3, 1965, Ser. No. 430,022
5 Claims. (Cl. 221—2)



1. A device for the programmed dispensing of pharmaceutical tablets comprising, in combination,
(a) an elongate, transparent magazine having a chamber and an open end;
(b) a plurality of discrete series of indicia of periodicity on the magazine and characterized by uniformly-spaced intervals defining each of a series of indicated periods;
(c) external reference means selectively positionable about the magazine to enable reference selectively to be made and maintained in respect of one series of indicia;
(d) a base member mounted on the external reference means;
(e) a metering gate in the base member covering the open end of the magazine; and,
(f) a resiliently mounted piston within the chamber of the magazine exerting force toward the metering gate so that, when reference is made in respect of one series of indicia of periodicity and when a number of pharmaceutical tablets are within the chamber of the magazine intermediate the piston and the metering gate, the transport of one such tablet across the metering gate will cause the piston and the remaining tablets visibly to displace toward the metering gate.

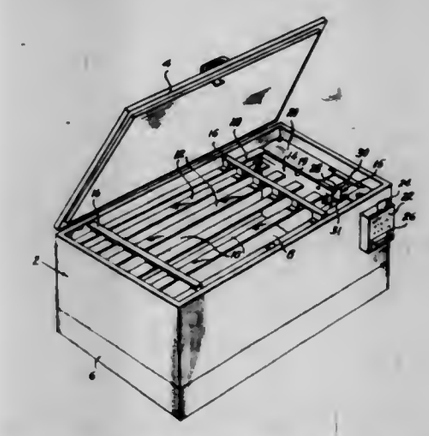
3,270,916
VENDING MACHINE EMPTY SIGNAL INDICATING MECHANISM
Wallace R. Lyman, West Springfield, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 28, 1965, Ser. No. 451,576
4 Claims. (Cl. 221—6)

1. A vending machine comprising, a frame having a plurality of side by side column structures adapted to contain articles to be vended, each of said column structures having respective article sensing levers adapted to contact an article in the column and to be movable to assume a first position in response thereto and to assume a second position when no article is present in the respective column, a movable common signal member, means interconnecting each of said article sensing levers and said common signal member to move said common signal member to a first position when at least one of said article sensing levers is in its first position and to move said common signal member to a second position when



all of said article sensing levers are in their second positions, a respective individual column empty signal means responsive to a respective one of said article sensing levers to be operated when the respective lever is in a selected one of its said positions, and an all column empty signal means responsive to said common signal member to be operated when said common signal member is in a selected one of its said positions.

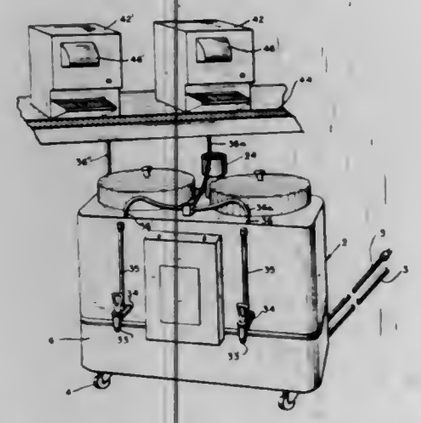
3,270,917
COIN CONTROLLED BOTTLE RELEASING MECHANISM
Norman L. Kesecker, Kearneysville, W. Va., assignor to Dixie-Narco, Inc., Ranson, W. Va.
Filed May 27, 1965, Ser. No. 459,251
4 Claims. (Cl. 221—133)



1. A bottle releasing mechanism for a dispensing cabinet, said mechanism comprising means defining a housing provided with a side wall, a top wall, a compartment in said housing, a side opening in said side wall for admitting an upright bottle to said compartment, and a top opening in said top wall for removal of a bottle from said compartment, a bottle restraining lip member partially closing said top opening and being movably mounted on said housing for movement away from said top opening; a movable latch holding said lip member in position to partially close said top opening when said latch is in latching position; a solenoid in said housing; and means operable by said solenoid when energized to release said latch to move to a release position, means biasing said latch to its release position; movable blocking means

engaging said latch to prevent movement thereof to its release position, said solenoid being connected to said blocking means whereby to withdraw said blocking means from said latch when said solenoid is energized.

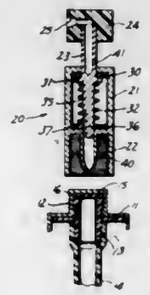
3,270,918
HOT BEVERAGE DISPENSER
Eugene E. Goodrich, Park Ridge, Ill., Paul J. Daniels, Sarasota, Fla., Glen A. Burch, Niles, Mich., and Michael R. Wilkinson, South Bend, Ind., assignors, by mesne assignments, to The Bastian Blessing Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 26, 1963, Ser. No. 333,610
12 Claims. (Cl. 222—64)



1. In a fluid dispensing device the combination of a first container for a reserve supply of water, means for heating the water, a second container for a beverage disposed within said first container in heat exchange relationship with the water therein, means for transferring a predetermined amount of water to the second container from the first container including a liquid pump and vertically spaced water level responsive elements in the first container, circuit means connected to the upper element controlling the level of said water in the first container and the lower element stopping said pump, lift means for dispensing hot beverage from the second container above the level thereof including a flexible wall tube including means for progressively collapsing the tube successively along a portion of its length, and a liquid flow restricting means at the outlet of said tube.

3,270,919
AEROSOL DISPENSING APPARATUS
John Frangos, Brooklyn, N.Y., and Milton Schwarz, Westport, Conn., assignors to Revlon, Inc., New York, N.Y.
Filed Apr. 16, 1964, Ser. No. 360,225
1 Claim. (Cl. 222—82)

In metering valve apparatus of the character described for repeated application as a dispenser of a measured quantity of materials including a gaseous propellant from any one of a number of sealed containers having a threaded neck with a pierceable seal thereon, the combination which comprises a hollow axially extending valve body having top and bottom walls defining therebetween a volume measuring chamber the capacity of which determines said measured quantity of materials to be dispensed, a valve stem axially reciprocable in said valve body and extending axially through both said top and bottom walls, first sealing means disposed adjacent said top wall of said valve body and surrounding said valve stem in sealing engagement therewith, second sealing means adjacent said bottom wall of said valve body and surrounding said valve stem in sealing engagement therewith, means at the upper end of said valve stem and above said top wall of said valve body forming an ejection orifice, a radial port in said stem axially spaced below said ejection orifice, an axially extending internal passage in said valve stem interconnecting said radial port with said ejection orifice providing flow communication from said volume measuring chamber and said orifice through said port and axial passage when said valve stem is moved to a position where said port is below said first sealing means and within said volume measuring chamber, a reduced diameter portion at the lower end of said valve stem and extending through said second sealing means providing flow communication into said volume measuring chamber when said valve stem is in a position such that said reduced diameter portion is adjacent said second sealing means but preventing said flow into said chamber when said reduced diameter portion is wholly below said second sealing means, the axial spacing relationships of said radial port and said reduced diameter portion of said valve stem being correlated with the axial extent of said volume measuring chamber between said first and second sealing means such that said radial port is above said first sealing means whenever said reduced diameter portion permits flow through said second sealing means into said chamber and said reduced diameter portion is below said second sealing means preventing



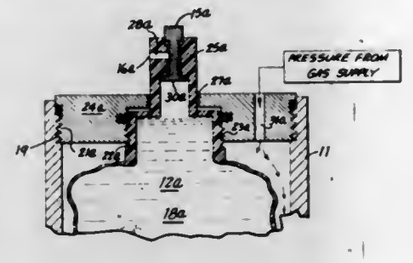
flow into said chamber whenever said radial port is below said first sealing means permitting flow through said axial passage from said chamber, biasing means effective on said valve stem and within said chamber for urging said valve upwardly toward the position where said radial port is above said first sealing means, an abutment on said valve stem for engaging said top wall of said valve body for limiting said upward movement of said stem, a threaded skirt depending from said valve body for engaging said neck portion on said sealed containers, a generally cylindrical and pointed hollow nipple depending from said valve body and coaxially within said skirt and in flow communication with said chamber for piercing the sealed top of said containers as said skirt is threaded down on to said neck portion thereof, said hollow nipple being disposed to receive slidably said reduced diameter portion of said valve stem when said valve stem is depressed against the action of said biasing means and the hollow internal diameter of said nipple being larger than said reduced diameter portion of said valve stem permitting flow of material through said hollow nipple into said chamber.

3,270,920
APPARATUS FOR PRESSURE DISPENSING LIQUIDS
Charles G. Nessler, Bokum Road, Chester, Conn.
Filed Dec. 3, 1964, Ser. No. 415,670
1 Claim. (Cl. 222—95)

An apparatus for dispensing liquids as spray, comprising in combination;

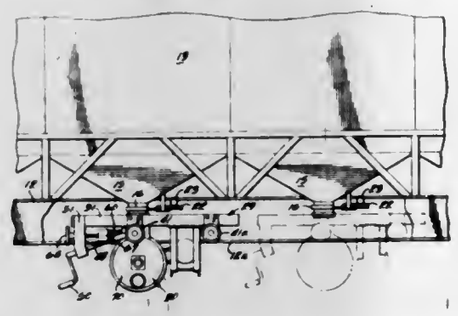
(a) a solid open-ended pressure vessel for holding a collapsible bladder therein;
(b) a collapsible bladder including a spout integral therewith which bladder in turn will contain a liquid therein which is to be dispensed as an aerosol spray from said spout, said spout having an external shoulder;

(c) a top to seal off said bladder within said vessel, said top including external coupling means for coupling to said vessel open-end, internal coupling means for coupling to said spout, an internal shoulder on said top to engage the external shoulder of said spout;
(d) an outlet section in said spout extending out through said top internal shoulder;
(e) an elongated narrow passage in said outlet section, the inner and outer terminals of said narrow passage acting as valve seats;
(f) a valve in said spout outlet section slidable along the main axis thereof normally sealed against said inner terminal by fluid pressure against said valve, a



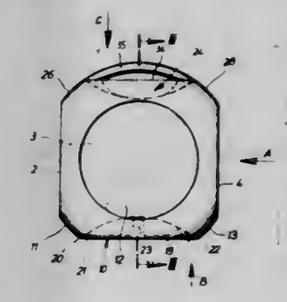
valve projection on said valve extending through said narrow passage, exterior valve depressing means integral with said valve projection which when depressed will move said valve longitudinally in said outlet section, said exterior depressing means moving only until it strikes the outer terminal of said narrow passage;
(g) a dispensing passage extending from said narrow passage to the exterior, at right angles to said narrow passage so that the depressing of said depressing means moves the valve and permits fluid from said bladder to enter said narrow passage and be sprayed under pressure from said dispensing passage.

3,270,921
UNLOADING SYSTEM FOR BULK MATERIAL BINS
William A. Nadolske and Kenneth E. Wilkin, Newark, Ohio, assignors to Styron-Beggs Research Corporation, Newark, Ohio, a corporation of Ohio
Filed Dec. 13, 1963, Ser. No. 330,299
5 Claims. (Cl. 222—132)



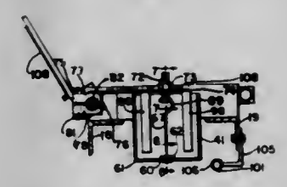
1. In combination with a supporting structure having a plurality of bulk material bins carried thereby with each having a downwardly extending outlet spout through which material will discharge therefrom, the discharge outlet spouts of the respective bins being disposed in spaced relationship along the supporting structure, an unloading unit mounted on said supporting structure for movement therealong into cooperative relationship with any of said outlet spouts, said unloading unit having an upwardly projecting inlet throat for connection to the cooperating downwardly extending outlet spout, and means on said unit for adjusting said throat on said unit into and out of connecting relationship, said means including guide wheels on said unit, guide rails with which said wheels cooperate for movably mounting the unit, and means for independently adjusting each wheel on said unit.

3,270,922
PORTABLE CONTAINER OF SYNTHETIC MATERIAL ADAPTED TO BE STACKED
Alfred Schmidt, Dusseldorf, Germany, assignor to –form– Gesellschaft für Formgebung m.b.H., Dusseldorf, Germany
Filed Nov. 8, 1963, Ser. No. 322,417
Claims priority, application Germany, Nov. 12, 1962, F 38,282
4 Claims. (Cl. 222—143)



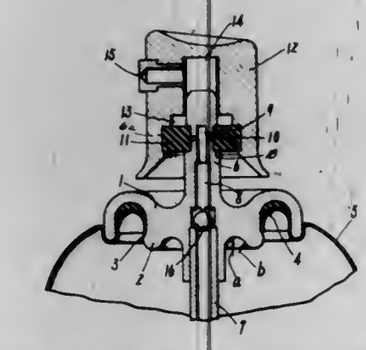
2. A self supporting container of synthetic material having circular top and bottom end walls of substantially equal diameter and four similar vertical side walls of equal area spaced from said end walls, the margins of said end and side walls lying in planes forming the surface of a rectangular prism, said walls being within the surface of said prism with the top and bottom end walls having portions depressed inwardly of said surface, said margins being connected by a continuous curved wall within the surface of said prism, and an integral handle projecting above the margin of said top end wall, said bottom end wall being formed to receive and contact the handle of a similar container on which it is stacked with it bottom margin resting on the top margin of the lower container.

3,270,923
MACHINE FOR DISTRIBUTING PARTICULATE MATERIAL
George F. Rooney, Jr., % Winton Engineering, 2353 May St., Cincinnati, Ohio
Filed Mar. 19, 1965, Ser. No. 441,080
5 Claims. (Cl. 222—193)



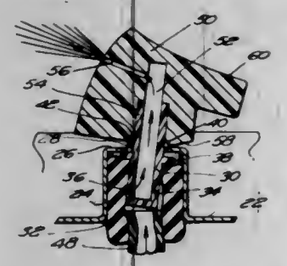
3. A powder distributing device which comprises a frame, an open-topped box, means on the frame for supporting said box for vibratory movement, there being a plurality of powder-dispensing orifices in a bottom wall of said box, plate means mounted on the frame overlying the box, a plurality of valve needles pivotally mounted on said plate means and extending downwardly therefrom into the orifices, there being a valve needle for each orifice, and means for vibrating the box, the valve needles metering the flow of powder through the orifices as the box vibrates.

3,270,924
MOUNTING CAPS FOR AEROSOL DISPENSER
Seiichi Kitabayashi 2–2246 Nishisugamo, Toshima-ku, Tokyo, Japan
Filed Sept. 17, 1964, Ser. No. 397,333
Claims priority, application Japan, Sept. 19, 1963, 38/49,406
1 Claim. (Cl. 222—394)



A mounting cap for aerosol dispensers comprising a disc of a resilient synthetic resin having an annular wall member pendant from the bottom face of said disc and a tubular member extending from the center of the upper face of said disc, said annular wall member having an outer wall face capable of closely engaging the lower end of the mouth of the aerosol dispenser at an inner portion of said outer wall face, said tubular member being provided with a peripheral step, an axial bore closed at one end and opening at said disc bottom face and side orifices opening above said peripheral step and in said bore adjacent the closed end of said bore, a rubber ring having a pair of ends with one end mounted on said annular step normally closing said side orifices, a push button being mounted on said rubber ring other end and having an emission orifice, inner cavities communicating with said orifice and one of said inner cavities facing said rubber ring for receiving aerosol material from said side orifices when said push button is moved against said rubber ring and thereby opens said side orifices.

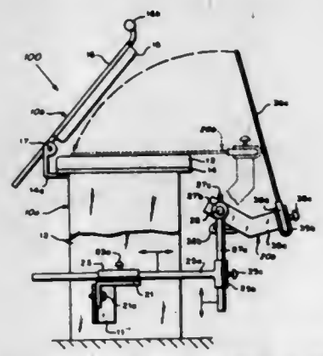
3,270,925
AEROSOL VALVE AND METHOD OF MANUFACTURE OF SAME
Charles J. Obst, West Barrington, R.I., assignor to Joseph J. Vastano, Warwick, R.I.
Filed Dec. 28, 1964, Ser. No. 421,289
6 Claims. (Cl. 222—394)



1. An aerosol valve for an open mouthed container comprising a lid adapted to sealingly engage the container at the open mouth thereof, said lid having an opening extending therethrough, a hollow valve tube extending through said opening, said tube being tiltable with respect to said lid, abutments on said tube on both sides of said lid for limiting movement of said tube in either direction with respect to said lid, an aperture in said valve tube beneath said lid, and a resilient body fixed to said lid and surrounding said valve tube, said resilient body sealing said lid opening to prevent passage therethrough outside of said tube and at the same time normally sealing said aperture in said valve tube, said resilient body being compressible upon tilting of said tube to unblock said aperture, whereupon pressurized contents of the container automatically pass out through said tube.

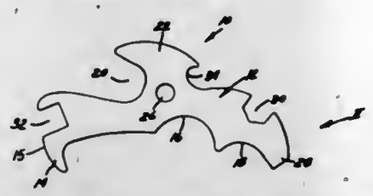
5. The method of making an aerosol valve comprising the following steps:
(1) forming a circular lid with an intermediate cylindrical cup portion;
(2) forming an opening in the top wall of said cup portion;
(3) dishing the edge of said opening so as to enlarge same;
(4) forming a rigid valve tube with a closed bottom except for a small aperture adjacent said bottom and with an open top;
(5) providing a pair of spaced circular flanges on the outside of said tube, the upper of which is just slightly smaller than the enlarged opening in the lid and the lower of which is larger than the said enlarged opening;
(6) passing the aforesaid tube upwardly through said enlarged lid opening until the lower flange engages the dished edge of the enlarged opening;
(7) straightening the dished edge of the opening in order to decrease the size of same and to capture the lid between the flanges of the valve tube; and
(8) forcing a cored rubber plug up into said cup portion so that the lower end of the valve tube is received in the core of the plug with its said aperture normally sealed by said plug.

3,270,926
GARMENT HOLDER FOR PRESSING MACHINE
Frank Machota, Philadelphia, Pa., assignor of one-half to Carmen Di Mascio, Philadelphia, Pa.
Filed Sept. 13, 1965, Ser. No. 486,666
4 Claims. (Cl. 223—70)



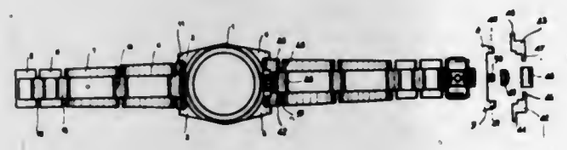
1. A pressing machine and garment holder, said pressing machine comprising a lower section, a fixed lower buck on said lower section, a tiltable upper section, an upper buck on said upper section, said upper section being hingedly connected to said lower section, said garment holder comprising (a) a horizontally sliding section mounted on said pressing machine lower section below said lower back, and (b) a pivoting section mounted on said horizontally sliding section and being pivotable in a vertical plane, said pivoting section including a garment frame, said garment frame including a planar, horizontally disposed shaped frame section adapted to receive a garment to be pressed and pivotable with said pivoting section from a horizontal position parallel to and in contact with said lower buck to a substantially upright position, said lower buck limiting the pivotable travel of said pivoting section in one direction, said horizontally sliding section including a stop, said stop being positioned to be contacted by said pivoting section when said pivoting section is so pivoted to position said shaped frame in said substantially upright position, said stop limiting the pivotable travel of said pivoting section in the other direction.

3,270,927
LACE PULLER
Mark K. Wallach, Grand Rapids, Mich., assignor to Wolverine Shoe & Tanning Corporation, Rockford, Mich., a corporation of Michigan
Filed July 6, 1965, Ser. No. 469,598
2 Claims. (Cl. 223—113)



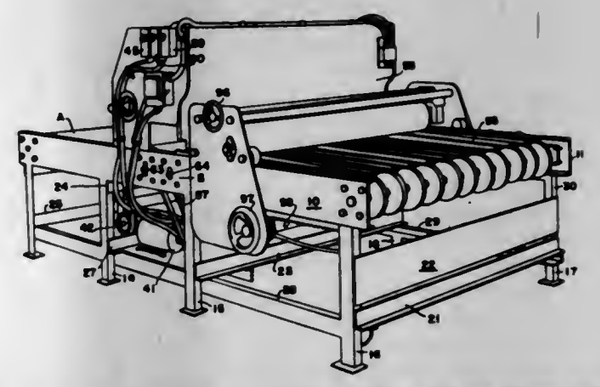
1. A boot lace puller comprising: a generally flat, one piece, integral plate stamping having an elongated body portion with upper and lower edges; said body portion having a hooking, lace-engaging tang extending on one end thereof generally tranverse to the long dimension of said body, and generally toward said lower edge; an arcuate index-finger-receiving-cavity rearwardly of said tang along said upper edge of said body; a palm engaging surface along said upper edge between said index-finger-receiving-cavity and the body end opposite said one end; and at least two arcuate, finger receiving cavities in said lower edge adjacent said opposite end.

3,270,928
WATCH STRAP
Louis Brunet, Annecy, France, assignor to Z.R.C.-Zuccolo, Rochet & Co., Haute Savoie, France, a corporation of France
Filed July 27, 1964, Ser. No. 385,427
Claims priority, application France, July 30, 1963, 943,123
2 Claims. (Cl. 224—4)



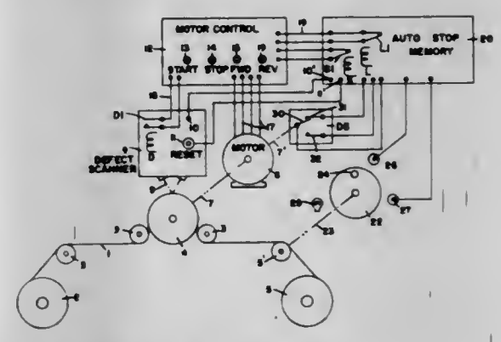
1. In combination with a watch case having two oppositely disposed pairs of spaced parallel lugs with aligned holes, and having between one of said pairs of spaced lugs a threaded sleeve barrel projecting perpendicularly from said case in the plane of said one pair of lugs and a crown screwed on to said sleeve barrel; a watch strap comprising two parts and a clasp releasably connecting one end of one of said strap parts to one end of the other of said strap parts, said strap parts each including a plurality of frame-like members and a plurality of connecting hinge members between said frame-like members to provide hinged connection therebetween, and said strap parts each including a fastening device for fastening the opposing ends of said strap parts to said watch case, the fastening device of one of said strap parts comprising a generally U-shaped stirrup-like component including a middle portion secured to the terminal frame-like member at said opposite end of said one strap and spaced from the watch case for a distance equal to that of the free end of the crown from said case when the crown is tightly screwed on the said sleeve barrel, and including end portions having outwardly directed projections engaging in said aligned holes of said one pair of lugs to provide a hinged connection, whereby the said stirrup-like component has dimensions such that it can only straddle said crown when said crown is fully screwed on said sleeve barrel, the fastening device of the other of said strap parts comprising a component including a first portion secured to the terminal frame-like member at said opposite end of the other of said strap parts and a second portion positioned between the other of said pair of spaced lugs and having a transverse channel therethrough, the fastening device of said other strap part further comprising a pin extending through said channel and terminating in said aligned holes in said other pair of lugs.

3,270,929
VIBRATION DIE CUT STRIPPING MACHINE
Joseph E. Foster, Jr., 29 Doe Lane, Malvern, Pa.
Filed Aug. 13, 1964, Ser. No. 389,502
20 Claims. (Cl. 225—97)



1. In a machine for removing scrap sections from cut and scored blanks having leading and trailing edges, the combination of a feeding conveyor, a stripping section and a delivery conveyor in continuous juxtaposed relation; said feeding conveyor delivering said cut and scored blanks to said stripping section through feed roller means; said delivery conveyor carrying stripped blanks away from said stripping section through delivery roller means; and said stripping section supporting rotary beater means and fan means respectively mounted below and above said blanks when within said stripping section.

3,270,930
WEB INSPECTION SYSTEM
Howard J. Emerson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 28, 1961, Ser. No. 141,481
8 Claims. (Cl. 226—33)

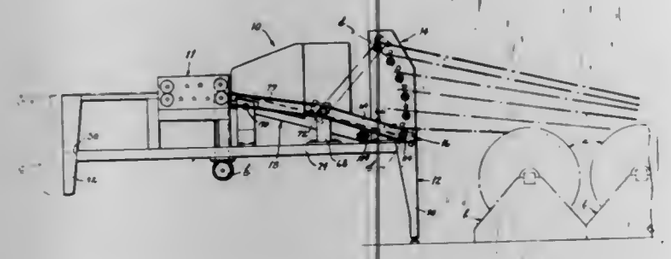


8. A moving web control comprising:
means to decelerate and stop a rapidly moving web in response to a stop signal,
means rendered operative in response to said stop signal for determining the deceleration distance,
means operative during said deceleration for generating a signal indicating said web has come to a stop,
and means responsive to said signal generating means and said distance determining means for reversing the movement of said web at a greatly reduced speed a distance equal to said deceleration distance.

3,270,931
APPARATUS FOR SELECTIVELY FEEDING SHEET MATERIAL FROM A PLURALITY OF COILS

Walter A. Ried, St. Louis, and Joseph J. Schrader, Jr., Florissant, Mo., assignors to Engel Equipment, Inc., St. Louis, Mo., a corporation of Missouri

Filed Nov. 25, 1964, Ser. No. 413,848
10 Claims. (Cl. 226—49)



1. For use in selectively feeding sheet material from a plurality of coils, the apparatus comprising

a frame,

a plurality of horizontally-extending feed roller pair sets rotatably mounted on said frame and positioned at different levels one above the other, each pair being in constant gripping engagement, whereby the rolls of each set receive and retain between them sheet material from one of such coils without interference, and

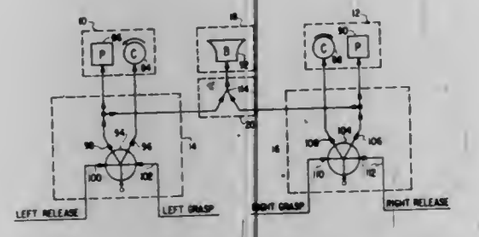
means carried by said frame for selectively engaging and reversibly driving a roller of a selected roller pair set, and for disengaging same,

whereby sheet material from one of the plurality of coils may be selected and advanced to a subsequent operation station and may be retracted therefrom.

3,270,932
FLUID CONTROLLED CAPSTANS WITH BRAKES

Robert T. Smith, Jr., Hatboro, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 13, 1964, Ser. No. 337,293
24 Claims. (Cl. 226—95)



1. A web transport device which comprises:

(a) first and second web drive means each located adjacent a web path for moving a web grasped thereby, with each said drive means being adapted to receive fluid energy in either a first state or a second state for selectively creating across the web a fluid pressure gradient of either web grasping polarity or web releasing polarity, respectively;

(b) web brake means located adjacent said web path for restraining movement of a web grasped thereby, said web brake means being adapted to receive fluid energy in either a third state or a fourth state for selectively creating across the web a fluid pressure gradient of either web grasping polarity or web releasing polarity, respectively;

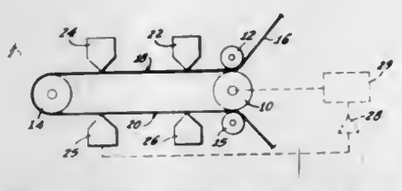
(c) first pure fluid amplifier means responsive to either a selectively generated first fluid grasp signal or a selectively generated first fluid release signal for respectively supplying first state fluid energy or second state fluid energy to said first web drive means; and second pure fluid amplifier means responsive to either a selectively generated second fluid grasp signal or a selectively generated second fluid release signal for respectively supplying first state fluid energy or second state fluid energy to said second web drive means; and

(d) pure fluid logic means operatively responsive to either the generation of said first fluid grasp signal or the generation of said second fluid grasp signal for supplying fourth state fluid energy to said web brake means, said pure fluid logic means further being operatively responsive to either the generation of said first fluid release signal following the generation of a said first fluid grasp signal, or the generation of said second fluid release signal following the generation of a said second fluid grasp signal for respectively supplying third state fluid energy to said web brake means.

3,270,933
AIR-CUSHIONED TAPE GUIDE

Frank Dekker, Inglewood, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Dec. 20, 1963, Ser. No. 332,014
13 Claims. (Cl. 226—97)



1. In a tape transport system wherein a travelling tape passes around a cylindrically curved means to form a loop with an ingoing leg and an outgoing leg with first means positively gripping the tape to feed the tape to the ingoing leg at a given rate and second means positively gripping the tape to withdraw the tape from the outgoing leg at a given higher rate to cooperate with the first means to maintain the loop under predetermined constant tension with transducer means cooperating with the tape adjacent at least one leg of the loop, wherein a closed-loop servo-mechanism regulates the speed of said first and second means to keep the speed of the tape in the loop constant within a small range of deviation and wherein said transducer means includes a reading head that is included in the closed-loop servomechanism, the improvement to enable the system to drive the tape in a stable manner with the range of deviation reduced to a few microinches, comprising:

said cylindrically curved means being a stationary hollow member having a curved wall at its exterior to guide the tape, the curved wall being porous and being formed from solid particles to provide numerous closely spaced exceedingly small tortuous flow passages therethrough;

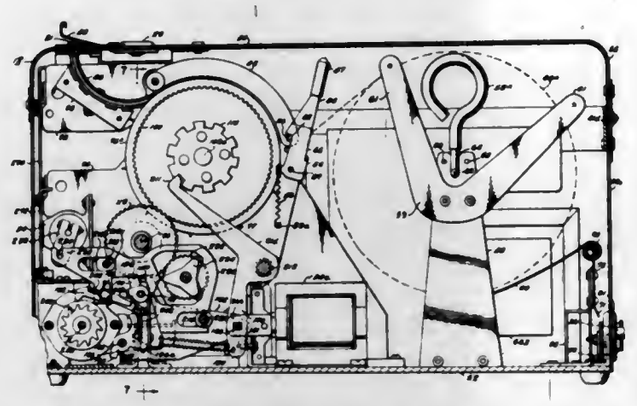
means for providing compressed gaseous fluid; and

means operatively coupled to the last mentioned means to supply the interior of the hollow member with the compressed gaseous fluid for flow through the tortuous flow passages to the curved wall to maintain a cushion of the gaseous fluid between the traveling tape and the curved wall and to maintain the tape out of contact with the curved wall in opposition to the tension of the tape.

3,270,934
DISPENSING APPARATUS

Charles E. Stansell, Dallas, Tex., assignor to Trolex Corporation, Dallas, Tex., a corporation of Texas

Filed July 31, 1963, Ser. No. 303,461
36 Claims. (Cl. 226—136)

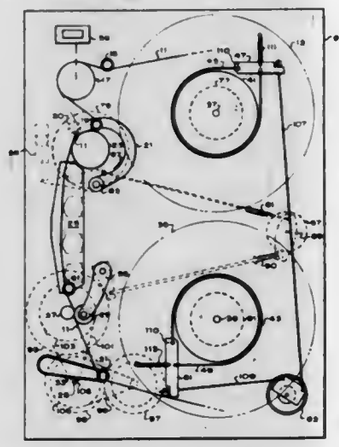


1. An apparatus for dispensing a tape perforated to define stamps or tickets that comprises: drive roller means for engaging said tape; means producing rotation of said drive roller means; a control device including a plurality of normally open switches; a step switch having a plurality of normally closed contacts; circuit means connecting each of said plurality of normally open switches to a different one of said plurality of normally closed contacts; means to close one of said plurality of normally open switches to register the desired number of stamps to be issued; means effective responsive to closure of a circuit through said one of said plurality of normally open switches and the normally closed contact of said step switch connected thereto for actuating said means producing rotation to issue stamps; and means for indexing said step switch to open the normally closed contact connected to said one of said plurality of normally open switches when the desired number of stamps are issued.

3,270,935
TAPE RECORDING AND REPRODUCING APPARATUS

Walter T. Selsted, Redwood City, and William I. Girdner, Portola Valley, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Nov. 29, 1963, Ser. No. 326,811
6 Claims. (Cl. 226—188)



1. A mechanical filter for tape recording and reproducing apparatus which moves a continuous tape from a tape supply having angular inertia, the apparatus comprising:

a rotatable member having high angular inertia;

a roller attached to said rotatable member for rotation therewith;

means disposed away from said roller on the tape supply side thereof for positioning tape on said roller;

a tape guide disposed on a movable member intermediate said means and said roller;

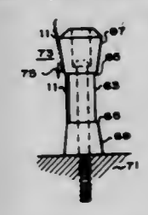
said movable member being adapted to move along a path for altering the wrap angle of tape around said roller and said tape guide; and

means actuated by said movable member for exerting braking torque on the combined attached roller and rotatable member as said tape guide approaches a position which produces a selected wrap angle of tape about said roller.

3,270,936
TAPE GUIDE FOR TAPE RECORDING AND REPRODUCING APPARATUS

Walter T. Selsted, Woodside, and William I. Girdner, Portola Valley, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Original application Nov. 29, 1963, Ser. No. 326,811. Divided and this application Sept. 29, 1965, Ser. No. 491,220
4 Claims. (Cl. 226—196)



1. A tape guide for tape transport apparatus comprising:

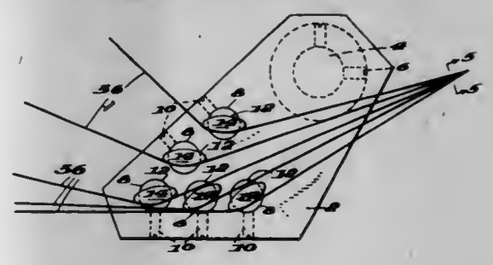
a pair of frusto-conical sections and a non-rotatable cylindrical section having a diameter smaller than the truncate diameters of said frusto-conical sections and having a length substantially equal to the width of a tape;

said cylindrical section being disposed between said pair of frusto-conical sections with the truncate diameters adjacent said cylindrical section and with the truncate surfaces of said frusto-conical sections forming outwardly extending shoulders for engaging the longitudinal edges of the tape.

3,270,937
GUIDE ELEMENTS

William Albright Harrell, Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

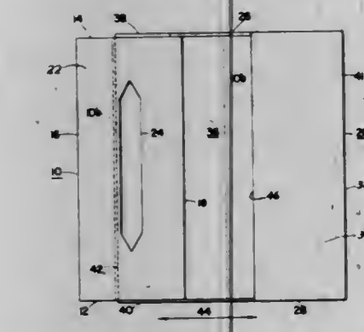
Filed Nov. 27, 1964, Ser. No. 414,158
2 Claims. (Cl. 226—197)



1. In an apparatus for continuously receiving a plurality of separate moving ribbons of filaments which comprises means vertically aligning each moving ribbon in a spaced relationship and means converging said ribbons to form a tow having said ribbons uniformly stacked and a width equal to that of a single ribbon, the improvement wherein said converging means comprises a base plate having a plurality of cantilevered guide elements mounted thereon, said guide elements each having a portion having

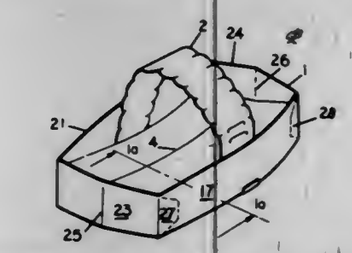
an oval-shaped guide surface with a radius of curvature in the range of from about 5/8 inch to about 3 inches, said guide elements being positioned on said base plate in such a manner that each guide element guides a single ribbon to a common convergence point, said ribbons contacting said guide elements on the oval-shaped surface.

3,270,938
WASTE RECEPTACLE
Floyd P. Rhinegold, 338 SW. 17th St., Richmond, Ind.
Filed Oct. 5, 1964, Ser. No. 401,462
7 Claims. (Cl. 229—7)



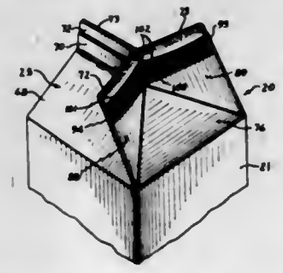
1. A combination tissue dispenser and waste receptacle comprising a rectangular waste box having two upstanding sides, a bottom, an end and a cover, said sides and said end being of equal height, said waste box being of rectangular cross-section, said cover and said end being of equal length, said cover having a width equal to a fraction of the dimension of said bottom measured in a direction parallel to said width, thereby providing for a rectangular waste box having an access opening in said cover and an open end, and a tissue box having second ends, bottom and sides, said sides and said bottom of said waste box having peripheral portion adjacent said open end adapted to fit over a portion of said second ends and bottom of said tissue box to receive said tissue box therebetween thereby securing said waste box to said tissue box and bounding said waste box and said access opening, said waste box and said tissue box being equal in height, said end of said waste box being equal in length and area with said sides of said tissue box, said waste box having means for selectively collapsing said waste box onto said tissue box and thereby varying the volume of said waste box.

3,270,939
CONTOURED CONTAINER
David P. Ebelhardt, Atlanta, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Feb. 5, 1964, Ser. No. 342,705
7 Claims. (Cl. 229—16)



6. A container comprising a main panel of bendable material having side and end edges, a pair of side panels of bendable material disposed in generally normal relation to said main panel along opposite side edges thereof, a pair of end panels adjoined respectively to the adjacent end of said side panels, and elevator panels having one edge foldably joined to said side edges of said main panel and having another edge foldably joined to an adjacent edge of said side panels, said elevator panels being disposed in flat face contacting relation to the inner surfaces of the adjacent side panels and being configured to impart a degree of curvature to said main panel in a direction generally normal to the plane and end edges thereof and wherein a slit is formed at the edge of each side panel which is adjacent said main panel and wherein a strap is adjustably disposed within at least one of said slits so as to form a closure band for the container.

3,270,940
CONTAINER WITH EXTENSIBLE POURING SPOUT
Harry B. Egleston, Livonia, and Charles Z. Monroe, Detroit, Mich., assignors to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed July 7, 1961, Ser. No. 122,571
15 Claims. (Cl. 229—17)

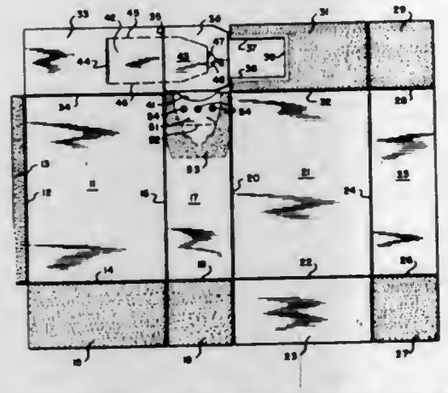


1. A gable top container of paperboard or the like coated overall with a thermoplastic material that becomes an adhesive when subjected to heat, said container comprising, in combination, a tubular body having a bottom closure thereon, a pair of opposed roof panels inclined toward each other and overlying said body, a pair of opposed triangular end panels in-folded between said roof panels from the opposite gable ends formed by the latter, two pairs of triangular fold-back panels each pair of which is integral with a respective one of said in-folded triangular end panels along fold lines which underlie said roof panels, said fold-back panels being folded adjacent the undersides of said roof panels, an outer rib panel surmounting each roof panel, a pair of inner rib panels joined by a fold line and surmounting each pair of triangular fold-back panels and adjoining end panel, a sanitarily protected extensible pouring spout housed in collapsed condition within said container and defined in part by one of said triangular end panels and an adjacent pair of said fold-back panels and an adjacent pair of said inner rib panels, said spout also being defined by adjacent portions of said roof panels and outer rib panels, an abhesive layer interposed between each of said spout-defining inner rib panels and the one of said outer rib panels adjacent thereto, said abhesive layers terminating short of the outer ends of said inner and outer rib panels and defining thereon marginal sealing areas adjacent said abhesive, an upstanding sealing flap integral with each one of said outer rib panels, each said sealing flap having a marginal sealing area defined thereon, said rib panels and said marginal sealing areas being sealed together into a top closure rib surmounted by an upstanding sealing rib enclosing said extensible spout with a fluidtight sanitary margin.

3,270,941
EASY OPEN AND RECLOSABLE CARTON
Donald E. Barnes, Minnetonka, Minn., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Nov. 3, 1964, Ser. No. 408,600
20 Claims. (Cl. 229—17)

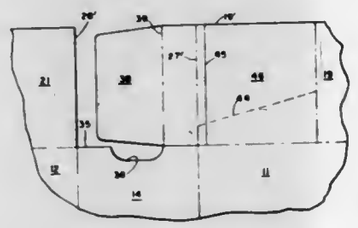
1. A carton for containing a dry free-flowing product and comprised of opposed side and end panels of semi-rigid packaging material secured together in a rectangular

tubular construction, a bottom closure formed of side panel and end panel-joined flaps bent inwardly and secured in overlying relation to one another, a first top closure flap joined to one of said side panels and formed to provide an orifice-defining portion at one end thereof, a second top closure flap joined to the other side wall panel and disposed in overlying relation to said first top closure flap, and an end closure flap joined to said second top closure flap and disposed in overlying relation to the top portion of one of said end panels, said end closure flap and said second top closure flap being weakened



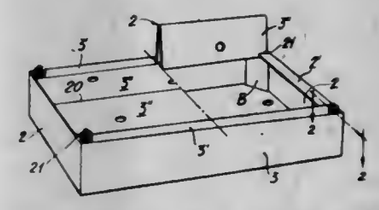
along lines defining a continuous tear strip of which the portion formed from said second closure flap is of larger dimensions than, and disposed in registration with, the orifice-defining portion of said first top closure flap, said second top closure flap and said end closure flap being firmly adhered to the first top closure flap and said end panel, respectively, only over areas thereof exclusive of said tear strip, the tear strip portion of said end closure flap being less firmly and removably adhered to said end panel to enable the severance of said tear strip from said end closure flap and said second top closure flap to expose a pouring orifice for said carton.

3,270,942
CARTON
Paul E. Cope and Charles R. Specter, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 14, 1965, Ser. No. 467,185
5 Claims. (Cl. 229—17)



1. A seal-end carton in the form of a sleeve of rectangular cross-section and having alternating side, front and back panels, said carton having a siftproof end closure comprising adhesively attached overlapping closure flaps articulated from said front and back panels along integral score lines, said overlapping and attachment of said closure flaps to one another occurring only in areas directly overlying the end of said sleeve, the lowermost closure flap having a length and width substantially the same as the cross-section of the sleeve and having integrally connected to one end thereof an outwardly extending tab, a fold line intervening said tab and said lowermost closure flap, the region of said tab within at least about one-quarter inch of said fold line having approximately the same width as said lowermost closure flap and the balance of said tab being reduced in width as the free end thereof is approached, the inner surface of said tab in said region being adhesively attached directly to a full width area of the exterior surface of one of said side panels with the distal end of said tab free from attachment whereby it may be readily grasped in use, said one side panel terminating in a die-cut free edge coplanar with the score lines of said closure flaps, said full width area of the exterior surface being immediately adjacent said die-cut free edge, the entire said tab being adapted to be torn free from said one side panel whereby access to the carton interior is gained.

3,270,943
PACKING CASE ESPECIALLY FOR TRANSPORTING HEAVY GOODS
Roberto Polenghi, Strad Alzaia Naviglio Pavese 10, Milan, Italy
Filed May 18, 1964, Ser. No. 368,082
Claims priority, application Italy, June 17, 1963, 36,165
8 Claims. (Cl. 229—23)

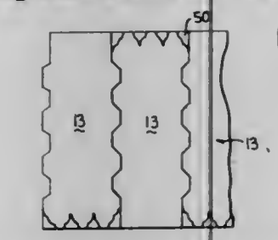


1. Composable packing box suitable to be stacked with many other similar boxes in particular for the transportation of heavy goods comprising at least one blank of foldable material which is suitably sheared and provided with bending lines to be formed into a parallelepiped box, said blank including a central rectangular bottom surface with a hole at each corner, first appendant portions extending from each side of said rectangular bottom surface and adapted to be bent at right angle thereto, second appendant portions with a hole at each corner of their lateral ends, said second appendant portions extending from said first appendant portions and being adapted to be bent parallelly to the bottom surface inwardly with respect to the box and at right angle to said first appendant portions, further four angle rods with a blind hole axially extending from each of their base, and four connecting members, said angle rods being placed on the central bottom surface with their axis perpendicular thereto, with their lower blind holes in register with the holes thereof and, upon bending of said first and second appendant portions, with part of their surface in contact with said appendant portions, whereby the upper blind holes of each angle rod and the holes of the second appendant portions, which are bent to cover the upper surface of said angle rods, are brought in reciprocal register relation to be in a position to receive said four connecting members penetrating therein for holding together the different components of the box, each of said connecting members comprising a pin, a flange-like spacer body and a tapered extension projecting from said spacer body in a direction opposite to the one of the pin, the holes of the bottom surface and the lower blind holes of the relative angle rods resting thereupon being adapted to be engaged by the tapered extensions of the connecting members of an adjacent box positioned below.

3,270,944
ARTICLE CARRIER
Theodore C. Baker, New Canaan, Conn., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 28, 1964, Ser. No. 370,884
8 Claims. (Cl. 229—40)

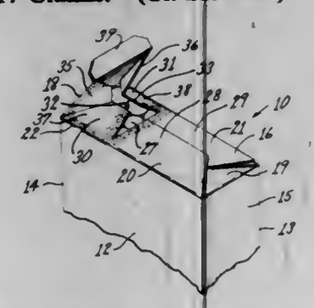
1. An elongated wrapper blank comprising a main panel, a pair of side panels foldably joined respectively to opposite side edges of said main panel, and a pair of

lap panels foldably joined repectively to the edges of said side panels remote from said main panel, the end edges of each of said panels being cutaway to form a uniform scallop-like configuration along both edges of the blank for substantially the entire length thereof, said lap panels having cooperating latch means, and the spacing between



one of said side panels and an adjacent end of said wrapper blank being substantially equal to the spacing between the other of said side panels and the other end of said wrapper blank plus one-half the length of a convolution of said scallop-like configuration whereby adjacent wrapper blanks in reversely turned relation internest and have substantially aligned ends.

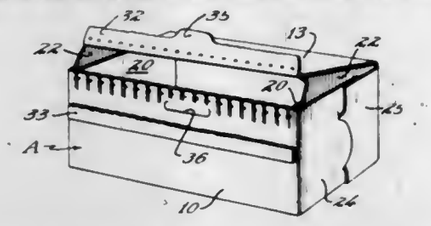
3,270,945
CIGARETTE PACKAGE CONSTRUCTION OR THE LIKE
William C. Whitaker, Chesterfield County, and Joseph Y. Thomas, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 351,997
17 Claims. (Cl. 229—51)



1. A container having an open end, said open end having a pair of opposed side flaps and an end flap extending therefrom, said side flaps each being formed into two portions by a slit extending inwardly from the free edge thereof toward said open end, said side flaps being folded over said open end with said one portion of one of said side flaps disposed in overlapping relation with said one portion of the other side flap and the other portion of said one side flap disposed in abutting relation with said other portion of said other side flap to close said open end, said end flap being folded over said other portions of said side flaps and extending over part of said one portions of said side flaps to completely cover said slits in said side flaps.

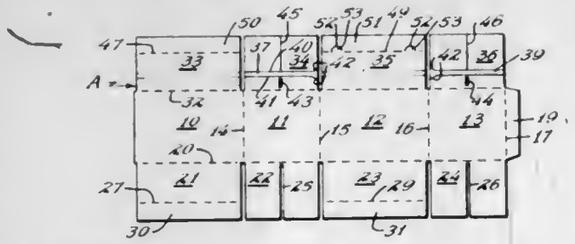
3,270,946
ICE CREAM CARTON
John R. Redpath, Western Springs, and Lawrence S. Wysocki, Chicago, Ill., assignors to Waldorf Paper Products Company, a corporation of Minnesota
Filed Apr. 13, 1964, Ser. No. 359,333
3 Claims. (Cl. 229—51)

1. A carton including
a sheet of paperboard of substantially uniform thickness cut and creased to provide a series of foldably connected wall panels,
a glue flap hinged to one end wall panel of said series adapted for attachment with the other end panel of the series to form a tubular body,
said glue flap having two spaced weakened lines of separation extending thereacross generally parallel to the end of the glue flap and dividing the glue flap into an anchoring section between one said weakened line and the end of the glue flap, a removable tear strip section between said weakened lines, and a detachable section between the other said weakened line and the fold line connecting said glue flap to said one end wall panel,
adhesive connecting said anchoring section securely in face contact to said other end wall of said series,



said tear strip section being free of adhesive connection to said other end wall of said series, and
one of the overlapping areas of said detachable portion and said other end wall including spaced embossed areas extending toward the other overlapping area and adhered thereto, said embossed areas holding the areas between said embossed areas out of face contact,
whereby when said tear strip section is removed, said detachable section may be easily detached from said other end wall.

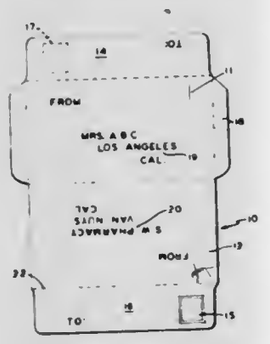
3,270,947
RECLOSABLE CONTAINERS
Walter H. Rasmussen, St. Paul, Minn., assignor to Waldorf Paper Products Company, Ramsey County, Minn., a corporation of Minnesota
Filed Mar. 2, 1965, Ser. No. 436,576
6 Claims. (Cl. 229—51)



1. A reclosable container including,
a rectangular tubular body having parallel end walls and parallel side walls connected in tubular relation,
closure flaps hingedly connected to said side and end walls, the closure flaps on said side walls extending substantially in edge abutting relation when folded into a common plane,
tuck flaps hinged to the ends of said side wall closure flaps and extendable into said container at substantially right angular relation to said side wall closure flaps and in face contact when said side wall closure flaps are folded into a common plane,
said end wall closure flaps being foldable outwardly of said side wall closure flaps,
said end wall closure flaps including removable tear strips defined by spaced parallel weakened lines of separation extending substantially parallel to the lines of fold connecting said end wall closure flaps to said end walls and dividing each said end wall closure flaps into an end portion between said tear strip and the end of said end wall closure flaps and a hinged portion between said tear strip and the lines of fold connecting said end wall closure flaps to said end walls.

said portions including lines of separation extending from said tear strip to the end of said end wall closure flaps, said slits being adapted to substantially register with the end edges of said side wall closure flaps in closed condition of said container, and
said end wall closure flaps having apertures therein extending substantially across said hinged portions thereof in alignment with said lines of separation in said end portions and of a width to receive said tuck flaps,
whereby after said containers are closed and said end portions of said end wall closure flaps are adhered in face contact with the portions of said side wall closure flaps which they overlie, said tear strips may be removed to open said container, and said hinged portions of said end wall closure flaps may be folded beneath said side wall closure flaps to receive said tuck flaps in said apertures.

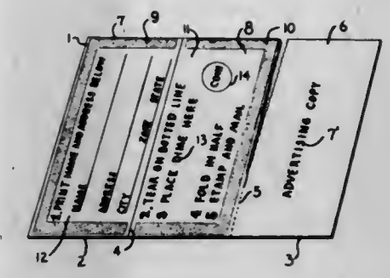
3,270,948
TWO-WAY ENVELOPE
Marion Donovan, 435 E. 52nd St., New York, N.Y.
Filed May 14, 1965, Ser. No. 455,879
1 Claim. (Cl. 229—73)



A two-way envelope including first and second opposed walls forming front and rear walls when first sent, and having areas for imprinting thereon, respectively, a first receiver's name and a sender's name, each wall having imprinted thereon above said name, a word, flaps permanently closing the opposed ends of the envelope, and gummed flaps extending upwardly from each of said walls and having a word imprinted thereon, each of said flaps being of sufficient depth to cover the word on the first and second walls when adhered downwardly thereon, one of the gummed flaps remaining unadhered on its first journey to the receiver while the other gummed flap is adhered over the wall carrying said unadhered flap and concealing the word printed thereon, said latter flap being removable when received by the first receiver, and the other wall flap when adhered over the opposite wall concealing the word thereon and converting the envelope to one addressed to the original sender.

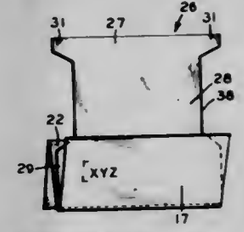
3,270,949
MAILING PIECE
Joel Hillman II, New York, N.Y., assignor to Tension Envelope Corporation, Kansas City, Mo., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 435,955
2 Claims. (Cl. 229—92.1)

2. A mailing piece comprising a blank having at least three like panels secured together by integral fold lines, only one of said fold lines being perforated, two of said like panels being secured together by an unperforated fold line; each of said last named panels having U-shaped strips of pressure sensitive adhesive with the ends of the U-shaped strips terminating adjacent said unperforated fold line and in matching relation to one another when said panels are folded along said unperforated fold line in face contacting relation; and said blank when folded



along, first said perforated fold line and then along said unperforated fold line, forming at least a three ply mailing piece.

3,270,950
ENVELOPE AND WRITING SHEET COMBINATION
Marion Donovan, 435 E. 52nd St., New York, N.Y.
Filed Apr. 14, 1965, Ser. No. 448,000
4 Claims. (Cl. 229—92.1)

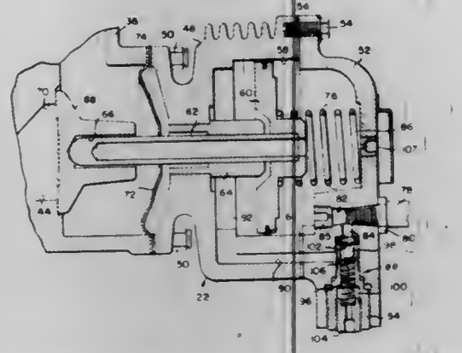


1. A sealed correspondence assembly including a writing sheet and an envelope sheet partially enclosing the writing sheet, the sheets having transverse fold lines dividing the same into a plurality of sections, the writing sheet having a downwardly extending pocket between its first and second sections, the envelope sheet including a shallow first section having short inwardly extending cut lines at the bottom thereof and forming laterally extending tabs with adhesive thereon, a third section which is positioned in said writing sheet pocket and is of substantially the same depth and width as the pocket, and an intermediate section which is positioned rearwardly over the back of the folded writing sheet sections, the folded writing sheet sections and the second and third envelope sections having fold lines adjacent but spaced from opposite ends thereof, the portions of said sections lying outside the fold lines positioned inwardly and rearwardly of the folded writing sheet sections and enclosed by said intermediate envelope section, the shallow first section of the envelope sheet extending upwardly from the lower edge of the folded writing sheet sections and partially over the foremost section thereof with its adhesive tabs adhered to the rear face of the folded assembly.

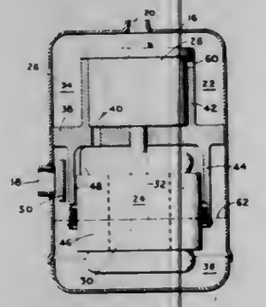
3,270,951
TURBOCHARGER CONTROLS
Wendell E. Reed, Chula Vista, Calif., assignor, by mesne assignments, to International Harvester Company, a corporation of Delaware
Filed Apr. 4, 1963, Ser. No. 270,646
5 Claims. (Cl. 230—9)

1. Control apparatus for a waste gate valve for a turbocharger having a turbine and a compressor comprising a piston connected to said valve, means forming inner and outer chambers at the sides of said piston adjacent and remote from said valve, respectively, means defining a restricted inlet connecting the compressor discharge pressure to said outer chamber, means defining a restricted

outlet connecting said outer chamber to a low pressure area, said restricted inlet and outlet cooperating to establish a reference pressure in said outer chamber bearing a predetermined relation to the compressor discharge pressure, a spring biasing said piston in a valve-closing direction, the force of said spring plus the reference pressure normally holding said valve closed, and valve means normally venting said inner chamber, said valve means being responsive to an increase in the compressor discharge pressure to a predetermined level to connect said inner chamber to said compressor discharge pressure to overcome the force of said spring and said reference pressure to thereby open said waste gate valve.

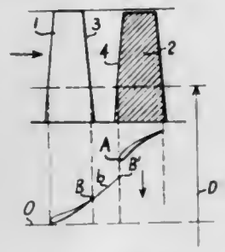


3,270,952
PROTECTIVE DEVICE FOR COMPRESSORS
Friedrich O. Bellmer, East Orange, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,785
16 Claims. (Cl. 230—58)



1. Apparatus comprising:
(a) a casing,
(b) a motor disposed within said casing,
(c) a shell positioned within said casing about said motor,
(d) said motor being operative to drive means for withdrawing gas from within said shell,
(e) partition means for dividing said casing into two portions,
(f) said motor and shell being positioned in one of said portions of said casing,
(g) said casing having an inlet opening for introducing fluid into said lower portion,
(h) said shell having an inlet opening to allow fluid to pass from said lower portion into said shell,
(i) valve means at said shell inlet opening operative in a sealed position thereof to seal said shell inlet opening when liquid is collected in said shell up to the level of said shell inlet opening,
(j) said valve means including a valve actuator operative to be forced into a said sealed position when liquid in said casing reaches the level of said shell inlet opening.

3,270,953
AXIAL FLOW COMPRESSOR, BLOWER OR VENTILATOR WITH REDUCED NOISE PRODUCTION
Jan Jerie, 27 Komornicka, Prague 6, Czechoslovakia; Jaroslav Němec, 3 Libicka, Prague 3, Czechoslovakia; and Zdeněk Moravec, 8 Legerova, Prague 2, Czechoslovakia
Filed May 19, 1964, Ser. No. 368,649
Claims priority, application Czechoslovakia, May 21, 1963, 2,900/63
2 Claims. (Cl. 230—120)

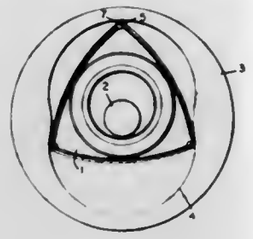


1. An axial compressor, blower, or ventilator having a set of rotor blades and a set of stator blades, said blades satisfying the relationship $S=\tau/\tau_0>0.65$, wherein τ is the characteristic crossing value of one of said sets by the other set, and τ_0 is the pitch of the blades of said other set,
(1) the blades of each set being spaced about a common axis and extending radially between a root circle near said axis and a tip circle remote from said axis, said circles being centered in said axis, said pitch being the circumferential spacing of adjacent blades of the other set as measured on said tip circle,
(2) said characteristic crossing value being the circumferential spacing of two lines projected on a plane perpendicular to said axis, said spacing being measured on said tip circle, said projected lines intersecting in said root circle,
(3) one of said projected lines being an axial projection of a line of intersection between a surface of rotation about said axis and a plurality of radially spaced trailing rays of one of the blades of said other set, each trailing ray being defined by the point of intersection of the camber line of said one blade with the trailing edge of said one blade in the airfoil section of said one blade and by a point on said camber line spaced from said trailing edge toward the leading edge of said one blade a distance equal to one fourth of the length of the chord between said camber line and said leading edge, said distance being measured along said chord,
(4) the other one of said projected lines being an axial projection of the leading edge of one blade of the other set,
(5) said surface of rotation being defined by said leading edge of the last-mentioned blade when said other set rotates about said axis.

3,270,954
SEALING DEVICE FOR ROTARY PISTON ENGINE
Kenichi Yamamoto, Hiroshima-shi, Japan, assignor to Toyo Kogyo Company Limited, Hiroshima-ken, Japan
Filed Feb. 10, 1965, Ser. No. 431,639
Claims priority, application Japan, Feb. 17, 1964, 39/10,973
3 Claims. (Cl. 230—145)

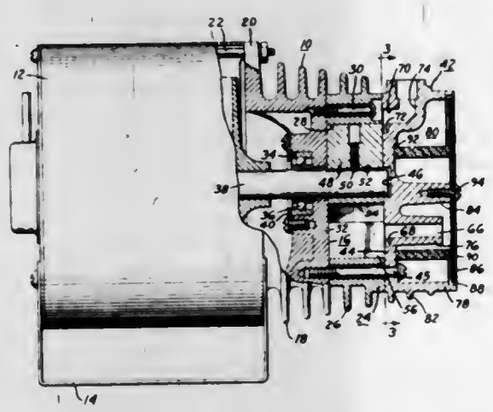
1. A rotor and sealing device for a rotary piston internal combustion engine having an annular casing with a trochoidal shaped internal peripheral wall and a crankshaft within said casing for eccentrically rotating a rotor within said casing, comprising a triangular rotor adapted to be eccentrically rotatably mounted on the crankshaft for rotation within the annular casing, said rotor having

an axially extending groove at each apex thereof, an apex seal piece radially slidably mounted in each groove, each apex seal piece having at least one longitudinally extending bore therethrough adjacent the radially outward edge of the seal piece and leaving between said bore and the radially outward edge a frictional sliding contact portion of sufficient thickness for withstanding the sliding frictional forces of the seal piece on the internal wall of



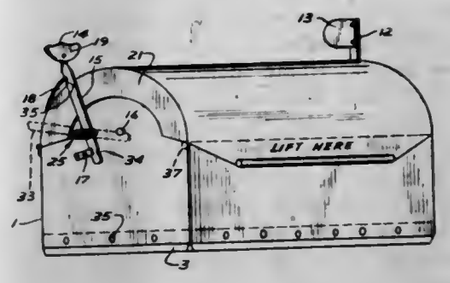
the casing, said bore being entirely within the portion of the seal piece which projects out of the groove with the edge of the groove at a position on the seal piece radially inwardly of the said at least one bore, and at least one radially extending hole in said seal piece extending from the edge thereof within the groove into said bore and positioned substantially midway of the length of the seal piece.

3,270,955
AIR COMPRESSOR
Curtis W. Huyser, Zeeland, and Frederick T. Vaas, Jr., Grand Rapids, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 16, 1965, Ser. No. 440,130
5 Claims. (Cl. 230—232)



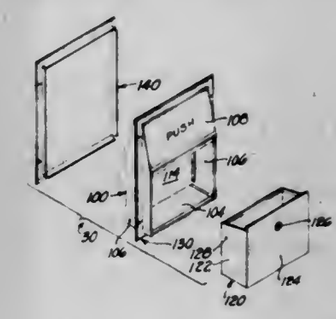
1. An air compressor comprising, an open-ended cylinder forming a cavity, impeller means in said cavity including means for dividing said cavity into a variable volume intake chamber and a variable volume discharge chamber, an inlet and an outlet in communication with said chambers, a base plate for closing one end of said cylinder, a cover plate for closing the other end of said cylinder having said inlet therein, said cover plate including an outwardly opened enclosure having a planar extent substantially equal to the outer dimension of said cylinder, an annular filter disposed within said enclosure surrounding said inlet opening in spaced relationship therewith, closure means for closing one end of said annular filter including means for producing an annular inlet opening into said enclosure for directing fluid intake across said filter and thence through said inlet into said cavity, said closure means in cooperation with said enclosure forming a large volume chamber serving to muffle noises within said cavity produced during compressor operation.

3,270,956
RURAL MAILBOX WITH AUTOMATIC SIGNALS
Jake S. Mullner, Box 148, Westport, S. Dak.
Filed Mar. 9, 1964, Ser. No. 350,337
2 Claims. (Cl. 232—35)



1. In a mailbox, an upwardly opening receptacle having adjoining upright end and rear walls, a cover hinged to the upper portion of the rear wall for swinging movement between a closed position over the receptacle and an upwardly extending open position, a signal positioned outside of the receptacle and pivoted to the end wall on an axis parallel to the hinge axis for movement of the signal along a path between a normal lowered position extending rearwardly from the rear wall and a raised position beside the end wall, spring means on the signal device for yieldably retaining the device in said path, a lifter member integrally mounted on the cover to extend into said path, said lifter member having a beveled rear edge and a hooked front edge whereby as the cover is opened the rear edge of the lifter member will engage the signal device and move it from said path against bias of the spring means until said front edge has passed under the device to raise the device upon closing movement of the cover.

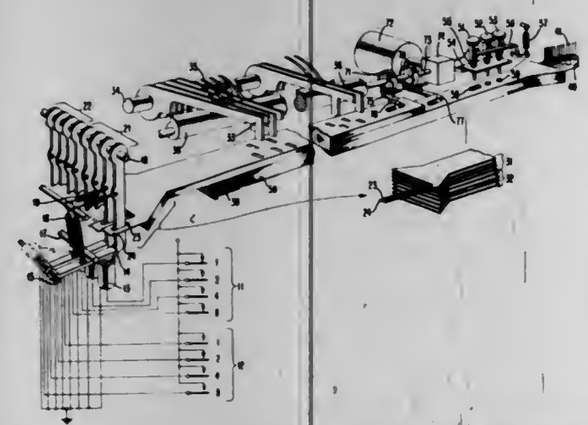
3,270,957
PARTITION MOUNTED CONTAINER
William S. Louchheim, Beverly Hills, Calif., assignor to The Bobrick Corporation, Los Angeles, Calif., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,234
4 Claims. (Cl. 232—43.2)



1. In a partition mounted container for location in an opening formed in a relatively thin partition, the combination of: a box-like receptacle having a substantially enclosed, hollow interior, said receptacle being formed by horizontal, transversely extending top and bottom walls and vertical, transversely extending end walls with vertically extending sidewalls connected to the transverse extremities of the top and bottom and end walls, the sidewalls being of substantially equal dimensions and being positioned by the top and bottom and end walls substantially transversely aligned, said receptacle being mounted with said top and bottom and end walls extending transversely through the partition opening and transversely beyond the sides of the partition, said receptacle sidewalls being spaced transversely outwardly of said partition sides

and thereby fully exposed; frame means operably connected between said receptacle and said partition for supporting said receptacle in said mounted position extending through said partition opening, said frame means including first and second frame members, said first frame member having a leg secured to said receptacle within said partition opening and a leg overlying one of said partition sides, said second frame member having a leg slidably engaged with said receptacle within said partition opening and a leg overlying the other of said partition sides; access opening means formed through each of said receptacle sidewalls at upper portions of said sidewalls and providing access to said receptacle interior, said access opening means of one sidewall being substantially transversely aligned with the access opening means of said other sidewall, said lower portions of said receptacle sidewalls normally being closed and being substantially free of access to said receptacle interior; and servicing means forming at least a part of one of said receptacle sidewalls selectively operable for opening at least a part of said one sidewall to provide servicing access to said receptacle interior.

3,270,958
MECHANICAL CALCULATING APPARATUS
John E. Hickerson, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 27, 1964, Ser. No. 406,842
11 Claims. (Cl. 235—61)



1. Apparatus for performing an ordered operation with a plurality of operands comprising:

a group of selecting members for each operand in the operation, the selecting members in each group being positioned according to the given character of the group's operand and each selecting member having a pattern of openings;

a plurality of operational members normally retracted but being active to pass into channels formed by the openings in the selecting members when the selecting members have been positioned, each operational member being representative of one combination of characters for the operands;

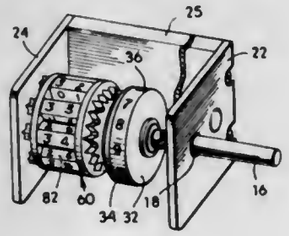
each group of selecting members, when selecting members in the group have been positioned, forming channels to pass a set of operational members wherein the operational members of the set represent all combinations of the group's given-character operand with all other characters which could be given for the other operands;

each group of selecting members, when selecting members in the group have been positioned, forming in cooperation with the other groups of selecting members a single channel to pass the one operational member which represents the combination of characters given for the operands;

a group of read-out members in proximity to the groups of selecting members, each read-out member having a pattern of multiple-size openings to receive any operational member passed by the groups of selecting members so that those read-out members engaged at a smaller opening by the operational member are limited in movement while those read-out members engaged at a larger opening by the operational member are permitted greater movement; and

biasing means to bias said group of read-out members to move after the operational member has passed into the read-out members so that the pattern of movement of the read-out members will indicate the result of an ordered operation performed on the combination of characters given for the operands.

3,270,959
INDICATOR
James R. Young and Robert L. Mills, Fort Wayne, Ind., assignors to Planet Instrument, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Feb. 17, 1964, Ser. No. 345,166
6 Claims. (Cl. 235—110)



1. An indicator device, comprising input drive means including a rotatable drive shaft, a first unitary rotatable indicator means, including first rotatable indexing means, said rotatable indicator means providing information spaced at regular circumferential intervals around the periphery of said rotatable indicator means, a rotatable carrier means operatively indexed at each revolution of said first indicator means by said rotatable indexing means, a plurality of additional indicator means spaced at regular angular intervals about the circumference of said carrier means and each mounted for independent rotational indexing movement thereon, said additional indicator means having at least three indicating surfaces, and second rotatable indexing means including a toothed gear forming a part of each of said additional indicator means for individually indexing each of said additional indicator means, and stationary means for coordinating the rotational movement of the carrier means and the rotational indexing movements of said additional indicator means with respect to said first named indicator means to provide a sequence of coordinated movements.

3,270,960
FLUID SENSOR
Edwin R. Phillips, Rosemont, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 11, 1964, Ser. No. 395,796
16 Claims. (Cl. 235—201)

1. Fluid apparatus for sensing the presence of an aperture extending through a body, which comprises:

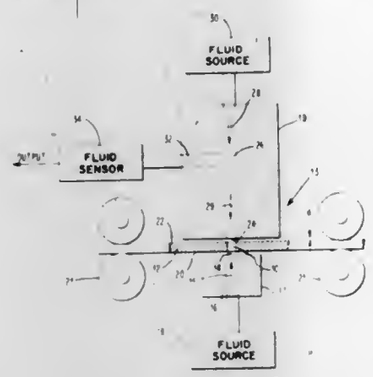
(a) a region in which the body can be selectively placed;

(b) a first fluid orifice having a predetermined first flow area which is located to one side of said region and oriented such that a fluid jet stream issuing therefrom will pass through a body aperture in alignment therewith to emerge at the opposite side of said region;

(c) a second fluid orifice having a predetermined second flow area which is located at the opposite side of said region in alignment with said first fluid orifice for receiving a fluid jet stream therefrom, said second orifice being spaced from the body a distance sufficient to provide a predetermined third flow area therebetween;

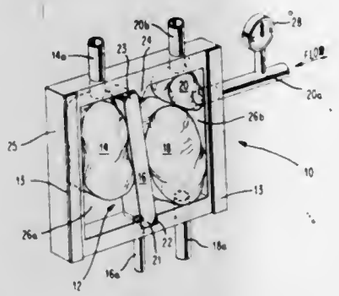
(d) a fluid recovery channel of predetermined volume connected to said second fluid orifice;

(e) fluid static pressure sensing means including means directly connected to said fluid recovery channel, said sensing means being in at least a first or a second state in response to a fluid static pressure of a first or a second value, respectively, in said fluid recovery channel; and



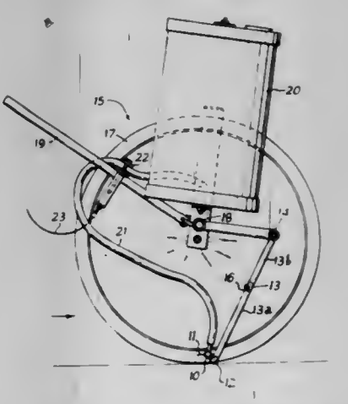
(f) a first pressurized fluid source connected to said first fluid orifice for producing a first fluid jet stream therefrom, and a second pressurized fluid source connected to said fluid recovery channel for producing a second fluid jet stream from said second fluid orifice, where the energies of the fluid from said first and second fluid sources are such, relative to each other, to said recovery channel predetermined volume, and to said first, second, and third flow areas, that fluid in said recovery channel any time substantially comes only from said second fluid source and is at either said one or said second static pressure value in response to the respective absence or presence of said first fluid jet stream impingement on said second fluid orifice so that fluid from said second fluid source is the sole fluid acting on said pressure sensing means.

3,270,961
PNEUMATIC TUBING MEMORY
Arnold Schonfeld, Levittown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 17, 1964, Ser. No. 411,846
7 Claims. (Cl. 235—201)



1. A fluid memory unit comprising: a housing; a memory element within said housing and movable between two stable states within said housing, and responsive to fluid pressure to be locked in either state; said memory element comprising a flexible semi-rigid element having a fluid inlet conduit whereby fluid pressure may be introduced into the element to effect the locking thereof in either of its stable states; a first fluid responsive means within said housing for moving the memory element from a first state to another; a second fluid responsive means within said housing for returning the memory element to its first state; said first and second fluid responsive means comprising flexible elements positioned on opposite sides of said memory element and each having a conduit for introducing fluid pressure therein to expand the selected fluid responsive means whereby the memory element is moved; and fluid flow means cooperating with one of said fluid responsive means to sense the state of said memory element.

3,270,962
APPLICATOR
Robert Watts, Fernhurst, England, assignor to Imperial Chemical Industries Limited, Millbank, London, a corporation of Great Britain
Filed Nov. 29, 1962, Ser. No. 241,007
Claims priority, application Great Britain, Dec. 8, 1961, 44,005/61
1 Claim. (Cl. 239—165)

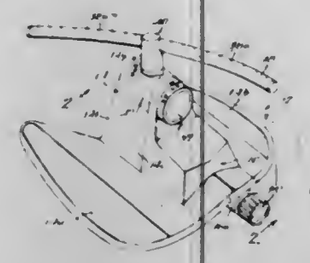


A device for applying liquid weedkiller to the ground between adjacent rows of growing plants while preventing undesirable application of liquid weedkiller to said plants comprising: a vehicle and a distributor assembly; means pivotally securing said distributor assembly to said vehicle for free vertical movement thereof in response to ground irregularities, said distributor assembly comprising at least one longitudinally slidably telescopically adjustable distributor tube extending generally transversely with respect to said rows and being shorter than the distance between said rows, means defining an inlet orifice on said tube; a supply tank on said vehicle for receiving liquid weedkiller; means communicating said supply tank with said inlet orifice; means defining a plurality of generally downwardly directed discharge orifices spaced from one another along said tube; and means on said tube arranged to engage the ground at each end of said tube to support said tube a short distance thereabove to thereby prevent clogging of the discharge orifices by dirt and undesirable application of liquid weedkiller to the plants.

3,270,963
LAWN SPRINKLER
Ivar Jepson, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 18, 1962, Ser. No. 188,407
12 Claims. (Cl. 239—242)

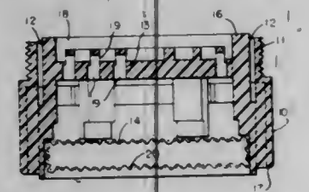
1. An oscillating sprinkler comprising an elongated spray tube, carrier means for said spray tube pivotal about a horizontal axis, a water motor operable to oscillate

said carrier about said axis, means mounting said spray tube on said carrier for selective manual positioning at various angles to said axis, and means defining a water



conduit for supplying water to said spray tube, said last-mentioned means being water sealed at any of said various angles of positioning of said spray tube.

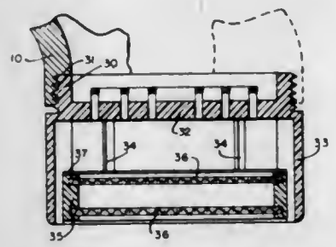
3,270,964
MOLDED WATER AERATORS
Elie P. Aghnides, 46 W. 54th St., New York 19, N.Y.
Filed Jan. 31, 1962, Ser. No. 170,140
5 Claims. (Cl. 239—428.5)



4. A water aerator comprising, an annular generally cylindrical casing, a circular diaphragm integral with the side walls of said casing and transverse to the axis of said casing near its inlet end, said diaphragm defining a plurality of tortuous paths for water to thereby break up the stream of water into a plurality of high velocity jets, said side walls defining a first annular passageway therein which extends from the inlet end of said aerator parallel to the axis of said casing and terminates downstream of said diaphragm, said first annular passageway communicating with the hollow interior of said annular casing downstream of said diaphragm, said side walls of said casing also defining a second annular passageway extending from the discharge end of said aerator also parallel to the axis of said aerator and terminating upstream of the downstream end of said first annular passageway, said first annular passageway having an outer diameter which at least equals the inner diameter of said second annular shell passageway to thereby provide an air flow path from the discharge end of said aerator to the interior of said casing downstream of said diaphragm, means joining the opposing side walls of at least one of said annular shell passageways at a plurality of places around the circumference of said casing, and mixing means including at least one mixing screen in frictional engagement with the side walls of said casing near its discharge end for thoroughly admixing the water jets and air to provide a bubble-laden stream of water.

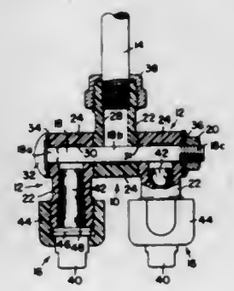
3,270,965
SELF-SEALING AND DEPOSIT-PROOF AERATOR
Elie P. Aghnides, 46 W. 54th St., New York 19, N.Y.
Filed Feb. 5, 1963, Ser. No. 256,343
20 Claims. (Cl. 239—428.5)

18. A device for producing a coherent jet of water containing air bubbles comprising, a casing having an inlet end adapted for connection with the discharge end of a tube containing water under pressure and being in the form of a metal faucet having outside threads and with an outlet end adapted to discharge said coherent jet, said casing having threads on its inside wall adapted to mate with those on the faucet, said casing including a sealing portion adapted to engage the lower end of the faucet and thus seal the casing to the faucet and require substantially all of the water to flow downstreamwardly through the casing, a diaphragm at the upstream end of said casing having at least one orifice through which the stream of water is adapted to be forced into the casing with substantial velocity, an air inlet means opening into the chamber through which air is induced by the stream of water, and means in the path of the stream of water after it leaves the orifice and before it discharges at the outlet end for finely breaking up the water and for offering sufficient resistance for throughly mixing it



with air and for thereafter uniting the aerated water to form a coherent jet having small bubbles disseminated throughout the jet, the resistance offered by the said means and the cross-sectional area of the orifice being proportioned to effect the entrainment and mixing of the air with water before their discharge from said outlet end, substantially all surfaces of said casing and of said diaphragm which are exposed to water comprising a yieldable, moldable synthetic polymer plastic which is resistant to the accumulation of calcium deposit thereon to prevent calcium deposits from forming which might impair the aforesaid proportioning, said air inlet means defining an air passageway extending downstreamwardly from the threads on the casing to the bottom end of the aerator to thus discharge through said air passageway any water that should leak past the seal effected between the said sealing portions and said faucet.

3,270,966
SPRAYER NOZZLE
John W. Ackley, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Illinois
Filed July 15, 1964, Ser. No. 382,885
6 Claims. (Cl. 239—550)



1. A spray nozzle construction comprising: a plurality of substantially identical nylon bodies including one inlet body and at least one outlet body, each of the bodies being of generally T-shaped configuration having a leg portion and a transverse head portion, a transverse

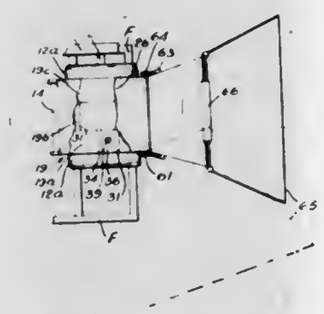
aperture extending entirely through the head portion and a longitudinal aperture extending entirely through the leg portion and extending into communication with said transverse aperture, the leg portion of each of the bodies being provided with a threaded external surface and a threaded internal surface, a drop pipe threaded at one end and matingly engaged with the threaded internal surface of the inlet body, fastener means holding the head portions of said inlet and outlet bodies together whereby the transverse apertures are in communication with each other, spray tip means, and spray tip cap means holding said spray tip means at the end of said outlet body means, said spray tip cap means including an internally threaded bell-shaped portion matingly engaged with said external threads on said outlet bodies.

3,270,967
GAS BURNERS
Albert Westerman, Normanton, and Douglas Harrison, Leeds, England, assignors to Geo. Bray & Co. Limited, Leeds, England, a British company
Filed Jan. 10, 1964, Ser. No. 337,503
Claims priority, application Great Britain, Jan. 18, 1963, 2,357/63
8 Claims. (Cl. 239—560)



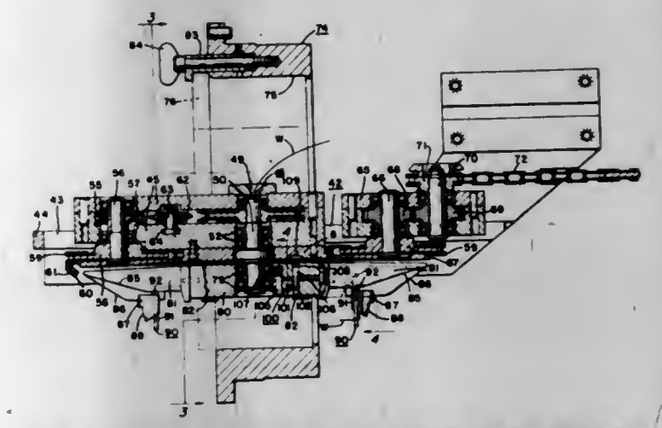
1. A gas burner having a plurality of symmetrically arranged flame ports each having a diameter of the order of 0.030 to 0.060 of an inch and being formed in a strip of heat resisting metal such that each flame port diameter is between 0.8 and 2.0 times the thickness of the metal strip, the flame ports being spaced at centres of between 2 and 4 times the flame port diameter.

3,270,968
BRUSH CHIPPING MACHINE
Norman E. Hess and Dean L. Larsen, Saginaw, Mich., assignors to Mitts & Merrill, Saginaw, Mich., a corporation of Michigan
Filed May 20, 1963, Ser. No. 281,433
11 Claims. (Cl. 241—186)



6. In a brush chipper machine; housing means; revolvable cylinder means therein; a material feeding surface for said housing means leading in toward said cylinder means, said material feeding surface including throat bar means with a leading edge adjacent the path of said cylinder means; actuating means having a tapered surface engageable with a cooperative surface on said throat bar means for moving said throat bar means toward said cylinder means; said cylinder means having a plurality of openings therein at spaced intervals around the periphery thereof; a chipping knife received in each opening and extending a predetermined distance peripherally beyond the cylinder means; and anchor means received in each opening and bearing against each knife to hold it in position.

3,270,969
POLYPHASE STATOR WINDING APPARATUS
Paul B. Greene, Miamisburg, and Lewis H. Le Valley, Albert B. Mewhinney, and Emmet C. Nevin, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Dec. 4, 1962, Ser. No. 242,236, now Patent No. 3,210,020, dated Oct. 5, 1965. Divided and this application Nov. 2, 1964, Ser. No. 408,040
5 Claims. (Cl. 242—1.1)

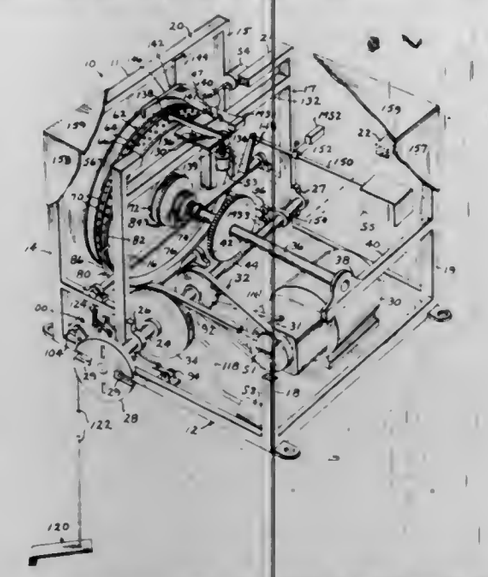


1. In a polyphase stator winding apparatus including a cantilever supported winding head structure having a snorkel member with an axial wire passage and a wire guiding shoe portion pivotally connected to said snorkel member in a spaced relationship from said winding head structure with said wire guiding shoe portion being movable toward and retractable from a magnetic stator core during progressive placement of wire conductors into slots of said core, and interlocking means selectively interconnecting said winding head structure and said wire guiding shoe portion comprising, a recessed area within one of the adjacently spaced surfaces of said winding head structure and said wire guiding shoe portion, and a movable pin means aligned with said recessed area and projecting from the other of said adjacently spaced surfaces, the projecting end of said pin means being receivable within the recessed area and engageable therewith to restrain lateral turning movement of the wire guiding portion about the pivotal support when the wire guiding portion is retracted from the slots of said stator core.

3,270,970
AUTOMATIC COIL WINDER
Chester A. Luke, 1124 St. Charles, Oklahoma City, Okla.
Filed Nov. 26, 1963, Ser. No. 325,996
5 Claims. (Cl. 242—9)

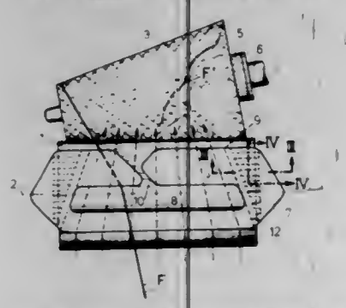
1. A coil winding machine, comprising: a frame; a spindle journaled by the frame and projecting outwardly of the frame at one end; a coil form holding head secured to the outwardly projecting end of said spindle; a variable speed motor drivably connected with said spindle; brake means on said spindle; a cam on said spindle; an indexing shaft journaled by the frame; gears connecting said index shaft to said spindle; pinwheel counting means supported by the frame coaxial with respect to said index shaft; clutch means interconnecting said index shaft and said pinwheel means; control means within the frame and having a control arm connected with said motor; and electrical components connected with a source of electrical energy for stopping said motor at a predetermined setting of said counting means, said electrical components

including a solenoid operatively connected with said brake means and said control arm, a first normally open switch closed by the rotation of said counting means at a predetermined setting, a second normally open switch



connected in series with said first switch and closed by said cam completing a circuit with a source of electrical energy and energizing the solenoid connected with said control arm.

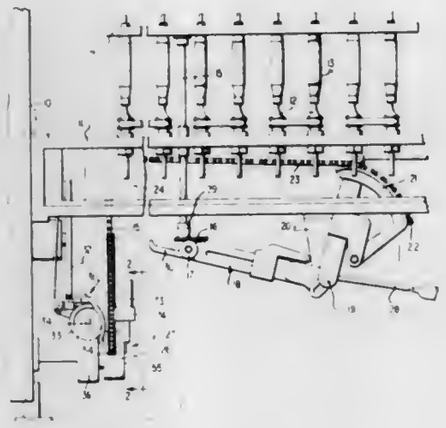
3,270,971
YARN OR THREAD GUIDING APPARATUS FOR A WINDING LOCATION
Rudolf Jenny, Thalwil, Zurich, Switzerland, assignor to Schweiter Engineering Works Ltd., Horgen, Switzerland, a corporation of Switzerland
Filed June 4, 1964, Ser. No. 372,484
Claims priority, application Switzerland, June 18, 1963, 7,568/63
10 Claims. (Cl. 242—18)



1. Yarn guide apparatus comprising, in combination, a rotatable grooved drum located at a winding location, a curved yarn guide plate increasingly curved inwards in the direction of rotation of said grooved drum arranged in front of said grooved drum, said yarn guide plate having curved frontal surfaces and lateral bounding means cooperating with the surface of said grooved drum such as to form and limit a passage extending in the direction of rotation of said grooved drum which narrows in such direction of rotation.

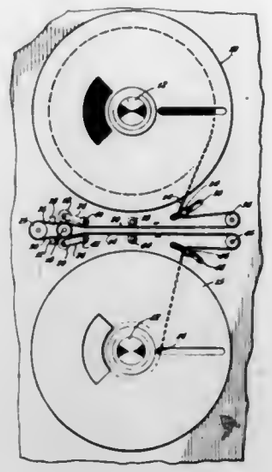
3,270,972
APPARATUS FOR REWINDING BUILDER CHAIN OF SPINNING MACHINE
Otto E. A. Edler, Greenville, and Coy V. Jones, Sr., Greer, S.C., assignors to Southern Machinery Company, Greer, S.C., a corporation of South Carolina
Filed June 5, 1964, Ser. No. 372,972
15 Claims. (Cl. 242—26.1)

1. In a spinning frame having a movable ring rail to lay yarn on bobbins for building the same, lift means connected with the ring rail and constantly biasing it upwardly, a builder motion to dictate the movement of the ring rail in coordination with the lift means and including a fixed arm, and a builder chain interconnecting the lift means and builder motion, the improvement comprising a support shaft fixed to said arm, a sleeve member rotatably mounted upon said shaft, builder motion gearing connected with the sleeve member to turn the same in one direction, a one-way active clutch on the sleeve member to turn therewith in said one direction and being active in that direction and freely turning in the reverse direction, a builder chain pulley on said clutch and driven thereby positively in said one direction to unwind the builder chain from the pulley, said chain secured to the pulley and windable and unwindable thereon, a separate one-way active brake means interconnecting said pulley and shaft and allowing free turning of the pulley in one direction to unwind the chain and preventing reverse turning of the pulley in the direction which said one-way clutch is free to allow, and power-operated means to release the brake means at a predetermined time after the chain is substantially fully unwound from the pulley to allow reverse turning thereof relative to said shaft and sleeve member in the direction permitted by the one-way clutch, resilient means connected with the pulley and building up energy during turning of the pulley in said one direction to unwind the pulley and automatically turning the pulley in the opposite direction to rewind the chain thereon when said power-operated means releases said brake means.

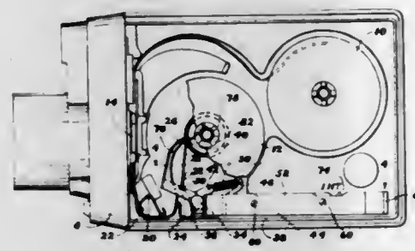


3,270,973
TAPE TRANSPORT MECHANISM FOR MULTIPLE TAPE WIDTHS
Frank Dekker, Inglewood, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 21, 1964, Ser. No. 361,478
17 Claims. (Cl. 242—55.12)

1. In a tape transport system for quick conversion from handling a relatively narrow tape on a pair of relatively thin reels to handling a relatively wide tape on a pair of relatively thick reels, the combination of:
two hub assemblies to engage and mount the two pairs of reels interchangeably;
means including a drive capstan to engage and drive the narrow tape and the wide tape interchangeably; and
a plurality of guide means located and shaped to guide the tapes from one of the reels to the drive capstan and from the drive capstan to the other reel,
at least a portion of each of at least some of the guide means being rotatable between one operating position presenting a pair of shoulders spaced apart for slidingly confining the opposite longitudinal edges of the narrow tape and a second operating position presenting a pair of shoulders spaced apart for slidingly confining the opposite longitudinal edges of the wide tape.



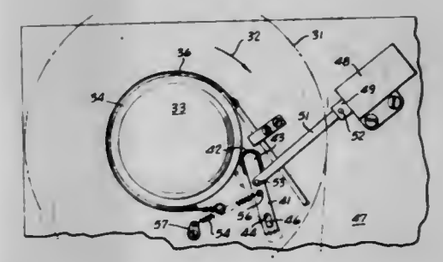
3,270,974
SELF-THREADING CAMERA
John H. Eagle, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 30, 1963, Ser. No. 320,026
5 Claims. (Cl. 242—71)



1. In a self-threading motion-picture camera of the type in which film chute means is engageable with a film take-up spool to releasably hold the spool against rotation and direct film into a film receiving slot in the hub of the spool as the film is fed by a drive motor having selective run and stop conditions and connected by a tendency drive to the take-up spool, the improvement comprising means interconnecting said film chute means to said drive motor for controlling the operation of the motor in accordance with movement of said film chute between (a) a first position in which it starts said drive motor, releasably holds said take-up spool and directs said film into said slot, (b) a second position in which it releases said take-up spool for rotation by said drive motor for winding said fed film onto said hub, and (c) a third position in which it stops said motor.

3,270,975
INCHING DEVICE FOR A REEL
John D. Sperry, Los Altos, and Martin Siegel, San Mateo, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 23, 1963, Ser. No. 304,111
5 Claims. (Cl. 242—75.4)

1. A reel brake comprising:
a base on which said reel is mounted for rotation;
a brake drum coupled to said reel for rotation therewith;
a pivot pin mounted on said base in spaced relation to said drum;
a brake shoe in the form of an arm provided with a longitudinal slot defining a pair of parallel bearing surfaces and mounted thereby for pivoting and lengthwise sliding of said surfaces on said pin, said arm extending from said pin toward said drum in the winding direction of said reel;
said arm having a retracted position with said pin engaging the end of said slot remotest from said drum and the extending end of said arm pivoted slightly away from said drum, a first limiting position of engagement with said drum with said pin engaging said end of said slot remotest from said drum, and a second limiting position of engagement with said drum with said pin engaging the end of said slot closest to said drum;
means coupled to said arm for moving said end of said arm in said winding direction of said reel and away from said drum to said retracted position of said arm, and for releasably holding said arm in said retracted position, said means including a solenoid mounted on said base and having a plunger



coupled to said arm and an energized position corresponding to said retracted position of said arm; and
a tension spring having one end coupled to said arm and the other end extending from said arm in the unwinding direction of said reel and anchored to said base, the line of urging of said spring on said arm being inclined toward said drum and defining an angle β of inclination with respect to the plane of one of said bearing surfaces, said angle β opening toward said drum and being chosen so that in all of the engaged positions of said drum and arm

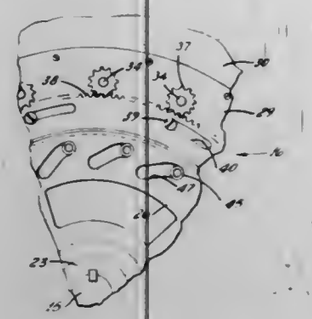
$$180° > \beta > \arctan \frac{a+b}{b \tan \alpha}$$

where α is the lesser dihedral angle between said plane and a plane tangential to said drum at the point of engagement of said arm and drum, a is the moment arm between said point and the point of coupling of said spring to said arm, and b is the moment arm between said last-named point and the point of engagement of said arm and pin.

3,270,976
WINDING DRUM
Rolland H. Smith, Broomall, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 1, 1964, Ser. No. 415,139
5 Claims. (Cl. 242—78.1)

5. Winding apparatus comprising an inner hub and rim section and an outer section mounted on the inner section for limited oscillation with respect thereto, said outer section comprising means forming a surface adapted to have strip material wound thereupon, means for rotating the inner section and for stopping the inner section, said outer section lagging behind the inner section at the start of rotation and overrunning the inner section when the

winding is stopped, and strip end gripping means articulated to both said inner and outer sections, said gripping means being moved into strip end gripping position when



said outer section lags behind said inner section and into non-gripping position when said outer section overruns said inner section.

3,270,977
STRAND DISTRIBUTING DEVICE FOR OPEN-TOP CONTAINERS
Manley B. Tillou II, Buffalo, N.Y., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 6, 1964, Ser. No. 365,335
5 Claims. (Cl. 242—82)

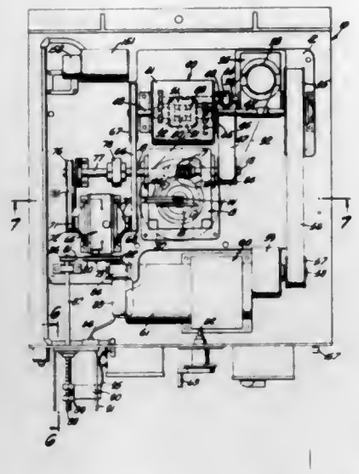
1. A device for deflecting a strand into an open-top container, comprising:

a plate spaced from and mounted for rotation about a substantially vertical axis, the plate being gradually curved inwardly so as to intersect the vertical axis at an oblique angle, and

means for rotating the plate about the vertical axis.

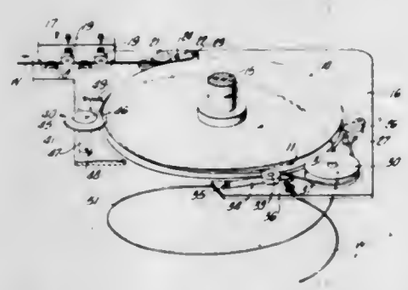
3,270,978
WIRE-COILING MACHINE WITH DIFFERENTIAL DRIVE
Donald P. Whitacre, 1013 N. Margarita Ave., Alhambra, Calif.
Filed Oct. 28, 1964, Ser. No. 407,103
9 Claims. (Cl. 242—82)

1. In a wire-coiling machine, the combination of: a block mounted to rotate about a vertical axis, a rotary-flyer assembly mounted to rotate about said axis for wrapping wire upon said block, a differential drive device having a first driven member connected to said block and a second driven member connected to said rotary-flyer assembly, said differential drive device having a power input



member, means for driving said power input member, and adjustable control means for regulating the speed ratio between said block and said rotary-flyer assembly.

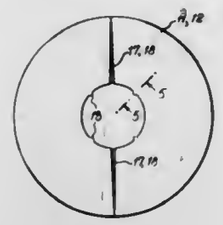
3,270,979
WIRE COILING MACHINE HAVING GROOVED BLOCK
Donald P. Whitacre, 1013 N. Margarita Ave., Alhambra, Calif.
Filed Dec. 14, 1964, Ser. No. 417,874
12 Claims. (Cl. 242—82)



1. Apparatus for controlling the feed rate of a continuous wire, comprising: a block having a continuous peripheral groove, means to guide the wire into the groove, a pulley positioned adjacent the periphery of the block and having a diameter substantially less than the diameter of the block, a casting roller, a pressure roller, the said guide means, pulley, casting roller and pressure roller being circumferentially spaced about said block in the order named and supported substantially in the plane of said groove, the wire passing from said groove around a portion of the pulley remote from the block, then around a portion of the casting roller adjacent said block, and then back into said groove, said pressure roller having a peripheral portion extending into the groove and contacting the wire under pressure to hold it in the groove, the wire then emerging from said groove.

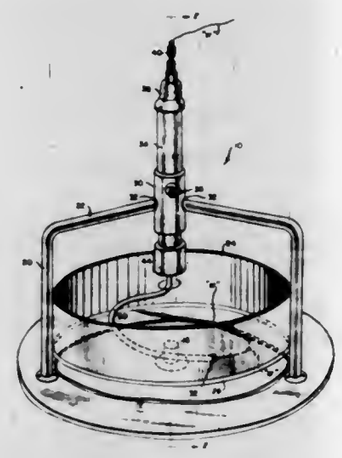
3,270,980
SPOOL FOR THREADS, YARNS AND THE LIKE
Michael R. Philips, Park Ridge, N.J., assignor to Jonathan Temple & Co. Inc., Hackensack, N.J., a corporation of New Jersey
Filed Mar. 25, 1965, Ser. No. 442,737
9 Claims. (Cl. 242—118.7)

1. A spool for serving thread or yarn to a wire, said spool being a molded thermo-plastic organic composition and comprising a hollow cylindrical core and a pair of flanges one at each end of said core, the inner surface of said core being slightly tapered from one end to the other and having ridges directly on said tapered surface spaced circumferentially about the inner surface of said core and extending approximately from end to end of said core, said ridges tapering complementary to the taper of



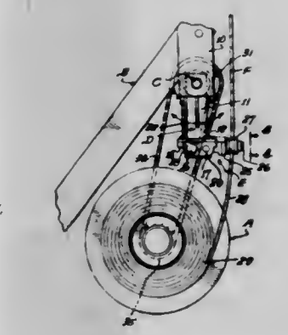
the inner surface of said core, the inner edges of said ridges lying in a cylindrical surface to rest on the outer surface of a supporting spindle and being distortable to accommodate a spindle of slightly larger diameter than that of a cylindrical surface tangent to the inner edges of said ridges.

3,270,981
WIRE UNCOILING APPARATUS
Archie Lee Perren, Lemont, Edmund Frank Mokersky, Chicago, and Mitchell J. Shepard, Hinsdale, Ill., assignors, by mesne assignments, to Rockwell-Standard Corporation, a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,339
2 Claims. (Cl. 242—128)



1. Apparatus for feeding a wire from a coil comprising a base on which said coil may rest, a frame structure detachably carried by said base and extending upwardly therefrom, an essentially cylindrical wall carried by said frame structure for confining said wire coil, a hollow tubular support member fixedly supported by said frame structure in axial alignment with said coil, a fixed exit throat member carried by the upper end of said hollow support member, hollow tubular wire guide means, means carried by the lower end of said hollow support member supporting said guide means for rotation coaxially of said coil, said hollow tubular guide means having an internal passage for said wire, said guide means having an inlet portion extending essentially tangentially of said coil, an outlet portion extending axially of said coil, and a smoothly, curved intermediate portion connecting said inlet and outlet portions, said outlet portions communicating with the interior of said support member whereby when said wire is pulled through said exit throat member, said guide means is caused to move in the direction opposite to the direction in which said wire is coiled and said wire passes through said guide means, thence along the length of said hollow support member and through said fixed exit throat member.

3,270,982
CABLE WINDING APPARATUS FOR CABLE DRUMS OF SEWER CLEANING MACHINES
Charles J. Prange, Lima, Ohio, assignor to Flexible Sewertool Corporation, Lima, Ohio, a corporation of Ohio
Filed Mar. 6, 1964, Ser. No. 349,965
9 Claims. (Cl. 242—158.3)

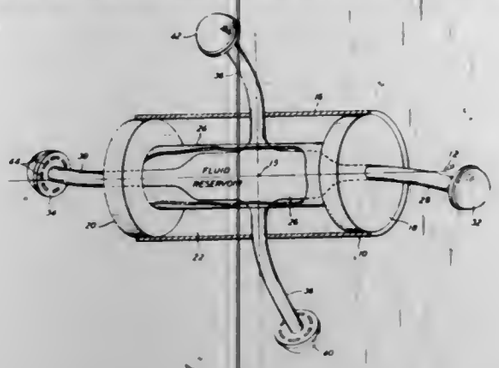


1. Sewer cleaning drag bucket hoist apparatus comprising: a cable-winding drum; a guide for receiving a stretch of cable extending tangentially from the drum; a double-helix scroll shaft on which said guide is mounted for reciprocating movement in response to rotation thereof; means supporting said scroll shaft in a position parallel to the axis of said drum, said supporting means being movable transversely with reference to a radius of said drum to effect shifting movements of said guide so as to follow movements of said cable stretch corresponding to changes in the radial distance from the axis of said drum to the point of tangency of said cable stretch with the cable-wound periphery of the drum in accordance with changes in the amount of cable wound upon the drum; and means transmitting rotary drive from the drum to said scroll shaft to rotate the same in timed relation to drum rotation, said scroll shaft supporting means being disposed above said drum and comprising a swing and fixed supporting pivot means from which said swing is free-hanging, depending toward the drum with its lower portion clearing the upper side of the drum, said scroll shaft being mounted in said lower portion of the swing.

3,270,983
APPARATUS FOR REDUCING SPIN OF A SPACE SATELLITE
Robert T. Adams, Short Hills, N.J., and Gordon Raisbeck, Lexington, Mass.; said Adams assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland, and said Raisbeck assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 1, 1961, Ser. No. 149,416
11 Claims. (Cl. 244—1)

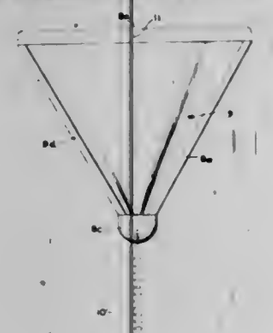
5. In a spinning space satellite, means for reducing the spin of said satellite comprising a reservoir of fluid under pressure located within said satellite, at least one normally straight flexible tube connected to said reservoir, said tube attached to and protruding radially from the surface of said satellite, and a recurved nozzle terminating said flexible tube to redirect the fluid expelled by said nozzle tangential to the axis of said tube when the satellite is not spinning such that the Coriolis force exerted

upon the fluid flowing through said tube during rotation of said satellite orients said nozzle to expel fluid in a di-



rection to produce a torque counteracting the spin of said satellite.

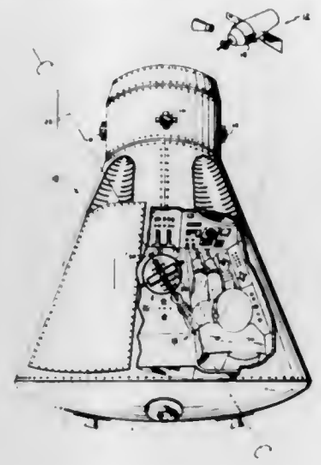
3,270,984
GRAVITY GRADIENT SATELLITE DAMPING DEVICE
James E. Rice, Cuyahoga Falls, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,402
5 Claims. (Cl. 244—1)



5. In a satellite damping system, the combination of a satellite,
a mass means,
a helically coiled spring having one end operatively connected to the satellite and the other end operatively connected to the mass means, said spring adapted to effect rotary motion to said mass means as defined by the period of oscillation of said satellite and the rotational inertia of said mass means to achieve a maximum cross-coupling of rotation to extension ratio of the spring, and
means operatively carried by said mass means which displaces upon rotation of said mass means to effect friction losses.

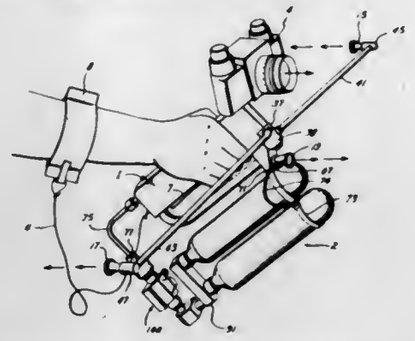
3,270,985
REACTANCE CONTROL SYSTEM
Richard Schmidt, Madison, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 26, 1963, Ser. No. 333,770
19 Claims. (Cl. 244—1)

1. In combination with a craft adapted to move through a fluid or substantial vacuum, a reactance attitude control system for controlling the angular movement of said craft around a predetermined axis thereof, comprising:
(a) bearing means mounted on said craft,
(b) reactance producing means mounted on said bearing means and adapted to be placed in rotation about an axis parallel to said predetermined axis,
(c) a source of potential energy attached to and carried by said craft for placing said reactance producing means in rotation;
(d) coupling means for selectively connecting said source of potential energy to said reactance producing means thereby placing said reactance producing means in rotation,
said craft being moved about said predetermined axis by the reactance force produced by said reactance producing means;



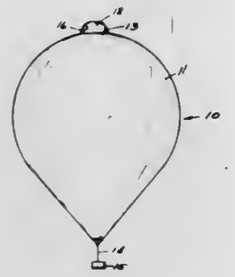
(e) energy storage means mounted on said craft for receiving and storing the kinetic energy contained in said rotating reactance producing means; and
(f) means for connecting said rotating reactance producing means to said energy storage means so that the kinetic energy of said reactance producing means is removed therefrom and stored in said energy storage means and the movement of said craft is thereby stopped at a predetermined angular position.

3,270,986
HAND-HELD SELF-MANEUVERING UNIT
Harold I. Johnson, Seabrook, and William C. Huber, League City, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 3, 1965, Ser. No. 511,567
10 Claims. (Cl. 244—4)



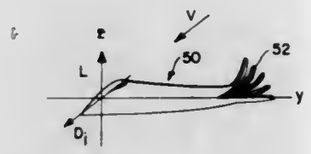
1. A propulsion and attitude control device for hand supported use by an astronaut in a reduced gravity environment comprising:
a housing having conduits therein for conducting fuel to reaction nozzle means;
reaction nozzle means affixed to said housing in operative communication with said conduits, said nozzle means adapted to emit pressurized gas so as to impart thrust to the unit; and
an actuation means operatively connected to said housing for selectively directing fuel through said conduits to said nozzle means to thereby control translational and orientating movements of the astronaut.

3,270,987
BALLOON STRUCTURE WITH DISTRIBUTED EXCESS MATERIAL
John R. Winckler, Minneapolis, Minn., and James A. Winker, Sioux Falls, S. Dak., assignors to Raven Industries, Inc., Sioux Falls, S. Dak., a corporation of South Dakota
Filed Dec. 14, 1964, Ser. No. 418,081
8 Claims. (Cl. 244—31)



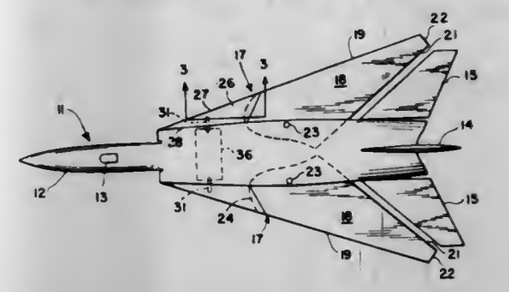
1. A balloon structure comprising in combination,
a balloon envelope formed of a lightweight thin flexible material,
said envelope having a lower body portion and an upper dome portion with a smaller circumference than the body portion and forming a bubble at the top end of the balloon envelope,
said dome portion being inflated at launching of the balloon and said body portion inflating after launching as the gas within the dome portion expands at higher altitudes,
means for supporting a payload from the balloon envelope below the body portion,
said envelope formed of a plurality of one-piece vertical gores of thin flexible film extending from the lower to the upper end of the balloon and joined at their side edges in seams with the gores shaped along the overall length to form said body and dome portions.

3,270,988
MINIMUM INDUCED DRAG AIRFOIL BODY
Clarence D. Cone, Jr., Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 26, 1962, Ser. No. 247,423
3 Claims. (Cl. 244—35)



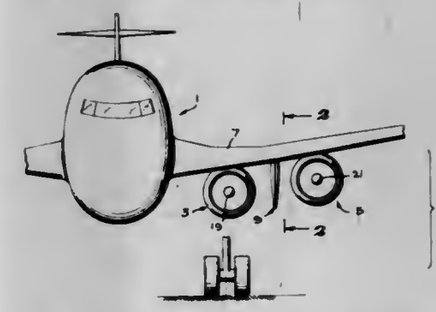
1. Improved means for reducing the induced-drag of a conventional wing configuration without excessively increasing wing surface areas comprising: a wing semispan of substantial planar configuration; and an unconventional split wing tip configuration having a plurality of separate winglets with different radii of curvature integrally formed with the wing semispan and collectively positioned vertically in a plane normal to the freestream velocity and disposed in the plane containing the wing span to insure reduced induced drag.

3,270,989
VARIABLE SWEEP AIRCRAFT
Edward C. Polhamus, Newport News, and Alexander D. Hammond, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 30, 1965, Ser. No. 444,087
10 Claims. (Cl. 244—46)



1. A variable sweep aircraft comprising:
a fuselage having a fineness ratio suitable for supersonic flight,
propulsion means carried by said fuselage,
an empennage assembly carried by said fuselage adjacent the after end thereof,
a wing connected to each side of said fuselage and projecting substantially horizontally and outwardly therefrom,
each said wing including a main wing panel and a forward auxiliary wing panel,
each said main wing panel having a straight leading edge pivotally connected to said fuselage for rotation in a substantially horizontal plane between a low-sweep position and a high-sweep position,
each said auxiliary wing panel having a straight leading edge and pivotally connected at a single pivot point substantially intermediate the length thereof to said fuselage for rotational movement only about said single pivot and in a plane substantially perpendicular to the horizontal rotative plane of said main wing panel, and
means engaging the trailing edge of said auxiliary wing panel and said leading edge of said main wing panel for combined contributory aircraft lift when said main wing panel is in said high-sweep position.

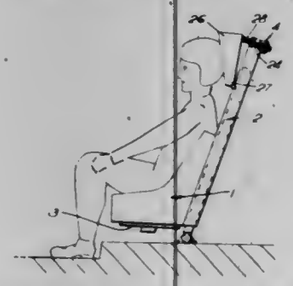
3,270,990
ABSORPTIVE SPLITTER FOR CLOSELY SPACED SUPERSONIC ENGINE AIR INLETS
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Howard Kastan
Filed Dec. 8, 1964, Ser. No. 416,946
4 Claims. (Cl. 244—53)



1. A supersonic aircraft having at least two jet engines mounted thereon in close proximity to one another:
(a) an absorptive barrier assembly mounted on said aircraft and disposed between said two engines, said assembly comprising:
(1) a solid plate and

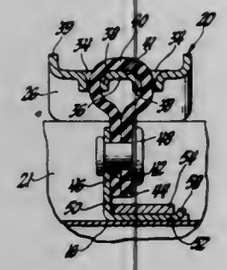
(2) perforated and arcuate side panels mounted to the sides of said plate to form shock cavities that absorb any shock waves generated by the engines.

3,270,991
EJECTION SEATS
James Martin, Southlands Road, Denham, near Uxbridge, Middlesex, England
Filed Aug. 5, 1965, Ser. No. 477,417
Claims priority, application Great Britain, Aug. 5, 1964, 31,742/64
4 Claims. (Cl. 244—122)



1. An ejection seat comprising a seat frame and a seat pan mounted thereon; an ejection gun for effecting at least initial ejection of the seat from an aircraft; at least one auxiliary rocket motor positioned on said seat to produce thrust in a direction such as to cause variation of the flight path of the seat; actuating means for initially firing said auxiliary rocket motor and such means being sensitive to aerodynamic forces in excess of a predetermined value.

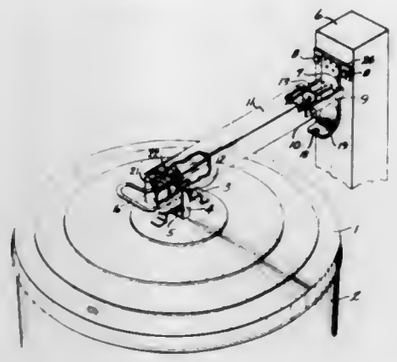
3,270,992
EXHAUST SYSTEM HANGER
Thomas R. Cassel, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 5, 1965, Ser. No. 493,143
3 Claims. (Cl. 248—60)



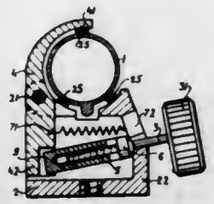
1. Hanger means for connecting a vehicle exhaust system to a vehicle body comprising, a support member mounted on said body and provided with a pair of openings therein, a loop member of flexible material received through said openings and having a surface thereof frictionally engaging the portion of said support member intermediate said openings, and means securing said exhaust system to said loop member, said loop member being relatively movable with respect to said portion of said support member in response to exhaust system vibrations to thereby frictionally damp said vibrations.

3,270,993
GARBAGE CAN LID MOUNTING
Ernest R. Montague, Moses Lake, Wash., assignor of one-half to Fred C. Bindel, Moses Lake, Wash.
Filed Feb. 2, 1965, Ser. No. 429,821
8 Claims. (Cl. 248—147)

1. A garbage can lid mounting comprising an attachment securable to a support and having a pivot mounting, an arm connected to said pivot mounting for swinging between a substantially horizontal position and an upright position, means for supporting a garbage can lid on the swinging end of said arm, and latch means interengageable between said swinging arm and said attachment and including a latch member carried by said arm and first latch-engageable means carried by said attachment and engageable by said latch member to latch said swinging arm in upright position with the garbage can lid raised to open position, and second latch-engageable means carried by said attachment and alternatively engageable by said latch member to latch said swinging arm in its substantially horizontal position with the garbage can lid on a garbage can.

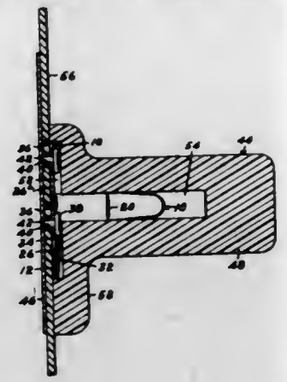


3,270,994
TRIPOD BASE
Antonin Machán and Ladislav Dubný, Prerov, Czechoslovakia, assignors to Meopta, národní podnik, Prerov, Czechoslovakia
Filed Aug. 25, 1964, Ser. No. 391,908
Claims priority, application Czechoslovakia, Aug. 27, 1963, 4,767/63
5 Claims. (Cl. 248—187)



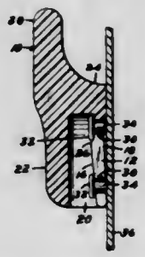
1. A tripod base for a photographic camera and the like, comprising
(a) base means having an outwardly disposed surface adapted to partly support a guiding rod of a camera or the like,
(b) a two-armed lever pivoted on said base means,
(1) one of the arms of said lever having a gripping surface to cooperate with said base means surface,
(c) operating means adapted to act upon the other of said lever arms to cause said lever to swing between two end positions,
(d) an abutment member on said operating means, adapted to bear against said base means and to position said lever in one of said end positions, while positioning said first named or gripping arm in gripping condition, said gripping arm being in a grip-releasing condition when said lever is in the other of said end positions, and
(e) spring means attached to said base means and said other or actuating lever arm to normally urge said gripping arm toward the grip-releasing position thereof.

3,270,995
SHELF SUPPORT
Stuart T. Shears, Belmont, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,732
2 Claims. (Cl. 248—224)



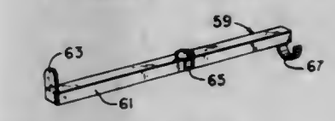
1. The combination of a fastening device and a support, said fastening device comprising a pair of studs and an adapter socket element, said adapter element socket having a base portion, a first and second slot formed through said base portion, said slots being spaced from each other along a long axis of said base portion, each of said slots comprising a large opening and a small opening connected by a necked channel, a locking tab extending from an edge of said base portion, over the area defined by said large opening of said first slot, said locking tab having a free engagement edge and lying on a plane in substantially parallel relation with said base portion, each of said studs having a head portion and a shank portion extending from said head portion in integral right angle therewith, said shank having a free end, each of said studs being secured at said free end of said shank to said support without perforation of said support, said large opening of said slots having a diameter greater than said head portion of said stud and said head portion being in abutting superposed relation to said base adjacent said small opening and said free engagement end of said locking tab being in approximate relation to said head portion of the stud engaged with said first slot and said fastening device having means of engaging an article to be held.

3,270,996
COAT HOOK AND ATTACHMENT
Wilmer H. Churchill, Wellesley, and Julius B. Wilhelmi, Nantasket, Mass., assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,837
2 Claims. (Cl. 248—224)



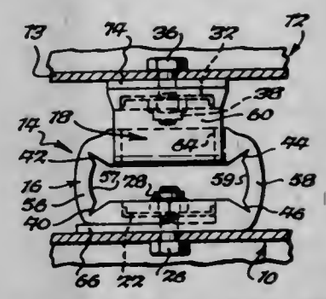
1. The combination of a fastening device, a support and an article, said article having a base portion, said base portion having an upper surface, sloped to provide a ramp, a lower surface in substantially parallel relationship with upper surface and a forward edge, a longitudinal slot extending through said base portion and extending from said forward edge, said fastening device including at least one stud, said stud comprising a head portion having a shank portion extending therefrom, said shank having a free terminal end, said stud secured at said terminal end of said shank to said support without perforating said support and said head portion overlying in abutting relation a portion of said upper surface of said base portion adjacent said slot and a portion of said shank portion lying within said slot and a part of said lower surface abutting said support.

3,270,997
SCAFFOLD DEVICE
Kenneth W. Gethmann, Gladbrook, Iowa
Filed Mar. 19, 1964, Ser. No. 353,192
6 Claims. (Cl. 248—235)



1. In a material support bracket,
an elongated horizontal member,
a plank retaining means extending upwardly from one end of said horizontal member,
a first sleeve segment secured to one side of said horizontal member adjacent to its other end,
and a second sleeve segment secured to said horizontal member at one side thereof intermediate its length
said first sleeve segment being arcuate about a horizontal axis and being open at its upper portion to receive a horizontal tubular member,
said second sleeve segment being arcuate about a vertical axis and having an open portion which opens in a direction towards said plank retaining means to receive a vertical tubular member.

3,270,998
ELASTOMERIC ISOLATOR
William A. Keetch, Ho-Ho-Kus, N.J., assignor to Robinson Technical Products, Inc., Teterboro, N.J., a corporation of New York
Filed Sept. 30, 1964, Ser. No. 400,330
4 Claims. (Cl. 248—358)



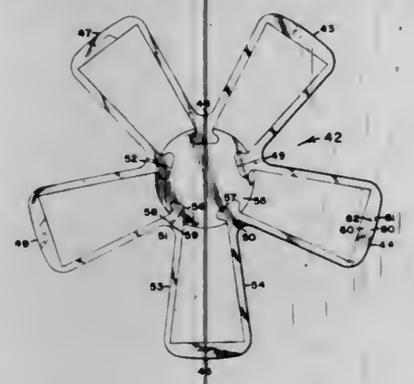
1. In a shock and vibration isolator, the combination of a yieldable element comprising at least two loops stacked vertically and fixed against rotation relative to one another about a vertical axis with the axes of said loops lying respectively in vertically spaced horizontal planes and disposed angularly with respect to one another, each of said loops being made of elastomeric material and comprising at least four walls hinged to one another in series along lines of intersection which extend parallel with the axis of said loop, two of said walls being in opposed generally horizontal relation to constitute upper and lower walls, the upper and lower walls respectively of the uppermost and lowermost of said loops being adapted to be connected to two objects between which it is desired to isolate vibration and shock loads; each of said loops having a plurality of grooves opening into the inner surface of said loop, one of said grooves being provided for each of said lines of intersection and each groove extending lengthwise along a line parallel with and adjacent the line of intersection for which it is pro-

vided, each of said grooves having the bottom thereof extending toward but terminating short of the outer surface of said loop adjacent the line of intersection between the respectively adjacent walls thereby providing in the vicinity of each line of intersection a wall portion having a thickness of elastomeric material which is substantially less than that of the thinnest portions of the respectively adjacent walls, said grooves being so shaped and disposed that incident to deflections of said objects toward or laterally with respect to one another which are greater than a predetermined amplitude at least one of said grooves in at least one of said loops will close thereby increasing the effective wall thickness in the vicinity of the line of intersection adjacent said closed groove at least to a thickness approximately that of the walls which intersect along said adjacent line of intersection.

3,270,999
SEGMENTED CORE FOR MOLDING A CAVITY IN A CAST SOLID PROPELLANT ROCKET MOTOR

Russell Fowler, James L. Bulfer, and Louis L. Ullman, Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Apr. 12, 1963, Ser. No. 272,771
2 Claims. (Cl. 249—61)



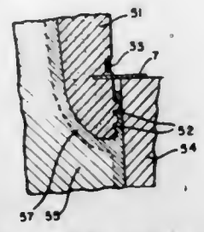
2. In a segmented core, a plurality of preformed sections that are adapted to be assembled into a unit of predetermined configuration for creating a cavity of preformed configuration in a cast solid propellant grain for a solid propellant rocket motor, a rigid centering member extending longitudinally of said core and said cavity, said centering member having a plurality of radially disposed cutouts, and the inner ends of said sections are to be positioned in said cutouts to detachably connect said sections directly to said centering member, the outer ends of said sections being in interlocking engagement with each other and wedge members coacting with the inner and outer ends of said sections to retain said sections in rigid relation to said centering member and with each other.

3,271,000
DISPOSABLE HOT TOP

Darold W. Thiem, Elm Grove, and Gordon W. Gottschalk, Hales Corners, Wis., assignors to Universal Refractories Corporation

Filed Aug. 13, 1963, Ser. No. 301,723
6 Claims. (Cl. 249—197)

1. The combination of a disposable hot top and an ingot mold, said mold comprising a metallic body having an opening in its upper end, said hot top comprising a sinkhead casing having a lower end of such shape and dimensions as to be adapted for insertion into the opening in the body of said ingot mold in close proximity to the inner surfaces of the walls of said opening, said casing comprising a formed structure of heat degradable refractory material having sufficient strength to withstand necessary handling and to contain molten metal when the ingot is poured, at least one half-round chill channel dam integral with and extending outwardly from the outer wall of said casing and encircling the lower portion thereof, independent support means holding the casing in position in the opening of the body of the mold with said chill channel dam spaced slightly from the inner surfaces of the walls of said opening and exposed to the molten metal

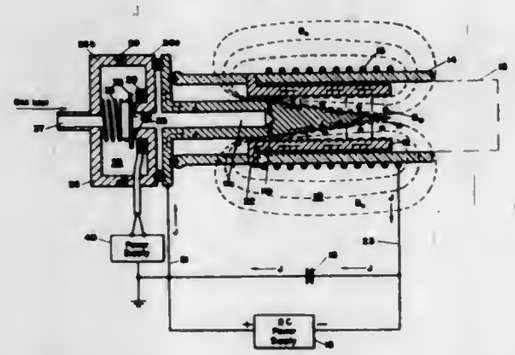


which rises in the space between the hot top and the walls of said opening, whereby the molten metal which is chilled by the wall of the ingot mold will set rapidly, anchoring the hot top to the chilled metal on the inner surface of the ingot mold preventing upward displacement of the hot top by the buoyant force of the molten metal in the mold.

3,271,001
QUICK ACTING VALVE

Per Gloersen, Levittown, Bernard Gorowitz, Elkins Park, and Kenneth G. Moses, Philadelphia, Pa., assignors to General Electric Company, a corporation of New York

Original application Aug. 18, 1959, Ser. No. 834,574, now Patent No. 3,151,259, dated Sept. 29, 1964. Divided and this application July 23, 1963, Ser. No. 304,710
1 Claim. (Cl. 251—139)



A quick-acting valve comprising:
a member having a passage therethrough;
a flat electrically conductive plate disposed over the said passage;
sealing means disposed between the said member and the said plate;
force means for producing a biasing force on the said plate to hold the plate against the sealing means to close the said passage;
a magnetizing coil surrounding the said member and positioned to produce, by passage of current through the said coil, a magnetic field to impinge on the said electrically conductive plate and induce therein eddy currents to interact with the said magnetic field to overcome the said biasing force and thereby to open the said passage.

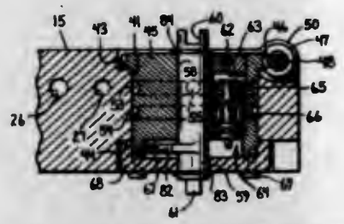
3,271,002
ADJUSTABLE FLUID TIMER

Anthony T. Zappia, 6230 E. 56th St., Indianapolis, Ind.

Filed Dec. 30, 1965, Ser. No. 517,719
6 Claims. (Cl. 251—259)

1. In a device of the class described, a housing formed to provide a straight-through, cylindrical bore and further formed to provide a first passage and a second passage opening into said bore at spaced levels along the axis of said bore and opening to the exterior of said

housing, a cylindrical plug mounted in said bore for turning movement relative to said housing about the axis of said bore and spanning said passages, said plug having a first peripheral groove disposed at the level of said first passage and a second peripheral groove disposed at the level of said second passage when said plug is so mounted, said plug being formed with an axial bore communicating near one end of said plug with a concentric enlargement in said plug and said plug further being formed with an internal chamber spanning the levels of said grooves and with a first port opening from said first groove to said chamber and a second, separate port

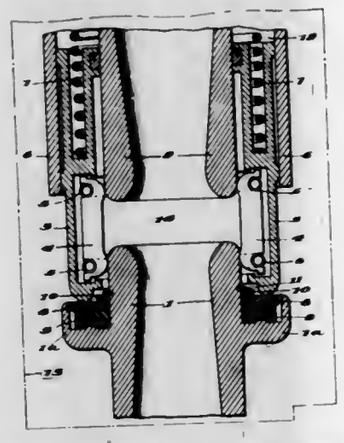


opening from said second groove to said chamber, valve means disposed in said chamber and comprising seat means disposed between said first port and said second port and a valve body biased toward flow-preventing engagement with said seat and having a portion extending into said enlargement at a point eccentric relative to said plug axis, a rotor journalled in said plug bore, cam means carried by said rotor within said enlargement and engageable with said valve body once in every revolution of said rotor to shift said valve body off its seat against its bias, and means for retaining said plug in any one of a plurality of selected position of rotational adjustment relative to said housing.

3,271,003
BLAST VALVE STRUCTURE FOR AN ELECTRICAL CIRCUIT BREAKER

Dieter Floessel, Fislisbach, and Gerhard Mauthe, Baden, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Oct. 28, 1963, Ser. No. 319,323
Claims priority, application Switzerland, Dec. 21, 1962, 15,069/62; Feb. 9, 1963, 1,593/63
4 Claims. (Cl. 251—363)

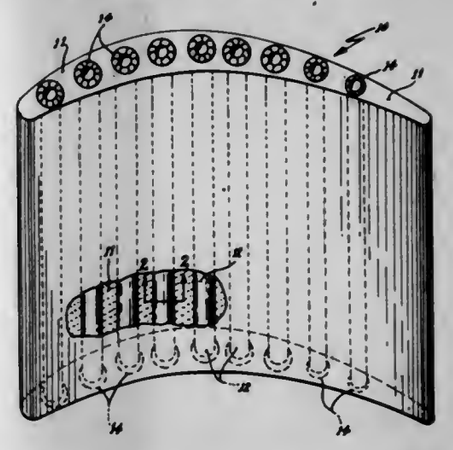


1. In a combined pneumatic circuit breaker and blast valve structure the combination comprising a gas-pressurized chamber within which is located a stationary tubular contact member and a tubular movable contact structure coaxial with said stationary tubular member and adapted for movement longitudinally of itself into and out of engagement with said stationary tubular contact member, and a blast valve sealing off communication between said chamber and the interior of said stationary tubular contact member when said contact members are engaged, said blast valve including a tubular valve member forming part of said movable contact structure and the end face of which serves as a movable valve seat arranged to strike against a stationary annular sealing means surrounding and supported by a lateral surface on said stationary tubular contact member, said sealing means being constituted by two annular superimposed hard and soft sealing discs, said hard sealing disc being strikable by the end face of said movable tubular valve member to effect a closing of said blast valve and being made from polytetrafluoroethylene reinforced with glass fibres and said soft disc being made from a silicone rubber.

3,271,004
TURBINE VANE ADAPTED FOR HIGH TEMPERATURE OPERATION

Robert John Smuland, Reading, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed June 22, 1965, Ser. No. 466,131
1 Claim. (Cl. 253—39.1)

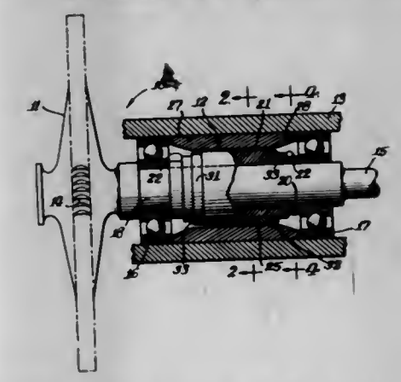


A rotary vane for gas turbine engine comprising: a ceramic member of airfoil cross-section; said member having longitudinally extending holes, serially arranged along its lateral axis; and metal tubes fitted in and extending through the holes of said ceramic member; said tubes being flared at each end and adapted to carry a coolant; said tubes further constructed of a metal such that the thermal coefficient of expansion is matched to the ceramic vane whereby the compressive load on the vanes, caused by flaring the ends of said tubes, is increased at higher temperatures.

3,271,005
MECHANICAL OVERSPEED PREVENTION DEVICE

George R. Jones, Arvada, Colo., assignor to Sundstrand Corporation, a corporation of Illinois

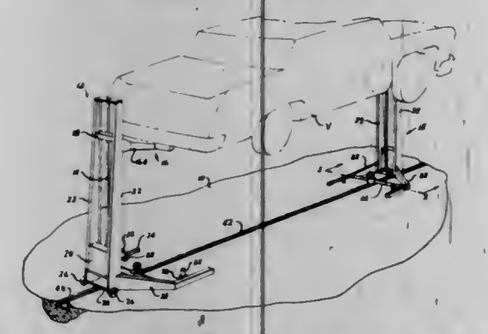
Filed Mar. 2, 1964, Ser. No. 348,590
8 Claims. (Cl. 253—59)



1. A failsafe device for reducing the speed of a turbine drive unit having a turbine wheel below the maximum operating speed thereof against the accelerating forces of

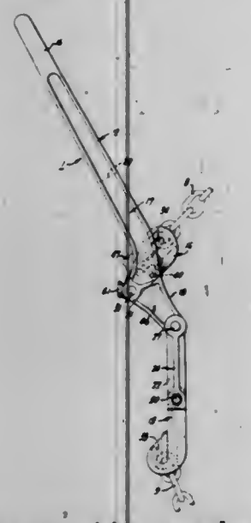
a propellant, comprising; a first member driven by said turbine unit, a brake shoe mounted on said first member in contiguous contact therewith and prestressed just below the proportional limit of the material from which the shoe is constructed, a retainer on said shoe for urging said shoe against said first member, said retainer being of sufficient thickness to fracture under the sum of the centrifugal force of the shoe upon the retainer at the maximum desired overspeed and the elastic force of the shoe upon the retainer, and a second stationary member adjacent said shoe whereby the shoe will rapidly recover from its prestressed position upon fracture of the retainer and engage the second member thereby reducing the speed of the turbine unit.

3,271,006
PORTABLE SERVICE LIFT
Charles Huston Brown and Robert J. Haddix, Dayton, Ohio, assignors of one-third to said Brown, one-third to Ion V. K. Hott, and one-third to Warren E. Webster, all of Dayton, Ohio
Filed July 6, 1962, Ser. No. 208,015
3 Claims. (Cl. 254—2)



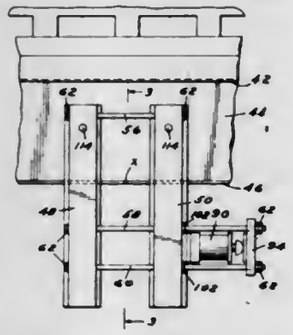
1. A portable jacking unit for use on a floor having clamp receiving means connected thereto or formed therein or thereon comprising: a frame; a vehicle engaging means mounted for vertical movement upon said frame; a pair of horizontally disposed legs connected to said frame; a clamp support plate connected between said legs; and a clamp slidably mounted on said support plate between said legs adapted to releasably engage said clamp receiving means.

3,271,007
OVER-CENTER LOAD BINDER
Ralph A. Ratcliff, 1300 Sunnyslope Ave., Belmont, Calif.
Filed Jan. 6, 1965, Ser. No. 423,733
14 Claims. (Cl. 254—78)



1. A load binder comprising: an elongated operating lever movable between a load binding closed position and a load releasing open position, said lever being defined by a graspable handle portion and a clevis portion integral with said handle portion; a first hook member pivotally connected with said clevis portion adjacent an end thereof; a second hook member pivotally connected with said clevis portion inwardly of said clevis end; and automatically engageable latching means provided between said clevis portion and said second hook member, said latching means becoming automatically engaged when said operating lever is moved from said open position to said closed position during a load binding operation, said latching means thereafter insuring movement of said second hook member with said lever as said lever is moved from said closed position toward said open position during a load releasing operation whereby unrestrained motion of said operating lever during such load releasing movement thereof is precluded.

3,271,008
APPARATUS FOR TREATING STRUCTURAL MEMBERS
Robert Krammer, Detroit, Mich., assignor to Taylor & Gaskin, Inc., Detroit, Mich., a corporation of Michigan
Filed Dec. 27, 1963, Ser. No. 333,955
7 Claims. (Cl. 254—98)

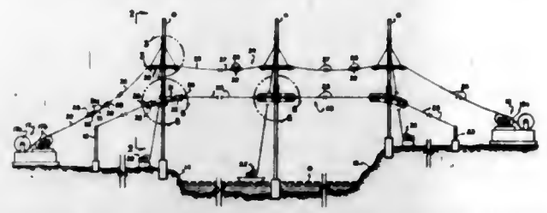


1. Apparatus for treating a longitudinally extending transversely loaded structural member having a web and a flange, comprising: opposed pairs of rigid fingers positioned adjacent opposite lateral edges of said flange with each pair of fingers being spaced from each other longitudinally along a flange edge adjacent opposite sides of a localized flange area to be treated; shoe members secured to said fingers having end portions overhanging the flange surfaces in spaced relation thereto; a plurality of wedge members interposed between said shoes and the flange surfaces frictionally held in non-slipping engagement against the flange surfaces; and force applying mechanism including means coupling together the fingers of each pair to urge said fingers in a direction to apply prestressing forces to the beam flange longitudinally of the beam to stress relieve the beam flange in said area to be treated.

3,271,009
METHOD OF AND APPARATUS FOR STRINGING EXTRA HEAVY DUTY ELECTRIC POWER CONDUCTORS
Robert H. Wright, 6366 Cobbler Rock Lane, and Edward J. Moulton, 2223 Castle Hill Lane, both of Salt Lake City, Utah
Filed Jan. 4, 1965, Ser. No. 422,960
7 Claims. (Cl. 254—134.3)

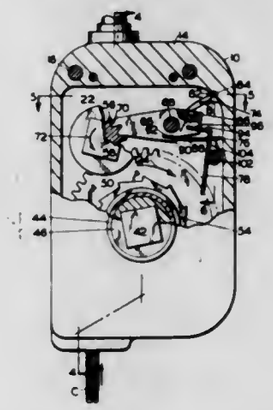
1. A method of stringing an electric power conductor for a power line, said conductor having at least one portion along its length unsuited for passing over the usual supporting block on a tower or other elevated structure, comprising the steps of
passing an end of said conductor over such a block and pulling thereon until the said portion reaches the block;
transferring the weight of the conductor to a different support at a location adjacent to the block;

separating the conductor and the block sufficiently for said portion of the conductor to by-pass the block upon continued pulling of the conductor;



pulling the conductor until said portion thereof by-passes the block;
and transferring the weight of the conductor back to the block for continued stringing.

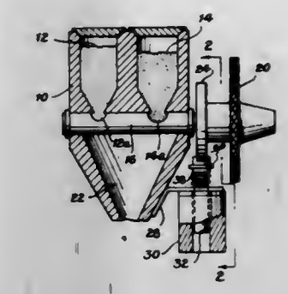
3,271,010
REVERSIBLE HAND WINCH
Robert H. Gray, 4420 NE. Maywood Place, Portland, Oreg.
Filed Nov. 26, 1963, Ser. No. 325,981
9 Claims. (Cl. 254—167)



1. A reversible hand winch comprising a housing, a shaft journaled in said housing, a winding drum on said shaft, a gear wheel operably connected for rotation with said drum, a pawl pivotally mounted in said housing and having a toothed end engageable with said gear wheel, said pawl being arranged to provide ratcheted movement of said gear wheel in one direction, a first spring engaged with said pawl and having a pair of overcenter positions one of which urges said pawl into engagement with said gear wheel and the other of which urges and is adapted to hold said pawl out of engagement with said gear wheel, a second spring engaged with said pawl and arranged to urge said pawl into ratcheting engagement with said gear wheel, selector means rotatable between set positions, and a cam on said selector means engageable with said second spring, said cam in one position of the selector means distorting said second spring sufficient to override the forces of said first spring to cause the pawl to pivot into engagement with said gear wheel and in another position releasing said second spring to permit operating influence of said first spring on said pawl.

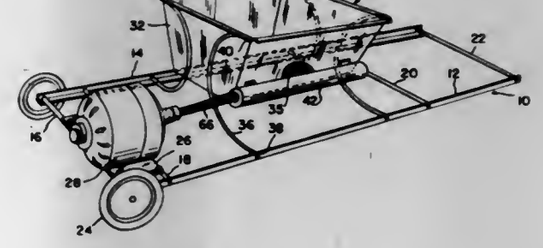
3,271,011
METERING AND MIXING DEVICE FOR DENTAL MATERIALS
Fritz Röhm, Stuttgart-Kaltental, Wilhelm Ahrens, Bergen-Enkheim, and Heinz Strähle, Schwabisch Gmund, Germany, assignors to Dr. Walter u. Schmitt G.m.b.H., Schwabisch Gmund, Germany
Filed Nov. 4, 1964, Ser. No. 408,973
Claims priority, application Germany, Nov. 6, 1963, W 35,574
1 Claim. (Cl. 259—12)

In a power driven mixing device for metering and mixing dental materials and having a plurality of hoppers for holding dental materials, a pocketed metering valve shaft rotatably mounted beneath said hoppers, electric motor means for shaking said device, and timer switch means joined to said motor, the improvement comprising a disc secured to said shaft, a notch in the periphery



of said disc, solenoid locking means actuatable by said timer switch means engageable with said notch to prevent the rotation of said shaft until said motor means has started, and spring means for holding said solenoid means normally engaged with said notch.

3,271,012
WET LIME SCREENER
Joseph Van Bael, 37426 Lakeshore Drive, Mount Clemens, Mich.
Filed Nov. 18, 1963, Ser. No. 324,346
16 Claims. (Cl. 259—29)

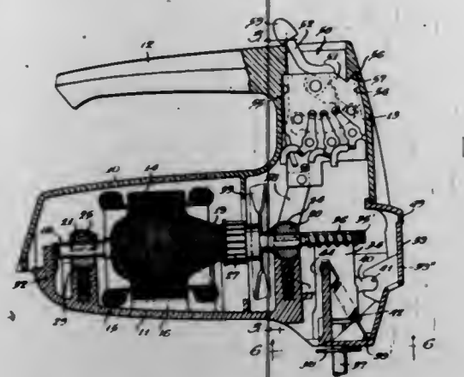


1. A wet lime screener comprising a frame, a hopper having a screen at its bottom wall, resilient means mounting said hopper on said frame, and centrifugal agitating means connected to said hopper, said agitating means comprising elongated rotary means extending substantially from end to end of said hopper and mounted for rotation about a single axis, said rotary means comprising two masses whose centers of gravity are spaced longitudinally of said axis substantially midway between the center and ends of said hopper and further are spaced circumferentially of said axis about 90 degrees from each other.

3,271,013
MIXER
Worthy L. Chambers, Wilmette, and James A. Wright, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 27, 1964, Ser. No. 355,171
7 Claims. (Cl. 259—131)

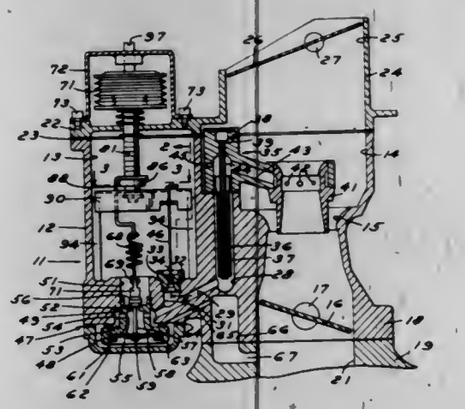
1. A mixer comprising a housing, said housing comprising top and bottom members which together define said housing, a handle connected to said top member, and a mixer motor including motor shaft bearings inside said housing, said bottom member comprising a molded plastic member having integrally formed bearing seats formed therein, said motor and said bearings being di-

rectly mounted on said plastic member and its bearing seats, and metallic bearing retainers for retaining said



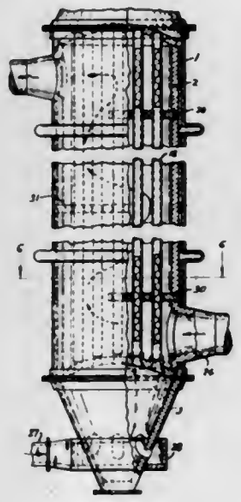
bearings in said seats, said bearing retainers having cooling fins integrally formed thereon.

3,271,014
ALTITUDE COMPENSATED CHARGE FORMING DEVICE
Tao-Yuan Wu, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,948
7 Claims. (Cl. 261—43)



1. A charge forming device for an internal combustion engine comprising an induction passage, a throttle valve in said induction passage, a fuel source, fuel discharge circuit means connecting said fuel source with said induction passage for discharging fuel into said induction passage, metering valve means in said fuel discharge circuit means for regulating the rate of fuel discharge into said induction passage, said metering valve means comprising a metering jet through which at least a portion of the fuel discharge passage passes and a metering rod adapted to be inserted varying depths into said metering jet, said metering rod having a substantially uniform cross-sectional area and shape along at least a portion of the length that is adapted to be inserted into said metering jet whereby the cross-sectional flow area is relatively independent of the degree of insertion of said metering rod into said metering jet, the external surface of said metering rod having a predetermined surface finish to offer a frictional resistance to flow dependent upon the depth of insertion, power valve means in said fuel discharge circuit means responsive to the pressure in said induction passage posterior to said throttle valve, said power valve means being adapted to open at a predetermined pressure to provide additional fuel flow into said induction passage in response to increased engine power demand, an altitude responsive device, and means operatively connecting said altitude responsive device to said power valve and to said metering rod for simultaneously adjusting the pressure at which said power valve opens and the depth of insertion of said metering rod into said metering jet in response to altitude variations.

3,271,015
PROCESS OF PREPARING LIME AND A SYSTEM INCLUDING MEANS FOR PROVIDING A HOT GAS FOR USE IN THE PROCESS
Harold A. Mahony, 1827 Taylor Road, East Cleveland 12, Ohio
Filed Jan. 25, 1963, Ser. No. 253,874
11 Claims. (Cl. 263—1)



1. In the process of preparing lime, the steps which comprise feeding limestone in a finely divided state of approximately minus 200 mesh or finer into the lower housing of a vertical reactor having a plurality of externally heated elongated tubes, each composed of a material capable of resisting a temperature above the sintering temperature of lime and being of a diameter of approximately four to six inches communicating with the lower housing and extending upwardly therefrom and enclosed in an upper housing of the reactor with the open end of each tube communicating with conduit means leading from the upper end of the reactor, and passing a hot gas through the limestone particles in said housing to force the limestone particles upwardly through each of said tubes at such pressure that the buoyant force of the gas and the aerodynamic drag upon the limestone particles and the lime formed therefrom are just sufficient to overcome the force of gravity thereon to thereby cause the limestone and the lime formed therefrom to pass from one side to the other side of each of the tubes as it ascends through each tube and said gas being at such temperature and said tubes being of such length that the gas will convert a predominant amount of the limestone into lime and carbon dioxide during the passage of the limestone and lime converted therefrom through the tubes but at a temperature insufficient to sinter a substantial amount of the lime.

3,271,016
MACHINE FOR HEAT SETTING SYNTHETIC FABRICS
George M. Marks, Greenville, S.C., assignor to Industrial Heat Engineering Corp., Greenville, S.C., a corporation of South Carolina
Filed Oct. 27, 1964, Ser. No. 406,784
6 Claims. (Cl. 263—3)

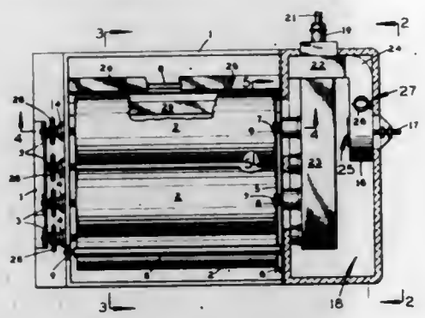
5. In a machine for heat setting synthetic fabrics of the character described

a means forming a frame,

a hollow drum journalled in said frame about the principal axis thereof with a predetermined opening in one end thereof,

a longitudinal duct fixed to said frame positioned in said drum having a cylindrical shaped foraminated baffle along one side thereof positioned in close proximity to the inside cylindrical surface of said drum with the inlet of said duct extending from the said opening,

a gas burner means for burning a predetermined mixture of flammable gas and air including an outlet orifice for conducting the products of combustion therefrom when operated,

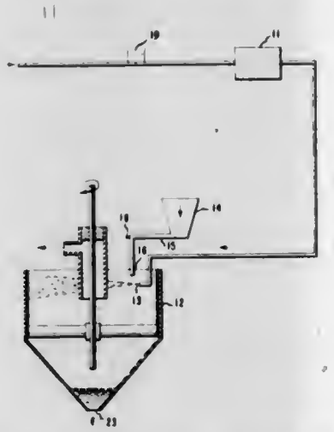


a manifold having the outlet thereof connected to said inlet of said duct and having a common inlet thereof connected to said orifice,

a power driven rotary blower means having an inlet and outlet with the latter connected into said common inlet of said manifold means,

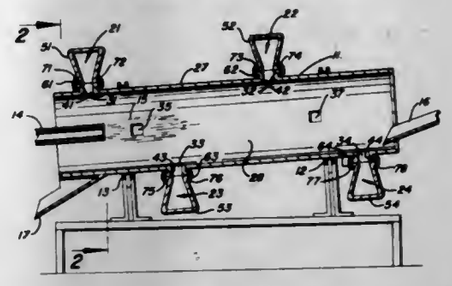
a casing enclosure connecting the opening in said drum to the inlet of said blower means whereby the products of combustion of said burner means will be circulated and recirculated through said drum for heating same when said blower means and said burner means are operated.

3,271,017
APPARATUS FOR MELTING PLASTIC POWDER
Willis F. Brondyke, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 24, 1964, Ser. No. 362,447
3 Claims. (Cl. 263—7)



1. An apparatus for melting particulate plastic material which comprises a cylindrical chamber, a cylindrical wall mounted longitudinally in said chamber for rotational movement therein, means to rotate said wall, feed means to deliver said plastic material into said chamber at a point within said cylindrical wall and means disposed within said cylindrical wall at a point adjacent said feed means to render said plastic material molten upon delivery within said cylindrical wall and to deposit said plastic material on said cylindrical wall.

3,271,018
ROTARY CALCINING KILN
Warford A. Reaney, 264 W. Lincoln Ave., Delaware, Ohio, and David W. Reaney, 898 Shore Drive, North Madison, Ohio
Filed Apr. 8, 1964, Ser. No. 358,220
1 Claim. (Cl. 263—33)



A rotary kiln for treating material such as lime comprising, in combination:

a cylindrical drum, having a cylindrical wall of refractory material forming the shell of said drum, having a plurality of circumferentially and longitudinally spaced wall openings formed through said cylindrical wall through which a portion of the material being treated may at times move, and having end openings at the ends thereof for the input of material to be treated and for the outlet of material which has been introduced at the inlet end, treated within the drum, and after treatment, removed at the outlet end;

means for mounting said drum for rotation substantially about its longitudinal axis and with its longitudinal axis at an acute angle to the horizontal and sloping from the inlet end downward towards the outlet end;

means for rotating said drum continuously about its longitudinal axis;

means for supplying material to be treated to the inlet end of said kiln;

means for removing material which has been treated from the outlet end of said kiln;

means for applying heat to the material to be treated within the interior of said drum;

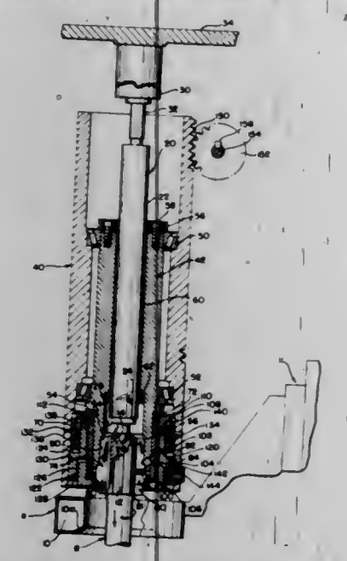
a plurality of separable heat resistance receptacles secured to the outside of said kiln each having an open mouth, each formed with a substantially closed interior except for said mouth, each having the mouth secured in registration with one of said wall openings, each of said receptacles being staggered longitudinally about said wall relative to adjacent receptacles, each of said wall openings registering with one of said receptacles, and each of said receptacles being removable and replaceable; and

fastening means for securing said receptacles to said cylindrical drum with their mouths in alignment with the openings in said drum.

3,271,019
MECHANISM FOR AN INDUCTION HEATING APPARATUS
Robert G. Armstrong, Chardon, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed July 23, 1963, Ser. No. 297,109
8 Claims. (Cl. 266—4)

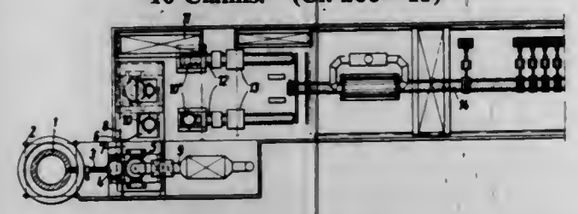
1. In an induction heating apparatus for progressively hardening an elongated workpiece having a first and second end, said apparatus including a first and second center for locating said workpiece in said apparatus with the axis of said workpiece assuming a desired position with respect to said induction heating apparatus means for forcing said centers together to secure said workpiece within said apparatus, a first clamping device adjacent said first center for holding said first end of said workpiece, a second

clamping device adjacent said second center for holding said second end of said workpiece, said clamping devices being rotatably mounted with respect to said apparatus, an inductor and quenching device positioned on said apparatus and encircling said workpiece, a quench passage associated with said device for quenching said workpiece after said workpiece has been heated by said device, means for rotating said workpiece about said axis and means for causing relative movement of said workpiece with respect to said inductor and quenching device with said



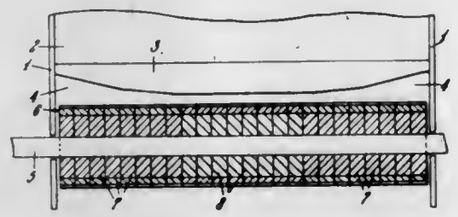
relative movement being in the direction with said workpiece moving through said inductor and quenching device, the improvement comprising: said second clamping device comprising a rotatable clamping collet for gripping said second end of said workpiece, a non-rotatable frame member, means for supporting and jaurnalling said collet in said frame member and means for applying a controlled force on said frame member in a direction substantially parallel to said axis of said workpiece to create a tension within said workpiece as said inductor and quenching device scan and harden said workpiece.

3,271,020
STEEL PLANT
Wilhelm Heemeyer, Dusseldorf-Kaiserswerth, Germany, assignor to Klockner-Werke AG, Duisburg, Germany
Filed Nov. 30, 1965, Ser. No. 510,612
Claims priority, application Germany, Oct. 11, 1961, K 44,907; Dec. 1, 1964, K 54,675
10 Claims. (Cl. 266—13)



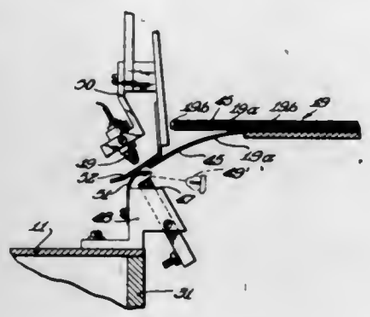
1. In a steel plant, in combination, converter means movable along a path; blast furnace means located on one side of said path; hearth furnace means located between said blast furnace means and said path for receiving molten iron from said blast furnace means and for discharging the heated iron into said converter means while the same are located on said path; steel molding and forming means located on the other side of said path extending along at least one line transverse to said path and spaced along the same from said hearth furnace means; and treating means located along said path for transforming iron in said converter means into steel while said converter means are located on said path so that said converter means receives iron from said hearth furnace means in a first position on said path and discharges steel in a second position on said path for supplying said steel molding and forming means.

3,271,021
EXTRACTION OF ZINC
Patrick Alexander Tempest Keeping, Walter Lindsay Linton, and Harry Gilead Spencer Havard, Avonmouth, England, assignors to The National Smelting Company Limited, London, England
Filed July 18, 1963, Ser. No. 295,888
Claims priority, application Great Britain, July 30, 1962, 29,238/62
9 Claims. (Cl. 266—24)



1. In a continuously operable externally heated retort for the production of zinc and the like, containing charging means for briquettes at the upper end of the retort and discharging means for spent briquettes as residues at the lower end of the retort, the discharging means including a horizontally disposed rotatable extractor roll and an extractor plate with a free edge extending along and spaced from the extractor roll, the improvement in combination therewith which comprises: the horizontal extractor roll has exterior pockets in its outer surface for receiving and thereafter discharging the residues; the distance of the extractor plate free edge from the outer surface and the bottoms of the extractor roll pockets increases from the central portion of the extractor roll to at least one end portion of the extractor roll so that spent residues may be withdrawn more rapidly from that end portion of the extractor roll than from its central portion to alter the pattern of flow of the briquettes through the retort.

3,271,022
INSERTER WITH DOCUMENT RESPONSIVE TRACK CONTROL MEANS
Eugene Sather, Washington, and Lester H. Stocker, Phillipsburg, N.J., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed July 11, 1963, Ser. No. 294,367
14 Claims. (Cl. 270—58)

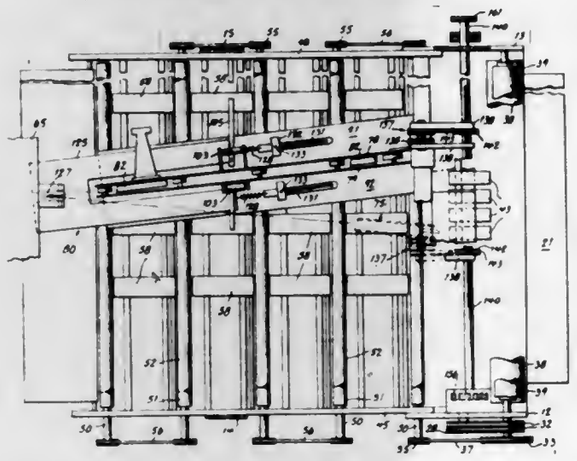


1. In an inserter including means for supporting a stack of groups of inserts comprising in each group at least a master insert and optionally an indefinite number of companion inserts with sensibly differentiating identification means on either the master insert or the companion inserts and means for withdrawing the inserts

one-by-one from the stack and depositing them in an insert track including an insert conveyor with means for indexing intermittent advancing movements of the conveyor in timed relation to the withdrawing and delivering means, the improvement comprising:

means for controlling operations of said indexing means including sensing means responsive to said identification means for enabling functioning of the indexing means to advance the conveyor when a master insert is withdrawn from the stack and for disabling the indexing means to hold the conveyor in a dwell when a companion insert is withdrawn from the stack to be collated with the master insert in the track.

3,271,023
SHEET COLLATING APPARATUS
Harley J. Disbrow, Richland, and Ingvar L. Tolf, Battle Creek, Mich., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,230
16 Claims. (Cl. 270—58)



1. An apparatus for collating sheetlike articles being fed seriatim in a plurality of separate files disposed in coplanar and parallel relation to one another comprising, a first conveyor means for advancing the articles of one file within the common plane and along a predetermined directional axis, a second conveyor means for feeding the articles of another file within another plane and along a directional axis converging with said predetermined directional axis, and means disposed at the input and output ends, respectively, of said second conveyor means for diverting the articles of said another file from said common plane to said another plane and from said another plane to said common plane, respectively, whereby the articles within the first and second files become merged at a location of convergence of the respective directional axis for delivery in superposed relation to one another from the apparatus.

3,271,024
HIGH SPEED CARD FEED
Gordon H. May, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,819
11 Claims. (Cl. 271—27)

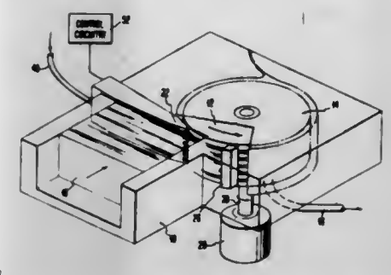
1. A record card feeding means for feeding record cards from a hopper, comprising:

a feeding means disposed adjacent a record card in said hopper;

means for producing a vacuum force on the periphery of said feeding means adjacent said record card;

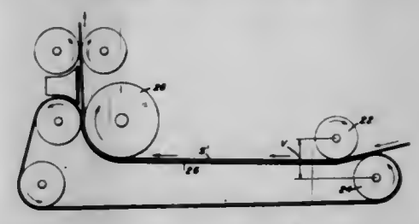
means for directing a high velocity stream of fluid to create a fluid bearing adjacent to said feeding means for overcoming said vacuum force; and

means for selectively interrupting said high velocity fluid stream so that said vacuum means pulls said



record card to said feeding means to feed said record card.

3,271,025
SHEET CONVEYOR
Norman J. Rosenburgh and David D. McNair, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 6, 1964, Ser. No. 357,435
6 Claims. (Cl. 271—45)



1. A conveyor for transporting and changing the direction of movement of a sheet having a predetermined length, comprising:

(a) a moving endless belt for supporting such sheet and defining a path of travel of said sheet;

(b) a first member having a curved surface in peripheral contact with said belt, whereby said sheet, when moving on said belt and in contact with said curved surface, has a speed relative to said curved surface which is different from the speed of the belt at the neutral axis of said belt by virtue of the deformation of said belt as it moves along said curved surface; and

(c) compensating means for arcuately deforming said belt, at a point in said path ahead of said first member relative to the movement of said belt, said belt being deformed by said compensating means in such a manner as to cause the sheet contacting surface of said belt in the area of contact with said compensating means to move at a speed not greater than the speed of the sheet relative to said curved surface;

(d) the distance of said path between said first member and said compensating means being less than said predetermined length;

(e) whereby when said sheet is moving in simultaneous contact with said first member and said compensating means the speed of the portion of the sheet in contact with said curved surface is at least as great as the speed of the portion of the sheet which is in contact with said compensating means, the sheet thereby being held in a taut condition as it moves in said path.

3,271,026
DOCUMENT STACKING DEVICE
Üstün Germen, Newton Center, Mass., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 1, 1964, Ser. No. 379,451
9 Claims. (Cl. 271—71)

1. The combination comprising:

first and second wheels rotatably mounted on a shaft;

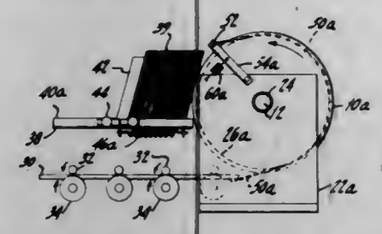
a third wheel, smaller in diameter than the first and

second wheels, mounted on said shaft between said first and second wheels;

a document hopper having an input end located adjacent said wheels;

a band concentric with a peripheral portion of said third wheel at a radial distance from said shaft that is less than the radii of said first and second wheels;

one end of said band extending beyond the peripheries of all of said wheels and being operatively connected



at a fixed point, said one end of said band and the adjacent peripheral portion of said third wheel defining a throat for documents;

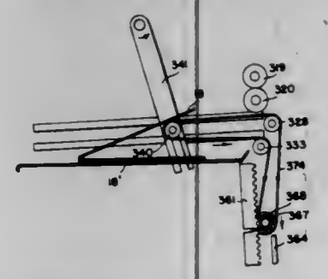
means operatively connecting the other end of said band to a fixed point near the input end of said hopper;

the peripheries of the first and second wheels having a higher coefficient of friction than said band;

means for feeding a document into said throat; and

means for rotating said first and second wheels.

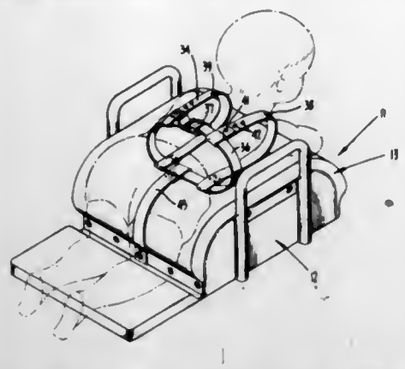
3,271,027
STACKING DEVICE
Jerome J. Liedl, Mahtomedi, and Donald L. Snyder, St. Paul, Minn., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application Sept. 4, 1962, Ser. No. 221,039, now Patent No. 3,218,950. Divided and this application July 2, 1965, Ser. No. 469,222
3 Claims. (Cl. 271—78)



1. In a stacking device, a first revolvable roller, a second revolvable roller parallel to said first roller, an endless flexible web passing around said rollers defining spaced first and second runs of said web, means for placing said web under tension, means for reciprocating said first roller in a plane containing the axis thereof, and limit means engaging each run of said web between said rollers and oppositely acting to limit the rotational movement of said web about said rollers to a single direction, a first of said limit means preventing movement of the first run of the web as said first roller is moved in one direction and a second of said limit means preventing movement of the second run of the web as said first roller is moved in a direction opposite said one direction.

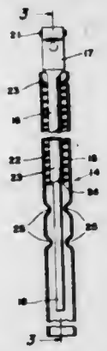
3,271,028
BABY EXERCISER
Alvina K. Albin, Oakland, Calif.
(9 Redwood Road, San Anselmo, Calif.)
Filed May 21, 1963, Ser. No. 282,015
4 Claims. (Cl. 272—57)

3. A baby exerciser comprising a generally rectangular support including side walls and interconnecting cross members and a padded cover secured to said cross members and arcuately extending over said cross members to define a curved upper support surface, a pair of handles



secured to said side walls and projecting above the crown of said support surface, a knee pad secured to a cross member of said support at the lower end thereof, and a body harness secured to a cross member of said support.

3,271,029
AIRGLIDE SUSPENSION DEVICE
Daniel P. Grudoski, Hartstown, Pa., assignor to Blazon, Inc., Akron, Ohio, a corporation of Ohio
Filed Aug. 6, 1962, Ser. No. 215,105
1 Claim. (Cl. 272—87)

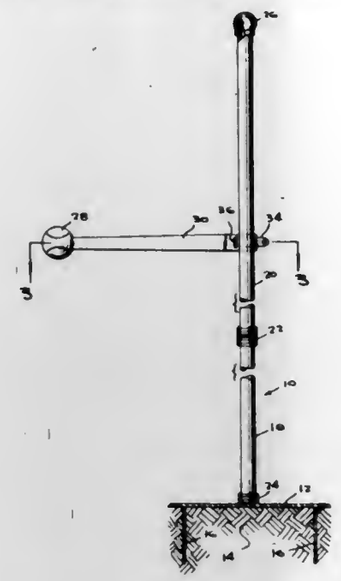


In combination with a gym set having a top crossbar and drop arms pivotally connected to said top crossbar, the improvement which comprises a resiliently extensible drop arm pivotally connected to said crossbar, said drop arm comprising an outer tubular member, an inner tubular member telescoped within said outer tubular member, means resiliently interconnecting said inner and outer tubular members, pivot means on said inner tubular member for attaching said inner tubular member to the top crossbar of the gym set, said inner tubular member having a flattened lower end portion, said outer tubular member having lower, inwardly crimped portions cooperating with said flattened lower end portions to prevent substantial relative rotation of said members.

3,271,030
CAPTIVE BATTING BALL
Theodore H. Mueller, 312 Gaines Ave., Mobile, Ala.
Filed Apr. 23, 1965, Ser. No. 452,452
2 Claims. (Cl. 273—26)

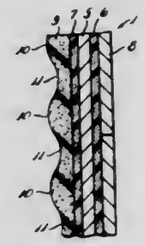
1. A batting practice device comprising a plate adapted to rest upon a ground surface, spikes depending from the underface of said plate and penetrating the ground when the plate rests upon the ground surface to thereby fixedly-attach said plate to said ground surface, a threaded boss rising from the mid-part of the upper face of said plate, a standard rising from said plate and having the portion adjacent the lower end in threaded-engagement with said boss, a cap on the upper end of said standard, a flexible arm having an outer end provided with a simulated ball and having an inner end provided with a

loop, said arm being horizontally-disposed at a location below said cap and having the loop surrounding-receiving the adjacent part of said standard, a clamp encompassing



said loop and supported on said loop, and releasable-fastening means fixedly securing said clamp about said loop to thereby attach said loop to said standard.

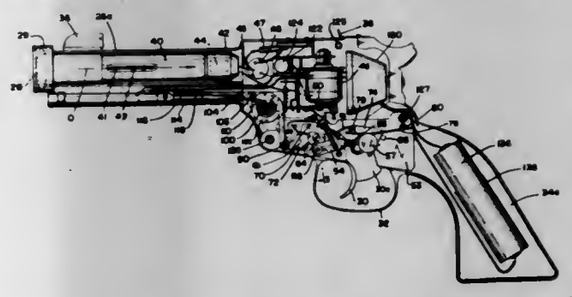
3,271,031
RIBBED BOWLING BALL PATCH
Charles F. Mitchell, 181 Crescent Drive, Akron, Ohio
Filed June 7, 1962, Ser. No. 200,687
3 Claims. (Cl. 273—63)



2. A bowling ball finger or thumb hole patch comprising an adhesive flexible backing layer having a pressure sensitive adhesive on both surfaces thereof and having a back surface for engaging a wall of a bowling ball hole, and a solid, but flexible rubber-cork strip secured to the face surface of said backing layer, said rubber-cork strip having a frictional face surface that is free from any surface skin thereon, with a plurality of solid ribs having smoothly curved convex surfaces and smoothly connected together by arcuately contoured concave recesses formed thereon, said rubber-cork strip having about equal quantities by weight of (A) a ground vulcanized material comprised of cork mixed with a significant quantity of rubber to give a tough substance having a relatively hard gripping characteristic and (B) a rubber material to provide a fairly hard, high frictional surface on the patch.

3,271,032
PHOTOELECTRIC TARGET PRACTICE PISTOL
Jacob G. Rabinowitz, Jamaica, and Victor Yager, Long Island City, N.Y., assignors to Clairex Corporation, New York, N.Y., a corporation of New York
Filed Sept. 7, 1962, Ser. No. 222,095
5 Claims. (Cl. 273—101.1)

1. A target practice pistol, comprising a hollow casing having a tubular barrel at one end, a photoelectric cell in the casing exposable through said barrel to a light target external of said casing, said light target emitting light of sufficient brightness to activate said cell, circuit means connected to said cell, power supply means in said casing connected to said circuit means to energize the same, signal means connected to said circuit means and controllable thereby to indicate when said circuit means is energized, said circuit means including a switch having normally open contacts to keep said circuit means in a normally deenergized state, whereby said circuit means is energized only momentarily while light from said target impinges on said cell simultaneous with momentary closure of the switch contacts, a manually movable trigger disposed to cause the contacts of said switch to close automatically for only an instant at a time during each operative movement of the trigger and then to permit the switch contacts to open automatically and remain open during the remainder of said movement, so that said circuit means is energized by said power supply means only momentarily while the contacts of said switch are



momentarily closed and while the light from said target impinges on said cell, whereby said signal means is actuated only during the momentary instants of closure of the switch contacts occurring while the light from said target impinges on said cell to indicate that the axis of said barrel is precisely aligned with said light target; said signal means comprising an electromagnet having a movable armature, a cocking lever pivotable by said trigger, means actuated by the cocking lever for closing the contacts of said switch momentarily; a hammer lever pivotable by the cocking lever and engageable by said armature when the trigger is moved in one direction, a hammer carried by said hammer lever, and a bell disposed adjacent the hammer, whereby the hammer strikes the bell when the electromagnet is energized to move the armature and release the hammer lever, said electromagnet being energized only during the instants when said circuit means is energized.

3,271,033
TOY DEVICE FOR LAUNCHING AND INTERCEPTING ROTARY WING FLYING TARGETS
Frederick R. Parker, Long Beach, Calif., assignor of one-half to Johnny E. Johnson, Santa Fe Springs, Calif.
Filed Feb. 25, 1963, Ser. No. 260,647
9 Claims. (Cl. 273—101)



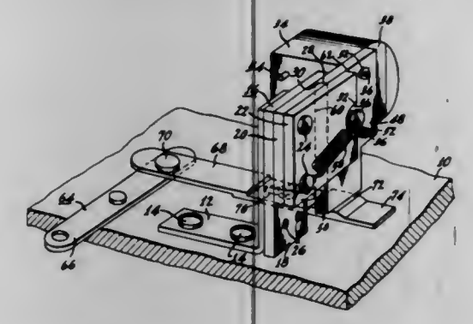
1. A device for launching a rotary wing flying target and for propelling a missile at such launched target, comprising:

a body portion;

launching means rotatably mounted on said body portion for detachably drivingly engaging a rotary wing

target device and actuatable for imparting flying rotational speed thereto;
mounting means on said body portion for detachably supporting a missile thereon including means for propulsion of said missile in a predetermined direction relative to said body portion;
and means carried by said body portion and manually actuatable for sequentially imparting by movement in one direction such rotation to said launching means and by movement in another direction for detaching and effecting such propulsion of such missile from said mounting means.

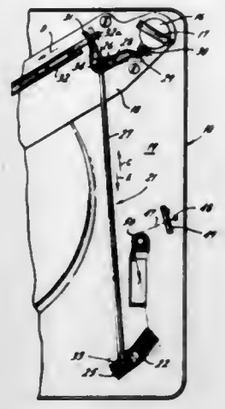
3,271,034
POSITIONING MECHANISM
Dallas R. Andrews, Indianapolis, Ind., assignor to Radio Corporation of America a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,493
4 Claims. (Cl. 274—4)



1. A mechanism for shifting the position of a magnetic head into scanning relationship with selected ones of a plurality of record tracks on a magnetic tape record, said head having at least one head unit including a signal gap disposed along a gap line, said mechanism comprising
(a) a stationary mounting member defining a slot having side and bottom walls parallel to said gap line, said bottom wall being beveled,
(b) a bracket plate mounting said head and disposed in said slot, said bracket plate having a beveled edge complementary to said beveled bottom wall, the corner of said beveled edge being parallel to said gap line,
(c) means for tilting said bracket plate toward at least one of said side walls of said slot and providing lines of intimate contact between said plate and the walls of said slot at said corner and at the side of said bracket plate adjacent said one side wall, and
(d) means for moving said bracket in said slot in a direction along said lines of contact whereby to shift said head among selected ones of said tracks.

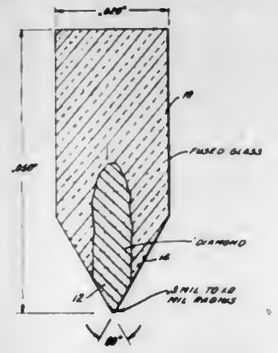
3,271,035
PHONOGRAPH APPARATUS
Henry E. Johnston, Huntingdon Valley, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 13, 1964, Ser. No. 337,362
11 Claims. (Cl. 274—23)

9. In an electrically driven record-playing phonograph having a tone arm movable to and from a rest position and record-playing position, the combination of a switch movable to OFF position for stopping the phonograph and to ON position for starting the phonograph, a manually operable element for moving the switch between ON and OFF positions, an automatically operable member for moving the switch from ON position to OFF position, linkage means linking the switch to said element and member and operable in response thereto for imparting the aforesaid movements to the switch, and tone arm engaging means connected to and operated by the linkage means for automatically securing the tone arm in rest



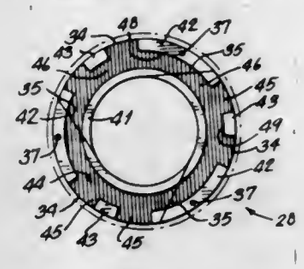
position when the phonograph is stopped and automatically releasing the tone arm for placement in the record-playing position when the phonograph is started.

3,271,036
PHONOGRAPH STYLUS AND METHOD OF MAKING SAME
Paul L. Kuzmick, 30 Oval Road, Essex Fells, N.J.
Filed May 6, 1963, Ser. No. 278,364
2 Claims. (Cl. 274—38)



1. A diamond point phoograph stylus comprising a glass shank and a diamond point set at the end of the glass shank, the said end of the glass shank being fused onto the diamond point thereby bonding the diamond point to the stylus shank.

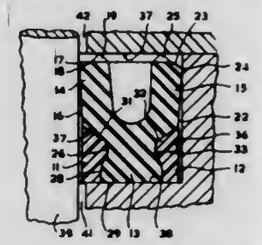
3,271,037
PRESSURE-BALANCED SEGMENTAL PACKING RINGS
Frank E. Hammond, Palmyra, N.Y., assignor to Garlock Inc., Palmyra, N.Y., a corporation of New York
Filed Apr. 1, 1963, Ser. No. 269,617
1 Claim. (Cl. 277—27)



A segmental packing ring comprising segments, of substantially non-deformable material, which are in abutment at axially extending surfaces of tangentially extending splits; said segments having radially outwardly facing surfaces receptive to fluid pressure directed radially inwardly thereon to urge the segments forcefully against a rod

extending through said ring and each of said segments being formed with spaced arcuate lands extending circumferentially of the ring and having radially inwardly facing surfaces receptive to fluid pressure directed radially outwardly thereon to oppose said radially inwardly directed pressure and thereby ease the engagement of said segments with the rod; said lands on each segment being located adjacent the segment's outer circumferential surface and at the tangentially extending splits at opposite ends of the segment in abutment with similarly located arcuate lands of adjacent segments, whereby to provide lateral support at the outer periphery of the ring against wobbling of the segments thereof; said lands, further, being provided at both the pressure side and the rear side of the ring.

3,271,038
SEALING DEVICES
Frank Bastow, Charlton Kings, Cheltenham, England, assignor to Dowty Seals Limited, Ashchurch, near Tewkesbury, England, a British company
Filed Oct. 29, 1963, Ser. No. 319,785
Claims priority, application Great Britain, Oct. 30, 1962, 41,049/62
2 Claims. (Cl. 277—205)

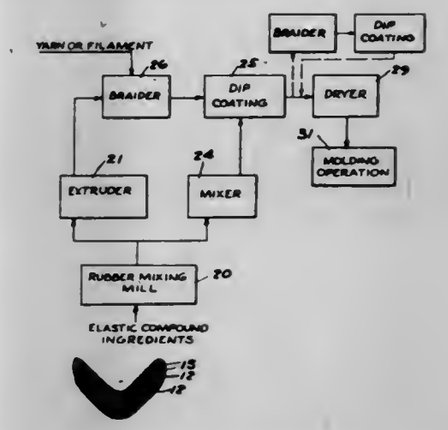


1. A sealing device for use between relatively movable members which have co-axial sealing surfaces, comprising a sealing ring of resiliently deformable material having a base portion defined in part by an end face transverse to the central axis of the ring, inner and outer sealing lips extending from the base portion on opposite sides thereof so as to be capable of effecting sealing engagement with the respective co-axial sealing surfaces when the sealing device is interposed therebetween, an annular recess formed in the angle of the sealing ring which is defined by the intersection of the transverse end face and the outer face of that sealing lip which has a sealing edge that in use is engageable with the relatively movable member, a backing ring of a flexible material harder than that of the sealing ring having a surface complemental to the surface of the recess, said complemental surfaces being shaped to provide on one of said rings an annular groove and on the other of said rings an annular bead, whereby the sealing ring and the backing ring may enter into releasable locating engagement of one ring radially within the other and an annular projection in the axial direction beyond the sealing edge of at least that sealing lip which engages the relatively movable member, said annular projection being set back in a radial sense from the sealing edge, and said annular projection having a radial gap therein for providing communication for pressure fluid across the end of the lip when the sealing device is mounted in a housing.

3,271,039
PACKING RING AND METHOD OF MAKING
John Kohl, Birmingham, Mich. (111 E. 10 Mile Drive, Hazel Park, Mich.), and Gene Pillar, Livonia, Mich.; said Pillar assignor to said Kohl
Filed Mar. 29, 1962, Ser. No. 183,467
5 Claims. (Cl. 277—228)

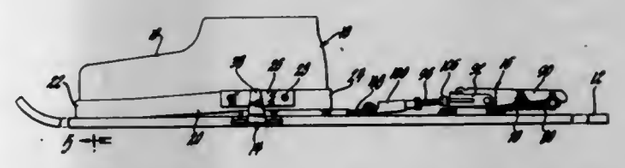
1. A packing comprising a ring having a predetermined molded cross section, said ring comprising a core of cured elastomeric material, and a seamless tubular layer of braided fabric having a covering of substantially the same cured elastomeric material thereon surrounding said core, at least some of said cured elastomeric material penetrating the interstices of said braided fabric, said elastomeric material covering said fabric and said elastomeric material penetrating said interstices being cured in situ at the same time as curing of said core.

3. The method of making a packing which comprises braiding a seamless tubular layer of fabric over a core of uncured elastomeric material,



dipping said core with said braided layer of fabric in a coating comprising a solution of elastomeric material and a solvent,
drying the dipped fabric and core,
cutting off a predetermined length of said dipped dried fabric and core,
shaping said predetermined length into a ring by bringing the ends of said length adjacent one another,
and compressing and curing said ring into a predetermined cross section to form the packing.

3,271,040
SAFETY BINDING
Richard G. Spademan, 3655 Colegrove, San Mateo, Calif.
Filed Apr. 29, 1965, Ser. No. 451,881
80 Claims. (Cl. 280—11.35)

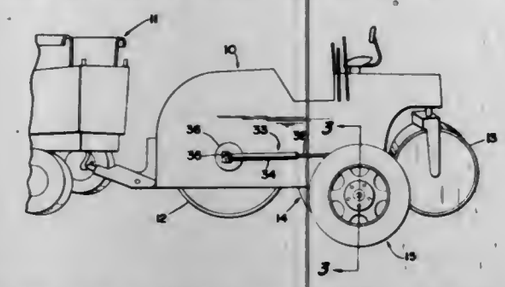


1. In combination; a ski, a ski boot, and a binding mechanism for binding said ski boot to said ski, said mechanism coacting only with the side portions of said ski boot and being the only means by which said ski boot is secured to said ski, and said mechanism being positioned on said ski rearwardly of the point of application of heel lifting force on said ski boot.

3,271,041
TANDEM ROLLERS
Richard E. Acker, Marion, Ohio, assignor to Huber-Warco Company, Marion, Ohio, a corporation of Ohio
Filed July 15, 1964, Ser. No. 382,883
10 Claims. (Cl. 280—43.23)

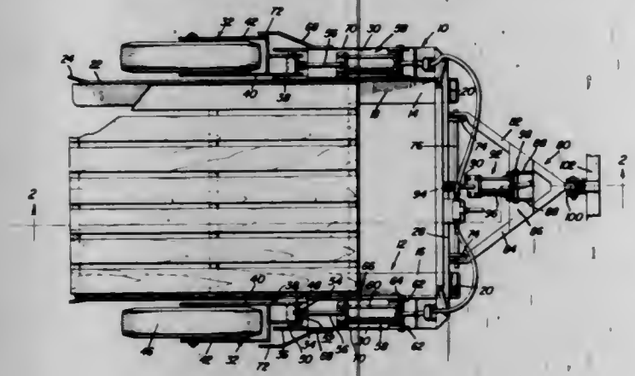
7. A road roller comprising a frame, road working rolls mounted on said frame, a lever arm pivoted at one end to said frame, a socket at the other end of said lever arm, a ground-engaging trailing wheel rotatably mounted on a wheel spindle, a hollow wheel hub extension removably fixed to said wheel hub spindle and projecting into said socket, means to releasably lock said extension with-

in said socket, means to move said lever arm between a first position wherein said working rolls engage the ground and the trailing wheel is retracted and a second position wherein the trailing wheel engages the ground and the



working rolls are liftable, and a locking means cooperative with said hollow wheel hub extension to lock said wheel and lever arm to the frame when the trailing wheel is in said second position.

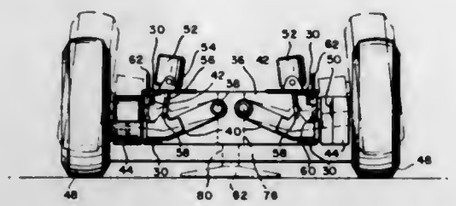
3,271,042
TRAILER WITH LIFT-TYPE LOAD BED
Frank L. Flodin, Sunnyside, Wash., assignor to Flodin Inc., Sunnyside, Wash., a corporation of Washington
Filed Jan. 9, 1964, Ser. No. 336,748
4 Claims. (Cl. 280—43.23)



1. A trailer with a lift-type load bed, comprising: (a) a pair of spaced apart, longitudinal main frame members, (b) transverse frame means interconnecting said main frame members at their forward ends leaving the area between said main frame members unobstructed rearwardly of said transverse means and having towing means attached thereto, (c) reinforcing members attached generally to the outside, forward portion of each of said main frame members, (d) a trailing arm means pivotally secured to the rear end of each of said reinforcing members, each of said trailing arm means having a generally rearwardly extending arm portion on which is rotatably supported a ground-engaging wheel, each of said trailing arm means also having a generally upwardly extending lever arm portion, and (e) extendible fluid motor means pivotally secured at one end thereof on each of said reinforcing members and the other end of said fluid motor means being pivotally attached to the outer end of said lever arm portion, whereby said load bed may be raised when said motor is extended and lowered when said motor is retracted.

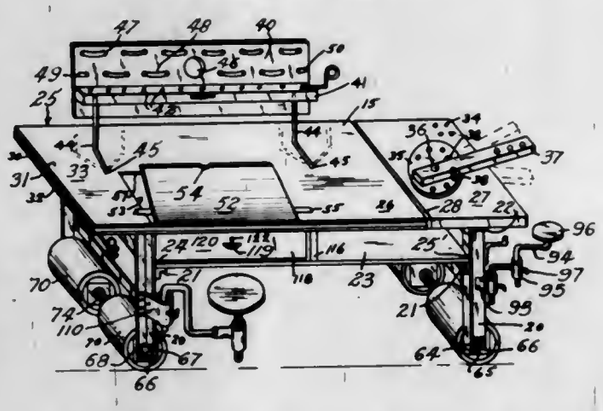
3,271,043
TRAILER SLED WITH RETRACTABLE WHEEL ASSEMBLY
Reid G. Priest, Port Angeles, Wash., assignor to Hyster Company, Portland, Oreg., a corporation of Nevada
Filed Feb. 24, 1964, Ser. No. 346,712
20 Claims. (Cl. 280—43.23)

1. A mobile trailer-sled for supporting spar towers comprising: (1) a rigid platform having at least two generally parallel spaced apart longitudinal main frame members interconnected by cross frame structure, the forward end of said platform having a front ground engaging sled and a detachable towing tongue, the rear end of said platform having a second ground engaging sled, said platform being provided with a pair of spaced apart axle frame means extending between said longitudinal members generally rearwardly of the transverse center line of said platform and defining an elongated axle space therebetween, and axle openings being provided in said longitudinal members at the ends of said axle space, (2) axle means being provided within said axle space and extending outwardly through



said axle openings beyond said longitudinal members to the outboard sides of said platform, said axle means being capable of moving upwardly and downwardly within said axle space and said openings, (3) wheel supporting means attached to the ends of said axle means, said wheel supporting means having rotatable wheels thereon, (4) a plurality of platform raising and lowering means located on said platform for raising and lowering said platform with respect to said wheels, and (5) locking means located near the ends of said axle means for locking said axle means in either one of its up and down positions within said space and openings.

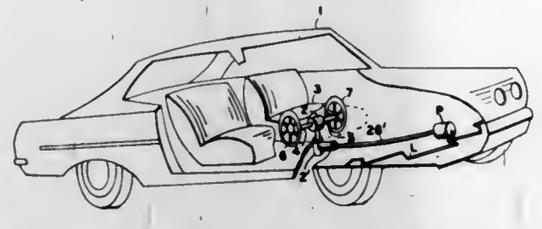
3,271,044
PORTABLE WORKBENCH FOR HAND AND TABLE TOOLS
John M. Bosko, 6691 Cleveland Road and Wall St., Ravenna, Ohio; John L. Bosko, Upland, Calif. (6691 Cleveland Road and Wall St., Ravenna, Ohio); and Joseph B. Lindecker, Skokie, Ill. (1193 Valetta Drive, Temperance, Mich.)
Filed Mar. 4, 1964, Ser. No. 349,326
8 Claims. (Cl. 280—79.3)



1. A device of the character described including a portable workbench having a top formed of a wooden section and a metal section, said top adapted for supporting wood working tools and metal working tools, a vertical tool supporting back board movably secured above the rear side portion of said wooden section and remote therefrom, said wooden section having an aperture and a leaf pivotally secured in the aperture and provided with means for supporting it in angular relation above the wooden section and also adapted to be retained in closed position flush with the top surface of the wooden section, a supporting frame comprising vertical corner leg members at the ends thereof secured with and beneath said top, a shaft extending between the lower end portions of the corner leg members at each end of the frame, a pair

of elongated rollers rotatably and slidably mounted on each shaft, a coil spring mounted on each of said shafts between said rollers adapted to bias the rollers and resist a change in position on said shaft, and said rollers adapted to movably support said portable workbench.

3,271,045
STEERING WHEEL MECHANISM
Matthew Vacante, Old Bethpage, N.Y., assignor to Postless Steering By Dual Wheels Co., Inc., Baldwin, N.Y.
Filed Apr. 22, 1965, Ser. No. 450,030
1 Claim. (Cl. 280—87)



Steering wheel means for a vehicle having a driver's seat and a steering linkage extending between the front wheels of the vehicle comprising,

a gear box having upper and lower portions mounted in the floor board of the vehicle, said upper portion located under the substantially horizontal portion of said driver's seat,

said lower portion having a flange adapted to rest on said floor board, the remainder of said lower portion extending below said floor board,

a pair of horizontal shafts extending from the upper portion of said gear box to just beyond the side of said driver's seat,

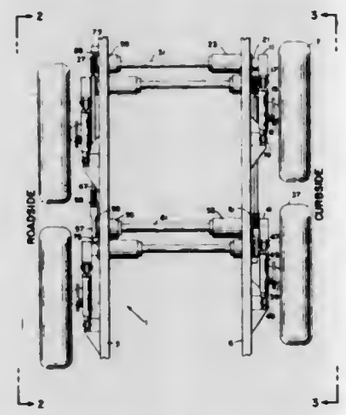
a pair of hand wheels, one mounted on each of said shafts,

gear means in said gear box connecting said wheels and shafts for counter rotation,

an output shaft in said gear box connected to said gear means and,

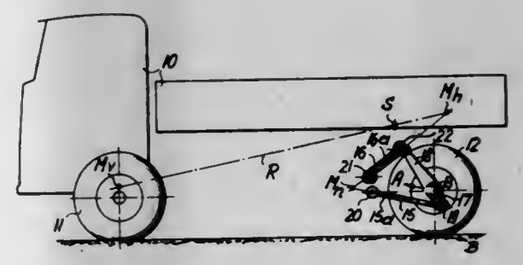
means to connect said output shaft to said steering linkage.

3,271,046
BOGIE ACTION TORSION BAR SUSPENSION SYSTEM
George D. Evans and Lawrence L. Mitchell, Salt Lake City, Utah, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 26, 1964, Ser. No. 370,390
6 Claims. (Cl. 280—104.5)



1. A bogie action torsion bar suspension system for a vehicle having a frame, said suspension system including: a roadside and a curbside bogie action suspension system mounted on said frame; said roadside and said curbside bogie action suspension system each including, a forward wheel and a rear wheel which are interconnected by a generally U-shaped linkage which extends from one side of said frame to the other and which includes at least one torsion bar as a part of said linkage, said linkage being arranged in such a manner as to have a bogie action built therein; and said curbside suspension system being mounted on said frame forward of said roadside suspension system.

3,271,047
AXLE SUSPENSION
Paul E. Strifler, Dettingen, Teck, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed June 15, 1964, Ser. No. 375,203
7 Claims. (Cl. 280—124)

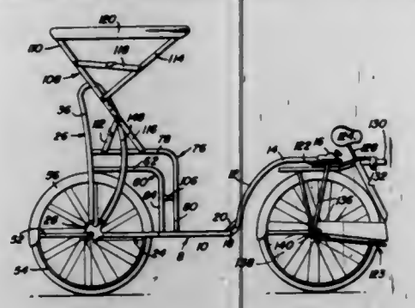


1. An axle suspension for a road vehicle having at least two axles and wheels thereon, and an upper vehicle structure resiliently supported on said axle, one of said axles being a rigid rear axle having an upwardly extending axle arm rigidly secured to each side thereof, a pair of upper guide arms pivotally connected at one end to said axle arm and at the other end to said upper structure and extending from said axle arm at an oblique direction to the longitudinal direction of the vehicle and away from each other and adapted to swing in said oblique direction and also extending at an oblique angle to the horizontal plane so that the longitudinal axes of said upper guide arms, as seen in a side view of the vehicle, intersect at a point located above said axle near a perpendicular transverse plane of the vehicle extending from the centers of the wheels on said axle, said point being located near the level of the center of gravity of said upper structure, a pair of downwardly extending axle arms rigidly secured to said axle at the opposite sides thereof, a pair of lower guide arms pivotally connected at one end to said last axle arms and extending therefrom at a small angle upwardly and pivotally connected at the other end to said upper structure, said longitudinal axis of each of said upper guide arms extending steeply downwardly and forwardly from their respective axle arms, the longitudinal axes of said upper and lower guide arms on each side of said axle intersecting at a point located in front of said axle and above the center of the wheel thereon.

3,271,048
SULKY VEHICLE ATTACHMENT FOR BICYCLES
Albert E. Beesley, 2609 Cheyenne, and Jack R. Hitchcock, 2941 Azalea, both of Pueblo, Colo.
Filed Dec. 21, 1964, Ser. No. 419,790
10 Claims. (Cl. 280—204)

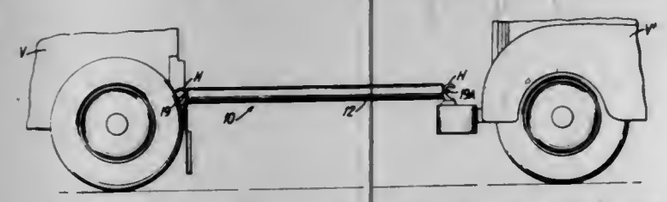
1. A trailer of the character described comprising a frame including a pair of spaced side members, a floor panel on said side members, supporting wheels on the frame, and a seat structure on the frame, said seat structure including a backrest comprising a pair of upstanding wings mounted on the frame, angulated supports having

one end affixed to the frame and their other ends affixed to the wings, a seat panel mounted on said supports, angular hand rails mounted on the frame and the wings



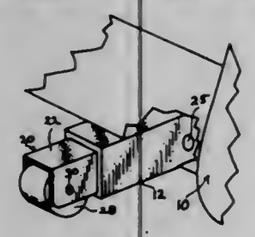
adjacent to and in spaced parallelism with the supports, and means for connecting the frame to a bicycle to be towed thereby.

3,271,049
VEHICLE TOW BAR
George P. Schoonmaker, R.R. 2, Roscoe, N.Y., and Andrew M. Schoonmaker, 4 Tandler Ave., Conklin, N.Y.
Filed Apr. 7, 1964, Ser. No. 357,955
6 Claims. (Cl. 280—493)



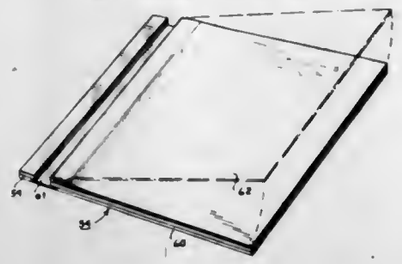
1. A tow bar for connecting two vehicles having towing elements, said bar comprising a rigid tubular member adapted to extend between the towing elements of said vehicles, a looped cable positioned within said tubular member and including looped portions projecting from the opposite ends of said tubular member and adapted to engage said towing elements, said cable further including opposed end portions disposed exteriorly of said tubular member, and means located exteriorly of said tubular member for engaging the opposed cable end portions and drawing the same together to thereby tighten said cable looped portions about said towing elements and bringing said towing elements into close abutting relation to the opposite ends of said tubular member.

3,271,050
HITCH BAR PROTECTOR
Eldon J. Saunders, 13420 Frazo Road, Warren, Mich.
Filed Dec. 14, 1964, Ser. No. 418,051
3 Claims. (Cl. 280—507)



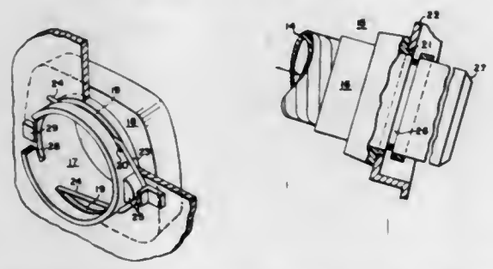
1. For use on road vehicle tractors equipped with a trailer hitch bar for receiving the projecting end of a trailer hitch, a close-off device for closing off the open end of said hitch bar comprising a member having a rear end insertable into said hitch bar, means on said rear end for removably affixing the device to said hitch bar, and a wheel rotatably mounted at the lower front end of said member for rollably supporting the rear end of the tractor when it goes up driveways and the like inclines such as would otherwise scrape the hitch bar.

3,271,051
ALBUM COVER BOARDS AND METHOD OF MAKING SAME
Edward K. Mullen and Leewood C. Carter, Union County, N.J., assignors to Book Covers, Incorporated, Newark, N.J., a corporation of New Jersey
Filed May 20, 1965, Ser. No. 457,357
16 Claims. (Cl. 281—29)



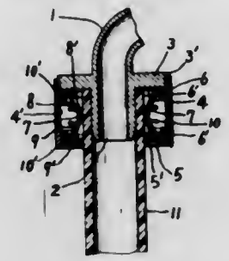
1. An album cover board structure comprising a multilayer spine board portion; a multi-layer panel board portion disposed in spaced relation to said spine board portion; a hinge material portion bonded to a surface of said spine board portion and a first surface of said panel board portion, said hinge material being indented substantially flush into said panel board portion; and a flap portion bonded solely on one side of the album cover board structure to a second surface of said panel board portion for disposition only on said one side of the album cover board structures, said flap portion substantially covering said second surface of said panel board portion.

3,271,052
COUPLING
Robert S. Waters, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 20, 1964, Ser. No. 353,507
5 Claims. (Cl. 285—7)



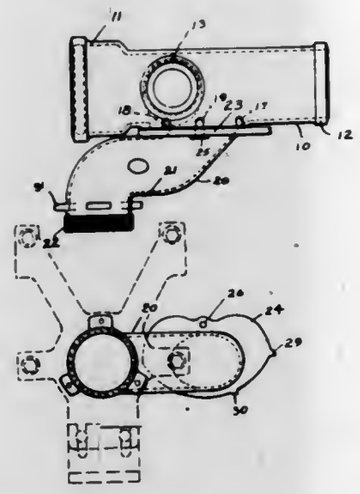
1. Mechanism for detachably connecting one end of a hose to a housing having an opening through a wall thereof, said mechanism comprising: a cylindrical sleeve member rotatably supported in said housing opening, said sleeve member being provided with means adapted to abut said housing wall at one side thereof, said sleeve member having at least one slot means disposed therein, spring means disposed in said slot means and extending beyond the periphery of said sleeve means, said slot means being of such a depth that at least a portion of said spring means extends into the interior of said sleeve member and the wall forming said slot means which is closest to said abutment means being removed axially therefrom a distance substantially equal to the thickness of said housing so that said portion of said spring means which extends beyond said sleeve periphery contacts said housing wall at the side thereof opposite the side thereof abutted by said abutment means whereby said abutment means and said spring means cooperate to retain said sleeve member in said housing opening, a cylindrical terminal member connected to said hose and receivable in said sleeve member, means carried by the outer surface of said terminal member for engaging said portion of said spring means extending into the interior of said cylindrical sleeve whereby said terminal member is retained in said sleeve member, cooperating means carried by said sleeve member and said housing adapted upon rotation of said sleeve member to temporarily effect disengagement of said portion of said spring means from said engaging means for permitting withdrawal of said terminal member from said sleeve member.

3,271,053
MEANS FOR COUPLING A HOSE TO A PIPE
Hisaharu Kurachi, 1–13 Suehirochi, Naka-ku, Nagoya, Japan
Filed July 2, 1964, Ser. No. 379,884
5 Claims. (Cl. 285—8)



1. A means for coupling a hose to a pipe comprising a flange means provided adjacent an outlet of said pipe, a cup member engaging said flange means by means of threads and having an opening in the bottom wall thereof to receive said hose therein, and a spring means disposed between said flange means and said bottom wall of the cup member and adapted to function so as to vary the inside diameter thereof by the movement of said cup member, said spring means comprising a pair of supporting rings, a plurality of hinged members pivotal intermediate the ends thereof and a helical spring disposed between said supporting rings, opposite ends of each of said hinged members being hooked on the opposite end turns of said helical spring so that said hinged members may form a drumlike cylindrical body.

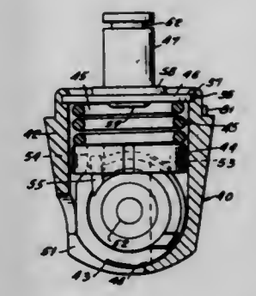
3,271,054
FITTING FOR BATTERIES OF WALL MOUNTED WALL CLOSETS
John H. Schmid, Erie, Pa., assignor to Zurn Industries, Inc., Erie, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 127,248, July 27, 1961. This application Oct. 23, 1965, Ser. No. 503,984
4 Claims. (Cl. 285—93)



1. A fitting for connecting a closet in a generally horizontal line slightly inclined toward the outlet comprising a hollow member having means on the ends thereof for connecting it in said line,

a hollow arm disposed generally parallel to said line,
an opening in one side of said hollow member,
said opening being longer in a horizontal direction than its height,
a finished outwardly disposed surface around said opening,
a finished surface on said arm around a hollow end thereof engaging said finished surface on said hollow member,
pivot means swingably connecting said arm to said member,
said pivot means being attached to said member above and on the side of said opening remote from the distal end of said arm whereby said distal end swings through a generally vertical line,
said arm having a peripheral edge defining a curve of predetermined shape,
a cam swingably connected to said hollow member,
an edge of said cam engaging said curved edge,
said cam and said hollow member adjacent said peripheral edge having calibration marks indicating the position to which said distal end of said arm is swung.

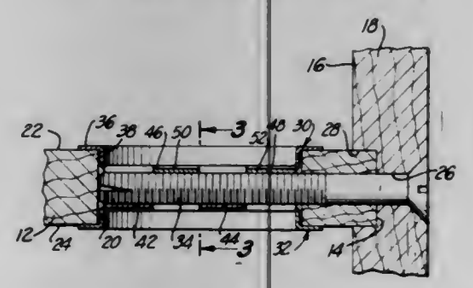
3,271,055
COUNTERBALANCED OSCILLATIVE JOINT
Nathan R. Schwartz, Yonkers, N.Y., assignor, by mesne assignments, to Swivelier Company, Inc., Nanuet, N.Y., a corporation of New York
Original application May 27, 1960, Ser. No. 32,438, now Patent No. 3,122,331, dated Feb. 25, 1964. Divided and this application July 31, 1963, Ser. No. 307,275
5 Claims. (Cl. 285—264)



1. A counterbalanced swivel joint which comprises:
(a) a swivel ball having a bore therethrough;
(b) a shell wherein said ball is disposed, the shell comprising a cast member having a rounded internal wall at one end thereof against which the ball is seated, said shell having an elongated opening adjacent said bore of said ball and the longitudinal axis of said shell being parallel to the axis of said ball;
(c) a torsion spring mounted within said shell and having its axis arranged normal to the axis of said ball and normal to the axis of the bore in said ball, one end of the torsion spring being secured to the ball and the other end being held in fixed relationship with respect to the shell;
(d) a first means formed integrally with said shell and operatively engaging cooperating means on said ball for preventing the ball from pivoting about the axis of said bore while permitting the same to pivot about the axis of said torsion spring, said elongated opening, bore of said ball, longitudinal axis of said shell and the axis of said ball, all lying in a common plane;
(e) a washer having a curved seat engaging said ball and means on the washer for securing said other end of the torsion spring;
(f) a second means formed integrally with said shell and operatively engaging cooperating means on said washer for preventing relative rotation between the washer and the shell;

(g) retaining means attached on the end of said shell opposite from the rounded internal wall thereof;
(h) a loaded compression spring interposed between said retaining means and said washer to urge the washer against said ball and, in turn, to urge the ball against the rounded internal walls of said shell, and
(i) a third means formed integrally with said shell and operatively engaging cooperating means on said retaining means for preventing relative rotation between the retaining means and the shell.

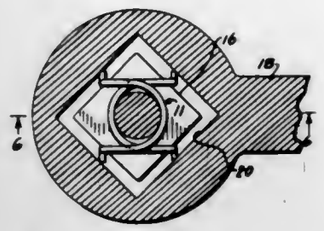
3,271,056
FASTENING DEVICE
George W. Frisbey, Jr., Garden Grove, Calif. (7899 Westminster Ave., Westminster, Calif.)
Filed Dec. 3, 1963, Ser. No. 327,687
2 Claims. (Cl. 287—20.92)



1. A fastened assembly comprising a first piece of material having an end, first and second sides and a first hole extending through said first piece of material from said first side to said second side thereof, first and second inserts engaged in said hole in said first piece of material, said first insert having a surface engaged upon said first side of said first piece of material and said second insert having a surface engaging upon said second side of said first piece of material, said first hole in said first piece of material having an axis and each of said inserts having an axis, said inserts being inserted in said first hole so that said axes of said inserts are substantially coincidental and are substantially parallel to said axis of said first hole, said first and second inserts each having fingers thereon, said fingers being positioned in overlapped relationship and defining a screw receiving opening, said fingers being located between said first and second sides of said first piece of material, said screw receiving opening having an axis at an angle to said axis of said first hole in said first piece of material, a second hole in the end of said first piece of material, said second hole having an axis which is substantially coincidental with said axis of said screw receiving opening, and a screw passing through said second hole and into said screw receiving opening so that said screw engages with fingers and prevents separation of said first and second inserts.

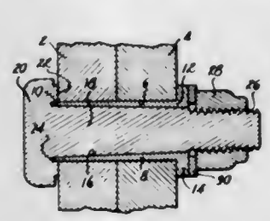
3,271,057
FASTENING DEVICE
Robert M. Kimbro, South San Gabriel, Calif., assignor to Kimbro Corporation, South San Gabriel, Calif., a corporation of California
Continuation of application Ser. No. 219,603, Aug. 27, 1962. This application July 30, 1964, Ser. No. 387,552
3 Claims. (Cl. 287—53)

1. A device for preventing rotation between a member having a shaft receiving recess with a side wall and a bottom wall and a shaft extending into said recess, wherein said recess is larger than said shaft,
and means are provided for moving said shaft endwise toward said bottom of said recess, comprising a member of spring wire formed intermediate its ends into a generally U-shaped loop,
said loop lying between said bottom of the recess and the adjacent end of said shaft,
said loop lying in a plane that extends at least substantially perpendicular to the axis of said shaft and intersects said axis at a point,
the ends of said loop being bent to form legs extending



along the length of said shaft and between said shaft and the sides of said recess,
portions of said legs engaging and binding against the peripheral edge of said end of said shaft upon said movement of said shaft by said moving means, and
the terminal portions of said legs extending radially outwardly to drivingly engage the sides of said recess.

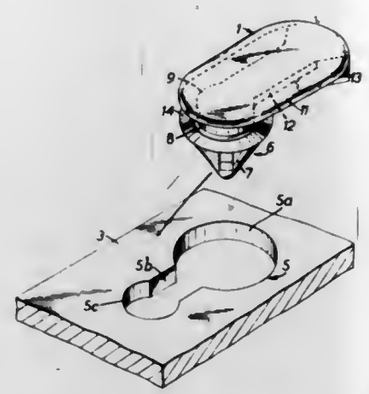
3,271,058
TAPERED FASTENER
Ben M. Anderson, Houston, Tex., assignor to Anderson, Greenwood & Company, Houston, Tex., a corporation of Texas
Filed May 22, 1963, Ser. No. 282,360
8 Claims. (Cl. 287—189.36)



1. A fastener comprising: a hollow sleeve having an outer surface shaped to conform generally to an opening through workpieces to be joined; the interior of said sleeve tapering uniformly from one end to the other; a draw pin member having a shank with an external surface tapered complementary to the tapered interior of said sleeve; a head on the large end of said shank, having a generally transverse bearing surface adjacent said shank; and a recess in said head circumscribing said shank and of a size and shape to receive the said one end of said sleeve.

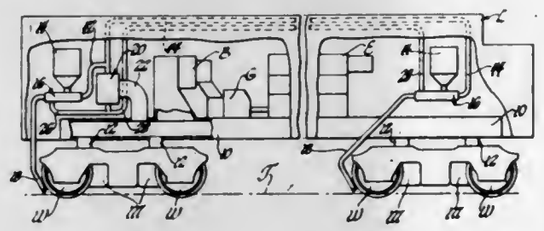
3,271,059
CLIP FOR FASTENING TOGETHER TWO APERTURED PANELS
Arthur Stanley Pearson, Sherwood, England, assignor to United-Carr Incorporated, a corporation of Delaware
Filed Feb. 17, 1964, Ser. No. 345,443
Claims priority, application Great Britain, Feb. 22, 1963, 7,287/63
3 Claims. (Cl. 287—189.36)

1. A clip for fastening together two panels, the first panel having an aperture and the second panel having an elongated slot, said clip formed of resilient material and comprising a stud-like member for snapping engagement in the aperture in the first panel and an integral arm extending radially away from the stud-like member, and said stud-like member having a neck portion of reduced diameter between the head of the stud and said arm and the radially outmost end of said arm carrying a peg projecting in a direction of said head of said stud, the configuration of the clip being such that it is slidable into assembly in said slot in the second panel with the stud-like member abutting at one end of the slot and a rib extending from said arm extending into and abutting the opposite end of said slot to prevent movement of the clip in the plane of the second panel, said slot being shaped in



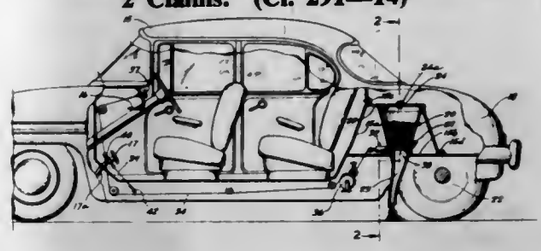
plan like a dumbbell with unequal ends, flanges being provided on the clip for engaging into opposite faces of the second panel and preventing movement of the clip perpendicular thereto, and said stud-like member being receivable in snapping engagement in the aperture in the first panel and said peg snapping into the wider end of the slot, to abut the end wall thereof, when the stud-like member abuts the wall of the narrow end of the slot.

3,271,060
SANDING SYSTEM
Harry A. Kilgore, Elmhurst, and Harold L. Smith, La Grange, Ill., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 17, 1965, Ser. No. 488,210
6 Claims. (Cl. 291—3)



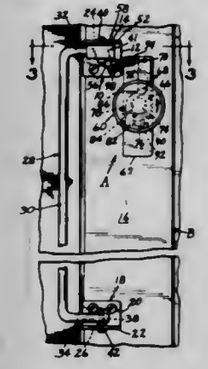
1. In a railway locomotive including wheels adapted to roll along a track, a system for supplying sand to said wheels to increase traction comprising: a delivery conduit extending adjacent one of said wheels, sand storage means connected to said delivery conduit and adapted to deliver sand thereto, a source of air under pressure, an air conduit from said source connected to said delivery conduit upstream of said storage means and adapted to direct a stream of air through said delivery conduit whereby sand is delivered to said wheel, a bypass conduit from said source connected to said delivery conduit downstream of said storage means and adapted to direct a stream of air through said delivery conduit whereby said delivery conduit is maintained free of obstruction, and switching means in said source adapted to direct a stream of air through said air conduit only when delivery of sand to said wheel is required.

3,271,061
VEHICLE TRACK SANDING DEVICE
Milford A. Miller, 8035 S. Euclid Ave., Chicago, Ill. 60617
Filed Mar. 22, 1965, Ser. No. 441,801
2 Claims. (Cl. 291—14)



1. An installation for the luggage locker of a motor car for releasing an abrasive in front of the rear wheels thereof, comprising a pair of nozzles mounted in the floor of the locker above said wheels, hoppers mounted above the nozzles, valves controlling communication between the hoppers and the nozzles, a strip between the hoppers with ends removably attached to the front and bottom of the luggage locker respectively, and a cross-bar carried by the strip and connecting the hoppers at the top, the detaching of said ends enabling the hoppers to be raised off the nozzles as a unit.

3,271,062
RELEASE DEVICE FOR DOOR LATCH
Ross P. Schelin, Culver, Minn.
Filed Mar. 16, 1964, Ser. No. 351,985
5 Claims. (Cl. 292—336.3)

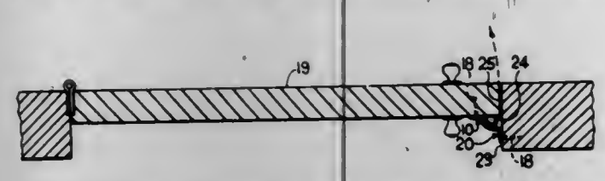


2. A release device for a door lock comprising:
(a) an elongated release bar,
(b) upper and
(c) lower spaced brackets,
(d) means laterally of said release bar for pivotally mounting said bar on said brackets,
(e) a lever plate connected to said release bar,
(f) an arm,
(g) means for securing said arm to the shaft of a door lock,
(h) a coil spring connected to said lever plate and said arm whereby the shaft of the door lock is rotated when said release bar is pivotally actuated.

3,271,063
DOOR GUARD
Edd W. Garrett, 4350 S. Prairie Ave., Chicago, Ill.
Filed Apr. 29, 1964, Ser. No. 363,506
1 Claim. (Cl. 292—346)

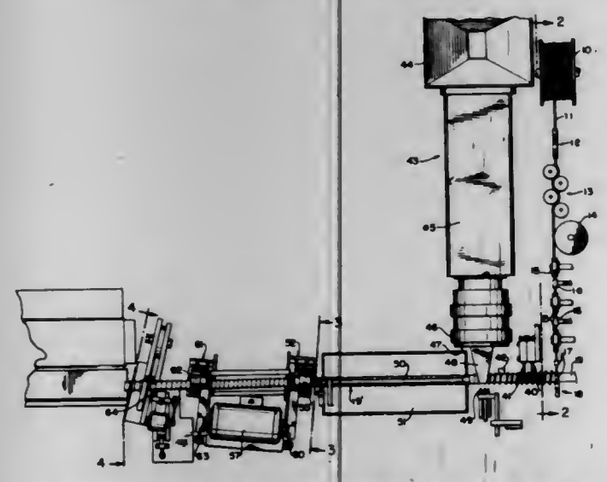
A door guard of the character described, comprising a first elongated flat metal strip, an elongated U-shaped channel having one edge terminating in one edge of the metal strip and the other edge in the same plane as the metal strip, a second elongated, flat metal strip, a second elongated metal channel which is substantially a quadrant of a hollow cylinder, the second channel having

one edge terminating in one edge of said second elongated strip and the other edge terminating in a plane at right angles to the plane of said second metal strip, the metal strips having elongated transverse openings near each end thereof and spaced circular openings between



said elongated openings, whereby the first metal strip can be secured to a door near the free edge thereof and the second metal strip can be secured to the door jam of said door is in a position such that the channels nest when the door is closed.

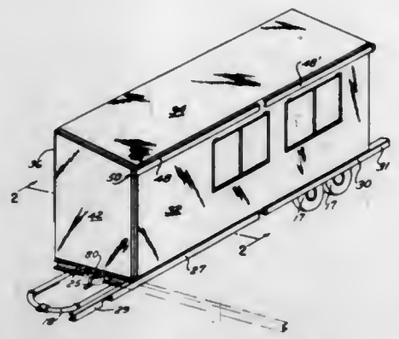
3,271,064
METHOD AND APPARATUS FOR MAKING INDEFINITE LENGTH FLEXIBLE CONDUIT
Marcus A. Hall, Branford, Conn., assignor to Flexible Tubing Corporation, Guilford, Conn., a corporation of Connecticut
Filed Dec. 5, 1962, Ser. No. 242,448
4 Claims. (Cl. 264—93)



1. In a method of making indefinite length flexible conduit on a continuously advancing and rotating mandrel surface, the improvement which comprises
(a) forming a spaced-turn helix of wire about the mandrel surface,
(b) freshly extruding an unset thermoplastic strip at a temperature above its setting temperature directly above the wire at an unset and a tacky stage and at a rate less than the tangential velocity of the mandrel surface so that the strip necks down to produce a covering of overlapping turns around the wire,
(c) fluid-blasting the unset strip radially into corrugated shape over the wire turns and mandrel surface, and
(d) removing the thermoplastic strip with the wire turns off the mandrel surface in the form of a conduit after the thermoplastic sets.

3,271,065
EXPANDIBLE HOUSE TRAILER
Peter C. Scuris, 21 Colonial St., Hartford, Conn.
Filed Apr. 23, 1964, Ser. No. 361,982
5 Claims. (Cl. 296—23)

1. A laterally expandible house trailer having a carriage frame adapted for mobility, a rectangular body section having end walls fixed to said frame, an extensible side section telescopically received over said body section, said side section having end walls, side wall and a roof, an auxiliary roof hingedly related to said extensible section roof along the longitudinal edge thereof remote from the said side wall, auxiliary end walls hingedly related to said extensible section end walls along the vertical edge remote from the said side wall so that the auxiliary end walls will overlie the extensible section end



walls in folded position and partially overlie the body end walls in extended position, said extensible side section having a collapsible floor section, and laterally extendible frame members carried by said carriage frame adapted to support said extensible side section when extended.

3,271,066
EXPANSIBLE VEHICLE STORAGE COMPARTMENT
Richard A. Teague, Franklin Village, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Sept. 8, 1964, Ser. No. 394,740
5 Claims. (Cl. 296—76)

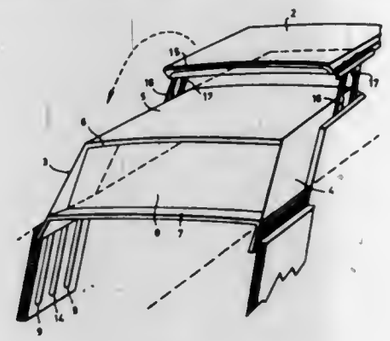


1. A vehicle body comprising:
(a) a passenger compartment;
(b) a storage compartment rearwardly of the passenger compartment and being open at its upper end;
(c) a cover for closing off the open upper end of the storage compartment;
(d) spaced hinge arms pivotally connected at their forward ends to the vehicle body and pivotally connected at their rearward ends to the cover;
(e) said hinge arms being removably anchored to the cover intermediately of the forward and rearward pivots whereby to selectively immobilize the rearward pivots.

3,271,067
RETRACTABLE FOLDABLE RIGID ROOF FOR VEHICLE BODY
Paul Pierre Rollman, 1 Cite Beaumont, Fribourg, Switzerland
Filed Oct. 20, 1964, Ser. No. 405,106
Claims priority, application Switzerland, Nov. 18, 1963, 14,126/63
3 Claims. (Cl. 296—116)

1. In a vehicle having a windshield, front and back seats and a storage space behind said back seats, a rigid, foldable, convertible roof comprising

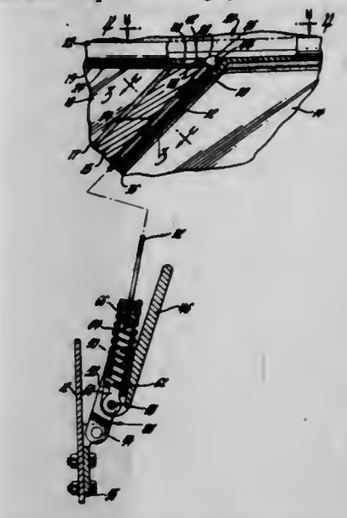
(A) a main rear roof section covering approximately the space between said front seats and the back of said rear seats;
(B) lateral panels supporting said main roof section and extending downwardly from the main roof section;
(C) a frame, supported by said panels and having a window;
(D) sliding members secured to said panels;
(E) guides in said storage space for receiving said sliding members, said guides lying in a vertical plane parallel to the forward direction of the vehicle, and being inclined downwardly and backwardly of the vehicle;
(F) means for raising and retracting said sliding members in said guides and thereby raising and retracting said main roof section into said storage space;



(G) a forward roof section having a front edge adapted to be secured to the top of said windshield, said forward section being pivotally secured to said main section by means of lateral arms so as to swing rearwardly to fit over said main roof portion and having means for pivoting said forward section to fold the same over said main section;
(H) said roof extending substantially rearwardly from the rear edge of the back of said front seats when in the unfolded and retracted position so as to transform said vehicle into a vehicle of the "spider" type with tonneau cover; said roof extending substantially rearwardly from the back of said front seats when in the raised but folded position so as to transform said vehicle into a sun roof sedan; said roof fitting in said storage space when in its retracted and folded position so as to transform said vehicle into a convertible.

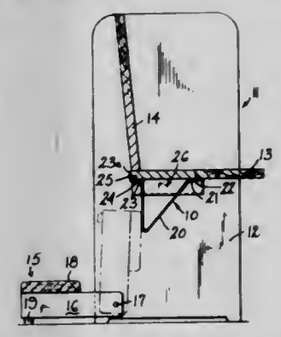
3,271,068
CONVERTIBLE TOP LATCHING MECHANISM
William T. Collins, Jr., Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,879
7 Claims. (Cl. 296—120)

1. A top latching mechanism for a convertible vehicle body including
a windshield mounting member extending upwardly from the vehicle body forwardly of a body formed passenger compartment,
top supporting means including a member movable proximate the upper end of the windshield mounting member in closing the convertible top with respect to the passenger compartment,
said windshield mounting member defining a housing extending upwardly and opening toward said top supporting member in its top closed position,
a latch member having an enlarged head thereon projecting outwardly of the upper end of said housing,
flexible means extending through said housing and mounting the latch member for reciprocable movement between a retracted top latching position and an extended top releasing position, and



said top supporting member having a keeper slot therein enlarged at one end to receive the extended latch head during movement of the top supporting member toward its top closed position and narrowed adjacent its opposite end to engage and retain the retracted latch head upon movement of the top supporting member to its extreme top closed position.

3,271,069
BOOKRACK AND KNEELER STOP
Rudolph J. Gondar, 11 Shelton Road, Shelton, Conn.
Filed Oct. 6, 1965, Ser. No. 493,356
10 Claims. (Cl. 297—192)

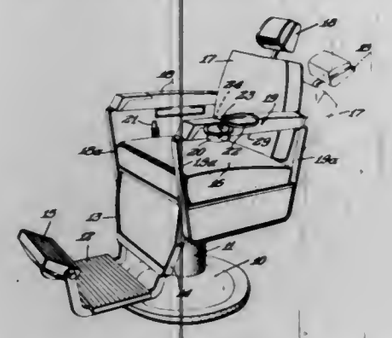


1. For use in combination with a church pew including floor-mounted upright members supporting a seat therebetween and a kneeler extending between the upright members and pivotally mounted therebetween for pivotal movement between a horizontal kneeling position and a storing position generally 90° therefrom between the upright members; a kneeler stop and bookrack comprising a pair of spaced apart arms adapted to be fastened to the underside of the seat and provide substantially vertical surfaces depending from the seat adapted to stop the kneeler when pivoted to a storing position, and rack means carried between said arms for storing books therein.

3,271,070
BARBER CHAIR WITH MANICURE SOCKET
John A. Dlouhy, River Forest, and Paul A. Springer, Palatine, Ill., assignors to Emil J. Paidar Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 9, 1965, Ser. No. 446,853
5 Claims. (Cl. 297—194)

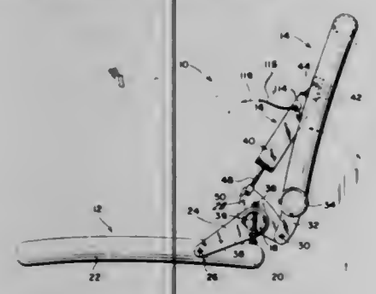
1. In a barber chair having a seat,
a back at the rear of the seat movable between an erect position and a reclining position,

and horizontally elongate side arm rests,
the combination comprising:
an elongate slide track means mounted on one of the arms substantially parallel thereto extending toward the front and extending toward the rear of the chair,
a holder slidably mounted and supported on said track means and shiftable therealong to different positions,



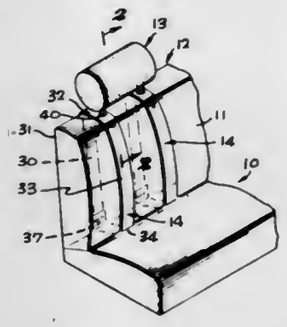
and means for locking said holder in any one of said positions so that the holder may be repositioned and locked at different locations along said arm with change in position of said back to accommodate the change in position of a chair occupant.

3,271,071
POSITION ADJUSTERS FOR SEAT BACKS
Paul C. Tabor, Clawson, Mich., assignor, by mesne assignments, to Rockwell-Standard Corporation, a corporation of Delaware
Filed June 22, 1964, Ser. No. 376,775
4 Claims. (Cl. 297—375)



1. In a seat assembly having a relatively fixed seat member and a back member mounted on said seat member for pivotal movement between an inclined position and an upright position; means for adjusting the position of said back member comprising an extendable and contractable connector assembly pivotally secured at its opposite ends to said seat member and said back member respectively, and arranged to be extended when said back member is moved to said inclined position, said connector assembly comprising a housing connected to one of said members, a rod slidably received in said housing and connected to the other member, an operating spring wholly within said housing biasing said connector assembly to its contracted position, a plurality of juxtaposed centrally apertured lock plates carried by said housing, said rod extending through the apertures therein, and said apertures being larger than said rod whereby said lock plates can be tilted relative to said rod, a fixed fulcrum rigid with said housing for preventing the movement of said lock plates toward the end of said housing from which the rod protrudes, said fulcrum being offset to one side of the axis of said rod, a locking spring encircling said rod and compressed between a fixed housing part and the side of said lock plates remote from said fulcrum, said spring being operative to tilt said lock plates around said fulcrum to lock said rod and said housing against extensible movement to lock said seat back member against movement toward its inclined position, said locking plates being effective to brake, but not lock, said rod against movement in a contracting direction whereby said seat back member may be moved toward its upright position, a cam member rotatably supported in said housing for selective direct engagement with said locking plates on the side of said rod opposite said fulcrum, and means for rotating said cam to move said lock plates against the force of said locking spring until said lock plates are substantially normal to said rod whereby said rod may be freely moved in either direction.

3,271,072
HEAD REST FOR MOTOR VEHICLES
Donald E. Barker, 9352 Balcom Ave., Northridge, Calif.
Filed June 14, 1965, Ser. No. 463,755
15 Claims. (Cl. 297—397)

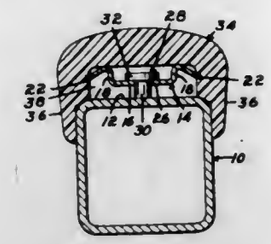


1. A device for connection to a motor vehicle seat back comprising at least one flexible strap to be connected to the seat back and having a first portion to extend upwardly along the rear side of said back and a second portion to extend forwardly from the upper end of said first portion and along the upper side of the seat back, a more rigid element carried by said strap and having a first portion to extend upwardly along the rear side of said seat back, adjacent said first portion of the strap, and a second portion turned forwardly from the upper end of said first portion of said element at a location to extend along the upper side of the seat back adjacent said strap and in vertical force transmitting relation to the seat back so that downward forces exerted on said element are transmitted to and taken by said upper side of the seat back to prevent relative downward movement of said element, means carried by said strap forming a pocket structure extending longitudinally of the strap into which at least a part of said element is insertible by movement generally longitudinally of the strap to a position of confinement in the pocket, and from which said element is withdrawable by movement generally longitudinally of the strap, and a head rest structure to be received above said seat back and connected to and supported by said element.

3,271,073
ARM CHAIR FASTENER
Harold S. Van Buren, Jr., Cambridge, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,821
3 Claims. (Cl. 297—422)

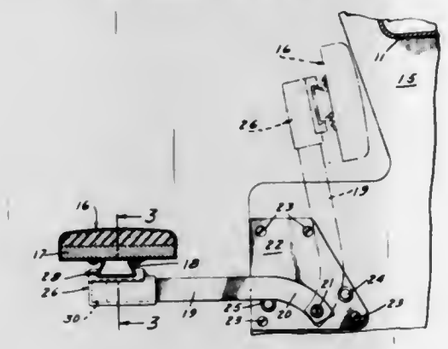
1. A combination of a fastening device, a support and an article, said fastening device comprising a rectangular base portion having an upper surface and having side edges, an integral wall extending from each of said side edges in right angle relation to said base portion, each of said walls having a free terminal end bent back toward the plane of said base portion and having a series

of serrations formed thereon and a keyhole slot formed through said base portion said keyhole slot having an enlarged portion and a long, narrow portion opening into said enlarged portion, said stud comprising a head portion having a shank portion extending therefrom said shank portion having an inner end, said stud secured



at said inner end of said shank to said support without perforating said support and said head portion overlying a portion of said body portion adjacent said long, narrow portion of said keyhole slot, said article having a cavity formed therein and said free terminal ends engaged to said article within said cavity.

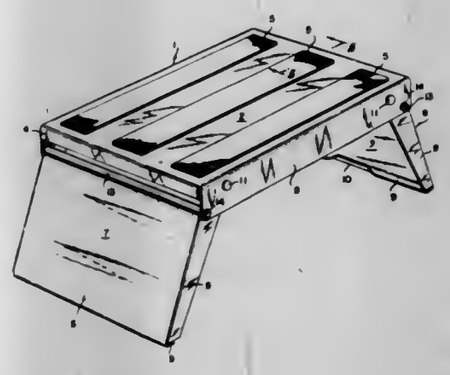
3,271,074
ADJUSTABLE CHURCH KNEELER
William Hahnlein, Glendale, Calif., assignor to Hamlin Manufacturing Co., a corporation of California
Filed May 3, 1965, Ser. No. 452,729
4 Claims. (Cl. 297—426)



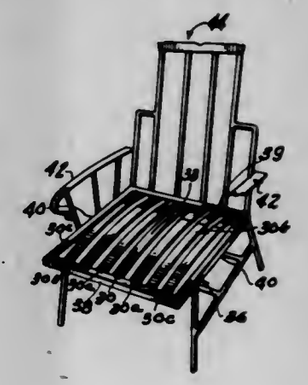
1. A kneeler of the character described, comprising:
(a) an elongate kneeling bench;
(b) fixed bracket means adapted to be mounted on a flat surface of a supporting structure and having a projecting pivot member;
(c) means supporting said kneeling bench for translatory movement between positions of use and non-use, including a swingable bracket arm having one end rotatably movable on said pivot member and the other end connected to said bench; and
(d) spaced stop members adjacent said pivot member respectively engaged with the bracket arm in the non-use and the use positions of said bench, said bracket arm in the use position providing a cantilever for supporting the bench independently of an underlying floor surface.

3,271,075
FOOT STOOL
Wayne W. Good, Sturgis, Mich., assignor to Harter Corporation, Sturgis, Mich., a corporation of Michigan
Filed May 20, 1965, Ser. No. 457,420
5 Claims. (Cl. 297—439)

1. A foldable stool comprising a platform member having a leg member pivotally mounted at each end thereof, said platform member comprising a sheet-form top member having depending lateral flanges at the sides thereof, each of said leg members comprising a sheet-form web having a lateral flange at each side thereof disposed at substantially right angles to said web, each lateral flange of said leg members being pivotally connected at one end to the end of a lateral flange of said platform member and being tapered toward the other end, and a transverse limit rod provided at each end of said platform member having its ends affixed to the ends of the lateral flanges thereof, the arrangement being such that said leg members are retained in downwardly divergent relationship by said limit rods in operative position, and whereby said leg members may be folded against said platform member in inoperative position and said limit rods utilized as carrying handles, and wherein in the inoperative position said leg members are nested completely within the space defined by said plaform member and its depending flanges.



3,271,076
SEATING CONSTRUCTION
William I. Smith, Marinette, Wis., assignor to Heywood-Wakefield Company, Gardner, Mass., a corporation of Massachusetts
Filed Mar. 26, 1965, Ser. No. 443,020
8 Claims. (Cl. 297—445)



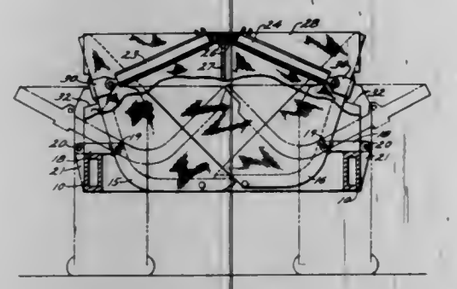
1. In a seating construction including a rectangular seat frame, having front, rear and side members and floor engaging members extending downwardly from the frame, the improvement which comprises a plurality of resilient members extending between the front and rear portions of the frame disposed in spaced parallel relationship defining a resilient supporting surface within the frame, the resilient members having a rigid sector extending forwardly and upwardly from the rear frame member to an apex and a flexible resilient sector extending forwardly from the said apex to the front frame member.

3,271,077
TRUCK SUSPENSION SYSTEM
Hillis J. Timmer, 2150 Mariacoba Drive, Holland, Mich., and Norman P. Unema, 3281 Oak St., Hudsonville, Mich.
Filed July 13, 1964, Ser. No. 381,967
5 Claims. (Cl. 298—22)



1. A truck assembly comprising: front and rear axle assemblies; a frame supported on said axle assemblies; said frame forming a load bed generally over said rear axle assembly; a dump box pivotally mounted on the rear of said frame; a third tandem axle assembly displaced to the rear of said load bed; a tandem frame extension extending from said truck frame rearwardly to said tandem axle assembly; the rear of said tandem frame extension being supported by said tandem axle assembly; the forward end of said extension being pivotally mounted on said truck frame, and said extension intermediate its ends being in supporting engagement beneath said dump box to allow distribution of part of the load normally applied to the rear axle assembly to the front and tandem axle assemblies.

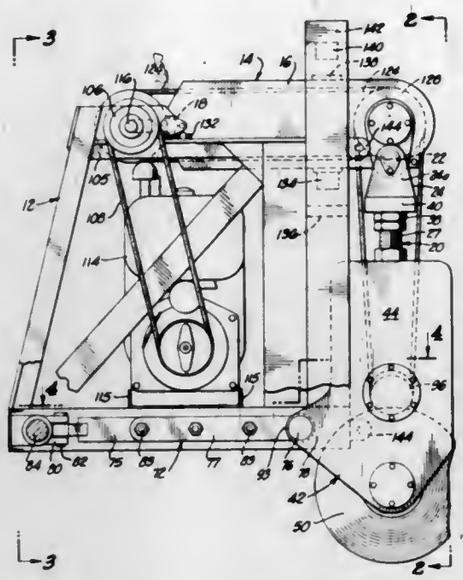
3,271,078
ROCK WAGON
Dean C. Klingaman, Decatur, and Alfred C. La Grow, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 18, 1965, Ser. No. 456,709
4 Claims. (Cl. 298—25)



1. A dump wagon having a frame supported on wheels and including two spaced longitudinally extending beams, a body between said beams comprising two halves each having a side wall and a bottom wall, pivot means supporting said halves each with respect to one of said beams and with edges of the bottom walls meeting between the beams to form a receptacle, and power means engaging each half adjacent its side wall to swing it to a position for dumping its contents outwardly over the beam to which it is pivoted.

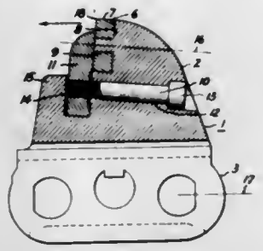
3,271,079
PAVEMENT CUTTER
James B. Simmons, 12203 Gneiss Ave., Downey, Calif.
Filed July 18, 1963, Ser. No. 295,887
16 Claims. (Cl. 299—40)

4. In a pavement cutter, the combination of:
a frame;
an assemblage including a substantially vertical arm pivotally mounted on the frame for limited movement relative thereto, and a sharp edged disc rotatably held about a horizontal axis to the lower end of the arm and movable about a vertical axis;



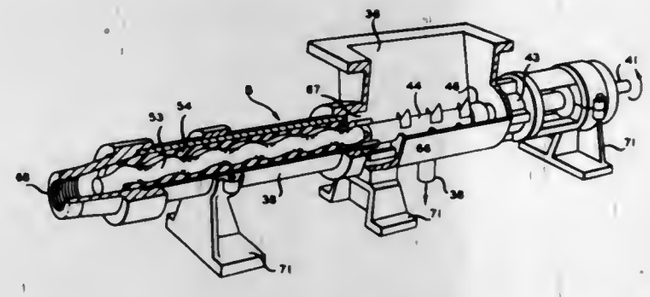
means for imparting a vibratory motion to the assemblage, said means including a rotatable off-center mass rotatably held to the assemblage; and
means for pivoting the cutting disc about its substantially vertical axis.

3,271,080
CUTTER BIT ASSEMBLY FOR MINING MACHINES
Thomas W. Gowanlock, Detroit, Mich., assignor to General Electric Company, a corporation of New York
Filed Feb. 6, 1964, Ser. No. 343,092
8 Claims. (Cl. 299—92)



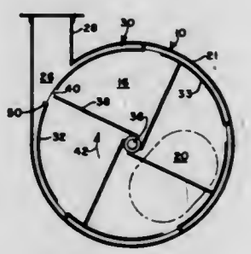
1. A cutter bit assembly for mining machines comprising in combination
a cutter bit holder adapted at a first end thereof for attachment to a mining machine, the other end thereof having a recess to receive a disposable cutter bit, said recess having a first and second supporting surface for said cutter bit at substantially right angles to each other,
said disposable cutter bit having two opposite parallel surface and an edge surface therebetween perpendicular to both said opposite parallel surfaces to provide a plurality of cutting edges on both said parallel surfaces, the cutter bit mounted for rotatable adjustment in said recess at a negative rake angle with one of said parallel surfaces fully supported by the first parallel surface of the recess of the cutter bit holder and a portion of the edge surface of said cutter bit resting on the second supporting surface of said recess,
the dimension of said cutter bit holder along the cutter bit axis being substantially in excess of the width of said cutter bit along the cutter bit axis so as to provide substantial structural support for the cutter bit in the direction of the cutting forces, said cutter bit being indexable and invertible in the recess of said holder for full utilization of said cutting edges on both parallel surfaces of said cutting insert, and clamping means for securely retaining said cutter bit in said recess, said clamping means being releasable for rotation and inversion of said cutter bit in said cutter bit holder.

3,271,081
APPARATUS AND PROCESS FOR PUMPING SLURRY
Thomas J. Huddleston, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,807
5 Claims. (Cl. 302—14)



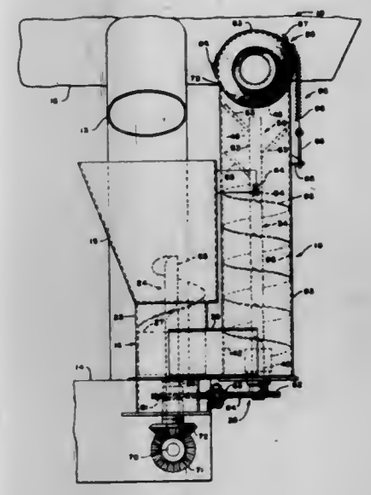
1. A progressing cavity pump having a feed hopper and a progressing cavity stator, an inlet to the feed hopper, an outlet to the stator, and a stator inlet space between the hopper and the stator, a progressing cavity rotor mounted in the stator, a drive shaft with pitched paddle feeding means thereon mounted on the hopper and connected to the rotor, and an agitating bar mounted on the nearest paddle of said feeding means and extending into said stator inlet space to a point adjacent said rotor to prevent the crystals in said slurry bridging in said stator inlet space.

3,271,082
BLOWER CONVEYOR
Keith E. Wood, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,749
13 Claims. (Cl. 302—37)



2. In a blower conveyor having a housing, an impeller rotating within the housing and including a plurality of radial impeller vanes, one end of the housing transverse to the impeller axis having an inlet for feeding material to the impeller, the housing also having an outlet for delivery of the propelled material, the improvement comprising an impeller member interposed between the vans and the housing, open toward the housing inlet and having a plurality of radial apertures, the impeller member coaxially rotating in a timed relationship with the impeller vanes for discharge of the material through the apertures and the housing outlet.

3,271,083
PNEUMATIC CONVEYOR
William Hobbs, Jr., Lancaster, and William W. Mann, Talmage, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Sept. 13, 1965, Ser. No. 486,999
10 Claims. (Cl. 302—50)

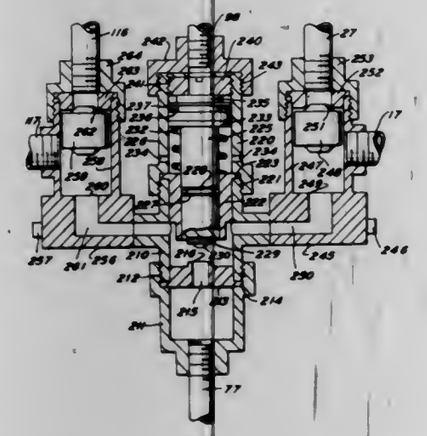


1. A pneumatic conveyor for dry, fluent material such as forage, shelled corn, feed supplements and other products comprising a vertically extending tubular imperforate housing having an inlet opening at a bottom end and a discharge opening at an upper end, said discharge opening being open in an axial direction relative to said housing, a conveying tube extending perpendicular to said housing and through which a high speed air stream passes, said tube having a bottom opening communicating with said housing discharge opening to receive material therefrom, means for continuously delivering material to said housing through said inlet opening, a vertically extending feed auger within said housing and having flights in close proximity to the housing inner walls, said feed auger having a lower receiving end at said inlet opening and an upper discharge end located below said discharge opening to define a chamber for a material plug between the feed auger and said conveying tube to prevent downward passage of air from the tube and through said housing, an agitator on said auger discharge end and projecting into said chamber to facilitate upward movement of material from the chamber into said conveyor tube, means detachably connecting said agitator to said feed auger whereby the agitator may be removed to provide an unobstructed chamber, said agitator being affixed to said feed auger for rotation therewith and being of such length that it projects through a major portion of said chamber, and drive means for rotating said feed auger.

3,271,084
AUTOMATIC BRAKE VALVE
Robert H. George, Melrose Park, Pa., assignor to Brakmaster Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 30, 1964, Ser. No. 379,173
6 Claims. (Cl. 303—8)

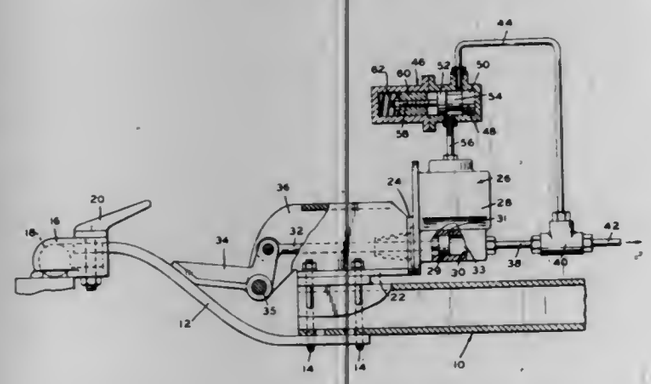
1. A brake control valve interposed between the fluid pressure supply and storage and the fluid pressure operated brakes comprising
a valve body with a movable valve member therein having a valve seating portion,
said valve body having a fluid space therein,
a fixed valve seat in said body at a boundary of said fluid space for engagement by said valve seating portion,

a fluid connection for applying the pressure from a brake operating storage tank for moving said valve member toward seated position on said fixed seat,
a resilient member for normally urging said valve member away from said fixed seat,
a venting valve communicating with said fluid space,
a fluid pressure responsive member for actuating said venting valve,
a fluid connection for applying the pressure from a supply of fluid pressure against said pressure responsive member for opening said venting valve,



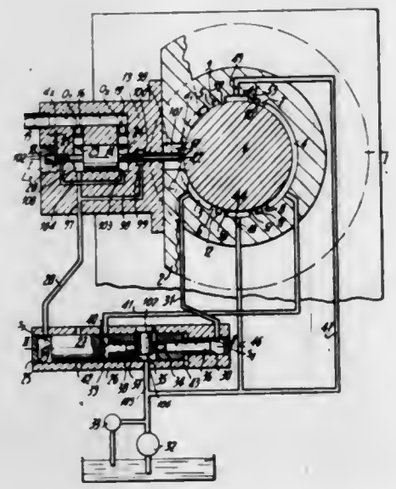
said valve body having a bore in offset relation to the movable member,
one end of said bore having a valve seat and being in communication with said fluid space,
the other end of said bore having a valve seat and being in communication with an operator controlled variable supply of brake operating pressure,
a brake operating delivery fluid connection in communication with said bore between said seats, and
a valve seating member seating on one of said seats as determined by the supply of fluid through the other of said seats.

3,271,085
VEHICLE TRAILER BRAKE ACTUATING MECHANISM
William J. Payne, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 24, 1964, Ser. No. 413,411
5 Claims. (Cl. 303—18)



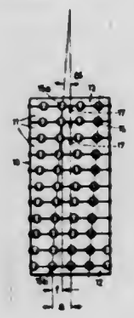
4. A vehicle trailer brake comprising a rigid tongue support structure, a resiliently flexible tongue portion connected to said structure and adapted to be hitched to a towing vehicle, a brake master cylinder assembly connected to said support structure, said master cylinder assembly having a pressure chamber and a reservoir chamber, a fluid pressure outlet from said pressure chamber adapted to be connected to the wheel brakes of a trailer, means responsive to the reflexing of said resilient tongue portion constructed to force pressure fluid from said actuating chamber, said means comprising a bell crank pivotally supported on said support structure and having one end engaging said resilient tongue portion, the other end of said bell crank being connected to a piston within said pressure chamber.

3,271,086
DEVICE FOR MAINTAINING CONSTANT THE DISTANCE BETWEEN ADJACENT SURFACES OF A REFERENCE BODY AND A MOVABLE BODY SUBJECT TO A VARIABLE EXTERNAL FORCE
Paul Deffrenne, Geneva, Switzerland, assignor to Mecanorga S.A., Geneva, Switzerland, a corporation of Switzerland
Filed Oct. 10, 1963, Ser. No. 315,334
Claims priority, application Switzerland, Oct. 26, 1962, 12,625
22 Claims. (Cl. 308—5)



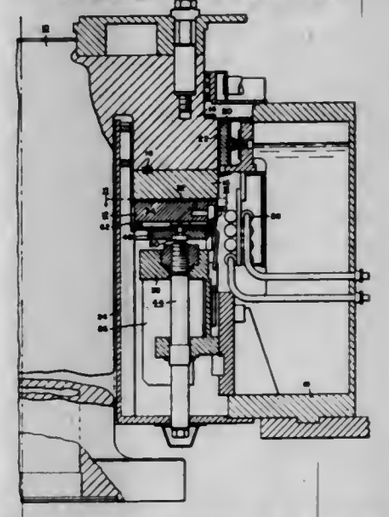
1. A device for maintaining constant in a determined direction the distance between adjacent and lightly spaced surface of a reference body (**2**) and of a movable body (**1**), said movable body being subjected to an outer variable force and to an antagonistic force exerted in at least two pressure zones (**3**, **4**) located opposite each other, fluid circuits under pressure controlling said pressure zones, said device comprising a corrector element (**14**) slidable in the reference body (**2**) in the manner of a slide valve, the distance of which to the movable body (**1**) determining the pressure in a primary gas circuit in which a flow of gas, at a certain feed pressure, takes place through two orifices, one of said orifices consisting of a nozzle (**16**) with the cross section O_1 and the other being composed of the surface (L_1 x d_1) of a cylinder whose base is the perimeter circumference (L_1) forming the lips of an opening (**17**) provided in the corrector element (**14**) and whose height is the distance (d_1) between the plane of the said circumference and the surface of the movable body (**1**), the distance from a wall integral with the reference body (**2**) determining the pressure in a secondary gas circuit in which a flow of gas, at the same feed pressure, takes place through two secondary orifices of the same nature as those of the primary circuit and placed in the same order, one of said secondary orifices consisting of a nozzle (**19**) with the cross section O_2 and the other being composed of the surface L_2 x d_2 of a cylinder whose base is the perimeter circumference L_2 forming the lips of an opening (**21**) which is part of the reference body and communicates with said corrector element (**14**), the height of said other secondary orifice being the distance d_2 between the plane of the said circumference and the corresponding face of the adjacent corrector (**14**), the assembly being so arranged that the pressures p_1 and p_2 of the primary and secondary gas circuits act respectively on the surfaces s_1 (**23**) and s_2 (**24**) of the corrector (**14**) in such directions that an elementary displacement of the movable body (**1**) causes a displacement in the opposite direction of the corrector (**14**), the various values O_1, L_1 O_2 and L_2, on which the values of p_1 and p_2 depend, being determined in such a way that the product of p_1 by s_1 is always equal to the product of p_2 by s_2, whatever the feed pressure, provided only that the distance d_2 of the corrector (**14**) from the wall integral with the reference body (**2**) is equal to the distance d_1 of the corrector (**14**) from the movable body (**1**) which forces the latter to remain in a predetermined position, a distributor (**25**) adapted to regulate the pressure in at least one of the fluid circuits which feed the two opposite pressure zones (**3**, **4**) as a function of the position occupied by the corrector (**14**) so that the pressure of the fluid in said zones varies in such a direction that the variation of the force acting on the movable body has a tendency to oppose the variation of the outer force, so that the corrector (**14**) can only find its equilibrium when the movable body (**1**) occupies the said predetermined position with regard to the reference body (**2**) and that any displacement of the movable body (**1**) from the said position, caused by the variation of the outer force, has the effect of disturbing the equilibrium of the pressures acting on the two faces of the corrector (**14**) and of producing a displacement of said corrector (**14**), which in turn results in the antagonistic force exerted by the fluid by means of the distributor to be varied and create a new state of equilibrium by bringing the movable body (**1**) to its predetermined position with regard to the reference body (**2**).

3,271,087
CAGE FOR BALL OR ROLLER BEARINGS
Gerhard Wieland, Gochsen, and Robert Blassnitz, Wustenrot-Hasenhof, near Heilbronn, Germany, assignors to Fischer-Brodbeck G.m.b.H.
Filed Oct. 16, 1963, Ser. No. 316,678
Claims priority, application Germany, Oct. 18, 1962, F 38,080
8 Claims. (Cl. 308—6)



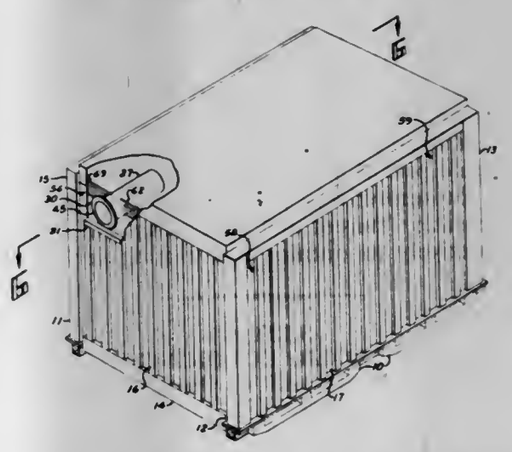
1. A cage adapted to receive and retain a plurality of rolling elements of a bearing, the cage comprising a plurality of rings made of synthetic resin material, grooves spaced in circumferential direction from each other being formed in each of the end faces of said rings, the grooves of each adjacent pair of rings co-operating to provide sockets for the rolling elements, the grooves in one end face of any one ring being displaced circumferentially with respect to the grooves in the other end face of the same ring.

3,271,088
SUPPORTING MEANS FOR BEARING PADS IN A THRUST BEARING ASSEMBLY
Albert W. Latham, Murrysville, and Barney Slotnick, Irwin, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 25, 1964, Ser. No. 369,953
4 Claims. (Cl. 308—160)



1. A supporting arrangement for a thrust bearing assembly having a plurality of segmental bearing pads circumferentially disposed and having respective bearing surfaces for supporting a rotating thrust runner of a vertical machine shaft, said supporting arrangement comprising for each of said bearing pads a spring plate disposed on a stationary pivot support substantially at its center of loading, three discs supporting the associated pad on said spring plate, means forming a part of each spring disc for characterizing the support of said pad relative to said spring plate with a given degree of spring response, one of said spring discs disposed radially inwardly of the other two spring discs so as to provide substantial uniformity of loading on the bearing surface of the associated bearing pad and so as to promote sufficient and appropriate pad bending for efficient bearing surface lubrication during machine operation, and means retaining said spring discs in the positions described.

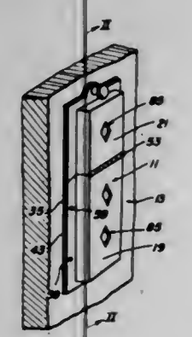
3,271,089
DEHUMIDIFYING BREATHER SYSTEM FOR MOBILE CARGO CONTAINER
Harry I. Krellen, Newport News, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 29, 1963, Ser. No. 319,896
1 Claim. (Cl. 312—31.2)



In combination with a cargo container having four vertical walls one of which is provided with an access opening to the interior of the container, means render-

ing said container substantially air tight, apparatus providing substantially free breathing between the interior of said container and the ambient atmosphere while maintaining the interior of said container substantially free of moisture comprising a receptacle mounted in said container and opening through one vertical wall thereof, said receptacle including a plenum chamber in one end portion, desiccant material in said receptacle between said plenum chamber and the interior of said container, and a plurality of breather tubes extending from said plenum chamber through the vertical walls of said container, said breather tubes sloping downwardly away from said plenum chamber for gravity flow of condensation therefrom, said tubes passing for substantial distances inside of said container where they are subject to ambient temperatures which, at times, are cool enough to condense moisture from ambient air surrounding said container as it enters said tubes, the arrangement being such that air entering said container from the outside atmosphere passes first through said breather tubes and then through said desiccant material before entering said container.

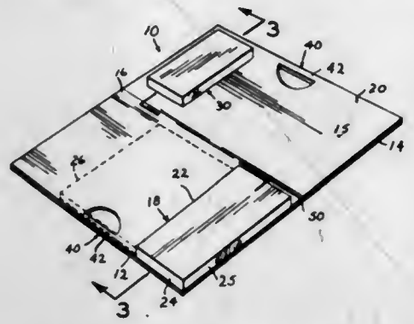
3,271,090
TOILET PAPER CABINET
Bethel E. Smithers, 1036 Shawnee Circle, Memphis, Tenn.
Filed Sept. 29, 1964, Ser. No. 400,135
6 Claims. (Cl. 312—41)



1. A toilet paper cabinet adapted to be fixed to a bathroom wall for dispensing the paper of an open core type toilet paper roll, said cabinet comprising a hollow body structure having a front body member, a door hingedly secured on said front body member with said door being hinged on a horizontal axis and supported from said front body member and movable in a 180° arc toward and away from upwardly closed and downwardly open positions, roll handling means including a pair of arms pivotally secured from said body structure and with each arm having a distal portion, said pair of arms being oppositely arranged and pivotable together, said roll handling means including roll support means for supporting a roll of paper between said pair of arms, and connecting link means interconnecting said door and said distal portions of said pair of arms said roll handling means being adapted for respectively presenting a roll of paper for the dispensation thereof and concealing said roll responsive respectively to opening and closing said door.

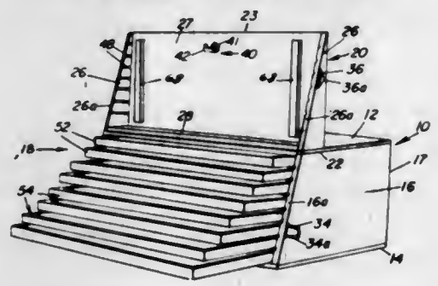
3,271,091
PORTFOLIO COLORING KIT
Jennie Henry, 425 W. Douglas Drive, Midwest City, Okla.
Filed Apr. 26, 1965, Ser. No. 450,826
4 Claims. (Cl. 312—231)

4. A portfolio coloring kit, comprising: an edge abutted identical pair of rectangular sections lying in a common plane forming a writing surface; a panel of pliable material coextensive with and underlying said sections, said panel being bonded to said sections except along the adjacent edge portion opposite the writing surface of the abutted edges of said sections permitting said sections to be hinged toward each other and disposed in spaced-apart parallel relation; a pocket secured to the surface of said panel opposite one end portion of one said section, said pocket being open toward the other end portion of said



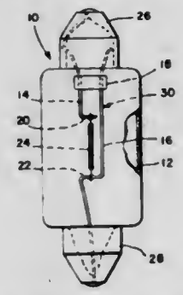
one section; a rectangular box-like container formed by said panel opposite the end portion of the other said section diagonally opposite said pocket, said other section having an opening coinciding with said box-like container; a lid slidably connected to the surface of said other section around the opening; and a handle formed in the free edge of said panel and each said section opposite the abutted edges of the latter.

3,271,092
DISPLAY AND OTHER CASES AND METHOD OF MAKING
Thomas Pierson Hatfield, 705 Zimmerman St., and James Earl Squyres, 1112 N. Main, both of Homer, La.
Filed Aug. 13, 1963, Ser. No. 301,855
1 Claim. (Cl. 312—311)



A portable display case which is open at its front end and provides top, bottom and rear walls, and parallel side walls which latter and the rear wall are perpendicular to said bottom wall; a closure for the open front end of said casing, said closure providing top and side walls as continuations of corresponding casing walls and an end wall which latter provides the casing front and parallels the casing rear wall when the closure is closed; hinge means connecting the top walls of the casing and closure whereby the latter, when opened, will seat upon the top wall of the casing; a plurality of display trays in said casing and insertable thereinto from the open casing end when the closure is opened, said trays being of uniform length and width, with the length of each slightly less than the interior length of the casing when the closure is closed, so that the front ends of said trays can be spaced from the closure end wall at the casing front, there being a casing side wall-provided supporting means for the respective trays, a lock means for retaining the closure closed, and comprising a rotatable member extending through the closure end wall and having operating means adjacent the outer surface of the latter, the inner end of said rotatable member within the casing having a right angularly disposed arm, a seat provided by the bottom casing wall into which the free end of said arm is movable to prevent opening movement of the closure, and the inner surface of the closure end wall having secured thereto at each opposite side of said lock means a compressible strip, each strip being disposed in opposition to the front ends of said trays, the thickness of said compressible strips being such as to force the rear tray ends against the rear casing wall whereby to prevent tray shifting in transit, the outer rearwardly disposed surfaces of said strips disposed rearwardly of the plane of arm and seat whereby to admit of free movement of said arm to lockingly engage its seat to lock the closure against opening movement.

3,271,093
METHOD FOR MAKING INCANDESCENT LAMPS
Arthur P. Meier, Bloomfield, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 10, 1960, Ser. No. 35,360
2 Claims. (Cl. 316—19)



1. The method of sealing an incandescible filament under predetermined tension within an envelope, which method comprises: supporting a relatively short first conducting lead in spaced and generally parallel relationship with respect to a relatively long second conducting lead having a resilient section bent generally transverse to adjacent conducting lead portions, and positioning in predetermined spaced relationship the bent section of said second conducting lead and the closest extremity of said first conducting lead; connecting a filament of predetermined dimensions between the bent section of said second conducting lead and said first conducting lead proximate its positioned extremity; inserting into an open-ended vitreous envelope said supported conducting leads and said filament, with portions of both said first and second conducting leads projecting from one envelope end and only a portion of said second conducting lead projecting from the other envelope end; sealing into one selected end of said envelope portions of both said first and second conducting leads as project through such selected envelope end; applying a predetermined tension on said second conducting lead to cause the bent section thereof to flex a predetermined amount to place a predetermined tension on said filament; sealing the other end of said envelope about the second conducting lead portion projecting therethrough while maintaining the predetermined tension on said second conducting lead; and removing oxygen from said envelope and hermetically sealing same.

3,271,094
ADJUSTABLE EYEGLASS TEMPLE UNIT
Wallace P. Wildermuth, Lead, S. Dak.
Filed Nov. 28, 1961, Ser. No. 155,354
1 Claim. (Cl. 351—120)

An interchangeable and length adjustable eyeglass temple member for pivotal attachment to one end of an eyeglass frame,

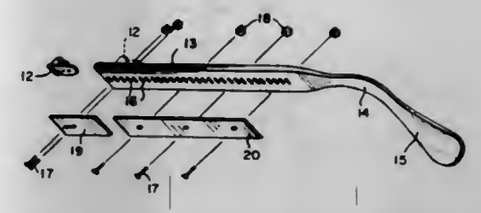
said temple member comprising an elongated member generally of rectangular section having flat parallel and relatively wide opposite vertical side faces and relatively narrow upper and bottom sides,

one of said flat vertical side faces providing an attaching portion at one end thereof for an eyeglass frame and an ear-engaging portion at the opposite end thereof,

a plurality of parallel and relatively closely spaced elongated apertures extending transversely through said temple member substantially at right angles to the longitudinal axis thereof,

said plurality of elongated transversely positioned apertures extending adjacent the attaching end of said temple member to provide for selective detachment of end portions thereof to vary its length to fit the wearer,

a first hinge member fixedly mountable on the attaching end portion of an eyeglass frame,

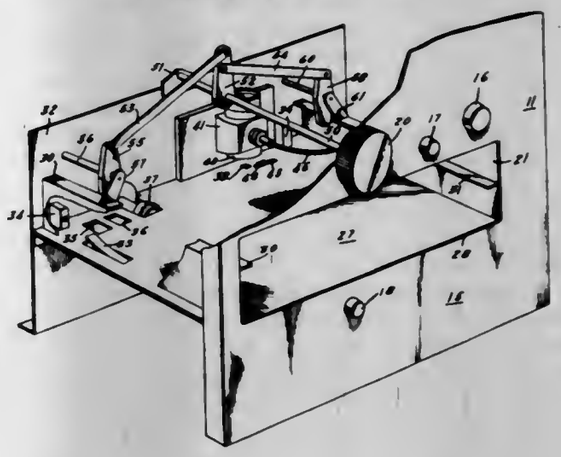


a second hinge member cooperatively pivotally engageable with said first hinge member and having releasable securing means coacting with a pair of said elongated apertures in said temple member adjacent the attaching end thereof for adjustably and fixedly mounting said second hinge member on one flat vertical side of the attaching end of said temple member,

a reinforcing back-up plate disposed along the other flat vertical side of said temple member and opposite said second hinge member and fixedly held in position against said other side of the temple member by said securing means,

said elongated apertures coacting with said releasable securing means to provide for angular adjustment of said temple member relative to said second hinge member in the plane of said temple member.

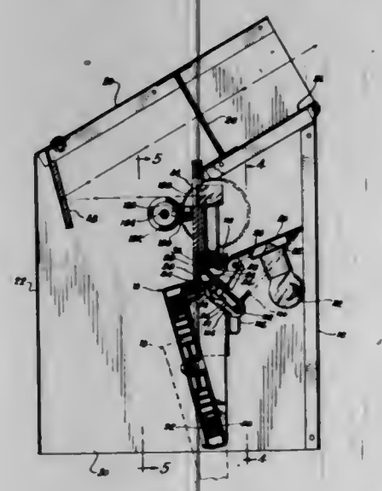
3,271,095
PROJECTOR FOR CONTINUOUS SOUND AND MOTION PICTURE FILM
Volmer S. Jensen, Glendale, and Louis M. Goldstone, Beverly Hills, Calif., assignors, by mesne assignments, to Jayark Instruments Corporation, a corporation of New York
Filed June 15, 1964, Ser. No. 374,998
10 Claims. (Cl. 352—34)



1. A projector for projecting motion picture film and for reproducing sound recorded on the film, the film having sprocket holes and being disposed in a self-winding film cartridge,

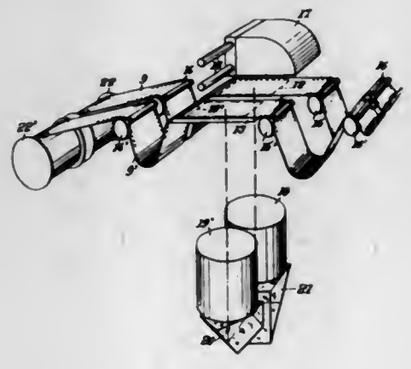
(a) said projector having a housing provided with an aperture for receiving the cartridge;
(b) a bottom wall in said housing;
(c) a pair of spaced guide rails disposed parallel to said bottom wall to confine the cartridge when introduced into said aperture;
(d) a continuously rotatable sprocket wheel extending through said bottom wall;
(e) spring means on said bottom wall for normally urging the cartridge when introduced into said aperture upwards against said guide rails to clear said sprocket wheel; and
(f) manually operable means for pushing the cartridge downwardly against said bottom wall to engage said sprocket wheel with the sprocket holes in the film.

3,271,096
PROJECTOR CONSTRUCTION
Robert C. Blackmore, 3950 Lake Shore Drive, Chicago, Ill.
Filed Aug. 5, 1963, Ser. No. 299,952
9 Claims. (Cl. 352—72)



1. In a projector construction, the improvement comprising a housing, a film strip included in a cartridge mounted within said housing, said cartridge being of the type confining an endless length of film strip whereby repeated projection of the film strip can be accomplished without removal of the strip from the cartridge, a light source within the housing adapted to direct light onto frames in said film, a projector screen mounted on the housing for displaying the projected images on said strip, and drive means for engaging said strip to successively move said frames past said light source, said drive means including a manual actuating means whereby the strip can be stopped during projection and whereby the speed of movement of the strip past said light source can be manually controlled, said cartridge including a guide plate for said film strip with an aperture in said guide plate for passage of light therethrough, said strip including sprocket holes, an opening defined by said guide plate over which the sprocket holes of said film strip pass, a sprocket connected to said drive means having teeth adapted to extend through said opening and to be received by said sprocket holes for movement of said film, an aperture plate mounted in said construction having an aperture defined therein for communication with said first mentioned aperture, projections formed in said aperture plate, additional openings in said guide plate for receiving said projections to thereby accurately align said cartridge in said construction, a reflecting mirror and lens whereby said light source is adapted to direct light onto said mirror and then through said lens for passage through said film strip, means mounting said lens and mirror on a common pivotal axis, said cartridge including a recessed portion for receiving said mirror and lens in an operating position, and means on said cartridge for pivoting said mirror and lens between said operating position and an inoperative position to thereby provide clearance for insertion and removal of said cartridge.

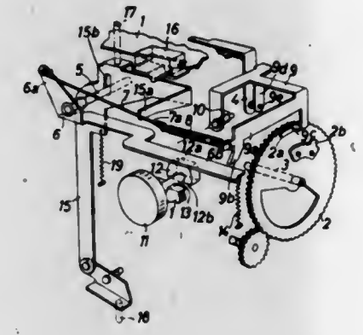
3,271,097
METHODS AND APPARATUS FOR MAKING ANIMATED CARTOONS
Jean de Montremy, 8 Ave. des Tilleuls, and Jean Véran Dejoux, 15 Rue de Castellane, both of Paris, France
Filed Apr. 24, 1964, Ser. No. 362,415
Claims priority, application France, Nov. 16, 1960, 844,085, Patent 1,280,047; Feb. 19, 1964, 964,418, Patent 85,956, 964,419, Patent 1,411,004
25 Claims. (Cl. 352—133)



5. The method of making animated cartoons which comprises recording a series of individual pictures which constitute an animated sequence directly onto two separate bands of film, successive pictures of the sequence being recorded alternately first on one band and then on the other band, and projecting an image of each successive picture recorded on each band onto an area of the other band on which the next picture of the sequence is to be recorded.

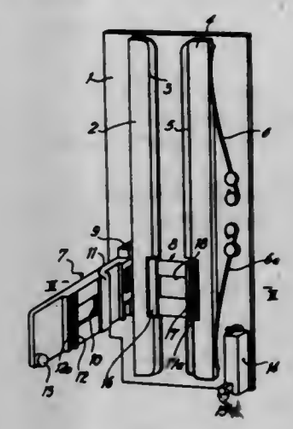
3,271,098
ASSEMBLY FOR SELECTIVELY OPERATING AN APPARATUS SUCH AS A MOTION PICTURE APPARATUS, IN DIFFERENT WAYS
Karl Neudecker, Munich, and Johann Zanner, Unterhaching, near Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Mar. 12, 1964, Ser. No. 351,283
Claims priority, application Germany, Mar. 15, 1963, A 42,607
7 Claims. (Cl. 352—169)

1. In an assembly for selectively operating an apparatus, such as a motion picture apparatus, in different ways, in combination, support means; control means carried by said support means for movement on a rest position to one of a pair of operating positions which respectively provide different types of operation of the apparatus, said control means moving through one of said operating positions thereof before reaching the other of said operating positions thereof; a positioning lever turnably carried by said support means for movement between a pair of locations in which said lever is situated in the path of movement of said conttrol means from said rest position to said operating positions thereof and said lever in one of said locations being located nearer to said control means, when the latter is in said rest position thereof, than when said lever is in the other of said locations thereof; manually operable selecting means engaging said lever for placing the latter in one or the other of said locations, said lever when in said one location arresting the movement of said control means when it reaches said one operating position and when in the other of said locations arresting the movement of said control means after it has moved through said one operating position to the other of said operating positions; manually operable actuating means for initating the movement of said control means from said rest position thereof to one or the other of said operating positions; and motion-transmitting means operatively connected to said control means and engaged by said actuating means for displacing said control means from said rest position to



one or the other of said operating positions upon operation of said actuating means by the operator, said motion-transmitting means including an elongated rod pivotally connected at one end to said positioning lever and an elongated coil spring connected to the end of said rod distant from said lever and having an end distant from said rod and connected to said control means, said rod being located in the path of movement of said actuating means to be deflected thereby to transmit movement of said actuating means through said spring to said control means to displace the latter from said rest position to that one of said operating positions determined by the location of said positioning lever which has been selected by said selecting means.

3,271,099
FILM-GUIDING TRACKS OR CHANNELS IN CINEMATOGRAPHIC APPARATUS
André Victor Léon Clément Debrie, 131 Ave. de Malakoff, Paris, France
Filed Jan. 30, 1964, Ser. No. 341,380
Claims priority, application France, Feb. 14, 1963, 924,822
4 Claims. (Cl. 352—224)



1. A film guide track for cinematographic apparatus for controlling the braking of film as it moves longitudinally along said guide track comprising two spaced opposing strips having V-shaped grooves mounted on a fixed plate and adapted to be oppositely engaged by the longitudinal edges of the film therebetween, at least one of said strips being movable and subjected to the action of spring means towards the other strip, said strips being interrupted in their lengthwise direction about a portion of said plate where an image aperture is located, a film gate and a shoe cooperating with said film gate located at said aperture being located on either side of said plate, said film gate and said shoe in combination being adapted to bear upon peripheral margins of the film, said margins being exterior at least of the image track, whereby said strips insure the braking of the film while said film gate and said shoe insures the flatness of the film at the location of said image aperture.

CHEMICAL

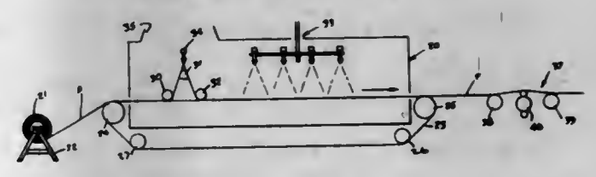
3,271,100
DYEING AND PRINTING PROCESS
Donald K. Clough, Bradford, England, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed May 6, 1965, Ser. No. 453,826
Claims priority, application Switzerland, Nov. 13, 1961, 13,128/61
12 Claims. (Cl. 8—54)

1. A process for dyeing wool which comprises applying to the wool an aqueous solution containing as essential ingredients 0.5 to 5% of a water-soluble hydroxylamine salt and a water-soluble dye selected from the group consisting of an acid dye, a reactive dye and a direct dye and subjecting the wool to a wet heat treatment at temperatures ranging from 60° to 110° C. for at least 5 minutes.

3,271,101
PROCESS FOR TREATING FIBROUS MATERIALS AND RESULTING PRODUCTS
Edward L. Patton, Middlesex, N.J., and Robert D. Lundahl, Hawthorne, N.Y., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 11, 1961, Ser. No. 137,024
12 Claims. (Cl. 8—120)

1. A process for treating cellulosic fibrous materials to impart dimensional stability thereto which comprises impregnating the fibrous material with a 1% to 25% aqueous caustic solution and exposing for a period of from about 15 seconds to 3 minutes the resulting wet impregnated material to hot vapors of a mixture of water and a member of the group consisting of epihalohydrins and materials which liberate epihalohydrins in an alkaline medium, said mixture containing at least 10% by weight of water.

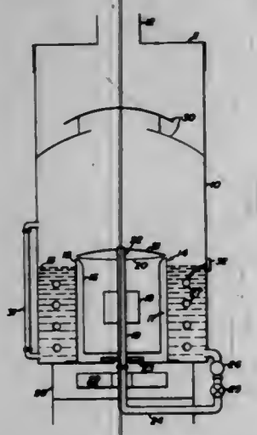
3,271,102
SPRAY DYEING PILE FABRICS
Harry L. Morgan, Collegeville, Pa., assignor to James Lees and Sons Company, Bridgeport, Pa., a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,430
4 Claims. (Cl. 8—151)



1. The method of continuously dyeing a textile pile fabric which comprises the steps of continuously passing the fabric through a first liquid spray zone, bending the

fabric at said first liquid spray zone to open up the pile and expose the base of the pile, applying conditioning liquid to the opend up pile in said first spray zone to aid and assist in the subsequent dye penetration, continuously passing the fabric through a second spray zone in a straight line path and applying liquid dye under pressure to the fabric at said second spray zone by oscillating liquid dye spray means transversely across the fabric while it is being fed.

3,271,103
LIQUID DISSEMINATOR
Lee M. Buchanan, Frederick, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 11, 1964, Ser. No. 351,260
1 Claim. (Cl. 21—92)



An apparatus for vaporizing liquid disinfectant comprising a cylindrical container; a cap on said container; a centrally disposed flue on said cap; a centrifugal atomizer unit within said container comprising a motor means located within a motor housing and having a hollow, vertically disposed, driven shaft, a pair of concentric, rotatable discs located at the upper end of said shaft, the said discs extending to be coterminous with the upper diameter of the motor housing, and the said discs being concavely opposed to each other and meeting at their peripheries to form a slit for improved atomization of the conveyed liquid, said shaft being provided with radial bores in that portion located between said discs, a fan attached to the lower end of said shaft and located below said motor housing, and an atomizer housing surrounding said motor housing and forming therewith a narrow air conduit; liquid heating means located in the lower portion of said container where the liquid to be vaporized is confined; a base on the bottom of said container for supporting the same; an air heater means located within said base; a liquid conduit extending from near the bottom of the container, external thereto, to said hollow shaft of said motor; baffle means within said container and located between said centrifugal atomizer unit and said flue; and thermostat means for controlling the temperature of said liquid.

3,271,104
PROCESS FOR THE RECOVERY OF TUNGSTEN FROM ITS ORES
Joseph P. Suris, Jr., Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 7, 1963, Ser. No. 256,842
6 Claims. (Cl. 23—19)

1. A process for recovering high purity tungsten values from tungsten source materials which comprises:

(a) reacting a tungsten bearing source material with a concentrated alcoholic hydrogen halide solution acidulating agent at a temperature of from about 40 to about 70° C. for a period of from about 0.25 to about 4 hours employing an amount of said acidulating agent such that the original hydrogen halide/tungsten weight ratio of the reaction mix expressed as equivalent HCl/WO_3, is at least 3 thereby to dissolve substantially all of the tungsten values present in said tungsten containing source material, the alcohol component of said acidulating agent being a member selected from the group consisting of aliphatic monohydric alcohols containing from 1 to 3 carbon atoms, and the hydrogen halide being a member selected from the group consisting of HCl and HBr, said concentrated alcoholic hydrogen halide solution being saturated with said hydrogen halide based on said alcohol component being substantially anhydrous, and said alcoholic hydrogen halide solution being further characterized as having from 0 to about 70 volume percent of said alcohol replaced with water,

(b) separating the resulting solution containing substantially all of the tungsten values present in said tungsten bearing source material from any undissolved solid residue,

(c) treating said solution thereby to precipitate said tungsten values therein by reducing the hydrogen halide concentration therein,

(d) separating said precipitated tungsten values from the residual solution and washing said precipitated tungsten values; and,

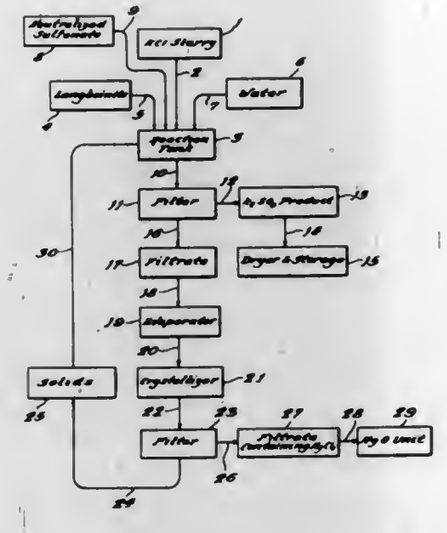
(e) recovering said precipitated tungsten values as a high purity product.

3,271,105
PROCESS FOR THE SEPARATION AND RECOVERY OF HYDROXYLAMMONIUM SALT
Wallace F. Runge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Filed Feb. 3, 1964, Ser. No. 342,284
13 Claims. (Cl. 23—87)

1. A process for the separation and recovery of an hydroxylammonium salt from an aqueous reaction mixture produced by the reaction of a primary nitroalkane having from 2 to 10 carbon atoms, a mineral acid and water, said reaction mixture containing the hydroxylammonium salt corresponding to said mineral acid and the acid corresponding to said nitroalkane, comprising maintaining said reaction mixture above the crystallization temperature of said hydroxylammonium salt, passing said reaction mixture through a solvent extraction zone containing a water-insoluble mono-ring aromatic hydrocarbon solvent selective for said acid and said nitroalkane, removing an aqueous phase containing said hydroxylammonium salt from said zone, and recovering said hydroxylammonium salt from the aqueous phase.

3,271,106
PRODUCTION OF POTASSIUM SULFATE AND POTASSIUM CHLORIDE
Alfred F. Nylander, Redwood City, Calif., assignor to International Minerals & Chemical Corporation, a corporation of New York
Filed Oct. 9, 1963, Ser. No. 314,979
19 Claims. (Cl. 23—121)

10. In the crystallization of potassium chloride from an aqueous medium, the improvement comprising incorporating in said medium 250 to 2,000 parts per million of a neutralized agent of the group consisting of sodium, potassium, and magnesium salts of monosulfonic acids of oleic acid, stearic acid, lauric acid, valeric acid, palmitic acid, capric acid, caproic acid, caprilic acid, and sylvic acid; the sodium, potassium, and magnesium salts of acid sulfates of oleic acid, stearic acid, lauric acid, valeric acid, palmitic acid, capric acid, caproic acid, caprilic acid, and sylvic acid; the compounds triethanol amine oleic



acid sulfonate, disodium 4-dodecylated oxydibenzene sulfonate, and sodium dodecyl benzene sulfonate; and mixtures thereof prior to crystallizing the potassium chloride therefrom.

3,271,107
SILICA PIGMENTS FROM FLUOSILICIC ACID
John D. Nickerson and George M. Burkert, Lakeland, Fla., assignors to International Minerals & Chemical Corporation, a corporation of New York
Filed July 31, 1963, Ser. No. 298,856
9 Claims. (Cl. 23—182)

1. In the preparation of silica by the reaction of fluosilicic acid with ammonium hydroxide in aqueous medium, the improvement comprising carrying out the reaction in two separate stages which comprise:

(a) reacting fluosilicic acid with ammonium hydroxide in a reaction zone of high agitation, and adjusting the proportions of the reactants to maintain a pH in the range of 6.0 to 8.0, whereby a silica-containing slurry is produced;

(b) then reacting said slurry in a quiescent reaction zone with additional ammonium hydroxide in an amount sufficient to provide a final pH in the range of 8.3 to 9.0 for a time of about 20 minutes to 120 minutes, and separating precipitated silica from the resulting slurry.

3,271,108
PREPARATION OF LITHIUM HYDRIDE
George S. Fujioka, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 26, 1962, Ser. No. 183,329
5 Claims. (Cl. 23—204)

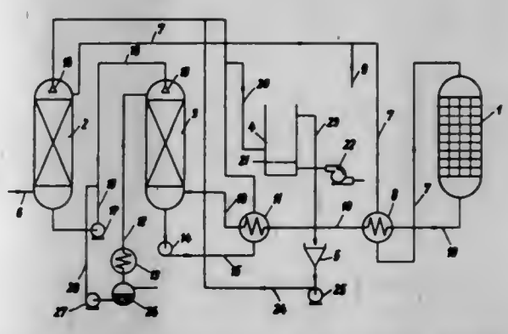
1. A process for the preparation of lithium hydride which comprises intermixing a lithium halide selected from the group consisting of lithium chloride, lithium bromide and lithium iodide with sodium hydride in an inert organic diluent in which at least one of the reactants is at least partially soluble, to thereby react the lithium halide with sodium hydride at a temperature in the range of from 20° C. to 150° C. to form lithium hydride and recovering the lithium hydride from the reaction mixture.

3,271,109
PIGMENTARY SILICON CARBIDE
Eugene J. Mezey and Hans H. W. Schwantje, Wadsworth, Ohio, assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 11, 1963, Ser. No. 272,236
11 Claims. (Cl. 23—208)

1. A process for producing pigmentary silicon carbide which comprises reacting an oxide of silicon with carbon particles of from 0.005 to 1.5 microns in size while said carbon is in the form of particles in a flowing inert gaseous atmosphere whereby to form pigmentary silicon carbide.

10. A novel particulate composition of pigmentary silicon carbide, the silicon carbide content of which consists of silicon carbide particles, at least 80 percent, on a number basis, of which particles are substantially spherical and have a mean number particle size between 0.05 and 0.4 micron.

3,271,110
METHOD OF PRODUCING HYDROGEN
Karl Bratzler, Bad Homburg vor der Hohe, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Nov. 6, 1961, Ser. No. 150,543
Claims priority, application Germany, Nov. 12, 1960, M 47,102
1 Claim. (Cl. 23—213)



A cyclic process for recovering hydrogen, which process comprises the following steps:

(a) passing a crude gas containing hydrogen, carbon monoxide, carbon dioxide and hydrogen sulfide into a saturation zone, in contact with an aqueous alkaline solution containing a hydrogen sulfide and carbon dioxide absorbent selected from the group consisting of an alkali metal arsenate and an alkali metal ferricyanide, withdrawing at the top portion of said saturation zone the unabsorbed gases saturated with water vapor and withdrawing at the bottom portion of said saturation zone the said aqueous alkaline absorbent solution, passing on and distributing the said solution at the top of the cooling zone;

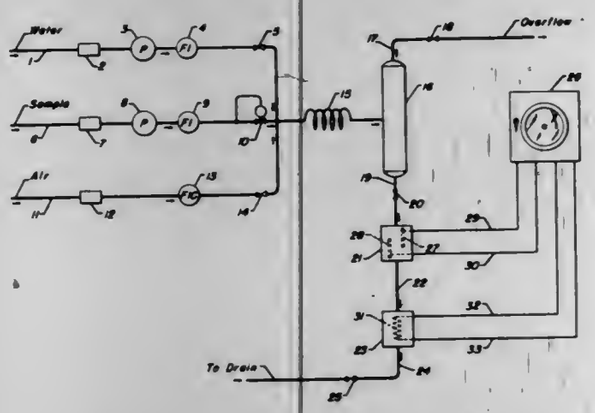
(b) introducing steam into the unabsorbed gases and then passing the said unabsorbed gases saturated with water vapor and containing the aforesaid introduced steam into a catalyst reaction zone wherein the said gases and water vapor are catalytically reacted at 350–500° C. to produce hydrogen and carbon dioxide;

(c) passing the resultant reacted gases from the catalytic reaction zone to the bottom portion of the cooling zone wherein said gases are cooled by countercurrent contact with the absorbent solution supplied thereto, to thereby further remove carbon dioxide and hydrogen sulfide impurities from said reacted gases;

(d) withdrawing the purified hydrogen-containing reacted gases from the top portion of said cooling zone;

(e) recycling to the top of the saturation zone a portion of the aqueous alkaline absorption solution withdrawn from the bottom of the said cooling zone, and transferring the remaining portion of the aqueous alkaline absorption solution withdrawn from the bottom portion of the cooling zone to the regenerating zone, aerating the latter solution therein for precipitating sulfur, removing the said sulfur by filtration, and recycling the said regenerated aqueous alkaline solution free from precipitated sulfur to the top of said saturation zone.

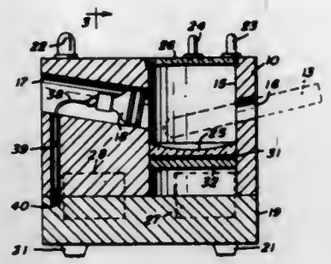
3,271,111
METHOD AND APPARATUS FOR BORON TRIHALIDE ANALYSIS
David M. Boyd, Jr., Clarendon Hills, and Kenneth O. Rockey, Evanston, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,767
7 Claims. (Cl. 23—230)



1. A method for continuously determining the concentration of a boron trihalide in a flowing stream of liquid hydrocarbon containing said boron trihalide which comprises withdrawing from said flowing stream a sample stream of said hydrocarbon; passing said sample stream, under a pressure sufficiently high to maintain all constituents of the sample stream in the liquid phase, to a pressure reducing means; reducing the pressure of the sample stream and partially vaporizing it to form a vapor-liquid mixture; commingling a stream of aeration gas and a stream of substantially pure water with said vapor-liquid mixture; intimately mixing said streams and dissolving in the water the boron trihalide present in said sample an electrical conductance cell; and continuously measurwater-rich stream; passing said water-rich stream through ture to a separation zone and withdrawing therefrom a stream; passing the resultant gas-hydrocarbon-water mixing the electrical conductivity of said water-rich stream as a measure of the boron trihalide content of said sample stream.

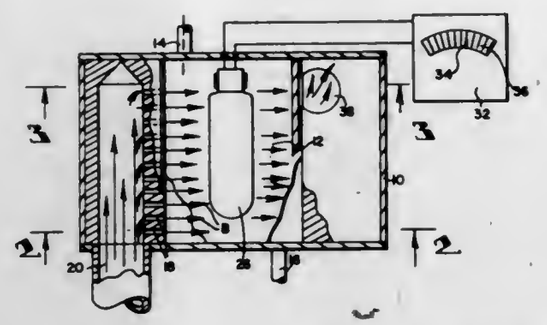
3,271,112
APPARATUS FOR LABORATORY TESTING
Donald L. Williams, 1687 N. 17th, Coos Bay, Oreg., and Robert D. Pence, 363 N. Commercial, Empire, Oreg.
Filed Dec. 12, 1962, Ser. No. 244,160
5 Claims. (Cl. 23—253)

1. Apparatus for determining prothrombin time in blood plasma comprising a housing, means for heating said housing and maintaining it at a predetermined temperature, said housing being of material having a good heat conductivity characteristic whereby said housing has a uniform temperature, first container means for carrying blood plasma to be tested, storage means in said housing for said first container means whereby said blood plasma is preheated to said predetermined temperature prior to the measurement of prothrombin time, viewing chamber means substantially fully enclosed by said housing and adapted to receive at least a portion of said first container means, means for illuminating said viewing



chamber, and means for viewing that portion of said first container which is inserted into said chamber, said viewing chamber being substantially closed to the ambient atmosphere and being maintained at said predetermined temperature whereby said prothrombin time may be accurately determined.

3,271,113
CHEMILUMINESCENCE DETECTION APPARATUS
Bernard I. van Pul, 6531 W. Devonshire Ave., Phoenix, Ariz.
Filed Apr. 12, 1963, Ser. No. 272,651
6 Claims. (Cl. 23—255)

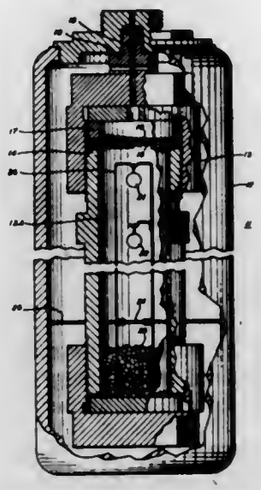


1. In a chemiluminescence detection apparatus the combination of: a housing structure; a chamber for containing liquid luminescent material; first means for establishing an upper surface of said liquid luminescent material in said chamber; oxidant gas inlet means communicating with said chamber and disposed to conduct oxidant gas to said surface position of said luminescent material in said chamber; an outlet in said chamber to permit the escape of said gas therefrom and an illumination sensitive device disposed to receive light emitted from said luminescent material as it reacts with said oxidant gas.

3,271,114
CRYSTAL GROWTH CONTAINER
Ernest D. Kolb, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 15, 1964, Ser. No. 375,096
1 Claim. (Cl. 23—273)

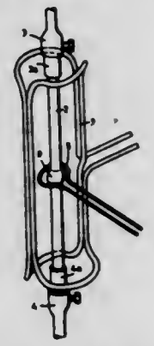
Hydrothermal crystal growth apparatus including an outer container and an inner container, said inner container being suspended within said outer container by means of a head therebetween, said inner container having disposed therein a noble metal liner including a pair of rupture disks, the outer of said rupture disks being perforate, the outer of said rupture disks being solid and so designed

as to rupture in an outward direction at a predetermined pressure differential, said head being so constructed that said rupture disks are the only impediment to a free exchange between said inner container, said outer con-



tainer and the atmosphere, an external baffle in the annulus between said inner and said outer container, a baffle intermediate the inner chamber and a seed rack for suspending crystals above the baffle within said inner chamber.

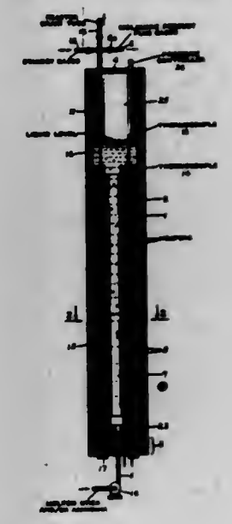
3,271,115
APPARATUS FOR CRUCIBLE-FREE ZONE MELTING OF SEMICONDUCTOR MATERIAL
Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed June 21, 1965, Ser. No. 469,048
Claims priority, application Germany, June 20, 1964, S 91,638; Mar. 29, 1963, S 84,442
7 Claims. (Cl. 23—273)



1. In an apparatus for crucible-free zone melting of a semiconductor rod, a first induction heating coil for melting a zone of the rod, said coil being located adjacent the rod and displaceable in the direction of the rod axis, and a second induction heating coil for heating the rod to a temperature below its melting point, said second coil comprising at least one turn having portions extending substantially parallel to each other and to the rod axis.

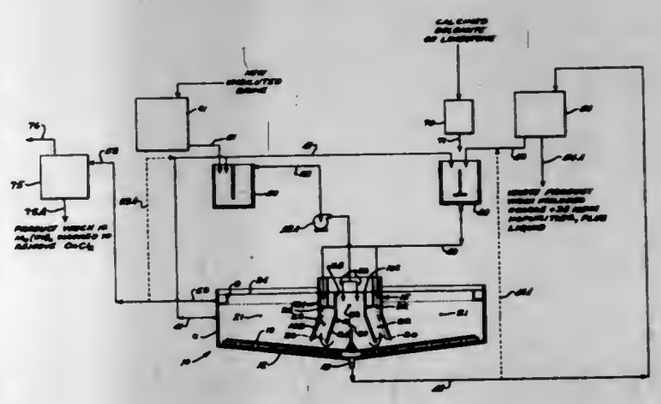
3,271,116
APPARATUS FOR CONTINUOUS PYROLYSIS OF LIQUID MATERIALS
Russell Frank Hazelton, Chester, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Original application Mar. 6, 1962, Ser. No. 177,919. Divided and this application Jan. 8, 1964, Ser. No. 336,521
12 Claims. (Cl. 23—284)

1. An apparatus which comprises a vertically elongated pressure resistant reaction vessel having a top closure and a bottom closure, a series of vertical bayonet-type electrical heaters extending a major portion of the height of said vessel so disposed within said vessel as to provide a heated zone and a laterally adjacent unheated zone, means for introducing liquid feed to the bottom portion of said vessel and distributing it about said heaters, and a dip tube extending vertically downward from said top closure a fraction of the total height of said vessel for



continuously removing liquid reaction product and by-products from the upper portion of said vessel and maintaining a substantial gas buffer volume between liquid material in said vessel and said top closure, and a vertical draft tube coaxially aligned within said vessel and extending from the lower portion of said vessel upward to a point lower than the lower end of said dip tube.

3,271,117
APPARATUS FOR RECOVERY OF MAGNESIUM VALUES
Earl Leatham, Wexford, Pa., Albert H. Pack, Ludington, Mich., and Ernest P. Weaver, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application May 22, 1963, Ser. No. 282,379. Divided and this application Oct. 20, 1965, Ser. No. 498,412
8 Claims. (Cl. 23—287)



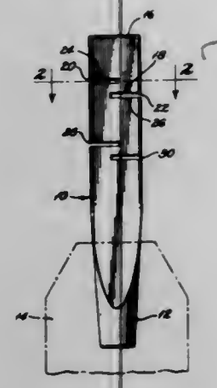
1. An arrangement for recovery of magnesian values from concentrated magnesium salt-containing aqueous solutions comprising; a reactor vessel, a slurry vessel and a dilution vessel, said reactor vessel having a bottom discharge opening for withdrawing settling solids in the reactor vessel, means connected to the discharge for transporting said solids to a disposal, at least two adjacent tubu-

lar shells substantially centrally suspended within the vessel, said shells being arranged to define a path for the flow of fluid therebetween, fluid agitating means disposed within an upper section of one of said shells for drawing fluid upwardly through said shell and enabling downward flow through an adjacent shell, first conduit means opening from said vessel at a point above the bottom discharge opening and interconnected with said slurry vessel and dilution vessel for circulating a volume of fluid from the reaction vessel to said slurry and dilution vessels, second conduit means opening from said reaction vessel at a point above said fluid agitating means to withdraw a volume of fluid from said reaction vessel and pass it to washing and thickening means, washing and thickening means arranged to recover magnesium hydroxide substantially free of magnesium chloride impurities from the fluid passed thereto, channel means connecting the slurry vessel and the tubular shell containing the fluid agitating means for delivering a mixture of lime containing material and fluid thereto, and channel means connecting the dilution vessel and other tubular shell for delivering a mixture of concentrated magnesium salt containing solution and fluid thereto.

3,271,118
SEED CRYSTALS AND METHODS USING THE SAME

Siri Ram Bhola, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware

Filed Oct. 18, 1961, Ser. No. 145,866
19 Claims. (Cl. 23—301)



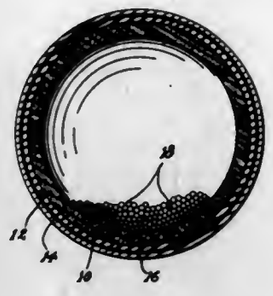
1. A crystalline seed comprising an elongated crystalline body, at least one end portion of which is formed substantially entirely from a single crystal, said portion having at least one longitudinally extending, intermediate zone having a substantially reduced cross-sectional area relative to the cross-sectional area of the portions of said seed disposed immediately adjacent said one zone, said zone of reduced cross-sectional area being formed by at least one notch intermediate the termini of said end portion, the opposed faces of said notch lying in substantially parallel planes.

3,271,119
FOAMED PLASTIC STRUCTURE HAVING A UNIFORM CONTINUOUS METAL COATING INTEGRALLY BONDED TO THE SURFACE THEREOF

Paul T. Woodberry, Reading, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Mar. 13, 1964, Ser. No. 351,874
2 Claims. (Cl. 29—191)

1. A load-bearing structure comprising an inner core member of a rigid foamed plastic and having a hollow portion, a heat decomposable blowing agent positioned within the hollow portion of said core member, an intermediate layer of latex rubber bonded to the outer surface of said core member, an electrically conductive coat-



ing adhesively bonded to said intermediate layer, and a layer of electrodeposited metal integrally bonded to said conductive coating to form a unitary structure.

3,271,120
ALCOHOL FUEL GELS

Garland George Corey, Milltown, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,996
8 Claims. (Cl. 44—7)

1. A stable alcohol gel composition comprising a major proportion of a lower aliphatic monohydroxy alcohol, a nitrocellulose gelling agent, about 15% to about 30% by weight water and about 0.05% to about 0.3% by weight of an alcohol-soluble and water-soluble hydrated inorganic polyvalent metal nitrate salt.

3,271,121
ETHYLENE-STYRENE COPOLYMER AS POUR POINT DEPRESSANT

David W. Young, Homewood, and George A. Uhl, Markham, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1963, Ser. No. 265,047
2 Claims. (Cl. 44—62)

1. A hydrocarbon fuel oil distillate boiling primarily in the range of about 300° to 750° F. containing a small amount of a mineral oil-soluble polymer of about 10 to 90% by weight styrene and about 10 to 90% by weight ethylene, said copolymer having a Staudinger molecular weight of about 1,000 to 40,000 and being prepared by subjecting said styrene and said ethylene to a gamma ray dosage of at least about 5,000,000 roentgens to obtain said oil-soluble product and said amount being sufficient to provide the oil with a reduced pour point.

3,271,122
METHOD FOR FORMING GLASS FIBERS

Donald W. Denniston, Ross Township, Pa., and Clarence H. Helbing, Shelbyville, Ind., assignors to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania

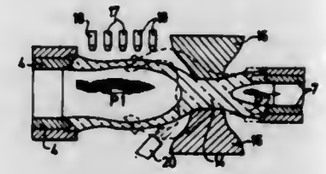
Filed Nov. 25, 1959, Ser. No. 855,416
5 Claims. (Cl. 65—3)

1. A method of forming glass fibers which comprises drawing a plurality of fibers from a supply of molten glass, applying a coating to the fibers, advancing fibers to a collecting position, imparting rapid, sidewise oscillations to the fibers thereby removing portions of the coating from the fibers, surrounding the fibers with an atmosphere moving in the direction of travel of the fibers and continuing movement of this atmosphere in the same general direction beyond the collecting position thereby carrying the coating particles removed from the fibers away from the supply of molten glass.

3,271,123
METHOD OF MAKING HOLLOW GLASSWARE WITH A STEM AND A FOOT

Emil Jan Johan Benard, Leerdam, Netherlands, assignor to N.V. Vereenigde Glasfabrieken (United Glassworks), Schredam, Netherlands, a limited-liability company of the Netherlands

Filed Mar. 26, 1963, Ser. No. 268,017
Claims priority, application Netherlands, Mar. 28, 1962, 276,533
3 Claims. (Cl. 65—80)

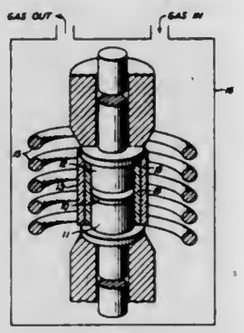


1. A machine performed process for manufacturing hollow glassware with a stem and a foot, comprising pressing a preformed blank to form impressions in the upper and lower ends of the blank, seizing the upper and lower ends of the blank and rotating the latter about a vertical axis while air is simultaneously blown into both of said impressions to initially inflate the end portions of the blank and have a solid intermediate portion therebetween, turning the blank to dispose its axis horizontally, pulling the opposite ends of the horizontally disposed blank in directions away from each other while simultaneously rolling the solid intermediate portion of the blank to form a stem therefrom and blowing air into the end portions for further inflating the latter, positioning the blank in a blowing mould, and blowing air into the further inflated end portions to effect final inflation of the latter to the shape of the blowing mould.

3,271,124
SEMICONDUCTOR ENCAPSULATION

James E. Clark, Upper Saucon Township, Lehigh County, Pa., assignor to Bell Telephone Laboratories, Incorporated, a corporation of New York

Filed Sept. 16, 1963, Ser. No. 309,161
4 Claims. (Cl. 65—54)

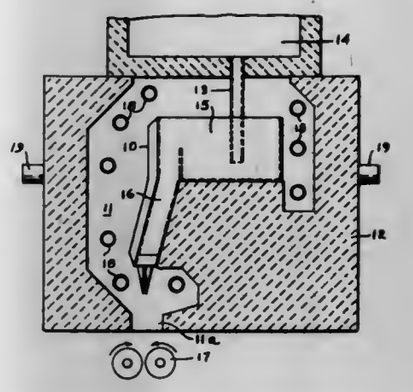


1. The process of fabricating a semiconductor assembly comprising the steps of:
forming a laminated tubular envelope having an inner layer of substantially alkali-free glass and an outer layer of a chemically durable glass which has a composition that is not alkali-free;
positioning the envelope around two metal studs which contain a semiconductor element therebetween;
heating the envelope to a temperature above the softening point temperature of both of the two layers;
increasing the ambient pressure to which the envelope is subjected, thereby forming a seal between the envelope and the two studs;
and cooling the envelope.

3,271,125
GLASS STREAM FEEDER

George D. Lipp, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Oct. 12, 1962, Ser. No. 230,054
4 Claims. (Cl. 65—145)



1. In the manufacture of sheet glass, apparatus for uniformly feeding a plurality of closely spaced streams of molten glass along the bite of a pair of sheet forming rolls positioned therebelow so as to form a continuous uniform pool along the length of the bite of such rolls which comprises, a hollow refractory housing, a container positioned within said housing for receiving and maintaining a pool of molten glass, a downwardly inclined chute communicating with said container for delivering glass from said pool downwardly therealong, weir means for maintaining the pool of molten glass in said container at a predetermined height and for overflowing molten glass from said pool into said chute, a plurality of spaced-apart dividers depending from the lower end of said chute and having tapered guide means for delivering a plurality of separate individual streams of molten glass substantially along the entire line contact of a pair of forming rolls positioned therebelow to produce a continuous pool of molten glass along such bite, and pivot means for pivoting said refractory housing and accordingly said pool-containing container about an axis extended substantially normal to a vertical plane passing through such line of contact so as to vary the head across such pool and relatively control the amount of flow delivered by the various dividers.

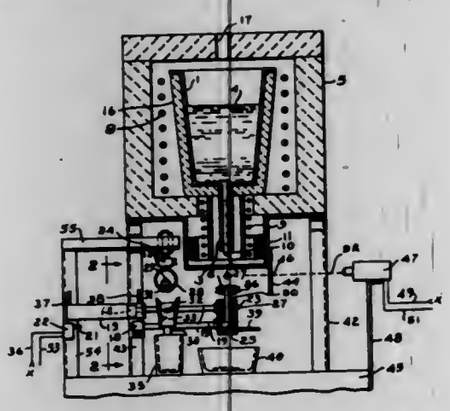
3,271,126
PRESS FORMING APPARATUS FOR FORMING WAFERS FROM DRIPS OF GLASS

Weston H. Jenkins, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

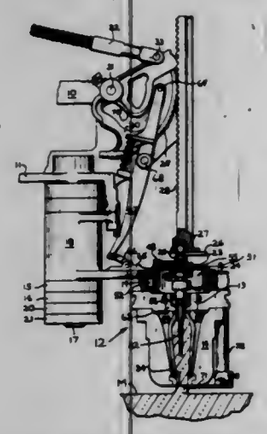
Original application Mar. 20, 1963, Ser. No. 266,649. Divided and this application Nov. 25, 1964, Ser. No. 413,815
2 Claims. (Cl. 65—160)

2. An apparatus for forming disks or wafers of a molten glass-making material, comprising, in combination, a container of said material including an orifice so located and having a diameter so chosen in accordance with the viscosity of the melt of said material at the chosen temperature of the melt that the material falls from the orifice in freely forming and falling drops, photo-responsive means for detecting each falling drop, a mold actuable at varying times between a drop catching position and a drop pressing position, means responsive to the detection of one of said drops by said photo-responsive means for moving said mold from its drop catching position to its drop pressing position following a time delay of a duration sufficient only to assure the catching of the drop by the mold after the detection of

the drop by said photo-responsive means, means actuated by the movement of the mold to its pressing position for thereafter pressing the drop for a predetermined period of time, means actuated following the expiration of said predetermined period of time for ejecting the pressed drop from the mold, and means thereafter responsive to the detection of another falling drop by said photo-responsive means for moving said mold from its drop pressing position to its drop catching position following a preset time delay, such time delay being of a duration sufficient only to assure the clearance by such other drop of the path of movement of the mold to its drop catching position prior to the movement of the mold into the path of fall of the drops.

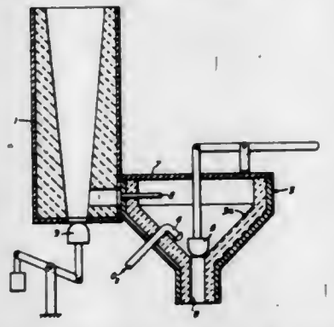


3,271,127
PARISON FORMING APPARATUS
Edward F. Wendle, Godfrey, Ill., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed May 1, 1963, Ser. No. 277,164
4 Claims. (Cl. 65—207)



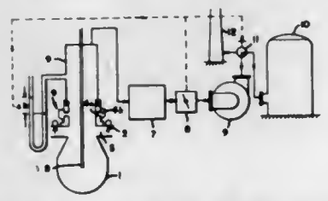
1. A glass parison forming apparatus comprising in combination a partible neck mold defining in closed position a neck finish portion of a parison, means supporting said neck mold for opening and closing movement at a parison forming station, a partible blank mold defining in closed position the body of a parison having a shoulder defining region for an article to be formed from said parison and being open at the one end opposite the neck mold for loading molten glass therein, means supporting said blank mold for opening and closing movement with respect to said neck mold at the parison forming station, an elongated, narrow plunger adapted to be inserted axially through said neck mold cavity and extend centrally into the blank mold inwardly beyond said shoulder defining region of the parison whereat the plunger is in a glass molding position, means connected to said plunger and operable for moving the plunger into and out of said molding position with respect to said blank mold cavity, means for loading molten glass into the open end of the blank mold, said means being operated to move said plunger into its said molding position whereby the plunger is in said molding position at the time the glass is loaded into said blank, and means applying vacuum into the neck mold and blank mold for filling the cavity defined by said blank and neck mold with glass around said plunger, the said mold cavities, when filled, forming a final narrow neck parison shape.

3,271,128
PREREFINING BLAST FURNACE IRON
Francis X. Tartaron, Pittsburgh, Pa., assignor to the United States of America as represented by the Secretary of the Interior
Filed July 9, 1963, Ser. No. 293,913
4 Claims. (Cl. 75—60)



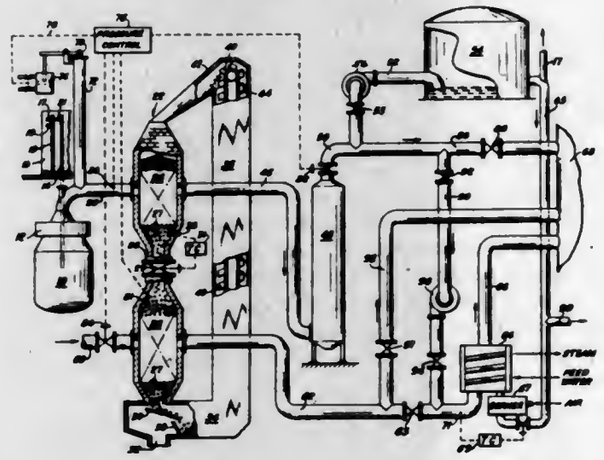
1. A process for prerefining molten iron comprising:
(a) passing a thin layer of said iron over a stationary surface,
(b) establishing a vortical path of movement for said layer as it travels over said stationary surface, whereby a vortex is formed,
(c) introducing an oxidizing gas into said layer as it travels said vortical path, and
(d) removing the molten iron from the center of the vortex.

3,271,129
METHOD OF RECOVERING AN UNBURNT WASTE GAS PRODUCED IN AN OXYGEN TOP-BLOWING CONVERTER
Shigeru Maehara and Isoji Garashi, Yawata District, Fukuoka, Japan, assignors to Yawata Iron & Steel Co., Ltd., and Yokoyama Engineering Co., Ltd., Tokyo, Japan, both corporations of Japan
Filed Apr. 22, 1963, Ser. No. 274,545
Claims priority, application Japan, Apr. 24, 1962, 37/16,573
3 Claims. (Cl. 75—60)



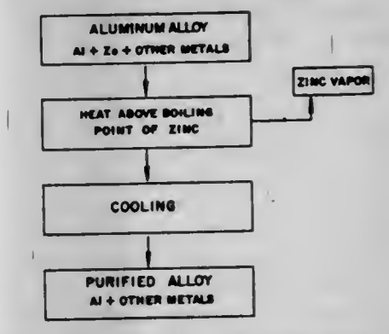
1. A method of recovering in a gas recovery system unburned waste gas issuing from an oxygen top-blowing converter during the refining of molten pig iron in the converter by blowing oxygen into said converter, comprising the steps of positively introducing air into the waste gas flowing from the converter into the recovery system during the initial period of blowing while the CO content of the waste gas is below the desired value, the air being introduced in an amount in excess of that necessary for burning the waste gas and in an amount which when combined with the products of combustion produces a gas flow at a level substantially above the amount of waste gas flowing from the converter at the end of said initial period and sufficient to effectively control the pressure within the gas recovery system by means of a damper installed in the recovery system, discharging burned gas and excess air from the recovery system; then when the CO content of the waste gas reaches the desired value, preventing the entry of air into the gas from the converter flowing into the recovery system, then introducing an inert gas into the gas flowing from the converter into the recovery system in an amount sufficient to maintain said level of the gas flow, terminating the input of inert gas when the gas flow from the converter reaches said level, recovering the waste gas flowing from the converter in an unburned state starting just after the air is excluded and the introduction of the inert gas has started and throughout the middle period of blowing; then just before the flow of gas from the converter falls below the said level, introducing inert gas into the waste gas in an amount sufficient to maintain said level of gas flow, and just before the CO content of the waste gas falls below the desired value, terminating the recovery of the unburned waste gas and introducing air into the waste gas flowing from the converter into the recovery system in an amount in excess of that necessary for burning the waste gas and in an amount which when combined with the products of combustion is sufficient to keep the level of gas flow substantially above the level of waste gas flow from the converter at the end of said middle period of blowing, and discharging the combustion gas and excess air from the recovery system.

3,271,130
METHOD AND APPARATUS FOR TREATING GASES
Fred Denig, Kilchberg, Zurich, Switzerland, assignor to Koppers Company, Inc., a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,561
8 Claims. (Cl. 75—60)



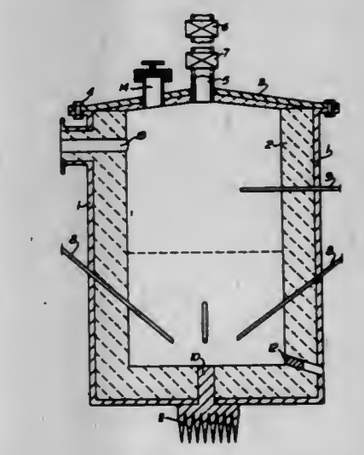
1. Apparatus for the treatment of dirty waste gases from a metallurgical furnace comprising, a pebble heat exchanger having two chambers, a first chamber for cooling said waste gases, a second chamber for heating a gaseous material while simultaneously cooling said pebbles, means to pass pebbles from said first chamber to said second chamber, and means to recycle pebbles from said second chamber to said first chamber; conduit means to pass gases from said metallurgical furnace to said first chamber; a gas cleaner to clean said waste gases; means to pass gas from said first chamber of said pebble heat exchanger to said gas cleaner; a gas holder for storage of gas; means for passing cleaned gas from said gas cleaner to said gas holder; means to pass cold gas into said second chamber of said pebble heat exchanger for cooling said pebbles and heating said cold gas; heat recovery means to recover heat from said heated cold gas; means for pasing gas from said second chamber to said heat recovery means; stack means for venting gas to the atmosphere; and means for passing gas from said heat recovery means to said stack means.

3,271,131
RECLAMATION OF ALLOY
Edward E. Dickey, R.F.D. 1, Millersport, Ohio
Filed Aug. 19, 1963, Ser. No. 305,917
12 Claims. (Cl. 75—63)



1. A method of purifying an aluminum alloy of zinc impurities where the alloy consists of at least 80% of aluminum, from 4 to 6.5% of zinc, together with from 0.64 to 13% of at least one metal selected from the group consisting of beryllium, boron, bismuth, chromium, copper, iron, lead, magnesium, manganese, nickel, silicon, tin, and titanium comprising
heating the alloy to a temperature in the range of from 1665° F. to 1800° F. at a temperature of about 1700° F. which is below the boiling point of all of the other constituents of the alloy excepting zinc;
allowing zinc to evaporate from the liquid alloy; and
cooling the remaining liquid to secure an aluminum alloy, substantially free of zinc.

3,271,132
METHOD AND APPARATUS FOR THE TREATMENT OF ALUMINUM
James Dennis Groves, Stockton-on-Tees, England, assignor to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom
Filed Nov. 19, 1963, Ser. No. 324,682
Claims priority, application Great Britain, Nov. 21, 1962, 44,019/62
12 Claims. (Cl. 75—68)



1. In an apparatus for the treatment of molten aluminium, which apparatus comprises a container for said molten aluminium having a lining of a refractory, corrosion-resistant material of relatively poor heat-conducting properties, the improvement comprising a plug of solid aluminium passing through a wall of said container

and through said lining, the interior end of said plug adapted to be in direct heat exchange contact with contained molten aluminium, and the exterior end of said plug having a substantially expanded cross sectional area adapted for direct heat exchange with a fluid, and means associated with the exterior end of said plug for passing a heat exchange fluid into direct, intimate contact therewith, said means adapted to remove heat from said exterior end of said plug at a rate greater than the minium rate necessary to maintain said plug substantially unmelted when the interior end of said plug is in contact with contained molten aluminium.

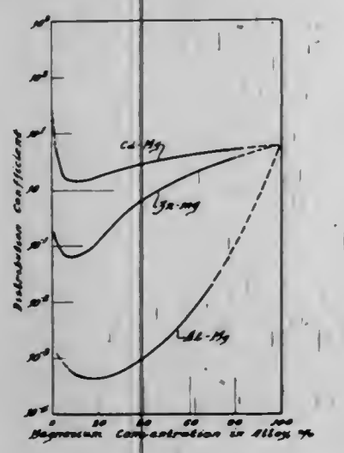
7. A process for the production of aluminium chloride by reaction of gaseous chlorine with molten aluminium in a reactor having a refractory, corrosion-resistant lining of relatively poor heat-conducting properties, said reactor provided with an aluminium plug passing through a wall of said reactor and through said lining into direct heat exchange contact with the contained molten aluminium and having an exterior end portion of substantially expanded cross sectional area comprising the steps of (a) introducing gaseous chlorine into said molten aluminium beneath the surface thereof with a pressure drop in the range of 0.25 to 50 times the pressure drop between the point of chlorine introduction and said surface of said molten aluminium, (b) reacting said chlorine and said molten aluminium to form aluminium chloride vapor, (c) recovering aluminium chloride from the vapor space above said surface of said molten aluminium, (d) passing a cooling fluid into direct, intimate contact with said expanded exterior portion of said aluminium plug to effect substantial withdrawal of heat from said contained molten aluminium through said aluminium plug, and (e) maintaining the flow of said cooling fluid across said expanded portion of said plug at a rate sufficient to maintain said plug substantially intact and to withdraw at least a major portion of the heat of reaction from said reactor.

3,271,133

PURIFICATION OF MOLTEN SALTS

James B. Knighton, Joliet, and Robert, K. Steunenberg, Naperville, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed June 29, 1965, Ser. No. 468,169
6 Claims. (Cl. 75—84.1)



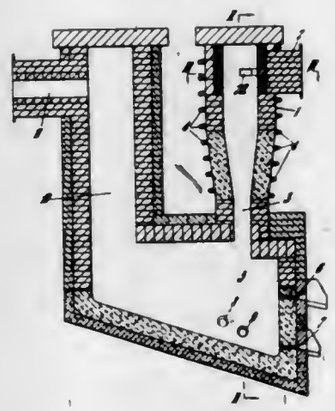
1. A process of purifying a fused salt containing fission products comprising contacting said fused salt with a binary alloy of aluminum and magnesium whereby essentially all of the rare-earth fission products are extracted into the binary alloy, and separating the salt and metal phases.

3,271,134

EXTRACTION OF ZINC

Leslie Jack Derham, Avonmouth, England, assignor to The National Smelting Company Limited, London, England, a British company

Filed Aug. 5, 1963, Ser. No. 299,888
Claims priority, application Great Britain, Aug. 20, 1962, 31,919/62
14 Claims. (Cl. 75—87)



1. In the method of smelting a mixed charge of finely divided oxidic zinciferous material and carbonaceous fuel-reducing agent suspended in a stream of oxygen containing gas moving downwardly in a vertically disposed reduction zone, the improvement in combination therewith which comprises:

(a) the finely divided oxidic zinciferous material and the finely divided carbonaceous fuel-reducing agent suspended in the stream of oxygen containing gas are injected under pressure horizontally and tangentially into the upper portion of a vertically disposed reduction zone generally in the shape of a cyclone, with its larger end at the top and its smaller but open end at the bottom;

(b) a swirling downwardly spiraling motion of sufficient strength is imparted to the charge to cause it to pass into and around the peripheral upper portion of the cyclone-shaped reduction zone and into and around the inwardly inclined peripheral lower portion of the cyclone-shaped reduction zone;

(c) the temperature of the upper and lower portions of the reduction zone is kept sufficiently high to oxidize the carbon in the charge to a mixture of carbon dioxide gas and carbon monoxide reducing gas to reduce the zinc oxide in the charge with the carbon monoxide and to vaporize the resulting zinc, and to melt non-volatilizable metal compounds normally present in the charge and carbon ash impurities to a slag;

(d) the swirling downwardly spiraling motion of the charge is maintained throughout the reduction zone sufficiently long to provide the detention time required to effect the reduction of the oxidic zinciferous material and to melt the non-volatilizable metal compounds and ash impurities to a slag;

(e) the resultant droplets of molten slag are forced centrifugally to the periphery of the inwardly inclined and gradually constricted lower portion of the cyclone-shaped reduction zone;

(f) the droplets of molten slag are there coalesced and dropped through the open bottom of the cyclone-shaped reduction zone, and gathered in a molten slag collecting zone, immediately below the reduction zone, as a pool of molten slag;

(g) molten slag is tapped from the pool of molten slag; and

(h) the resultant zinc vapour is passed downwardly from the reduction zone into the molten slag collecting zone and from above the top of the pool into a condensing system for the separate recovery of the zinc.

11. In apparatus for smelting a mixed charge of finely divided oxidic zinciferous material and carbonaceous fuel-reducing agent suspended in a stream of oxygen-containing gas moving downwardly in a vertically disposed reduction shaft, the improvement in combination therewith which comprises:

(a) the vertically disposed reduction shaft of the smelting furnace is refractory-lined and is in the shape generally of a cyclone with its larger end at the top and its smaller end at the bottom, the lower portion of the shaft being frusto-conical in shape, tapering downwardly and inwardly towards its lower end so that its cross-sectional area is gradually constricted to a bottom outlet throat;

(b) an insulated charge-feeding device connects the upper exterior portion of the smelting furnace with the upper interior portion of the reduction shaft, the charge-feeding device having a conduit extending therethrough that connects the upper exterior portion of the smelting furnace with the upper interior portion of the reduction shaft horizontally and tangentially to permit the charge to assume a swirling, downwardly spiraling, motion,

(c) a combined slag collecting and zinc vapour receiving chamber is located immediately below the bottom of the vertical shaft to collect a pool of molten slag and to permit separation of zinc vapour therefrom;

(d) at least one slag-tapping conduit extends through the wall of the slag collecting chamber for removing molten slag therefrom; and

(e) a zinc vapour outlet offtake, separate and distinct from the reduction shaft, connects the upper portion of the slag collecting and zinc vapour receiving chamber for the passage of zinc vapour therefrom.

3,271,135

GOLD RECOVERY PROCESS USING AN ALKALI METAL HYDROSULFITE WITH A WATER SOLUBLE OXYGEN CONTAINING COMPOUND

Charles Davidoff, 118 Rollinghill Road, Manhasset, N.Y.

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,717
6 Claims. (Cl. 75—106)

1. A method of recovering gold from an aqueous solution of alkali metal gold cyanide consisting essentially in adding to the solution alkali metal hydrosulfite and at least one member selected from the group of water soluble oxygen-containing compounds consisting of aldehydes, hydroxyl-containing amines, ammonium and alkali metal phosphates, hypophosphites and thiosulfates, and amino- and hydroxy-carboxylic acids and their ammonium and alkali metal salts in a combined molar amount at least equivalent to the gold in said solution, maintaining the resulting solution at an elevated temperature above about 150° F. until cessation of precipitation of the gold, and removing the precipitated gold from the solution.

3,271,136

GOLD RECOVERY PROCESS USING AN ALKALI METAL HYDROSULFITE WITH A WATER SOLUBLE ALKALI METAL ALKANOATE

Charles Davidoff, 118 Rollinghill Road, Manhasset, N.Y.

No Drawing. Filed July 8, 1964, Ser. No. 381,214
8 Claims. (Cl. 75—118)

1. A method of recovering gold from an aqueous solution of alkali metal gold cyanide comprising adding to the solution an alkali metal hydrosulfite in a molar amount at least equivalent to the gold in said solution and about 0.2 to 20 parts of a water soluble alkali metal alkanoate per part by weight of the hydrosulfite, maintaining the resulting solution at an elevated temperature above about 150° F. until cessation of precipitation of the gold, and removing the precipitated gold from the solution.

3,271,137

VACUUM TREATED HIGH SILICON CAST IRON WITH GRAPHITIZING INOCULANT

Walter A. Luce and Glenn W. Jackson, both of Dayton, Ohio, assignors to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York

Filed Jan. 2, 1964, Ser. No. 335,207
7 Claims. (Cl. 75—123)



Fig. 3 Vacuum treated Duriron containing calcium. Photomicrograph from a 2" section shows small graphite flakes (Type A) and little porosity. 100X.

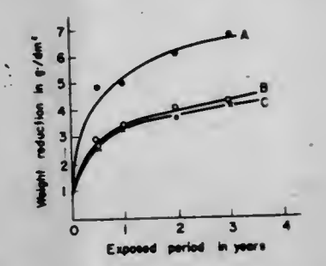
1. High silicon cast iron having a silicon content of from 12% to 15%, carbon from 0.3% to 1.5%, manganese of from approximately 0.65% to 1.0%, plus retained calcium of from 0.02% to 0.05%, the balance substantially all iron; said alloy as cast having its residual gas content reduced by vacuum furnace treatment to remove hydrogen to not over about 2 p.p.m., nitrogen to not over about 6 p.p.m. and oxygen to not over 20–30 p.p.m.; said alloy having a minimum transverse load strength of 1600 pounds and a microstructure characterized by fine acicular graphite uniformly distributed in a fine grain dendritic iron silicide matrix.

3,271,138

ATMOSPHERIC CORROSION RESISTANT NOTCH DUCTILE HIGH TENSILE STRENGTH STEEL

Tadashi Ohtake, Tobata, Toru Muta and Takashi Zaizen, Yawata, and Tadashi Nishi, Wakamatsu, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Mar. 12, 1962, Ser. No. 179,099
Claims priority, application Japan, Mar. 17, 1961, 36/9,585
1 Claim. (Cl. 75—125)



An atmospheric corrosion resistant notch ductile high tensile steel, which has a tensile strength greater than 60 kg./mm.², consisting essentially of 0 to 0.20% carbon, 0.01 to 1.0% silicon, 1.05 to 1.61% manganese, 0 to 0.10% phosphorous, 0.20 to 0.60% copper, 0 to 1.0% chromium, 0.027 to 0.5% titanium, 0.05 to 0.5% niobium, and iron, said percentages being by weight based on the total weight of the steel.

3,271,139
PROCESS FOR THE PRODUCTION OF LOW SULFUR FERROCHROMIUM

Richard A. Crago, Grand Island, James H. Downing, Clarence, and Harold S. Redline, Lewiston, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 10, 1962, Ser. No. 186,310
5 Claims. (Cl. 75—130.5)

1. In a process for producing ferrochromium alloy by smelting a mixture of chrome ore, carbon and slag-forming material to cause reduction of the ore and the production of ferrochromium and a basic slag, the improvement for producing a low sulfur, low silicon alloy which comprises adjusting the composition of the mixture so that (1) the base to acid molar ratio of the mixture is between about 2.5:1 and 8.5:1, (2) the CaO to SiO_2 ratio of the mixture is greater than about 0.75, (3) the resulting slag has a 25 poise temperature of at least about 1575° C., and (4) the alloy produced is at least 95 percent in the form of $(Fe,Cr)_7C_3$.

3,271,140
HIGH TEMPERATURE COBALT-BASE ALLOY

John C. Freche, Fairview Park, Stanley J. Klima, Rocky River, and Richard L. Ashbrook, Berea, Ohio, assignors to the United States of America as represented by the National Aeronautics and Space Administration

No Drawing. Filed Mar. 26, 1964, Ser. No. 355,126
4 Claims. (Cl. 75—170)

1. A cobalt base alloy capable of high load carrying capacity at elevated temperatures consisting essentially of from 48.5% to 84.5% cobalt, from 15% to 45% tungsten, from 0.4% to 2.5% titanium, and from 0.1% to 1.0% carbon.

3,271,141
PROCESS FOR PRODUCING A COLUMBIUM ADDITION AGENT

Thomas F. Kaveney, Lewiston, and Rodney F. Merkert, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Jan. 10, 1961, Ser. No. 81,683, now Patent No. 3,143,788, dated Aug. 11, 1964. Divided and this application Feb. 13, 1964, Ser. No. 344,561
5 Claims. (Cl. 75—206)

1. A process for producing a sintered, columbium-containing, low-carbon ferrochromium addition agent which comprises admixing a particulate high-carbon ferrochromium, a particulate oxidic columbium material, and a binder; compacting the resulting admixture so as to form a coherent body, heating the coherent body under a pressure below about 3 mm. of Hg to a temperature below about 1500° C. but sufficiently high to react the carbon present in the ferrochromium with the oxygen present in the oxidic columbium materials; maintaining the coherent body at such temperature and pressure until the evolution of carbon oxides substantially subsides; and thereafter recovering the sintered, columbium-containing, low-carbon ferrochromium addition agent.

3,271,142
METHOD FOR FORMULATING MASTER ALLOY COMPOSITIONS FOR USE IN DISPERSION HARDENED COMPACTS

Joseph P. Hammond, Knoxville, Tenn., and Krishna Kuman Sinha, Bombay, India, assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 25, 1965, Ser. No. 435,385
6 Claims. (Cl. 75—206)

1. A process for producing a compact containing a refractory metal oxide uniformly dispersed within a matrix of a metal or alloy selected from tungsten, molybdenum, and rhenium which comprises mixing a colloidal-like dispersion of a water-soluble compound of said selected metal with a colloidal dispersion of a refractory metal oxide which is stable and non-reactive with said selected metal at any temperature up to about 2500° C., separating the liquid phase from the colloidal mixture to obtain a solid dispersion of metal oxide-metal compound, heating the resultant solid cake in a reducing atmosphere to selectively reduce the metal compound of the selected metal and then compacting the resultant powdered dispersion of metal oxide in the selected metal to a densified structure.

3,271,143
PHOTOCONDUCTOR SHEET MATERIAL

David P. Sorensen, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,066
10 Claims. (Cl. 96—1.7)

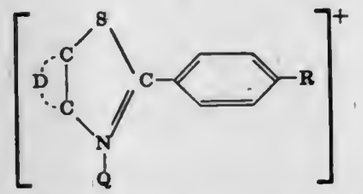
1. A photoconductor sheet material comprising a flexible backing, uniformly adhered to a layer containing discrete particles of a zinc oxide and an organic binder, said zinc oxide particles being intimately associated with a photoreducible sensitization dye and from 10 to 100 molar excess of a complexing agent for zinc ions, based on the molar concentration of said dye, said complexing agent when used in the absence of said photoreducible sensitization dye having essentially no sensitization properties for said zinc oxide.

3,271,144
SUPERSENSITIZED ZINC OXIDE

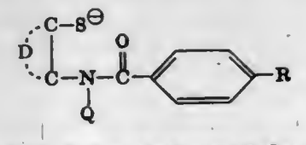
Ralph L. Clausen, South St. Paul, and Donald K. Meyer, West St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,362
10 Claims. (Cl. 96—1)

1. A supersensitized zinc oxide dispersion suitable for use in the preparation of photoconductor sheet materials which comprises an admixture prepared from zinc oxide, binder, sensitizing dye and at least 0.001 percent, based on the weight of said zinc oxide, of a compound having the nucleus



wherein D represents atoms completing an aromatic ring, R is a tertiary amino group and Q is hydrogen, aryl, alkyl or alkaryl, said dispersion having substantially no color attributable to said compound due to the conversion thereof into a colorless zinc (II) complex of



wherein D, Q and R are as above defined.

3,271,145
PROCESS FOR PRODUCING AN ELECTROSTATIC CHARGE IMAGE

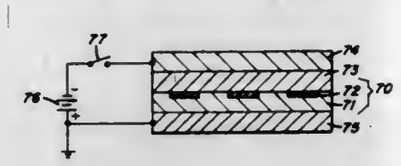
Gene H. Robinson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 23, 1963, Ser. No. 332,695
2 Claims. (Cl. 96—1)

1. A process for producing an electrostatic charge image, corresponding to an image on a document to be recorded, on a xerographic sheet comprising a photoconductive insulating layer on a conductive backing, comprising the steps of:

(a) positioning said document in facing, virtual contact with said sheet, said document and said sheet being separated by a minute air gap, with said image of said document in contact with said layer,

(b) sandwiching said document and said sheet between and in contact with two plate electrodes,



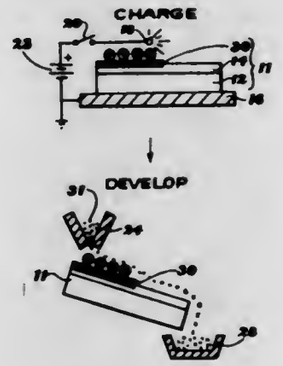
(c) applying a voltage across said electrodes of a value sufficient to ionize the air in said air gap whereby ions of one polarity deposit on and therefore charge said layer, and

(d) continuing said voltage application for a time sufficient to allow the light produced by said ionization to reflex expose said layer, whereby an electrostatic charge image, corresponding to said image to be recorded on said document, is produced on said layer without the necessity for a separate, additional exposure step from an external source of actinic radiation.

3,271,146
XEROPRINTING WITH PHOTOCONDUCTORS EXHIBITING CHARGE-STORAGE ASYMMETRY

Gene H. Robinson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 19, 1963, Ser. No. 266,233
8 Claims. (Cl. 96—1.4)



1. An electrostatic printing process comprising

uniformly applying to a photoconductive layer which exhibits charge-storage asymmetry, electrostatic charges of the polarity which said layer readily stores, in the absence of any substantial amount of radiation to which said layer is sensitive,

imagewise exposing said layer to cause the charges to leak away in the exposed areas,

applying electrically insulating toner to said layer whereby said toner becomes distributed in accordance with the electrostatic image,

fusing said toner to said layer to form insulating image areas,

uniformly applying to said layer electrostatic charges of the polarity which said layer does not readily store,

applying toner to the electrostatic image formed by the charges retained on said insulating areas,

transferring the last-mentioned toner from said layer to a receiving sheet, and

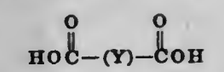
fusing said last-mentioned toner to said receiving sheet.

3,271,147
COACERVATE MORDANT DISPERSIONS FOR ACID DYES

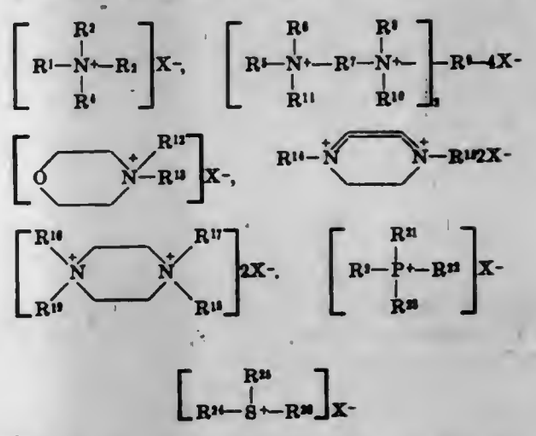
Walter M. Bush, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 19, 1962, Ser. No. 211,094
20 Claims. (Cl. 96—29)

10. In a photographic color diffusion transfer process wherein an acid dye is transferred imagewise by diffusion to a mordanting reception layer, the improvement which comprises utilizing as said mordanting reception layer a layer comprising a hydrophilic organic colloid containing substantially uniformly dispersed therein finely-divided particles less than about 30 microns in diameter of a hydrophobic salt prepared with gelatin acylated with a dicarboxylic acid having the formula



wherein Y is a divalent hydrocarbon radical having 1 to 10 carbon atoms and a nonpolymeric organic cationic mordant for acid dyes selected from the group consisting of compounds having the formulas



and

wherein:

A. R^1, R^2, R^5, R^6, R^8, R^{10}, R^{11}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}, R^{24} and R^{25} are alkyl radicals,

B. R^3 is selected from the group consisting of

(1) an amino radical,

(2) an alkyl radical, and

(3) a cyclohexyl radical,

C. R^4, R^{12}, R^{13}, R^{23} and R^{26} are selected from the group consisting of

(1) an alkyl radical, and

(2) a cyclohexyl radical,

D. X is an acid anion, and

E. R^7 and R^9 are alkylene radicals;

said mordant being ballasted with at least one substituent having at least 8 carbon atoms.

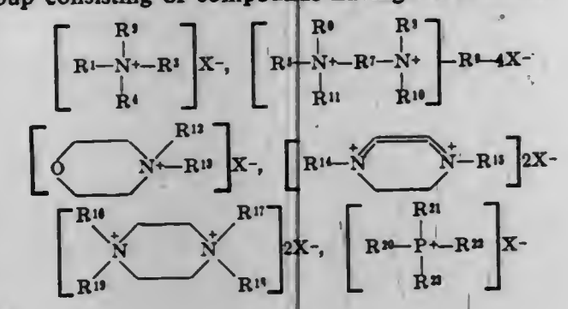
3,271,148
MORDANTING OF ACID DYES

Keith E. Whitmore, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

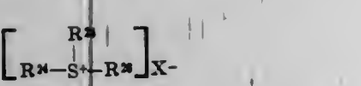
No Drawing. Filed July 19, 1962, Ser. No. 211,095
22 Claims. (Cl. 96—29)

11. In a photographic color diffusion transfer process wherein an acid dye is transferred imagewise by diffusion to a mordanting reception layer, the improvement which comprises utilizing as said reception layer a layer compris-

ing a hydrophilic organic colloid containing substantially uniformly dispersed therein finely divided droplets of a crystalloidal, water-immiscible, organic solvent boiling above about 175° C. containing dissolved therein a non-polymeric organic cationic mordant for said acid dye at a ratio of said mordant to said solvent of about 1/.25 to 1/2 by weight, said mordant being selected from the group consisting of compounds having the formula



and



wherein:

A. R^1, R^2, R^5, R^6, R^8, R^{10}, R^{11}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}, R^{24}, and R^{25} are alkyl radicals,

B. R^3 is selected from the group consisting of

(1) an amino radical,

(2) an alkyl radical, and

(3) a cyclohexyl radical,

C. R^4, R^{12}, R^{13}, R^{23} and R^{26} are selected from the group consisting of

(1) an alkyl radical, and

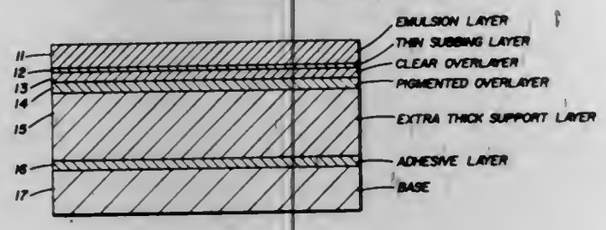
(2) a cyclohexyl radical,

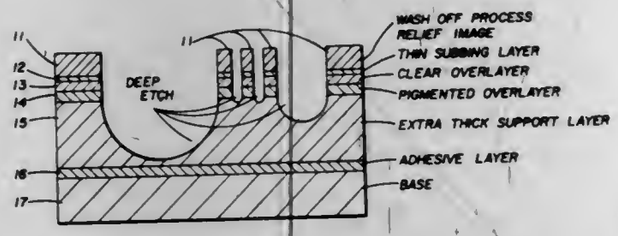
D. X is an acid anion, and

E. R^7 and R^9 are alkylene radicals;

said mordant being ballasted with at least one substituent having at least 8 carbon atoms.

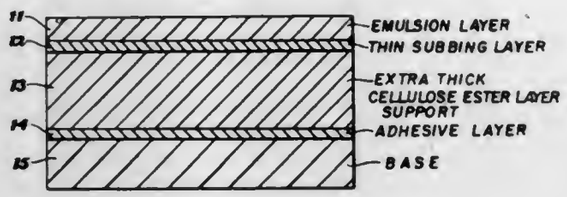
3,271,149
RELIEF PRINTING PLATE
Clemens B. Starck and Frederick J. Jacoby, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 27, 1964, Ser. No. 414,291
25 Claims. (Cl. 96—35)

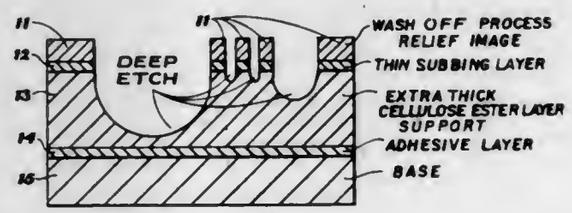




1. A photosensitive element for preparing plastic relief printing plates by etching the plastic imagewise with a semisolvent for the plastic, comprising an organic plastic support having a thickness of about 8 to 40 mils, having thereon at least one thin organic plastic overlayer of less solubility in the semisolvent than the support, having thereon a gelatino silver halide, light sensitive emulsion strongly adhered to the overlayer by means of a thin subbing layer no thicker than that having a coverage of about 0.020 g./sq. ft. and capable of being etched imagewise by a semisolvent for the plastic.

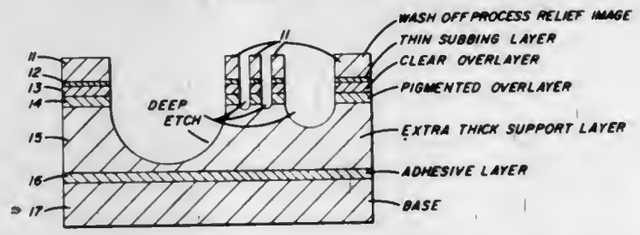
3,271,150
PHOTOGRAPHIC PRINTING PLATE
Carlton D. Baxter and Henry C. Staehle, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 1, 1963, Ser. No. 269,345
20 Claims. (Cl. 96—36.3)





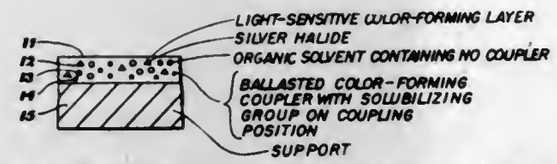
16. A process for preparing printing plates having raised printing surfaces free of undercutting in the support portions thereof which comprises developing with a silver halide tanning developer an exposed substantially unhardened silver halide emulsion attached to a cellulose acetatebutyrate support having a thickness of 0.010 to 0.020-inch by a thin subbing layer no thicker than that having a coverage of about 0.012 g./sq. ft. and capable of being readily etched imagewise by a semisolvent for the cellulose acetatebutyrate, removing the unexposed portions of the emulsion to form a resist image in hardened gelatin, etching the exposed areas of the cellulose acetatebutyrate support by repeated cycles of (1) etching with semisolvent, (2) removing the semisolvent and (3) drying.

3,271,151
PHOTOGRAPHIC RELIEF PRINTING PLATE
Henry C. Staehle and Albert C. Smith, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 8, 1965, Ser. No. 431,035
26 Claims. (Cl. 96—36.3)



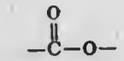
21. A relief printing plate having an image thereon comprising an organic plastic support having a thickness of about 8–40 mils in the image areas, laminated to a base, capable of being readily etched imagewise by a semisolvent for the plastic, having a gelatino-silver image layer containing inert particulate solid matter of a high degree of hardness, adhered to the image areas of the uppermost overlayer by means of a thin subbing layer no thicker than that having a coverage of about 0.020 g./sq. ft. and capable of being readily etched imagewise by said semisolvent for the organic plastic, said plate having the organic plastic etched to a depth of at least 0.005 inch in the deepest of the non-image areas of the organic plastic support by repeated cycles of (1) etching with said semisolvent for the organic plastic, (2) removing the semisolvent and (3) drying to form a relief image with line or dot areas substantially free from undercutting.

3,271,152
LIGHT-SENSITIVE ELEMENTS FOR COLOR PHOTOGRAPHY AND PROCESS THEREFOR
Wesley T. Hanson, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 4, 1962, Ser. No. 220,979
13 Claims. (Cl. 96—56.5)



12. A process for forming a color image in a hydrophilic colloid silver halide emulsion layer comprising the steps of

(1) imagewise conversion of a molecular dispersion of a nondiffusing hydrophilic color forming coupler compound in said layer, said coupler having a removable water-solubilizing group attached to said coupler on one of the positions (a) a carbon atom in the coupling position and (b) a carbon atom adjacent to the carbon atom in the coupling position through a



radical, and a hydrophobic ballasting group substituted on a non-coupling position of said coupler, to a hydrophobic dye image by reaction with an imagewise distribution of an oxidized primary aromatic amine color developing agent and

(2) solution of the said hydrophobic dye image in contiguous coupler-free hydrophobic high-boiling, water-immiscible organic solvent having a boiling point above about 175° C., that is dispersed in the said layer so that substantially all of the said dye image is removed from reactive contact with the residual coupler which is insoluble in the said solvent and remains in the hydrophilic phase of the said emulsion layer.

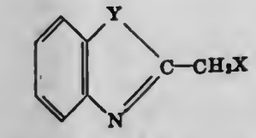
3,271,153
PHOTOGRAPHIC PROCEESSING BATHS FOR STABILIZATION PROCESSING
Ronald H. Miller and Martin A. Foos, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Jan. 18, 1963, Ser. No. 252,305
6 Claims. (Cl. 96—61)

1. A method of rapid processing light-sensitive silver halide emulsion comprising developing an exposed emulsion with a silver halide developer, fixing with a silver halide solvent to remove unexposed silver halide, and stabilizing by imbibing into the emulsion a stabilizing bath containing about 15–40 percent by weight of a mixture of mono- and di-basic salts of phosphoric acid and about 2–20 percent by weight of a sulfite salt.

4. A bath for stabilization of developed and fixed photographic silver halide emulsions comprising about 37 to 83 percent by weight of an aqueous solvent, about 15 to 40 percent by weight of a mixture of mono- and di-basic salts of phosphoric acid and about 2–20 percent by weight of a sulfite salt.

3,271,154
ANTIFOGGING AND STABILIZING AGENTS FOR PHOTOGRAPHY
Fritz Dersch and Millet R. De Angelus, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 30, 1961, Ser. No. 156,151
10 Claims. (Cl. 96—66)

10. A photographic developer containing a developing agent and an antifoggant characterized by the general formula:



wherein X represents a halogeno radical selected from the group consisting of chlorine, bromine and iodine, and Y represents members selected from the group consisting of O, S and NH.

3,271,155
THERMO-DEVELOPABLE DIAZO COATINGS EMPLOYING DICYANDIAMIDE COMPOSITIONS
Claude M. Aebi, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 27, 1962, Ser. No. 247,513
7 Claims. (Cl. 96—75)

1. A light-sensitive heat-developable diazonium composition comprising a light-sensitive diazonium salt, a diazo coupler, a diazonium stabilizing acid and a dicyandiamide composition selected from at least one member of the group consisting of dicyandiamide, dodecyldicyandiamide, cyclohexyldicyandiamide, o-tolyldicyandiamide, p-tolyldicyandiamide, dicyandiamide formaldehyde, dicyandiamide acetaldehyde, dicyandiamide paraformaldehyde, and dicyandiamide benzaldehyde.

3,271,156
PHOTOGRAPHIC ELEMENT
George W. Sawdey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 27, 1965, Ser. No. 494,301
6 Claims. (Cl. 96—84)

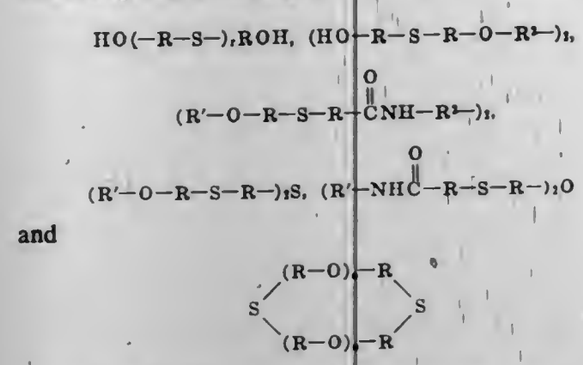
1. A photographic element having a dye image protected against ultraviolet radiation by a transparent overcoating containing a non-fluorescing ultraviolet absorber having an acenaphthenotriazole nucleus.

3,271,157
LIGHT-DEVELOPABLE DIRECT-PRINT SILVER HALIDE EMULSIONS
Clarence E. McBride, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation of abandoned application Ser. No. 222,964, Sept. 11, 1962. This application Apr. 29, 1965, Ser. No. 452,009
20 Claims. (Cl. 96—107)

1. A light-developable, direct-print silver halide emulsion containing silver halide grains formed in the presence of an organic thioether silver halide solvent, an aqueous solution of said thioether at a 0.02 molar concentration being capable of dissolving more than twice the amount of silver chloride than that which can be dissolved by water at 60° C.

3. A light-developable, direct-print silver halide emulsion containing silver halide grains formed in the presence of an organic thioether silver halide solvent, an aqueous solution of said thioether at a 0.02 molar concentration being capable of dissolving more than twice the amount of silver chloride than that which can be dissolved by water

at 60° C., and said thioether having a formula selected from the group consisting of



and

wherein R is an alkylene radical having 1 to 5 carbon atoms, R' is an alkyl radical having 1 to 5 carbon atoms, R^2 is an alkylene radical having 1 to 5 carbon atoms, *r* is an integer of 1 to 3 and *s* is an integer of 1 to 2.

20. A light-developable, direct-print silver halide emulsion containing silver halide grains formed in the presence of lead ions and an organic thioether silver halide solvent, an aqueous solution of said thioether at a 0.02 molar concentration being capable of dissolving more than twice the amount of silver chloride than that which can be dissolved by water at 60° C.

3,271,158
PHOTOGRAPHIC SILVER HALIDE EMULSIONS HAVING HIGH WET DENSITY RETENTION
Norman Allentoff and Louis M. Minsk, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 9, 1963, Ser. No. 301,177
5 Claims. (Cl. 96—114)

1. A photographic gelatino-silver halide emulsion containing 5% to 50% by weight based on the said gelatin in said emulsion of a water-soluble polyacrylamide having an inherent viscosity of .1 to .6 as determined at 25° C. in water, said silver halide comprising a substantial amount of silver bromoiodide having .5 to 10 mole percent iodide and a mean grain size of at least .4 micron.

3,271,159
FEED COMPOSITIONS CONTAINING SODIUM N-GLYCOLYLARSANILATE AND METHOD OF USE
Emery W. Dennis and Aaron Arnold, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 26, 1962, Ser. No. 182,647
10 Claims. (Cl. 99—2)

1. A composition for promoting the growth and improving the appearance and feed conversion of poultry without leaving toxic levels of trivalent inorganic arsenic in the tissues of the animals which comprises a poultry feed having dispersed therein as an effective growth-promoting, appearance-improving, and feed conversion-improving ingredient sodium N-glycolylarsanilate.

3,271,160
PROCESS FOR PREPARING FEED FROM UNDECORTICATED OIL FREE SAFFLOWER SEED RESIDUE
George A. Kopas, San Francisco, and John A. Kneeland, Menlo Park, Calif., assignors to Pacific Vegetable Oil Corporation, San Francisco, Calif., a corporation of California
Filed May 27, 1963, Ser. No. 283,400
9 Claims. (Cl. 99—2)

1. A process of preparing a high-protein feed product from the dried undecorticated oil-free solvent-extracted residue of safflower seeds, comprising the steps of

(a) impacting the said residue so as to detach the meat particles from the hull particles and also to break up the meat particles to a greater degree than the hull particles, and

(b) separating a finer portion of higher protein value from a coarser portion of lower protein value.

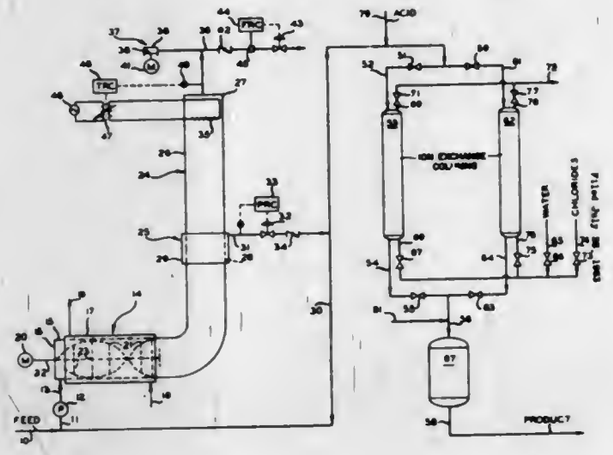
3,271,161
POULTRY FEED CONTAINING ABOUT 1% DIATOMACEOUS EARTH
John C. Eshleman, Box 9, Greencastle, Pa.
No Drawing. Filed June 22, 1964, Ser. No. 377,099
5 Claims. (Cl. 99—4)

1. A complete poultry feed consisting essentially of a mixture of conventional poultry feed nutrients and additives and about 1% of diatomaceous earth.

3,271,162
PROCESS FOR SEGREGATING LUPULIN FROM DRIED HOPS
Laurence R. Bishop, Mortlake, England, assignor to Watney Combe Reid & Company Limited, London, England
Filed Mar. 20, 1963, Ser. No. 266,654
Claims priority, application Great Britain, Mar. 21, 1962, 10,797/62
2 Claims. (Cl. 99—50.5)

1. A process for segregating lupulin from dried hops, which comprises the steps of disintegrating the hops in a pin mill, and sifting the lupulin from the discarded plant tissue in a turbo-sifter.

3,271,163
REMOVAL OF RADIOACTIVE MATERIAL FROM MILK BY ION EXCHANGE
Emil A. Malick, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 28, 1963, Ser. No. 254,121
3 Claims. (Cl. 99—60)



1. A method for the removal of radioactive material from milk which comprises passing the milk through a cooling zone and therein cooling the milk to produce a slurry of ice crystals in mother liquor, passing said slurry through a filtering zone from which a stream of mother liquor is withdrawn as a first product stream, passing the crystals and any remaining mother liquor from said filtering zone through a reflux zone and into a melting zone, introducing heat into said melting zone to melt the crystals to obtain a melt, withdrawing a portion of the melt from said melting zone as a second product stream, passing the remainder of the melt countercurrently to the movement of crystals through said reflux zone as reflux

therefor and passing said first product stream through an ion exchange zone, said ion exchange zone containing a material which selectively accepts the ions of radioactive materials contained in said first product stream, recovering milk from said ion exchange zone in a concentrated form and substantially free of radioactive material, and reconstituting the thus recovered concentrated milk from said ion exchange zone to produce milk having a lower concentration of radioactive material than that obtainable by passing unconcentrated milk through said ion exchange zone.

3,271,164
ADDITIVE FOR BAKED GOODS TO RETARD STALING
John Jean Richard Andt, Elmhurst, N.Y., assignor to Stein, Hall & Co., Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 13, 1964, Ser. No. 337,140
8 Claims. (Cl. 99—90)

1. An additive for baked goods consisting essentially of karaya gum and from 2% to 20%, based on the weight of the additive of a material selected from the group consisting of algins and carrageenans.

3,271,165
POWDER PRODUCED FROM BUTTER OR OTHER EDIBLE FATS
Poul Martin Trøst Hansen, Cheltenham, Victoria, and Lois Linton-Smith, Lower Plenty, Victoria, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a corporation
No Drawing. Filed May 13, 1963, Ser. No. 280,122
19 Claims. (Cl. 99—118)

1. In a method of making an edible fat-containing composition in powder form suitable for use as a shortening material, the steps of homogenizing an edible cream in the form of a fat-in-water dispersion containing non-fat milk solids and at least 35% water, mixing said cream with additional non-fat milk solids and with an edible fat-soluble emulsifying agent in an amount sufficient to cause partial de-emulsification of the final product but not exceeding 25% of the total non-fat solids to form a fat-in-water dispersion system having a fat content comprising at least 80% of the total solids present in the dispersion, spray-drying the mixture without breaking down the structure thereof to form a powder, cooling the spray-dried powder and blending it with at least ½% of a finely divided physiologically acceptable agent to confer free-flowing properties on the powder, the mixing of the emulsifying agent with the other ingredients not involving a homogenizing treatment, whereby a partial de-emulsification takes place when water is added to the dried powder.

3,271,166
COOKING FAT COMPOSITION
Geert Jan Van Leeuwen, Capelle aan den Ijssel, Aart Mijnders, Vlaardingen, and Gerhardus Wilhelmus Boot, Barendrecht, Netherlands, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Aug. 5, 1963, Ser. No. 300,097
Claims priority, application Great Britain, Aug. 10, 1962, 30,765/62
7 Claims. (Cl. 99—118)

1. A substantially water-free composition suitable for use as a cooking fat, said composition being composed substantially of an edible fat containing dispersed therein 0.2 to 8% of whey powder and 0 to *n* percent of milk powder, where *n* is not more than 2% of the composition and not more than the proportion of whey therein, all these percentages being based on the weight of the composition, no other non-fat milk solids being present.

3,271,167
BEEF-TYPE FLAVORING COMPOSITION, SOUP AND GRAVY
Marcel A. Perret, Greenwich, Conn., and John Raymond McMahan, Freeport, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 17, 1963, Ser. No. 288,518
6 Claims. (Cl. 99—140)

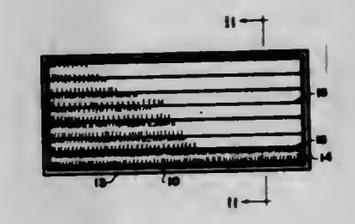
1. A flavoring composition comprising:

(a) a compound selected from the group consisting of α-ketobutyric acid and its physiologically-acceptable salts thereof;

(b) a compound selected from the group consisting of inosinic acid and physiologically-acceptable salts thereof in an amount to provide from about 4 to about 100 parts by weight based on said α-ketobutyrate; and

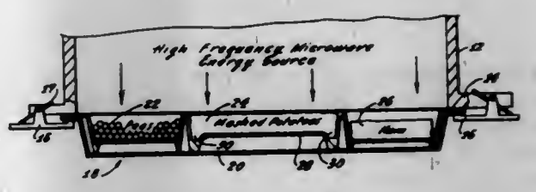
(c) a compound selected from the group consisting of glutamic acid and physiologically-acceptable salts thereof in an amount to provide from about 20 to about 1500 parts by weight based on said α-ketobutyrate and from about 5 to about 15 parts by weight based on said inosinate.

3,271,168
HUMIDIFICATION OF SHIRRED ARTIFICIAL SAUSAGE CASINGS
Clarence M. Alsys, 203 Denvale Drive, Danville, Ill.
Filed Nov. 15, 1965, Ser. No. 507,751
17 Claims. (Cl. 99—176)



1. A plurality of shirred artificial sausage casings disposed in layers, said casings having a predetermined initial moisture content, moisture absorbent material disposed in contact with substantially all of said casings and containing sufficient moisture initially to humidify said casings to a predetermined higher moisture content, and a moisture-proof container enclosing said layers of shirred casings and moisture absorbent material.

3,271,169
FOOD PACKAGE FOR MICROWAVE HEATING
Berkley J. Baker, Sunnyvale, and Edward Z. Krajewski, Belmont, Calif., assignors to Litton Precision Products, Inc., a corporation of Delaware
Filed Feb. 1, 1963, Ser. No. 255,640
5 Claims. (Cl. 99—221)



1. A food package for microwave heating applications comprising a container having a base and sides and in-

ternally divided into a plurality of sections for receiving different types of foods, an electrically conducting material of continuous sheet like form being provided at one of the base or sides of the container, a first food portion requiring the application of higher intensity microwave energy located in one of said sections and spaced by a given electrical distance from said conducting material, a second food portion requiring the application of substantially lower intensity microwave energy located in a different section and electrically spaced substantially closer to said conducting material, dielectric support means within said container for spacing said first and second food portions at said different electrical distances, said container adapted to be exposed to microwave energy in a direction through said food portions toward said conducting material whereby said food portions spaced electrically closer to said conducting material are heated to lower temperatures than said food portions spaced further from said conducting material.

3,271,170

TRACTION INCREASER COMPRISING POLYDIHYDROQUINOLINES AND ROSIN

Richard E. Ahlberg, Bay City, and Joseph E. Schrems, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,609
7 Claims. (Cl. 106—36)

1. A method for increasing the traction of a rubber surface on ice and snow which comprises applying to said rubber surface a liquid composition which consists essentially of a solution in a substantially water-miscible lower aliphatic organic solvent of a material consisting essentially of about 20–100% by weight of polymerized 2,2,4-trimethyldihydroquinoline and about 80–0% of rosin.

3,271,171

GRAY CERAMICS CONTAINING A CALCINED MIXTURE OF ALUMINUM AND VANADIUM COMPOUNDS

Aladar Burgyan, Cleveland, and Werner Votava, Broadview Heights, Ohio, assignors to Ferro Corporation, Cleveland, Ohio

No Drawing. Filed June 16, 1965, Ser. No. 464,541
10 Claims. (Cl. 106—39)

5. As an article of manufacture, a gray fired ceramic body which derives its gray color from a heat stable gray pigment which is the unfused calcination product of a combination of aluminum and vanadium compounds, said gray pigment present in said ceramic body in an amount from about 0.5 to about 15.0 parts thereof based on the weight of said casting body, said pigment deriving its pigmentation effect from the presence therein of the oxide equivalents, respectively, of vanadium, expressed as V_2O_5, in from about 0.5 to about 20 parts by weight, and aluminum, expressed as Al_2O_3, in from about 80 to about 99.5 parts by weight, said parts by weight based on the total pigment composition taken as 100 parts by weight, said color imparted to said article having improved stability and durability.

3,271,172

DOLOMITE BRICK AND METHOD OF MAKING IT

William H. Powers, Franklin Township, Westmoreland County, and Charles K. Russell, Monroeville, Pa., assignors to United States Steel Corporation, a corporation of New Jersey

No Drawing. Filed Mar. 3, 1965, Ser. No. 436,951
4 Claims. (Cl. 106—61)

1. A refractory brick consisting of dead-burned dolomite and strontium oxide, the content of the latter being about 1 to 5 percent.

3,271,173

PREPARATION OF ALUMINA MONOFILAMENTS

Robert J. Lockhart and Eugene Wainer, Shaker Heights, Ohio, assignors to Horizons Incorporated, a corporation of New Jersey

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,442
6 Claims. (Cl. 106—65)

6. A monofilament having a diameter of about 20 microns and consisting essentially of $Li_2O \cdot 5Al_2O_3$ spinel.

3,271,174

PROCESS FOR PREPARING PHOTOGRAPHIC GELATIN

Guenther H. Klinger, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 26, 1963, Ser. No. 276,040
4 Claims. (Cl. 106—125)

1. The process of preparing inert photographic gelatin which contains an active sulfur sensitizer, which comprises desensitizing the gelatin without a substantial change in its physical properties by treating the gelatin containing said sensitizer with 0.01 to 1% by weight, based on the gelatin, of an unsaturated thiolophilic compound capable of forming an addition compound with a mercapto compound and having at least one activated double bond and selected from the group consisting of N-aryl maleimides, N-alkyl maleimides, vinyl ethers, vinyl esters, dihydropyranes, dihydrofuranes, ethylvinylsulfone, divinyl sulfone, 2,5-diethyleneimine-quinone and ortho iodosobenzoic acid to render said sulfur inert.

3,271,175

AZIRIDINYL PHOSPHONITRILE GELATIN HARDENING AGENT

Donald M. Burness and Melvin D. Sterman, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 4, 1963, Ser. No. 328,102
6 Claims. (Cl. 106—125)

1. A composition of matter comprising gelatin containing in hardening amount an aziridine derivative of a cyclic phosphonitrile in which the aziridine groups are linked to phosphonitrile by N—P bonds.

3,271,176

COMPOSITION OF MATTER COMPOSED OF A CYANOETHYLATED CELLULOSIC MATERIAL AND AN INORGANIC PHOTOCHROMIC MATERIAL

John A. Chopoorian, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 21, 1962, Ser. No. 239,324
13 Claims. (Cl. 106—193)

1. A composition of matter consisting essentially of a cyanoethylated cellulosic material having uniformly dispersed throughout the body thereof from about 1.0% to 70%, by weight, based on the weight of said material, of an inorganic photochromic material selected from the group consisting of (A) TiO_2 doped with an oxide selected from the group consisting of Fe_2O_3, FeO, Cr_2O_3, CuO, NiO, MnO_2, Mn_2O_3, mixture of Fe_2O_3 and NiO, a mixture of Fe_2O_3 and CuO, a mixture of FeO and NiO and a mixture of FeO and CuO, (B) Nb_2O_5 doped with an oxide selected from the group consisting of Fe_2O_3, FeO, Cr_2O_3, CuO, V_2O_5, MnO_2 and Mn_2O_5, (C) Al_2O_3 doped with an oxide selected from the group consisting of Cr_2O_3 and V_2O_5, (D) ZnO_2 doped with an oxide selected from the group consisting of CuO and V_2O_5, (E) SnO_2 doped with CuO, (F) ZrO_2 doped with an oxide selected from the group consisting of CuO and NiO, (G) TiO_2 heat-reacted with an oxide selected from the group consisting of MoO_3 and WO_3, (H) ZnO heat-reacted with an oxide selected from the group consisting of MoO_3 and WO_3, (I) ZrO_3 heat-reacted with an oxide selected from the group consisting of MoO_3 and WO_3, (J) SnO_2 heat-reacted with an oxide selected from the group consisting of MoO_3 and WO_3, and (K) GeO_2 heat-reacted with an oxide selected from the group consisting of MoO_3 and WO_3.

3,271,177

WAX COMPOSITIONS AND COATED ARTICLES

George G. Rumberger, Kalamazoo, Mich., assignor to KVP Sutherland Paper Company, Kalamazoo, Mich., a corporation of Delaware

Filed Apr. 30, 1965, Ser. No. 452,329
25 Claims. (Cl. 106—272)

1. A composition suitable for coating and laminating sheet materials consisting essentially of a petroleum wax base in an amount of about 55 to about 96.5 parts, a hydrous adsorbent inorganic powder, capable of a decrease of pore diameter upon dehydration, in an amount of about three to about thirty parts, and a surface activator which is a fatty acid amide having at least one aliphatic group of at least 8 carbon atoms in an amount of about one-half to about fifteen parts, said composition resulting from the admixture of the named ingredients under conditions which operate to expel water of hydration of the hydrous adsorbent powder in the presence of the wax base and the surface activator, and characterized by a thixotropic viscosity of from about 100 to about 10,000,000 centipoises when measured at about 220° F. to about 270° F. with a rotational viscometer at a spindle speed of less than ten r.p.m.

3,271,178

ADHERING LAYER TO POLYESTER FILM

Gale F. Nadeau and Clemens B. Starck, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 14, 1965, Ser. No. 497,602
10 Claims. (Cl. 117—7)

1. An aqueous coating composition for use in providing a highly adherent sub layer on a polyester film surface, said coating composition being comprised of, by weight, (1) from about 3 parts to 25 parts of a dihydroxy softening agent of polyester, (2) from about 0.5 part to 3 parts of gelatin, and, (3) from about 0.75 part to 4 parts of a vinylidene chloride copolymer.

7. In a method of preparing a composite film element for use in the manufacture of photographic film products the steps of which comprise (A) orienting a sheet of polyethylene terephthalate film, (B) coating said sheet on at least one surface thereof with an aqueous coating composition comprised of, by weight, (1) from about 3 parts to 25 parts of a dihydroxy softening agent for polyester, (2) from about 0.5 part to 3 parts of gelatin, (3) from about 0.75 part to 4 parts of a vinylidene chloride copolymer, and, (C) heating the coated sheet to provide a well-bonded composite element.

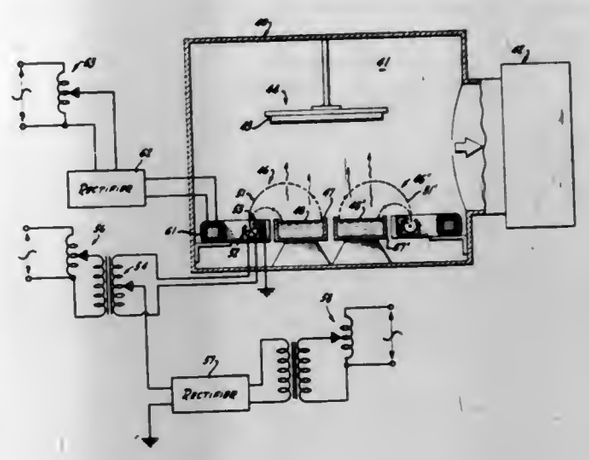
3,271,179

METHOD FOR THE MANUFACTURE OF AN OPTICAL FILTER

Hugh R. Smith, Jr., Piedmont, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California

Filed Sept. 24, 1962, Ser. No. 225,555
4 Claims. (Cl. 117—33.3)

1. A method for the manufacture of an optical filter which includes a light filtering coating on the surface of an optical substrate comprising, vaporizing at least two materials having different refractive indexes by electron bombardment of the surfaces thereof in a high vacuum to form a vapor mixture of said materials, condensing said



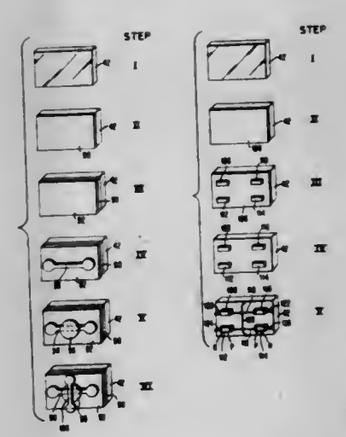
vapor mixture on the surface of an optical substrate to form a coating thereon, and controlling the intensity of the electron bombardment of the surface of said materials in order to control the composition of said vapor mixture.

3,271,180

PHOTOLYTIC PROCESSES FOR FABRICATING THIN FILM PATTERNS

Peter White, Shenorock, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 19, 1962, Ser. No. 205,821
13 Claims. (Cl. 117—38)

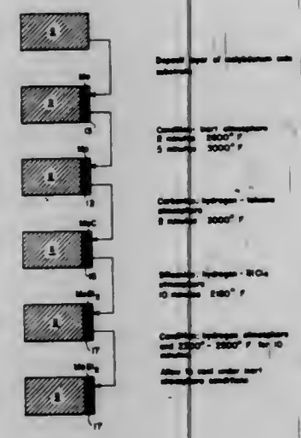


1. A method of forming a thin film of material in a precise geometric pattern upon the surface of a rigid substrate positioned within a chamber comprising the steps of introducing into said chamber a vapor of a material capable of being photolytically reacted; said vapor capable of being photolytically reacted in the gas phase by light of a first predetermined wavelength and when adsorbed upon said substrate surface by light of a second predetermined wavelength; controlling the pressure of said vapor to form an adsorbed layer of said vapor upon said substrate surface; and directing light of said second predetermined wavelength through said chamber and onto said substrate surface to react said adsorbed layer in said geometric pattern; said vapor when reacted forming a thin film of said material on said substrate surface.

3,271,181
METHOD OF COATING CARBONACEOUS BASE TO PREVENT OXIDATION DESTRUCTION AND COATED BASE

Robert A. Jewell and Noel T. Wakelyn, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed May 29, 1963, Ser. No. 284,266
5 Claims. (Cl. 117—46)



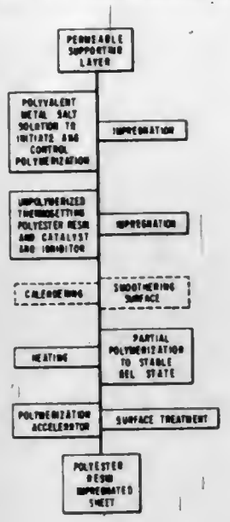
1. An article of manufacture comprising:
a carbonaceous member having
an oxidation protective coating integrally formed on an exposed surface thereof,
said coating being essentially molybdenum disilicide and being formed by (a) depositing a layer of molybdenum onto an exposed surface of said carbonaceous member, (b) conditioning the coated member at an elevated temperature and in an inert gaseous environment, (c) carbonizing said coating under said elevated temperature condition, (d) siliconizing said coating in the presence of an excess of hydrogen while maintaining said elevated temperature condition, (e) further conditioning said coating in the presence of hydrogen in the temperature range of 2300–2500° F. for approximately ten minutes, and (f) cooling the coated base to room temperature in an inert gaseous atmosphere.

3,271,182
PROCESS FOR PRODUCING SHEETS OF REINFORCED POLYESTER RESIN

Pierre Paul William Varlet, Asnieres, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, Seine, France, a corporation of France

Filed Aug. 3, 1962, Ser. No. 214,522
Claims priority, application France, Nov. 26, 1958, 780,144, Patent 1,223,346; Sept. 21, 1959, 805,633, Patent 76,338
15 Claims. (Cl. 117—47)

1. Process for the manufacture of reinforced polyester resin sheets capable of being shaped mechanically, which comprises the steps of first impregnating a supporting layer of a permeable reinforcing material with a solution in a diluent selected from the group consisting of a polyhydric alcohol and a vinyl monomer, of a polyvalent metal salt soluble in said diluent, said polyvalent metal being selected from the group consisting of tin, iron, zinc, boron, cobalt and manganese, said salt being capable of initiating and then controlling the polymerization of said polyester resin upon heating below a predetermined temperature, then impregnating said impregnated reinforcing material with a mixture of an unpolymerized thermosetting polyester resin and a polymerization catalyst therefor not substantially activated by said predetermined temperature and a sufficient amount of an alkylated phenol to inhibit polymerization, then heating said impregnated material to a temperature within the limit of said predetermined temperature to initiate polymerization and to cause said

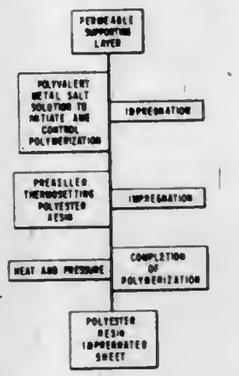


resin to go to a partially polymerized and stable gel state by the action of said polymerization initiating and controlling salt.

3,271,183
PROCESS FOR PRODUCING SHEETS OF REINFORCED POLYESTER RESIN

Pierre Paul William Varlet, Asnieres, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, France, a company of France

Filed Aug. 3, 1962, Ser. No. 214,523
Claims priority, application France, Dec. 3, 1958, 780,703, Patent 1,217,742
15 Claims. (Cl. 117—47)



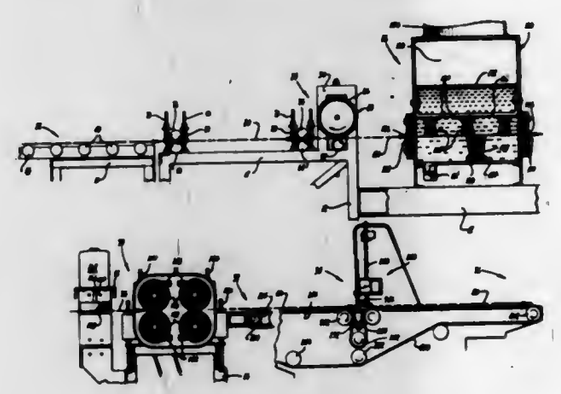
1. Process for the manufacture of reinforced polyester resin sheets capable of being shaped mechanically, which comprises the steps of first impregnating a supporting layer of a permeable reinforcing material with a solution in a diluent comprising at least one member selected from the group consisting of a polyhydric alcohol, a lower aliphatic alcohol, and a vinyl monomer, of a polyvalent metal salt soluble in said diluent, said polyvalent metal being selected from the group consisting of tin, iron, zinc, boron, cobalt and manganese, said salt being capable of initiating and then controlling the polymerization of said polyester resin upon heating below a predetermined temperature, then impregnating said impregnated reinforcing material at least partially with a thermosetting polyester resin which is in a pregelled state in which it is stable at ambient temperature, said resin having been previously brought to said pregelled state by admixing with a catalyst adapted to permit initiating of polymerization, with said polyvalent metal salt solution,

and with a sufficient amount of an alkylated phenol to inhibit further polymerization and to maintain the resin in said pregelled state.

3,271,184
METHOD AND APPARATUS FOR THE CONTINUOUS APPLICATION OF COATINGS TO STRIP MATERIALS

Nicholas V. Poletika and Rodrick E. Black, Fort Bragg, Calif., assignors to Union Lumber Company, San Francisco, Calif., a corporation of California

Filed Sept. 26, 1962, Ser. No. 226,212
17 Claims. (Cl. 117—65.2)

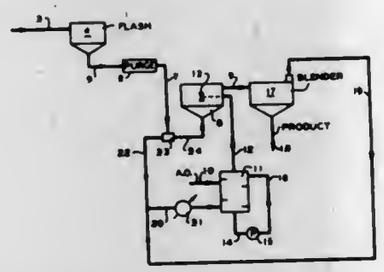


13. In a rapid, continuous method for the application of coating materials to elongated units of lumber without any intermediate drying step, the steps of immersing said units of lumber in successive baths of coating material under conditions of controlled hydrostatic pressure, subjecting the top and bottom surfaces of said units of lumber to brushing while immersed in said coating baths to force the coating material into said top and bottom surface layers, simultaneously wiping the top and bottom surfaces of said units of lumber as they are discharged from said coating baths to remove excess coating material, buffing all coated surfaces of said units of lumber discharged from the last of said coating baths to remove any remaining coating material not adsorbed into and onto the surfaces thereof, and drying the successive units of lumber.

3,271,185
POLYMER STABILIZATION

Lyle W. Pollock, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 1, 1963, Ser. No. 299,225
7 Claims. (Cl. 117—100)



1. In a process for the production of stabilized solid polymer particles wherein said polymer particles are obtained by flash vaporization in a flash zone of a stream containing polymer in a vaporized liquid diluent and removing the resulting vaporized diluent therefrom as effluent, the improvement which comprises uniformly coating the resulting solid polymer particles in said flash zone with an organic antioxidant for said polymer by contacting said polymer particles with a stream comprising vapors of said antioxidant composition and a portion of said vaporized diluent as carrier for the vaporized antioxidant composition.

3,271,186
METHODS FOR MAKING ASBESTOS FIBER PRODUCTS

Thomas H. Sadler, Middlesex, and George P. Reimschussel, Flemington, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

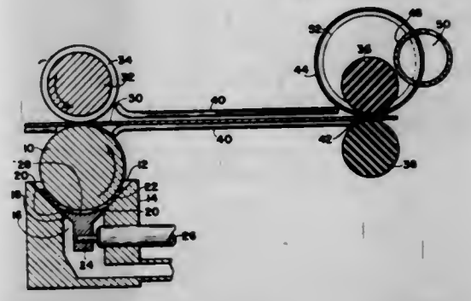
Filed Dec. 23, 1963, Ser. No. 332,566
8 Claims. (Cl. 117—100)

1. Method for manufacturing an asbestos fiber product comprising:
(a) mixing together asbestos fiber and hydromodifier and moving said mixture in a predetermined direction,
(b) adding to the moving mass of asbestos fibers and hydromodifier atomized droplets of water to swell said hydromodifier and to coat at least portions of said asbestos fibers with said water swollen hydromodifier, and
(c) drying and collecting said coated asbestos fibers.

3,271,187
PROCESS FOR CONDITIONING WRINGER ROLLS WHICH TREAT ONE-SIDE-COATED SHEET MATERIAL

Richard J. Chen, Brockton, and Nicholas Gold, Arlington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed May 17, 1965, Ser. No. 456,417
3 Claims. (Cl. 117—102)

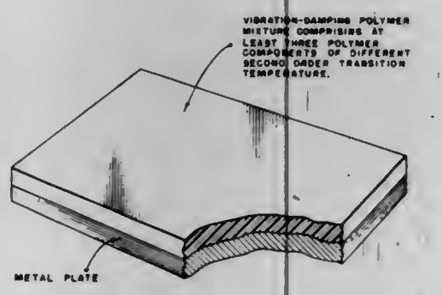


1. A method of treating one side of each of a succession of sheets with a liquid without wetting the opposite sides of said sheets comprising:
applying a liquid to one side of each of a succession of sheets for adsorption into said each sheet;
allowing a portion of said liquid to be absorbed into said each sheet;
removing excess liquid from said one side of said each sheet by moving said one side of said each sheet relative to a pressure roll while pressing said one side of said sheet against said pressure roll by pressing a perforated strip against the opposite side of the sheet and collecting liquid removed from said each sheet between said one side thereof and said pressure roll;
immediately following movement of said each sheet from contact with said pressure roll and prior to movement of the next succeeding sheet into contact with said pressure roll, removing from said pressure roll said liquid collected thereon by rotating said pressure roll against said perforated strip to entrap said liquid in the perforations in said strip; and
expelling said liquid from said perforations.

3,271,188
VIBRATION DAMPING POLYMER MIXTURE ON METAL PLATE

Walter Albert, Lothar Bohn, and Joachim Ebigt, Frankfurt am Main, Hermann Oberst, Hofheim, Taunus, and Horst Pfister, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed Sept. 7, 1960, Ser. No. 54,386
Claims priority, application Germany, Sept. 11, 1959, F 29,363
2 Claims. (Cl. 117—132)



1. A metal plate having on a surface thereof a layer of polymer mixture damping the vibration of said metal plate uniformly over a wide temperature range, the ratio of the mass of said layer of polymer mixture to the mass of said metal plate being from 0.20 to 0.25, said polymer mixture comprising at least three compatible externally unplasticized polymers having second order transition temperatures which differ from one another by from 10° C. to 200° C., the temperature range of vibration damping of said mixture being determined by the two polymer components thereof having the highest and lowest second order transition temperatures, and the uniformity of the damping throughout said temperature range being promoted by the presence of the at least one further polymer component having a second order transition temperature intermediate to said highest and lowest second order transition temperatures.

3,271,189
PROCESS OF TREATING SYNTHETIC FIBERS

Hugo Hofmann, Elizabethton, Tenn., assignor to Beaunit Corporation, a corporation of New York

No Drawing. Filed Mar. 2, 1962, Ser. No. 176,891
2 Claims. (Cl. 117—138.8)

1. As a new article of manufacture, polyester fiberfill with high, substantially permanent resiliency comprising crimped polyester fiberfill having a thin, solid coating of a methylpolysiloxane polymer cross-linked with a methylhydrogenpolysiloxane polymer.

3,271,190
ANTI-BLOCKING COMPOSITIONS AND SHEET MATERIAL TREATED THEREWITH

Gale F. Nadeau and Crayton B. Thompson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 6, 1962, Ser. No. 214,833
10 Claims. (Cl. 117—138.8)

1. As an article of manufacture a polyester sheet having applied to at least one surface thereof a composition comprising:
(A) an anionic surface active agent and
(B) from 1 part to 10 parts by weight for each part by weight of (A) of a compound selected from the group consisting of resorcinol, orcinol, catechol, pyrogallol, 1-naphthol, 2,4-dinitropbenol, 2,4,6-trinitrophenol, 4-chlororesorcinol, 2,4-dihydroxytolulene, 1,3-naphthalenediol, 1,6-naphthalenediol, acrylic acid, sodium salt of 1-naphthol-4-sulfonic acid, benzyl alcohol, trichloroacetic acid, o-hydroxybenzotrifluoride, m-hydroxybenzotrifluoride, o-fluorophenol, m-fluorophenol, p-fluorophenol, chloral hydrate, o-cresol, and mixtures of two or more.

3,271,191
METHOD OF MAKING MANGANESE FERRITE FILM FROM NITRATE SOLUTION

William L. Wade, Jr., Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army

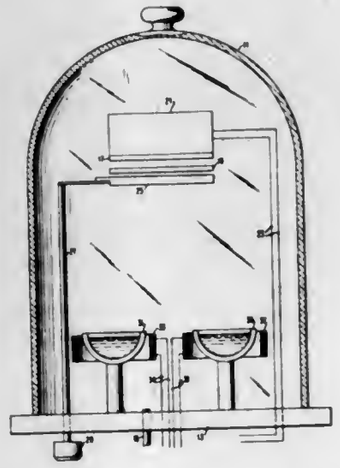
No Drawing. Filed Nov. 8, 1962, Ser. No. 236,459
3 Claims. (Cl. 117—169)

1. The method of making magnetic ferrite films comprising mixing an alcoholic solution of ferric nitrate with an alcoholic solution of metallic nitrate selected from the group consisting of manganese nitrate and manganese nitrate-magnesium nitrate in the stoichiometric proportion necessary to form the ferrite, immersing a substrate into the thus prepared solution, preliminarily firing the coated substrate at 400° C. to 700° C., cooling the coated substrate, repeating the immersion, preliminary firing and cooling steps until the desired amount of magnetic ferrite material is deposited in situ on the substrate, and firing the coated substrate at 800° C. to 1000° C. in an inert atmosphere for one to four hours to align the oxides formed to the spinel structure of the ferrite.

3,271,192
CAPACITORS AND PROCESS FOR MAKING SAME

Rudolf E. Thun, West Hurley, and Fred S. Maddocks, Kingston, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 5, 1962, Ser. No. 200,256
11 Claims. (Cl. 117—217)

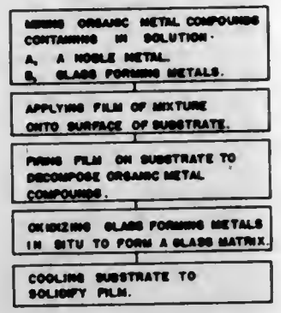


1. A process of producing a capacitor having a high dielectric constant, which comprises:
evaporating in a low pressure vacuum chamber an evaporant heated to a temperature of between 1350° C. and 1750° C., said evaporant consisting essentially of material selected from the group consisting of the rare earth fluorides and oxides and mixtures thereof, in contact with a metal having a high melting point, and condensing said evaporant on a conductive substrate to form a dielectric film over the conductive substrate;
and evaporating a conductive material and condensing the conductive evaporant on said dielectric film to form the conductive member of a capacitor.

3,271,193
ELECTRICAL RESISTANCE ELEMENT AND METHOD OF MAKING THE SAME

Otis F. Boykin, Chicago, Ill., assignor to CTS Corporation, Elkhart, Ind., a corporation of Indiana

Filed Sept. 20, 1962, Ser. No. 225,134
5 Claims. (Cl. 117—227)

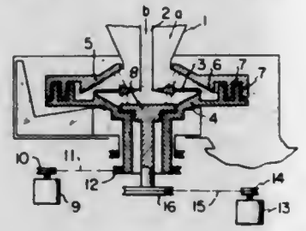


1. A method of manufacturing a resistive element comprising the steps of admixing a composition of a thermally decomposable organic metal compound containing at least one of the noble metals in solution and thermally decomposable glass-forming organic metal compounds in solution; applying a film of the composition onto the surface of a high-temperature-resistant, electrically nonconductive base; firing the mixture and the base at from 750–900° C. to thermally decompose the organic metal compounds; and cooling the film and the base to solidify the film.

3,271,194
SOLIDIFICATION OF SACCHARIDE SOLUTIONS

Hideo Oikawa, Yokohama-shi, Japan, assignor to Yokohama Seito Kabushiki Kaisha and Takara Kabushiki Kaisha, Tokyo-to, Japan

Filed July 24, 1964, Ser. No. 384,958
Claims priority, application Japan, Jan. 27, 1964, 39/3,565
3 Claims. (Cl. 127—60)



1. A method for the continuous solidification of sugar solutions which comprises the steps of: introducing solid phase sugar as seed onto a surface of revolution rotating at a high speed rendering said solid phase sugar into a continuous and uniform thin layer on said surface under the action of centrifugal force; introducing a liquid phase sugar onto another surface of revolution also rotating at high speed to render said solution into a continuous thin film, projecting said thin film from the edge of said another rotating surface onto said thin layer of solid phase sugar, mixing said solid and liquid phase sugars; and, simultaneously subjecting said mixed solid and liquid phase sugars to a gas flow to impart solidification thereto.

3,271,195
ELECTRODES AND METHODS OF MAKING SAME

Aldo S. Berchielli, New Hyde Park, N.Y., and Renato Di Pasquale, Rutherford, N.J., assignors to Yardney International Corp., New York, N.Y., a corporation of New York

No Drawing. Filed July 30, 1962, Ser. No. 213,103
5 Claims. (Cl. 136—67)

1. A method of making a composite electrode for a galvanic electrical generator, comprising the steps of:
(a) forming a viscous mixture of an electrochemically active comminuted material, a resinous binder, and between substantially 0.1 and 5% of said material, by weight, of randomly dispersed reinforcing fibers;
(b) shaping and pressing said mixture at room temperature into mechanically strong, stable, thin plates; and
(c) sandwiching a conductive grid provided with an electrode terminal between two of said plates to form an electrode assembly and then pressing the said assembly into a unitary composite electrode.

3,271,196
FUEL CELL ELECTRODES

Harry G. Oswin, Chauncey, N.Y., assignor to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

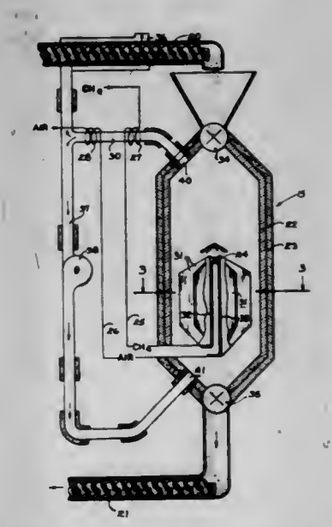
No Drawing. Filed Nov. 8, 1961, Ser. No. 150,902
3 Claims. (Cl. 136—86)

1. A fuel cell for the generation of electrical energy directly from a fuel and oxidant comprising an electrolyte, an oxidizing electrode, a fuel electrode, said electrodes being in contact with said electrolyte, and means for providing fuel cell reactants to said electrodes, at least one of said electrodes comprising a structure having elemental lithium uniformly dispersed at least at the surface of a radioactive host metal, said host metal being a member of the group consisting of Group I–B and Group VIII metals of the Mendelyeev's Periodic Table and said lithium being present in an amount of from 10–200 micrograms per square centimeter of surface area of said host metal, the radiation level of the radioactive host metal being in the range of from 1 microcurie to 10 millicuries per square centimeter of electrode surface.

3,271,197
PROCESS FOR PRODUCING ELECTRICITY AND FURNACE

Ernest H. Lyons, Jr., Box 37, Elsah, Ill.

Filed Apr. 24, 1962, Ser. No. 189,784
9 Claims. (Cl. 136—86)



1. In an energy conversion process where a lower metallic oxide is oxidized as an anode in an electrolytic cell with the production of electrical energy and the resultant higher metallic oxide is regenerated, a process wherein
said higher metallic oxide is introduced to and caused to flow downwardly in a regeneration zone wherein a fuel is burned in said zone with oxygen to supply heat for reducing said higher metallic oxide, largely to said lower metallic oxide with the resultant production of oxygen, the combustion products and most

of the produced oxygen being exhausted from said zone at a locus distant from the point where the fuel is burned, and wherein

a major amount of the oxygen so produced is recirculated to said zone and flowed through said zone countercurrently to said oxide and through the point where the fuel is burned, to supply a substantial portion of the oxygen needed for burning said fuel and to conserve the heat produced by burning said fuel and needed to produce the reduction of said higher metallic oxide, whereby the thermodynamic efficiency in said zone is markedly increased.

9. A regeneration oxide-reduction furnace, comprising

a generally cylindrical well-insulated vertically extending housing having at its upper end a first opening for exhausting combustion products and a second opening for introducing a material to be treated to the upper end of said furnace, said second opening including a valve,

means for feeding said material to said second opening,

a fuel-air nozzle in said housing having fuel and air inlet pipes, said pipes being provided with heat exchange means for heating the incoming fuel and air and for resultant cooling of the regenerated product,

the lower end of said housing including means for removing said material and a recycle opening,

conduit means connecting said first opening to said recycle opening near the bottom of said housing for recycling a portion of the exhaust gases, said conduit means conveying said portion of exhaust gases to said heat exchange means where said exhaust gases help to heat said incoming fuel and air, and

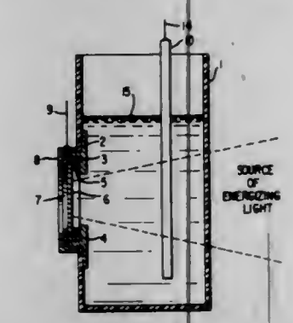
means in heat-exchange relationship with said feeding means, and conduit means for conveying another portion of said exhaust gases from said first opening to said heat exchange means.

3,271,198

ELECTROLYTIC SEMICONDUCTOR PHOTOCELL

Nicholas N. Winogradoff, Yorktown Heights, and Herbert K. Kessler, Mahopac, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 30, 1960, Ser. No. 79,753
1 Claim. (Cl. 136—89)



A semiconductor photovoltaic cell comprising:

containing means and an optically transparent solution of H_2SO_4 therein,

an element comprising a region of single crystal silicon semiconductor material having two major surfaces, one of said surfaces being etched to substantially reduce recombination of carriers, said element being disposed in said containing means so that said etched surface is in contact with said electrolyte and forms therewith an interface across which exists a surface barrier field, and so that said etched surface is exposable to light transmitted through said electrolyte thereto,

inert platinum electrode in ohmic contact with said electrolyte, and an electrical contact in ohmic contact with said other surface of said semiconductor, said electrode and electrical contact serving as the cell terminals.

3,271,199

SOLID ACID STORAGE BATTERY ELECTROLYTE

Hermann Beste and Alexander Koenig, Frankfurt am Main, Guenther Ryhiner, Bad Soden am Taunus, and Ernst Voss, Frankfurt am Main, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 14, 1963, Ser. No. 251,005
Claims priority, application Germany, Jan. 20, 1962, A 39,254; Jan. 23, 1962, A 39,263
4 Claims. (Cl. 136—157)

1. A gelled storage battery electrolyte consisting essentially of an aqueous sulfuric acid solution, pectin and colloidal silica, the electrolyte containing at least about .3% of pectin by weight of the sulfuric acid solution.

3,271,200

PROCESS FOR THE PRODUCTION OF SUPERCONDUCTIVE WIRES AND BANDS

Ulrich Zwicker, Aalen, Wurttemberg, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

No Drawing. Filed June 7, 1963, Ser. No. 286,151
Claims priority, application Germany, June 19, 1962, M 53,256
3 Claims. (Cl. 148—11.5)

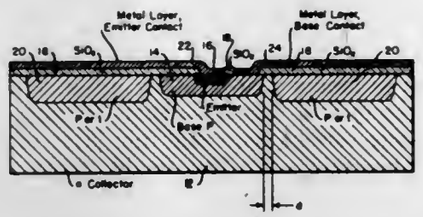
1. Method of producing superconductive wires and bands from titanium-niobium alloys composed of 20–45% by weight of niobium and the remainder titanium which comprises cooling down such an alloy from a temperature in the β phase region sufficiently rapidly that such β phase is retained and in addition a martensitic phase but no equilibrium α phase is produced, cold working such cooled alloy to wires and bands and subjecting such cold worked wires or bands to a heat treatment between 250 and 650° C., to cause the supersaturated β and martensitic phases therein to separate out.

3,271,201

PLANAR SEMICONDUCTOR DEVICES

Daniel I. Pomerantz, Lexington, Mass., assignor, by Telegraph Corporation, New York, N.Y., a corporation mesne assignments, to International Telephone and of Maryland

Filed Oct. 30, 1962, Ser. No. 234,108
2 Claims. (Cl. 148—33.3)



2. A planar transistor comprising:

a die of semiconductor material having a collector region of one conductivity type, at least a portion of said collector region being contiguous with a given surface of said die;

a base region of opposite conductivity type inset into said collector region, the surface of said base region being contiguous with said given surface;

an emitter region of said one conductivity type inset into said base region, the surface of said emitter region being contiguous with said given surface;

a layer of insulating material on said given surface having apertures therein to expose given parts of said base and emitter regions;

a metallic layer on said layer of insulating material overlying the contiguous portion of said collector region and contacting a given one of said emitter and base regions through a corresponding one of said apertures; and

an auxiliary region of said opposite conductivity type inset into and surrounded by said collector region, the surface of said auxiliary region being contiguous with said given surface and underlying said metallic layer thereby to reduce the capacitance between said metallic layer and said collector region.

3,271,202

PROCESS FOR PRODUCING SILICON-IRON THIN TAPES

Eleanor A. Freeman, Schenectady, and John L. Walter, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Dec. 18, 1963, Ser. No. 331,528
3 Claims. (Cl. 148—112)

1. The process for producing high purity silicon-iron thin tapes comprising providing a cold rolled tape of up to 6 mils thickness which compositionally consists of from about 1.5 to 4.0 weight percent silicon, remainder substantially all iron and containing not more than about 0.010 weight percent incidental impurities, annealing the tape at a temperature and for a time sufficient to form integral iron oxide film of up to 3000 A. thickness on the surface thereof, and subjecting the annealed tape to a final anneal in a vacuum no higher than about 1×10^{-4} mm./Hg at temperatures of from about 1100° C. to 1350° C. to develop the (110) [001] crystallographic orientation.

3,271,203

METHOD FOR PRODUCING ORIENTED SILICON-IRON

John L. Walter, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 16, 1962, Ser. No. 231,017
1 Claim. (Cl. 148—113)

In the method of producing cube-on-edge grain oriented strip the steps comprising, providing a rolled strip of final thickness, the strip compositionally consisting of from about 1.5 to 5.0 weight percent silicon, balance substantially all iron, and containing not more than about 0.2 weight percent incidental impurities and having no precipitated second phase to restrict grain growth, vapor depositing a continuous layer of silica over the exposed surfaces of the strip, and annealing the strip at a temperature of from about 950° C. to 1100° C. in an environment selected from the group consisting of vacuum no higher than about 10^{-4} mm. Hg and hydrogen having a dew point no higher than about —40° F., the annealing being effected for a time sufficient to orient a majority of the constituent grains in the (110) [001] crystallographic orientation.

3,271,204

LAMINATED CORES

John P. Glass, Ardmore, Pa., assignor to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware

Filed Nov. 29, 1957, Ser. No. 699,563
28 Claims. (Cl. 148—120)

28. In a method of making a lamination useful in a synchro, the steps comprising taking a ring-shaped lamination composed of 50% nickel and 50% iron, annealing said lamination at 1700° F., compressing selected areas of said lamination, which areas are spaced from each other throughout the lamination, so as to raise the lower knee of its permeability curve at 0.2 gilbert per centimeter of length to 4100 gausses, and to lower the upper knee of its permeability curve to 9,400 gausses at 0.5 gilbert per



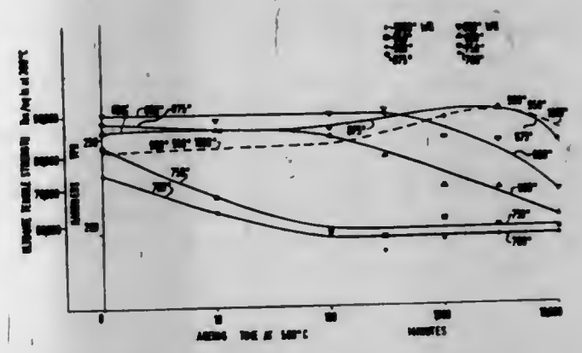
centimeter of length, to make the permeability curve of said lamination more linear.

3,271,205

ZIRCONIUM BASE ALLOYS

John Winton and Robert Murgatroyd, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 23, 1964, Ser. No. 353,790
Claims priority, application Great Britain, Mar. 27, 1963, 12,201/63
5 Claims. (Cl. 148—133)



1. A method for strengthening a zirconium base alloy containing niobium which comprises introducing oxygen into the alloy to give an oxygen content in the range 1000 to 2000 parts per million by weight, raising the alloy to a sufficiently high temperature to effect conversion predominantly to the beta phase quenching the alloy from that temperature, and subsequently ageing the alloy for a period in excess of two hours.

5. A binary alloy of zirconium with 1 to 4% by weight of niobium and having an oxygen content in the range 1000 to 2000 parts per million by weight, such alloy being predominantly of martensitically transformed beta phase with a fine dispersion of a second phase precipitate rich in niobium.

3,271,206

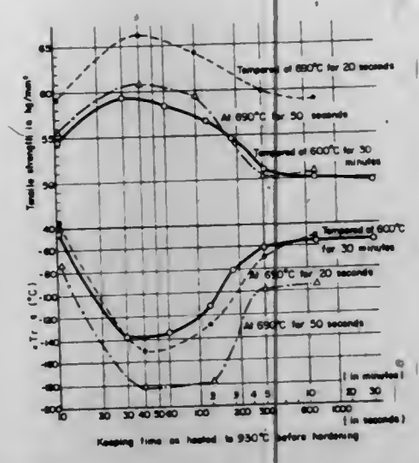
SHORT-TIME HEAT-TREATING PROCESS FOR STEELS

Susumu Goda, Hisashi Gondo, Suehiro Hiyoshi, and Asao Arima, Yawata, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan

Filed Feb. 26, 1963, Ser. No. 261,182
Claims priority, application Japan, Feb. 28, 1962, 37/7,895
4 Claims. (Cl. 148—143)

4. A heat treating process for steels comprising heating quickly a steel containing 0.10% C., 0.32% Si, 1.13% Mn the rest being Fe and the usual impurities to a temperature of 930° C. in a heating time of less than 100 seconds, holding said steel at said temperature for from 30 seconds to 2 minutes, quenching it so as to produce a fine grain hardened structure, than again heating quickly said steel to a temperature of from 600 to 690° C. in

a heating time of 100 seconds, holding it at said temperature for from 20 seconds to 3 minutes so that carbide



precipitations occur with no appreciable grain growth, and then cooling said steel.

3,271,207
HEAT TREATING PROCESS
Richard Davis, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Sept. 25, 1963, Ser. No. 311,304
14 Claims. (Cl. 148—143)

1. In a process for the heat treating of a material selected from glass and a metal to change the physical characteristics thereof the step comprising heating said material to a temperature below its melting temperature and thereafter cooling said material by contacting with a medium comprising chlorinated biphenyl.

3,271,208
PRODUCING AN N+N JUNCTION USING ANTIMONY
John E. Allegretti, East Brunswick, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
Filed Dec. 29, 1960, Ser. No. 85,173
2 Claims. (Cl. 148—175)

1. A method of forming by vapor deposition an N+N single crystal silicon semiconductor body including a substrate layer of single crystal silicon semiconductor material of N-conductivity type having a resistivity up to and including 0.05 ohm-cm. and a vapor-deposited single crystal silicon semiconductor layer of N-conductivity type having a resistivity of at least 1 ohm-cm. thereon, with an abrupt transition region therebetween, comprising the steps of:
(a) providing within a reaction chamber a single crystal silicon semiconductor substrate wafer of N-conductivity type doped with antimony as an impurity element to a resistivity level up to and including 0.05 ohm-cm.,
(b) heating said thus-doped wafer to a deposition temperature,
(c) introducing into said chamber a decomposable vapor including a halogen-containing source compound of silicon semiconductor atoms, and N-conductivity type active impurity atoms therewith to impart a predetermined high resistivity of at least 1 ohm-cm. to said semiconductor atoms, and
(d) contacting said heated wafer with said vapor thereby to form a single crystal N-conductivity type silicon layer on said low resistivity layer having a resistivity corresponding to said impurity atoms in said vapor, and an abrupt transition region between said low resistivity substrate and said high resistivity vapor-deposited layer.

3,271,209
METHOD OF ELIMINATING SEMICONDUCTOR MATERIAL PRECIPITATED UPON A HEATER IN EPITAXIAL PRODUCTION OF SEMICONDUCTOR MEMBERS
Theodor Rummel, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, and Munich, Germany, a corporation of Germany
Filed Feb. 19, 1963, Ser. No. 259,582
Claims priority, application Germany, Feb. 23, 1962, S 78,192
10 Claims. (Cl. 148—175)

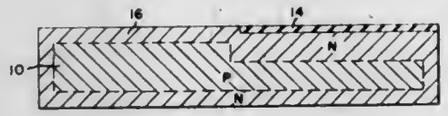
1. In the production process of growing monocrystalline semiconductor layers on substrates of semiconductor material by thermal dissocation of gaseous semiconductor compound and precipitation of the resulting semiconductor substance upon the substrates placed upon and heated by a supporting heater structure consisting at least at its surface of a refractory material different from the semiconductor substance being precipitated and more resistive to reactive agents at high temperatures than the substance being precipitated the method of removing from the heater structure while in situ the semiconductor coating grown upon it during the thermal production process, which comprises heating the structure, between successive runs of the semiconductor layer production and after removal of the substrate from the structure, to reaction temperature in a gas containing halogen atoms to form a gaseous compound of the semiconductor coating, whereby the coating is eliminated from the heater structure.

3,271,210
FORMATION OF P-N JUNCTIONS IN SILICON
Colin Pritchard, Birmingham, England, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 24, 1963, Ser. No. 297,309
5 Claims. (Cl. 148—187)



1. A method of diffusing phosphorus into a surface of a P-type silicon substrate which comprises: forming a blackened layer on at least a portion of said silicon surface by a chemical reaction with a hydrofluoric acid solution; exposing said surface with said blackened layer thereon to phosphorus so that atoms of phosphorus diffuse through said blackened layer into said substrate.

3,271,211
PROCESSING SEMICONDUCTIVE MATERIAL
Colin Pritchard, Birmingham, England, and Samuel A. Zeitman, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 24, 1963, Ser. No. 297,343
15 Claims. (Cl. 148—187)

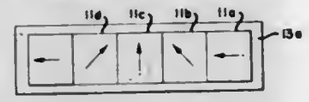


1. The method of diffusing phosphorus into a surface of a silicon substrate which comprises: forming a blackened layer on at least a portion of said silicon surface by an electrolytic reaction with a solution containing at least 50% by volume of concentrated hydrofluoric acid; and then diffusing phosphorus through said blackened layer into said substrate.

3,271,212
EXPLOSIVE WITH TRINITROBENZENE
Hans-Joachim Riedl, Recklinghausen, Hermann Frank, Dulmen, Westphalia, and Walter Sauermilch, Sythen, Westphalia, Germany, assignors to Wasag-Chemie Aktiengesellschaft, Essen, Germany
No Drawing. Filed Aug. 14, 1964, Ser. No. 389,805
Claims priority, application Germany, Aug. 17, 1963, W 35,106
7 Claims. (Cl. 149—92)

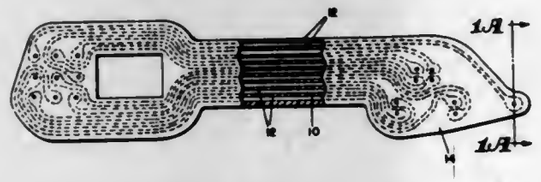
1. A high explosive body consisting essentially of an intimate mixture of a first explosive composition and a second explosive composition, said second explosive composition being selected from the group consisting of (a) mixtures of between about 70 and 90% by weight trinitrobenzene and between about 30 and 10% by weight trinitrotoluene, and (b) mixtures of between about 20 and 80% by weight of trinitrobenzene and between about 80 and 20% by weight of tetryl, said first explosive composition having a significantly higher melting point than said second explosive composition.

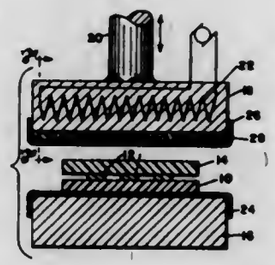
3,271,213
METHODS OF MAKING ANIMATION ILLUSTRATORS
Donald N. Yates, 710 Rockwood Drive, Gibsonia, Pa.
Filed Oct. 25, 1962, Ser. No. 233,113
2 Claims. (Cl. 156—3)



1. The method of preparing a polarizing animator comprising the steps of preparing a series of successively angularly oriented sections by coating a section of polarizing film on a clear isotropic support of desired shape and orientation with a chemical resist, removing the portion of film not covered by said resist and assembling said sections in successive angularly oriented position on a support member, said polarizing film sections being carried on separate temporary supports during the coating and removing steps and transferred into side by side relation on a permanent support.

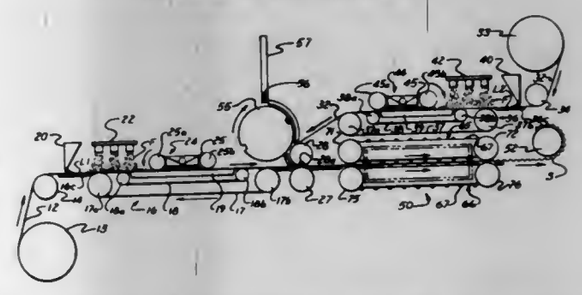
3,271,214
METHOD OF MAKING FLEXIBLE MULTICONDUCTOR WIRING UNITS
Robert W. Tabor, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Oct. 19, 1960, Ser. No. 63,624
2 Claims. (Cl. 156—52)





1. The method of fabricating a flexible multiconductor wiring unit comprising the steps of:
(a) bonding to a first preformed sheet of thermoplastic insulating resin a complex of thin flat electrical conductors relatively spaced one from another,
(b) covering the conductors with a second preformed sheet of thermoplastic insulating resin,
(c) placing such assembly on a flat unyielding platen, said first preformed sheet of thermoplastic insulating resin being in contact with said platen,
(d) heating said second preformed sheet of thermoplastic insulating resin to a temperature effective to cause softening thereof, and
(e) applying pressure to said heated second preformed sheet of thermoplastic insulating resin by means of a flat porous member having a degree of resilient compressibility, said pressure being at least adequate to cause the second sheet to bond to the opposed surface of the electrical conductors and intrude between the same to weld to the surfaces of the first sheet which are exposed between the conductors.

3,271,215
METHOD OF CONTINUOUSLY FORMING REINFORCED RESINOUS SHEET MATERIAL
Paul H. Hoffman, Tampa, Fla., assignor, by direct and mesne assignments, to Roy E. Raney and Charles F. Clark, St. Petersburg and Tampa, Fla., respectively, co-trustees
Filed Feb. 27, 1961, Ser. No. 92,009
3 Claims. (Cl. 156—62.8)



1. A method of continuously forming fiber reinforced sheet material of polymerized resin, said method comprising the steps of moving a first traveling carrier web through a resin and fiber depositing station, forming a mixture of loose fibers and polymerizable resin in a layer supported by said first carrier web by depositing resin and loose fibers on said web, moving a second carrier web through a resin and fiber depositing station, forming a mixture of loose fibers and polymerizable resin in a layer supported by said second carrier web, moving the fiber and resin mixture bearing surfaces of said webs into confronting relation, inserting a rigid member between said confronting webs, pressing the confronting layers of resin-fiber mixture together to form a single layer between said carrier webs having said rigid member embedded therebetween, and applying heat to said webs and said resin-fiber mixture for curing and hardening thereof into finished sheet material.

3,271,216
PRODUCTION OF LOOP PILE TEXTILES
Charles Richard Koller, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 22, 1963, Ser. No. 253,186
3 Claims. (Cl. 156—72)

1. Method for the production of a porous self-supporting sheet material comprising
(a) providing one or more fibrous bundles each composed of a plurality of contorted filamentary structures which are overlapping and intercontacting throughout the three dimensions of the bundle, said filamentary structures being aligned generally in the same direction throughout the bundle,

(b) pleating said bundles in siusoidal configuration to provide a body having a fiber density below 25 lbs./ft.^{3}, wherein filamentary structures of adjacent pleats of the bundles overlap one another, and wherein said body has two opposing faces defined by closed curved portions of said bundles,



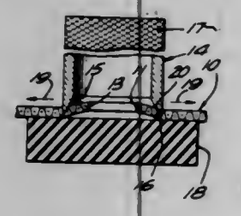
(c) interconnecting at least a major proportion of said filamentary structures at a plurality of spaced points along their lengths throughout the three dimensions of said body while maintained in sinusoidal configuration, and

(d) sectioning the body in a plane intermediate said two opposing faces.

3,271,217
METHOD FOR MENDING HOLES IN FABRICS

Donald L. Mapson, 172 E. Leucadia Road, La Habra, Calif.

Filed Dec. 17, 1962, Ser. No. 245,230
1 Claim. (Cl. 156—98)



A method of mending a small hole in a fabric garment which comprises the steps of stretching said garment fabric uniformly radially from the center of said hole, applying a rotary cutter to said garment to cut a disc of fabric therefrom embracing the area in which said hole appears, providing an undamaged sample of the fabric of said garment, applying the same cutter to said fabric sample to cut an undamaged disc of fabric therefrom inserting said undamaged disc in the opening produced in said garment fabric by cutting said first disc therefrom, pressing a thermo-plastic patch against the reverse face of said undamaged disc and in overlapping relation with said garment fabric, and applying heat to said patch to soften the same and cause it to flow only partially through said fabric disc and the area of said garment fabric engaged thereby whereby solidification of said patch material causes the latter to unite said disc with said garment fabric and bind against unravelling the adjoining cut edges of said garment fabric and said fabric disc.

3,271,218
METHOD OF MAKING PRE-POPPED FILM TRANSPARENCY SLIDES

Howard F. Ott and James J. Heffer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 1, 1963, Ser. No. 269,619
5 Claims. (Cl. 156—108)

1. The method of making pre-popped film transparencies from an elongated filmstrip of the type wherein the filmstrip includes a marginal portion along each longitudinal edge and a plurality of centrally located image areas, which comprises the steps of:

(a) progressively bending said marginal portions of said filmstrip in a common direction out of the normal plane of said image areas by feeding said marginal portions of said filmstrip between pairs of cooperating rotatable forming rollers disposed on opposite sides of said transparency;

(b) severing said filmstrip along lines transverse to said filmstrip and intermediate successive areas to obtain separate film transparencies;

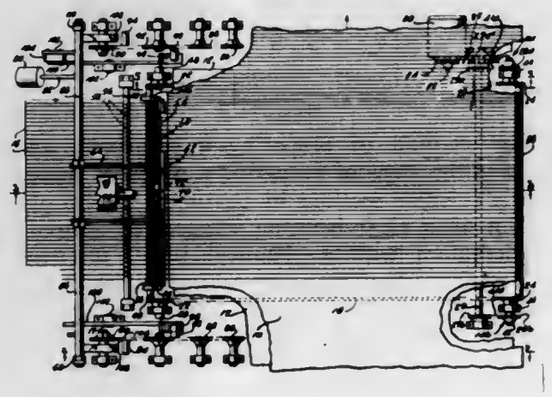
(c) mounting each of said film transparencies between a pair of apertured halves of a film mount with the marginal portions of the transparency positioned between the inner surfaces of the halves and the image area in registry with the aperture of each of the halves of the mount; and

(d) securing said mount halves together with said surfaces engaging and applying pressure to said marginal portions whereby the image area of the transparency is stressed and a curvature is imparted thereto.

3,271,219
METHOD AND APPARATUS FOR CROSS LAYING REINFORCING STRANDS ON WEB MATERIAL

Franklin G. Nickerson, Jr., Union Beach, and Joseph E. Cameron, Roselle, N.J., assignors to General Gummed Products, Inc., Linden, N.J., a corporation of New Jersey

Filed Aug. 3, 1961, Ser. No. 129,040
22 Claims. (Cl. 156—177)



5. A method of applying a plurality of strand elements to a continuous web comprising directing the individual strands between spaced guide elements to dispose them in parallel spaced relationship, moving an adhesive coated pickup rod member between the guide elements upwardly from below the strands to cause the strands to become engaged with the adhesive coating and to be lifted and carried thereby, thereafter moving the pickup bar with the strands across the web as the web is advanced, depositing the strands on the web by moving the pickup bar down below the plane of the web, and moving a cutting member downwardly against the strands to effect the simultaneous cutting of the opposite ends of the strands below the web and the pressing of the strands downwardly on the web.

3,271,220
CONTACTING FIBER BONDING

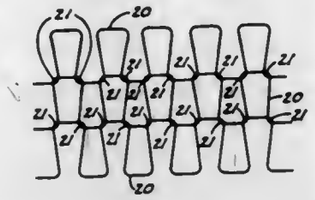
Henry C. Geen, Ann Arbor, Mich., assignor to Chemotronics Incorporated, Ann Arbor, Mich., a corporation of Michigan

Filed Apr. 5, 1963, Ser. No. 270,902
11 Claims. (Cl. 156—180)

1. The method of bonding contacting fibers comprising an organic resin at least at the point of contact of the fibers, which comprises:

(a) mounting a high energy light pulse source such that a light pulse from the light pulse source will irradiate the point of contact of the fibers positioned in spaced relationship to the light pulse source; and

(b) exposing the point of contact of the fibers to a light pulse from the light pulse source of between

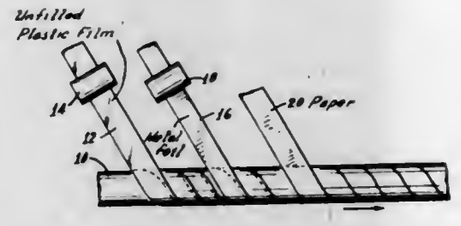


about a few hundred microseconds to about a few milliseconds duration and of sufficient energy to cause bonding of the fibers at the point of contact.

3,271,221
METHOD OF MAKING AN ELECTRICAL CONDENSER

Joseph P. Sheehan, Forest Hills, West Sanford, N.C., assignor to Cornell-Dubilier Electric Corporation, a corporation of Delaware

Original application June 22, 1961, Ser. No. 118,855, now Patent No. 3,185,759, dated May 25, 1965. Divided and this application Aug. 26, 1964, Ser. No. 398,141
6 Claims. (Cl. 156—190)

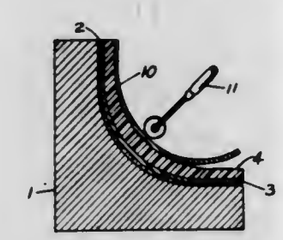


1. The method of making an electrical condenser of a form that includes a condenser body having projecting terminal wires, an enclosing tube and a cured-resin end fill covering each end of said body and sealing each end of said enclosing hollow tube, said method including the steps of forming a tube of an unfilled plastic film that is surface-treated for forming a bond to curable resins, adhering a complete external covering of metal foil to said plastic-film tube, applying a complete external covering of paper to said foil-and-plastic tube, impregnating the resulting tube with a rigidizing resin, and subjecting the impregnated tube to polymerizing conditions.

3,271,222
METHOD FOR PREPARING CORED LAMINATES

Roger Moorman, Gloucester, Va., assignor to Mobjack Manufacturing Company, Incorporated, Gloucester County, Va., a corporation of Virginia

Filed Sept. 20, 1962, Ser. No. 224,995
8 Claims. (Cl. 156—214)

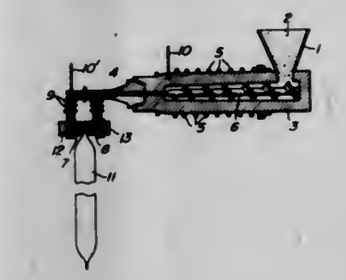


1. The method for preparing a low density sandwich type cored laminate having a core density in the range twenty-five to forty pounds per cubic foot, comprising the steps of preparing a preformed first lamina in contact with the contours of a previously prepared mold surface, applying a mixture comprising a hardenable resin with cellular microparticulate aggregate dispersed therein in the form of a thin layer at least several times the thickness of a single cellular particle upon the surface of said lamina, applying additional dry cellular microparticulate aggregate of substantially the same size range to the surface of said mixture, allowing said dry aggregate to consolidate with said mixture, thereby producing a homogeneous core layer of substantially uniform density throughout its thickness, and applying a covering lamina in contact with the surface of said homogeneous core layer.

3,271,223
METHODS FOR SEALING THERMOPLASTIC RESIN FILM

Michio Sudo, Tokyo, Japan, assignor to Asaki Dow Limited, Tokyo, Japan, a corporation of Japan

Filed June 20, 1963, Ser. No. 289,227
Claims priority, application Japan, Oct. 30, 1962, 37/47,086; Dec. 20, 1962, 37/76,109
5 Claims. (Cl. 156—244)



1. A method for sealing two sheets of thermoplastic material, comprising advancing the two sheets in face-to-face relation, extruding a heated thermoplastic resin in the form of a bead onto the outer surface of at least one of the sheets such that the heated bead advances with the sheets and applying pressure to the sheets immediately adjacent the heated bead to advance the sheets while confining the heated bead to restrict its bounds and cause welding of the sheets together along their mating surfaces by the transfer of heat from the bead.

3,271,224
METHOD OF MANUFACTURING HOLLOW BODIES HAVING WALLS OF SANDWICH CONSTRUCTION

Bo Axel Gunnar Bjernekull, Norrkoping, Sweden, assignor to Saab Aktiebolaget, a corporation of Sweden

Filed Feb. 13, 1963, Ser. No. 258,270
3 Claims. (Cl. 156—245)

1. The method of making a hollow body having an opening therein and having walls of sandwich construction comprising a core of edgewise adjacent slabs of cellular material confined between and bonded to inner and outer wall forming layers of resin permeated glass fibers, which method comprises:

(A) separately forming complementary body parts which, in the finished body comprise all of the body except for substantially narrow body wall portions that are integrated with and smoothly connect free edge portions of said complementary body parts to provide continuity between them, proceeding, as to each of said complementary body parts, by

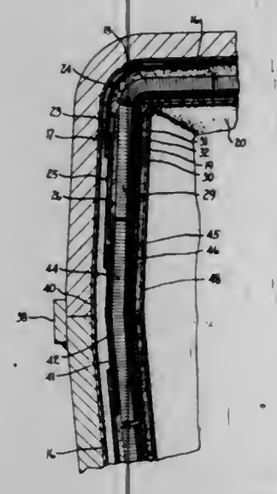
(1) successively laying down one of said wall forming layers, the core, and then the other wall forming layer, with corresponding layers and the cores of the body parts, at the free edge portions thereof, all stepped an appreciable distance in the same direction, so that the core of each body part terminates at a location inter-

mediate the terminal edges of said layers at the free edge portions of the body parts;

(2) making each of said wall forming layers by laying down laminae of mats of glass fiber impregnated and saturated with a curing resin, with adjacent laminations of each layer stepped in said direction at the free edge portions of the body part a distance sufficient to expose substantial side surfaces of said laminations;

(B) holding the complementary body parts in the positions they are to occupy in the finished body; and

(C) from the side of the body having corresponding wall forming layers spaced apart the greatest distance, integrating the free edge portions of the body parts by



(1) laying down mats to form successive spanning laminae, upon and in flatwise overlapping relation to the stepped and exposed side surfaces at the end portions of the laminae of the corresponding layers at the other side of the body,

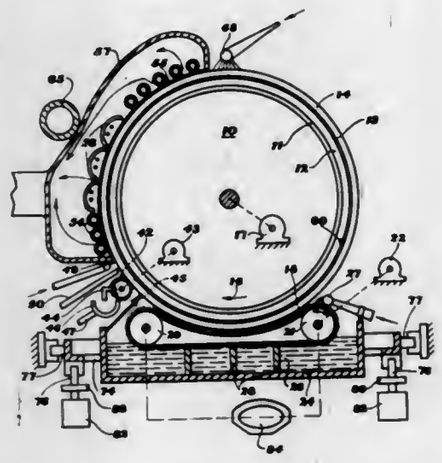
(2) laying down spanning slabs of cellular core forming material upon said spanning laminae, in close edge to edge relationship with the free edge portions of the core slabs of the body parts,

(3) and laying down other mats to form successive spanning laminae, upon and in flatwise overlapping relation to the stepped and exposed side surfaces at the end portions of the laminae at the first designated side of the body, with the first lamination thus applied overlying said spanning core slabs.

3,271,225
LABELING PROCESS
Carl Fritz Walter Wolf, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 26, 1963, Ser. No. 290,589
7 Claims. (Cl. 156—315)

1. A process for the production of labeled plastic bottles which comprises the steps of coating a plastic film with a thermo-sensitive adhesive, coating a portion of the thermo-sensitive adhesive with a pressure-sensitive adhesive, heating a thermoplastic bottle to a temperature at least about as high as that necessary to render the thermo-sensitive adhesive active, contacting the heated bottle with the coated plastic film while said bottle is at a temperature above that necessary to render the thermo-sensitive adhesive active, whereby said plastic film becomes attached to said plastic bottle.

3,271,226
ETCHING APPARATUS FOR MAKING A CELLULOSIC PRINTING PLATE
Henry C. Staehle, Lincoln A. Cundall, Cyril A. Horton, and Harold J. Frelier, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 9, 1963, Ser. No. 300,977
12 Claims. (Cl. 156—345)



1. An etching apparatus for etching in a plurality of bites a relief printing plate including a cellulosic layer having a resist stencil layer thereon, comprising;

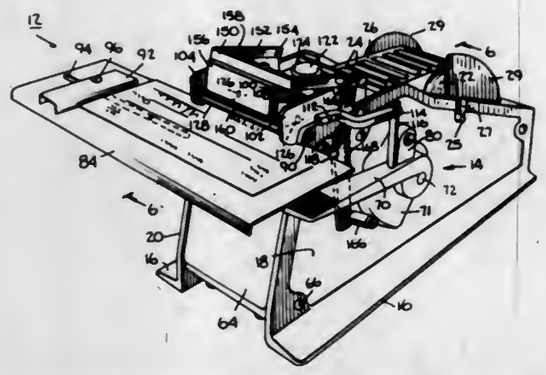
a rotatable drum for supporting the plate with the stencil layer facing outward;

a plush belt drivable to scrub the surface of the plate during rotation of said drum and having bristles fine enough to engage each of the exposed areas of the cellulosic layer;

means for wetting said belt with etchant during its scrubbing of the plate for softening the exposed cellulosic areas; and

means for driving said belt at surface velocities different from that of the plate on said drum and in a plurality of directions relative to the surface of the plate so that the softened portions are scrubbed away by the bristles on all sides of each stencil nodule of the stencil layer.

3,271,227
APPARATUS FOR DISPENSING AND APPLYING PRESSURE SENSITIVE LABELS
Fred R. Jaeckel, Jamaica, N.Y., assignor to Normandie Press, Inc., New York, N.Y., a corporation of New York
Filed May 9, 1963, Ser. No. 279,143
11 Claims. (Cl. 156—556)



1. An apparatus for first dispensing and then applying an oblong pressure sensitive label selectively to any one of several predetermined locations wholly within the boundary of an upwardly facing indicia-bearing exposed upper surface of a horizontally disposed stationary oblong sheet document during a cycle of operation, each dimension of the document being greater than a parallel corresponding dimension of the label, said apparatus comprising:

a backing strip upon which the oblong labels are mounted seriatim, each of said labels having a pressure sensitive face adherent to the backing strip and being adapted to be peeled away from said strip,

a supply roll,

a take-up roll,

a horizontal linear jutting stripping edge, said backing strip following a fixed path from said supply roll to said take-up roll including a sharp reverse bend over said stripping edge,

drive means moving said backing strip along the fixed paths and through the bend so as to dispense the labels from the strip and so that each label after being dispensed falls freely through a short substantially vertical path to a predetermined situs,

a flat horizontal shelf secured to the apparatus and adapted to support the document close to and below the stripping edge,

means to position the document on the shelf with an edge boundary of the document substantially parallel to the stripping edge and with some portion of the document in vertical free fall alignment with said stripping edge, and so that any predetermined selected one of the several locations on the exposed upper surface of the document is coincident with the predetermined situs, and

regulating means dispensing only one label from the backing strip during a cycle of operation.

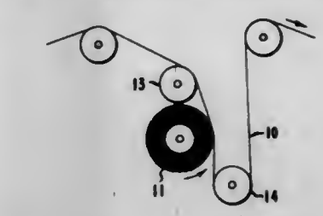
3,271,228
REMOISTENABLE ADHESIVE SHEET
Robert S. Ives, Lexington, Mass., assignor to Gurdon S. Worcester, Gloucester, Mass.
Filed Oct. 14, 1963, Ser. No. 315,832
4 Claims. (Cl. 161—151)



1. A remoistenable adhesive sheet comprising a flexible base web, a layer of water soluble adhesive on the base, said adhesive being in tacky, flexible state, and a thin, flexible fibrous layer at least partially covering said adhesive layer, the inner side of said fibrous layer being imbedded in said adhesive layer, said adhesive layer extending only partially toward the outer side of said fibrous layer, and said fibrous layer being readily penetrable by softened adhesive from the inside to the outside of said fibrous layer, whereby said fibrous layer prevents blocking of a plurality of said sheets when stored in superposition, while permitting said adhesive layer to be easily activated for adhering a sheet to a surface.

3,271,229
SURFACE TREATMENT OF ORGANIC THERMOPLASTIC FILM AND PRODUCT
Victor M. Grabovez, Columbus, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,566
8 Claims. (Cl. 161—164)

1. As a new article of manufacture an organic thermoplastic film having a buffed surface, said surface having at least 1×10^6 asperities per square inch of surface, said asperities having a maximum average height of 5 microinches; said surface further characterized by microscopic



orange peel structure, a surface haze of less than 6%, and a coefficient of friction of less than 0.6.

3,271,230
BONDED PLASTIC SEGMENTS
Robert J. Johnson, Chicago, and Thomas W. Findley, La Grange, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Sept. 4, 1962, Ser. No. 221,359
14 Claims. (Cl. 161—184)

1. An article comprising a plurality of nylon segments bonded together by means of an adhesive phase, said adhesive phase comprising a polymeric resin formed by reacting 100 parts of a nonterminal-oxirane-containing fatty material having at least one 8–22 carbon chain and containing at least four oxirane groups per molecule, said material selected from the group consisting of oxirane substituted higher fatty acid esters, oxirane substituted higher alcohol esters, and oxirane substituted higher fatty acid amides of polyamines, with 1 to 20 parts of a lactam and 0.5 to 40 parts of a polyamine under temperature and time conditions sufficient to open the lactam ring.

3,271,231
AIR-LAID, FLEXIBLE, SELF-SUPPORTING SHEET
William A. Moggio, Millersville, Moses Sparks, Jr., Manheim Township, Lancaster County, and Robert M. Miller, Lancaster, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
No Drawing. Filed June 15, 1962, Ser. No. 202,723
10 Claims. (Cl. 161—150)

7. A tough, self-supporting, flexible, air-laid fibrous sheet having a fused, smooth surface on one side and a fused, relatively rough surface on the other side comprising a cellulose acetate containing fibrous mixture plasticized with 2%–8% by weight plasticizer for said cellulose acetate fibers, said fibrous mixture comprising 20%–50% by weight cellulose acetate fibers having a length in the range of 1½ to 2 inches and a denier in the range of 40–60, said 40–60 denier fibers being concentrated on said roughened side, 20%–50% by weight cellulose acetate fibers having a length in the range of ½ to 2 inches and a denier in the range of 5.5–35, said 5.5–35 denier fibers being concentrated on said smooth side, at least 10% by weight cellulosic fibers having a length in the range of ½ to 3 inches, any remaining balance of the fibers being selected from the group consisting of said cellulosic fibers, 5.5–35 denier cellulose acetate fibers, and mixtures thereof.

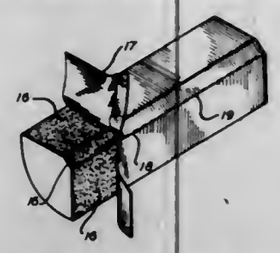
3,271,232
WINDOW PANE MOLDING
James M. Moore, West Keansburg, N.J. (Rte. 5, Box 198, Keyport, N.J.)
Filed Dec. 16, 1963, Ser. No. 330,862
1 Claim. (Cl. 161—175)

A window pane molding comprising:

(a) an elongated member,

(b) a pair of contact surfaces on said member disposed at right angles to each other,

(c) a chamfered surface joining the contact surfaces, the contact surfaces and the chamfered surface lying on the reflex angle side of the member,
(d) pressure sensitive adhesive on the contact surfaces,



(e) a protective sheet extending over the contact surfaces and the chamfered surface and detachably secured to the adhesive on the contact surfaces, and
(f) a row of perforations in the sheet along an edge defined by the intersection of one of the contact surfaces and the chamfered surface.

3,271,233
LAMINATED SAFETY GLASS
Edward Lavin, Longmeadow, and George E. Mont, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,038
19 Claims. (Cl. 161—199)

10. An improved laminated safety-glass comprising two layers of glass bonded to a plasticized polyvinyl acetal interlayer; said interlayer having a moisture content of 0.2 to 0.8% by weight and containing sufficient alkali and alkaline earth metal salts of substituted acetic acids wherein the substituted acetic acid portion is selected from the group consisting of glycine, glycolic acid, phenylacetic acid, chloroacetic acid and phenoxymethyl acetic acid to produce an alkalinity titer of at least 3.

3,271,234
LAMINATED SAFETY GLASS
Edward Lavin, Longmeadow, and George E. Mont, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,049
17 Claims. (Cl. 161—199)

9. An improved laminated safety-glass comprising two layers of glass bonded to a plasticized polyvinyl acetal interlayer; said interlayer having a moisture content of 0.2 to 0.8% by weight and containing sufficient salts of organic acids to produce an alkalinity titer of at least 10, said salts being a mixture of at least one metal acetate and at least one metal salt of a substituted acetic acid wherein the substituted acetic acid portion is selected from the group consisting of glycine, glycolic acid, chloroacetic acid, phenylacetic acid, and phenoxymethyl acetic acid, wherein, in each instance, the metal portion is independently selected from the group consisting of alkali metals and alkaline earth metals, said mixture containing sufficient metal acetate to produce an alkalinity titer of at least about 5 and up to about 95% of the total alkalinity titer.

3,271,235
LAMINATED SAFETY GLASS
Edward Lavin, Long Meadow, George E. Mont, Springfield, and Aubrey F. Price, South Hadley, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,071
17 Claims. (Cl. 161—199)

9. An improved laminated safety-glass comprising two layers of glass bonded to a plasticized polyvinyl acetal interlayer; said interlayer having a moisture content of 0.2 to 0.8% and containing sufficient metal alkyl carboxylate to produce an alkalinity titer of 10 to 100, said metal alkyl carboxylate being a mixture of potassium alkyl carboxylate and at least one other metal alkyl carboxylate wherein the metal portion is selected from the group consisting of Groups II–A, I–B, II–B, IV–A, VII–B and VIII of the Periodic Table, and the alkyl carboxylate portion is selected from the group consisting of formate, acetate, propionate and butyrate, said mixture containing sufficient potassium alkyl carboxylate to produce an alkalinity titer of at least about 5 and up to 96% of the total alkalinity titer.

3,271,236
METHOD AND APPARATUS FOR THE ELECTRICAL LOOSENING OF THE BOND BETWEEN A PIPE AND A MANDREL DURING THE WINDING OF THE PIPE ON THE MANDREL
William La Badie, New Brunswick, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Oct. 31, 1963, Ser. No. 320,287
9 Claims. (Cl. 162—122)

1. A method for manufacturing a pipe comprising:
(a) supporting a mandrel having an electrically conductive surface for rotation about its axis,
(b) winding a sheet of electrically conductive material around said mandrel during the rotation thereof to form a pipe comprising a plurality of laminations on said mandrel,
(c) applying pressure during said winding operation causing said pipe to bond to said mandrel, and
(d) passing an electric current through said pipe and said electrically conductive surface of said mandrel after at least one lamination has been formed on and bonded to said mandrel and during at least a portion of the winding of the remaining portion of said sheet on said mandrel to loosen said bond between said mandrel and said pipe.

3,271,237
PROCESS FOR THE PRODUCTION OF A FIBROUS POLYAMIDE LAMINAR STRUCTURE
Erwin Sommer and Klaus Gerlach, Obernau am Main, and Klaus Boehme, Erlenbach am Main, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany
No Drawing. Filed Sept. 15, 1964, Ser. No. 396,729
Claims priority, application Germany, Sept. 17, 1963, V 24,598
9 Claims. (Cl. 162—146)

1. A process for the production of a fibrous polyamide laminar structure on a papermaking machine which comprises: waterlaying polyamide fibers from an aqueous dispersion onto the foraminous support of the papermaking machine, said fibers consisting essentially of (A) 10 to 100% by weight of a copolyamide of caprolactam: hexamethylene adipamide in a weight ratio of about 2:3 to 3:1 and (B) 90 to 0% by weight of a polyamide selected from the group consisting of polycaprolactam and polyhexamethylene adipamide; removing water from the fibers to form a non-woven waterlaid web; and heating the waterlaid web in a moist state to a temperature sufficient to soften the copolyamide fibers and cause them to become adherent.

3,271,238
METHOD OF ADDING FIRE RETARDANT CHEMICALS TO A FIBER BOARD WHILE ON THE FORMING WIRE
Ralph H. Bescher, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,353
2 Claims. (Cl. 162—159)

1. Process for the production of a fire retardant artificial board that is made from wood fibers which comprises:
conveying a suspension of wood fibers in water onto a moving wire belt,
removing by suction a major portion of said water from said wood fibers so that the wood fibers become entangled to form a continuous layer,
thereafter flooding said layer with a concentrated aqueous solution of fire retardant chemicals so that a pool about one-half inch deep of said solution and being about 2 to 4 pounds of water per pound of dry fiber forms on said layer,
drawing said solution through said layer by suction so that said wood fibers retain an amount of about 5% to 15% by weight of said fire retardant chemicals to become fire retardant, and
recovering said concentrated solution so passed through said layer for use for flooding additional layers of said wood fibers.

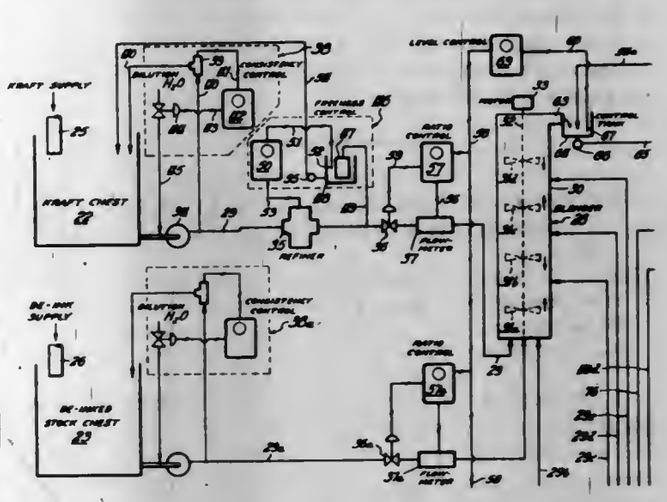
3,271,239
PROCESS OF FORMING A WATER-LAID FIBROUS ARTICLE CONTAINING A C_2–C_3 POLYALKYLENE RESIN
Lloyd Hornbostel, Jr., Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
No Drawing. Filed Jan. 23, 1964, Ser. No. 339,575
5 Claims. (Cl. 162—169)

1. A method of forming a molded fibrous pulp article, which comprises
(a) forming a dilute aqueous stock suspension of cellulosic fibers
(b) depositing C_2–C_3 polyalkylene polymeric resin in discrete particulate form on the fibers in such stock;
(c) forcing the resin-containing stock through a porous forming surface to deposit a resin particle filled fibrous pulp article on such surface;
(d) forcing drying gas of at least 100° F. below the softening temperature of the resin through said article and the porous surface carrying the same to substantially dewater the article to at least 90% bone dryness under time-temperature conditions less than those required to fuse the resin; and
(e) subjecting the dewatered article to time-temperature-pressure-shaping conditions of from approximately 300 to 500 p.s.i. and from approximately 300° to 400° F. and for a time sufficient to fuse the resin to form a fiber-filled resin matrix of predetermined configuration.

3,271,240
PROCESS OF SIZING WATER-LAID SHEETS WITH A CATIONIC ASPHALT EMULSION
William J. Kari, Lafayette, Ernest M. Lorenzini, Menlo Park, and Lloyd C. Wingerd, Berkeley, Calif., assignors to Chevron Research Company, a corporation of Delaware
Filed Nov. 20, 1962, Ser. No. 238,928
7 Claims. (Cl. 162—171)

1. A process for the manufacture of sized sheets of paper and board from a cellulosic fibrous material, said process consisting essentially of the steps of forming an aqueous pulp of said fibrous material of a consistency from about 0.1 to about 6.0% of fibrous solids and thoroughly intermixing with and throughout said aqueous pulp a cationic oil-in-water type emulsion of asphalt characterized by a penetration of from about 0 to about 30 at 77° F. (ASTM D5–52) and a softening point of about 170 to about 260° F. (ASTM D36–26), said asphalt being emulsified in water with the aid of an oil-soluble, cation-active, emulsifying salt of an alkylene diamine of the general formula $RNHR'NH_2$ wherein R is an acyclic hydrocarbon group of from 8 to 20 carbon atoms and R' is an alkylene group of from 2 to 3 carbon atoms.

3,271,241
STOCK SUPPLY SYSTEM FOR PAPERMAKING MACHINES INCLUDING CONTROL OF STOCK CONSISTENCY AND STOCK FLOW
Kenneth I. Mummé, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,678
8 Claims. (Cl. 162—353)



5. In papermaking apparatus, the combination of a plurality of chests for different types of papermaking stock including a chest for kraft stock, a papermaking machine, a main conduit connected with the papermaking machine for supplying stock to the machine, an auxiliary conduit for connecting each of said chests with said main conduit, means for pumping stock through each of said auxiliary conduits to said main conduit so that the various types of stock from said chests are mixed as stock moves through said main conduit to said machine, means responsive to the rate of stock flow through said main conduit, means for controlling the rate of stock flow through each of said auxiliary conduits and being under the control of said flow responsive means so as to decrease the rate of flow through each of said auxiliary conduits as the rate of stock flow through said main conduit increases, means for controlling the consistency of stock in each of said auxiliary conduits to a regulated value, means including a refiner for controlling the freeness of the stock flowing through the said auxiliary conduit which is connected to said kraft chest, and means including another refiner for controlling the freeness of the composite stock flowing through said main conduit to said papermaking machine.

3,271,242
STABLE CHLORINE DIOXIDE COMPOSITION AND METHOD OF MAKING SAME
Thomas P. McNicholas, Johnston, R.I., assignor to Alexander R. Reed III, Agawam, Mass., Leon R. Noel, North Adams, Mass., and Alexander C. Politis, Pittsfield, Mass.
No Drawing. Filed Mar. 29, 1963, Ser. No. 269,171
9 Claims. (Cl. 167—17)

1. The method of making a stable chlorine dioxide composition which comprises, heating an aqueous soluton of chlorine dioxide and a hydrogen peroxide compound to a temperature range sufficiently high to drive off any free peroxide in the solution but too low to drive off the chlorine dioxide, and maintaining the solution at a temperature within said range until substantially all the free peroxide is driven off.

3,271,243
STABLE CONCENTRATED BACTERIAL INSECTICIDE SUSPENSIONS

Helmuth Cords and Robert A. Fisher, Bakersfield, Calif., and John D. Briggs, Westerville, Ohio, assignors to International Minerals & Chemical Corporation, a corporation of New York

No Drawing. Filed Mar. 13, 1963, Ser. No. 264,774
24 Claims. (Cl. 167—22)

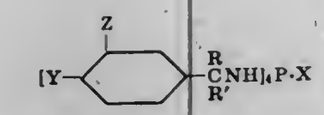
12. A stable bacterial insecticide concentrate comprising (a) a non-dried cell sludge recovered from a final whole culture derived from culturing an insecticidal-producing spore-forming microorganism of the type which both sporulates and also forms crystals in an aqueous nutrient medium, the pH of said sludge having been adjusted to lie within the range of about 3.5 to 4.5, and (b) a liquid oleaginous material.

3,271,244
METHOD OF CONTROLLING BACTERIA AND FUNGI WITH PHOSPHORIMIDIC TRIAMIDE SALTS

Harold F. Wilson, Moorestown, N.J., and Robert L. Skiles, Warminster, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed May 3, 1965, Ser. No. 452,892
8 Claims. (Cl. 167—30)

1. A method for controlling phytopathogenic fungi and bacteria comprising applying to the loci to be protected in an effective amount a fungicidal and bactericidal composition comprising a carrier and a phosphorimidic triamide salt having the formula



wherein

R and R' are individually selected from the class consisting of hydrogen and methyl,

Y is selected from the class consisting of hydrogen, chlorine, bromine, lower alkyl and lower alkoxy;

Z is hydrogen; and when

Y is hydrogen, Z is selected from the group consisting of hydrogen, bromine, chlorine, lower alkyl and lower alkoxy; and

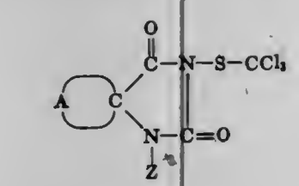
X is a salt-forming anion.

3,271,245
N-TRICHLOROMETHYLTHIOHYDANTOINS FOR FUNGICIDAL COMPOSITIONS AND METHODS

Richard James Campbell-Davys Cremlyn, Binfield, and Richard Stewart Elias, Michael Joseph Augustine Geoghegan, and John Theodore Braunholtz, Bracknell, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Original application Nov. 3, 1960, Ser. No. 66,911, now Patent No. 3,177,224, dated Apr. 6, 1965. Divided and this application Oct. 5, 1964, Ser. No. 401,640
Claims priority, application Great Britain, Nov. 10, 1959, 38,144/59
13 Claims. (Cl. 167—33)

1. A fungicidal composition comprising, as the essential active ingredient, a fungicidally effective amount of a hydantoin compound of the formula:



wherein the group A together with its adjacent carbon atom constitutes an alicyclic ring selected from the group consisting of cyclopentane, cyclohexane and cycloheptane; and Z is selected from the group consisting of hydrogen, acetyl and nitro, in admixture with a major amount of an inert, fungicidal carrier therefor.

3,271,246
METHOD OF CONTROLLING SEA LAMPREY

John H. Howell and Everett L. King, Jr., Cheboygan, Mich., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,079
15 Claims. (Cl. 167—46)

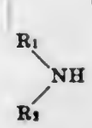
1. A method for controlling *Petromyzon marinus* lamprey comprising establishing, in cold water aquatic environments tributary to the Great Lakes of North America containing the *Petromyzon marinus* larvae and habitable by fresh water trout, a concentraion of at least about 0.07 part per million of a water dispersible lamprecidal composition that is lethal to the larvae without more than twenty-five percent trout mortality, said lamprecidal composition comprising 2',5-dichloro-4'-nitrosalicylanilide.

3,271,247
BIRD REPELLENT COMPOSITIONS

Andrew J. Reinert, Ernest A. Zuech, and Kenneth E. Cantrel, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,287
8 Claims. (Cl. 167—46)

1. A method of repelling birds which comprises applying to a locus from which birds are to be repelled the mineral acid-insoluble portion of the reaction product obtained by contacting a conjugated diolefin selected from the group consisting of 1,3-butadiene, isoprene, piperylene, 1-phenyl-1,3-butadiene, and 2,3-dimethyl-1,3-butadiene with a compound having the formula



wherein R_1 is selected from the group consisting of hydrogen, alkyl, aryl, aralkyl, alkaryl, cycloalkyl, and combinations thereof, and R_2 is selected from the group consisting of hydrogen, alkyl, aryl, aralkyl, alkaryl, cycloalkyl and combinations thereof, and wherein the total number of carbon atoms represented by R_1 and R_2 does not exceed 12, said contacting being conducted under conditions sufficient to produce said reaction product.

3,271,248
PHARMACEUTICAL COMPOSITIONS CONTAINING AMINE MERCAPTO-SUCCINATES

Jean A. Renault and Eugène L. Lerol, Paris, France, assignors to Societe Civile de Recherches et d'Applications Scientifiques, Seine, France, a French civil society

No Drawing. Filed July 17, 1961, Ser. No. 124,354
Claims priority, application Great Britain, July 25, 1960, 25,802/60
2 Claims. (Cl. 167—52)

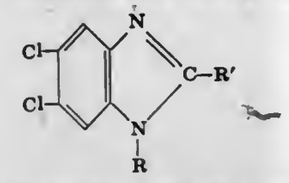
2. A pharmaceutical composition having detoxicant properties comprising, as an essential ingredient therein, an effective amount of at least one member selected from the group consisting of the neutral and acid mercapto-succinates of -1-2-diaminoethane, of -1-diethylamino-2-hydroxy-ethane, of -1-phenyl-2-amino-ethane, of -(d,l)-1-phenyl-1-amino-ethane, of diphenyl-aminomethane, of -1-oxo-1-phenyl-2-methylamino-propane, and ephedrine, together with an appropriate carrier.

3,271,249
DIHALOBENZIMIDAZOLES FOR POULTRY DISEASE TREATMENT

John Martin Clegg, Upper Montclair, and Bernard Bean Brown, Westfield, N.J., assignors to S. B. Penick & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 24, 1963, Ser. No. 290,165
12 Claims. (Cl. 167—53.1)

8. The method for combatting and controlling the avian protozoan diseases coccidiosis and histamoniasis which comprises administering to poultry a composition containing an amount necessary to combat and control coccidiosis and histamoniasis in poultry of a compound chosen from the class of benzimidazoles having the formula



where R and R' are selected from the group consisting of hydrogen, lower alkyl, hydroxy-lower-alkyl, di-lower-alkyl-amino-lower-alkyl, mercapto-lower-alkyl, benzyl, phenethyl and diphenylmethyl, and their pharmacologically acceptable quaternary ammonium and acid addition salts.

3,271,250
THERAPY AND CONTROL OF ATHEROSCLEROTIC DISEASES

Ken-Ichi Kanazawa, Kamikotoen, Nishinomiya, and Taizo Matsukawa and Yoshitomo Aramaki, Suita, all of Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

Filed Nov. 15, 1961, Ser. No. 152,515
Claims priority, application Japan, Nov. 17, 1960, 35/45,838
9 Claims. (Cl. 167—65)

1. A method of controlling atherosclerosis in a patient subject to high blood cholesterol level which consists in administering to the patient an effective amount of a member selected from the group consisting of cholestane-3,5,6-triol, cholestane-3,5,6-triol 3,6-diformate, cholestane-3,5,6-triol 3-hemisuccinate and alkaline salts thereof.

3,271,251
GERM-COUNTERACTING COMPOSITIONS

John A. Vaichulis, 7204 S. Campbell Ave., Chicago 29, Ill.

No Drawing. Filed June 24, 1963, Ser. No. 290,172
9 Claims. (Cl. 167—65)

1. A composition effective to inhibit tubercle bacilli, said composition consisting essentially of an aqueous solution of a hydrazine derivative of isonicotinic acid, penicillin, sodium benzoate, and a non-toxic acidic material, said solution having a pH between 6 and 7.

3,271,252
ANTI-INFLAMMATORY COMPOSITIONS COMPRISING 16α - CHLOROMETHYL-$\Delta^{1,4}$-PREGNADIENE-11β,21-DIOL-3,20-DIONE

Ulrich Kerb and Klaus Kieslich, Berlin-Charlottenburg, and Rudolf Wiechert, Berlin-Lichterfelde, Germany, assignors to Schering A.G., Berlin, Germany

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,878
Claims priority, application Germany, Oct. 20, 1962, 32,212
14 Claims. (Cl. 167—65)

14. Anti-inflammatory composition, comprising a pharmaceutical carrier having distributed therethrough an amount sufficient to have an effective anti-inflammatory action of a compound selected from the group consisting of 16α-chloromethyl-$\Delta^{1,4}$-pregnadiene - 11β,21-diol-3,20-dione and lower aliphatic carboxylic acid 21-esters thereof.

3,271,253
ANTIBIOTIC OSSAMYCIN AND METHOD OF PREPARING SAME

Kenneth E. Price, Fayetteville, and Henry Schmitz, Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

Filed Nov. 19, 1964, Ser. No. 412,372
5 Claims. (Cl. 167—65)

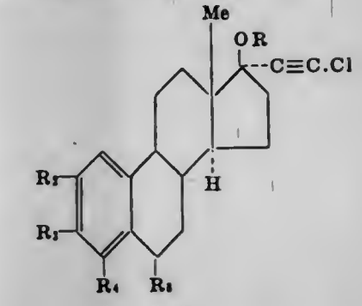
1. A composition of matter designated as ossamycin, said composition being characterized by ready solubility in ethyl alcohol and ethyl acetate, and slight solubility in water, and exhibiting in the pure state white crystals, a melting point of 175–180° C., a molecular weight of 917 by thermoelectric determination, an elemental analysis as follows: 64.70% carbon, 9.45% hydrogen, 1.50% nitrogen and 24.35% oxygen (by difference), an optical rotation of $[\alpha]_D^{25}=+8$ (c.=1 in chloroform), an ultraviolet absorption spectrum in chloroform exhibiting a maximum of 244 mμ, an ultraviolet spectrum in concentrated sulfuric acid exhibiting a maxima at 385 and 282 mμ with absorptivities of 6.0 and 26.0 respectively, and an infrared absorption spectrum in potassium bromide as shown in the drawing.

3,271,254
17α-CHLORETHYNYL-17β-ALKOXY STEROIDS AND PROCESS FOR THEIR PREPARATION

Colin Michael Burgess, Peter Feather, and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Aug. 22, 1963, Ser. No. 303,935
Claims priority, application Great Britain, Aug. 24, 1962, 32,638/62
24 Claims. (Cl. 167—74)

8. A compound selected from the group consisting of compounds of the formula:



wherein,

R is an alkyl group containing not more than 5 carbon atoms,

R_2 is selected from the group consisting of hydrogen, methyl and chloro,

R_3 is selected from the group consisting of hydrogen and —OR_1 where R_1 is selected from the group consisting of lower alkyl, cyclic alkyl, benzyl and tetrahydropyranyl,

R_4 and R_5 are selected from the group consisting of methyl and hydrogen; and corresponding compounds having unsaturation at C_8, C_9 and C_{14}, and C_9 and C_{11}.

21. A pharmaceutical preparation in dosage unit form comprising 17α - chlorethynyl-3,17β-dimethoxy-oestra-1,3,5,(10)-triene in admixture with lactose, magnesium stearate and starch.

3,271,255
EXTRACTION PROCESS AND PRODUCT OF HOLOTHURIOIDEA

Shigetoshi Shimada, 4–138 Kohamanaka, Sumiyoshi-ku, Osaka, Japan

Filed Nov. 18, 1963, Ser. No. 324,496
Claims priority, application Japan, Nov. 30, 1962, 37/54,120
14 Claims. (Cl. 167—74)

1. A process for preparing an extract of Holothurioidea comprising treating said Holothurioidea with a lipophilic

organic solvent and removing material soluble therein from a first insoluble residue, treating said first insoluble residue with water and removing material soluble therein from a second insoluble residue, and treating said second insoluble residue with a hydrophilic organic solvent selected from the group consisting of methanol and ethanol and removing material insoluble therein from said extract.

3,271,256
CHLOROFORM IN HARD CANDY

Robert R. Frey, Greensboro, N.C., assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,799
15 Claims. (Cl. 167—82)

1. A method of incorporating chloroform in hard candy which comprises the steps of preparing a plastic mass of hard candy at a temperature above the boiling point of chloroform containing plasticizers comprising from 0.5 percent to 5.0 percent of water and 5 to 20 percent by weight of a nonhygroscopic polyethylene glycol; then working chloroform into said plastic candy mass at temperatures within the range of 120° F to 165° F.

3,271,257
CYTODIAGNOSIS OF RUPTURED FETAL MEMBRANES

Hervy E. Averette, Jr., 4010 SW. 10th St., Miami, Fla.

Filed Oct. 10, 1963, Ser. No. 315,224
7 Claims. (Cl. 167—84.5)

7. A method of testing for ruptured fetal membranes comprising fixing a vaginal smear, said vaginal smear having been obtained from a pregnant patient, staining the fixed smear with a dye which identifies vernix caseosa cells if they are present in said smear, said dye being selected from the group comprising pinacyanol chloride and pinacyanol iodide, terminating the staining by washing excess dye from said smear, and examining the washed smear under a microscope to determine if vernix caseosa cells are present in said smear.

3,271,258
MELAMINE AND DICYANDIAMIDE AS DEPILATORY ACCELERATORS

Charles Zviak, Franconville, and Jean Ronet, Le Blanc-Mesnil, France, assignors to Société Anonyme dite: L'Oreal, a corporation of France

No Drawing. Filed June 19, 1963, Ser. No. 288,908
Claims priority, application France, June 22, 1962, 901,682
8 Claims. (Cl. 167—89)

1. A depilatory composition comprising:
(a) one part of at least one substance selected from the group consisting of thioglycolic acid, calcium thioglycolate, strontium thioglycolate, thiolactic acid, calcium thiolactate and strontium thiolactate, and
(b) one-half to two parts of an accelerator comprising at least one substance selected from the group consisting of melamine and dicyandiamide;
(c) said composition having a pH of substantially 12 when mixed with water.

3,271,259
SYNTHETIC LAVANDIN OIL

Harry C. Saunders, Nutley, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

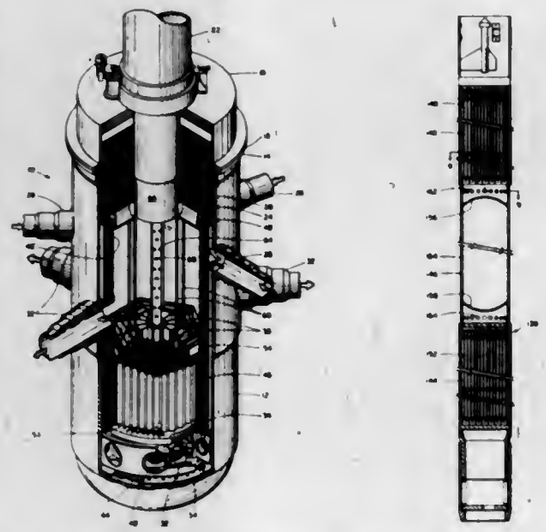
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,397
4 Claims. (Cl. 167—94)

1. A synthetic lavandin oil comprising an admixture of 3a,4,5,6,7,7a-hexahydro-4,7-methanoindene substituted in one of the 5 and 6 positions with an oxo group and 5 - vinyl - 5 - acetoxy 2,3,3a,4,5,6,7,7a-octahydro-4,7-methanoindene.

3,271,260
LIQUID METAL FAST BREEDER REACTOR

Lawrence C. Noderer, Windsor, Conn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed May 20, 1964, Ser. No. 369,029
6 Claims. (Cl. 176—18)



1. A liquid metal cooled fast breeder nuclear reactor comprising:
(a) a reactive core containing fissile material;
(b) a blanket region surrounding said core containing fertile material; and
(c) a zone between said core and said blanket region containing means to reduce the absorption of neutrons passing from the reactive core to said blanket region, said means being surrounded within said zone by axial regions of fuel and fertile material mixtures.

3,271,261
ORGANIC MODERATED NUCLEAR REACTOR AND CONTROL METHOD THEREFOR

Sidney Visner, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 27, 1963, Ser. No. 333,884
13 Claims. (Cl. 176—20)

1. A nuclear reactor comprising a quantity of a fissionable material, a quantity of moderator proximate to said fissionable material, said moderator comprising a hydrocarbon and a fluoronated polyphenyl, and means for regulating the ratio of said hydrocarbon to said fluoronated polyphenyl during operation to maintain criticality.

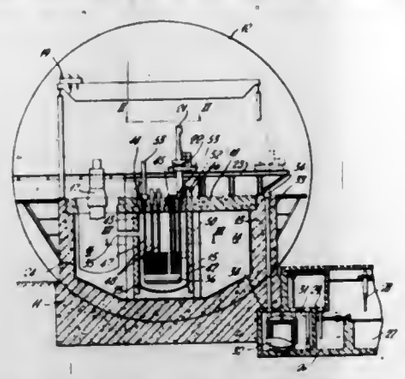
3,271,262
NUCLEAR REACTOR WITH IMPROVED FUEL HANDLING FACILITY

William George Hutchinson, Leslie Charles Cole, and Peter Liptrot Riley, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 11, 1964, Ser. No. 351,097
Claims priority, application Great Britain, Mar. 22, 1963, 11,421/63
7 Claims. (Cl. 176—30)

1. A nuclear reactor comprising a cylindrical reactor vessel, fuel element support structure within the vessel to define a core zone eccentric with respect to the vessel and a storage zone alongside the core zone, an outer rotary shield to close the upper end of the reactor vessel,

an inner rotary shield carried in the outer shield for rotation about an axis which is eccentric with respect to the outer shield, a transfer mechanism carried eccentrically by the inner shield which mechanism is movable over

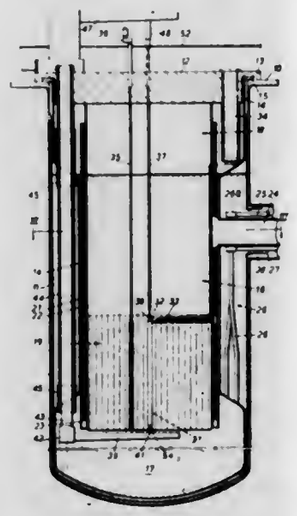


the aforesaid zones by rotation of the inner and outer shields, and a control face provided on one of the shields from which to suspend core reactivity control mechanisms, the shields having an operational position in which the control face is located over the core zone.

3,271,263
NUCLEAR REACTOR WITH IMPROVED FUEL HANDLING APPARATUS

Alexander Gilchrist Frame, Wilmslow, Horace Frank Parker, Culcheth, Warrington, John Stacey, Bolton, and Peter Liptrot Riley, Culcheth, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed June 17, 1964, Ser. No. 375,867
Claims priority, application Great Britain, June 25, 1963, 25,188/63
3 Claims. (Cl. 176—30)

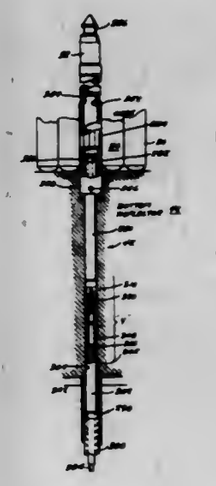


1. Nuclear fuel handling apparatus for charging fuel units into a nuclear reactor core housed in a reactor vessel, the apparatus comprising an upright shaft displaceable axially and rotatably in the vessel, a radial arm carried by the shaft adjacent its lower end for sweeping through an arc below the core, a fuel unit carrier supported by and traversable lengthwise of the arm, and means for controlling, externally of the vessel, the position of the fuel unit carrier, such means including a member which extends radially of the shaft axis and has a connection to the shaft for maintaining the radial arm coplanar with the member on displacement of the latter, a key carried by and traversable lengthwise of the member, and linkage to cause traverse of the key to be reflected by a corresponding traverse of the fuel unit carrier, whereby for any position of the key the carrier is positioned in alignment therewith.

3,271,264
NEUTRONIC REACTOR WITH IMPROVED RELEASE MECHANISM BETWEEN CONTROL ROD AND ASSOCIATED DRIVE

Peter Fortescue, La Jolla, and David Nicoll, Del Mar, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Application Apr. 22, 1964, Ser. No. 367,274, now Patent No. 3,180,800, dated Apr. 27, 1965, which is a division of application Ser. No. 775,578, Nov. 21, 1958, now Patent No. 3,138,535, dated June 23, 1964. Divided and this application Nov. 13, 1964, Ser. No. 417,261
3 Claims. (Cl. 176—36)



1. In combination with a neutronic reactor of the type having a pressure vessel, a core within the vessel including a plurality of vertically extending fuel and control rod channels arranged about the reactor axis in parallel relation thereto, pick-up means for withdrawing fuel elements and control rods from the core to a position thereabove within the vessel, and control rod actuating means for effecting vertical movement of each of said control rods within said core including an axially movable, vertical tubular member positionable within the control rod channel in supporting relation to one of said control rods, means for releasably locking said tubular member and control rod together, said locking means comprising an extending axial section of reduced diameter on the end of the control rod including an annular outer groove thereon, a sleeve member carried at the upper end of said tubular member for axial movement relative thereto in enclosing relation to said rod section and including a plurality of circumferentially disposed transverse recesses, a ball carried in each of said recesses for movement relative to a position of partial extension within the interior of said sleeve for locking engagement with said annular groove provided in said rod section, a collar disposed in encircling relation to said sleeve member and including an internal annular recess adapted to receive said balls, and means for moving said collar relative to said sleeve to effect transverse movement of said balls and thereby selectively lock and release said control rod relative to said actuating means.

3,271,265
FUELS FOR NUCLEAR REACTORS

Peter Murray, Abingdon, and John Brian Sayers, Didcot, England, assignors to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed May 22, 1964, Ser. No. 369,607
Claims priority, application Great Britain, June 11, 1963, 23,210/63
10 Claims. (Cl. 176—69)

1. A fuel material for a nuclear reactor comprising a dispersion of mixed zirconium and plutonium dioxides

in a matrix formed of a zirconium-based alloy having a low neutron-capture cross section rendering said alloy suitable for use as a matrix for reactor fuel.

9. A fuel element for a nuclear reactor comprising a fuel material in a cladding material in which the fuel material comprises a dispersion of mixed zirconium and plutonium dioxides in a matrix formed of a pressurized water corrosion resistant zirconium-based alloy having a low neutron-capture cross section rendering said alloy suitable for use as a matrix for reactor fuel and the cladding material is the same zirconium-based alloy as the matrix.

3,271,266

PROCESS FOR CULTIVATING MICROORGANISMS ON A HYDROCARBON FEEDSTOCK EMPLOYING A CARBOHYDRATE PRETREATMENT FEEDSTOCK

Bernard Maurice Laine and Jean Antoine Filosa, Lavera, France, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,524
Claims priority, application Great Britain, Dec. 31, 1962, 49,052/62
10 Claims. (Cl. 195—3)

1. A process which comprises, in a pretreatment stage, cultivating a carbohydrate consuming yeast in the presence of a pretreatment feedstock comprising a carbohydrate and thereafter, in a growth stage, cultivating the yeast so obtained in the presence of a growth feedstock comprising a straight chain hydrocarbon.

3,271,267

BIOCHEMICAL SYNTHESIS OF INDUSTRIAL GUMS

Ralph O. Weber, St. Paul, and Francis E. Horan, Minneapolis, Minn., assignors to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

Filed July 29, 1964, Ser. No. 385,943
20 Claims. (Cl. 195—31)

1. An improved process for making water-soluble gum which comprises inoculating an aqueous culture medium containing cereal grain flour and buffer salt and having a weight ratio of carbohydrate to protein of from 7/1 to 15/1 with a fermenting microorganism of the gum producing plant pathogen genus Xanthomonas, at least 50 weight percent of said carbohydrate being provided by said cereal grain flour, initially adjusting the pH to a point within the range of 7 to 8.5, mechanically agitating and aerating the mixture while effecting fermentation of the culture medium at a temperature in the range of about 21° C. to 35° C. to thereby produce a solution of water soluble gum having a solution viscosity within the range of about 4,000 to about 12,000 centipoises at a final pH within the range of from 5 to 7, and thereafter recovering said gum.

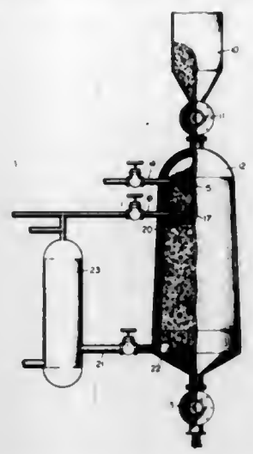
3,271,268

PROCESS OF CALCINING COKE

Victor D. Allred, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

Filed Jan. 21, 1963, Ser. No. 252,732
The portion of the term of the patent subsequent to July 21, 1981, has been disclaimed
16 Claims. (Cl. 201—20)

1. A continuous process for calcining coke comprising in combination the steps of passing coke particles as a moving bed cocurrently into a combustion zone with an amount of oxidant stoichiometrically insufficient to cause complete combustion of the coke under conditions such that only a minor portion of the coke is oxidized, the remaining coke being calcined, without substantial oxidation, by heat imparted from the combustion; and thereafter passing both the solid and gaseous products from



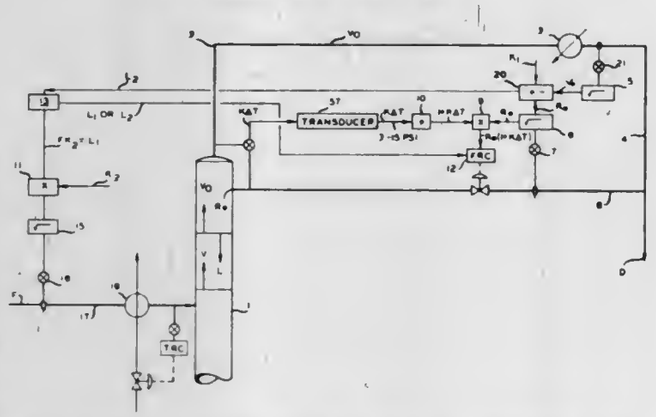
said combustion zone through a zone containing insufficient oxidant to support combustion.

3,271,269

CONTROL SYSTEM FOR FRACTIONAL DISTILLATION

Harry L. Walker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 26, 1961, Ser. No. 161,935
1 Claim. (Cl. 202—160)



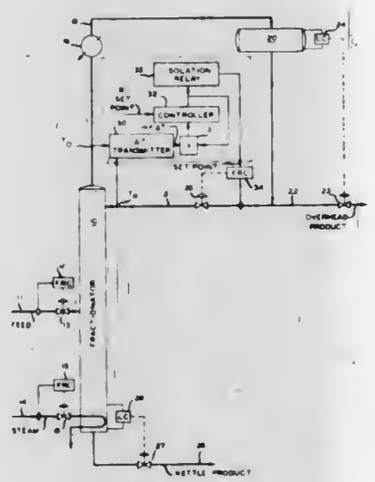
Apparatus for controlling flooding in a fractional distillation column which comprises, in combination, a distillation column, means for introducing feed to said column, means to remove liquid from a first zone in said column, means to remove vapor from a second zone in said column, means to condense said vapor, means to introduce condensed vapor back into said second zone in said column as reflux, first transmitting means to measure the rate of flow of said condensed vapor from said column and to establish a first signal representative thereof, square root extracting means communicating with said first transmitting means and a computing means to establish a second signal representative of the rate of flow of condensed vapor from said column and to introduce said second signal to said computing means which provides a first value representative of the maximum allowable internal reflux without flooding, second transmitting means in operable association with said means to introduce reflux to measure the rate of reflux to said column and to establish a third signal representative thereof, square root extracting means in operable association with said second transmitting means and said computing means to receive said third signal and to introduce said third signal to said computing means, third transmitting means to measure the rate of flow of feed to said column and to establish a fourth signal representative thereof, square root extracting means in operable association with said third transmitting means and a multiplying means to receive said fourth signal and to introduce same to said multiplying means, said multiplying means adapted to multiply said fourth signal by the predetermined reflux-to-feed ratio required to obtain the desired distillation and to produce a second value representative of the internal reflux required to make the desired separation, fourth transmitting means to measure said first and second values and to establish a fifth signal representative of the smaller of said first and second values, and flow recorder controller means in operable association with said fourth transmitting means and responsive to said fifth signal to regulate flow control means operably associated with said means to introduce condensed vapors back into said second zone.

3,271,270

CONTROL OF INTERNAL REFLUX IN A FRACTIONAL DISTILLATION PROCESS AND SYSTEM

Dale E. Lupfer and Merlon L. Johnson, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 12, 1962, Ser. No. 165,965
4 Claims. (Cl. 202—160)



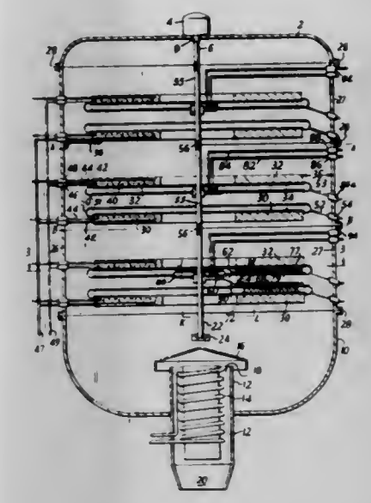
1. In a fractionation system that includes a fractionation column, means to introduce a feed mixture to be separated into said column, first conduit means connected to said column to remove a vapor stream from the upper region of said column, cooling means connected to said first conduit means to condense at least a portion of the vapor stream removed from said column, and second conduit means connected between said first conduit means and said column to return a portion of the resulting condensate to said column as external reflux, a control system comprising first temperature sensing means positioned to sense the temperature T_O of said vapor removed from said column; second temperature sensing means positioned to sense the temperature T_R of said condensate returned to said column as external reflux; means responsive to said first and second temperature sensing means to establish a first signal representative of $1+K\Delta T$, where K is a constant equal to the specific heat of said external reflux divided by the heat of vaporization of liquid in the top of said column and ΔT is T_O-T_R; signal multiplying means having first and second inputs and an output; means to apply said first signal to said first input; controller means having a signal input and a set point input with the signal applied to said set point input being representative of the desired value of internal reflux; means connecting said output of said multiplying means to said signal input of said controller means, said controller means being adapted to compare the signal applied to its set point input with the signal applied to its signal input and produce responsive to such comparison an output signal representative of the value of external reflux necessary to maintain the internal reflux substantially equal to said desired value; means independent of the actual flow of external reflux to apply the output signal of said controller means to said second input of said multiplying means; and means responsive to said output signal of said controller means to regulate the rate of flow of said external reflux through said second conduit means.

3,271,271

MOLECULAR STILL HAVING STATIONARY EVAPORATOR AND CONDENSER SURFACES

Peter Ridgway Watt, Reigate, Surrey, England, assignor to Vitamins Limited, London, England, a British company

Filed May 8, 1962, Ser. No. 193,259
Claims priority, application Great Britain, May 12, 1961, 17,441/61
8 Claims. (Cl. 202—173)



1. Molecular distillation apparatus comprising a plurality of stationary, heatable, vertically-spaced, upwardly-facing evaporator surfaces, a stationary, coolable, downwardly facing condenser surface disposed above each evaporator surface, wiping means movable over each evaporator and condenser surface and arranged to displace a liquid film on such surfaces towards the outer periphery of each surface, means for transferring distillate from the outer periphery of each condenser surface to the next higher evaporator surface, and means for transferring residual distilland from the outer periphery of each evaporator surface to the next lower evaporator surface.

3,271,272

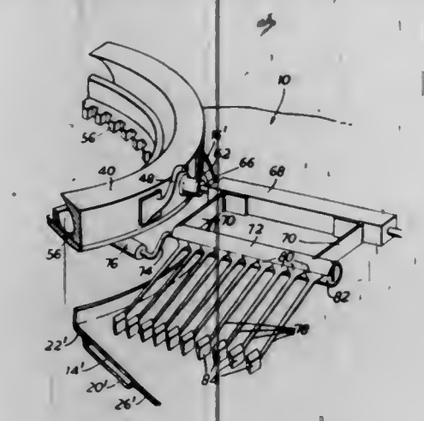
VIBRATORY WIPING DISTILLATION APPARATUS

Peter Ridgway Watt, Reigate, Surrey, England, assignor to Vitamins Limited, London, England, a British company

Filed Dec. 19, 1962, Ser. No. 245,757
Claims priority, application Great Britain, Dec. 29, 1961, 46,680/61
18 Claims. (Cl. 202—236)

1. A wiper assembly for wiping a surface, which comprises a vibratable support member, a plurality of wiper members resiliently mounted on said support member, drive means for causing relative movement of said support member and said surface with said wiper members in wiping contact with the surface, and vibrator means

for imparting vibratory motion to the support member with a component of such vibration perpendicular to the direction of relative movement of said support member and said surface and each wiper member having a wiping edge disposed obliquely to such direction of relative movement.

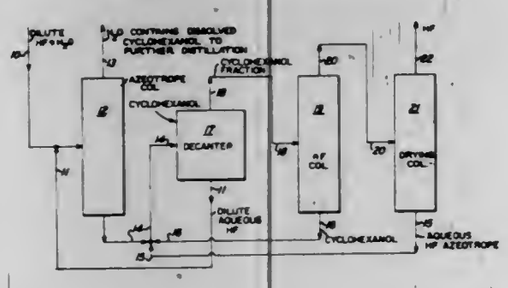


3,271,273

DISTILLATION PROCESS FOR RECOVERING ANHYDROUS HYDROGEN FLUORIDE

Sherwood N. Fox, Stamford, Conn., and Martin B. Sherwin, Jackson Heights, N.Y., assignors to Halcon International, Inc., a corporation of Delaware

Filed Feb. 13, 1963, Ser. No. 258,284
10 Claims. (Cl. 203—12)



1. A process for recovering anhydrous hydrogen fluoride by distillation which comprises forming a two phase mixture thereof with water and a water immiscible oxygenated organic liquid selected from the group consisting of n-butanol, methyl isopropyl ketone, methyl isobutyl ketone, n-hexanol, or cyclohexanol, each phase containing some of the hydrogen fluoride, recovering anhydrous hydrogen fluoride as overhead by distillation from the organic liquid phase, removing water from the aqueous phase by distillation to form an aqueous hydrofluoric acid azeotrope as bottoms and returning the latter to the step of forming the separate liquid phases.

3,271,274

ELECTRODEPOSITION OF A TERNARY ALLOY OF NICKEL, IRON AND MOLYBDENUM

Guy Di Guilio, Philadelphia, Pa., Joseph S. Mathias, Riverton, N.J., and Edwin F. Schneider, Jenkintown, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 31, 1962, Ser. No. 234,518
8 Claims. (Cl. 204—43)

8. The method of electrolytically depositing thin magnetic nickel-iron-molybdenum films having the composition 60–77%, 13–24% and 10–16%, respectively, from an aqueous plating bath including Ni^{++}, Fe^{++} and MoO_4^{--}, said method being particularly characterized in that the Fe^{++}/Ni^{++} normality ratio in said bath ranges from about 0.03 up to 0.06, the MoO_4^{--}/Ni^{++} normality ratio in said bath ranges from about 0.016 up to about 0.036, the pH range of said bath is maintained between about 3 and about 6, the current density employed in said bath ranges from about 6 ma. up to about 12 ma. for each $cm.^2$ of plating surface and wherein an external magnetic field is applied to the film being plated along the plane of the film.

3,271,275

ELECTRODEPOSITION OF A MAGNETIC TERNARY ALLOY OF IRON-NICKEL-ARSENIC

Guy Di Guilio, Philadelphia, Pa., and Joseph S. Mathias, Riverton, N.J., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 31, 1962, Ser. No. 234,519
10 Claims. (Cl. 204—43)

3. The method which comprises electrolytically depositing thin magnetic Ni-Fe-As films upon a substrate to be coated by passing current through an aqueous acidic plating bath to electrolytically deposit said film on said substrate, said bath consisting essentially of Ni^{++}, Fe^{++} and AsO_2^- ions, the concentration of said ions in said bath being such that the Fe^{++}/Ni^{++} normality ratio ranges from about 0.020 to about 0.032, and the AsO_2^-/Ni^{++} normality ratio ranges from about 0.0009 to about 0.0047, the pH of the bath being between about 2 and 5.

3,271,276

ELECTRODEPOSITION OF QUATERNARY MAGNETIC ALLOY OF IRON, NICKEL, ANTIMONY AND PHOSPHORUS

Guy Di Guilio, Philadelphia, and Walter O. Freitag, Conshohocken, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 31, 1962, Ser. No. 234,520
8 Claims. (Cl. 204—43)

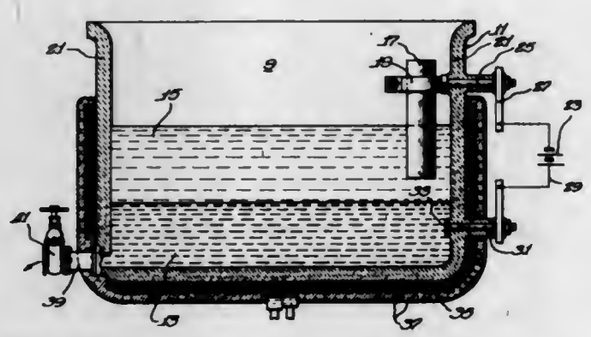
1. The method which comprises electrolytically depositing thin magnetic Ni-Fe-P-Sb films onto a substrate to be coated by passing current through an aqueous acidic plating bath consisting essentially of Ni^{++}, Fe^{++}, $H_2PO_2^-$, and SbO^+ ions, the concentration of said ions in said bath being particularly characterized in that the Fe^{++}/Ni^{++} normality ratio ranges from 0.017 to 0.028, the SbO^+/Ni^{++} normality ratio ranges from .00009 to .00027, and the $H_2PO_2^-/Ni^{++}$ normality ratio ranges from .0011 to .0034.

3,271,277

REFRACTORY METAL PRODUCTION

Leonard F. Yntema, R.R. 1, Box 9–A, Wadsworth, Ill.

Filed Apr. 30, 1962, Ser. No. 191,209
12 Claims. (Cl. 204—64)



1. An electrolytic process for the production of purified refractory metals, which process comprises the steps of dissolving a refractory metal oxide in a molten alkali halide electrolyte in an electrolysis zone maintained at an electrolysis temperature between about 500° C. and about 700° C., reducing said oxide in said electrolysis zone at said electrolysis temperature to the corresponding refractory metal, depositing said refractory metal in particulate form into a molten metal cathode in said zone, and separating said particulate refractory metal from said cathode by distilling off said cathode metal, said cathode metal comprising metal other than mercury having a negligible mutual solubility with said refractory metal and said molten electrolyte, said cathode metal having a low vaporization point at said electrolysis temperature and having a melting point substantially below that of said refractory metal.

3,271,278

ELECTROLYTIC REDUCTIVE COUPLING OF AROMATIC COMPOUNDS

Manuel M. Baizer, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 2, 1965, Ser. No. 469,350
16 Claims. (Cl. 204—72)

1. The method of producing reduced coupled products of olefinic compounds selected from the group consisting of pyridyl ethylenes having a pyridyl group bonded at the 2- or 4-position, alpha, beta-olefinic ketones, carboxylates, carboxamides, nitriles, phosphonates, phosphinates, phosphine oxides and sulfones with an aryl ethylene having a ring of the aryl moiety bonded directly to the ethylene which comprises subjecting a solution of said olefinic compounds and said aryl ethylene to electrolysis in contact with a cathode and separating the reduced, coupled product from the catholyte.

3,271,279

ELECTRODEPOSITION OF COPPER FROM CHROMIUM-CONTAINING SOLUTION

John G. Poor, Otisco, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 18, 1962, Ser. No. 202,969
10 Claims. (Cl. 204—108)

1. A method for the plating out of copper from an aqueous solution containing at least about 20 grams per liter of dissolved copper, at least about 50 grams per liter of dissolved chromium, measured as CrO_3, no more than about 10 grams per liter of which is in the hexavalent form and at least about 25 grams per liter of free H_2SO_4, which comprises subjecting the solution to a cathodic current at a temperature of about 30 to 75° C. while agitating the solution and forming a coherent high purity copper deposit, said plating out being continued until the aqueous solution contains less than about 5 grams per liter of copper, and said cathodic current having a density no greater than about 5 amperes per square foot when the solution contains no more than about 5 grams per liter of dissolved copper.

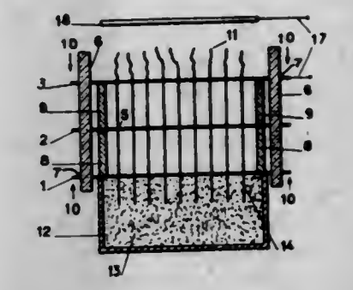
3,271,280

METHOD FOR MANUFACTURING COLD-EMISSION CATHODES

Arvind M. Shroff, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed June 4, 1963, Ser. No. 285,404
Claims priority, application France, June 29, 1962, 902,437
8 Claims. (Cl. 204—142)

1. A method for manufacturing cold-emission cathodes having a plurality of substantially parallel point-ended metal rods, comprising the steps of: passing said rods through the holes in a grid-like structure the diameter of said holes being slightly larger than the diameter of said rods; fixing said rods to a support; immersing the assembly of said support, rods and grid-like structure in an electrochemical bath; and applying an electrochemically acting voltage between said rods and said grid-like structure until said rods are simultaneously cut to the same length and tapered to thereby produce the said pointed ends thereof.

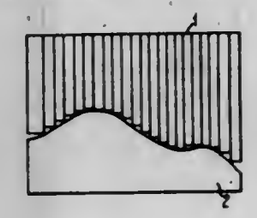


3,271,281

METHOD OF MAKING A TOOL FOR ELECTRO-CHEMICAL MACHINING

Dennis Cockburn Brown and Eric Winston Dickson, Warwickshire, England, assignors to Associated Engineering Limited, Leamington Spa, Warwickshire, England, a British company

Filed Mar. 8, 1962, Ser. No. 178,418
Claims priority, application Great Britain, Mar. 8, 1961, 8,492/61
10 Claims. (Cl. 204—143)



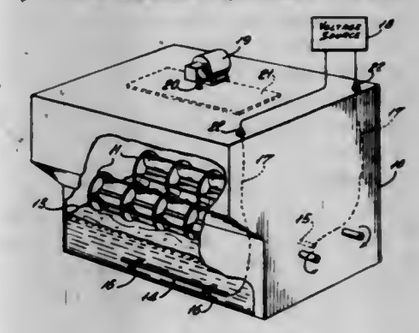
1. The method of making a tool for the electrochemical machining of complex cavities which consists in bringing a plurality of electrically conductive components together in parallel relationship so that each of said components has one end engaged by a die having the shape of a complex surface to be formed, whereby said ends of said components are positioned to conform to this shape, and securing the said components together.

3,271,282

PROCESS FOR ETCHING PHOTO-ENGRAVING COPPER

Paul F. Borth, Park Forest, Ill., assignor to Photo-Engravers Research, Inc., Savannah, Ga., a corporation of Georgia

Filed June 18, 1963, Ser. No. 288,802
10 Claims. (Cl. 204—143)

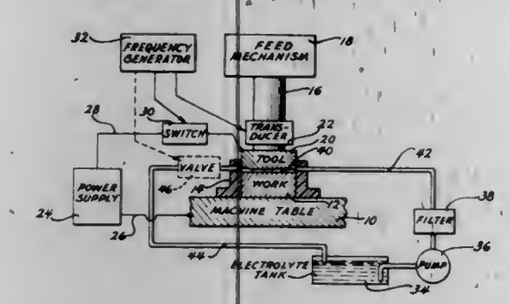


1. In a process for etching photo-engraving copper by contacting said copper with an aqueous ferric chloride solution containing a formamidine disulfide passivating

agent, the improvement which comprises impressing a potential difference of from about 3 to about 50 volts across the etching bath so as to enhance the effectiveness of the passivating agents.

4. In a process for etching a photo-engraving copper having a portion of its surface masked with a resistant coating, wherein the etching is effected by contacting the photo-engraving copper with an aqueous ferric chloride etching solution containing a passivating agent selected from the group consisting of (1) formamidine disulfide compounds, and (2) amine compounds selected from the group consisting of alkyl amines and alkanol amines in combination with formamidine disulfide compounds, the improvement which comprises impressing a voltage differential of from about 3 to about 50 volts across the etching bath while contacting the photo-engraving copper with the etching solution.

3,271,283
METHODS AND APPARATUS FOR ELECTROCHEMICAL SHAPING OF A WORKPIECE
John E. Clifford, Columbus, Ohio, and Kempes F. Trager, Detroit, Mich.; said Clifford assignor, by mesne assignments, to The Steel Improvement and Forge Company, Cleveland, Ohio, a corporation of Ohio, and said Trager assignor to Ex-Cell-O Corporation, Detroit, Mich.
Filed Oct. 28, 1963, Ser. No. 319,166
8 Claims. (Cl. 204—143)



1. Apparatus for electrochemically shaping the surface of an electrically conductive workpiece to a predetermined three-dimensional contour comprising:

an electrically conductive tool provided with a working face having a contour, shape and area corresponding substantially to the contour, shape and area with which the workpiece is to be provided;

feeding means for advancing said tool toward said workpiece at a substantially constant velocity corresponding to the rate of removal of material from said workpiece so as to prevent contact between said tool and said workpiece;

means for oscillating said tool in the same direction as the direction of advance of said tool, the amplitude of said tool oscillations being such as to avoid contact between said tool and said workpiece;

means for confining an electrically conductive electrolyte in a confined space within the gap between said tool and said workpiece;

means for flowing said electrolyte through said confined space within the gap between said tool and said workpiece;

means for interrupting said flow of electrolyte through said confined space within the gap in synchronism with the oscillations of said tool at a predetermined time at least shortly before said tool reaches a position of minimal spacing from the workpiece; and

means for reestablishing the flow of electrolyte in synchronism with said oscillations at a predetermined time at most shortly after the tool has reached said position of minimal spacing from the workpiece;

and means connecting said tool and said workpiece in an electrical circuit to effect passage of current in a manner as to make said tool cathodic in relation to said workpiece only when said flow of electrolyte is interrupted.

7. A method for electrochemically shaping the surface of an electrically conductive workpiece to a predetermined three-diemnsional contour comprising:

disposing in close proximity to the workpiece an electrically conductive tool provided with a working face having a contour, shape and area corresponding substantially to the contour, shape and area with which the workpiece is to be provided;

advancing said tool toward said workpiece at a substantially constant velocity corresponding to the rate of removal of material from said workpiece so as to prevent contact between said tool and said workpiece;

oscillating said tool in the same direction as the direction of advance thereof, the amplitude of said tool oscillations being such as to avoid contact between said tool and said workpiece;

flowing an electrolyte through a confined space within the gap between said tool and said workpiece;

interrupting said flow of electrolyte through said confined space within the gap in synchronism with the oscillations of said tool at a predetermined time at least shortly before said tool reaches a position of minimal spacing from the workpiece;

reestablishing said flow of electrolyte in synchronism with said oscillations at a predetermined time shortly after said tool has reached said position of minimal spacing from said workpiece;

connecting said tool and said workpiece in an electrical circuit to effect passage of current as said flow of electrolyte is interrupted; and

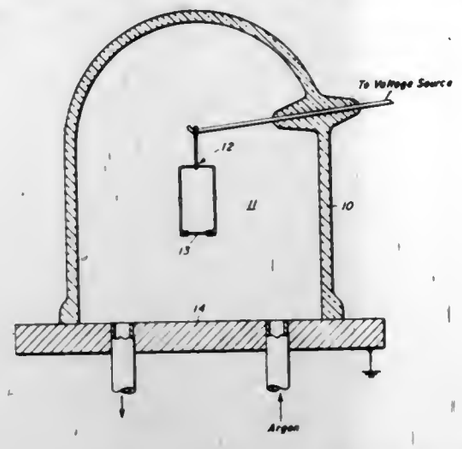
disconnecting said circuit from said tool and said workpiece after a predetermined time.

3,271,284
METHOD OF TREATING GALVANIZED SHEET TO INHIBIT STAINING
Paul R. Carter, Monroeville Borough, and Lawrence E. Helwig, Hampton Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Oct. 29, 1963, Ser. No. 319,659
1 Claim. (Cl. 204—145)

In the treatment of galvanized sheet steel to inhibit staining in storage under humid conditions by immersing it in a dilute water solution of a salt selected from the group consisting of sodium chromate and sodium dichromate, the step of preliminarily treating the sheets by electrolysis as a cathode in a dilute water solution of tri-sodium phosphate to the extent of at least 300 coulombs per square foot.

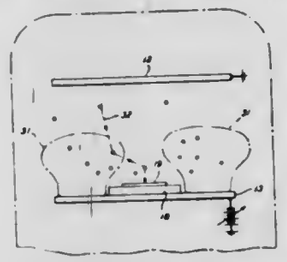
3,271,285
METHOD FOR SPUTTERING NIOBIUM OR TANTALUM THIN FILMS
Raymond E. Skoda, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 17, 1963, Ser. No. 316,917
1 Claim. (Cl. 204—192)

A method of sputtering superconductive films of niobium or tantalum on to a supporting substrate comprising, positioning a perforate cathode having at least one opening the axis of which is substantially perpendicular to the substrate and which is constructed of a metal selected from the group consisting of niobium and tantalum within an enclosed chamber, providing an anode operatively spaced from the cathode, locating a suitable substrate within the enclosed chamber between the cathode and the anode, introducing a supply of argon into the enclosed chamber, and energizing the perforate cathode



with direct current whereby the substrate is hit simultaneously by ionized argon and cathode metal to form a superconductive film.

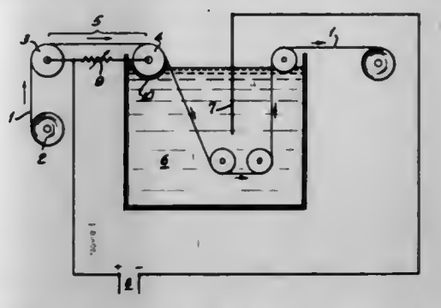
3,271,286
SELECTIVE REMOVAL OF MATERIAL USING CATHODIC SPUTTERING
Martin P. Lepselter, Franklin Park, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 25, 1964, Ser. No. 347,173
2 Claims. (Cl. 204—192)



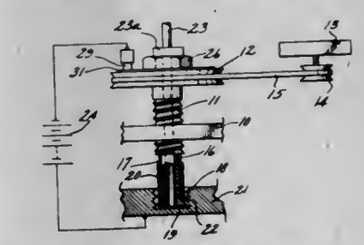
1. A method for the selective removal of material from the surface of a substrate having a dielectric coating thereon, comprising effecting a glow discharge in a low pressure gaseous ambient between an anode and a cathode whereby an ionized gaseous plasma is formed in said glow discharge, electrically isolating an area of the surface of said cathode facing said anode larger than the cross sectional area of said substrate, but having the peripheral portions of said cathode in electrical communication with said discharge, and mounting said substrate between said anode and said electrically isolated area of said cathode so that no voltage drop occurs through said dielectric coating whereby said glow discharge is restricted to the region peripheral to said surface so that ions are impacted on said surface removing material therefrom.

3,271,287
APPARATUS FOR ANNEALING AND ELECTROLYTICALLY TREATING METALLIC STRIP
Wolfgang Post, Singen am Hohentwiel, Germany, assignor to Swiss Aluminium Ltd., Chippis, Switzerland, a joint-stock company of Switzerland
Filed Nov. 27, 1962, Ser. No. 240,372
Claims priority, application Switzerland, Nov. 28, 1961, 13,827/61
3 Claims. (Cl. 204—210)

1. An apparatus for treating metal, comprising an electrolytic treatment tank for containing an electrolyte for the electrolytic treatment of the metal, means for continuously advancing a continuous length of metal lengthwise through the electrolyte in said tank, two electrical contact points at the entrance side of said electrolytic tank in electrical contact with said metal and spaced therealong to define an annealing zone therebetween, and an incomplete electric circuit comprising a source of electric current having two terminals of opposite polarity, an electrode dipping into said electrolyte, an electrical connection between one of said terminals and said electrode, an electrical connection between the other terminal and the contact point furthest from the entrance side of the tank, and a variable resistance between said contact points in parallel with the section of the metal between said contact points while said metal is extending between said contact points, said circuit being completed by the continuous length of metal passing over the two electrical contact points and through the electrolyte.



3,271,288
ELECTROLYTIC DRILLING AND TAPPING APPARATUS
Joseph H. Crawford, Cincinnati, and William H. Peters, Loveland, Ohio, assignors to General Electric Company, a corporation of New York
Filed Dec. 1, 1960, Ser. No. 72,890
1 Claim. (Cl. 204—212)

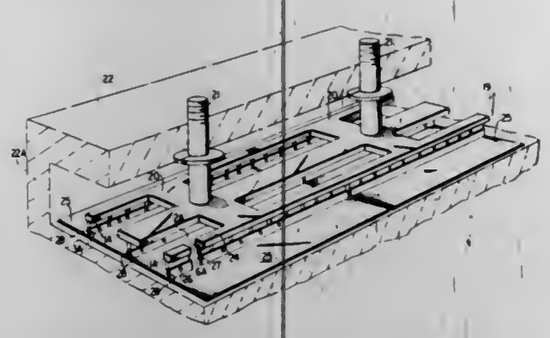


In an apparatus for the drilling and tapping of holes in a workpiece by the passage of electric current through an electrolyte between the apparatus and the workpiece, an elongated cathode having a radially extending thread-forming projection at a tip end thereof, a layer of insulation over the portions of said cathode exposed to electrolyte except for the tip surface and thread-forming projection, a conducting sleeve overlying said layer of insulation, means for moving said cathode along its longitudinal axis and rotating said cathode around said axis, and means for introducing electrolyte to the tip portion of said cathode.

3,271,289
MERCURY CATHODE ELECTROLYTIC CELL HAVING AN ANODE WITH HIGH CORROSION-RESISTANCE AND HIGH ELECTRICAL AND HEAT CONDUCTIVITY
Georg Messner, Milan, Italy, assignor to Oronzio de Nora Impianti Elettrochimici, Milan, Italy
Filed Oct. 10, 1963, Ser. No. 315,181
Claims priority, application Germany, July 22, 1959, O 6,894
4 Claims. (Cl. 204—219)

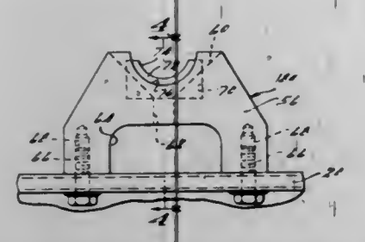
1. In combination with an electrolytic cell having four sides, a base and a cover, means to introduce an electrolyte solution into said cell, means to flow mercury over

said base, and means to provide anodic and cathodic current to said cell; an anode assembly comprising copper supporting means depending from said cover and acting as conductive members, a substantially horizontal copper anode support plate, having openings therethrough connected to said depending copper conductive members, titanium connecting means attached to the lower face of



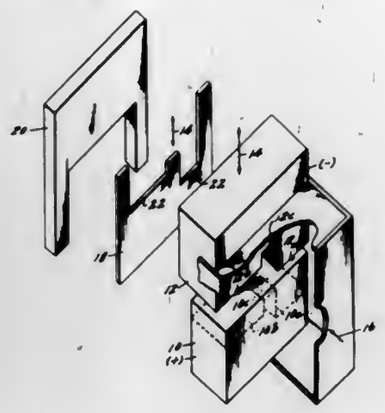
said horizontal copper anode support plate and depending therefrom, anode plates attached to said titanium connecting means and spaced from said horizontal copper anode support plate, said anode plate being substantially parallel to said base, and a non-conductive, non-corrosive covering over said supporting means and the joint between said connecting and supporting means.

3,271,290
CATHODE AGITATOR DEVICE
Leon J. Pianowski, Detroit, Mich., assignor to The Udylite Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 13, 1962, Ser. No. 244,358
8 Claims. (Cl. 204—222)



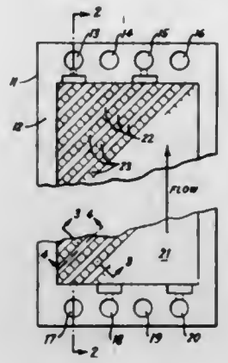
1. In an electrotreating apparatus including a supporting frame positioned at a treating station and an electrified rod reciprocably mounted on the frame for electrifying and reciprocably moving workpieces suspended therefrom, the improvement comprising a pair of bearings mounted in longitudinally spaced aligned relationship on the frame for slidably supporting the end portions of the rod, each of said bearings comprising a housing composed of an electrically nonconductive material and including a bearing face formed with a pair of longitudinally spaced end walls separated by a longitudinally extending inwardly directed cavity, a bearing pad composed of a solid self-lubricating material removably seated in said cavity having its outwardly directed bearing surface formed with a longitudinally extending groove for slidably receiving the rod, the longitudinal end edges of said bearing pad terminating at a point spaced from the inner surfaces of said end walls defining therewith a pair of longitudinally spaced residue cavities for receiving the wear-abrasion products of said bearing pad and the rod, coacting means on said bearing pad and said housing for retaining said bearing pad in appropriate spaced relationship from the said end walls, and coacting means on said housing for securing each of said bearings in a fixed position on the frame.

3,271,291
ELECTROCHEMICAL MACHINING APPARATUS WITH ELECTROLYTE FLOW CONTROL MEANS
Joseph Howard Crawford and Philip Allen Cappel, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Dec. 3, 1962, Ser. No. 241,585
2 Claims. (Cl. 204—224)



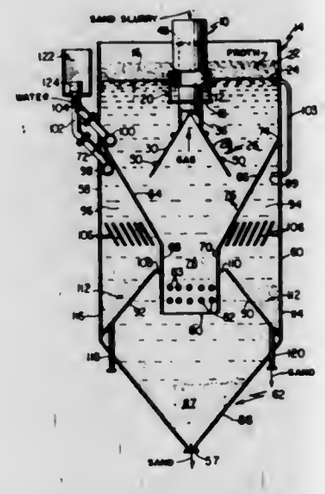
1. Electrochemical machining apparatus for use in producing an article surface from an electrically conductive workpiece including a work surface, in combination:
a cathode-tool having a three dimensional tool surface substantially different in surface contour from that of the work surface of the workpiece prior to electrochemical machining operation, the tool surface including at an edge an exit tool profile portion;
a workpiece support means to position the work surface of the workpiece in juxtaposition with the tool surface to define an electrochemical machining gap;
means for moving the cathode-tool and the workpiece support means one toward the other to maintain the gap;
chamber means to provide an electrolyte enclosure for filling the gap and for directing electrolyte through the gap toward the exit tool profile portion;
an electrolyte source;
means connecting the chamber means with the electrolyte source to circulate electrolyte through the chamber means;
weir means including a weir profile edge portion relating in shape to the exit tool profile portion;
means for supporting the weir means to position the weir profile edge portion in spaced apart relationship with and substantially opposite the exit tool profile portion of the cathode-tool during electrochemical machining operation to maintain an exit gap between the exit tool profile portion and the weir profile edge portion through which electrolyte is discharged from the electrochemical machining gap;
shutter means having a shutter edge portion forming one boundary of an opening in the shutter means;
means for supporting the shutter means adjacent the weir means and for positioning the shutter edge portion with respect to the exit gap formed by the exit tool profile portion and the weir profile edge portion, during relative movement between the exit gap and the shutter edge portion, to control flow of electrolyte from the exit gap as a function of the article surface to be produced;
an electrical power source of predominantly direct current; and
electrical conductor means connected between the cathode-tool and the workpiece whereby the cathode-tool is predominantly negative and the workpiece is predominantly positive during electrochemical machining.

3,271,292
ION EXCHANGE MEMBRANES AND SPACERS AND PROCESS OF MAKING THEM
Paul Kollsman, 100 E. 50th St., New York 22, N.Y.
Filed Nov. 8, 1960, Ser. No. 68,065
10 Claims. (Cl. 204—263)



1. An ion conductive membrane spacer of substantially lattice type form composed of anion exchange resin particles and cation exchange particles, both types of particles being in random arrangement, and predominantly in the shape of fibers having a length exceeding three times their mean diameter.

3,271,293
PROCESS AND APPARATUS FOR STRIPPING SOLIDS FROM BITUMINOUS SAND
Lincoln Clark, Newport Beach, Calif., assignor, by direct and mesne assignments, of thirty percent to Cities Service Athabasca, Inc., Edmonton, Alberta, Canada, a corporation of Delaware, thirty percent to Imperial Oil Limited, a corporation of Canada, thirty percent to Atlantic Richfield Company, a corporation of Pennsylvania, and ten percent to Royalite Oil Company Limited, a corporation of Canada
Filed May 3, 1963, Ser. No. 277,922
9 Claims. (Cl. 208—11)



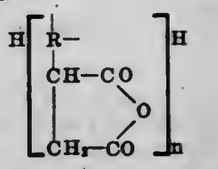
1. A process for separating bitumen from bituminous sand slurry which comprises passing a bituminous sand slurry into a body of water, guiding material in said bituminous sand including bitumen heavier than water downwardly through a column of water having a decreased cross-section, passing a flotation gas upwardly through said column within the area of decreased cross-section below the slurry entrance, said gas rising and contacting the downwardly flowing bitumen and floating a portion thereof upwardly, entrapping the rising gas and bitumen in a confined area below the top of the water column, conducting the entrapped gas and bitumen upwardly above above and out of contact with the water in said column and permitting the gas to vent thereabove.

3,271,294
HYDROISOMERIZATION PROCESS
Joseph Matthew Kelley, 1321 E. Broad St., Westfield, N.J.
No Drawing. Filed Oct. 26, 1962, Ser. No. 234,010
2 Claims. (Cl. 208—46)

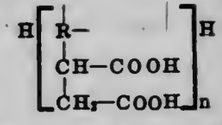
1. A method for treating a naphtha feed containing at least 10 percent by volume of olefinic materials wherein process conditions are optimized to produce as a principal product a middle distillate boiling in the range of 300° to 600° F., which comprises passing said naphtha feed over a hydrocracking catalyst base containing from 1 to 20 percent by weight of $CoMoO_4$ deposited thereon, the feed rate of said hydrocarbon being from 0.1 to 10 v./v./hr. at a hydrogen pressure of from 0 to 2000 p.s.i.g. and a temperature of from 350° to 500° F., said treatment being conducted in the presence of from 100 to 5000 standard cubic feet of hydrogen per barrel of said naphtha feed.

3,271,295
PROCESS OF HEAT TRANSFER
Gerardo A. Gonzalez, Philadelphia, Pa., assignor to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 23, 1965, Ser. No. 434,618
10 Claims. (Cl. 208—48)

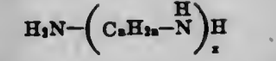
1. A process for preventing heat transfer reduction in a metal conductor, through which passes a hydrocarbon at a temperature between 200 and 1100° F., which comprises adding to said hydrocarbon between 1 and 200 parts per million by volume of a reaction product of
(a) a member of the group consisting of alkyl-substituted and alkenyl-substituted succinic anhydrides having the formula:



and alkyl-substituted and alkenyl-substituted succinic acids having the formula:



where n is an integer between 1 and 5 inclusive, and R is a group of the class consisting of alkyl and alkenyl groups having between 30 and 200 carbon atoms in the hydrocarbon chain; and
(b) a polyamine of the formula:



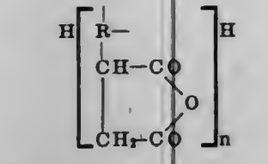
where n is an interger between 2 and 10 inclusive, x is an integer between 1 and 10 inclusive and C_nH_{2n} is a straight chain hydrocarbon, the proportions of polyamine varying from ½ to 2 equivalents per equivalent of succinic compound.

3,271,296
PROCESS OF HEAT TRANSFER
Gerardo A. Gonzalez, Philadelphia, Pa., assignor to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 1, 1965, Ser. No. 436,369
4 Claims. (Cl. 208—48)

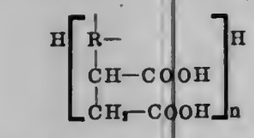
1. A process for preventing heat transfer reduction in a metal conductor, through which passes a hydro-

carbon of the group consisting of naphthas, gas oils, crude oils, residuum, light distillate, gasoline or mixtures thereof, at a temperature between 200 and 1100° F., which comprises adding to said hydrocarbon chain group between 1 and 200 parts per million by volume of a reaction product of

(a) a member of the group consisting of alkyl substituted and alkenyl substituted succinic anhydrides having the formula:

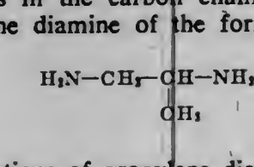


and alkyl substituted and alkenyl substituted succinic acids having the formula:



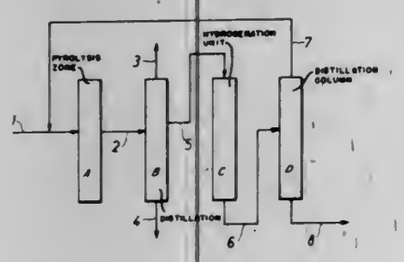
wherein *n* is an integer between 1 and 5 inclusive, and R is a group of the class consisting of alkyl and alkenyl groups having between 30 and 200 carbon atoms in the carbon chain; and

(b) propylene diamine of the formula:



the proportions of propylene diamine varying from one-half of 2 equivalents per equivalent of succinic compound.

3,271,297
RECYCLE OF MONOOLEFINES TO A HYDROCARBON PYROLYSIS PROCESS
Walter Krönig, Hans-Joachim Müller, and Karl-Heinz Vöpel, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Dec. 11, 1961, Ser. No. 158,569
Claims priority, application Germany, Dec. 15, 1960, F 32,763
5 Claims. (Cl. 208—67)



1. In a process for the pyrolysis of liquid hydrocarbons wherein a feed stock is subjected to pyrolysis to produce a cracked gasoline containing monoolefins and diolefins and aromatic compounds, the improvement which comprises subjecting the cracked gasoline to a hydrogenation treatment to convert diolefins of the cracked gasoline to monoolefins without substantial hydrogenation of monoolefins, separating monoolefins from the product of hydrogenation to provide to a monoolefin fraction and an aromatic fraction, and introducing said monoolefin fraction into the pyrolysis.

3,271,298
THERMAL CRACKING OF PARAFFINS TO AROMATICS
Clarence L. Dulaney and Marvin Lee Owens, Jr., Texas City, Tex., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Feb. 28, 1963, Ser. No. 261,878
10 Claims. (Cl. 208—106)

1. A process for increasing the production of aromatic hydrocarbons from the thermal cracking of paraffin hydrocarbons which comprises adding 0.1 to 10 mol percent of a hydrocarbon selected from the group consisting of hydrocarbon substituted aromatic hydrocarbons, partially saturated cyclic hydrocarbons and saturated cyclic hydrocarbons to a non-catalytic thermal cracking zone concurrently with a paraffin hydrocarbon feed containing less than 1% of non-paraffin hydrocarbons, said cracking zone being maintained at a temperature of 400–900° C. and a pressure of atmospheric to 1000 p.s.i.g.

3,271,299
COMPOSITIONS CONTAINING STABLE ALUMINUM PHOSPHATE GEL AND METHODS OF USING SAME
Kenneth K. Kearby, Watchung, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Original application Sept. 3, 1959, Ser. No. 837,807. Divided and this application Sept. 2, 1964, Ser. No. 394,006
24 Claims. (Cl. 208—114)

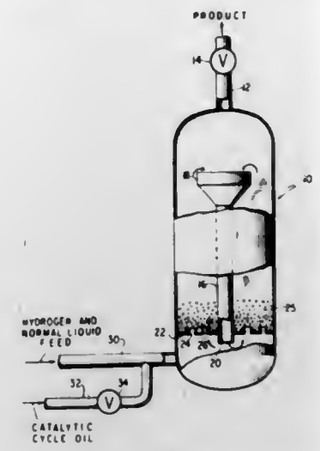
18. A method of cracking higher boiling hydrocarbons to lower boiling hydrocarbons which comprises contacting hydrocarbon oil feed at a cracking temperature for a sufficient time to crack said hydrocarbon oil feed with a catalyst comprising at least 50% of an aluminum phosphate hard stable gel made from a true vibrant aluminum phosphate hydrogel and which has an initial surface area above about 250 m.²/gram after calcining said true vibrant aluminum phosphate hydrogel.

3,271,300
SILICA-ALUMINA-MAGNESIA-MAGNESIUM FLUORIDE CATALYST AND PROCESS
Richard W. Baker, Ellicott City, James J. Blazek, Reisterstown, and Frank G. Ciapetta, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed May 11, 1964, Ser. No. 366,596
12 Claims. (Cl. 208—120)

7. A process for cracking heavy petroleum fractions to produce an increased proportion of high octane gasoline and light fuel oils with a minimum production of coke which comprises contacting said fraction at temperatures above about 800° F. with a silica-alumina-magnesia-magnesium fluoride cracking catalyst containing from about 0.2 to 57.0% alumina, from about 28.3 to .4% magnesia, and from about 14.0 to .1% magnesium fluoride, the balance of the catalyst composition being essentially silica.

3,271,301
HYDROGENATION PROCESS
Richmond B. Galbreath, Fanwood, N.J., assignor to Cities Service Research and Development Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 3, 1964, Ser. No. 341,941
4 Claims. (Cl. 208—143)

1. A continuous process for hydrogenating hydrocarbon oil which comprises maintaining a reaction zone containing a mass of particulate hydrogenation catalyst under hydrogen pressure and elevated temperature, alternately feeding residual oil at least 50 volume per cent of which boils above 650° F. and catalytic cycle oil having between about 30 and about 50 volume percent aromatics into said reaction zone upwardly in the liquid phase through the catalyst mass and expanding the volume of the mass by about 10% to about 300% as compared to its settled volume and hydrogenating said oils, and wherein the quantity of cycle oil fed to the reactor is between about one-third and one one-hundredth the quantity of residual oil fed to the reactor.



3,271,302
MULTIPLE-STAGE HYDROREFINING OF PETROLEUM CRUDE OIL
William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed June 17, 1964, Ser. No. 375,948
7 Claims. (Cl. 208—264)

1. A process for hydrorefining a hydrocarbon charge stock which comprises the steps of:

(a) treating said charge stock, in the absence of a catalytic composite, with a gaseous mixture of hydrogen and hydrogen sulfide; and

(b) reacting at least a portion of the resulting treated product effluent with hydrogen, in a reaction zone containing a hydrorefining catalytic composite.

3,271,303
PROCESS FOR DISPLACING AGENT CONTAINMENT
William R. Epperly, Murray Hill, and Charles W. Tyson, Jr., Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 24, 1962, Ser. No. 246,940
10 Claims. (Cl. 208—310)

1. A method of separating n-paraffins from a feed stream comprising n-paraffins and other saturated hydrocarbons which comprises in combination:

(a) introducing said feed stream comprising n-paraffins and other saturated hydrocarbons into a first adsorbent zone wherein said zone contains adsorbed displacing agent and said adsorbent is composed of molecular sieves having a pore size of about 5 A,

(b) displacing at least a portion of said displacing agent from said first adsorbent zone with said feed while adsorbing at least a portion of n-paraffins from said feed stream,

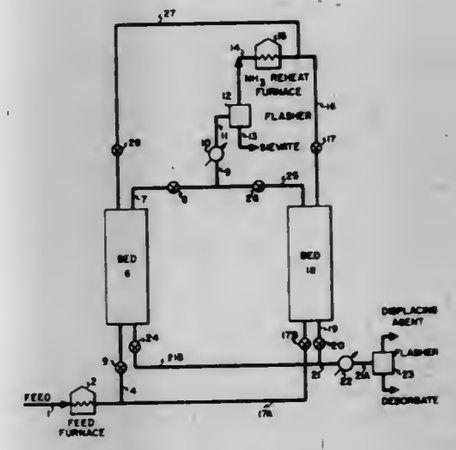
(c) conveying said displaced displacing agent to a second adsorbent zone containing adsorbed n-paraffins, wherein said zone also contains molecular sieves having a pore size of about 5 A,

(d) removing at least a portion of said adsorbed n-paraffins from said second zone by desorbing with said displacing agent from said first adsorbent while permitting less than 3% of said displacing agent to exit from said second adsorption zone,

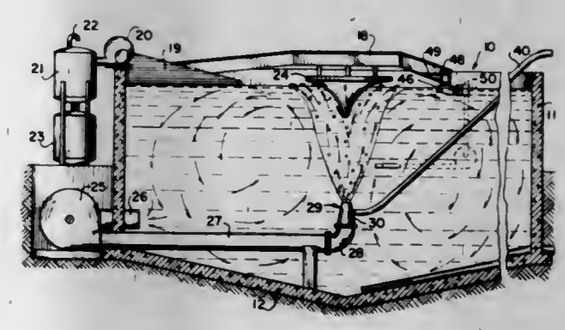
(e) introducing said feed into said second adsorption zone, and

(f) repeating the above cycle of said displacing, conveying, recovering and introducing.

8. A method of separating aromatic hydrocarbons from a feedstream comprising aromatic hydrocarbons and non-aromatic hydrocarbons which comprises in combination: (a) introducing said feedstream into a first adsorbent zone wherein said zone contains adsorbed displacing agent and said adsorbent is composed of type X molecular sieve, (b) displacing at least a portion of said displacing agent from said first adsorbent zone with said feed while adsorbing at least a portion of said aromatic hydrocarbons from said feedstream, (c) conveying said displaced displacing agent to a second adsorbent zone containing adsorbed aromatics, wherein said zone also contains type X molecular sieve, (d) removing at least a portion of said adsorbed aromatics from said second zone by desorbing with said displacing agent from said first adsorbent while permitting less than about 3% of said displacing agent to exit from said adsorption zone, (e) introducing said feed into said second adsorption zone and (f) repeating the above cycle of said displacing, conveying, recovering and introducing.



3,271,304
VENTURI AERATOR AND AERATING PROCESS FOR WASTE TREATMENT
Joe M. Valdespino, Orlando, Fla., and Clifford B. Cox, Chicago, Ill., assignors to Pacific Flush Tank Company, Chicago, Ill., a corporation of Illinois
Filed June 26, 1964, Ser. No. 378,320
17 Claims. (Cl. 210—15)



10. The method of introducing air under atmospheric pressure into a body of liquid contained in a tank compris-

ing the steps of removing liquid from said tank, pumping the removed liquid through an elbow to change its direction of flow, then through a swirling mechanism to impart a swirling motion to said liquid and then forcing the swirling liquid through a venturi type aspirator having a high pressure inlet portion, a constricted throat portion and a negative pressure discharge portion having an outlet, providing an orifice between said outlet and said throat portion in communication with said discharge portion of said aspirator, connecting said orifice to a source of air under atmospheric pressure, and discharging said liquid from said aspirator directly into the body of liquid, whereby the negative pressure created in said discharge portion will draw air through said orifice and entrain said air in the liquid being discharged from said aspirator.

3,271,305
TEXTILE TREATMENTS AND TREATED TEXTILES

Thomas C. Allen, High Point, N.C., and Harold J. Watson, Danville, Va., assignors to Dan River Mills, Incorporated, Danville, Va., a corporation of Virginia

No Drawing. Original application Sept. 1, 1961, Ser. No. 135,448, now Patent No. 3,215,719, dated Nov. 2, 1965. Divided and this application Sept. 15, 1964, Ser. No. 401,756

18 Claims. (Cl. 252—8.6)

1. Process for providing a lasting fragrance to cellulosic textiles comprising impregnating said textile with a silicon compound from the class consisting of silanes and siloxanes, said silicon compound having at least one hydrolyzable organic oxy group bonded to silicon through a silicon to oxygen to carbon linkage, said organic oxy group forming a fragrant essential alcohol upon hydrolysis, and drying the impregnated textile, said dried, impregnated textile being capable of thereafter successively forming said fragrant essential alcohol by subjecting said dried impregnated fabric to moisture to hydrolyze some of said organic oxy groups.

3,271,306
METHOD FOR PREVENTING THE FORMATION OF INSOLUBLE IRON COMPOUNDS

Enrico G. Capriati, Texas City, and David T. Oakes, Dickinson, Tex., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,811

8 Claims. (Cl. 252—8.55)

1. The method of preventing the formation of water-insoluble $Fe(OH)_3$ in aqueous systems in the presence of iron capable of forming said $Fe(OH)_3$ which comprises adding to said aqueous system 25 to 1000 p.p.m. of a haloalkyl phosphonic acid of no greater than 6 carbon atoms.

5. The method of preventing the formation of water-insoluble $Fe(OH)_3$ in subterranean petroleum-bearing formations during the secondary recovery of petroleum by water flooding, said method comprising adding 25 to 1000 p.p.m. of a haloalkyl phosphonic acid containing no greater than 6 carbon atoms to the secondary recovery injection water.

3,271,307
OIL WELL TREATMENT

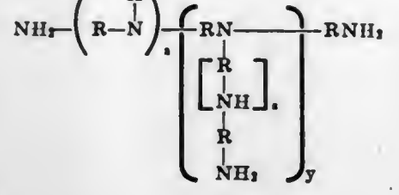
Woodrow J. Dickson, La Habra, and Fred W. Jenkins, Buena Park, Calif., assignors to Petrolite Corporation

No Drawing. Original application Aug. 4, 1960, Ser. No. 47,386, now Patent No. 3,200,106, dated Aug. 10, 1965. Divided and this application Aug. 6, 1963, Ser. No. 300,152

40 Claims. (Cl. 252—8.55)

1. A process for injecting water into an underground formation characterized by employing an aqueous solution of a compound selected from the group consisting of

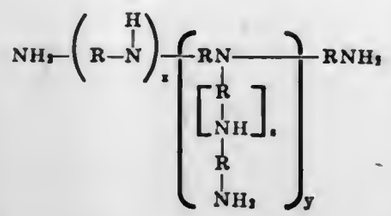
(1) a branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula



wherein

R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,

(2) an acylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula



wherein

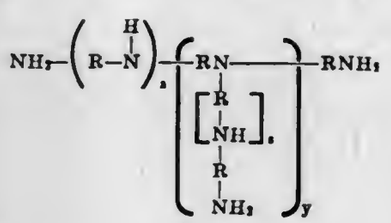
R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,

formed by reacting, at a temperature of from about 120° to about 300° C., said polyalkylenepolyamine with a compound selected from the group consisting of

(i) a carboxylic acid having 7–39 carbon atoms and

(ii) a precursor of said carboxylic acid capable of forming said acid in said reaction,

(3) an oxyalkylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula

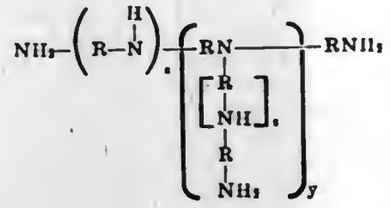


wherein

R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,

formed by reacting, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., said polyalkylenepolyamine with an alkylene oxide having at least 2 carbon atoms,

(4) an alkylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula

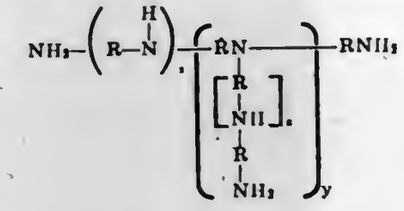


wherein

R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,

formed by reacting, at a temperature of from about 100° C. to about 250° C., said polyalkylenepolyamine with a hydrocarbon halide alkylating agent having 1 to 30 carbon atoms,

(5) an olefinated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula

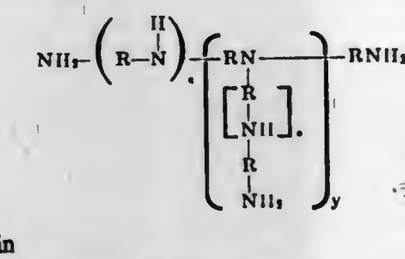


wherein

R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,

formed by reacting, at a temperature of from about 70° C. to about 100° C., said polyalkylenepolyamine with an olefinating agent selected from the group consisting of acrylonitrile, styrene, butadiene, vinyl ethers and vinyl sulfones,

(6) a Schiff base reaction product of a branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula



wherein

R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,

formed by reacting said polyalkylenepolyamine with a compound selected from the group consisting of aldehydes and ketones,

(7) an acylated, then oxyalkylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting, at a temperature of from about 125° C. to about 300° C., said polyalkylenepolyamine with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polyalkylenepolyamine, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., with an alkylene oxide having at least 2 carbon atoms,

(8) an oxyalkylated, then acylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., said polyalkylenepolyamine with an alkylene oxide having at least 2 carbon atoms and then reacting said oxyalkylated polyalkylenepolyamine, at a temperature of from about 120° C. to about 300° C., with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction,

(9) an alkylated, then acylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting, at a temperature of from about 100° C. to about 250° C., said polyalkylenepolyamine with a hydrocarbon halide alkylating agent having 1–30 carbon atoms, and then reacting said alkylated polyalkylenepolyamine, at a temperature of from about 120° C. to about 300° C., with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction,

(10) an acylated, then alkylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting at a temperature of from about 120° C. to about 300° C., said polyalkylenepolyamine with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polyalkylenepolyamine, at a temperature of from about 100° C. to about 250° C., with a hydrocarbon halide alkylating agent having 1–30 carbon atoms,

(11) an oxyalkylated, then alkylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i. to about 200 p.s.i., said polyalkylenepolyamine with an alkylene oxide having at least 2 carbon atoms, and then reacting said oxyalkylated polyalkylenepolyamine, at a temperature of from about 100° C. to about 250° C., with a hydrocarbon halide alkylating agent having 1–30 carbon atoms,

(12) a Schiff base reaction product of an acylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting, at a temperature of from about 120° C. to about 300° C., said polyalkylenepolyamine with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of

said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polyalkylenepolyamine with a compound selected from the group consisting of aldehydes and ketones,

(13) a Schiff base reaction product of an alkylated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting, at a temperature of from about 100° C. to about 250° C., said polyalkylenepolyamine with a hydrocarbon halide alkylating agent having 1–30 carbon atoms, and then reacting said alkylated polyalkylenepolyamine with a compound selected from the group consisting of aldehydes and ketones,

(14) an oxyalkylated Schiff base reaction product of a branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting said polyalkylenepolyamine with a compound selected from the group consisting of aldehydes and ketones to form said Schiff base reaction product and then reacting said Schiff base reaction product, at a temperature of from about 80° C. to about 200° C. and a pressure of from about 10 p.s.i., to about 200 p.s.i., with an alkylene oxide having at least 2 carbon atoms,

(15) an acylated, then olefinated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting, at a temperature of from about 120° C. to about 300° C., said polyalkylenepolyamine with an acylating agent selected from the group consisting of (i) a carboxylic acid having 7–39 carbon atoms and (ii) a precursor of said carboxylic acid capable of forming said acid in said reaction, and then reacting said acylated polyalkylenepolyamine, at a temperature of from about 70° C. to about 100° C., with an olefinating agent selected from the group consisting of acrylonitrile, styrene, butadiene, vinyl ethers and vinyl sulfones, and

(16) an alkylated, then olefinated branched polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the hereinabove recited formula, formed by reacting, at a temperature of from about 100° C. to about 250° C., said polyalkylenepolyamine with a hydrocarbon halide alkylating agent having from 1–30 carbon atoms, and then reacting said alkylated polyalkylenepolyamine, at a temperature of from about 70° C. to about 100° C., with an olefinating agent selected from the group consisting of acrylonitrile, styrene, butadiene, vinyl ethers and vinyl sulfones.

3,271,308

PACKING MATERIAL AND METHOD AND APPARATUS UTILIZING SAID PACKING MATERIAL

Theodore L. Veit and Richard W. Watson, Palmyra, N.Y., assignors to Garlock Inc., Palmyra, N.Y., a corporation of New York

Filed May 17, 1960, Ser. No. 29,682
6 Claims. (Cl. 252—13)

4. A packing material consisting essentially of a mineral fiber in an amount sufficient to impart body to the packing material, solid lubricant in an amount sufficient to provide for lubrication in use, and binder for the mineral fiber and solid lubricant in an effective amount, said binder being a material selected from the group consisting of butyl rubber, polyisobutylene, and polybutene, and being volatile and upon volatilization leaving the mineral fiber and solid lubricant in compressible condition.

3,271,309

GREASE COMPOSITIONS

Gerard P. Caruso, New Orleans, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 17, 1964, Ser. No. 383,503
20 Claims. (Cl. 252—21)

9. A grease composition consisting essentially of a lubricating base oil gelled to grease consistency by means of an oleophilic clay product, which has been rendered oleophilic by treatment of a clay having a base exchange capacity of 25–100 milliequivalents per 100 grams with an organic ammonium base, minor proportions each of an essentially water-insoluble metal carbonate having a Mohs hardness of 1–5 and a thermal decomposition of no less than 250° C. and a sulfide of the group consisting of molybdenum sulfide, amorphous antimony sulfides and mixtures thereof, the combined carbonate and sulfide being sufficient to improve substantially the extreme-pressure properties of the grease, and 0.1–0.75% by weight of a lead naphthenate.

3,271,310

METAL SALTS OF ALKENYL SUCCINIC ACID

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,031
7 Claims. (Cl. 252—35)

1. A metal salt of a hydrocarbon-substituted succinic acid having at least about 50 aliphatic carbon atoms in the hydrocarbon substituent, the metal of said metal salt being selected from the class consisting of Group I metals, Group II metals, aluminum, lead, tin, cobalt, and nickel.

7. A lubricating composition comprising a major proportion of a lubricating oil and from about 0.1% to about 20% by weight of a metal salt of claim 1.

3,271,311

LUBRICANT

Arnold J. Morway, Clark, and Albert J. Bodner, Linden, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 8, 1963, Ser. No. 314,630
5 Claims. (Cl. 252—39)

1. A lubricant having a tendency to increase in viscosity on heating and decrease in viscosity on cooling under low rates of shear, comprising a major amount of lubricating oil and alkaline earth metal salt of about 1.0 to 25.0 wt. percent of acetic acid, about 0.1 to 10.0 wt. percent C_{14} to C_{30} fatty acid having a Wijs iodine number of 35 to 75 and a saponification number of 150 to 250, and about .2 to 10.0 wt. percent of an amorphous polyisobutylene having a molecular weight of about 600 to about 1400 Staudinger, wherein all of said weight percents are based upon the total weight of the composition.

2. A lubricant according to claim 1, wherein said lubricating oil is mineral lubricating oil, said alkaline earth metal is calcium, and said C_{14} to C_{30} fatty acid is C_{14} to C_{20} fatty acid.

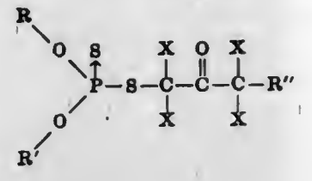
3,271,312

STABILIZATION OF ORGANIC SUBSTANCES

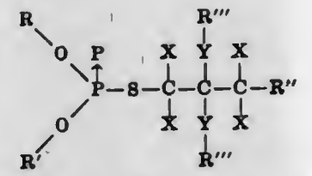
Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Original application Nov. 19, 1962, Ser. No. 238,773. Divided and this application Feb. 12, 1965, Ser. No. 432,404
6 Claims. (Cl. 252—46.7)

1. Organic material selected from the group consisting of hydrocarbons, lubricating oils and greases containing a stabilizing concentration of an inhibitor having a structural formula selected from the group consisting of:



and



where O is oxygen, S is sulfur, P is phosphorus, C is carbon, R and R′ are selected from the group consisting of hydrogen and alkyl radicals, R″ is selected from the group consisting of hydrogen, alkyl, halogen and O,O-dialkyldithiophosphatyl radicals, X is selected from the group consisting of hydrogen and halogen radicals, Y is selected from the group consisting of oxygen and sulfur, and R‴ is selected from the group consisting of hydrogen and alkyl radicals, said alkyls each containing from 1 to about 20 carbon atoms.

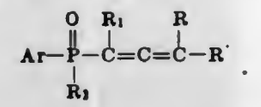
3,271,313

LUBRICANTS CONTAINING ALLENIC PHOSPHINYL COMPOUNDS

Armand P. Boisselle, Timberlake, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 24, 1964, Ser. No. 413,614
8 Claims. (Cl. 252—49.8)

1. A lubricating composition comprising a major proportion of a lubricating oil and from about 0.01% to about 5% by weight of an allenic phosphinyl compound having the structural formula

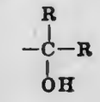


wherein

(a) Ar is an aryl radical selected from the group consisting of phenyl, naphthyl, alkylphenyl, alkylnaphthyl, halophenyl, nitrophenyl and alkoxyphenyl;

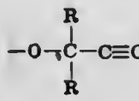
(b) R is selected from the class consisting of hydrogen, lower alkyl, and lower cycloalkyl radicals;

(c) R_1 is selected from the class consisting of hydrogen, lower alkyl and



radicals;

(d) and R_2 is selected from the class consisting of Ar and



radicals.

3,271,314

2,6-DIISOPROPYLPHENOL

George G. Ecke, Penn Hills Township, and Alfred J. Kolka, Pittsburgh, Pa., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 4, 1958, Ser. No. 778,063
2 Claims. (Cl. 252—52)

2. A lubricating oil normally tending to undergo oxidative deterioration containing a small antioxidant quantity, up to 5 percent, of 2,6-diisopropylphenol.

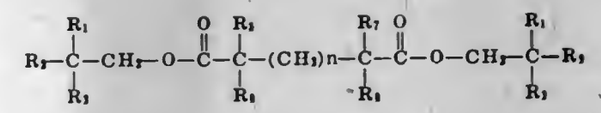
3,271,315

USE OF HINDERED ESTERS OF CARBOXYLIC ACIDS AS RADIATION RESISTANT LUBRICANTS

Leo J. McCabe, Glassboro, N.J., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,829
The portion of the term of the patent subsequent to June 14, 1983, has been disclaimed
6 Claims. (Cl. 252—56)

1. The method of lubricating machine elements subjected to atomic radiation comprising contacting said elements with a lubricating fluid having improved radiation stability and consisting essentially of a material having the formula



where R_1 and R_3 are alkyl groups containing not greater than 3 carbon atoms in each; R_2 is an acyclic alkyl group containing from 2 to 8 carbon atoms and may contain a single branch of not more than 2 carbon atoms; R_5, R_6, R_7, and R_8 are acyclic alkyl groups containing from 2 to 4 carbon atoms each; and n is an integer varying from 2 to 6.

3,271,316

METHOD OF MANUFACTURING FERROMAGNETIC OXIDES

Toru Inoue, 356 Soshigaya 2-chome, Tokyo, Japan, and Shuichi Iida, 14A–250 Mt. Vernon Place, Newark, N.J.

Filed June 11, 1965, Ser. No. 463,320
Claims priority, application Japan, Jan. 27, 1961, 36/2,195; Jan. 30, 1961, 36/2,616; Mar. 23, 1961, 36/9,468
8 Claims. (Cl. 252—62.5)

1. A method of manufacturing an iron-containing ferromagnetic oxide without disaccommodation which comprises preparing an iron-containing ferromagnetic oxide by a controlled atmosphere heat treatment, placing the resultant ferromagnetic oxide in an air-tight container with an oxygen absorbing agent in an amount which is less than 10^{-3}, and the tolerance of which is less than 5×10^{-4}, in terms of the proportion of the amount of the oxygen capable of absorbing to the total amount of the oxygen content of said ferromagnetic oxide; evacuating the interior of the container; sealing the container; heating the sealed container to an annealing temperature; annealing the ferromagnetic oxide under the action of said agent; and cooling the container to room temperature.

3,271,317

SILICATED SODIUM HYDROXIDE

Joseph V. Otrhalek, Dearborn, and Paul E. Luoma, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Dec. 24, 1963, Ser. No. 333,204
4 Claims. (Cl. 252—135)

1. A process for the preparation of silicated caustic soda comprising heating caustic soda liquor containing from about 50 to 75% sodium hydroxide at above a temperature of 200° F. to obtain a concentrate containing 69 to 76% sodium hydroxide and 31–24% water, adding

finely divided silica in an amount of from about 5 to 20% by weight based on the caustic soda liquor, boiling the reaction mass for about 1.5 to 4.5 hours to a final boiling point of about 355° F., and cooling the reaction mass to obtain a homogeneous frozen product comprising anhydrous sodium silicate having a particle size of less than 50 microns frozen in a matrix of a hydrate of sodium hydroxide containing no more than 1 mol of water per mol of sodium hydroxide.

3,271,318

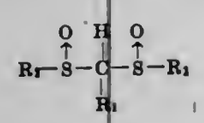
SULFOXIDE DETERGENT

Jim S. Berry, Springfield Township, Hamilton County, and Warren I. Lyness, Mount Healthy, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Original application Nov. 14, 1962, Ser. No. 237,715. Divided and this application July 28, 1965, Ser. No. 482,978

3 Claims. (Cl. 252—138)

1. An alkaline detergent composition consisting essentially of a 1,1-bis-sulfoxide compound having the formula:



wherein R_1 is an alkyl group containing from about 8 to about 16 carbon atoms; R_2 and R_3 are alkyl groups containing 1 to 2 carbon atoms and an alkaline builder salt selected from the group consisting of water soluble inorganic builder salts, water soluble organic alkaline sequestrant builder salts and mixtures thereof, the ratio of said sulfoxide compound to said builder salt being in the range of about 4:1 to about 1:20.

3. The composition of claim 1 wherein said alkaline builder salt is sodium tripolyphosphate.

3,271,319

WATER STAIN REMOVER

Carl H. B. Morrison, 4045 S. Cherry Ave., Fresno 6, Calif.

No Drawing. Filed Jan. 9, 1963, Ser. No. 250,233

2 Claims. (Cl. 252—142)

1. A fluid water stain remover having a Saybolt Universal viscosity of about 200 to 1500 seconds at 100° F. suitable for application to glass and glazed surfaces spotted by the action of water droplets, which comprises the following ingredients in solution:

	Percent
Hydrofluoric acid	8
Carboxy methyl cellulose	0.8
Sodium octyl sulfate	0.2
Water	91

3,271,320

POLONIUM RECOVERY

Raymond H. Moore, Kennewick, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,114

3 Claims. (Cl. 252—301.1)

1. A method of recovering polonium values from a solution in bismuth metal, comprising melting said solution; adding cerium metal to said solution, whereby cerium bismuthide is precipitated and said polonium values are carried by said cerium bismuthide; and separating the polonium-containing cerium bismuthide from bismuth metal.

3,271,321

RESINS HOMOGENEOUSLY BRIGHTENED WITH BIS-STYRYLBENZENES

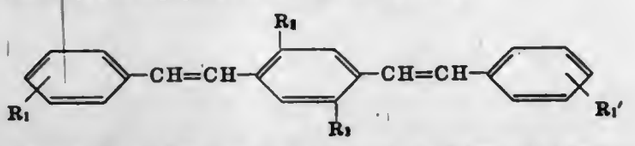
Walter Stilz and Horst Pommer, Ludwigshafen (Rhine), Erika Wolff, Heidelberg, and Heinz Fessmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany

No Drawing. Filed June 20, 1960, Ser. No. 37,058

Claims priority, application Germany, June 24, 1959, B 53,723

20 Claims. (Cl. 252—301.2)

1. An optically brightened synthetic organic polymer in which there is homogeneously incorporated a substituted 1,4-bis-styrylbenzene of the formula:



wherein R_1 and R_1' each represents a substituent selected from the group consisting of —CN, —COOH, —COO—alkyl, —COO—cyclohexyl, —$CONH_2$, —CONH—alkyl, —CONH—cyclohexyl and —CON=$(alkyl)_2$ wherein the alkyl groups contain 1 to 4 carbon atoms, and wherein R_2 and R_3 each represents a substituent selected from the group consisting of hydrogen, alkyl, alkoxy and halogen, said R_2 and R_3 being limited to substituents which impart a maximum ultraviolet absorption value of not higher than 380 millimicrons and a fluorescence spectrum value between about 390 and 450 millimicrons, said values being measured as bands of maximum extinction in dioxane.

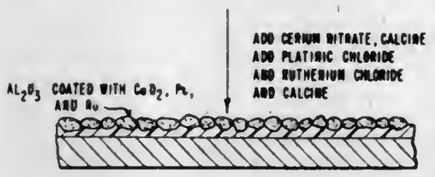
3,271,322

CATALYTIC SURFACE

Alvin B. Stiles, Welshire, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 30, 1964, Ser. No. 379,161

4 Claims. (Cl. 252—428)



1. A catalytic surface which consists essentially of a film of polytetrafluoroethylene, particulate carrier, and a catalyst, the catalyst being supported upon the said carrier and the supported catalyst being carried upon a surface and partially embedded in said film.

3,271,323

SILICATE MINERALS HAVING INCREASED SURFACE AREA AND ABSORPTION PROPERTIES AND METHOD OF PREPARATION THEREOF

Osgood J. Whittemore, Jr., Princeton, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

No Drawing. Filed Apr. 3, 1961, Ser. No. 100,031

16 Claims. (Cl. 252—432)

1. A method for the production of high surface area ceramics which comprises mixing together a silicate mineral with a boron compound selected from the group consisting of boric acid, boric oxide, calcium borate, and sodium tetraborate, firing the mixture at a temperature of from 600° C. to a temperature below that of complete fusion of the composition and for from about 1 to 60 hours, and leaching the fired product to substantially remove any water soluble residue, whereby the absorption and surface area of the silicate mineral are substantially increased.

3,271,324

CATALYST COMPOSITION CONSISTING OF COPPER OXIDE-IRON OXIDE ON ALUMINA

Ruth E. Stephens, Detroit, Daniel A. Hirschler, Jr., Birmingham, and Frances W. Lamb, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 1, 1962, Ser. No. 199,232

The portion of the term of the patent subsequent to Dec. 27, 1982, has been disclaimed

1 Claim. (Cl. 252—466)

A catalyst composition especially adapted to substantially oxidize the unburned hydrocarbons and carbon monoxide constituents of the exhaust gas of internal combustion engines, said composition consisting essentially of a major proportion of a transitional alumina and from 0.5 to about 25 percent by weight of copper oxide and from 0.5 to about 10 percent by weight iron oxide.

3,271,325

CATALYTIC COMPOSITIONS FOR USE IN STEAM REFORMING OF HYDROCARBONS

Phineas Davies, Norton-on-Tees, and Cecil Michael Stone, Reigate, Surrey, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 6, 1962, Ser. No. 221,898

Claims priority, application Great Britain, Sept. 11, 1961, 32,491/61

19 Claims. (Cl. 252—466)

1. A precursor composition for an alumina containing material, for use in catalysts, consisting essentially of a hydrate of alumina, aluminum, and a compound of a metal selected from the group consisting of aluminum and metals of Groups I, II and VIII of the Periodic Table.

8. An alumina containing material which is the heat reaction product obtained by heating a precursor composition consisting essentially of a hydrate of alumina, aluminum, and a compound of a metal selected from the group consisting of aluminum and metals of Groups I, II and VIII of the Periodic Table to a temperature of between 400° C. and 850° C. whereby the alumina hydrate and aluminum are at least partly converted to gamma alumina.

9. A steam reforming catalyst composition consisting essentially of an alumina containing material which is the heat reaction product obtained by heating a precursor composition consisting essentially of a hydrate of alumina, aluminum, and a compound of a metal selected from the group consisting of aluminum and metals of Groups I, II and VIII of the Periodic Table to a temperature of between 400° C. and 850° C. whereby the alumina hydrate and aluminum are at least partly converted to gamma alumina, and a catalytic material selected from the group consisting of nickel containing materials, platinum group metal containing material, and nickel and platinum group metal containing materials.

12. A process for preparing an alumina containing material which comprises heating a precursor composition consisting essentially of a hydrate of alumina, aluminum, and a compound of a metal selected from the group consisting of aluminum and metals of Groups I, II and VIII of the Periodic Table to a temperature of between 400° C. and 850° C.

14. A process for preparing an alumina containing material which process comprises mixing together a hydrate of alumina aluminum, and a compound selected from the group consisting of alkali metal and alkaline earth metal compounds, shaping the mixture and heating the shaped material to a temperature of between 600° C. and 800° C.

16. A process for preparing a catalyst composition comprising the steps of mixing together an alumina hydrate, aluminum and a compound of a metal selected from the group consisting of alkali metal and alkaline earth metal oxides, hydroxides and carbonates to provide a precursor composition, shaping said precursor composition and then heating in the presence of water to a temperature between 400° C. and 850° C. to provide an alumina containing material, wherein said alumina hydrate and aluminum are at least partially converted to gamma alumina, then impregnating said alumina containing material with a solution of a compound of a metal of Group VIII of the Periodic Table, and drying said impregnated alumina containing material to provide said catalyst composition.

3,271,326

FLAME SPRAYING OF CATALYTICALLY ACTIVE PULVERIZED METAL OXIDES ON SUPPORTS

Albert J. Forney, Coraopolis, and Joseph J. Demeter, Charleroi, Pa., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed July 22, 1963, Ser. No. 296,870

3 Claims. (Cl. 252—466)

1. A process for producing a catalytic structure composed of a coating of a catalytically-active elemental metal on an inert support material, the metal being selected from the group consisting of nickel, iron, cobalt, molybdenum, tungsten, silver, vanadium, chromium and manganese, comprising

(a) flame spraying a feed material composed of a powdered oxide of said metal onto said support to form an oxide coating thereon;

(b) contacting said coating with a reducing gas to remove the oxygen therefrom and form pores in the coating thereby forming said catalytically-active coating on said support.

3,271,327

PREPARATION OF SUPPORTED PALLADIUM CATALYSTS

James E. McEvoy, Morton, and Harold Shalit, Drexel Hill, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed May 29, 1963, Ser. No. 283,956

3 Claims. (Cl. 252—472)

1. The method of producing supported hydrated palladium oxide catalysts having peripheral distribution of palladium oxide on substantially non-porous support material, comprising neutralizing an aqeuous solution of palladium chloride and hydrochloric acid to a pH between 4 to 6.5 by the addition of a base, contacting the substantially non-porous support material with the neutralized solution, holding the treated support material for wet aging at a temperature between 70 to 85° F. and then drying the resulting supported catalyst at a temperature below 140° F.

3,271,328

POLYMERIZATION OF EPOXIDES IN THE PRESENCE OF ALUMINUM ALKYLATE AS CATALYST

Fred N. Hill, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 30, 1957, Ser. No. 675,023

2 Claims. (Cl. 260—2)

1. A process for the production of a solid polymer of ethylene oxide which comprises polymerizing ethylene oxide at about 25° C. to 150° C. in the presence of a catalytic quantity of aluminum C_1–C_4 alkylate.

3,271,329

METHOD FOR PRODUCING POLYMERS DERIVED FROM PHOSPHITES AND GLYCOLS

Harry W. Coover, Jr., and Richard L. McConnell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 19, 1958, Ser. No. 761,934
5 Claims. (Cl. 260—2)

1. A method for producing high molecular weight organo-phosphorus polymers which comprises transesterifying at a temperature within the range of 0–350° C. substantially equimolar proportions of hydrogen phosphite compound and dihydroxy compound in a reaction mixture selected from the class consisting of

(A) reaction mixtures that comprise

(1) a hydrogen phosphite compound having the formula

$$(RO)_2P(O)H$$

wherein R is alkyl containing 1 to 4 carbon atoms and

(2) a dihydroxy compound selected from the class consisting of

(a) 1,4-cyclohexanedialkanols in which the alkanol groups contain 1–4 carbon atoms,

(b) polyethylene glycols

(c) 2,2,4,4 - tetramethyl - 1,3 - cyclobutanediol, and

(d) 2,5- and 2,6-norcamphane dialkanols in which each alkanol group contains 1–4 carbon atoms and

(B) reaction mixtures that comprise

(1) diphenyl hydrogen phosphite and

(2) a dihydroxy compound selected from the class consisting of

(a) 1,4-cyclohexanedialkanols in which the alkanol groups contain 1–4 carbon atoms,

(b) alkanediols containing 4–8 carbon atoms in which the hydroxy groups are separated by more than 3 carbon atoms,

(c) polyethylene glycols,

(d) 2,2,4,4 - tetramethyl-1,3-cyclobutanediol, and

(e) 2,5- and 2,6-norcamphane dialkanols in which each alkanol group contains 1–4 carbon atoms

(f) 4,4'-alkylidene diphenols in which the alkylidene group contains 1–4 carbon atoms, and

(g) hydroquinone.

3,271,330

HIGH MOLECULAR WEIGHT PHOSPHONITRILE FLUOROESTERS

Roger L. Evans, Mendota Heights, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Nov. 15, 1963, Ser. No. 323,918
8 Claims. (Cl. 260—2)

1. A solid, high molecular weight, vulcanizable, millable, plastic, water-stable, non-distillable, light colored phosphonitrile polymer having repeating units of the formula:



wherein each X is each selected from the class consisting of halogen and fluoroalkoxy radicals having the formula:

$$Z(CF_2)_n(CH_2)_m—O—$$

wherein Z is selected from the class consisting of hydrogen, fluorine and methylol, n is an integer of at least 1, m is an integer from 1–18 and n plus m is 2–19, at least 40 percent of the X groups being fluoroalkoxy radicals.

3,271,331

PHENOLIC FOAMS STABILIZED BY SILOXANE-OXYALKYLENE COPOLYMERS

Hans H. Ender, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,352
18 Claims. (Cl. 260—2.5)

1. A mixture suitable for use in producing a foamed phenol-aldehyde resole resin, said mixture comprising:

(A) a phenol aldehyde resole resin and

(B) a siloxane-oxyalkylene copolymer as foam stabilizer for the foamed phenol-aldehyde resole resin, said copolymer consisting essentially of (a) at least one siloxane chain consisting essentially of at least two siloxane units represented by the formula:

$$R_bSiO_{\frac{4-b}{2}}$$

wherein R is a member selected from the group consisting of the monovalent hydrocarbon groups, the divalent hydrocarbon groups, the hydroxy-substituted divalent hydrocarbon groups and the divalent hydrocarbon groups linked to carbonyl groups and b has a value from 1 to 3 inclusive, said siloxane chain containing at least one of said siloxane units wherein at least one R group is a divalent group, as defined above which links the siloxane chain to an oxyalkylene chain as defined below by a carbon to silicon bond, and (b) at least one oxyalkylene chain consisting essentially of at least one oxyalkylene group represented by the formula —R'O—, wherein R' is an alkylene group, said copolymer being present in the mixture in an amount of from 1 part to 10 parts by weight per 100 parts by weight of the resole resin.

3,271,332

SILOXANE FOAM

Herbert M. Bond, Stillwater Township, Washington County, and Jun Tomita, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 144,856, Oct. 13, 1961. This application Dec. 7, 1964, Ser. No. 416,605
8 Claims. (Cl. 260—2.5)

1. A fluid, low-viscosity siloxane composition which autogenously foams and cures at room temperature on the addition of a basic vulcanization catalyst, exhibiting high tack and adhesive properties during such autogenous action to provide a resulting heat- and cold-resistant, flexible, tough, resilient, tack-free, foamed structural product, said fluid composition comprising a mixture of (1) between 60 and 80 parts of a diorganopolysiloxane fluid gum essentially free of hydroxyl termination, having a viscosity of between 1,000 and 50,000 cps. at 25° C., and having the general formula

$$R_nSiO_{\frac{4-n}{2}}$$

where R is a monovalent organic radical, at least 85% of said radicals being methyl, and n has an average value of 1.9 to 2.1, and (2) between 40 and 20 parts of a benzene-soluble silicone resin composed essentially of $R_3SiO_{1/2}$ units and SiO_2 units, where R is a monovalent organic radical, at least 90% of said radicals being methyl, and where the ratio of $R_3SiO_{1/2}$ units to SiO_2 units in said resin is between about 0.7 and 0.96 inclusive, said composition additionally including, for every 100 parts of said mixture, (3) sufficient methyl hydrogen polysiloxane to provide between 0.017 and 0.17 part by weight of silanic hydrogen, any organic radicals other than methyl in said methyl hydrogen polysiloxane being those which offer substantially no steric hindrance to removal of silanic hydrogen from its silicon atom bond in said methyl hydrogen polysiloxane, said composition being foamed and cured at room temperature on the addition of between 0.1 to 2 parts by weight of a basic vulcanization catalyst active to split off silanic hydrogen from its attachment to a silicon atom of said methyl hydrogen polysiloxane.

3,271,333

SELF-EXTINGUISHING ALKENYL AROMATIC POLYMERS

Jacob Eichhorn, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Michigan

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,598
5 Claims. (Cl. 260—2.5)

1. A self-extinguishing alkenyl aromatic polymer composition containing a halogenated organic compound as a self-extinguishing agent wherein said composition contains from about 0.1 percent to about 2.0 percent by weight of α,α'-diphenyl-α-methoxybibenzyl as a synergist for said self-extinguishing agent.

3,271,334

PROCESS FOR THE PRODUCTION OF CROSS-LINKED COMPOUND POLYMERS OF POLY-ACROLEIN

Werner Kern, Rolf Schulz, and Irmela Löflund, Mainz (Rhine), Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Sept. 4, 1963, Ser. No. 306,611
Claims priority, application Germany, Oct. 4, 1958, D 29,076
9 Claims. (Cl. 260—8)

8. The product of a reaction of an infusible macromolecular homopolymer of acrolein having a molecular weight of at least 10,000 produced in the presence of a free radical polymerization catalyst dissolved in an aqueous solution of sulfurous acid having a pH between 1 and 5 with a polymeric compound selected from the group consisting of natural and synthetic polymeric compounds which are macromolecular and contain more than four groups per macromolecule which are reactive with aldehyde groups selected from the group consisting of OH, SH, NH_2, NH, NH_2—NH and activated CH_2 groups at a temperature between 0° and 200° C.

3,271,335

MANUFACTURE OF CELLULOSIC BOARD AND NOVEL ADHESIVE SYSTEM THEREFOR

Logan C. Bostian, Morris Township, Morris County, and Malcolm H. Heffner, Whippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 20, 1963, Ser. No. 281,823
18 Claims. (Cl. 260—17.2)

1. The method for manufacture of pressed wood particle board which comprises forming stock of water-moistened wood particles intimately mixed with about 4 to 20 percent by dry weight of the wood particles of bonding material comprising the combination of: (a) about 10–60 percent of a chlorinated low pressure, linear polyethylene resin containing about 25–65 percent by weight chlorine, and (b) about 40–90 percent of a water-soluble formaldehyde resin selected from the group consisting of urea-formaldehyde and phenol-formaldehyde, and thereafter comprising said stock and heating to at least partially cure said formaldehyde resin and form said stock into pressed wood particle board.

2. The method for manufacture of pressed wood particle board which comprises forming stock of water-moistened wood particles intimately mixed with about 4 to 20 percent by dry weight of the wood particles of bonding material comprising the combination of: (a) about 10–60 percent of an oxidized chlorinated low pressure, linear polyethylene resin containing about 25–65 percent by weight chlorine, and (b) about 40–90 percent of a water-soluble formaldehyde resin selected from the group consisting of urea-formaldehyde and phenol-formaldehyde, and thereafter compressing said stock at elevated temperature between about 150° C. to 250° C. to form said stock into pressed wood particle board.

3,271,336

VINYL ESTER COPOLYMERS

Henry Warson, Olton, Solihull, and Douglas Stuart William Dargan, Wylde Green, Sutton Coldfield, England, assignors to Dunlop Rubber Company Limited, a British company

No Drawing. Filed July 25, 1963, Ser. No. 297,666
Claims priority, application Great Britain, Aug. 3, 1962, 29,895/62
12 Claims. (Cl. 260—17.4)

1. A copolymer of a vinyl ester and not more than 0.3% based on the total weight of monomers of the condensation reaction product of acrolein with a polyhydric alcohol having at least three hydroxy groups in the molecule.

3. A method for the production of a copolymer which comprises heating an aqueous emulsion of a vinyl ester and not more than 0.3% based on the total weight of monomers of the condensation reaction product of acrolein with a polyhydric alcohol having at least three hydroxy groups in the molecule.

9. A method according to claim 3 wherein the said aqueous emulsion incorporates a dispersing colloid.

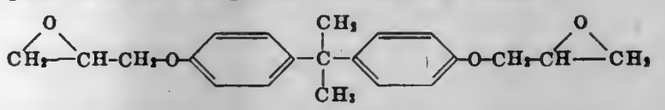
3,271,337

OXETANE POLYMERS STABILIZED WITH AN EPOXIDE AND A STERICALLY HINDERED PHENOLIC COMPOUND

Robert F. Goddu, Kennett Square, Pa., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 28, 1963, Ser. No. 283,701
2 Claims. (Cl. 260—18)

1. A polymeric composition consisting esentially of a mixture of a polymer of 3,3-bis(chloromethyl) oxetane and, as a heat and light stabilizer therefor, from about 0.1 to 10% by weight of the polymer of 2,4,6-tris(4-hydroxy-3,5,-di-t-butyl benzyl) mesitylene, and, as a co-stabilizer therefor, from about 0.01 to 4.0% by weight of the polymer of an epoxide compound selected from the group consisting of epoxidized soybean oil, epoxidized cottonseed oil, epoxidized linseed oil, the reaction product of epichlorohydrin and 2,2-bis(4-hydroxyphenyl) propane, said reaction product having the formula



phenoxy propylene oxide, cyclohexene oxide, 1,2-epoxy hexadecene, glycidyl octyl ether, 9,10-epoxy butyl stearate, phenyl methyl glycidol, epoxy acetoxy stearin, dipentene diepoxide, vinyl cyclohexene diepoxide, and dicyclopentadiene diepoxide.

3,271,338

POLYVINYL HALIDE STABILIZERS COMPRISING SULFUR-CONTAINING COMPOUNDS AND METAL SALTS OF EPOXIDIZED FATTY ACIDS

Peter Klemchuk, Yorktown Heights, and Martin Dexter, White Plains, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 27, 1961, Ser. No. 155,191
17 Claims. (Cl. 260—23)

1. Composition of matter which comprises a major proportion of polyvinyl chloride and a minor proportion of a stabilizer system comprising in a ratio of substantially 1:1 by weight:

(1) a member selected from the group consisting of

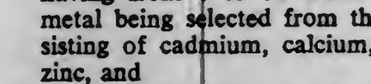
(a) a metal salt of an aliphatic carboxylic acid having at least one epoxy ring therein, said carboxylic acid containing from 8 to 18 carbon atoms and said metal being selected from the group consisting of cadmium, calcium, barium and zinc, and

(b) a mixture of

(i) a metal salt of an aliphatic carboxylic acid having from 8 to 18 carbon atoms, said metal being selected from the group consisting of cadmium, calcium, barium and zinc, and

(ii) an organic carboxylic acid ester having from 8 to 36 carbon atoms and at least one epoxy group therein and

(2) a compound of the formula:



wherein

R is a member selected from the group consisting of primary alkyl having from 8 to 18 carbon atoms, monoalkylphenyl and phenyl

R′ is a member selected from the group consisting of hydrogen and lower alkyl, and

M is a member selected from the group consisting of cadmium, calcium, barium and zinc.

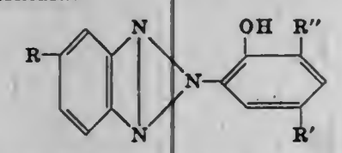
3,271,339

POLYOLEFIN STABILIZERS COMPRISING ESTERS OF THIODIETHYLENEGLYCOL AND HYDROXYPHENYL BENZOTRIAZOLES

Vittorio Cappuccio, Alberto Bouvicini, and Cornelio Caldo, Terni, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Feb. 12, 1963, Ser. No. 257,857
Claims priority, application Italy, Feb. 13, 1962, 2,825/62
13 Claims. (Cl. 260—23)

1. A stabilized polymeric composition consisting essentially of a poly-alpha-olefin and from about 0.02 to 2.0% by weight of said poly-alpha-olefin of a stabilizing mixture consisting of about 20 to 60% by weight of said stabilizing mixture of an aliphatic thioester wherein the aliphatic radical contains 8–30 carbon atoms, said thioester being an ester of thiodiethyleneglycol; at least 1% by weight of said stabilizing mixture of a substituted phenolic compound; and about 20 to 60% by weight of said stabilizing mixture of an hydroxybenzotriazolic compound having the general formula:



wherein R is selected from the group consisting of a halogen, hydrogen, a hydroxy group, an alkyl radical, and an aryl radical, and R′ and R″ are selected from the group consisting of an alkyl radical, an aryl radical, and hydrogen.

12. The stabilized polymeric composition of claim 1 which further contains at least 0.3% of calcium stearate.

3,271,340

OLEFIN POLYMERS MODIFIED WITH POLYPROPYLENE WAX

Newton H. Shearer, Jr., James E. Guillet, and Harry W. Coover, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,516
18 Claims. (Cl. 260—28.5)

1. An α-olefin polymer blend exhibiting improved physical properties consisting essentially of (1) solid hydrocarbon polymer of an α-olefin containing 3–10 carbon atoms, said polymer having a density of at least 0.80, a melting point in the range of about 45° to about 350° C. and an inherent viscosity in the range of about .9 to about 5 in Tetralin at 145° C. and (2) about 3 to about 50% by weight, based on the composition, of polypropylene wax having a density of at least 0.88, a melting point in the range of about 130° to about 180° C. and an inherent viscosity in the range of about .05 to about .5 in Tetralin at 145° C.

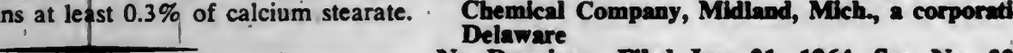
3,271,341

AQUEOUS COLLOIDAL DISPERSIONS OF POLYMER

William Emmett Garrison, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 7, 1961, Ser. No. 129,526
21 Claims. (Cl. 260—29.6)

1. In the polymerization of a monoethylenically unsaturated monomer composition in an aqueous medium to obtain a colloidal dispersion of polymer employing a water-soluble polymerization initiator, the step of carrying out the polymerization in the presence of an ionizable dispersing agent, said dispersing agent being a compound having a solubility of at least 0.1% at 100° C. and having the general formula



where X is a member of the class consisting of fluorine and the perfluoromethyl radical, *m* is a positive integer from 1 to 5 inclusive, *n* is a positive integer from 0 to 10 inclusive, and A is a hydrophilic radical selected from the class consisting of hydrogen, ammonium radical, alkali metals, and substituted ammonium radicals.

3,271,342

COMPOSITION COMPRISING A SALT OF A STYRENE-MALEIC ACID COPOLYMER AND A POLYURETHANE

Hans H. Kuhn, Edgar Dare Bolinger, and Emile E. Habib, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,153
7 Claims. (Cl. 260—29.6)

1. A flexible, film-forming, water-soluble composition comprising a mixture of

(a) a film-forming water-soluble partial metal salt of a styrene-maleic acid copolymer, having a pH between about 4 and 9, and

(b) a film-forming water-soluble polyurethane which is the reaction product of a diisocyanate and a polyalkylene ether glycol,

in a proportion of (a) to (b) of from about 9:1 to 1:9.

3,271,343

FLAME-RESISTANT ACRYLONITRILE POLYMER COMPOSITIONS CONTAINING POLYEPIHALOHYDRINS AND CALCIUM PHOSPHATES

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 21, 1964, Ser. No. 339,073
17 Claims. (Cl. 260—29.6)

1. Composition comprising a spinnable dispersion of (1) a fiber-forming acrylonitrile polymer which contains in the polymer molecule at least about 85 weight percent of acrylonitrile, any balance being another monoethylenically unsaturated monomer that is copolymerizable with acrylonitrile and, (2) between about 15 and 20 weight percent based on the weight of said fiber-forming polymer, of a flameproofing mixture comprised of (a) at least 5 weight percent of a substantially water-insoluble polyepihalohydrin, said polyepihalohydrin being essentially devoid of functional epoxy groups and having a viscosity at 100° F. of between about 300 and 4000 centistokes and (b) a substantially water-insoluble calcium phosphate, the ratio of polyepihalohydrin to calcium phosphate being from about 0.5:1 to 5:1.

3,271,344

FLAME-RESISTANT ACRYLONITRILE POLYMER COMPOSITIONS CONTAINING POLYEPIHALOHYDRINS AND ANTIMONY OXIDE

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 21, 1964, Ser. No. 339,075
17 Claims. (Cl. 260—29.6)

1. Composition comprising a spinnable dispersion of (1) a fiber-forming acrylonitrile polymer which contains in the polymer molecule at least about 85 weight percent of acrylonitrile, any balance being another monoethylenically unsaturated monomer that is copolymerizable with acrylonitrile and (2) between about 10 and 20 weight percent based on the weight of said fiber-forming polymer, of a flameproofing mixture comprised of (a) at least 2.5 weight percent of a substantially water-insoluble polyepihalohydrin, said polyepihalohydrin being essentially devoid of functional epoxy groups and having an average molecular weight less than about 1200 and a viscosity at 100° F. of between about 300 and 4000 centistokes and (b) antimony oxide, the ratio of polyepihalohydrin to antimony oxide being from about 1:5 to 5:1.

3,271,345

ADHERING LAYERS TO POLYESTER FILM

Gale F. Nadeau, Clemens B. Starck, and Frederick J. Jacoby, all of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 14, 1965, Ser. No. 497,603
6 Claims. (Cl. 260—29.6)

1. An aqueous coating composition for use in subbing polyester film support comprising (1) from 1 to 7 parts by weight of an adherent copolymer prepared from 35% to 96% of a monomer selected from the group consisting of vinyl chloride and vinylidene chloride, from 0.5% to 25% of an ethylenically unsaturated monomeric copolymerizable carboxylic acid compound wherein said carboxylic acid compound is selected from the group consisting of itaconic acid, citraconic acid, mesaconic acid, acrylic acid, α-methacrylic acid, maleic acid, fumaric acid and the anhydrides and lower alkyl half-esters of those acids which are dibasic, 0% to 65% by weight of an acrylic ester of a lower alkanol, and (2) from 0.1 to 5 parts by weight of a dihydroxy aromatic compound selected from the group consisting of resorcinol, orcinol, 4-chloro-resorcinol, 1,3-naphthalene diol, 1,6-naphthalene diol, catechol, 2,4-dihydroxy toluene and mixtures thereof.

3,271,346

PROCESS FOR PRODUCING ELASTIC POLYURETHANE YARN

Ryoichi Wakasa, Tokyo, Atsushi Shibata, Urawa-shi, and Jukichi Ohmura and Isamu Suzuki, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed July 5, 1963, Ser. No. 293,184
Claims priority, application Japan, July 7, 1962, 37/28,465
8 Claims. (Cl. 260—30.8)

1. A process for producing an elastic polyurethane yarn which comprises adding a solvent selected from the group consisting of dimethylformamide, dimethylacetamide, and dimethylsulfoxide to a prepolymer produced by reacting a diol polymer selected from the group consisting of polyethers, polyesters, polylactones and poly(oxyalkylene-carboxyalkylene), each of which has terminal hydroxyl groups, with an organic diisocyanate in an amount of 150 to 300 mole percent, based on the diol polymer, and with 3 to 30 moles of water per 100 moles of the diisocyanate to form a homogeneous solution, adding water to said solution at room temperature to bring said homogeneous solution to a gel state, heating the resulting gel at a temperature between 120° and 180° C. to obtain a solution state and then subjecting the solution to spinning.

3,271,347

PRINTING INK BASED ON ACRYLIC OR METHACRYLIC ACID COPOLYMERS AND POLYOXYETHYLENE

Elihu J. Aronoff, Glen Oaks, N.Y., and Paul D. Whyzmuzis, Clifton, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,744
11 Claims. (Cl. 260—31.4)

1. An acrylic acid copolymeric ink composition comprising (1) pigment dispersed in (2) a volatile organic solvent solution of (3) a copolymer or from 4 to 25% of an acrylic acid selected from the group consisting of acrylic acid and methacrylic acid and the remaining monomeric material comprising a member selected from the group consisting of vinylidene chloride and acrylic ester material having the formula



where R is a member selected from the group consisting of hydrogen methyl and ethyl and R′ is an alkyl radical of from 1 to 6 carbons said vinylidene chloride member being at least 70% of the copolymer and said acrylic ester member being at least 90% of the copolymer and (4) polyoxyethylene containing from 2 to 12 oxyethylene groups for each carboxyl group present in the acrylic acid copolymer.

3,271,348

FUSED EPOXY RESIN-MONOAMINE COMPOUND AS PROCESSING AID IN PIGMENTED NYLON

Augustinus Ludovicus Henricus Hartong, Deventer, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

No Drawing. Filed Jan. 17, 1962, Ser. No. 166,914
Claims priority, application Netherlands, Feb. 3, 1961, 260,804
3 Claims. (Cl. 260—32.6)

1. A process for uniformly incorporating pigments in polycaprolactam comprising forming a dispersion of finely divided pigment particles in a fused mixture of a compound or a mixture of compounds selected from the group of saturated primary, secondary and tertiary aliphatic monoamines having at least 14 carbon atoms and an epoxy resin having a molecular weight of from 300 to 3800 prepared by reacting epichlorohydrin with diphenylol propane in proportion of 2 to 3 parts of the epoxy resin per 4.5 parts of amine, and adding and mixing the resulting pigmenting dispersion to a polycaprolactam melt in amounts such that no more than 5% by weight of said amine based on the weight of polycaprolactam is included in said melt.

3,271,349

POLYSTYRENE METHODS AND PRODUCTS

Harold A. Levey, 812733 Oleander St., and Edward S. Fonda, % Alabama Chemical Co., 2721 Decatur, both of New Orleans, La.

No Drawing. Filed July 18, 1963, Ser. No. 296,099
5 Claims. (Cl. 260—33.6)

1. A method of removing objectionable odors from polystyrene containing malodorous styrene bottoms comprising

diluting said styrene bttoms in a solvent to form a solution having 10%–85% solids content and thoroughly mixing said solution with an oxidizing agent solution having a density different from the density of said first-mentioned solution, for a period of time sufficient to remove undesirable odors from said styrene bottoms substantially at room temperature,

said oxidizing agent being selected from the group consisting of hydrogen peroxide, sodium hypochlorite and sodium perborate,

permitting said first-mentioned solution to separate from said oxidizing agent solution to form two distinct layers,

and decanting said oxidizing agent solution from said first-mentioned solution.

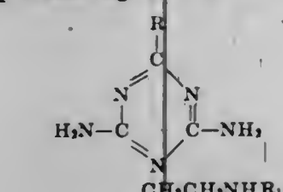
3,271,350
EPOXY RESIN COMPOSITION COMPRISING (1) PARTIAL REACTION PRODUCT OF EPOXY RESIN AND GUANAMINE AND (2) UNREACTED EPOXY RESIN

Leonard R. Vertnik, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

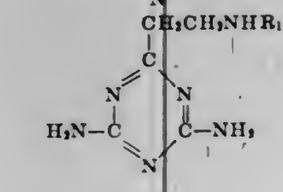
No Drawing. Filed May 28, 1963, Ser. No. 283,713
20 Claims. (Cl. 260—32.8)

1. The process of preparing a curable composition from at least one epoxy resin having terminal epoxide groups and an epoxy equivalent weight of from about 140 to about 2000 and a sufficient amount of a guanamine to cure said epoxy resin to an infusible and insoluble polymer, the weight ratio of the guanamine to the epoxy resin being in the range of about 5:95 to 75:25, comprising (I) reacting about 50 to 95% by weight of the epoxy resin with the guanamine, (II) terminating the reaction when about 5 to 90% complete and (III) adding the remaining 5 to 50% by weight of the epoxy resin to the partial reaction product, said guanamine being selected from the group consisting of

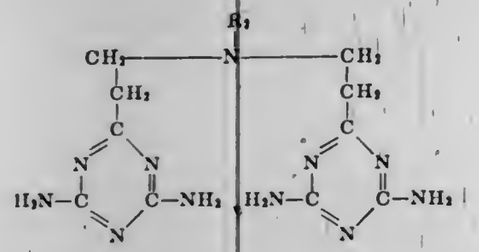
(A)



(B)

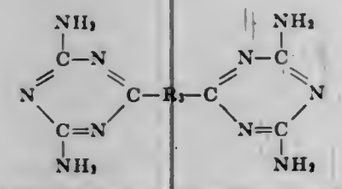


(C)



and

(D)



where R is selected from the group consisting of the phenyl radical and aliphatic hydrocarbon groups containing 4 to about 21 carbon atoms, R_1 and R_2 are aliphatic hydrocarbon groups containing 4 to about 21 carbon atoms and R_3 is a divalent hydrocarbon group containing 4 to about 42 carbon atoms.

12. The curable composition prepared by the process of claim 1.

19. A solvent solution of the curable composition of claim 12.

20. The solution of claim 19 wherein the solvent is selected from the group consisting of alkyl ethers of ethylene glycol, methyl ethyl ketone, acetone, trichloroethylene and mixtures thereof.

3,271,351
POLYETHYLENE OXIDES AS BINDERS IN ASBESTOS PACKINGS

George P. Leistensnider, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 1, 1961, Ser. No. 149,163
2 Claims. (Cl. 260—37)

1. A flexible molded composition packing consisting essentially of, within the approximate ranges, the following ingredients on a dry weight basis: 19 to 24.5% solid lubricating filler selected from the group consisting of graphite, mica, and mixtures thereof, up to 5% sodium nitrite inhibitor, 0.1 to 2% high molecular weight water soluble poly(ethylene oxide) resin, and the remainder asbestos fiber.

3,271,352
POLYURETHANE COATING FROM MIXED POLYURETHANE POLYMERS

Marvin Alfred Weinberg, Metuchen, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

No Drawing. Filed Mar. 9, 1965, Ser. No. 438,395
3 Claims. (Cl. 260—37)

1. A varnish composition comprising a varnish base comprising the combination of a solid isocyanato terminated polyether polyurethane resin and from 3 to 50% by weight of said combination of an isocyanato terminated polyether polyurethane liquid pre-elastomer, said resin having by weight 4 to 15% isocyanato groups and being the reaction product of a diisocyanate and a mixture of diols and triols having an average of approximately 2.5 to 2.67 hydroxyl groups per mole, at least 50 mole percent of said diols being a polypropylene ether glycol, and said pre-elastomer having by weight 2 to 9% isocyanato groups and being the reaction product of a diisocyanate and a polytetramethylene ether glycol having an average of approximately 2 hydroxyl groups per mole.

3,271,353
POLYESTERS AND PRESSURE-SENSITIVE ADHESIVE COMPOSITIONS

Theodore H. Szawlowski, Wonder Lake, Ill., and Louis A. Joo, Johnson City, Tenn., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,515
9 Claims. (Cl. 260—40)

7. A pressure-sensitive adhesive composition formed by the esterification of complex carboxylic acids derived from solvent extracts obtained in the solvent extraction of mineral lubricating oils using a solvent selective for aromatic compounds by metalation, carbonation and acidification of said solvent extracts, maleic anhydride, triethylene glycol and diethylene glycol using an excess of total acid equivalents over the total hydroxyl equivalents.

8. A pressure-sensitive adhesive composition in accordance with claim 7 in which the ratio of total acid equivalents to total hydroxyl equivalents is about 1.1/1 to 2.5/1 and said esterification is conducted at a temperature of about 400° to 450° F.

9. An adhesive composition in accordance with claim 8 containing an inert filler of the group consisting of silica flour, zinc oxide, iron oxide, barium sulfate, glass wool, fiber glass, and powdered clay.

3,271,354
PIGMENT PREPARATIONS FOR THE COLORATION OF PLASTIC MASSES

Josef Weissert, Viktor Schönbach, and Ferdinand Memmel, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,484
Claims priority, application Germany, Jan. 4, 1962, F 35,709
6 Claims. (Cl. 260—41)

1. A method for coloring a plastic mass with a pigment comprising incorporating into said mass a preparation consisting essentially of from 40 to 75% by weight of a pigment and from 25 to 60% by weight of a carrier, said carrier consisting essentially of

(a) from 10 to 95 weight percent of a copolymer of ethylene and propylene having a propylene content of from 30 to 50 mol percent and

(b) from 5 to 90 weight percent of amorphous polypropylene having an intrinsic viscosity of

$$[\eta] \lim_{c \to 0} \frac{\eta_{spec.}}{c} = 0.2\text{–}0.5 \text{ cm.}^3/\text{g}$$

and a crystalline portion of 0.5 to 15% by weight.

3,271,355
HYDROCARBON POLYMER CONTAINING VINYL SILANE MODIFIED SILICA

Byron M. Vanderbilt, Westfield, and Charles F. Marsden, Jr., Bedminster, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 9, 1961, Ser. No. 88,032
8 Claims. (Cl. 260—41.5)

1. A process which comprises admixing:

A. coarse silica having an average particle size of 10 to 100 microns; and

B. an organic silane containing an unsaturated hydrocarbon radical attached to the silicon atom; and

C. a thermosetting mix containing a mixture selected from the group consisting of:

(1)

(a) polymers of C_2–C_{12} olefins, and

(b) a peroxide catalyst; and

(2)

(a) homopolymers of C_4–C_6 conjugated diolefins,

(b) a peroxide catalyst, and

(c) 0 to 70%, based on the weight of said thermosetting mix, of at least one monomeric cross-linking agent selected from the group consisting of monovinyl aromatics, polyvinyl aromatics, acrylic acid esters of monobydric alcohols, methacrylic acid esters of monohydric alcohols, acrylic acid esters of polyhydric alcohols, alkyl fumarates, allyl esters, vinyl esters and mixtures thereof; and

(3)

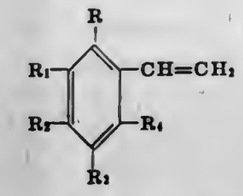
(a) copolymers of C_4–C_6 conjugated diolefins with minor amounts of ethylenically unsaturated monomers,

(b) a peroxide catalyst, and

(c) 0 to 70%, based on the weight of said thermosetting mix, of at least one monomeric cross-linking agent selected from the group consisting of monovinyl aromatics, polyvinyl aromatics, acrylic acid esters of monohydric alcohols, methacrylic acid esters of monohydric alcohols, acrylic acid esters of polyhydric alcohols, alkyl fumarates, allyl esters, vinyl esters and mixtures thereof; and

(4)

(a) amonomeric styrene compound having the formula:

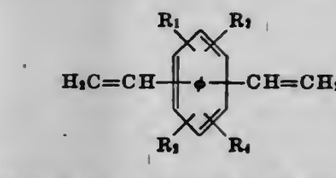


wherein R, R_1, R_2, R_3 and R_4 are each independently selected from the group consisting of hydrogen, halogen and alkyl radicals containing not more than 18 carbon atoms, and

(b) 0 to 20%, based on the weight of said thermosetting mix, of monofunctional monomer selected from the group consisting of acrylonitrile, alpha chloroacrylonitrile, methyl methacrylate, n-butyl methacrylate, vinylidine chloride, diethyl fumarate, dibutyl fumarate, vinyl propionate, ethyl acrylate, butyl acrylate, allyl benzoate, allyl hexoate, vinyl n-butyl ether, and vinyl stearate, and

(c) a peroxide catalyst and

(d) at least 0.5 part, per 100 parts of said thermosetting mix, of a polyolefinic monomer selected from the group consisting of the methacrylate esters of polyhydric alcohols and polyvinyl compounds having the formula:



wherein R_1, R_2, R_3 and R_4 are each independently selected from the group consisting of hydrogen, halogen, alkyl groups and a vinyl group; and ϕ is an aromatic nucleus selected from the group consisting of benzene, naphthalene, biphenyl and phenanthrene.

3,271,356
GRANULES OF FINELY DIVIDED RUBBER REINFORCING SILICEOUS PIGMENT AND RUBBERY MATERIAL

Gerd Roderburg, Bad Godesberg, and Gerhard Steenken, Wesseling (Rhine), Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,952
3 Claims. (Cl. 260—41.5)

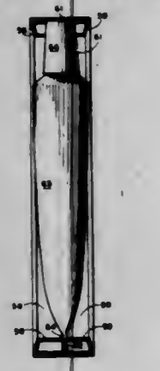
1. A method of preparing granules of siliceous pigmentary filler which comprises adding to an aqueous dispersion of solid siliceous pigmentary filler from 0.2 to 7.5 percent of rubbery latex by weight of the solid siliceous pigmentary filler content of the dispersion, said siliceous filler consisting essentially of finely divided particles having an average ultimate particle size below 1 micron and a specific surface area between 50 and 300 square meters per gram and being a member selected from the group consisting of precipitated hydrated silicas, alkaline earth metal silicates, aluminum silicates, and sodium aluminum silicates, said rubber consisting essentially of a material selected from the group consisting of natural rubber, butadiene-styrene copolymers, butadiene-acrylonitrile copolymers, butadiene homopolymers, 2-chlorobutadiene polymers, isoprene polymers and ethylene polymers, removing water and partially drying to form a dough of the resulting siliceous filler-rubber material,

granulating the dough and thereafter drying further to reduce the water content to below 2 weight percent to produce granules consisting essentially of said siliceous pigmentary filler and said rubber material.

3,271,357
DISPLAY PACKAGE FOR COLLAPSIBLE TUBES AND THE LIKE

Robert V. Burt, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Oct. 12, 1964, Ser. No. 403,214
3 Claims. (Cl. 206—45.33)



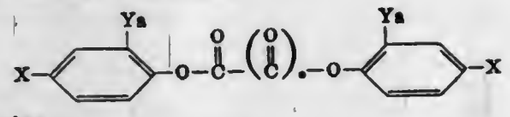
1. A package for a collapsible tube comprising a frame, said frame being formed from a frame blank made of paperboard material and generally configured in the form of an elongated strip, said frame blank having two spaced parallel scores running longitudinally from one end of said elongated strip to the other end thereof, a plurality of transverse scores at intervals along the said frame blank and being substantially perpendicular to said parallel longitudinal scores thereby dividing the central portion of the frame blank into four panels including two side panels and two end panels, said side and end panels being alternately spaced along said frame blank, a flap articulated to and extending beyond the panel at one end of said frame blank, an extending portion projecting laterally outwardly from each of the longitudinal scores which define the edge portions of the said panels, each of said extending portions being at least partially separated by angular relief cut-outs outwardly of each of said transverse scores, each of said extending portions having three score lines all of which are parallel to the parallel scores running longitudinally from one end of said elongated strip to the other, said three score lines dividing the extending portions into an inner area, an inner intermediate area, an outer intermediate area and an outer area, each of said extending portions being folded into a tubular support with the outer area of each extending portion being adhered to its adjoining panel so that each side and end panel has a pair of substantially rigid tubular supports in parallel abutting relationship alongside the longitudinal scores forming the upper and lower extremities of said side and end panels, said tubular supports being formed so that the outer intermediate area of each is substantially perpendicular to the side and end panels, said outer intermediate areas of said tubular supports being adhered together and having a wedge-shaped trough formed at the inner juncture thereof, a collapsible tube having a closure cap at one end and a sealed end at the other end, an opening cut from both tubular supports extending from the upper end panel, said opening being shaped to receive the closure cap of the collapsible tube, said wedge-shaped trough being shaped to receive and engage the sealed end of the collapsible tube, said side and end panels being folded into a substantially rectangular frame by folding the said frame blank on said transverse scores so that the said tubular supports face inwardly and said cap of said collapsible tube is supported in said opening and said sealed end of said collapsible tube is engaged in the wedge-shaped trough at the inner juncture of the tubular supports at the bottom end panel and the side panels, said flap at one end of said frame blank being secured to the panel at the opposite end of said frame blank to complete the frame structure around said collapsible tube, said frame structure being overwrapped with a flexible and heat shrinkable plastic film, said film being heated and shrunk on said frame structure to impart greater rigidity to said frame structure and to retain said secured flap in the completed package.

3,271,358
POLYOLEFINS CONTAINING DI(SUBSTITUTED PHENYL) OXALATES OR CARBONATES AS STABILIZERS

Aubert Yaucher Coran, Charleston, W. Va., and Constantine Emmanuel Anagnostopoulos, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 19, 1963, Ser. No. 288,926
13 Claims. (Cl. 260—45.85)

1. A composition comprising a normally solid polymer of a mono-olefinic aliphatic hydrocarbon monomer having from 2 to 4 carbon atoms, and a stabilizing amount, at least about 0.001% by weight of the polymer, of a compound of the formula,



wherein:
a is an integer from 0 to 1;
n is an integer from 0 to 1;
Y is alkyl of from 1 to 4 carbon atoms; and
X is selected from the group consisting of alkyl of from 4 to 18 carbon atoms and α-cumyl.

3,271,359
EQUILIBRATION OF ORGANOPOLYSILOXANES USING PHOSPHORUS-CONTAINING CATALYSTS

Ben A. Bluestein, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 24, 1962, Ser. No. 246,667
7 Claims. (Cl. 260—46.5)

1. A process for making a polymer having the formula,

$$(HOOCR'')_a(R')_b(R)_cSiO_{\frac{4-(a+b+c)}{2}}$$

which comprises heating to a temperature between 20° C. to 170° C., a mixture comprised of organopolysiloxane, and .01% to 10% by weight thereof of an equilibration catalyst, where said organopolysiloxane is selected from the class consisting of

(a) an organsiloxane hydrolyzate consisting of components having chemically combined structural units included by the formula,

$$(R)_dSiO_{4-d/2}$$

(b) a carboxyalkyl hydrolyzate consisting of components having chemically combined structural units included by the formula,

$$HOOCR''SiO_{\frac{3-e}{2}}$$
$$(R')_e$$

and (c), a mixture of said organosiloxane hydrolyzate and said carboxyalkyl hydrolyzate,

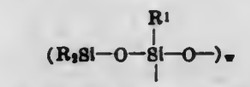
and where said equilibration catalyst is the product of reaction at a temperature in the range of from −10° C. to 100° C., of from 0.1, to less than about 3, moles of water, per mole of a phosphorous halogen compound, selected from the class consisting of phosphorous pentachlorides and phosphorous oxygen chlorides, *a* is equal to from 0 to 1, inclusive, *b* is equal to from 0 to 2, inclusive, *c* is equal to from 0 to 3, inclusive, and the sum of *a*, *b* and *c* is equal to from 1.5 to 3, inclusive, *d* is an integer equal to from 1 to 3, inclusive, *e* is an integer equal to from 1 to 2, inclusive, R is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals, and R' is a member selected from the class consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, and R'' is an alkylene radical.

3,271,360
POLYMERIC ORGANOSILOXANES

Thomas C. Williams, Lancaster, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,175
1 Claim. (Cl. 260—46.5)

A cyclic polymeric organosiloxane compound of the formula:



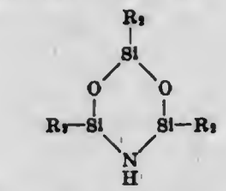
wherein R is a monovalent aliphatic hydrocarbon radical, R^1 is a member of the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, cyanoalkyl radicals and cyanoaryl radicals in which the cyano group of the cyanoalkyl and cyanaryl radicals is at least two carbon atoms removed from the silicon atom and (*w*) is an integer having a value from 3 to 7 inclusive.

3,271,361
PROCESS FOR MAKING ORDERED SILOXAZANE POLYMERS

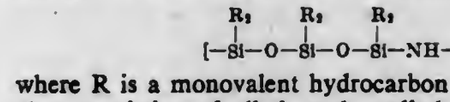
James G. Murray, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 13, 1965, Ser. No. 425,346
3 Claims. (Cl. 260—46.5)

1. The process which comprises effecting reaction between a cyclic siloxazane with the formula



with iodine, thereby, to obtain a polymer consisting essentially of recurring units of the formula



where R is a monovalent hydrocarbon selected from the class consisting of alkyl, aryl, aralkyl, and alkaryl radicals, with the proviso that where one R on a silicon is a member selected from the class consisting of aryl and alkaryl radicals, the other R is bonded to the same silicon atom and is selected from the same class of aryl and alkaryl radicals, and *n* is a whole number in excess of 50.

3,271,362
PROCESS FOR REACTION OF SILANIC HYDROGEN WITH UNSATURATED ORGANIC COMPOUNDS

Alan J. Chalk, Scotia, and John F. Harrod, Ballston Lake, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Feb. 7, 1966, Ser. No. 525,324
10 Claims. (Cl. 260—46.5)

1. A process for the production of organo-silicon compositions containing carbon-silicon bonds which comprises contacting (a) a silicon compound containing at least one hydrogen atom attached to silicon per molecule with (b) a compound containing aliphatic carbon atoms linked by multiple bonds, in the presence of a metallic carbonyl selected from the class consisting of dicobalt octacarbonyl, cyclopentadienyl cobalt dicarbonyl, and $Mn_2(CO)_{10}$.

3,271,363
EPOXIDE RESIN PROCESS AND COMPOSITION

Otho Leroy Nikles, Toms River, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1962, Ser. No. 211,127
12 Claims. (Cl. 260—47)

1. A process for producing essentially linear 1,2-epoxy resins having an epoxy equivalency greater than 1 of higher molecular weight and higher melting point from low molecular weight, low melting point 1,2-epoxy resins having an epoxy equivalency greater than 1, which comprises reacting a low molecular weight 1,2-epoxy resin having an epoxy equivalency greater than 1 with a dihydric phenol free from reactive groups other than phenolic hydroxyl groups in the presence of calcium salt as catalyst.

3,271,364
PROCESS OF PREPARING POLYCARBONATES

André Jan Conix, Antwerp, and Leonard Marie Dohmen, Berchem-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Aug. 27, 1962, Ser. No. 219,743
Claims priority, application Great Britain, Aug. 29, 1961, 31,147/61
4 Claims. (Cl. 260—47)

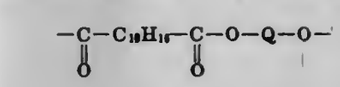
1. Process for the preparation of polycarbonates comprising reacting a dihalogenoformate of a diphenol with an alkali metal hydroxide, said hydroxide being present in an amount having a molar ratio to the amount of said dihalogenoformate of at least about 4:1.

3,271,365
POLYESTERS OF DECAHYDRONAPHTHALENEDICARBOXYLIC ACID AND DIHYDRIC PHENOLS

Fred M. Parham, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 5, 1962, Ser. No. 236,152
9 Claims. (Cl. 260—47)

1. A fiber-forming linear polyester of decahydronaphthalenedicarboxylic acid, at least 80 mol percent of the recurrent units being represented by the general formula



wherein —Q— is a divalent radical selected from the group consisting of 1,4-phenylene, 2,2-bis(4-phenylene)-propane, 4,4'-biphenylene, bis(4-phenylene)methane, 1,1-bis(4-phenylene)ethane and 1,2-bis(4-phenyleneoxy)ethane, the polyester being free from aliphatic unsaturation, melting above about 200° C. and having an intrinsic viscosity of at least about 0.3 as determined in trifluoroacetic acid/methylene chloride (1:3) solvent at 25° C.

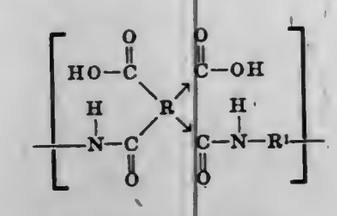
3,271,366
PREPARATION OF AROMATIC POLYIMINOLACTONES

John Anthony Kreuz, Tonawanda, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 21, 1963, Ser. No. 325,441
2 Claims. (Cl. 260—47)

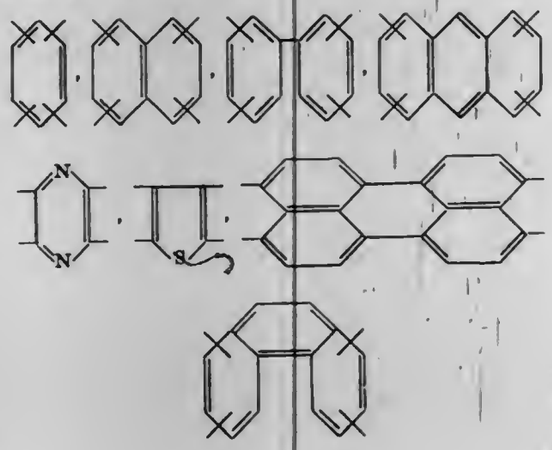
1. A process for preparing polyiminolactone which

comprises treating a polyamide-acid consisting essentially of recurring units of the formula:

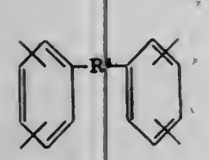


wherein the arrows denote isomerism;

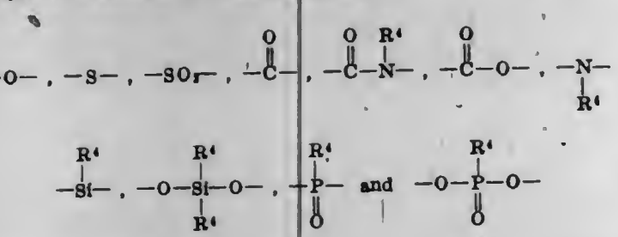
R is an aromatic tetravalent organic radical selected from the group consisting of



and



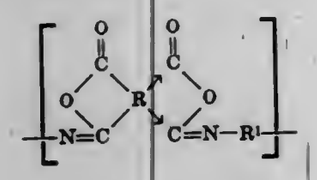
where R^6 is selected from the group consisting of an alkylene chain of 1–3 carbon atoms,



where R^4 and R^5 are selected from the group consisting of alkyl and aryl; and

R^1 is arylene; said polyamide-acid having an inherent viscosity of at least 0.1 as measured at 30° C. on a 0.5% by weight solution in N,N-dimethylacetamide;

with a compound selected from the group consisting of lower fatty acid halides, halogenated lower fatty acid halides, halogenated lower fatty acid anhydrides, aryl phosphonic halides and thionyl halides, to form a polyiminolactone consisting essentially of recurring units of the formula



wherein

the arrows denote isomerism; and

R and R^1 have the same meaning as above.

3,271,367

THERMOPLASTIC POLYCARBONATES OF DIHYDROXYDIARYLENE SULFONES AND THEIR PREPARATION

Hermann Schnell, Krefeld-Urdingen, and Heinrich Krimm and Ludwig Bottenbruch, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 21, 1956, Ser. No. 572,793
Claims priority, application Germany, Mar. 26, 1955, F 17,168
7 Claims. (Cl. 260—49)

6. A linear high molecular weight resinous polycarbonate of a compound of the formula:

$$HO—Ar—SO_2—Ar—OH$$

wherein Ar is an aromatic hydrocarbon radical.

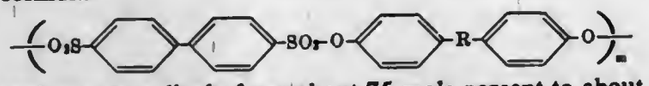
3,271,368

SULFONATE-THIOCARBONATE COPOLYMERS

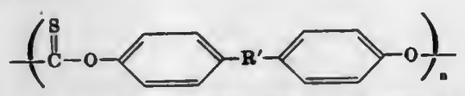
Eugene P. Goldberg, Highland Park, and Frank Scardiglia, Arlington Heights, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed May 2, 1963, Ser. No. 277,482
6 Claims. (Cl. 260—49)

1. A linear copolymer composition comprising in its linear chain from about 25 mole percent to about 75 mole percent (1) sulfonate ester structural units of the formula



and correspondingly from about 75 mole percent to about 25 mole percent (2) thiocarbonate ester structural units of the formula



wherein *m* and *n* are at least one and R and R' are selected from the groups consisting of alkyl and alkylidene groups.

3,271,369

STABILIZATION OF POLYOXYMETHYLENES

Werner Kern, Mainz, Germany, Volker Jaacks, Menlo Park, Calif., and Heinrich Delbig, Mainz, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Sept. 9, 1964, Ser. No. 395,326
Claims priority, application Germany, Sept. 11, 1963, D 42,456
7 Claims. (Cl. 260—67)

1. In a process for stabilizing a polyoxymethylene diol by etherification of its terminal hydroxy groups with an epoxide compound having a terminal oxirane group, the step comprising reacting the polyoxymethylene diol with a combination of said epoxide compound and a compound selected from the group consisting of

an alkyl halide
an aralkyl halide
an acid halide of an aliphatic carboxylic acid
an acid halide of an aromatic carboxylic acid
an acid halide of a cyclic carboxylic acid
an α-chloro ether represented by the structure

$$R—O—CHCl—R_1$$

wherein R is selected from the group consisting of an alkyl group containing 1 to 5 carbon atoms, a cycloalkyl group containing 5 to 7 carbon atoms and an aryl group containing up to 10 carbon atoms; and R_1 is selected from the group consisting of hydrogen, an alkyl group containing 1 to 5 carbon atoms, an aryl group containing up to 10 carbon atoms and an aralkyl group containing up to 7 carbon atoms

and esters of halo acids.

3,271,370

POLY(1,4-CYCLOHEXYLENEDIMETHYLENE TEREPHTHALATE) PROCESS USING SUBSTANTIALLY EQUAL PROPORTIONS OF REACTANTS

George A. Akin, Sarah J. Rush, and Nicholas C. Russin, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 10, 1961, Ser. No. 151,455
6 Claims. (Cl. 260—75)

1. A process for preparing a prepolymer having an inherent viscosity of about 0.30 to about 0.40 as measured in a solution of 60% phenol and 40% tetrachloroethane, said propolymer being prepared by reacting a glycol comprising at least 90 mole percent of 1,4-cyclohexanedimethanol and at least one diester of a 1 to 4 carbon atom monohydric alkanol and a dicarboxylic acid, of which at least 50 mole percent is a terephthalate diester of a monohydric alkanol of 1 to 4 carbon atoms, said process comprising heating said glycol and said diester in a mole ratio of from about 0.95 to 1 up to about 1.05 to 1 under a pressure of at least about 30 but not exceeding about 100 pounds per square inch above atmospheric pressure at a temperature above the melting point of the reaction mixture, and removing by distillation from the reaction mixture the alkanol being formed while retaining substantially all of the unreacted glycol and substantially all of the unreacted diester in the reaction mixture until substantially all of said unreacted glycol and said unreacted diester are converted to said prepolymer.

3,271,371

CURED DIEPOXY SULFONE AND POLYFUNCTIONAL AMINE COMPOSITIONS

Samuel W. Tinsley, South Charleston, Paul S. Starcher, Charleston, and Charles W. McGary, Jr., and Charles T. Patrick, Jr., South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 31, 1960, Ser. No. 18,865
15 Claims. (Cl. 260—79.3)

1. A polymerizable composition comprising a diepoxy sulfone having the formula

$$R—SO_2—R$$

wherein each R, individually, is selected from the group consisting of (a) vic-epoxyalkyl radical in which the vic-epoxy group is at least one carbon atom removed from the sulfonyl group, (b) a vic-epoxycycloalkyl radical which has from 5 to 7 carbon atoms in the cycloalkyl ring and in which the vic-epoxy group is at least one carbon atom removed from the sulfonyl group, (c) a vic-epoxycycloalkylalkyl radical which has from 5 to 7 carbon atoms in the cycloalkyl ring and in which the alkyl moiety contains up to 7 carbon atoms, (d) a 3-oxatricyclo [3.2.1.$0^{2,4}$]-oct-6-yl radical, and (e) a 3-oxatetracyclo-[4.4.0.$1^{7,10}$.$0^{2,4}$]undec-8-yl radical; and from about 0.2 to about 5.0 amino hydrogen atoms of a polyfunctional amine per epoxy group of said diepoxy sulfone, said polyfunctional amine having at least two active amino hydrogen atoms in the molecule.

3,271,372

METHOD OF REMOVING COORDINATION CATALYST RESIDUES FROM HYDROCARBON POLYMER SLURRIES WITH ALCOHOL

Stanley W. Caywood, Jr., Swarthmore, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 28, 1962, Ser. No. 176,441
9 Claims. (Cl. 260—80.5)

1. A process for the removal of vanadium catalyst residues from a methylene chloride slurry of a normally solid hydrocarbon copolymer comprising (A) forming dispersed granular copolymer particles having a general size of about 1/32 to 1/4 inch in diameter by adding an alcohol selected from the group consisting of an alcohol having up to 4 carbon atoms and mixtures of alcohols having up to 4 carbon atoms, said particles being swollen by the alcohol/methylene chloride mixture and said alcohol being added in amount of 10 to 35 percent by volume based on the total volume of said alcohol and methylene chloride and (B) separating the hydrocarbon copolymer from said slurry to obtain said copolymer having less than about 68 parts per million of vanadium; said solid hydrocarbon copolymer being a copolymer of ethylene and at least one other copolymerizable monomer and containing residues of a vanadium catalyst formed by mixing a vanadium salt with a member selected from the group consisting of an aluminum trialkyl, an alkyl aluminum halide and the reaction product of a molar proportion of an aluminum trialkyl and 0.5 to 2 molar portions of an aluminium halide.

3,271,373

USE OF IONIZED SALTS OF UNSATURATED MONOCARBOXYLIC ACIDS TO PREVENT COAGULATION IN THE EMULSION POLYMERIZATION OF CARBOXYL CONTAINING MONOMERS

Vernon Clare Wolff, Jr., Orange, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 22, 1964, Ser. No. 377,082
7 Claims. (Cl. 260—80.5)

1. In the process of preparing copolymers of ethylene, a monomer selected from the group consisting of vinyl chloride and vinyl acetate, and at least one monocarboxyl substituted monoolefin by free radical catalyzed aqueous emulsion copolymerization at superatmospheric pressure, the improvement comprising carrying out the copolymerization in the presence of coagulum reducing amount of an ionized salt of said monocarboxyl substituted monoolefin.

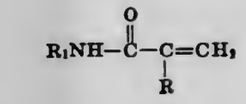
3,271,374

ACRYLIC COMPOUNDS

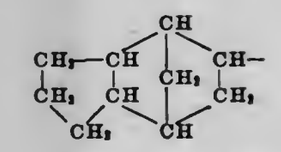
John R. Caldwell and Edward H. Hill, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,172
16 Claims. (Cl. 260—82.1)

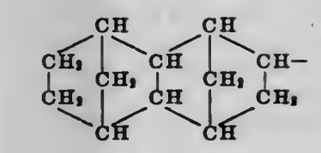
1. An acrylic monomer having the general structure



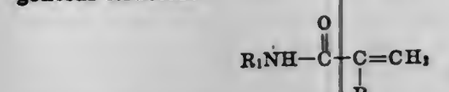
wherein R represents a member selected from the group consisting of —H and —CH_3 and R_1 represents a member selected from the group consisting of



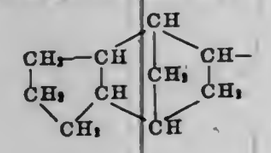
and



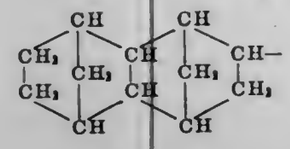
6. A resinous polymer of an acrylic amide having the general structure



wherein R represents a member selected from the group consisting of —H and —CH_3 and R_1 represents a member selected from the group consisting of



and

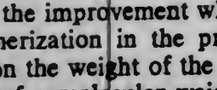


3,271,375
MOLECULAR WEIGHT REGULATION IN POLYMERIZATION OF VINYLIDENE MONOMERS USING HETEROCYCLIC COMPOUNDS AS REGULATORS

Richard E. Delacretaz and Speros P. Nemphos, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 18, 1964, Ser. No. 368,372
4 Claims. (Cl. 260—85.5)

1. In a process for polymerizing a free radical polymerizable material consisting essentially of 90–10 percent by weight of at least one monovinylidene aromatic hydrocarbon and 10–90 percent by weight of a nitrile selected from the group consisting of acrylonitrile and methacrylonitrile in the presence of a free radical polymerization initiator, the improvement which comprises conducting the polymerization in the presence of 0.05–5.0 percent, based upon the weight of the free radical polymerizable material, of a molecular weight regulator which corresponds to the formula:



wherein Z represents a divalent organic radical having in its chain an atom selected from the group consisting of oxygen, nitrogen and sulphur and which, together with the two C's of the formula, forms a heterocyclic ring having at least four members.

3,271,376
CATALYST SYSTEM FOR THE COPOLYMERIZATION OF OLEFINS

Marco A. Achon, Chester, and John A. Price, Swarthmore, Pa., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 30, 1962, Ser. No. 220,556
10 Claims. (Cl. 260—88.2)

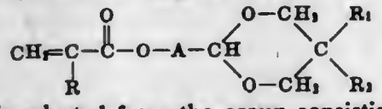
9. A process for the copolymerization of ethylene and propylene which comprises contacting, in an inert solvent, and at a temperature of from about 20° C. to about 200° C., a mixture of ethylene and propylene with a catalyst consisting essentially of the reaction product of an aluminum alkyl dihalide, a vanadium compound selected from the group consisting of vanadium tetrachloride, vanadium oxytrichloride, and a silane of the formula $R_3R'Si$ in which R' is an alkoxy radical and R is selected from the group consisting of alkoxy radicals and hydrocarbon radicals, wherein the mol ratio of aluminum alkyl dihalide to silane is from 1:1 to 100:1 and the mol ratio of aluminum alkyl dihalide to vanadium oxytrichloride is from 0.2:1 to 10:1.

3,271,377
POLYMERIZABLE 2-ALKYLENE-m-DIOXANYL ACRYLIC ESTERS

Gerald J. Mantell, Kansas City, Mo., David Rankin, Kansas City, Kans., and Francis R. Galiano, Kansas City, Mo., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed May 23, 1962, Ser. No. 196,915
35 Claims. (Cl. 260—88.3)

1. A polymerizable 2-alkylene-m-dioxanyl acrylic ester represented by the following formula:



wherein R is selected from the group consisting of lower alkyl radicals and hydrogen, A represents a divalent alkylene radical having a carbon chain length of 1 to 4 carbons, R_1 and R_2 are selected from the group consisting of hydrogen, alkyl, phenyl and alkyl and phenyl having attached thereto substituents selected from the group consisting of lower alkyl, cycloalkyl, nitro, chloro, bromo and dialkylamino.

3,271,378
PROCESS OF POLYMERIZING ACETYLENE AND DERIVATIVES THEREOF

Wiley E. Daniels, Easton, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 8, 1963, Ser. No. 322,506
6 Claims. (Cl. 260—91.3)

1. The process of polymerizing an acetylenic compound of the formula:

$$R_I—C\equiv C—R_{II}$$

wherein R_I represents a member selected from the class consisting of hydrogen, alkyl of from 1 to 12 carbon atoms, cycloalkyl of from 5 to 6 carbon atoms, aryl, cyano, methylol and iso-propylol, and R_{II} represents a member selected from the class consisting of hydrogen, methyl, cyano, phenyl and methylol, which comprises polymerizing said compound at a temperature of from —40° to 200° C. and a pressure ranging from ambient to 200 p.s.i.g. in the presence of a non-reduced nickel halide trisubstituted phosphine complex having the formula:

$$NiX_2.2R_3P$$

wherein X represents a halogen selected from the class consisting of bromine, chlorine and iodine and R represents at least one member of the group consisting of alkyl of from 1 to 12 carbon atoms, cycloalkyl of from 5 to 6 carbon atoms, aryl and aralkyl, and wherein the Ni is divalent.

3,271,379
PROCESS FOR PREPARING OPTICALLY ACTIVE POLYMERS

Giulio Natta, Milan, and Piero Pino and Gian Paolo Lorenzi, Pisa, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed May 8, 1961, Ser. No. 126,739
Claims priority, application Italy, May 13, 1960, 8,544/60
15 Claims. (Cl. 260—93.7)

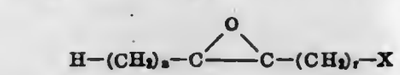
1. A process for preparing a polymer having optical activity in solution, from an optically inactive polymer capable of being separated into the optically active antipodes, characterized in that an optically inactive poly (alpha-olefin) having the formula CH_2=CHR wherein the R group contains at least one carbon atom which is asymmetric, dissolved in a solvent, is subjected to a selective adsorption using an optically active crystalline polyhydrocarbon adsorbent and two polymer fractions having opposite optical activity are recovered.

3,271,380
PROCESS FOR CATALYST RESIDUE REMOVAL

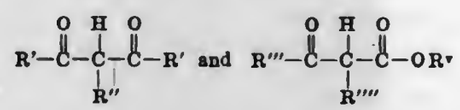
Richard E. Dietz, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,769
15 Claims. (Cl. 260—93.7)

1. A method of removing catalyst residues from a polymer prepared by catalytic polymerization in the presence of a catalyst which forms on commingling at least two essential components, one of said components being a metal compound selected from the group consisting of Groups IV, V, VI and VIII metal compounds and another of said components being selected from the group consisting of organometals, metal hydrides and metals of Groups I, II and III, which comprises treating said polymers with an agent selected from the group consisting of (A) a halogen-containing alkylene oxide of the formula



wherein X is a halogen, *n* is an integer from 0 to 10 and *r* is an integer from 1 to 10; (B) a halogen-containing alkylene oxide according to (A) and a dicarbonyl compound selected from those of the formulas



wherein R' is a member of the group consisting of alkyl, cycloalkyl, aryl, aralkyl, alkaryl, alkylcycloalkyl and cycloalkylalkyl and wherein the R''s can be joined to form a cyclic structure; R'' is a member of the group consisting of hydrogen, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, alkylcycloalkyl and cycloalkylalkyl; R''' is a member selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl, alkaryl, alkylcycloalkyl, cycloalkylalkyl and an OR^v group; R'''' is a member of the group consisting of hydrogen, alkyl, cycloalkyl, aryl, arylkyl, alkaryl, alkylcycloalkyl and cycloalkylalkyl; and R^v is a member selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl, alkaryl, alkylcycloalkyl and cycloalkylalkyl, and wherein each of said R', R'', R''', R'''' and R^v contains from 1 to 8 carbon atoms; and recovering the thus treated polymer from the solution thereof substantially free of catalyst residues.

3,271,381
POLYMERIZATION OF OLEFINS BY USE OF MODIFIED CATALYSTS

Harry M. Andersen and William R. Richard, Jr., Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 15, 1958, Ser. No. 760,858
6 Claims. (Cl. 260—94.9)

1. In the polymerization of alpha-olefins of 2 to 10 carbon atoms over catalyst prepared by the interaction of (a) an aluminum compound of the general formula R_2AlX wherein R is selected from the group consisting of alkyl, cycloalkyl, and aryl radicals and X is selected from the group consisting of hydrogen, halogen, alkyl, cycloalkyl and aryl radicals, with (b) a metal halide:

$$MeX_n$$

in which Me represents a metal of the beta-subgroups of Groups IV to VI, X represents halogen, and *n* represents the valence of the metal, the improvement which comprises utilizing such catalyst also comprising hydrochloric acid which has been added prior to contact with the alpha-olefins to effect control of the molecular weight of the resulting polyethylene, the amount of acid being within the range of 0.1 to 10 gram-equivalents per gram-atom metal in said metal halide.

3,271,382
RECOVERY OF LIGNOSULFONATES FROM SPENT SULFITE LIQUORS

George R. Quimby and Otto Goldschmid, Shelton, Wash., assignors to Rayonier Incorporated, Shelton, Wash., a corporation of Delaware

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,669
2 Claims. (Cl. 260—124)

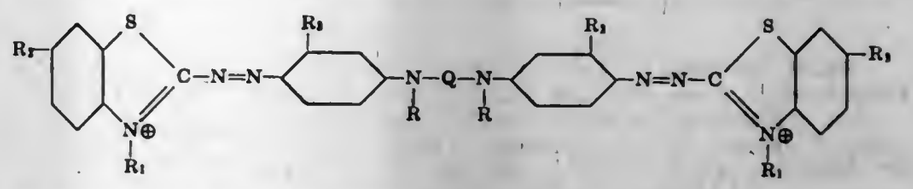
1. The process for the separation of lignosulfonate from spent sulfite liquor which comprises adding to said liquor a high molecular weight quaternary ammonium salt and precipitating the quaternary ammonium lignosulfonate, washing the precipitate with water, drying the precipitate, dissolving the dried precipitate in a lower aliphatic alcohol, adding to the alcoholic solution an alkali metal salt of the group consisting of sodium chloride and potassium chloride to precipitate alkali metal lignosulfonate, and separating the alkali metal lignosulfonate precipitate from the alcoholic solution.

3,271,383
DISAZO DYES CONTAINING AN N-SUBSTITUTED BENZOTHIAZOLYL GROUP

Wataru Yamaya, Kitakyushu-shi, Fukuoka-ken, and Kōji Matsui, Kiryu-shi, Gunma-ken, Japan, assignors to Mitsubishi Chemical Industries Limited, Tokyo, Japan

No Drawing. Filed June 11, 1963, Ser. No. 286,937
6 Claims. (Cl. 260—158)

1. Cationic azo dyestuffs having the following formula:



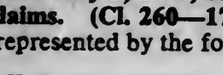
wherein R is a radical taken from the class consisting of methyl, ethyl, hydroxyethyl, hydroxypropyl, hydroxymethoxy-propyl and hydrogen; R_1 is a radical taken from the class consisting of methyl and ethyl; R_2 is a radical taken from a class consisting of hydrogen, methoxy, ethoxy, methyl, ethyl and chlorine; R_3 is a radical taken from the class consisting of hydrogen, methyl and chlorine; and Q is a divalent radical taken from the class consisting of ethylene, propylene, oxydiethylene, dioxytriethylene, hydroxypropylene and p-toluidino-N,N-diethylene.

3,271,384
PHENYL AZOBENZOYL PEROXIDES

Howard C. Haas, Arlington, and Elbert M. Idelson, Newton Lower Falls, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed May 9, 1963, Ser. No. 279,330
3 Claims. (Cl. 260—174)

1. A compound represented by the formula:



wherein each X is a phenylazo benzene radical.

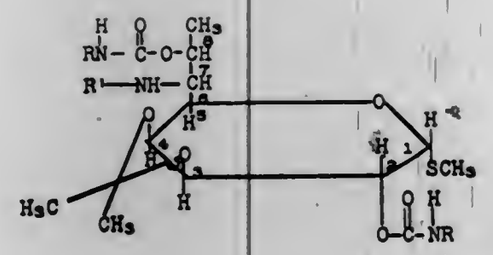
3,271,385
CARBAMOYL DERIVATIVES OF LINCOMYCIN AND PROCESSES FOR PRODUCING THEM

David G. Martin, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,504
8 Claims. (Cl. 260—210)

1. A compound of the formula:

(I)



wherein R is lower-alkyl; and wherein R' is trans-4-propyl-L-hygroyl.

3,271,386
5-AMINO-4-IMIDAZOLECARBOXAMIDE RIBOSIDE RECOVERY PROCESS

Hsing T. Huang, Groton, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1964, Ser. No. 371,784
5 Claims. (Cl. 260—211.5)

1. A process for the recovery of 5-amino-4-imidazolecarboxamide riboside from a fermentation broth containing the same which comprises contacting said fermentation broth at a pH of from about 1 to about 3 with a strong cation exchange resin in the hydrogen cycle, eluting said resin with ammonium hydroxide, concentrating the eluate, contacting said concentrate at a pH of about 9 to 10 with a strong anion exchange resin operating in either the formate or the acetate cycle, and eluting said resin with water.

3,271,387
HIGH VISCOSITY STARCH DERIVATIVES

Chim Patel, St. Louis, Mo., and Ronald E. Pyle, Granite City, Ill., assignors to Union Starch & Refining Co., Inc., Columbus, Ind., a corporation of Indiana

No Drawing. Filed Oct. 10, 1962, Ser. No. 229,724
14 Claims. (Cl. 260—233.5)

14. As a high viscosity starch derivative, the reaction product obtained by reacting starch with about 0.03 to about 0.3%, based on the dry starch, of a chlorothioformate ester of an alcohol selected from the group consisting of alkyl alcohols of 1–12 carbon atoms and phenyl alcohol, the reaction being carried out at a pH of 7–10 and at a temperature of 26–55° C.

3,271,388
AMYLOPECTIN SULFATES

Peter S. Cammarata and Stephen Eich, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 29, 1964, Ser. No. 379,035
Claims priority, application Great Britain, Mar. 17, 1964, 11,272/64
5 Claims. (Cl. 260—233.5)

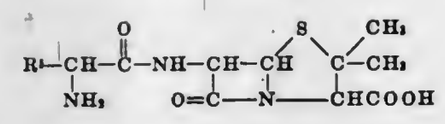
1. A pepsin inhibitory and anti-coagulant but not significantly anti-lipemic compound selected from the class consisting of sulfated potato starch amylopectins and the highly and instantly water soluble ammonium, alkali metal and aliphatic amine salts thereof, said derivatives possessing about 1–1.8 sulfate groups per glucose unit and characterized also by a molecular weight of $1–30\times10^7$.

3,271,389
PROCESS FOR THE ISOLATION OF CERTAIN BASIC PENICILLINS

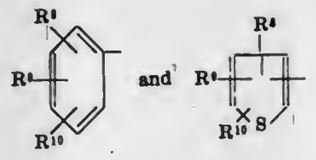
David A. Johnson, Fayetteville, and Glenn A. Hardcastle, Jr., Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 8, 1964, Ser. No. 373,527
12 Claims. (Cl. 260—239.1)

1. The process of preparing in pure form and high yield a penicillin having the formula



wherein R^5 is a member selected from the group consisting of

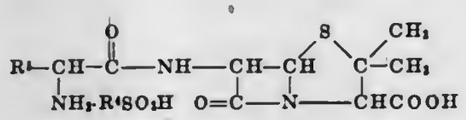


wherein R^6, R^9 and R^{10} each represent a member selected from the group consisting of hydrogen, nitro, di(lower)-alkylamino, (lower)alkanoylamino, (lower)alkanoyloxy, (lower)alkyl (including straight and branched chain saturated aliphatic groups having from 1 to 6 carbon atoms inclusive), (lower)alkoxy, sulfamyl, chloro, iodo, bromo, fluoro, trifluoromethyl, (lower)alkylthio, (lower)alkylsulfonyl, carbo(lower)alkoxy, benzyl, phenethyl, cycloheptyl, cyclohexyl and cyclopentyl which comprises mixing

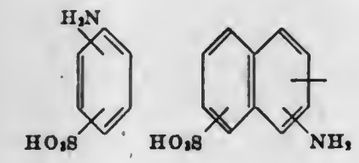
(a) water,

(b) a larger volume of a liquid, water-immiscible solvent,

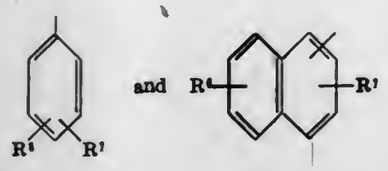
(c) a penicillin sulfonate of the formula



wherein R_4 is a member selected from the group consisting of

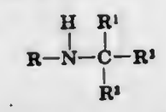


and



wherein R^6 and R^7 are each a member selected from the group consisting of hydrogen, alkyl containing from 1 to 12 carbon atoms (including straight and branched chain groups), (lower)alkoxy, (lower)alkylthio, nitro, (lower)alkanoylamino, (lower)alkanoyloxy, sulfamyl, chloro, iodo, bromo, fluoro, trifluoromethyl, (lower)-alkylsulfonyl, carbo(lower)alkoxy, benzyl, phenethyl, cycloheptyl, cyclohexyl and cyclopentyl, and wherein R^5 has the meaning set forth above, and

(d) a weight equal to at least one-half the weight of said penicillin sulfonate of a secondary amine selected from the group consisting of the secondary amines having the formula



wherein R is an aliphatic group having from 10 to 14 carbon atoms and R^1, R^2 and R^3 are each alkyl groups having a total of from 11 to 14 carbon atoms, said secondary amine being liquid at room temperatures and soluble in said organic solvent;

(e) agitating said mixture; and

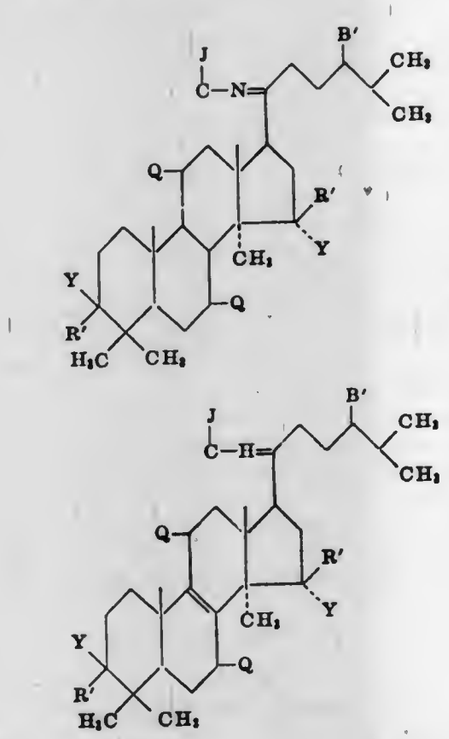
(f) recovering said penicillin after it forms and precipitates as a solid substantially free of any sulfonic acid contaminants.

3,271,390
SULFURENIC ACID AND DERIVATIVES THEREOF

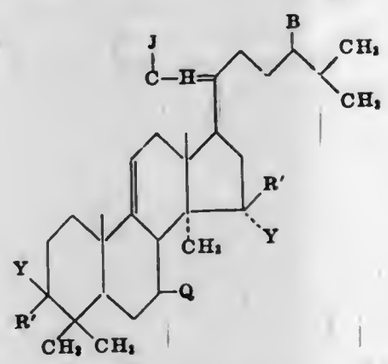
Josef Fried, Princeton, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 13, 1963, Ser. No. 308,677
20 Claims. (Cl. 260—239.5)

11. A compound selected from the group consisting of steroids of the formulae



and



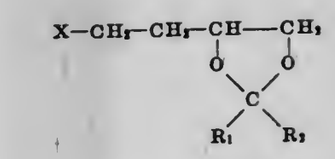
wherein J is selected from the group consisting of morpholyl, piperidyl and pyrrolidyl; and Y, R', B' and Q are as hereinbefore defined.

3,271,391
PROCESS FOR THE PREPARATION OF ω-(Δ⁴-ANDROSTENE-16β-OL-3-ONE-16α-YL) PROPIONIC ACID AND INTERMEDIATES FORMED THEREIN

Daniel Bertin, Montrouge, and Jacques Perronnet, Paris, France, assignors to Roussel-Uclaf, S.A., Paris, France, a corporation of France

No Drawing. Filed Apr. 11, 1963, Ser. No. 272,244
Claims priority, application France, Apr. 18, 1962, 894,926
18 Claims. (Cl. 260—239.55)

1. A process for the preparation of the lactone of ω-(Δ⁴-androstene-16β-ol-3-one-16α-yl)-propionic acid which comprises reacting Δ⁵-androstene-3β-ol-16-one with a magnesium derivative of a ketonide of 1,2-dihydroxy-4-halo-butane having the formula



wherein R_1 and R_2 are alkyl radicals having 1 to 10 carbon atoms and X is a halogen to form the corresponding ketonide of 16α-(3',4'-dihydroxybutyl)-Δ⁵-androstene-3β, 16β-diol, hydrolyzing the latter under acidic conditions to form 16α-(3',4'-dihydroxybutyl)-Δ⁵-androstene-3β,16β-diol, reacting the latter with periodic acid to simultaneously degrade and cyclize the lateral chain to form 1',16β-epoxy-16α-(1'ξ-hydroxypropyl)-Δ⁵-androstene-3β-ol, reacting the latter with a lower alkanol to form 1',16β-epoxy-16α-(1'ξ-alkoxypropyl)-Δ⁵-androstene-3β-ol, oxidizing the latter to form 1',16β-epoxy-16α-(1'ξ-alkoxypropyl)-Δ⁴-androstene-3-one, reacting the latter under acidic conditions to form the 1'ξ,1'ξ-ether oxide of 1',16β-epoxy-16α-(1'ξ-hydroxypropyl)-Δ⁴-androstene-3-one and oxidizing the latter to form the lactone of ω-(Δ⁴-androstene-16β-ol-3-one-16α-yl)-propionic acid.

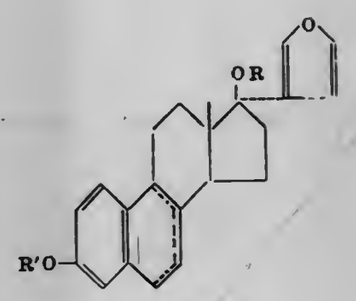
14. 1',16β-epoxy-16α-(1'ξ-hydroxpyropyl)Δ⁵-androstene-3β-ol.

3,271,392
17α-[3'-FURYL]-ESTROGENS

Yvon Lefebvre, Pierrefonds, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 14, 1965, Ser. No. 487,335
31 Claims. (Cl. 260—239.55)

1. A compound of the formula



wherein R is selected from hydrogen and lower aliphatic acyl groups; and R' is selected from hydrogen, lower alkyl

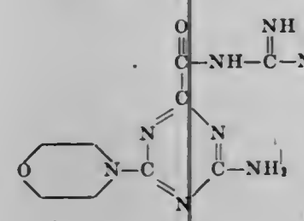
groups containing from 1 to 4 carbon atoms, cycloalkyl groups containing from 5 to 6 carbon atoms, tetrahydropyranyl and acyl groups, and the group $X^+SO_3^-$ in which X represents a cation selected from the group consisting of sodium, potassium, and organic bases.

3,271,393
2,4-DIAMINO-6-NON-OXO-CARBONYLIC TRIAZINES

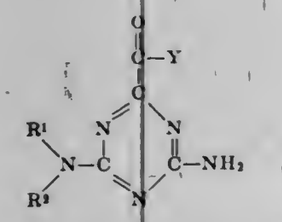
Takeo Ueda, 1066 Izumi, Komae-cho, Kitatama-gun, Tokyo, Japan; Shigeshi Toyoshima, 355 Funabashi-cho, Sedagaya-ku, Tokyo, Japan; and Mitsuru Furukawa, 897 Yukigaya-cho, Ota-ku, Tokyo, Japan

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,551
Claims priority, application Japan, July 3, 1962, 37/27,519
4 Claims. (Cl. 260—247.2)

1.



3. A compound selected from the group consisting of compounds of the formula

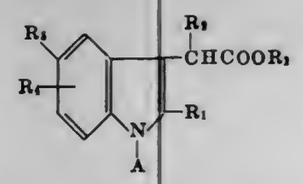


3,271,394
ALPHA-INDOLYL-3-ACETIC ACID ESTERS

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,567
7 Claims. (Cl. 260—247.2)

1. A compound selected from the group consisting of free bases and pharmaceutically acceptable acid addition salts of compounds represented by the formula:



wherein

A is selected from the group consisting of benzoyl, naphthoyl,



wherein Het is selected from the group consisting of furyl, thienyl, imidazolyl, thiazolyl, benzimidazolyl, indazolyl, oxoimidazolyl, pyridazinyl, pyrazolonyl, prazolyl, oxazolyl, isoxazolyl, isothiazolyl, pyridyl, pyrimidinyl, pyrazinyl and substituted benzoyl, naphthoyl and



wherein said substituent is selected from the group consisting of halo, lower alkoxy, phenoxy, trifluoroacetyl, acetyl, formyl, dimethylcarbamoyl, cyano, carb-lower alkoxy, lower alkylthio, N-N dilower alkylsulfamoyl, methylsulfinyl, methylsulfonyl, nitro, di(lower alkyl)amino, dihalo, trihalo and dihalo lower alkoxy;

R_1 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, methoxyphenyl, chlorophenyl, benzyl and phenyl;

R_2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and propargyl;

R_3 is selected from the group consisting of lower alkenyl, lower alkynyl, cyclopropylmethyl, lower alkoxy lower alkyl, poly lower alkoxy lower alkyl, dilower alkylamino lower alkyl, 1-piperidinyl(ethyl, 1-pyrrolidinyl(ethyl, 1-pyrrolidinyl(methyl), 1-morpholinyl(ethyl), 1-methyl-2-pyrrolidinyl(methyl), 1-methyl-2-piperidinyl(methyl), 3-(1-ethylpiperidinyl), N'-methyl-N-piperazinyl(ethyl), cyclopropylmethyl, p-acetaminophenyl, o-carboxyphenyl, o-carbamoylphenyl, β-phenethyl, β-(p-methoxyphenyl)ethyl, 3-phenylpropene-2-yl, tetrahydrofurfuryl and 4-dimethylaminocyclohexyl;

R_4 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, fluorine and trifluoromethyl; and

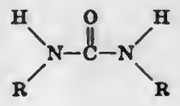
R_5 is selected from the group consisting of hydrogen, halogen, lower alkyl, amino lower alkyl, trifluoromethyl, lower alkoxy, benzyloxy, p-methylbenzyloxy, p-methoxybenzyloxy, p-propoxybenzyloxy, p-chlorobenzyloxy, p-fluorobenzyloxy, lower alkenyloxy, cyclopropylmethoxy, cyclopropylpropoxy, amino, lower alkylamino, dilower alkylamino, lower alkanolamino, cyano, nitro, 1-pyrrolidinyl, 4-methyl-1-piperazinyl, 4-morpholinyl, bis(hydroxy lower alkyl) amino, dilower alkylsulfamoyl, acetyl, bis(benzyloxyethyl) amino, benzylthio, p-methylbenzylthio, p-methoxybenzylthio, p-chlorobenzylthio, p-fluorobenzylthio, N,N-dimethylcarbamoyl, cyclobutylmethoxymethyloxy, 1-azacyclopropyl, ethylphenyl, butylphenyl, fluorophenyl, p-fluoro-m-methoxyphenyl and vinylphenyl.

3,271,395
MELAMINE PRODUCTION

Kenzie Nozaki, El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,110
4 Claims. (Cl. 260—249.7)

1. The process for preparing a melamine comprising reacting a mixture of sulfur trioxide, ammonia, and a carbamide of the formula



wherein the R's are independently selected from the group consisting of hydrogen, aryl of from 6–10 carbon atoms, and lower alkyl at a temperature from about 0° C. to about 450° C. and a pressure from about 50 p.s.i.g. to about 1000 p.s.i.g.

3,271,396
PYRIDO-QUINAZOLINE DERIVATIVES

Jack Bernstein, New Brunswick, and Ervin R. Spitzmiller, Highland Park, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 17, 1964, Ser. No. 390,215
7 Claims. (Cl. 260—251)

4. 5 - (3 - dimethylaminopropyl) - 5,5a,6,7,8,9 - hexahydro-11H-pyrido[2,1-b]quinazolin-11-one.

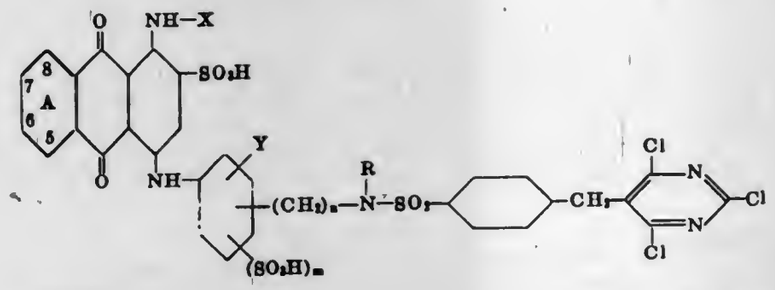
7. 5,5a,6,7,8,9 - hexahydro - 11H-pyrido[2,1-b]quinazolin-11-one.

3,271,397
REACTIVE ANTHRAQUINONE DYES CONTAINING A TRICHLORO PYRIMIDYL GROUP

Peter Bitterli, Reinach, Basel-Land, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed June 22, 1965, Ser. No. 466,111
Claims priority, application Switzerland, June 26, 1964, 8,361/64; Jan. 29, 1965, 1,275/65
7 Claims. (Cl. 260—256.5)

1. A reactive dye of the formula



wherein

R is a member selected from the group consisting of hydrogen, alkyl and lower hydroxyalkyl.

X is a member selected from the group consisting of hydrogen and methyl,

Y is a member selected from the group consisting of hydrogen, methyl and methoxy,

n is one of the integers 1 and 2,

m is one of the integers 1 and 2,

any substituents on the nucleus A are selected from the group consisting of chlorine, bromine, and fluorine in the positions 6 and 7 and $-SO_3H$ in one of the positions 5,6,7, and 8, and the group $-(CH_2)_n-$ stands in one of the meta- and para-positions with respect to —NH—.

3,271,398
OROTIC ACID SALT OF 4-AMINO-5-IMIDAZOLECARBOXAMIDE

Raitaro Haraoka, Osaka, and Takashi Kamiya, Toyanaka, Japan, assignors to Fujisawa Pharmaceutical Co., Ltd., Osaka, Japan, a company of Japan

No Drawing. Filed Mar. 13, 1963, Ser. No. 264,769
Claims priority, application Japan, Mar. 15, 1962, 37/10,258
1 Claim. (Cl. 260—256.4)

The orotic acid salt of 4(or 5)-amino-5(or 4)-imidazolecarboxamide.

3,271,399
5-ACYLOXYURACILS AND THEIR PREPARATION

George H. Hitchings, Yonkers, and Gertrude B. Elion, Bronxville, N.Y., assignors to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed Feb. 10, 1964, Ser. No. 343,498
2 Claims. (Cl. 260—256.4)

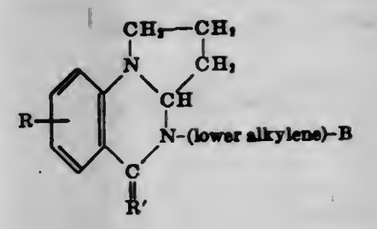
1. 5-nicotinoyloxyuracil.

3,271,400
PYRROLOQUINAZOLINE DERIVATIVES

Jack Bernstein, New Brunswick, and Ervin R. Spitzmiller, Highland Park, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 17, 1964, Ser. No. 390,217
11 Claims. (Cl. 260—256.4)

1. A compound selected from the group consisting of bases of the formula



and the pharmaceutically acceptable acid-addition and quaternary ammonium salts thereof, wherein R is selected from the group consisting of hydrogen, lower alkyl, halogen, halomethyl, lower alkoxy, mononuclear aryloxy, amino and di(lower alkyl)amino; R' is selected from the group consisting of two hydrogens and keto; and B is a basic nitrogen-containing radical selected from the group consisting of

amino,
(lower alkyl)amino,
di(lower alkyl)amino,
hydroxy(lower alkyl)amino,
halo(lower alkyl)amino,
di[hydroxy(lower alkyl)]amino,
(lower alkyl)phenyl(lower alkyl)amino,
piperidyl,
(lower alkyl)piperidyl,
di(lower alkyl)piperidyl,
homopiperidyl,
pyrrolidyl,
(lower alkyl) pyrrolidyl,
di(lower alkyl)pyrrolidyl,
piperazinyl,
homopiperazinyl,
(lower alkyl)piperazinyl,
di(lower alkyl)piperazinyl,
(lower alkoxy)piperazinyl,
R-phenylpiperazinyl,
R-phenyl(lower alkyl)piperazinyl,
pyridylpiperazinyl,
pyridyl(lower alkyl)piperazinyl,
(lower alkanoyloxy-lower alkyl)piperazinyl,
(hydroxy-lower alkyl)piperazinyl,
morpholinyl,
(lower alkyl)morpholinyl
di(lower alkyl)morpholinyl,
thiamorpholinyl,
(lower alkyl)thiamorpholinyl and
di(lower alkyl)thiamorpholinyl.

3,271,401
TETRAZAINDENE SYNTHESIS FOR PHOTOGRAPHIC PRODUCTS

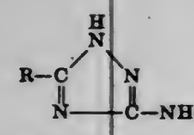
Leslie Alfred Williams, Wealdstone, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 20, 1964, Ser. No. 391,050
6 Claims. (Cl. 260—256.4)

1. A method for preparing 6-oxo-1,3,3a,7-tetrazaindene compounds useful in stabilizing photographic silver halide emulsions comprising condensing under alkaline conditions at a pH of at least 8.0 one molecule of an alkoxymethylenemalonic acid ester having the following formula:



wherein R_2, R_3 and R_4 each represents a lower alkyl group, with one molecule of a triazole compound having the following formula:



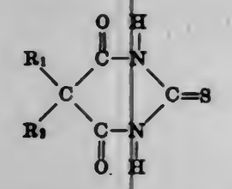
wherein R represents a member selected from the class consisting of H, lower alkyl, phenyl, tolyl, amino, methylamino, mercapto, methylmercapto and ethylmercapto groups.

3,271,402
5-HIGHER ALKYL-5-LOWER ALIPHATIC HYDROCARBON-2-THIOBARBITURIC ACIDS

Peter Fahrni, Binningen, and Walter Mosimann and Otto Schnider, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,288
Claims priority, application Switzerland, Sept. 29, 1961, 11,356/61
9 Claims. (Cl. 260—260)

1. A heterocyclic compound selected from the group consisting of members having the formula:



in which

R_1 is an alkyl group having from 11 to 18 carbon atoms, inclusive; and in which

R_2 is a propargyl radical

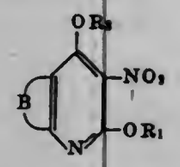
and medicinally acceptable metal salts thereof.

3,271,403
2,4-DIALKOXY-5,6-HYDROCARBYLENE-3-NITROPYRIDINES

André Grüssner and Otto Schnider, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,314
Claims priority, application Switzerland, Sept. 12, 1962, 10,829/62
12 Claims. (Cl. 260—289)

1. Compounds of the formula:



in which R_1 is a lower alkyl group selected from the group consisting of methyl and ethyl; R_2 is a lower alkyl group selected from the group consisting of methyl and ethyl; and B is a member selected from the group consisting of $-(CR_2{=}CR_4)_x-$ and $-(CR_3H)_x-$ wherein R_3 is a member selected from the group consisting of hydrogen, methyl and ethyl, R_4 is a member selected from the group consisting of hydrogen, methyl and ethyl and x is an integer selected from the group consisting of 4 and 5.

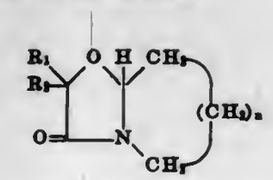
2. 2,4-dimethoxy-3-nitro-5,6,7,8-tetrahydroquinoline.

3,271,404
ANTI-CONVULSANT COMPOUNDS

Rudolf G. Griot, Florham Park, N.J., assignor to Sandoz, Inc., Hanover, N.J., a corporation of New York

No Drawing. Filed July 25, 1963, Ser. No. 297,708
7 Claims. (Cl. 260—294.7)

1. A compound of the formula:



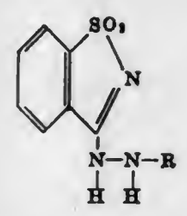
in which R_1 is selected from the group consisting of hydrogen, lower alkyl, benzyl, phenyl and cyclohexyl, R_2 is selected from the group consisting of lower alkyl, benzyl, phenyl and cyclo hexyl and n is an integer in the range of 2 to 3.

3,271,405
ACYLHYDRAZINO BENZISOTHIAZOLES

Calvert W. Whitehead and John J. Traverso, both of Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,892
4 Claims. (Cl. 260—301)

1. Compounds of the formula:



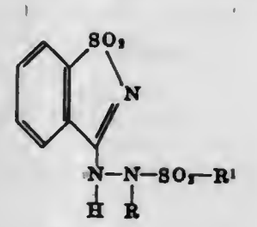
wherein R is acetyl or propionyl.

3,271,406
SUBSTITUTED-HYDRAZINO BENZISOTHIAZOLES

John J. Traverso and Calvert W. Whitehead, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,915
6 Claims. (Cl. 260—301)

1. The compounds of the following formula:



wherein

R is hydrogen, lower alkyl, or lower alkenyl; and

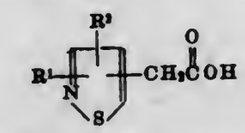
R^1 is lower alkyl, phenyl, or naphthyl.

3,271,407
CERTAIN ISOTHIAZOLYLACETIC ACID COMPOUNDS

Rintje Raap, Raymond Urgel Lemieux, and Ronald George Micetich, Edmonton, Alberta, Canada, assignors to R & L Molecular Research Ltd., Edmonton, Alberta, Canada, a corporation of Canada

No Drawing. Filed June 28, 1965, Ser. No. 467,703
10 Claims. (Cl. 260—302)

1. A compound having the formula



wherein R^1 and R^2 each represent a member selected from the group consisting of hydrogen, chloro, bromo, iodo and methyl.

3,271,408
β-CYANOVINYL THIOETHERS OF CERTAIN THIAZOLE COMPOUNDS

Everett Joseph Frazza, Yorktown Heights, N.Y., and Lorence Rapoport, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Connecticut

No Drawing. Original application July 19, 1960, Ser. No. 43,723. Divided and this application Apr. 27, 1964, Ser. No. 368,437
3 Claims. (Cl. 260—306.6)

1. A compound of the formula:

NCCH=CHSR

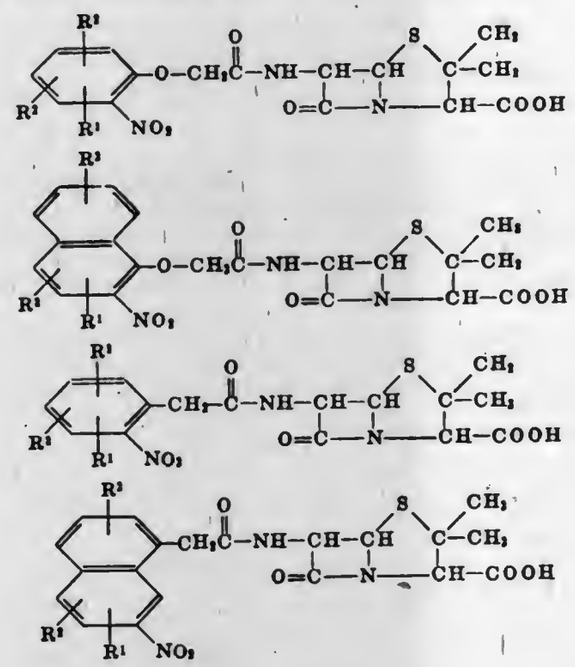
in which R is a radical selected from the group consisting of thiazolinyl, thiazolyl, and benzothiazolyl.

3,271,409
CHEMICAL CONVERSION OF NITRO-PENICILLINS TO 6-AMINOPENICILLANIC ACID

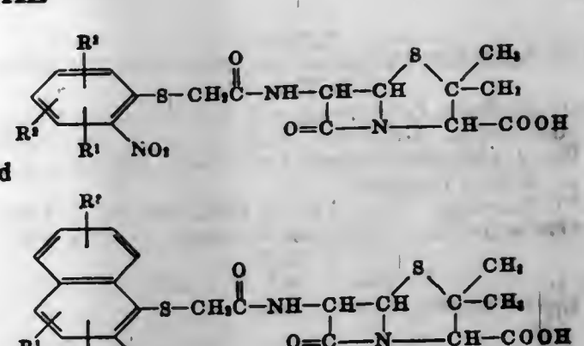
David A. Johnson, Fayetteville, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,818
7 Claims. (Cl. 260—306.7)

1. The process for the production of 6-aminopenicillanic acid which comprises reducing to a group selected from the group consisting of hydroxylamino and amino the ortho-nitro group of a "nitropenicillin" selected from the group consisting of acids of the formulae



and



wherein R^1, R^2 and R^3 are each a member selected from the group consisting of hydrogen, (lower)alkyl, (lower) alkoxy, chloro, bromo, iodo, trifluoromethyl, cyano, nitro, di(lower)alkylamino, methylsulfonyl, (lower)alkanoyl, (lower)alkylthio, phenoxy, benzyloxy, allyloxy and carbalkoxy and salts thereof and subsequently maintaining the reaction product of such reduction in solution in an inert solvent for said reaction product for at least several minutes at a pH in the range of 1 to 6.

3,271,410
REHYDROGENATION OF HYDROGENATED FATTY ACIDS

Lucien J. Cagneron, Pekin, Ill., and Eugene A. Skaradzinski, Minneapolis, Minn., assignors to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed July 19, 1965, Ser. No. 473,204
11 Claims. (Cl. 260—409)

1. The process of improving the quality of a catalytically-hydrogenated fatty acid which comprises catalytically rehydrogenating said hydrogenated fatty acid at a temperature of from 200° to 500° F. and at a pressure of from 10 p.s.i.g. to 5000 p.s.i.g.

3,271,411
PROCESS FOR COOXYALKYLATION OF CYANOGUANIDINE AND A POLYFUNCTIONAL POLYOL AND COMPOSITIONS PRODUCED THEREBY

Donald W. Kaiser, Hamden, and John K. Zane, East Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed May 1, 1963, Ser. No. 277,124
10 Claims. (Cl. 260—307)

1. The process for preparing a coalkoxylation composition which comprises forming a reaction mixture by admixing (1) a basic catalyst, (2) cyanoguanidine, (3) a polyol having a functionality of at least two selected from the group consisting of glycerol, ethylene glycol, propylene glycol, 1,4-butanediol, diethylene glycol, dipropylene glycol, neopentyl glycol, triethylene glycol, hexamethylene glycol, hexanetriol, 2-butene-1,4-diol, 2-butyne-1,4-diol, butanetriol, oxypropylated trimethylolpropane, oxypropylated trimethylolethane, oxypropylated pentaerythritol, oxypropylated dipentaerythritol, oxypropylated erythritol, oxypropylated mannitol, oxypropylated sorbitol, oxypropylated diphenylolpropane, oxypropylated resorcinol, oxypropylated catechol, oxypropylated hydroquinone, oxypropylated methyl glucoside, oxypropylated 4,4'-dihydroxybenzophenone, monoethanolamine, diethanolamine, triethanolamine, and mixtures thereof, and heating said reaction mixture to a temperature of 75° and 175° C. while passing into said reaction mixture (4) an oxide selected from the group consisting of styrene oxide, propylene oxide, butylene oxide, isobutylene oxide, n-hexylene oxide, cyclobutylene oxide, cyclohexylene oxide, and mixtures thereof, the weight ratio of the sum of (2) plus (3) to said oxide (4) being between about 1:2 and 1:125, and the weight ratio of (2) to (3) being between about 10:90 and 90:10.

4. The product of the process of claim 1.

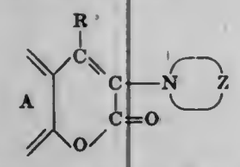
3,271,412

COUMARINE COMPOUNDS HAVING TRIAZOLE SUBSTITUENTS

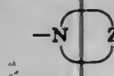
Roderich Raue, Leverkusen, and Heinrich Gold, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,294
Claims priority, application Germany, Aug. 19, 1961, F 34,735
7 Claims. (Cl. 260—308)

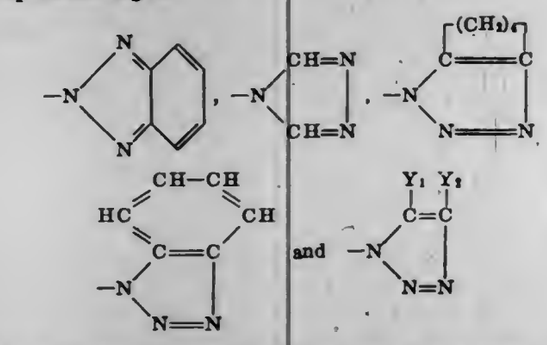
1. A compound of the formula



wherein R is a member selected from the group consisting of hydrogen and lower alkyl; A is a residue of an aromatic ring system selected from the group consisting of phenyl, chlorophenyl, dichlorophenyl, lower alkoxy phenyl, hydroxy-lower alkoxy phenyl, hydroxy phenyl, lower alkyl phenyl, di-lower-alkoxy phenyl, acetoxy phenyl, amino phenyl, sulfo-phenyl, acetylamino phenyl, naphthyl, hydroxy naphthyl, carbo-lower alkoxy naphthyl, hydroxy-lower alkoxy naphthyl;



is a 5–6 membered heterocyclic ring selected from the group consisting of



wherein Y_1 and Y_2 stand independently for a member selected from the group consisting of hydrogen and lower alkoxy alkyl; and the corresponding quaternization products effected with an alkylating agent selected from the group consisting of dimethyl sulfate, diethyl sulfate, methyl iodide, ethyl iodide, isopropyl iodide, butyl bromide, benzyl chloride, and 4-toluene-sulfonic acid methyl and ethyl esters.

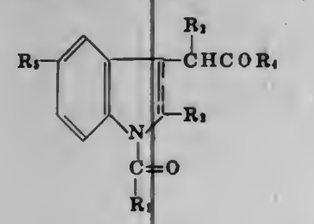
3,271,413

α-HALOMETHYL-1-PYRAZOLE CARBONYL-3-INDOLYLACETIC ACIDS

Tsung-Ying Shen, Westfield, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 29, 1965, Ser. No. 451,996
14 Claims. (Cl. 260—310)

1. A compound of the formula:



in which

R_1 is selected from the group consisting of pyrazole and substituted pyrazole in which the substituents are selected from the group consisting of halogen, lower alkyl, lower alkanoyl and phenyl;

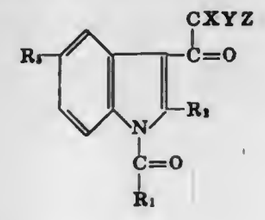
R_2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, tolyl and benzyl;

R_3 is selected from the group consisting of monohalomethyl, dihalomethyl and trihalomethyl in which said halogen has an atomic number less than 53;

R_4 is selected from the group consisting of hydroxy, lower alkoxy, benzyloxy, amino, lower alkylamino, di-lower alkylamino, lower alkanolamino, phenylamino, tolylamino, benzylamino, phenylethylamino, lower alkoxy-lower alkylamino and OM, where M is selected from the group consisting of ammonium, lower alkylammonium, morpholinium, cholinium, glucosammonium, methyl cyclohexylammonium, triethylammonium, N-butylammonium, anilinium, 2,3-xylidinium, piperizinium and an inorganic cation;

R_5 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, CF_3, CHF_2, nitro, cyano, aminomethyl, amino, hydroxy, benzylmercapto, lower alkylthio, diphenylamino, benzylamino, β-phenylethylamino, chloro lower alkylamino, chloro phenylamino, chloro benzylamino, lower alkoxy-lower alkylamino, anisidino, lower alkylanilino and lower alkoxyanilino.

12. A compound of the formula:



in which

R_1 is selected from the group consisting of pyrazole and substituted pyrazole in which the substituents are selected from the group consisting of halogen, lower alkyl, lower alkanoyl and phenyl;

R_2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, tolyl and benzyl;

R_5 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, CF_3, CHF_2, nitro, cyano, aminomethyl, amino, hydroxy, benzylmercapto, lower alkylthio, diphenylamino, benzylamino, β-phenylethylamino, chloro lower alkylamino, chloro phenylamino, chloro benzylamino, lower alkoxy-lower alkylamino, anisodino, lower alkylanilino and lower alkoxyanilino, and

XYZ are selected from the group consisting of hydrogen and halogen, no more than two being hydrogen at any one time.

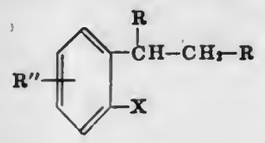
3,271,414

PREPARATION OF BENZOFURAN, BENZOTHIOPHENE, AND INDOLES

Gerrassimos Frangatos, Princeton, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 12, 1964, Ser. No. 366,889
8 Claims. (Cl. 260—319.1)

1. The process of forming benzofuran, benzothiophene, and indole compounds by ring closure, which comprises heating a substituted aromatic compound with oxygen in the presence of a phosphorus oxymetal compound dehydrocyclization catalyst to a temperature sufficient to bring about catalytic dehydrocyclization of the aromatic compound, said aromatic compound having the formula:



wherein R and R'' are selected from the group consisting of hydrogen and lower alkyl (C_1–C_6), and X is a member of the group consisting of —NH_2, —NHR', —SH, and —OH where R' is lower alkyl (C_1–C_6), and the metal of said phosphorus oxymetal compound catalyst is selected from the group consisting of vanadium, thorium, tantalum, chromium, molybdenum, manganese, iron, nickel, and cobalt.

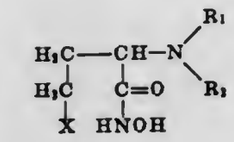
3,271,415

PREPARATION OF 1-HYDROXY-3-AMINO-PYRROLIDONE-2 AND DERIVATIVES THEREOF

Willem Jacob van der Burg, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 11, 1965, Ser. No. 432,003
Claims priority, application Netherlands, Mar. 7, 1964, 6,402,375
2 Claims. (Cl. 260—326.5)

1. Process for the preparation of 1-hydroxy-3-amino-pyrrolidone-2 and derivatives thereof which comprises the cyclisation of a hydroxamic acid of the formula:



in which

X is selected from the group consisting of halogen, lower alkyl sulfonyloxy, benzene sulfonyloxy and tosyloxy, and

R_1 and R_2 are selected from the group consisting of hydrogen, lower alkyl, lower aliphatic carboxyl, benzoyl and benzyloxycarbonyl, benzyl and taken together with the adjacent N atom form a heterocyclic ring selected from the group consisting of a phthalimide and a morpholine ring, and the hydrogen atoms of α, β, and γ-C-atom may be substituted by lower alkyl, cyclohexyl, amino and hydroxyl,

by means of lithium hydroxide.

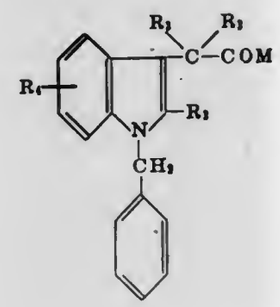
3,271,416

INDOLYL ALIPHATIC ACIDS

Tsung Y. Shen, Westfield, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 24, 1961, Ser. No. 147,161
The portion of the term of the patent subsequent to July 20, 1982, has been disclaimed
8 Claims. (Cl. 260—326.13)

1. A compound of the formula:



in which

R_2 is selected from the group consisting of lower alkyl, phenyl, carboxy, carboxy chloride, formyl, hydroxymethyl and benzylthiomethyl;

R_3 is selected from the group consisting of hydrogen, lower alkyl and, together with R_5, methylene and part of a cyclopropane ring;

R_5 is selected from the group consisting of hydrogen and, together with R_3, methylene and part of a cyclopropane ring;

R_4 is selected from the group consisting of nitro, amino, lower alkanoylamino, lower alkylamino, di(lower alkyl)amino, phenylamino, benzylamino, di(hydroxy lower alkyl)amino, N-pyrrolidinyl, N-piperazinyl, N-morpholinyl, cyano, aminomethyl, di(lower alkyl) aminomethyl, N-phenyl carboxamidino, lower alkylthiomethyl and N,N-di(lower alkyl) sulfamoyl, the said R_4 being on a position selected from the group consisting of the 5 and 6-positions;

and

M is selected from the group consisting of OH, NH_2, and lower alkoxy.

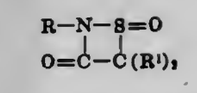
3,271,417

1,2-THIAZETIDINE-3-ONE-1-OXIDES AND THEIR PREPARATION

James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 6, 1963, Ser. No. 256,525
4 Claims. (Cl. 260—327)

3. A compound of the formula



wherein R is alkyl of up to 18 carbon atoms or phenyl and R' is lower alkyl.

3,271,418

CATALYTIC CONVERSION OF HYDROCARBONS WITH A CRYSTALLINE ALUMINO-SILICATE IN A SILICA-ALUMINA MATRIX

Charles J. Plank, Woodbury, and Edward J. Rosinski, Deptford, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Filed June 22, 1965, Ser. No. 466,096
24 Claims. (Cl. 208—120)

1. In a continuous cyclic process of cracking a petroleum gas oil to produce a selectively large yield of high octane gasoline, and selectively small yields of dry gas and coke, the steps of:

(a) continuously passing a gas oil through a cracking zone maintained under catalytic cracking conditions;

(b) in contact with a composite catalyst in said cracking zone;

(c) said composite catalyst comprising as a major proportion porous silica-alumina;

(d) which silica-alumina is capable, as a catalyst, of effecting at least 15 percent conversion of Mid-Continent gas oil having a boiling range of 450° to 950° F. at a liquid hourly space velocity of 2, a catalyst to oil volume ratio of 3, a temperature of 900° F. and substantially atmospheric pressure;

(e) and not more than about 25 percent by weight of a finely divided crystalline aluminosilicate intermixed with said silica-alumina, at least a substantial proportion of the original alkali metal content of said crystalline aluminosilicate having been replaced by ion exchange;

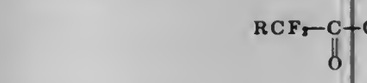
(f) said crystalline aluminosilicate having a structure of rigid three-dimensional networks characterized by a system of cavities with interconnecting pore openings having minimum diameters of greater than 4 Angstroms and less than 15 Angstroms, the cavities being connected with each other in three dimensions by said pore openings;

(g) said crystalline aluminosilicate having a catalytic activity which is substantially greater than that of said silica-alumina;

(h) the exchangeable sodium content of said composite catalyst being less than about 1% by weight;
(i) continuously recovering a liquid fraction rich in high octane gasoline;
(j) continuously withdrawing spent composite catalyst from the cracking zone;
(k) subjecting said withdrawn spent catalyst to an operation to regenerate catalytic activity of both said silica-alumina and said zeolite;
(l) and returning regenerated composite catalyst to said cracking zone.

3,271,419
PREPARATION OF FLUORO-CONTAINING LACTONES AND UNSATURATED ACIDS
William J. Linn, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 11, 1963, Ser. No. 294,270
12 Claims. (Cl. 260—343.9)

2. A process for preparing at least one member of the class consisting of fluorinated carboxylic acids and their lactones which comprises reacting a ketone of the formula



wherein R and R′ each are selected from the class consisting of fluorine, chlorine, bromine and hydrogen, with an anhydride of an aliphatically saturated hydrocarbyl carboxylic acid having from 2 to 8 carbon atoms inclusive at a temperature of at least 150° C.

3,271,420
STABILIZED DIKETENE AND METHOD FOR ITS PRODUCTION
Herbert Zima, Brig, Switzerland, assignor to Lonza Ltd., Gampel, Valais, Switzerland
No Drawing. Filed Nov. 27, 1964, Ser. No. 414,439
Claims priority, application Switzerland, Nov. 29, 1963, 14,627/63
6 Claims. (Cl. 260—343.9)

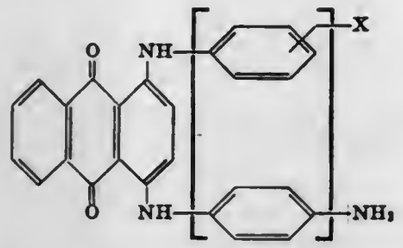
2. A method for reducing the resin formation in systems containing a member of the group consisting of ketene and diketene comprising adding to said system such an amount of elemental sulfur that said system contains at least 0.1% by weight of sulfur.

3,271,421
PROCESS FOR THE POLYCONDENSATION OF FURFURYL ALCOHOL
Mohammed Anwar Akbar, Bergen-Enkheim, and Herbert Simonis, Konigstein, Taunus, Germany, assignors to Hans J. Zimmer Verfahrenstechnik, Frankfurt am Main, Germany, a corporation
No Drawing. Filed Nov. 27, 1962, Ser. No. 240,401
Claims priority, application Germany, Dec. 9, 1961, Z 9,132
11 Claims. (Cl. 260—347.8

1. A process for the condensation of furfuryl alcohol which comprises polycondensing in homogeneous phase at a temperature below 100° C. furfuryl alcohol in a non-aqueous organic solvent forming azeotropes with water in the presence of between about 0.01 and 1% referred to the furfuryl alcohol of an acid catalyst and between about 0.1 and 1% referred to the furfuryl alcohol of a polymerization inhibitor under simultaneous removal of the water formed in the reaction and discontinuing the reaction after the chain length desired has been attained but not later than upon termination of water elimination.

3,271,422
DIRECT-DYEING DIANTHRAQUINONYL SULFONIC ACID DYESTUFFS
Leon Katz, Springfield, and Wilhelm Schmidt-Nickels, Little York, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 18, 1964, Ser. No. 419,586
6 Claims. (Cl. 260—368)

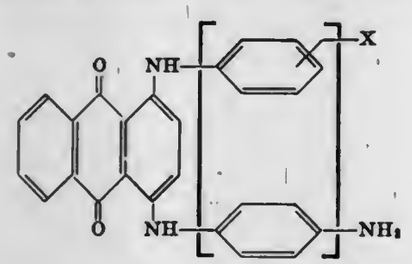
1. The product of the process which comprises
(1) reacting an intermediate of the formula



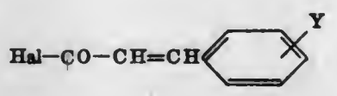
wherein X is H, lower alkyl, lower alkoxy, or halogen, with sulfuric acid of at least 96% concentration, including oleum, at temperatures of about 60–120° C. to introduce one —SO_3H group into one of the bracketed benzene rings and then
(2) reacting two moles of the resulting monosulfonated product with one mole of a dihalide of oxalic, maleic, malonic, fumaric, citraconic, adipic, butadiene-1,4-dicarboxylic, cumidic, isophthalic, terephthalic, azobenzoic, benzophenone-dicarboxylic, acetone-dicarboxylic, acetone-diacetic, cinnamic-carboxylic, diglycolic, pyridine-dicarboxylic, diphenic, diphenyldicarboxylic, succinic, isosuccinic, mesaconic, naphthalene-dicarboxylic, pyrotartaric, uvitic, or 4,4′-oxobisbenzoic acid; in an aqueous medium at a temperature of about −3 to +30° C. and a pH of about 7 to 11.5.

3,271,423
SUBSTITUTED 1,4-DIPHENYLAMINO ANTHRAQUINONE SULFONIC ACID DYESTUFFS
Leon Katz, Springfield, and Wilhelm Schmidt-Nickels, Little York, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 18, 1964, Ser. No. 421,763
4 Claims. (Cl. 260—372)

1. The product of the process which comprises
(1) reacting an intermediate of the formula



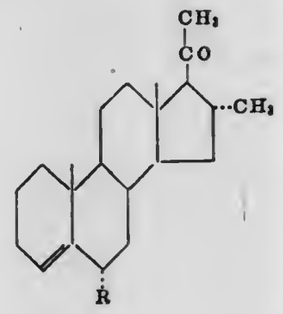
wherein X is H, lower alkyl, lower alkoxy, or halogen, with sulfuric acid of at least 96% concentration, including oleum, at temperatures of about 60–120° C. to introduce one —SO_3H group into one of the bracketed benzene rings and then
(2) reacting the resulting monosulfonated product with an equimolar amount of a cinnamoyl halide of the formula



wherein Hal is halogen and Y is H, nitro, amino, lower alkyl, or lower alkoxy, in an aqueous medium at a temperature of about −3 to +30° C. and a pH of about 7 to 11.5.

3,271,424
16α-METHYL PROGESTERONES
Irving Scheer, Somerville, and Robert Arthur Mallory, Branchburg Township, Somerset County, N.J., assignors to Ortho Pharmaceutical Corporation, a corporation of New Jersey
No Drawing. Filed Apr. 23, 1964, Ser. No. 362,176
3 Claims. (Cl. 260—397.3)

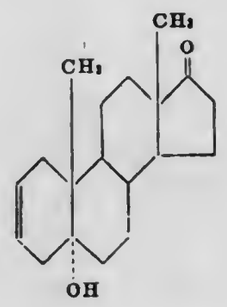
1.



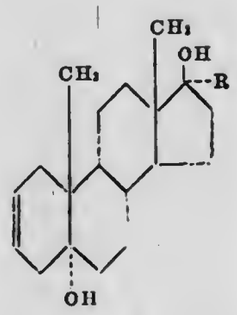
wherein R is selected from the group consisting of methyl and hydrogen.

3,271,425
ANDROST-2-ENE-5α,17β-DIOL, 17-ALKYL DERIVATIVES CORRESPONDING AND ESTERS THEREOF
Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Oct. 13, 1964, Ser. No. 403,650
7 Claims. (Cl. 260—397.4)

1. A member selected from the class consisting of compounds represented by the formulas



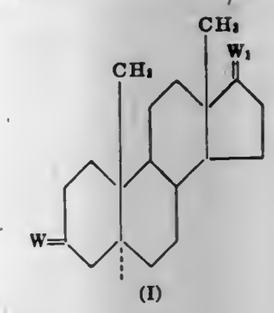
and



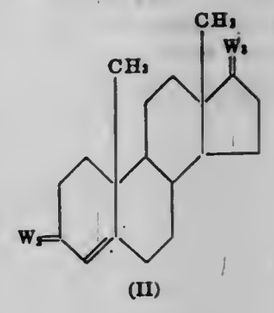
together with the 17-(lower alkanoates) corresponding, wherein R is selected from the group consisting of hydrogen and a lower alkyl radical.

3,271,426
NOVEL ANDROSTANE OXIMINO ETHERS AND METHODS FOR THEIR MANUFACTURE
Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed June 28, 1963, Ser. No. 291,262
9 Claims. (Cl. 260—397.5)

1. A steroid selected from the group consisting of androstane oximino ethers of the following Formulae I, II, and III:

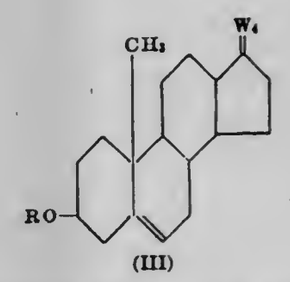


(I)



(II)

and

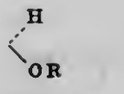


(III)

wherein R is a member selected from the group consisting of hydrogen and an acyl radical of a hydrocarbon carboxylic acid having up to 8 carbon atoms; W_4 is a dilower alkylaminoalkoximino; W is a member selected from the group consisting of dilower alkylaminoalkoximino, keto,



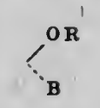
and



R being as defined hereinabove; W_1 is a member selected from the group consisting of dilower alkylaminoalkoximino, keto and



R being as defined hereinabove, at least one of W and W_1 being dilower alkylaminoalkoximino; W_2 is a member selected from the group consisting of keto and dilower alkylaminoalkoximino; W_3 being a member selected from the group consisting of keto and dilower alkylaminoalkoximino, and



R being as heretofore defined and B being a member selected from the group consisting of hydrogen, lower alkyl and ethinyl; and at least one of W_2 and W_3 being a dilower alkylaminoalkoximino; and the non-toxic, pharmaceutically acceptable acid addition salts and quaternary lower alkyl ammonium salts thereof.

2. 17-(β-dimethylaminoethoximino)-androstane-3β-ol.

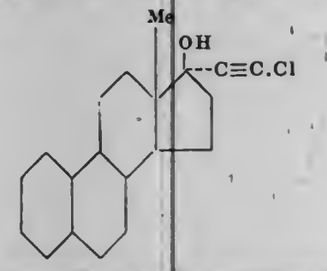
3,271,427

3-DESOXY-17α-CHLOROETHYNYL ESTROGENIC STEROIDS AND PROCESS FOR MAKING SAME

Vladimir Petrow, Colin Michael Burgess, and Peter Feather, all of London, England, assignors to British Drug Houses, Ltd.

No Drawing. Original application July 31, 1961, Ser. No. 127,805. Divided and this application Apr. 24, 1964, Ser. No. 362,497
Claims priority, application Great Britain, Aug. 5, 1960, 27,179/60
11 Claims. (Cl. 260—397.5)

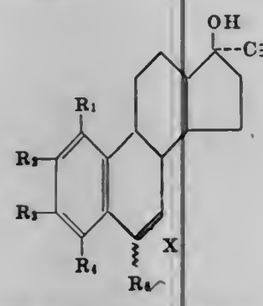
1. A process for the preparation of 17α-chloroethynyl steroids having, apart from substituents and unsaturated linkages in rings A, B, C and D, the formula



(I)

which process comprises reacting a corresponding 17-oxo steroid with lithium chloracetylide and subsequently regenerating the desired derivative from the complex so formed.

6. A 17α-chloroethynyl steroid of the oestrane series having the formula:



where R_1 is selected from the group consisting of hydrogen, methyl and hydroxyl; R_2, R_4 and R_6 are selected from the group consisting of hydrogen and methyl; R_3 is hydrogen; and X is selected from the group consisting of single and double bonds.

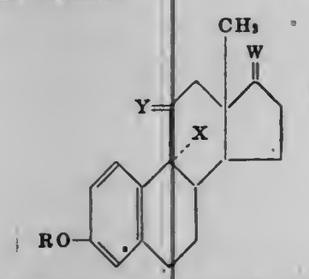
3,271,428

NOVEL ESTRATRIENE OXIMINO ETHERS AND METHODS FOR THEIR MANUFACTURE

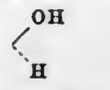
Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,833
12 Claims. (Cl. 260—397.5)

1. A steroidal 17-oximino ether selected from the group consisting of 1,3,5(10)-estratrienes of the following structural formula, and the non-toxic, pharmaceutically acceptable acid-addition salts and quaternary lower alkyl ammonium salts thereof:



wherein W is a dilower alkylaminoalkoximino group defined by the formula (N—O—Z—A) wherein Z is alkylene having from two to five carbon atoms, and A is dilower alkylamino; R is a member selected from the group consisting of hydrogen, lower alkyl, and an acid radical of a hydrocarbon carboxylic acid having up to 8 carbon atoms; X is hydrogen; Y is a member selected from the group consisting of hydrogen, keto,



and W; and together X and Y are members selected from the group consisting of 9α,11β-dichloro and an additional bond.

3,271,429

PROCESS FOR PREPARATION OF 20-KETOXIMES OF Δ^{16}-20-KETO-PREGNENES

Octavio Mancera, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,554
Claims priority, application Mexico, Nov. 26, 1963, 74,766
3 Claims. (Cl. 260—397.5)

1. A process for preparing the 20 - ketoxime of Δ^{16}-pregnene compounds, which comprises treating the total product of the degradation of sapogenins, consisting of a mixture of a 3 - acyloxy - γ - methyl - δ - acyloxy valerate of a 20-keto 16-hydroxy pregnane and a Δ^{16}-20-keto pregnene, with hydroxylamine hydrochloride in an alcoholic solvent and in the presence of a weak alkaline salt selected from the group consisting of carbonates and oxides of alkaline earth metals.

3,271,430

N-PERFLUOROACYL POLYALKYLENIMINES

Fred N. Teumac, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 7, 1963, Ser. No. 256,844
4 Claims. (Cl. 260—404.5)

1. An N-perfluoroacyl polyalkylenimine wherein perfluoroacyl is the residue of a perfluorinated alkanoic acid of 2 to about 12 carbon atoms and there are present in the perfluoroacyl polyalkylenimine molecule from about 10 to about 100 alkylenimine units for each perfluoroacyl group, each alkenylenimine unit containing from 2–4 carbon atoms.

3,271,431

POLYAMIDES OF POLYBASIC ARALIPHATIC CARBOXYLIC ACIDS

Josef Baltes, Hamburg, and Friedrich Weghorst and Zdzislaw Makus, Hamburg-Harburg, Germany, assignors to Harburger Fettchemie Brinckman & Mergell G.m.b.H., Hamburg-Harburg, Germany, a corporation of Germany

No Drawing. Filed Apr. 15, 1963, Ser. No. 272,866
8 Claims. (Cl. 260—404.5)

1. A polyamide prepared by a process which comprises condensing a polyamine having 2 to 5 amino groups with a polybasic araliphatic carboxylic compound, said compound having been prepared by subjecting a conjugated unsaturated fatty acid compound selected from the class consisting of conjugated unsaturated fatty acids and C_1 to C_4 alkanol esters of said acids to ionic copolymerization with an aromatic vinyl compound selected from the class consisting of styrene, alpha-methyl styrene and vinyl toluene in the proportion of 1 mole of fatty acid compound to 0.2 to 5 moles of aromatic vinyl compound and controlling the temperature of the reacting mass to prevent the mass temperature from exceeding at any time a temperature of about 200° C., said polyamide forming process comprising controlling the mass temperature throughout the course of the resulting reaction to maintain the temperature within the range of 120 to 230° C., subsequently removing volatile products and unreacted amine from the reaction mass and recovering the polyamide as the product.

3,271,432

PROCESS FOR THE MANUFACTURE OF POLYBASIC ARALIPHATIC CARBOXYLIC ACIDS AND PRODUCTS THEREOF

Josef Baltes, Hamburg, Friedrich Weghorst and Zdzislaw Makus, Hamburg-Harburg, Germany, assignors to Harburger Fettchemie Brinckman & Mergell G.m.b.H., Hamburg-Harburg, Germany, a corporation of Germany

No Drawing. Filed Apr. 15, 1963, Ser. No. 272,873
Claims priority, application Germany, Apr. 25, 1962, H 45,567
16 Claims. (Cl. 260—407)

1. The process for the manufacture of polybasic araliphatic carboxylic compounds which include subjecting a conjugated unsaturated fatty acid compound selected from the class of conjugated unsaturated fatty acid and C_1 to C_4 alkanol esters of the said acids to ionic copolymerisation with an aromatic vinyl compound selected from the class consisting of styrene, alpha methyl styrene, and vinyl toluene in the proportions of 1 mol of fatty acid compound to 0.2–5 mols of aromatic vinyl compound and controlling the temperature of the reacting mass to prevent the mass temperature from exceeding at any time a temperature of about 200° C., subsequently removing volatile products of the reaction by distilling the mass at atmospheric pressure, and recovering the product.

2. A polybasic araliphatic carboxylic compound obtained by the process of claim 1.

3,271,433

PROCESS FOR SEMI-CONTINUOUS HYDROGENATION OF FAT

Irvin C. Bentz, Houston, Tex., assignor to Anderson, Clayton & Co., Houston, Tex., a corporation of Delaware

Filed June 17, 1963, Ser. No. 288,387
5 Claims. (Cl. 260—409)

1. In the semi-continuous process of hydrogenating fat, such process including post hydrogenating treatment, the steps comprising,

(a) hydrogenating a batch of fat in the absence of oxygen in a first closed container,

(b) flowing the batch of fat immediately upon completion of hydrogenation into a second closed container in the absence of oxygen, the second container having a capacity sufficient to hold all the hydrogenated fat from the first container,

(c) placing another batch of fat to be hydrogenated in the first container immediately upon emptying the first mentioned batch into the second container, and

(d) flowing the first mentioned batch of fat from the second container to at least a first stage of post hydrogenation treatment in the absence of oxygen and within the time required for hydrogenating the other batch of fat.

3,271,434

PROCESS FOR CONTROLLING THE MELTING POINT OF HARD AND BRITTLE FATS

Wolfgang Baenitz, Witten-Annen, Germany, assignor to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,263
Claims priority, application Germany, Feb. 12, 1958, I 14,406
2 Claims. (Cl. 260—410.7)

1. A process for controlling the melting point of hard and brittle fats within a relatively narrow range which comprises esterifying a mixture of fatty acids having from 10 to 18 carbon atoms with glycerine in a ratio of 0.425 to 0.475 mole of glycerine per average mole of fatty acid mixture to produce an ester product of minimum melting point having a hydroxyl number in the range of 40 to 100 and containing at least 90% of di- and triglycerides.

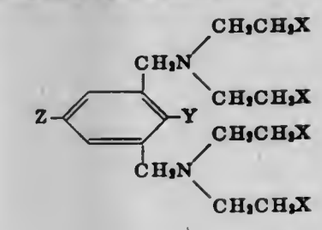
3,271,435

BIS[DI(2-SUBSTITUTED ETHYL)AMINOMETHYL] BENZENE COMPOUNDS

David Irwin Randall, Easton, Pa., and Wilhelm Schmidt-Nickels, Little York, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,410
5 Claims. (Cl. 260—458)

1. A compound of the formula



wherein

X is selected from the group consisting of hydroxy, chloro, bromo, sulfato, phosphato, and benzenesulfonyloxy,

Y is selected from the group consisting of H, lower alkyl and lower alkoxy, and

Z is selected from the group consisting of $—NO_2$ and $—NH_2$.

3,271,436

PROCESS FOR THE PRODUCTION OF HETEROCYCLIC BORON COMPOUNDS

Roland Koster, Mulheim (Ruhr), Germany, assignor to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany, a corporation of Germany

No Drawing. Filed Feb. 10, 1961, Ser. No. 88,248
Claims priority, application Germany, Feb. 13, 1960, St 16,117
2 Claims. (Cl. 260—462)

1. B - butoxy - 3 - methyl-borolane having a $B.P._{.18}$ of 72° C.

2. A borazane mixture comprising B-diethylamino-2-methyl-boracyclohexane, B-diethylamino - 2 - ethyl-boracyclopentane and B-diethylaminoboracycloheptane and having a $B.P._{.12}$ of 102–115° C.

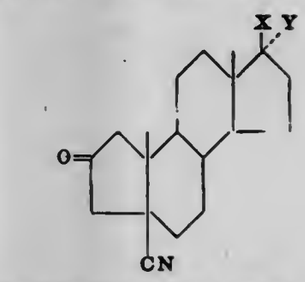
3,271,437

5β-CYANO SUBSTITUTED A-NORPREGNANE AND A-NORANDROSTANE COMPOUNDS

Seymour David Levine, Princeton, N.J., assignor, by mesne assignments, to E. R. Squibb and Sons Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,913
7 Claims. (Cl. 260—464)

1. A composition of the formula



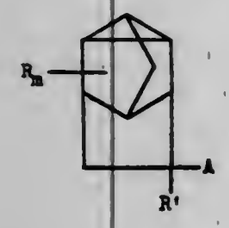
wherein X is selected from the group consisting of hydroxy the acyloxy radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms and $—COCH_3$; Y is hydrogen; and together X and Y is oxo (O=).

3,271,438
PRODUCTION OF POLYCYCLIC COMPOUNDS

Lawrence G. Cannell, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 14, 1964, Ser. No. 367,549
11 Claims. (Cl. 260—464)

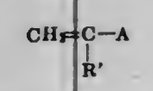
1. The process for the production of the 8-substituted quadricyclo(2.2.1.$2^{3,5}$.$0^{2,6}$)nonane of the formula



wherein R, *m*, R′ and A are as defined below, by reacting the hydrocarbon bicyclo(2.2.1)hepta-2,5-diene compound of the formula



wherein R is hydrocarbyl free from non-aromatic unsaturation of up to 10 carbon atoms and *m* is a whole number from 0 to 4, with the compound



wherein R′ is hydrogen or alkyl of up to 4 carbon atoms and A is cyano, carboalkoxy wherein the alkyl moiety has up to 8 carbon atoms, formyl, carbonylalkyl wherein the alkyl moiety has up to 8 carbon atoms or N,N-di-R′-carbamyl wherein R′ is hydrogen or alkyl of up to 4 carbon atoms, in the presence of from about 0.0001% mole to about 5% mole based on the limiting reactant of the tetrakis(trihydrocarbylphosphite)nickel(0) catalyst of the formula

$$[P(OR)_3]_4Ni(0)$$

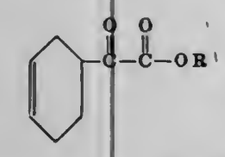
wherein R independently is hydrocarbyl free from non-aromatic unsaturation of up to 10 carbon atoms, at a temperature from about 80° C. to about 300° C. and a pressure from about 1 atmosphere to about 100 atmospheres.

3,271,439
3-CYCLOHEXENE-1-GLYOXYLIC ACID, SALTS AND ESTERS

Walter D. Celmer, New London, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 5, 1963, Ser. No. 262,829
5 Claims. (Cl. 260—468)

1. A compound having the formula



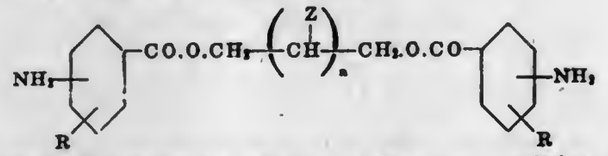
wherein R is selected from the group consisting of hydrogen, alkali metal, alkaline earth metal and alkyl of from 1 to 3 carbon atoms.

3,271,440
AMINO-BENZOIC AND AMINO-TOLUIC ACID DIESTERS OF POLYHYDRIC ALKANOLS

Telfer L. Thomas, Belleville, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 9, 1962, Ser. No. 229,481
6 Claims. (Cl. 260—471)

1. A compound of the formula:



wherein Z represents a member of the group consisting of H and —OH, R represents a member of the group consisting of H and —CH_3, *n* represents an integer from 0 to 4 inclusive and the amino groups occupy one of the positions in the benzene nucleus meta and para to the —CO—O— group.

3,271,441
PROCESS FOR PREPARING FLUOROALKYL SUBSTITUTED AROMATIC COMPOUNDS

Neal O. Brace, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 18, 1962, Ser. No. 203,392
2 Claims. (Cl. 260—476)

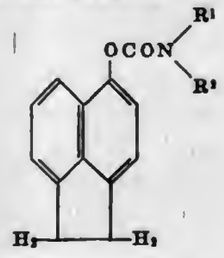
1. A process for preparing polyfluoroalkyl substituted aromatic compounds which process comprises heating together at a temperature from about 80° C. to about 190° C. (1) a polyfluoroalkyl iodide having the formula X—R_f—I, wherein X is selected from the group consisting of fluorine, chlorine, bromine and hydrogen and R_f is a perfluoroalkylene radical, (2) an aromatic compound selected from the group consisting of benzene, naphthalene, anthracene, phenanthrene, diphenyl, chrysene, pyridine, pyrimidine, pyridazine, pyrazine, quinoline, isoquinoline, cinnoline, quinazoline, quinooxaline, phthalazine, and the fused pyridopyridines, said aromatic compound containing from zero to two substituents other than hydrogen and said substituents selected from the group consisting of halogen, hydroxyl, alkoxyl, acyloxy, carboxyl, carboalkoxy, acyl, alkyl, chloroalkyl, bromoalkyl, aryl, cyano, sulfonyl, cyanoalkyl, carboxyalkyl, carboalkoxyalkyl, arylalkyl and sulfonylalkyl, and (3) a free radical generating compound selected from the group consisting of organic peroxides and aliphatic azo compounds; and recovering the product polyfluoroalkyl substituted aromatic compound from the reaction mixture.

3,271,442
5-ACENAPHTHENYL ESTERS OF CARBAMIC ACID AND N-SUBSTITUTED ALKYL CARBAMIC ACIDS

Joseph A. Lambrech, deceased, late of Charleston, W. Va., by Vallah G. Lambrech, executrix, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Aug. 29, 1955, Ser. No. 531,274, now Patent No. 3,084,096, dated Apr. 2, 1963. Divided and this application June 26, 1962, Ser. No. 205,467
2 Claims. (Cl. 260—479)

1. Compounds of the formula



wherein R^1 and R^2 are individually selected from the class consisting of hydrogen and lower alkyl, with the proviso that the total number of carbon atoms in R^1 and R^2 does not exceed 7.

3,271,443
ALKYLAMINO-2-HYDROXYPROPYL QUATERNARY AMMONIUM COMPOUNDS

Donald M. Burness, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 18, 1964, Ser. No. 345,579
4 Claims. (Cl. 260—501)

1. A compound selected from the group consisting of the compounds having the formula

$$R'\overset{R''}{N}CH_2CHOHCH_2\overset{+}{N}R_2\cdot X^-$$

wherein R′ is a linear hydrocarbon radical of 10–30 carbon atoms; R″ is hydrogen or a lower alkyl of 1–4 carbon atoms; R is lower alkyl of 1–4 carbon atoms; and X^- is an anion; and the compounds having the formula

$$R_3N^+CH_2CHOHCH_2ZCH_2CHOHCH_2N^+R_3\cdot 2X^-$$

wherein R is lower alkyl of 1–4 carbon atoms; X^- is an anion; and Z is a diamino group in which the amino groups are joined by an alkylene chain of at least 4 and not more than about 12 carbon atoms or an alkylene of at least 4 and not more than about 12 carbon atoms which is interrupted by at least one —O—, —S—, or

$$\overset{H}{\underset{|}{-N-}}$$

group.

3,271,444
SALTS OF C_{10} TO C_{20} 1,2-SULFONIC-SULFINIC ACIDS AND METHOD FOR THEIR PREPARATION

Douglas F. Percival, Martinez, Elmer E. Johnson, San Rafael, and Robert T. Adams, Lafayette, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Aug. 12, 1964, Ser. No. 389,208
7 Claims. (Cl. 260—513)

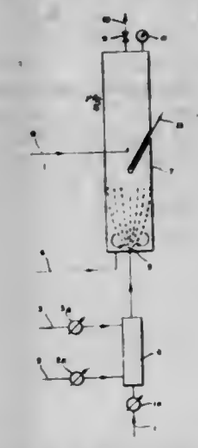
1. A method of preparing a salt of an n-alkane-1,2-sulfonic-sulfinic acid from an olefinic hydrocarbon feed selected from the group consisting of normal terminal C_{10}–C_{20} olefins and mixtures thereof, which comprises reacting a bisulfite salt with said olefin by adding an aqueous bisulfite solution containing for each mol of said olefin from about 1 to 2.5 mols of bisulfite to said olefin dissolved in an alcohol solvent containing for each mol of said olefin from 0.001 to 0.10 mol of an organic tertiary-butyl perester, and by maintaining the resulting reaction solution pH in the range from about 3.5 to 6.5 during said addition and thereafter while removing said solvent, thereby recovering the resulting salt of the corresponding n-alkane-1,2-sulfonic-sulfinic acid.

3,271,445
NITRIC ACID OXIDATION OF BENZENE COMPOUNDS CONTAINING OXIDIZABLE SIDE CHAINS

Ernst Bartholome, Heidelberg, Hans Nienburg, Ludwigshafen am Rhine, Walter Schenk, Heidelberg, Karl Scherf, Ludwigshafen am Rhine, Norbert Loesch, Hanhofen, Albrecht Wallis, Ludwigshafen am Rhine, and Ludwig Vogel, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany

Filed Apr. 17, 1963, Ser. No. 273,723
Claims priority, application Germany, Apr. 26, 1962, B 66,985
4 Claims. (Cl. 260—524)

1. In a continuous process for the production of aromatic carboxylic acids by oxidation of derivatives of benzene substituted by from 1 to 6 oxidizable side chains with 1 to 4 carbon atoms, said side chains being selected from the class consisting of alkyl groups, hydroxyalkyl groups, alkyl groups substituted by an aldehyde group, alkyl groups substituted by a keto group, monochloroalkyl groups and dichloroalkyl groups, said derivatives being further substituted by (x—1) inert substituents selected from the class consisting of nitro groups, halogen atoms and carboxylic groups, x denoting an integer from 1 to 4, at an oxidation temperature of from 150° to 400° C., comprising mixing the compound to be oxidized with nitric acid of from 10 to 40 weight percent concentration



in a mixing apparatus at a temperature below said oxidation temperature, leading the resultant mixture with turbulent flow into a reaction zone wherein a pressure of from 10 to 150 atmospheres is maintained and the temperature is maintained adiabatically at from 150° to 400° C., decreasing the velocity of flow of said mixture upon entry into said reaction zone to at least one third, avoiding a gas space at the upper end of said reaction zone, and withdrawing the reaction product at said upper end of said reaction zone, the improvement which comprises introducing 30 to 60% by weight of the nitric acid to be used from the bottom into the reaction zone and 40 to 70% into the middle third of the reaction zone.

3,271,446
PREPARING ACETIC ACID BY THE CATALYTIC OXIDATION OF METHACROLEIN

Ralph O. Kerr, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed July 2, 1962, Ser. No. 207,061
6 Claims. (Cl. 260—530)

1. A process for preparing acetic acid which comprises contacting at a temperature in the range of above 200° C. to below 300° C. at a residence time of less than 5 seconds, a gaseous mixture of methacrolein, a molar excess of oxygen and at least a 20 volume percent of steam with a catalyst comprising a complex of vanadium atoms and atoms selected from the group consisting of manganese and copper in an atomic ratio of about 0.3 to 0.8 atom of vanadium and about 0.2 to 0.6 atom selected from the group consisting of manganese and copper, wherein said complex constitutes at least about 50 weight percent of the catalyst.

3,271,447
LIQUID PHASE OXIDATION OF PROPYLENE TO ACRYLIC ACID IN THE PRESENCE OF AN Mn OR Ni CATALYST

Marcus A. Naylor, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

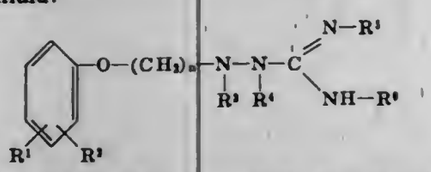
No Drawing. Filed May 11, 1964, Ser. No. 366,605
4 Claims. (Cl. 260—533)

1. An oxidation process which comprises simultaneously contacting propylene, oxygen, alkanoic acid solvent,

and salt of 1 to 100,000 parts by weight, per million parts by weight of said solvent, of catalytic metal from the group consisting of manganese and nickel, in liquid substantially anhydrous phase, at a temperature of 125° C. to 250° C. and a pressure of 5 to 200 atmospheres, continuing said contacting until acrylic acid is the principal oxidation product, and separating acrylic acid from the resulting reaction mixture.

3,271,448
PHENOXYALKYL AMINOGUANIDINES
Joachim Augstein, Canterbury, Kent, William C. Austin, Bishops Stortford, Ronald J. Boscott, Deal, Kent, Sheila M. Green, Maidstone, Kent, and William H. Hunter, Orpington, Kent, England, assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 10, 1964, Ser. No. 395,588
Claims priority, application Great Britain, Mar. 15, 1962, 9,998/62; July 20, 1962, 28,075/62
11 Claims. (Cl. 260—564)

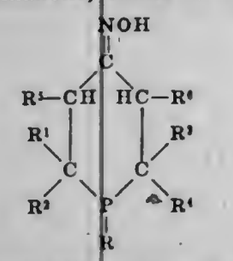
1. A compound selected from the class of organic bases of the formula:



and the pharmaceutically-acceptable acid addition salts thereof, wherein R^1 and R^2 are each a member selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower alkoxy and halogen; *n* is an integer of from two to four; R^3 and R^4 are each a member selected from the group consisting of hydrogen and lower alkyl; R^5 and R^6 are each members selected from the group consisting of hydrogen, lower alkyl and amino, and when said R^5 and R^6 are taken together with the nitrogen atoms to which they are attached, they form a cyclic member selected from the group consisting of imidazolo and dihydropyrimidino.

3,271,449
PHOSPHORINANONE OXIMES
Richard Parke Welcher, Old Greenwich, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Original application Dec. 22, 1961, Ser. No. 161,438, now Patent No. 3,225,103, dated Dec. 21, 1965. Divided and this application Aug. 9, 1965, Ser. No. 485,972
2 Claims. (Cl. 260—566)

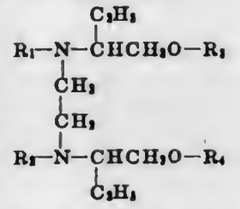
1. A 4-phosphorinanone, oxime of the formula



wherein R is a member selected from the group consisting of substituted and unsubstituted, branched and straight chain alkyl having from 1 to 18 carbon atoms, cycloalkyl, substituted and unsubstituted aryl; said substituents for alkyl being selected from the group consisting of lower alkoxy, phenyl and cyano, and said substituents for aryl being selected from the group consisting of halogen and lower alkyl; R^1, R^2, R^3, and R^4 each represent a member selected from the group consisting of hydrogen, lower alkyl, phenyl, chloro-substituted phenyl, lower alkyl-substituted phenyl, cyclohexyl and lower alkoxyalkyl; and R^5 and R^6 each represent a member selected from the group consisting of hydrogen, lower alkyl and phenyl.

3,271,450
2,2'-(ETHYLENEDIIMINO)-DI-1-BUTANOLS
Raymond George Wilkinson, Montvale, and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Original application Jan. 23, 1962, Ser. No. 168,241, now Patent No. 3,176,040, dated Mar. 30, 1965. Divided and this application Feb. 12, 1965, Ser. No. 432,419
Claims priority, application Great Britain, Feb. 7, 1961, 4,517/61, Patent 961,317
10 Claims. (Cl. 260—570.5)

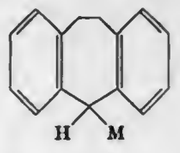
1. A member of the class consisting of symmetrical ethylenediamines of the formula:



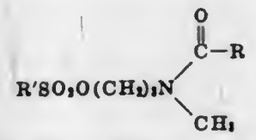
wherein R_1 and R_2 are the same and are selected from the group consisting of hydrogen, methyl and ethyl, and R_3 and R_4 are the same and are selected from the group consisting of methyl, ethyl and benzyl; and the non-toxic acid-addition salts thereof.

3,271,451
PROCESS FOR PREPARING 5-(3-METHYLAMINOPROPYL)-5H-DIBENZO[a,d]CYCLOHEPTENES
Max Tishler, Westfield, John M. Chemerda, Metuchen, and Janos Kollonitsch, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed July 3, 1962, Ser. No. 207,405
2 Claims. (Cl. 260—570.8)

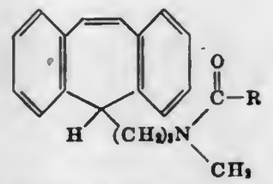
1. A process which comprises reacting a compound of the formula:



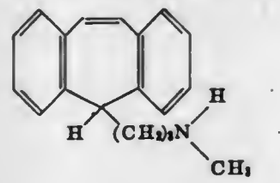
wherein M is an alkali metal with a compound of the formula:



wherein R is hydrogen, lower-alkyl or phenyl and R' is a phenyl, benzyl, tolyl or lower-alkyl, in an inert substantially anhydrous organic solvent to form a cycloheptene of the formula:

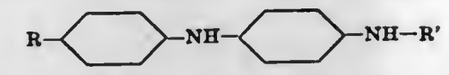


wherein R is as defined above and then hydrolyzing said cycloheptene to form a compound of the formula:



3,271,452
4-ALKOXY-4'-SECONDARY-ALKYLAMINO-DIPHENYL-AMINES
Paul L. Merz, Livermore, Calif., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 19, 1962, Ser. No. 238,784
4 Claims. (Cl. 260—571)

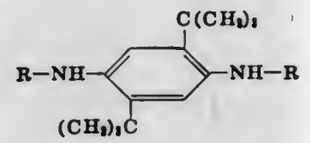
1. A chemical compound represented by the formula



in which R is an alkoxy group having 1 to 4 carbon atoms and R' is a secondary alkyl group having 3 to 8 carbon atoms.

3,271,453
2,5-DI-TERT-BUTYL-N,N'-DIARYL-p-PHENYLENEDIAMINES
Ernest Csendes, Atlanta, Ga., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 22, 1962, Ser. No. 167,938
5 Claims. (Cl. 260—576)

1. A 2,5-di-tert-butyl - N,N'-diaryl-p-phenylenediamine of the formula



wherein R is a member selected from the group consisting of phenyl, naphthyl, lower alkyl substituted phenyl and lower alkyl substituted naphthyl.

3,271,454
PRODUCTION OF UNSYMMETRICAL DIALKYLHYDRAZINES
Donald Pickens, Hopewell, Va., assignor to Allied Chemical Corporation, a corporation of New York
No Drawing. Filed Feb. 20, 1957, Ser. No. 641,237
2 Claims. (Cl. 260—583)

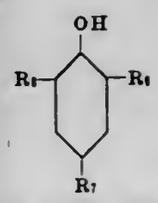
1. The process of hydrogenating nitrosodimethylamine to produce unsymmetrical-dimethylhydrazine which comprises producing a slurry of a platinum catalyst on an alumina support in an aqueous solution of nitrosodimethylamine, said solution having a concentration of 20 to 35 weight percent nitrosodimethylamine and said slurry containing from 7 to 15 grams of catalyst per mol of nitrosodimethylamine, introducing hydrogen at an initial pressure of 800 to 2000 pounds per square inch gauge into said slurry, maintaining the temperature during the introduction of said hydrogen within the range of 20° to 45° C. and continuing the introduction of the hydrogen until substantially all of the nitrosodimethylamine has been converted to unsymmetrical-dimethylhydrazine.

3,271,455
PROCESS FOR SEPARATING METHYLAMINES
Denys Cook and David M. Young, Sarnia, Ontario, Canada, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 22, 1961, Ser. No. 139,863
2 Claims. (Cl. 260—583)

1. A process for separating trimethylamine from mixtures containing trimethylamine and at least one other methylamine, comprising adding to said mixture at least about one mole of a lower alkyl borate ester per mole of other methylamines present in the mixture, thus to convert a major portion of said other amines to amine-borate adducts and separating the trimethylamine from said adducts.

3,271,456
OXYGENATED ORGANIC COMPOUNDS OF IMPROVED ODOR
Elaine Theodora Delaune and John Cecil Winkler, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Mar. 26, 1962, Ser. No. 182,639
8 Claims. (Cl. 260—593)

1. A composition of matter comprising an oxygenated organic liquid selected from the group consisting of methanol, ethanol, tertiary butanol, isopropanol, secondary butanol, branched oxo alcohols having 1 to 16 carbon atoms per molecule, diethyl ether, methyl ethyl ether, diisopropyl ether, methyl ethyl ketone, methyl isobutyl ketone, and acetone having dissolved therein 0.5 to 5 p.p.m. of an alkyl-substituted phenol compound having the structural formula

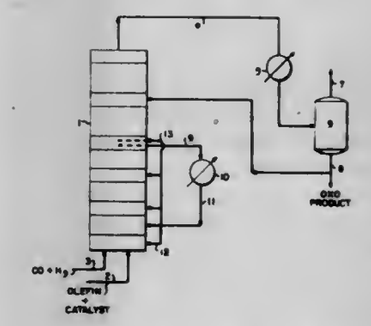


wherein R_6 is a C_1 to C_5 alkyl group and R_7 and R_8 are selected from the group consisting of hydrogen and C_1 to C_5 alkyl groups.

3,271,457
PROCESS FOR THE PRODUCTION OF PHENOL
Thomas Bewley and Maurice Dudley Cooke, Epsom, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company
Filed Apr. 16, 1962, Ser. No. 187,738
Claims priority, application Great Britain, Apr. 22, 1961, 14,653
6 Claims. (Cl. 260—593)

1. A process for the production of phenol and acetone which comprises the steps of:
(a) thoroughly mixing cumene hydroperoxide with a recycle stream of liquid acetone;
(b) contacting the mixture with sulphuric acid under conditions wherein acetone vapor is given off from the reaction zone;
(c) condensing said vapor to form the recycle stream of (a); and
(d) recovering the phenol from the reaction mixture.

3,271,458
COOLING AND CATALYST RECYCLE IN OXO SYNTHESIS
William J. Ellis, Dover, and Charles Roming, Jr., Towaco, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,558
17 Claims. (Cl. 260—604)



1. In an oxo process wherein an olefin, carbon monoxide and hydrogen are contacted in a carbonylation zone with an oxo catalyst under conditions to produce an oxygenated reaction product comprising an aldehyde, the

improvement which comprises withdrawing from said carbonylation zone an effluent stream having an olefin content higher than the final oxygenated reaction product, cooling and recycling about 20 to 90% by volume of said stream to said carbonylation zone, and injecting at least a portion of the cooled recycle stream into the initial stages of said carbonylation zone.

3,271,459
PRODUCTION OF METHACROLEIN

William F. Brill, Skillman, and Alfio J. Besozzi, East Brunswick, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed June 27, 1963, Ser. No. 290,916
6 Claims. (Cl. 260—604)

1. A process for the vapor phase production of methacrolein which comprises contacting an isobutylene mixture comprising about 0.5 to 3 mols of oxygen per mol of isobutylene at temperatures between about 450° C. to 650° C. with a catalyst containing silver and phosphorus in an atomic ratio of 1 to 10 atoms of silver per atom of phosphorus as the oxides for about 0.05 to about 0.5 second.

3,271,460
METHOD OF PREPARING ORGANOPHOSPHORUS COMPOUNDS

Albert Y. Garner, Yellow Springs, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 28, 1962, Ser. No. 205,841
3 Claims. (Cl. 260—606.5)

1. The method of preparing the compound $(ArP)_n$ wherein Ar is an aromatic hydrocarbon radical of from 6 to 12 carbon atoms which is free of olefinic and acetylenic unsaturation and n is a number of from 2 to 6, which comprises contacting with magnesium a compound of the formula $ArPX_2$ wherein Ar is as above defined and X is halogen in the presence of a solvent selected from the class consisting of tetrahydrofuran, chloroform, acetone and acetonitrile.

3,271,461
SUBSTITUTED ALLYL ETHERS

Robert James Stephenson, Llanyravon, Cumbran, England, assignor to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Oct. 30, 1962, Ser. No. 234,218
Claims priority, application Great Britain, Nov. 13, 1961, 40,502/61
5 Claims. (Cl. 260—614)

1. A process for the production of a substituted allyl ether, in which a conjugated diene is contacted with an organic compound containing a reactive hydroxyl group at a pressure of up to 100 atmospheres, a temperature of between about 20° C. and about 150° C., and in the presence of up to 0.5 mol of cuprous salt catalyst per mol of conjugated diene and 0.1 to 50 equivalents of acid co-catalyst per mol of cuprous salt catalyst; wherein the acid co-catalyst is selected from the group consisting of hydrogen bromide, hydrogen chloride, phosphoric acid, boron trifluoride, aluminum chloride, sulphuric acid, sulphamic acid, benzenesulfonic acid, p-toluenesulfonic acid, methanesulfonic acid, ethyl hydrogen sulfate, and sulfonated styrene ion exchange resins; wherein the cuprous salt catalyst is selected from the group consisting of cuprous halides, cuprous sulfate, cuprous p-toluenesulphonate, cuprous acetate, cuprous ammonium iodide, cuprous arsenide, cuprous carbonate, cuprous cyanide, cuprous ferricyanide, cuprous sulfide and cuprous sulfite; wherein the conjugated diene is selected from the group consisting of butadiene and substituted butadiene wherein the substituted groups are selected from the group consisting of alkyls of from 1 to 8 carbon atoms, aryls selected from the group consisting of phenyl, tolyl and xylyl; alkoxys selected from the group consisting of ethoxy and methoxy and halogens selected from the group consisting of chlorine and bromine; and wherein the organic compound containing a reactive hydroxyl group is selected from the group consisting of substituted and unsubstituted saturated monohydric aliphatic alkyl alcohols of from 1 to 18 carbon atoms, wherein the substituted groups are substituents selected from the group consisting of ethoxy, methoxy, chlorine and bromine; unsubstituted alkyl polyhydric alcohols containing from 2 to 5 hydroxyl groups and from 4 to 24 carbon atoms, and phenol and substituted phenol selected from the groups consisting of naphthol, cresol, xylenol, p-chloro-m-xylenol, β-naphthol and γ-phenylphenol.

3,271,462
ELIMINATION OF POLYOXYALKYLENE UNSATURATION

Mason H. Earing, Grosse Ile, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed June 29, 1962, Ser. No. 206,169
20 Claims. (Cl. 260—615)

1. A method of removing unsaturation found in polyoxyalkylene polyol compounds which comprises intimately contacting said polyoxyalkylene polyol compound with a mixture, having a pH of less than 8.0, of water and a sulfonated polystyrene resin, at a temperature of about 15° C. to about 100° C., said sulfonated polystyrene resin being present in the minimum amount of 1 weight percent of the polyoxyalkylene compound and having been activated by the replacement of a portion of its acidic hydrogen atoms by mercuric ions; furthermore, said polyoxyalkylene polyol compounds being characterized by having an average oxygen:carbon atom ratio of less than 0.45 and a molecular weight from about 600 to about 25,000 and being a condensation product of an alkylene oxide containing from about 2 to 12 carbon atoms and an alkane polyol having from about 2 to 8 hydroxyl groups.

3,271,463
PREPARATION OF INDANOLS

William L. Howard, Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 23, 1962, Ser. No. 182,100
3 Claims. (Cl. 260—619)

1. A process for making indanols which comprises reacting by contacting p,p'-isopropylidenediphenol with aqueous sulfuric acid of from about 7 to about 15 molar concentration at about 90° C. to about 150° C. for a length of time sufficient for substantial reaction to take place, and separating from the reaction mixture thereby produced 3,3,3',3'-tetramethylbis-1,1'-spiro-6-indanol.

3,271,464
SELECTIVE DEHYDRATION OF SECONDARY ALCOHOL OVER 5–A SIEVE

James Richard Hays and Arthur Homer Neal, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 19, 1961, Ser. No. 117,826
6 Claims. (Cl. 260—643)

1. A process for selectively dehydrating secondary alcohols to olefins in the presence of primary alcohols which comprises contacting a mixture of alkanols selected from the group consisting of linear and methyl-branched C_1–C_{30} primary and C_3–C_{30} secondary alkanols with a crystalline alumino-silicate having a pore size of about 5 A. units molecular sieve at temperatures in the range of 250 to 650° F. and utilizing liquid space velocities of 8 to 12 volumes of alcohol/volume of molecular sieve/hour.

3,271,465
PREPARATION OF CHLOROALKYLATED BENZENES AND ALKYLSUBSTITUTED BENZENES

William A. Krewer, Arlington Heights, and George W. Ayers, Chicago, Ill., assignors, by mesne assignments, to Union Oil Company, of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Nov. 30, 1962, Ser. No. 241,175
9 Claims. (Cl. 260—651)

1. The process of preparing chloroalkylated derivatives of a member of the group consisting of benzene, toluene, o-xylene, m-xylene, p-xylene, ethylbenzene fractions from the alkylation of benzene with propylene tetramer and solvent extracts obtained in the solvent extraction of mineral lubricating oils with a solvent selective for aromatic compounds, which comprises heating at least one of said members with an alkanal of the group consisting of formaldehyde, paraldehyde, paraformaldehyde, s-trioxane, acetaldehyde, butyraldehyde, chloroacetaldehyde, propionaldehyde, and mixtures thereof, in the presence of a hydrohalide of the group consisting of hydrogen chloride, hydrogen iodide and hydrogen bromide, and a sulfur-chlorine compound of the group consisting of sulfur monochloride, sulfur dichloride, thionyl chloride and sulfuryl chloride, under essentially anhydrous conditions and at a temperature of about 50° to 150° C., the reaction mixture containing about 0.5 mole of said sulfur-chlorine compond per mole of said member and per monomer unit of said alkanal, and recovering said chloroalkylated derivatives therefrom.

3,271,466
PROCESS FOR THE PREPARATION OF 2-BROMO 3-HALO PROPENE-1

Hendricus Gerardus Peer, Hilversum, Netherlands, assignor to The Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten Behoeve van Nijverheid, Handel en Verkeer, The Hague, Netherlands, a corporation of the Netherlands

No Drawing. Original application Mar. 16, 1961, Ser. No. 96,102, now Patent No. 3,197,514, dated July 27, 1965. Divided and this application Dec. 24, 1964, Ser. No. 421,068
Claims priority, application Great Britain, Mar. 28, 1960, 10,897/60, 10,898/60; May 20, 1960, 10,889/60
1 Claim. (Cl. 260—654)

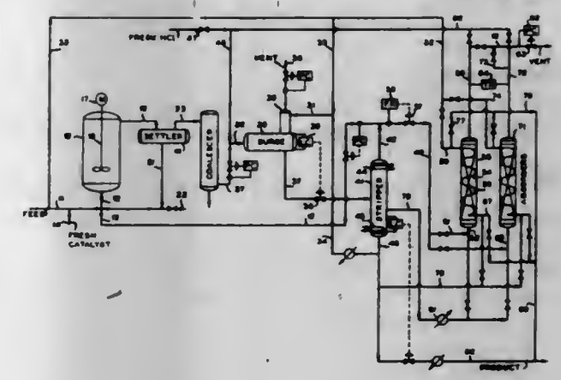
A process for the production of 2-bromo-3-chloro-propene-1, which consists of the steps of reacting a mixture of substantially equimolar amounts of chlorine and bromine with a solution of allene in an inert liquid solvent selected from the group consisting of methylene chloride, chloroform and carbon tetrachloride and recovering said 2-bromo-3-chloro-propene-1.

3,271,467
MAINTAINING HYDROGEN HALIDE CONCENTRATION IN THE CONVERSION OF HYDROCARBONS EMPLOYING METAL HALIDE CATALYSTS AND HYDROGEN HALIDE PROMOTER

Eddie U. Nakayama, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 29, 1963, Ser. No. 305,407
8 Claims. (Cl. 260—666)

1. In a process for the conversion of a hydrocarbon in the presence of a metal halide catalyst and a hydrogen halide promoter in a reaction zone, wherein hydrocarbon effluent from said reaction zone is introduced into a stripping zone from which a gaseous stream rich in hydrogen halide is separated, non-condensible gases including hydrogen halide, gases lower boiling than hydrogen halide and other non-condensible gases boiling about the same as and higher than hydrogen halide are vented from the process system upstream from said stripping zone, and wherein said gaseous stream rich in hydrogen halide is recycled from said stripping zone to said reaction zone, the improvement comprising: venting non-condensible gases which are lower boiling than hydrogen halide, and a reduced amount of hydrogen halide from the process system upstream from said stripping zone; contacting a portion of said gaseous recycle in an adsorption zone with



a solid adsorbent to selectively adsorb hydrogen halide therefrom; venting said other non-condensible gases which boil about the same as and higher than hydrogen halide from said adsorption zone as non-adsorbed gases; and subsequently desorbing said adsorbed hydrogen halide and returning same to said process system.

3,271,468
PROCESS FOR THE CATALYTIC CO-OLIGOMERIZATION OF DIOLEFINS

Günther Wilke and Paul Heimbach, Mulheim (Ruhr), Germany, assignors to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,364
Claims priority, application Germany, Mar. 26, 1962, St 19,011
19 Claims. (Cl. 260—668)

1. The process which comprises contacting (a) 1,3-diolefin and (b) a member selected from the group consisting of ethylene, butyne-(2) and styrene with an amount sufficient to catalyze the co-oligomerization reaction between said 1,3-diolefin and said group member of a carbon monoxide free organo-metallic complex compound of nickel, and recovering the co-oligomer thus produced.

17. 1,2 - dimethyl cyclodecatri - (1,4,8) - ene having a boiling point of 32–33° C./0.05 mm. Hg and a refractive index, n_D^{20}, of 1.5098.

18. 1 - phenyl decatri - (1,4,9) - ene having a boiling point of 73–75° C./10^{-4} mm. Hg and a refractive index, n_D^{20}, of 1.5420.

3,271,469
PREPARATION OF ALKENYL SUBSTITUTED AROMATIC HYDROCARBONS

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,363
13 Claims. (Cl. 260—669)

1. A method of preparing an alkenyl substituted aromatic hydrocarbon which comprises heating an alkyl substituted aromatic hydrocarbon at a temperature of from about 200° C. to about 400° C. in contact with a tetrahalide of carbon containing at least one halogen atom independently selected from the group consisting of bromine, chlorine, and iodine, the remaining halogen atoms thereof being of a lower atomic number.

3,271,470
DIMERIZATION METHOD

Sydney P. Spence, Westfield, Ulrich A. Steiner, North Plainfield, Larry Madestau, Martinsville, Robert E. Richardson, Newark, and Stephen Kaufman, East Brunswick, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 22, 1964, Ser. No. 377,133
14 Claims. (Cl. 260—670)

1. Method for the preparation of cyclic di-p-xylylene which comprises:

(a) cooling a stream containing steam and p-xylylene radicals to a temperature between about 450° C. and about 800° C.;

(b) thermally and physically isolating said stream from non-wetted surfaces maintained at temperatures below about 350° C.;

(c) absorbing a substantial portion of the p-xylylene diradicals from said stream by contacting said stream in a first spray zone with a spray of a quench liquor containing a solvent for the p-xylylene diradicals wherein said diradicals can dimerize to the cyclic dimer, di-p-xylylene, said quench liquor maintained at a temperature above the condensation temperature of the steam in said stream;

(d) desuperheating said stream in said first spray zone by contacting said stream with said spray of quench liquor and vaporizing a portion of said quench liquor spray without excessive reduction of spray volume;

(e) further contacting the effluent from said first spray zone with a fine spray of said quench liquor in a second spray zone, said quench liquor maintained at a temperature above the condensation temperature of the steam in said stream under conditions sufficient to remove substantially all of the residual p-xylylene diradicals from said stream;

(f) maintaining all surfaces in said first and second spray zones wet with said quench liquor;

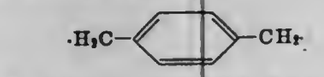
(g) separating the quench liquor from the effluent from said second spray zone and recovering the cyclic di-p-xylylene from said quench liquor.

3,271,471
DIMERIZATION PROCESS

Leonard M. Baker, Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,151
12 Claims. (Cl. 260—670)

1. Process for the preparation of cyclic di-p-xylylene which comprises forming reactive p-xylylene diradicals having the structural formula:



by pyrolyzing a stream comprised of a p-xylylene diradical precursor at temperatures from about 900° C. to about 1000° C. in an oxygen enriched environment and contacting said stream in said environment with an iron base alloy composition consisting essentially of:

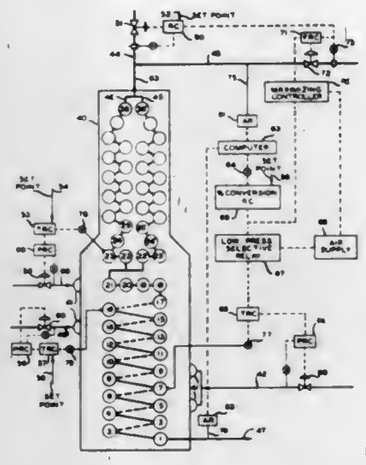
	Percent
Chromium	20–23
Nickel	25–40
Carbon	0.02–0.15
Rare earth metal	0.001–0.3
Molybdenum	1–3
Copper	Up to about 3.0
Manganese	Up to about 1.0
Silicon	Up to about 1.0
Columbium and tantalum	Up to about 1.0

and the remainder of said alloy being iron, condensing the reactive diradicals so formed in a fluid medium containing an inert organic solvent maintained at a temperature below about 300° C., and thereafter recovering the cyclic di-p-xylylene.

3,271,472
METHOD OF CONTROLLING A THERMAL CONVERSION PROCESS

Frank T. Ogle and Donald E. Berger, both of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 22, 1961, Ser. No. 140,039
6 Claims. (Cl. 260—683)



1. A method of controlling a thermal conversion process which comprises measuring at least a first process variable representative of the operation of said process, passing a first signal representative of said measurement to a first control zone and a second control zone, passing a second signal representative of the operating limit of a second input process variable to said first and second control zones, said first control zone capable of transmitting a third signal representative of the difference between said first and second signals received by said first control zone, said second control zone capable of transmitting a fourth signal representative of one of two signals selected from the group consisting of said first and said second signals received by said second control zone, passing said third signal from said first control zone to a means of manipulating a third input process variable responsive to said third signal, and passing said fourth signal from said second control zone to a means of manipulating said second input process variable responsive to said fourth signal.

6. An apparatus for the thermal cracking of a light hydrocarbon which comprises in combination: a means for thermal cracking of a hydrocarbon, means for passing a light hydrocarbon feed stream to said means for thermal cracking, means for passing steam to said means for thermal cracking and therein contacting said light hydrocarbon feed with said steam, means for withdrawing from said means for thermal cracking an effluent hydrocarbon stream, a control means which comprises means for measuring a property of said light hydrocarbon feed stream which is representative of the chemical composition thereof, means for forming and passing a first signal representative of said measurement to a computing means, means for measuring a property of said effluent stream which is representative of the chemical composition thereof, means for forming and passing a second signal representative of said effluent stream measurement to said computing means, a primary control means, means for passing from said computer means a third signal representative of said percent conversion of said light hydrocarbon feed stream to said primary control means, means for forming in and passing from said primary control means a signal representative of a temperature desired in said thermal cracking means capable of producing a desired conversion in said thermal cracking means, a first control means, a second control means, means for passing said third signal to said first control means and to said second control means, means for passing a fourth signal representative of a maximum allowable temperature in said thermal cracking means to each of said first and said second control means, said first control means comprising means capable of forming and transmitting a fifth signal representative of the difference between said third and fourth signals received by said first control means, said second control means comprising means capable of forming and transmitting a sixth signal representative of the minimum of two signals selected from said third and said fourth signals received by said second control means, means for passing said fifth signal from said first control means to a means for manipulating the rate of flow of said light hydrocarbon feed to said thermal cracking means responsive to said fifth signal and means for passing said sixth signal from said second control means to a means for manipulating responsive to said sixth signal the rate of flow of heating medium to said thermal cracking means.

3,271,473
POLYMERIZATION PROCESS

Robert M. Engelbrecht, St. Louis, James M. Schuck, Webster Groves, and Robert G. Schultz, Vinita Park, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 12, 1963, Ser. No. 294,742
12 Claims. (Cl. 260—683.15)

1. The process for the polymerization of internally unsaturated acyclic mono-olefin hydrocarbons which comprises contacting such hydrocarbons at a temperature of 0 to 250° C. and a pressure within the range of from approximately atmospheric pressure to 2500 p.s.i.g. with a catalyst comprised of cobalt oxide supported on an activated carbon, said catalyst having been activated in a non-oxidizing atmosphere selected from the group consisting of nitrogen, helium, argon and combinations thereof at a temperature of 400 to 575° C.

3,271,474
POLYMERIZATION PROCESS

Robert M. Engelbrecht, St. Louis, James M. Schuck, Webster Groves, and Robert G. Schultz, Vinita Park, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 12, 1963, Ser. No. 294,744
8 Claims. (Cl. 260—683.15)

1. A process for the polymerization of polymerizable terminally unsaturated olefin hydrocarbons which comprises contacting said hydrocarbons with a catalyst comprised of an activated carbon supported cobalt oxide, said catalyst having been prepared by (1) treating an activated carbon support with a material selected from the group consisting of a non-oxidizing gas and ammonium hydroxide, (2) impregnating the treated carbon support by contacting said support with a solution of a cobalt salt, (3) drying the catalyst mass at a temperature of 100 to 200° C., (4) treating the dried cobalt impregnated carbon with ammonium hydroxide, (5) treating the ammonium hydroxide treated cobalt impregnated carbon with pyridine, (6) drying the pyridine treated ammonium hydroxide treated cobalt impregnated carbon, and (7) activating the catalyst at a temperature of 200 to 550° C. and in the presence of an inert gas.

3,271,475
CATALYTIC POLYMERIZATION OF OLEFINS TO LIQUID POLYMERS

William E. Weesner, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,310
16 Claims. (Cl. 260—683.15)

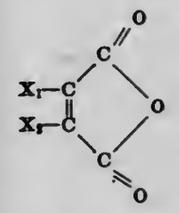
1. A process for the polymerization of a mono-olefin having from 2 to about 10 carbon atoms to a liquid olefin product which comprises contacting said mono-olefin under polymerization conditions with a catalyst consisting essentially of a major proportion of an adsorbent carbon and a minor proportion of a mixture of cobaltous oxide and an oxide of a metal selected from the group consisting of molybdenum, chromium, tungsten, and vanadium, the mole ratio of said cobaltous oxide to said oxide of a metal selected from the group consisting of molybdenum, chromium, tungsten, and vanadium being at least 1:1, and recovering the liquid polymer thus produced.

3,271,476
CURABLE MIXTURES OF EPOXY RESINS AND POLYANHYDRIDES OR POLYCARBOXYLIC ACIDS

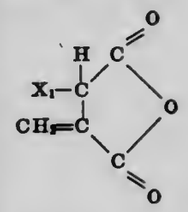
Franz Rudolf Widmer, Basel, Alfred Renner, Allschwil, and Hans Orth, Binningen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,890
Claims priority, application Switzerland, Mar. 1, 1962, 2,522/62
11 Claims. (Cl. 260—835)

1. A thermo-curable resin composition of matter, which comprises (1) a 1:2-epoxy compound and (2) as curing agent a polyanhydride obtained by reacting at most *n* molecular proportions of an unsaturated dicarboxylic acid anhydride selected from the group consisting of compounds of formula



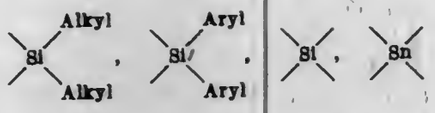
and compounds of formula



wherein X_1 and X_2 each are members selected from the group consisting of hydrogen atom and the methyl group, with 1 molecular proportion of a poly(cyclo-pentadienyl) compound of the formula



in which R is a member selected from the group consisting of



n-valent aliphatic hydrocarbon radicals, n-valent cycloaliphatic hydrocarbon radicals, n-valent araliphatic hydrocarbon radicals and n-valent aliphatic hydrocarbon radicals interrupted by oxygen bridges, *n* is an integer of at least 2 and at the most 4, and R_1 is a member selected from the group consisting of hydrogen atom and the methyl group.

11. A thermocurable adhesive composition, which comprises

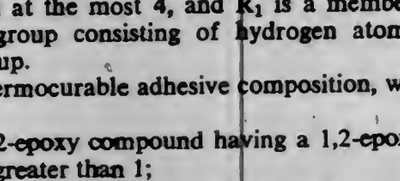
(1) a 1,2-epoxy compound having a 1,2-epoxy equivalency greater than 1;
(2) as curing agent the reaction product of less than 2 molecular proportions of maleic acid anhydride with 1 molecular proportion of 1,4-bis(cyclopentadienyl)-butene-(2);
(3) an unsaturated polyester; and
(4) an inorganic filler.

3,271,477
GRAFTED TERPOLYMERS
Edward N. Kresge, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,311
18 Claims. (Cl. 260—877)

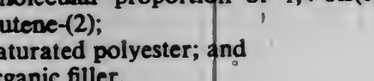
1. A grafted terpolymer that is sulfur-curable to an elastomeric, oil and solvent resistant vulcanizate, said grafted terpolymer consisting of a terpolymer having side chains grafted thereon and having been prepared from at least one ethylenically unsaturated free-radical polymerizable monomer grafted to a residually unsaturated terpolymer hydroperoxide, said terpolymer consisting of at least about 20% ethylene by wt., at least about 15% by wt. of a C_3 to C_{10} aliphatic alpha olefin, and at least about 0.01 gram-mole per 100 grams of said terpolymer and not over about 20% by wt. of a nonconjugated diolefin.

3,271,478
POLYMERIZABLE TRIAZINES AND PRODUCTS THEREOF
Gaetano F. D'Alelio, South Bend, Ind., assignor to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Jan. 24, 1963, Ser. No. 253,758
11 Claims. (Cl. 260—898)

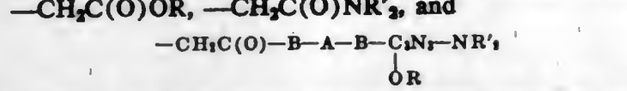
7. A polymerization product having in the polymer molecule a plurality of repeating units having the formula



wherein X is selected from the class consisting of hydrogen, cyano, —C(O)OR, —C(O)NR'$_2$, and



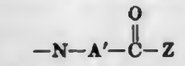
groups; Y is selected from the class consisting of hydrogen, alkyl groups of no more than six carbon atoms, and when X is hydrogen, Y can also be selected from the group consisting of chloro, fluoro, bromo, iodo, —$CH_2C(O)OR$, —$CH_2C(O)NR'_2$, and



groups; B is selected from the class consisting of oxygen and —N(R'')— radicals; A is a divalent hydrocarbon radical having at least two carbon atoms between said valencies; and when that B to which the



group is attached is oxygen, that part of A to which B is attached is aliphatic; R is selected from the class consisting of hydrogen and monovalent hydrocarbon radicals; R' is selected from the class consisting of hydrogen, monovalent hydrocarbon radicals, divalent hydrocarbon radicals representing two R''s with both valencies attached to the N, and divalent hetero groups representing two R''s with both valencies attached to the N; R'' is selected from the class consisting of hydrogen, monovalent hydrocarbon radicals, divalent hydrocarbon radicals in which the second valency is connected to A of the formula, and divalent hydrocarbon radicals in which the second valency is connected to the other B group when the latter also represents —N(R'')—; C_3N_3 represents the symmetrical triazine nucleus; B' is selected from the class consisting of B and

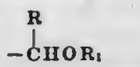


groups; A' is a divalent hydrocarbon radical; Z is selected from the class consisting of OR and NR'$_2$; D is any monovalent group not containing a polymerizable ethylenic group; and hydrocarbon groups of A, R, R', and R'' can have substituents thereon selected from the class consisting of chloro, fluoro, alkoxy, aryloxy and acyloxy groups.

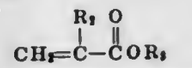
11. A mixture comprising a polymerization product of claim 7 and a polymer of acrylonitrile.

3,271,479
RESINOUS COMPOSITIONS OF CARBOXYLIC AMIDE INTERPOLYMERS AND UNSATURATED ESTER POLYMERS
Henry A. Vogel and Harold G. Bittle, Gibsonia, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 21, 1961, Ser. No. 161,269
18 Claims. (Cl. 260—901)

1. The resinous composition which consists essentially of a thermosetting interpolymer consisting of an unsaturated carboxylic acid amide and at least one other monomer containing a $CH_2{=}C<$ group, said interpolymer containing from about 2 percent to about 50 percent by weight of said amide in polymerized form and being characterized by having at least one hydrogen atom of the amido nitrogen replaced by the structure



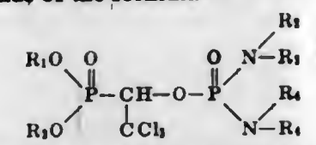
wherein R is a member selected from the group consisting of hydrogen and lower alkyl and R_1 is a member selected from the group consisting of hydrogen, alkyl and alkoxy ethyl radicals, and a thermoplastic polymer consisting of one or more ethylenically unsaturated esters represented by the general formula



wherein R_2 represents a member selected from the group consisting of hydrogen and a lower alkyl group having from 1 to 4 carbon atoms and R_3 is an alkyl group having from about 1 to 20 carbon atoms.

3,271,480
BIS-N,N-DIALKYLAMINO PHOSPHORIC ACID ESTERS OF O,O-DIALKYL-α-HYDROXY-β,β,β-TRICHLOROETHYLPHOSPHONATES
Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Sept. 4, 1963, Ser. No. 306,588
Claims priority, application Germany, Sept. 11, 1962, F 37,781
4 Claims. (Cl. 260—931)

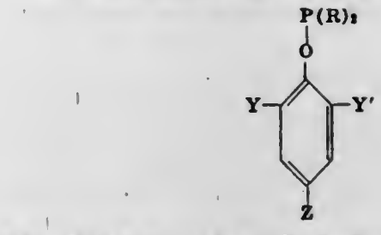
1. Compounds of the formula



in which R_1 and R_2 stand for members selected from the group consisting of lower alkyl radicals having 1 to 4 carbon atoms and R_3 and R_4 stand for members selected from the group consisting of methyl and ethyl radicals.

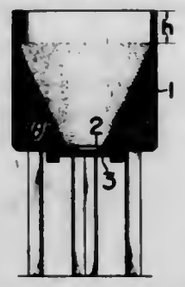
3,271,481
2,6-DISUBSTITUTED PRIMARY ARYL PHOSPHITES AND PHOSPHORODIHALIDITES AND PROCESSES FOR THE MANUFACTURE THEREOF
Francis M. Kujawa, Tonawanda, and Alvin F. Shepard and Bobby F. Dannels, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Aug. 31, 1962, Ser. No. 220,902
12 Claims. (Cl. 260—960)

1. A compound of the formula:



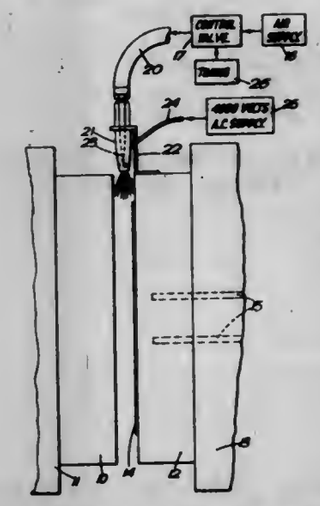
where R is selected from the group consisting of hydroxyl, chlorine and bromine; Y and Y' are selected from the group consisting of tertiary alkyl, having at least four carbon atoms, and phenylethyl radicals; and Z is selected from the group consisting of chlorine, alkyl, having at least four carbon atoms, and phenylethyl radicals.

3,271,482
PROCESS OF RECOVERING WASTE SYNTHETIC RESIN MATERIAL
Kazuya Harada, Mishima-shi, Shizuoka-ken, and Tsutomu Aoyagi, Shizuoka-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Nov. 21, 1963, Ser. No. 325,355
Claims priority, application Japan, Dec. 7, 1962, 37/53,948
7 Claims. (Cl. 264—15)



1. A process of recovering waste synthetic resin material which when it has such a size that it passes a 6 mesh wire gauze but not a 10 mesh gauze has an angle of rest of over 70°, the treatment comprising heating and deforming the waste material under agitation, until said waste material reaches a temperature above the deformation temperature but below the melting point thereof, and thereafter cooling and collecting the treated waste material.

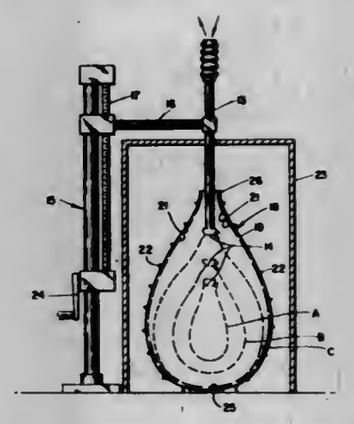
3,271,483
METHOD AND APPARATUS FOR DISCHARGING STATIC DURING MANUFACTURE OF RECORD DISKS
Alan Phillipson, Basil Harry Royston Spiller, Robin Smith, and Harry Cheesman, all of London, England, assignors to Decca Limited, London, England, a British company
Filed Mar. 15, 1965, Ser. No. 439,646
Claims priority, application Great Britain, May 12, 1964, 19,707/64
8 Claims. (Cl. 264—22)



1. A method of making a phonograph record by injection moulding including the steps, when the mould is opened and the record disc has been forced away from the faces of the mould, of directing a jet of ionized air at the disc so as to discharge any static charges on the disc.

5. Injection moulding apparatus for moulding a phonograph record comprising a fixed die, a moving die, means for closing the dies together to form a mould, and means for automatically directing a jet of ionized air at the faces of the record disc after the mould has been opened.

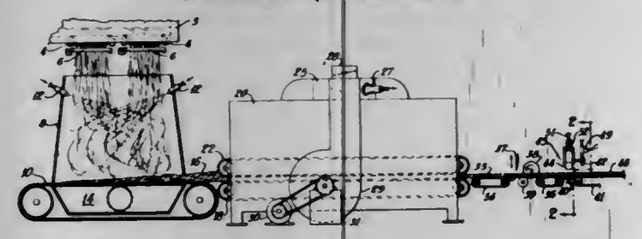
3,271,484
MANUFACTURE OF BALLOONS
James H. Brillinger, Belmont, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Dec. 31, 1963, Ser. No. 334,823
3 Claims. (Cl. 264—25)



1. The method of forming a permanently non-spherical balloon which includes fitting the neck portion of a partially crosslinked olefin polymer hollow balloon preform

on an inflater pipe, suspending the preform by the pipe within a permeable wall internal mold having the approximate size and shape of the intended balloon, heating the preform to above the crystalline transition temperature of the polymer, inflating the preform with a gas at moderate pressure and simultaneously raising the preform within the mold, thereby to prevent any but the pole portion of the expanding preform from touching the mold until the preform has expanded approximately to its final size, continuing the expansion until all areas save the neck extremity are in contact with the mold, cooling the balloon while maintaining the final inflation pressure, deflating the balloon and removing it from the mold.

3,271,485
METHOD AND APPARATUS FOR PRODUCING BONDED FIBROUS PRODUCTS
Sheldon A. Canfield, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Feb. 6, 1963, Ser. No. 256,566
5 Claims. (Cl. 264—26)



2. A method for producing a bonded panel of fibrous glass which comprises forming fibrous glass, gathering the fibrous glass in the form of a panel with a binder carried in water dispersed through the panel, said binder being heat settable after removal by heat of the water component, moving the panel through an oven to remove the water component and to set the binder, then moving the panel in a path through the dielectric fields of a plurality of capacitors placed in side-to-side relation across said path, and when the electrical charge of any one of said capacitors increases to a magnitude to indicate the presence of an excessive amount of water remaining in the particular portion of the panel passing through the said one of said capacitors, applying an identifying mark upon said particular portion of the panel.

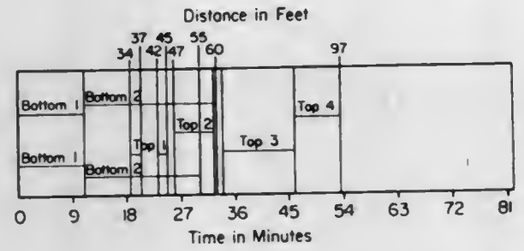
3. A method according to claim 2 in which the dielectric fields are provided with sufficient size and energy to heat and remove a portion of the water component.

3,271,486
METHOD OF PRODUCING AN ARTICLE FOR SIMULATING A DRINKING GLASS CONTAINING A DRINK
Robert George Dunlop, Glendow House, Oakmere, Potters Bar, England
Filed Jan. 9, 1963, Ser. No. 250,322
4 Claims. (Cl. 264—45)



1. A method of producing an article for simulating a drinking glass containing a drink, comprising pouring into a drinking glass a polymerisable mixture, which by activation with a suitable catalyst system forms a solid material simulating the drink, the pouring being effected under conditions of temperature which will not damage the glass, the polymerisable liquid then being allowed to harden but before it is set being agitated near its upper surface so that when it sets the existence of a froth is simulated.

3,271,487
METHOD OF FIRING A TUNNEL KILN
David E. Tomkins, New Castle, Pa., assignor to Shenango China, Inc., New Castle, Pa., a corporation of Pennsylvania
Filed Mar. 13, 1961, Ser. No. 95,192
2 Claims. (Cl. 264—64)



1. A method of firing ceramic articles comprising the sequential steps of bottom firing said articles to evenly heat each article, top and bottom firing said articles to rapidly heat said articles to a high temperature, and top firing said articles while progressively decreasing said high temperature.

3,271,488
METHOD OF MAKING MASKS FOR VAPOR DEPOSITION OF ELECTRODES
Reinhard Dahlberg, Gundelfingen, Germany, assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Nov. 6, 1962, Ser. No. 235,879
Claims priority, application Germany, Nov. 21, 1961, I 20,864
1 Claim. (Cl. 264—81)

A method of making high precision masks of the type used for vapor deposition of electrodes in the production of semiconductor devices, comprising: making an exact replica of the mask out of a metal susceptible to chemical dissolution and adapted to the facile production of such a replica with high precision; vapor depositing on one surface of said replica under high vacuum conditions a cohesive coating of a non-metallic refractory material selected from the group consisting of SiO_2, Al_2O_3, BeO and ThO_2; and thereafter dissolving away the replica by chemical means to which the coating material is impervious.

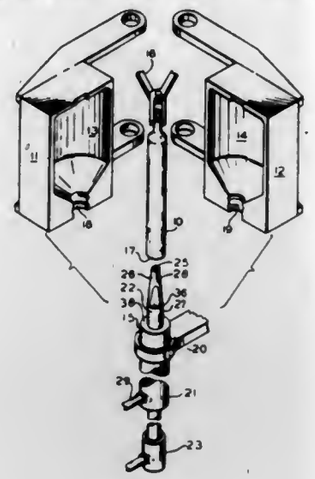
ERRATUM

For Class 264—93 see:
Patent No. 3,271,064

3,271,489
METHOD AND APPARATUS FOR FORMING HOLLOW PLASTIC ARTICLES
Clement V. Fogelberg and Peter W. Dart, Boulder, Colo., assignors, by mesne assignments, to Ball Brothers Company, Muncie, Ind., a corporation of Indiana
Filed Mar. 25, 1963, Ser. No. 268,516
9 Claims. (Cl. 264—94)

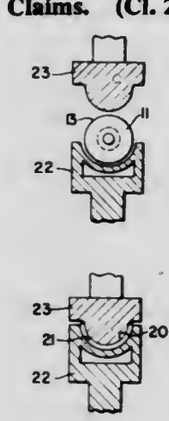
1. In a method for forming hollow plastic articles by the blow molding process wherein a portion of each article is press-formed substantially free from flash in

a multisectioned mold, the steps of exerting pressure against portions of the inner wall of the open end portion of a parison to distort said open end portion substantially independently of wall thickness variations, said inner wall portions being angularly displaced from abutment points



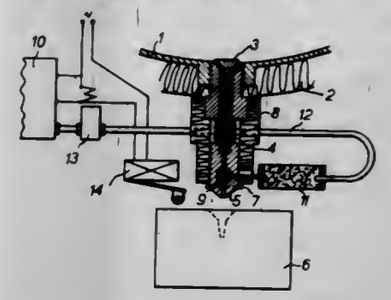
of the mold sections when said mold is closed, partially expanding said parison, gripping substantially the entire circumference of the open end portion of said parison, and further expanding said parison into forming contact with said mold.

3,271,490
METHOD FOR FABRICATING TUBES
Jean-Pierre Cattaneo, Geneva, Switzerland, assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 229,285
Claims priority, application Switzerland, Jan. 31, 1962, 1,246/62
3 Claims. (Cl. 264—92)



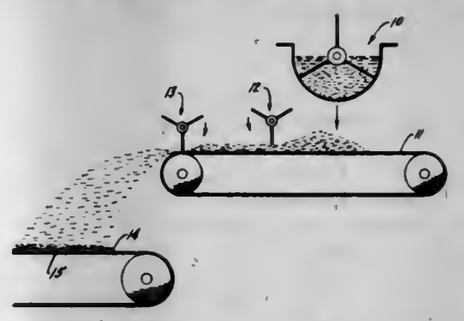
1. A method of producing a collapsible tube adapted for housing and dispensing a flowable commodity, said tube being fabricated from a flexible resinous thermoplastic material having a "memory," said tube having a generally tubular body portion and an integral head portion at one end of said body portion, the head portion having a dispensing passageway; said method comprising the step of deforming part of said body portion by application of heat and pressure differential to the part to cause the part to become more readily deformable than the remainder of the tube and to annul the convexity thereof, said part being a major segment of only an axial half of said body portion and said part being deformed to lie adjacent to and spaced from a corresponding part of the other axial head of said body portion such that said part may be flexibly expanded to its position prior to deformation upon filling the tube with said commodity and the part will return to its deformed position due to said "memory" upon dispensing the commodity from the tube.

3,271,491
METHOD OF PREPARING WITHIN A MOLD OF RUBBER OR OF A MATERIAL HAVING SIMILAR PROPERTIES SHAPES OF WAX OR SIMILAR MATERIALS FOR USE IN THE SO-CALLED LOST-WAX-MOLDING METHOD
Gunnar Mikkelborg, Villavelen 11, Notodden, Norway
Filed Jan. 23, 1962, Ser. No. 168,182
1 Claim. (Cl. 264—102)



A method for molding articles comprising the steps of pressing a mold member into engagement with a nozzle member connected to a zone provided with molding material, establishing communication between said nozzle and a vacuum zone by movement of said mold member toward said engagement, moving said nozzle member from a normally closed position by continued pressing of said mold member thereagainst to an operative position so that said nozzle member is simultaneously connected to said molding material zone to provide molding material thereto and to said vacuum zone, maintaining a valve member in said nozzle member in one position so that said molding material is prevented from entering said mold member while said vacuum zone is connected to said mold member to exhaust said mold member, moving said valve member to another position so that said vacuum zone is disconnected from said mold member and said molding material is allowed to enter said exhausted mold member, and then removing said mold member from said nozzle member so that said nozzle member moves to said normally closed position thereby disconnecting said nozzle member from both of said zones.

3,271,492
METHOD OF MAKING A NON-POROUS BOARD COMPOSED OF STRANDS OF WOOD AND PORTLAND CEMENT
Armin Elmendorf, Palo Alto, Calif., assignor to Elmendorf Research Inc., Palo Alto, Calif., a corporation of Illinois
Continuation of application Ser. No. 191,244, Apr. 30, 1962. This application Feb. 1, 1965, Ser. No. 431,760
6 Claims. (Cl. 264—122)



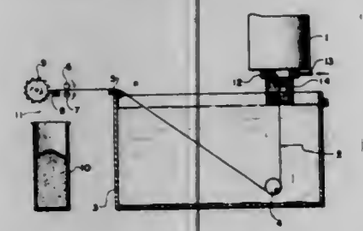
1. In the process of making a non-porous building board composed of wood shavings and Portland cement having a density of 0.9 to 1.4 in which the ratio of the weight of the cement to the weight of the wood shavings is more than 1.5 but less than 5, the steps of mixing water, shavings and cement until all the cement adheres to the shavings; moving a mass of said coated shavings toward a separating station; removing individual coated shavings

from the advancing mass, throwing the coated shavings through the air so they freely fall onto a moving support without loss of cement, forming a continuous layer of loosely felted coated shavings, and pressing said layer of loosely felted coated shavings.

3,271,493
MELT SPINNING PROCESS

Cornelis van den Berge, Emmen, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

Filed Dec. 27, 1962, Ser. No. 247,755
Claims priority, application Netherlands, Jan. 8, 1962, 273,302
5 Claims. (Cl. 264—143)



1. A process for the manufacture of funicular structure comprising the steps of extruding a thermoplastic material through the atmosphere into a bath of cooling liquid, and flowing an annular stream of liquid about the freshly extruded funicular material to isolate the same from the ambient atmosphere extending between extrusion and the cooling liquid.

3,271,494
PRODUCTION OF SHAPED PRODUCTS FROM SOLUTIONS OF POLYVINYL FORMATE IN A LOWER ALKYL NITRILE

Kiyoshi Fujii, Saburo Imoto, Tadao Ashikaga, and Junji Ukida, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Okayama, Japan, a corporation of Japan

No Drawing. Filed Nov. 29, 1961, Ser. No. 155,809
Claims priority, application Japan, Dec. 3, 1960, 35/47,289
7 Claims. (Cl. 264—184)

5. A method of producing shaped forms of polyvinyl alcohol which comprises,

forming a solution of a vinyl formate homopolymer dissolved in a lower alkyl nitrile,

said lower alkyl having 1 to 5 carbon atoms,

and passing said solution through a shaping zone into a medium effective to form a shaped form of said vinyl formate homopolymer and to convert said polymer shaped form to a polyvinyl alcohol shaped form.

3,271,495
PROCESS FOR BIAXIALLY ORIENTING POLYPROPYLENE FILM

Le Roy Frederick Gronholz, Richmond, Va., and James Maurice Quinn, Tonawanda, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Aug. 31, 1961, Ser. No. 135,115. Divided and this application Jan. 21, 1965, Ser. No. 435,109
11 Claims. (Cl. 264—210)

1. A process for biaxially orienting polypropylene film which comprises the steps, in sequence, of extruding a molten polypropylene resin at a temperature within the range of 190° C. through 325° C. in the form of a film; quenching said film at a temperature within the range of —75° C. through 15° C.; heating said quenched film to a temperature within the range of from 36° C. to 10° C. below the crystalline melting point of said resin; stretching said film at least two times its original dimension in a direction transverse to the direction of extrusion at a rate of at least 350% per minute while maining the temperature of said film at T_1, T_1 being within the range of from 36° C. to 10° C. below the crystalline melting point of said resin; and, thereafter, stretching the film longitudinally at least two times its original length while maintaining the temperature of said film at not more than 20° C. above T_1; and cooling said film while holding it under tension to prevent any substantial change in its dimensions.

3,271,496
METHOD OF SHAPING POLYELECTROLYTE POLYMER

Alan S. Michaels, Lexington, Mass., assignor to Amicon Corporation, Cambridge, Mass.

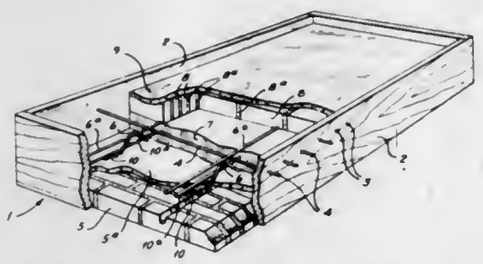
No Drawing. Filed Jan. 27, 1964, Ser. No. 340,560
9 Claims. (Cl. 264—232)

1. The method of shaping a solid non-plastic gel composition formed of two ionically cross-linked synethetic organic linear polymers, one of said polymers containing dissociable anionic groups and the other containing dissociable cationic groups, said ionic cross-linkages being the sole cross-linkages present, which method comprises imbibing into said composition from aqueous solution a salt selected from the class consisting of calcium nitrate, calcium bromide, calcium chloride, sodium bromide, and mixtures thereof, evaporating a portion of the solvent to leave a solid plastic composition, and shaping said composition under pressure at elevated temperature.

3,271,497
METHOD FOR PRODUCING WALL UNITS

Reinhold Magnus Elgenstierna, Engelbrektsgatan 29, and George Ohlson, Frejgatan 20, both of Stockholm, Sweden

Filed Apr. 19, 1962, Ser. No. 188,702
Claims priority, application Sweden, Apr. 19, 1961, 4,113/61
4 Claims. (Cl. 264—253)

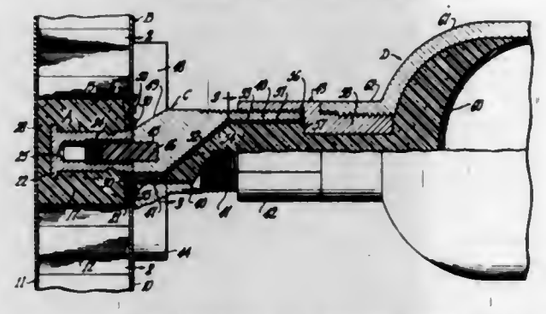


1. In a method of producing ready-to-erect wall units in a mainly horizontal position in a forming box-like jig having opposed sides, said wall units comprising at least three layers including a facade layer made of bricks, an inner layer spaced from said facade layer, means intermediate said facade layer and said inner layer securing them in spaced relation, and an intermediate layer of insulating material compressible by the weight of said inner layer, said method including applying said facade layer to the bottom of said jig, then applying the layer of insulating material to the upper surface of said facade layer, and then laying the inner layer onto said insulating layer, the improvement which comprises installing supporting means in the form of substantially horizontal supporting bars carried by the jig after the installation of the intermediate layer and before the application of said inner layer by pushing the bars through the intermediate insulating layer at a small distance from the top surface thereof and connecting the outer ends of the bars to opposite sides of the jig, said supporting means, during the application of said inner layer upon said insulating layer, carrying at least a major part of the weight of said inner layer until the inner layer has been assembled and has set, whereby to prevent substantial compression of said intermediate insulating layer.

3,271,498
METHOD OF INSTALLATION OF MOLDABLE INSERT IN SANDWICH PANEL

Frederick W. Rohe, 5191 S. Bradford, Placentia, Calif., and Charles S. Phelan, Tustin, Calif.; said Phelan assignor to said Rohe

Filed Jan. 27, 1964, Ser. No. 340,212
6 Claims. (Cl. 264—261)



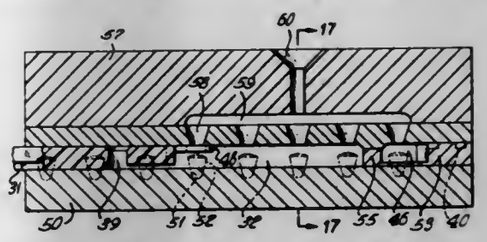
1. In the art of installing a fastener insert in a sandwich panel embodying a fragile, low density core sandwiched between spaced solid skin sheets, the method comprising the following steps: providing a hole in said panel beginning with an aperture in one of said skin sheets and extending into said core; utilizing an insert including a mounting head proportioned to fit snugly within said aperture, and having a pair of spaced ports therein, and a hollow body of smaller diameter than said head, extending axially therefrom and receivable in said hole within said core; projecting said insert into said hole and moving said head into closing relation to said aperture; providing a temporary supporting attachment between said head and skin sheet; subsequently injecting potting material through one of said ports into said hole by applying the nozzle of an injection gun to one of said ports; venting said hole through the other port as the potting material fills the hole and displaces air therefrom; visually inspecting said venting port to avoid injection of excess potting material into the hole; arresting the injection operation when sufficient potting material has been injected as thus determined; withdrawing said gun from the insert before said potting material has set and utilizing said temporary supporting attachment to hold said insert in position while said potting material hardens around said insert.

3,271,499
METHOD AND APPARATUS FOR MAKING ELONGATED FLEXIBLE BANDS OF ANY DESIRED LENGTH IN A STEP-WISE MANNER

Johann Schwaiger, Wattens, Tyrol, Austria, assignor to D. Swarovski & Co., Wattens, Tyrol, Austria

Filed Jan. 21, 1965, Ser. No. 426,767
Claims priority, application Austria, Aug. 18, 1964, 7,129/64
2 Claims. (Cl. 264—261)

1. A method of molding a flexible ornamental article, comprising the steps of introducing plastic material into a plurality of rows of mold cavities of ornamental configuration which communicate with each other longitudinally and transversely of said rows exclusively through restricted, filament-forming passages and which include annular eyelet cavities at at least one end of each row to form in one step a network of spaced ornamental elements and integral filaments, forming the only interconnection between said elements, as well as eyelet fasteners at at least one end of each row of ornamental elements, placing stones in all cavities except said eyelet cavities prior to said step of introducing plastic material, so that the plastic material will form in all except said eyelet cavities ornamental settings about said stones, said cavities, including the eyelet cavities, being uniformly spaced from each other at the ends of said rows with the eyelet cavities at one end of each row, and the other end of each row communicating with the exterior of the mold, and further including, before the step of introducing the

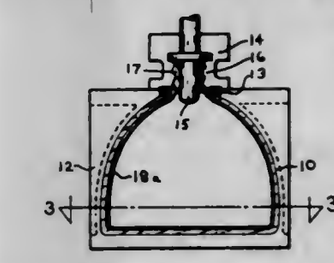


plastic material, the step of closing said other ends of said rows of cavities with a preformed article positioned with its eyelets in and partially filling mold cavities adjacent to said other ends of said rows, whereby plastic material introduced into said partially filled mold cavities will fuse with said eyelets therein for integrally connecting the preformed article with the molded article to form with the latter an uninterrupted network larger than the mold.

3,271,500
METHOD OF PRODUCING COMPOSITE PACKAGES

Thomas R. Santelli, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Dec. 17, 1962, Ser. No. 245,196
3 Claims. (Cl. 264—269)



1. The method of producing a composite package which consists in depositing a measured quantity of a powdered resinous material in a preformed shell having a mouth opening, closing the mouth opening with a neck forming mold, heating the shell and mold to the melting temperature of the resinous material and maintaining such temperature a predetermined period of time, imparting multidirectional movement to the shell and mold thereby distributing the resinous material as a permanent film over the shell interior surface and in part within and filling the neck forming mold, chilling the neck forming mold and shell to set the resinous material and separating the neck forming mold from the shell and film.

3,271,501
METHOD OF AND MEANS FOR MOLDING PLASTIC PARTS

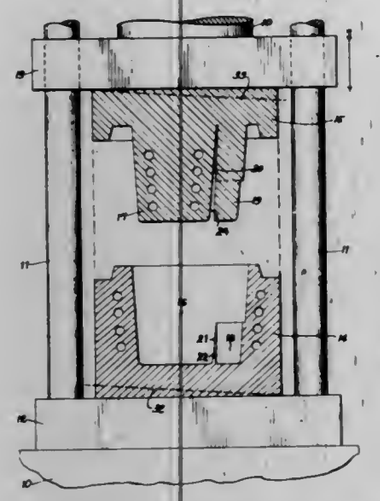
Edward E. Heck, Berwyn, Ill., assignor to Republic Molding Corporation, Niles, Ill., a corporation of Illinois

Filed May 28, 1965, Ser. No. 459,744
8 Claims. (Cl. 264—319)

1. In the method of molding a piece part having an undercut walled portion which comprises making the cavity part and the core part of the mold to produce said piece part, mounting said cavity and core parts upon platens of a molding machine, the platens having a substantially straight line movement toward and away from each other and angularly positioning said cavity and core parts to

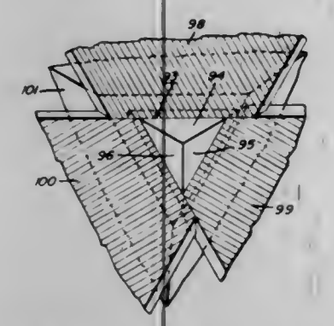
provide a mounting for said cavity and core parts upon the platens so as to bring the walls of said undercut portion of the piece part parallel to the straight line movement of said platens.

5. In combination, a core part and a cavity part of a mold to produce a molded piece part, both said mold parts adapted to be mounted upon opposing molding machine platens adapted to move in a substantially straight line



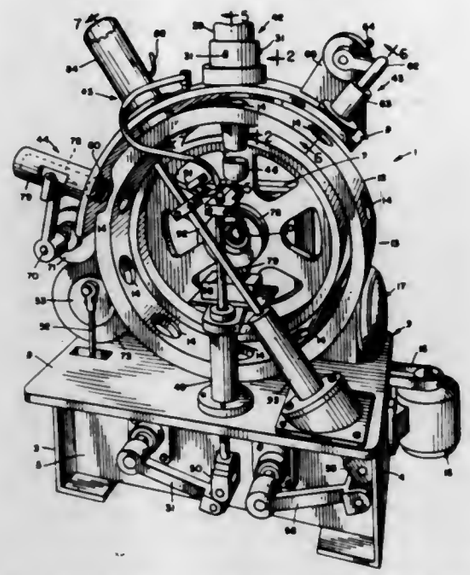
toward and away from each other, at least one corresponding and mating wall of each of said mold parts being at an angle to the straight line movement of said platens and constituting an undercut in said piece part before said mold parts are mounted upon said platens, and means for angularly mounting said mold parts upon said platens so that said corresponding angular walls of said mold parts lie parallel to said straight line movement of said platens.

3,271,502
HIGH PRESSURE METHOD AND APPARATUS
Robert H. Wentorf, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 26, 1962, Ser. No. 233,292
5 Claims. (Cl. 264—320)



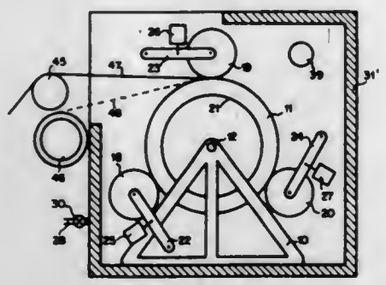
1. A method of compressing a specimen material comprising in combination:
- (a) defining a close reaction volume by means of at least four overlapping pressure resisting members which slide on each other,
- (b) placing the specimen in said volume, and
- (c) providing force on said pressure resisting members to slide and said pressure resisting members over each other to reduce the said volume and compress the said specimen therein,
  - (1) the directions of sliding of said pressure resisting members being such that no more than two of said pressure resisting members move in the same plane.

3,271,503
METHOD AND APPARATUS FOR FORMING PLASTIC ARTICLES
Richard K. Shelby, Chicago, Ill., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware
Filed May 8, 1961, Ser. No. 108,569
6 Claims. (Cl. 264—322)



6. A method of forming a plastic cup with a rolled rim comprising the steps of providing a molded plastic cup with a downturned skirt at its upper edge, said skirt defining an outer surface area, thereafter applying localized heat to the outer surface area of the downturned skirt to bring the temperature of the skirt to a substantially uniform formable level, immediately thereafter rolling the bottom edge of the skirt inwardly on a radius toward the cup wall, and thereafter discontinuing the application of heat to the skirt.

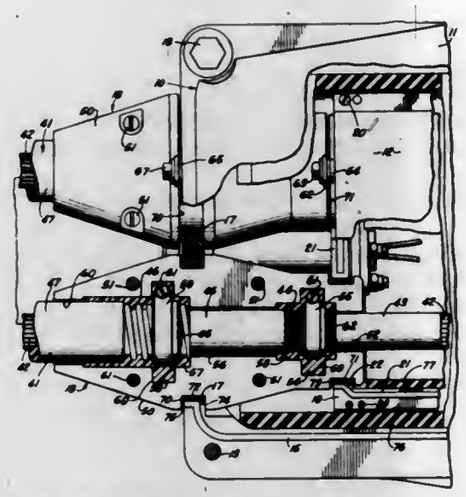
3,271,504
APPARATUS AND METHOD FOR VULCANIZING STRIPS OF MATERIAL CONTAINING AN ELASTOMER
Axel Emil Bergström, Lidingo, Rudolf Gotthard Hallhagen, Goteborg, and Leif Erik Roland Söderberg and Johan Eric Hayden Westberg, Lidingo, Sweden, assignors to AGA Aktiebolag, a corporation of Sweden
Filed Nov. 5, 1962, Ser. No. 235,565
Claims priority, application Sweden, Nov. 23, 1961, 11,658/61
5 Claims. (Cl. 264—347)



1. A method of vulcanizing an elongate weft impregnated with a vulcanizable elastomer, comprising winding said weft into a roll form and simultaneously interposing an intermediate layer member between adjacent turns of said weft to maintain said adjacent turns separate from each other, rotating said roll and applying external pressure to the periphery thereof, and passing a heated fluid in heat transfer relationship with said roll form, said intermediate layer member being formed of chlorosulfonated polyethylenes.

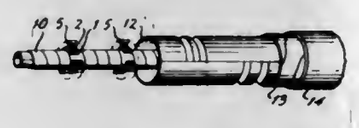
ELECTRICAL

3,271,505
CABLE SPLICE CASE
Harold W. Dellett, Los Angeles, and Woodford J. Crump, South Gate, Calif., assignors to A.T.I. Industries, Inc., Los Angeles, Calif., a corporation of California
Filed Sept. 9, 1963, Ser. No. 307,537
11 Claims. (Cl. 174—21)



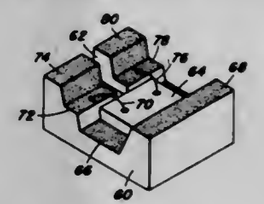
8. In a cable splice case connecting electrical cables of the type having multiple layers of insulating and protective materials surrounding a bundle of insulated conductors where the interior of such cable is to be pressurized, the combination of:
- internal and external housings insulated from each other and having an aperture in each for each cable, a dielectric collar for each cable and having external means fitting a said aperture in each of said housings, the cable being progressively stripped of each layer to expose a portion of each layer, each collar having a plurality of longitudinally adjacent and aligned bores of preselected sizes loosely fitting each portion of exposed layer of the cable, and a dielectric adhesive material filling said collar between said bores and said exposed layers of the cable securing each said layer to the collar.

3,271,506
COAXIAL HIGH-FREQUENCY CABLE WITH INTERNAL SPACERS
Horst-Edgar Martin and Klaus Spinler, Berlin, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany
Filed Mar. 23, 1965, Ser. No. 441,996
Claims priority, application Germany, Mar. 25, 1964, S 90,202
6 Claims. (Cl. 174—28)



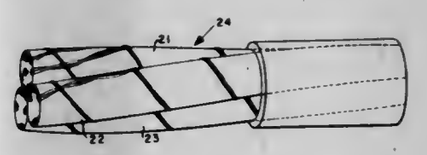
1. In a coaxial high-frequency cable having an inner conductor and an outer conductor coaxially surrounding the inner conductor, a plurality of annular spacers coaxially seated on said inner conductor and axially spaced from each other, each of said spacers comprising a foot portion forming a C-shaped spring clip clampingly seated on said inner conductor about a major portion of its circumference in engagement with said inner conductor, a plurality of angularly spaced legs extending radially away from said foot portion, each of said legs having a substantially cross-shaped cross-sectional area, and respective support members formed at the outer ends of said legs, said members being uniformly spaced from each other peripherally and individually engaging said outer conductor, said foot portion and said legs with said support members forming jointly an integral structure of insulating material.

3,271,507
FLAT PACKAGE FOR SEMICONDUCTORS
Charles G. Elliott, Setauket, N.Y., assignor to Alloys Unlimited, Inc., Melville, N.Y.
Filed Nov. 2, 1965, Ser. No. 506,030
10 Claims. (Cl. 174—52)



1. A package structure for containing semiconductor elements comprising:
- an insulating ceramic substrate having on one surface a channel section between first and second raised end sections;
- a step section between said channel section and said first end section along the entire length thereof and having a riser surface adjacent said channel surface and a tread surface adjacent said first end section;
- a first continuous conductive coating covering said tread surface, the top surface of said first end section, and the surface therebetween; and
- a second continuous conductive coating covering said channel surface, the top surface of said second end section, and the surface therebetween.

3,271,508
COMMUNICATION CABLE
Harvey Burr, De Kalb, Ill., assignor to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,225
4 Claims. (Cl. 174—113)



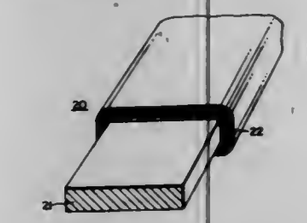
1. A communication cable comprising a large plurality of twisted pairs of insulated conductors,
- (A) all of said pairs of conductors being twisted with the same direction of lay,
- (B) each conductor being individually wrapped with an approximately double layer of spiralled insulating tape having a length of wrapping lay equal to the length of lay of twist of the pair comprising said conductor,
- (C) the direction of spiral of the tape on all conductors in said cable being the same,
- (D) said pairs being cabled together in a helix having a length of lay exceeding the length of lay of any of the component pair twists, and
- (E) a sheath surrounding said cabled conductors.

3,271,509

ELECTRICAL INSULATION FOR CONDENSER BUSHINGS AND THE LIKE

Robert H. Calderwood, Hampton Township, Allegheny County, Jacob Chottiner, McKeesport, and Harry R. Sheppard, Jr., Sharon, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 12, 1963, Ser. No. 272,749
13 Claims. (Cl. 174—121)



1. Laminated electrical insulation comprising plural layers of cellulosic fibers in sheet form having distributed throughout the sheet from about 0.02% to about 10%, based on the weight of the fibers, of at least one material selected from the group consisting of melamine, dicyandiamide and mixtures of melamine and dicyandiamide, the mixtures varying in proportions from 1 to 5 parts of dicyandiamide and 1 to 4 parts of melamine, by weight, said layers bound together into a unitary mass by a solid, infusible composition derived from the reaction of an epoxy resin selected from the group consisting of (1) 3,4-epoxy-6-methylcyclohexylmethyl-3,4-epoxy-6-methylcyclohexane carboxylate and (2) dicyclopentadiene dioxide with about 10 to 60 parts an anhydride cross-linking agent per 100 parts of epoxy resin, by weight.

3,271,510

REMOTELY APPLIED CONDUCTOR SPACER

Robert M. Decker, 8114 Covington Ave., Parma 29, Ohio, and Leonard J. Gierosky, 2125 Lincoln Ave., Parma 34, Ohio

Filed Dec. 1, 1964, Ser. No. 415,114
14 Claims. (Cl. 174—146)



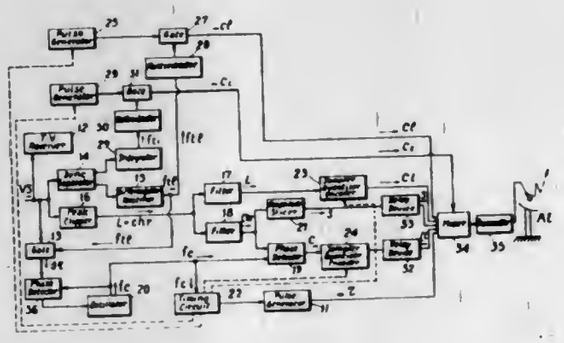
1. A remotely applied spacer for spacing at least a pair of elongated conductive elements and comprising first and second relatively movable nonconductive members, each member having a pair of spaced element receiving slots formed therein, the slots in said first member corresponding in spacing with those of said second member, said first and second members having an element locked position with respect to each other in which the slots of one member are in registry with corresponding slots in the other member and coact together to lock an element in place in each pair of corresponding slots, resilient means interposed between said members for resiliently biasing said members in said locked position, said first and second members having an element unlocked position with respect to each other in which the corresponding slots of said members are disposed relative to each other to permit entry and exit of an element, said slots in said first and second members being L-shaped slots, each having a first slot portion extending radially inward of said members to permit entry and exit of an element from the side of said spacer and a second slot portion extending axially of said members and wherein said second slot portion in said first member extends in an axially opposing direction from said second slot portion in said second member, and remotely actuated removable means securing said members in said element unlocked position until removed at which time said members are urged to said element locked position by said resilient means.

3,271,511

COLOUR TELEVISION TRANSMISSION SYSTEM FOR TRANSMISSION BY MEANS OF AT LEAST ONE SATELLITE

Georges Valensi, 3 Rue des Chaudronniers, Geneva, Switzerland

Filed Oct. 30, 1962, Ser. No. 234,194
Claims priority, application France, Nov. 3, 1961, 877,869; Nov. 29, 1961, 880,301; May 28, 1962, 898,897; July 13, 1962, 903,961; Sept. 21, 1962, 910,062
11 Claims. (Cl. 178—5.2)



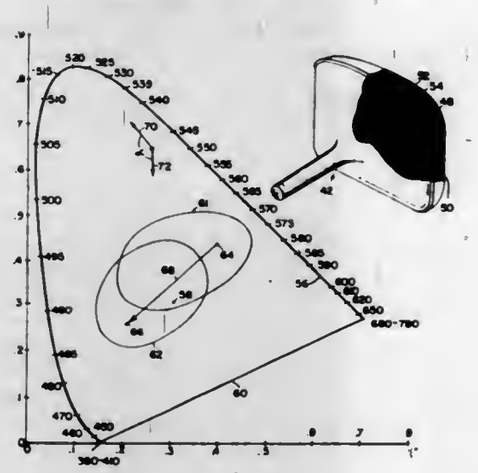
1. A colour television transmitting ground station comprising: means for deriving a luminance signal and n colour signals, where n is a positive integer smaller than three, relative to a scene to be televised; a timing circuit; sampling, quantizing and encoding means, controlled by said timing circuit, for deriving from said signals a first series of pulse coded signals carrying luminance information and n other series of pulse coded signals respectively carrying n colour informations; means for time positioning said pulse coded signals to derive therefrom successive sequences, each sequence comprising a pulse coded signal of the first series, and a pulse coded signal of each of said n other series; means, controlled by said timing circuit, for generating at the end of each scanning line and at the end of each scanning field a timing pulse; means for generating, after each timing pulse following a scanning line, a pulse coded line synchronization signal, and after each timing pulse following a scanning field, a pulse coded field synchronization signal; means for duration modulating said timing pulses in accordance with the sound accompanying said televized scene, the modulated timing pulses having a longer duration than the pulses of said pulse coded signals; mixing means fed with said duration modulated pulses and with said pulse coded signals for delivering a complex signal; means for modulating said complex signal on a carrier wave to obtain pulses of high frequency oscillations, and means for radiating said last mentioned pulses towards an artificial satellite.

3,271,512

COLOR TELEVISION METHOD AND APPARATUS EMPLOYING DIFFERENT SETS OF TARGET PHOSPHORS, ONE OF WHICH LUMINESCES IN A SINGLE COLOR AND ANOTHER OF WHICH LUMINESCES IN DIFFERENT COLORS

Nigel W. Daw, Baltimore, Md., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Continuation of application Ser. No. 152,283, Nov. 14, 1961. This application Oct. 12, 1965, Ser. No. 500,482
15 Claims. (Cl. 178—5.2)



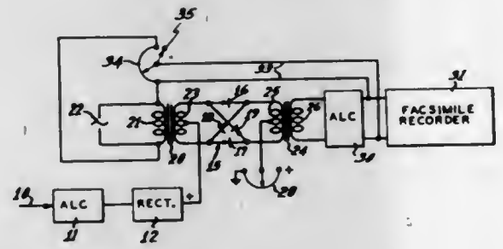
1. Cathode-ray tube means comprising a target screen having two types of luminescent elements adapted to emit light differentially in response to differences in irradiation, one of said types of elements emitting light of a predominantly reddish color substantially irrespective of variations in irradation current density, and the other of said types of elements emitting light having a relatively bluish hue in response to a relatively low irradiation current density and a relatively yellowish hue in response to a relatively high irradiation current density.

3,271,513

FACSIMILE RECORDING SYSTEM HAVING AUTOMATIC CONTRAST RANGE CONTROL

Peter R. Marzan, New City, N.Y., assignor to Litton Systems, Inc., Beverly Hills, Calif.

Filed Jan. 23, 1963, Ser. No. 253,390
8 Claims. (Cl. 178—6.6)



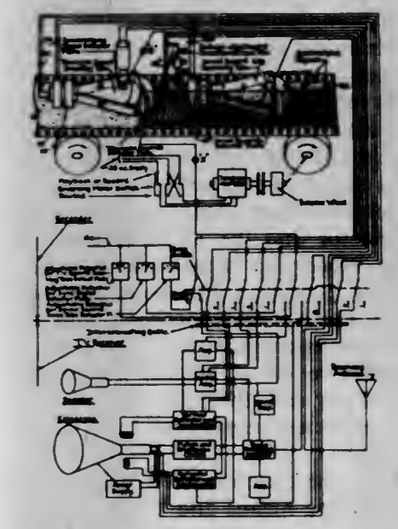
1. A facsimile recording system comprising:
input and output signal circuits, and
a first automatic level control,
a signal-inversion circuit, and
a second automatic level control, said first automatic level control, said signal-inversion circuit and said second automatic level control being connected in series relation between said input and output signal circuits to maintain constant output signal contrast.

3,271,514

RECORDING AND PLAYING-BACK TELEVISION PROGRAMS, BY WIDE-BAND CROSS-SCANNING RECORDINGS

Thomas A. Banning, Jr., Chicago, Ill., and Emil L. Ranseen, deceased, late of Chicago, Ill., by Agnes J. Ranseen, executrix, Evanston, Ill., assignors, by direct and mesne assignments, to Thomas A. Banning, Jr., trustee, Chicago, Ill.

Application Dec. 18, 1964, Ser. No. 419,612, which is a division of application Ser. No. 94,651, Mar. 9, 1961, which in turn is a division of application Ser. No. 427,428, May 4, 1954, now Patent No. 2,976,354, dated Mar. 21, 1961. Divided and this application Oct. 23, 1965, Ser. No. 504,250
1 Claim. (Cl. 178—6.6)

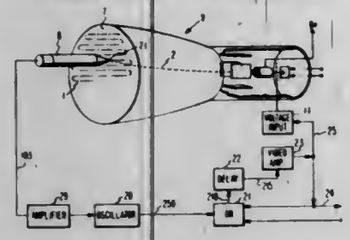


Means to produce a record of two continuing series of signals one such series comprising video signals of radio frequency which when sensed and translated comprise the video component of a television program, and the other such series comprising audio signals of audio frequency which when sensed and translated comprise the audio component of a television program; said recording means including a tape having a signal receiving and recording surface, means to drive said tape at substantially uniform rate; two deflectable beam units mounted in proximity to the tape surface, each including beam producing means mounted in proximity to the tape surface and including beam producing means and means constituted to cause cross-scanning deflections of such beam across the scan width of the tape, with production of a beam of force strength proportionate to the varying strength of one of the series of signals delivered to the corresponding deflectable beam unit, and production of a cross-scan recording on the tape of strength corresponding to the strength of such beam; means constituted to produce lateral deflection producing signals, and connections between such lateral deflection signal producing means and each of the deflectable beam units, constituted to cause both of the deflectable beam units to execute lateral deflections at the rate of production of such deflection producing signals; together with means to cause the beam strength of one of the deflectable beam units to vary according to the variations of strength of the video signals of such program, and means to cause the beam strength of the other deflectable beam unit to vary according to the variations of strength of the audio signals of such program.

3,271,515
ELECTRONIC HANDWRITING DETECTION AND DISPLAY APPARATUS

Thomas P. Harper, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 28, 1963, Ser. No. 254,150
4 Claims. (Cl. 178—6.8)



1. An electronic video writing and transmitting system comprising:

a writing surface means, said writing surface means comprising a display surface having separate luminescent cells of uniformly adjustable intensity, distributed homogenously thereacross, the intensity of said cells being uniform in the unwritten state, and having cell-intensity modifying means;

a manually manipulatable photodetector means adapted to generate a "write-pulse" whenever superposed upon said cells in "writing position" in response to the light energy of said cells; and

pulse synchronization means connected between said photodetector and the input of said adjustable cell intensity modifying means whereby said pulse may "write" by causing a change in the intensity of the cell over which it is superposed, said pulse synchronization means comprising:

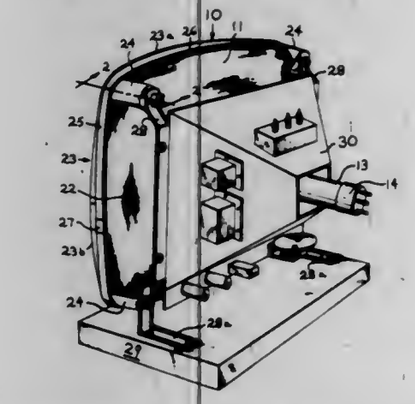
magneto-strictive delay means, including a magneto-strictive delay coil, the input of which includes drive means connected between said coil and said detector means; and

amplification means connected between said coil and said modifying means and being arranged to modify the delayed pulse from said photodetector and present it to beam-gating means associated with said modifying means so as to increase the intensity of said cell at said writing position and thereby "write" a brightened spot upon said display surface.

3,271,516
IMPLOSION RESISTANT CATHODE RAY TUBE WITH INTEGRAL MOUNTING ELEMENTS TO FACILITATE INSTALLATION

Daniel A. Damm, Toledo, Ohio, assignor, by mesne assignments, to Owens-Illinois, Inc., a corporation of Ohio

Filed Oct. 22, 1962, Ser. No. 231,887
18 Claims. (Cl. 178—7.8)

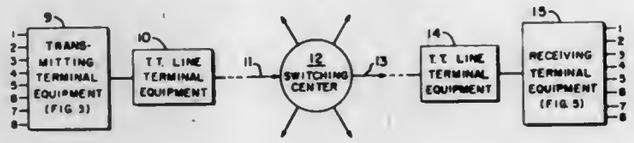


1. The combination comprising a television receiver cabinet, a cathode-ray tube having an essentially all-glass envelope, reinforcing means adhered to and extending over non-viewing frontal exterior surface portions of said tube envelope surrounding its viewing area, a rigid frame member disposed adjacent a rearward portion of said tube envelope to support the receiver components, and a series of spaced-apart mounting elements integrally attached to said reinforcing means and disengageably attached to, said rigid frame member and said cabinet at a frontal region of said tube.

3,271,517
DATA TRANSMISSION

Andrew C. De Rosa, Hazlet, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Jan. 2, 1963, Ser. No. 249,101
5 Claims. (Cl. 178—26)

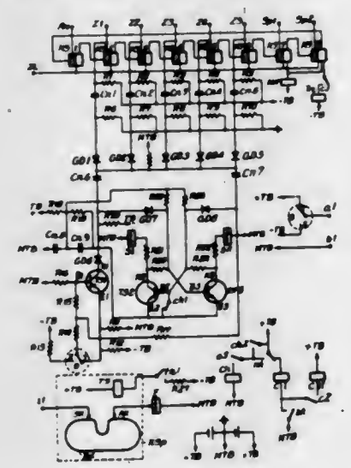


3. A means for transmitting eight bit per parallel character Fieldata over standard teletypewriter networks, comprising; means to split the information in each Fieldata character equally between two subcharacters of standard teletypewriter form, means to insert a dummy bit as the fifth bit of each of said teletypewriter subcharacters, means to provide said teletypewriter subcharacters with synchronizing pulses, means to serially apply said teletypewriter subcharacters to a teletypewriter network, means at a remote terminal of said teletypewriter network for re-assembling each group of two serial teletypewriter subcharacters into parallel Fieldata form.

3,271,518
DISTORTION CORRECTION OF TELEPRINTER SYMBOLS

Rudolf Krämer, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a German corporation

Filed July 6, 1961, Ser. No. 122,249
Claims priority, application Germany, July 7, 1960, S 69,265
9 Claims. (Cl. 178—53.1)

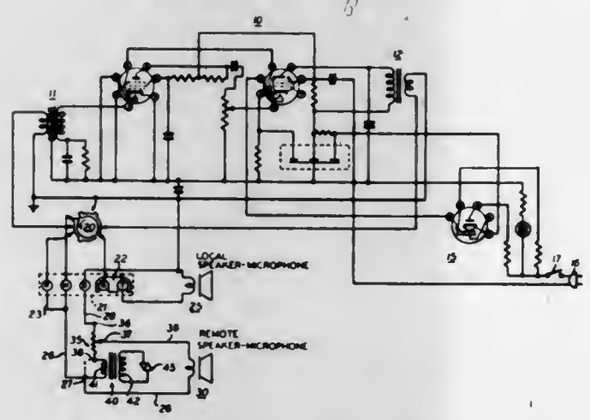


1. In a teleprinter system for start-stop telegraphy, a circuit arrangement for correcting distorted teleprinter symbols of a plurality of teleprinter messages which are respectively transmitted over separate lines, wherein the correcting is effected with the aid of center sampling of the individual teleprinter symbol elements, the combination of storage feed-in means allocated to each line, an intermediate storer operatively connected with each of said storage feed-in means and adapted to store at least one complete teleprinter symbol, means for conducting incoming teleprinter signals to said storage feed-in means for the storage thereof in said intermediate storer, storage feed-out means for each intermediate storer operatively connected thereto, a centrally disposed element former having means for delivering sampling pulses operative for the center sampling of the symbol elements, and means operatively connected to said element former and controlled by said element former, operable for the duration of the seizure of the respective intermediate storers, for operatively releasing the corresponding storage feed-out means of the respective intermediate storers at instants defined with respect to the position of the start element formed by the central element former.

3,271,519
VOLUME CONTROL CIRCUIT

Allan C. Bernstein, Kings Point, N.Y., assignor to Electone, Inc., Long Island City, N.Y., a corporation of New York

Filed Nov. 9, 1962, Ser. No. 236,526
4 Claims. (Cl. 179—1)

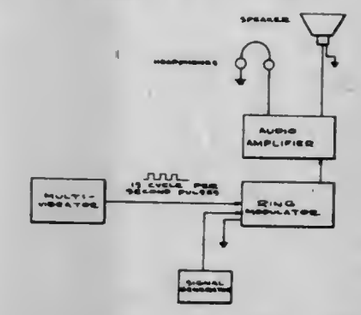


3. In an audio intercommunication system having a two-terminal sound transducer reversibly operable to generate a low level audio signal upon the application of a sound input thereto, and to audibly reproduce a higher level audio signal applied to such transducer, and a pair of conductors for transmitting such low level audio signals from the sound transducer and for transmitting such high level audio signals thereto, a volume control circuit which comprises a potentiometer and two-terminal voltage variable impedance means, said potentiometer having a resistance element connected in series with said variable impedance means and an adjustable resistance tap connected to one terminal of the sound transducer, one terminal of said resistance element being connected to one of said conductors, and the other of said conductors being connected in common with the other terminal of said variable impedance means and with the other terminal of said transducer, said variable impedance means having voltage-impedance characteristics whereby the effective impedance of said variable impedance means is sufficiently low as to constitute a short circuit when excited by a high level audio signal applied to said conductor pair, and sufficiently high as to constitute an open circuit when excited by a low level audio signal applied by the transducer through said resistance tap and the common connection to said variable impedance means, whereby low level audio signals generated by said transducer experience a limited and relatively low attenuation, and high level audio signals applied to said transducer experience a greater attenuation.

3,271,520
ACOUSTIC REFLEX EAR PROTECTIVE SYSTEM

John L. Fletcher, Fayetteville, Ark., and Arthur J. Riopelle, Orange Park, Fla., assignors to the United States of America as represented by the Secretary of the Army

Filed Dec. 4, 1962, Ser. No. 242,337
1 Claim. (Cl. 179—1)



Apparatus for producing continuous sound for placing the ear in acoustic reflex condition for continuous protection against distressing noise comprising:

(a) a multivibrator continuously producing pulses at the rate of 15 cycles per second;

(b) a signal generator;

(c) a ring modulator electrically connected to said signal generator and said multivibrator;

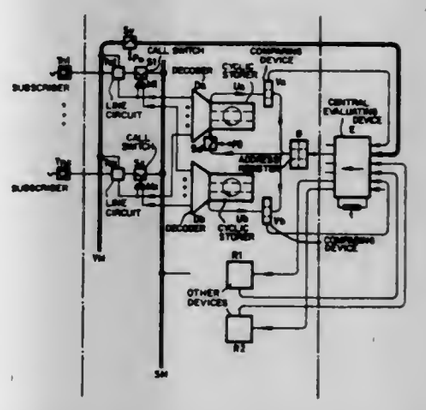
(d) an audio amplifier electrically connected to said ring modulator; and

(e) a speaker electrically connected to said audio amplifier, said speaker impressing the continuous 15 cycle per second pulses upon the ear thereby producing the acoustic reflex condition.

3,271,521
CIRCUIT ARRANGEMENT FOR ASCERTAINING OPERATING CONDITIONS OF SUBSCRIBER STATIONS OF A TIME MULTIPLEX COMMUNICATION SYSTEM

Dieter von Sanden, Munich-Solln, Hubert Suckfüll, Munich-Obermenzing, and Allan Darré, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed May 8, 1961, Ser. No. 108,330
Claims priority, application Germany, June 10, 1960, S 68,878
23 Claims. (Cl. 179—15)



1. A communication system, especially a telephone system, wherein two-wire connections are established between subscriber stations in accordance with the time multiplex principle, comprising line circuits respectively cooperatively connected with subscriber stations, means forming a call multiplex point, electronic call switches for connecting with said call multiplex point, over the

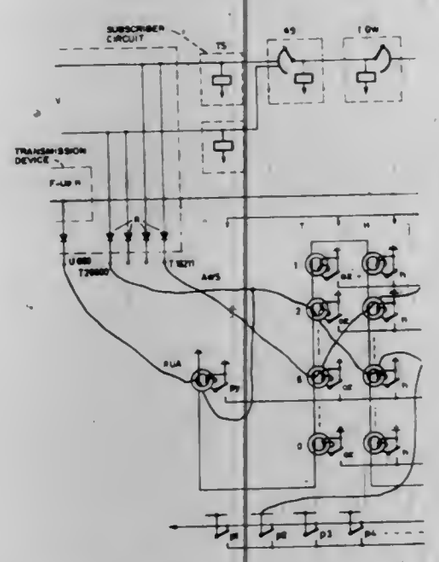
respective line circuits, subscriber stations which are to be interconnected, means for producing, under the control of addresses of subscribers involved in the extension of a call, phase shifted control pulses for controlling the operative actuation of said electronic call switches, the respective phase shifted pulses being cyclically allocated to the connection which is to be established between the involved subscriber stations, a common control device, means for inserting in the cycle of said control pulses a reading pulse with a pulse sequence frequency corresponding to that of the control pulses, means governed by said reading pulse for successively testing all line circuits as to the busy or idle condition of the respective subscriber stations and thereby producing in the line circuits a corresponding criterion, means for directly extending criteria to said common control device, and means in said common control device for evaluating a received criterion after comparison of the address of the corresponding tested subscriber station with the addresses of subscriber stations which are involved in extended calls.

3,271,522

CIRCUIT ARRANGEMENT FOR DETERMINING THE CALL NUMBERS OF PARTY LINE SUBSCRIBERS

Gerhard Polensky, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Sept. 28, 1962, Ser. No. 227,688
Claims priority, application Germany, Sept. 29, 1961, S 76,042
8 Claims. (Cl. 179—17)



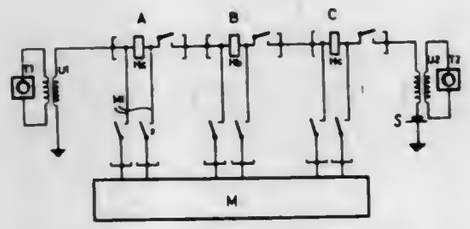
1. A circuit arrangement for the determination of call numbers of subscribers to party lines in telecommunication, particularly telephone installations, comprising evaluation circuits allocated to the individual call numbers, which characterize in a coordinate formed evaluation field the digits of the call numbers, said evaluation circuits marking the individual call numbers containing in each case one characterizing element less than there are places in each call number, the evaluation circuits for subscribers with line selector outlets in common for several subscribers being operative to mark all digits of the call number except the ordinal number of the correspondingly party line connection, means for storing such ordinal number of the corresponding party line connection and the evaluation circuits for subscribers with individual selector outlet being operative to mark all digits of the call number except the sub-office digit characterizing the appropriate group of subscribers, which digit is determined by associated connecting devices.

3,271,523

COUPLING FIELDS WITH SINGLE CONDUCTOR THROUGH-SWITCHING OF EXTENSIONS OVER ELECTROMAGNETICALLY ACTUATED CONTACTS

Korbinian Karrer, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Sept. 28, 1960, Ser. No. 59,029
Claims priority, application Germany, Oct. 14, 1959, S 65,425
11 Claims. (Cl. 179—22)



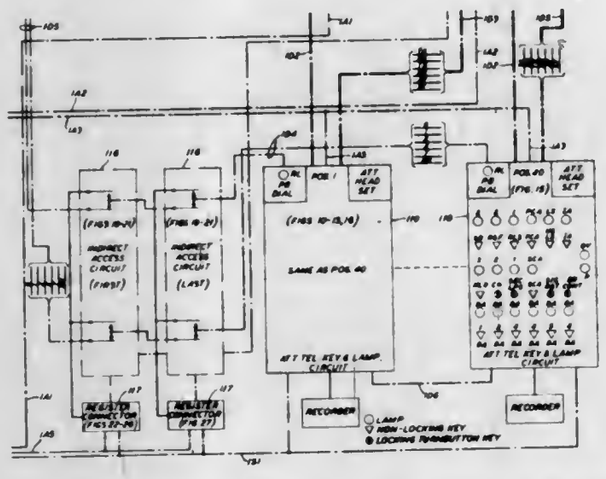
1. In a coupling field employed in a communication system, an arrangement for switching through connections over a single conductor of the speech current path extending over electromagnetically controlled coupling contacts, comprising a holding coil disposed in serial relationship with respect to each coupling contact, and circuit means operatively directing current flowing over said single conductor to the respective holding coils to energize the same and thereby maintain the coupling contacts respectively associated therewith in actuated condition.

3,271,524

KEY TYPE COMMON CONTROL TELEPHONE SWITCHING SYSTEM

Theodore E. Allen, Topsfield, Mass., Walter R. Baker, North Hollywood, Calif., Richard H. Bidlack, Boonton, N.J., Karl N. Gardner, San Gabriel, Calif., William E. Mullan, Jr., Washington, D.C., and Milton E. Ozenberger and Louis E. Van Damme, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 27, 1961, Ser. No. 141,178
28 Claims. (Cl. 179—27)



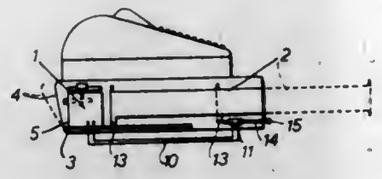
1. A switching system comprising, subscriber stations, an attendant position, a plurality of manually operable keys at said position each of which is individually associated with one of said stations, and common control switching facilities responsive to the operation of a selected one of said keys to alternatively complete incoming and outgoing connections between said position and the subscriber station associated with said selected key.

3,271,525

SOUND REPRODUCER EQUIPPED CASH REGISTER

Jörgen Sigurd Lien, 2–4 Mollendalsveien, Bergen, Norway

Filed July 11, 1962, Ser. No. 208,984
Claims priority, application Norway, Aug. 22, 1961, 137,064, Patent 100,021
5 Claims. (Cl. 179—100.2)



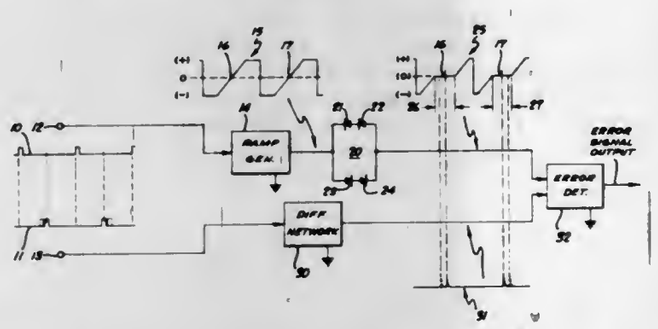
1. The combination of a cash register having a cash drawer movable from a closed position to an open position and versa versa; with a sound reproducing device having a playback head and an electric motor; a low frequency amplifier having a loud speaker; means supplying electrical current to said playback head, said motor and said amplifier and comprising a contact switch located in the path of movement of said cash drawer and closed by said cash drawer when it is adjacent its open position; a manually operable rod connected with said switch for closing said switch independently of the movement of the cash drawer, and means energized by the electrical current for maintaining the flow of electrical current after said switch is opened, magnetic recording tape adapted to engage said playback head, a drive for said magnetic tape, means operatively connecting said drive with said motor, and means connected with said tape and de-energizing the last-mentioned means after a predetermined length of tape has been moved by said drive.

3,271,526

SERVO SYSTEM THAT IS INSENSITIVE TO TAPE FLUTTER ERRORS

Donald James Cochran, Pacifica, and Donald Marvin Patterson, Sunnyvale, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Nov. 5, 1962, Ser. No. 235,376
6 Claims. (Cl. 179—100.2)



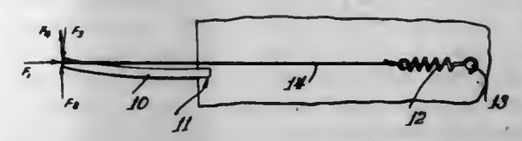
2. A speed control servo system for a magnetic tape record-playback apparatus comprising:
- means for generating ramp pulses from a first group of pulses, said ramp pulses having zero crossover points;
- means for differentiating a second group of pulses to produce sharp pulses;
- means for comparing the time between one sharp pulse and one ramp pulse; and
- diode means for shaping the ramp pulses at their zero crossover points to make the servo system insensitive to tape flutter errors.

3,271,527

TRANSDUCER ELEMENT MOUNTING

Robert J. Hammond, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan

Filed Nov. 23, 1962, Ser. No. 239,542
9 Claims. (Cl. 179—100.41)



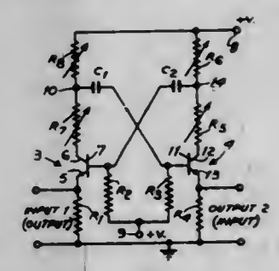
5. A transducer element assembly comprising, in combination, a bender element mounted in cantilever fashion so as to be adapted to be driven in a transverse direction at its free end to generate an output voltage proportional to the amplitude of the driving force, and a tension spring anchored at one end so as to be adapted to pivot about a point substantially rearwardly of the fixed end of said bender element and associated with said bender element so as to be adapted to apply a compressive spring force at the free end thereof, thereby to increase the effective lateral compliance of said bender element and reduce the transverse force required to drive the same, said tension spring being disposed approximately in the plane of said bender element when the latter is in its undeflected position.

3,271,528

ADJUSTABLE INPUT IMPEDANCE AMPLIFIER

Lucio M. Vallese, Glen Ridge, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Feb. 7, 1963, Ser. No. 256,918
16 Claims. (Cl. 179—170)



1. An amplifier comprising:
an input;
an output;
a first active element coupled to said input circuit;
a second active element coupled between the output of said first active element and said output;
first means coupling said second active element to said first active element to provide positive feedback for said first active element; and
second means coupled to said first means to control the amount of said feedback to adjust the input impedance of said amplifier between two values including zero impedance and a predetermined negative impedance while maintaining an amplified output signal at said output.

3,271,529

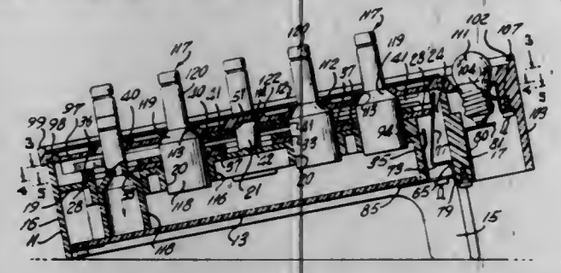
CODED SWITCH CONSTRUCTION

Gustav J. Pawelka, Sunset Ave., Glenwood Landing, N.Y., and Frederick H. Kroll, 72 Wood Hollow Lane, New Rochelle, N.Y.

Filed May 12, 1964, Ser. No. 366,725
9 Claims. (Cl. 200—5)

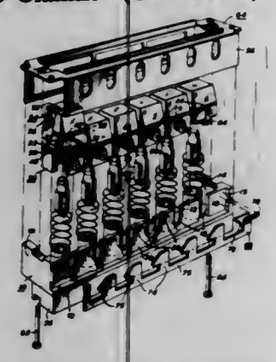
1. An electrical switching device comprising a base plate having formed therein a plurality of longitudinally and transversely aligned regularly spaced first apertures pro-

vided with sleeves depending from the peripheral edges of said apertures and integrally formed with said base plate, a plurality of longitudinally extending first bars, superimposed side by side on said base plate and individually movable along their lengths between advanced and retracted positions, said bars having formed therein second apertures substantially coinciding with said first apertures when said first bars are in retracted positions, a plurality of transversely extending second bars superimposed side by side on said first bars and individually movable along the lengths thereof between advanced and retracted positions, said second bars having formed therein third apertures substantially coinciding with said first and second apertures when said second bars are in retracted positions to define with said first and second aper-



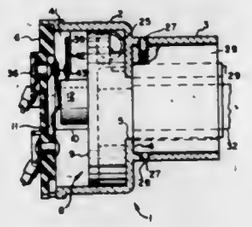
tures a plurality of sets of three registering apertures, means individually resiliently urging said bars toward their advanced positions, a latching element registering with each of said aperture sets and axially movable between a raised and depressed position and including a latching section frictionally slidably engaged by a respective of said sleeves and engaging a respective aperture set when said latching element is in its raised position to lock the corresponding bars in their retracted positions, and out of engagement with said aperture set when said latching element is in its depressed position to release said corresponding bars for movement toward their advanced positions, and switch means responsive to the movement of any of said bars to its advanced position.

3,271,530
PUSHBUTTON SWITCH WITH LATCHING, LOCK-OUT AND INDICATOR LAMP STRUCTURE
Robert E. Wirsching, Greenfield, Ind., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 12, 1965, Ser. No. 424,997
8 Claims. (Cl. 200—5)



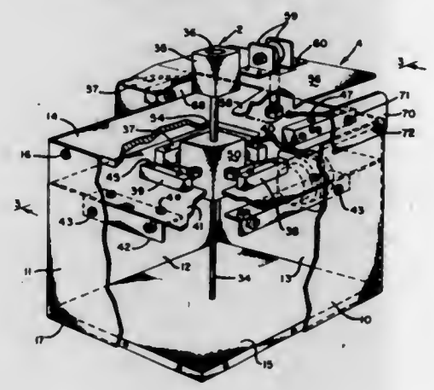
7. A multiple pushbutton switch comprising:
a dielectric housing including
a generally planar base portion,
a plurality of spaced sleeve portions extending upwardly from the base portion, the sleeve portions being intermediate the front and rear edges of the base portion,
a rear wall portion extending upwardly from the base portion, the rear wall portion lying along the rear edge of the base portion spaced from the sleeve portions,
and a terminal portion situated on the underside of the base portion, the terminal portion having a plurality of first and second spaced pockets therein, the terminal portion further having a plurality of parallel spaced grooves therein extending transverse to the front edge of the base portion, each groove communicating with an individual first pocket, and an individual pair of second pockets communicating through the base portion with the interior of each of the sleeve portions;
a plurality of generally L-shaped contact springs, the first leg of each contact spring having a socket portion and a second leg of each contact spring having a contact portion, the first leg of each contact spring being respectively received by an individual groove in the terminal portion of the housing with the socket portion thereof being accommodated in the first pocket communicating with the groove, the second leg of each contact spring extending upwardly transverse to the forward edge of the base portion of the housing;
a plurality of generally I-shaped contact springs having a socket portion at one end thereof and a contact portion at the other end thereof, each contact spring being positioned with the socket portion thereof in an individual second pocket in the terminal portion of the housing and with the contact portion thereof extending into a sleeve portion with which the pocket communicates;
an individual lamp positioned within each sleeve portion of the housing, each lamp when so positioned having contact portions thereon in engagement with the contact portions of the pair of I-shaped contact springs extending into the sleeve portion; and
an individual pushbutton disposed about each sleeve portion and movable along the length thereof, each pushbutton having a portion adapted to interact with the wall portion to guide the movement of the pushbutton, each pushbutton further having a cam portion for engaging the second legs of certain of the contact springs, the cam portion deflecting these contact springs into engagement with adjacent contact springs when the plunger is moved to a downward position, each pushbutton further having a light transmitting portion at the upper end thereof.

3,271,531
OSCILLATORY SWITCH WITH IMPROVED ROTOR CAM MECHANISM
Ray F. Winogrocki, East Detroit, and Walter T. Stoi, Warren, Mich., assignors to Boyne Products, Inc., Detroit, Mich., a corporation of Michigan
Filed Nov. 19, 1964, Ser. No. 412,422
11 Claims. (Cl. 200—6)



1. A switch construction comprising a casing; a plurality of spaced apart, fixed contacts supported by said casing in spaced planes; at least one bridging contact supported by said casing for movement between said planes to positions in and out of engagement with selected ones of said fixed contacts; a rotor member rotatably mounted in said casing for movement from a first position to any selected one of a plurality of other positions; biasing means reacting between said casing and said rotor member and constantly urging the latter to said first position, said biasing means being yieldable to permit rotation of said rotor member from said first position to any selected one of said other positions; and means carried by said rotor member for engaging said bridging contact and moving the latter from one of said positions to the other in response to movement of said rotor member.

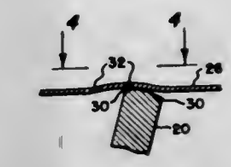
3,271,532
THREE-AXIS FINGER TIP CONTROLLER FOR SWITCHES
Armando E. Lopez, Sunnyvale, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 18, 1965, Ser. No. 433,821
8 Claims. (Cl. 200—6)



1. A finger-tip controller comprising a first control member engageable by the index finger, means supporting said first control member for sideways movement selectively in either of two planes, means responsive to movement of said first control member in said two planes for transmitting a control command to an element to be controlled, a second control member projecting on two sides of said first control member and spaced around the first control member to permit said movement of the first control member, said second control member being engageable by the thumb and second finger of an operator whose index finger engages said first control member, means pivotally supporting said second control member for rocking motion about an axis extending toward said first control member, and means responsive to said rocking motion of said second control member for transmitting a control command to an element to be controlled.

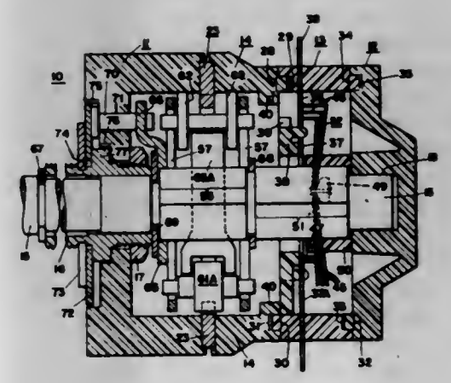
3,271,533
ROTARY SWITCH, WITH VIBRATION RESISTANT RESILIENT DISPLACEABLE FIXED CONTACT STRUCTURE
Maurice C. Butler, San Diego, Calif., assignor to Kinetics Corporation, Solana Beach, Calif., a corporation of California
Filed Oct. 28, 1963, Ser. No. 319,107
6 Claims. (Cl. 200—9)

1. A rotatable electrical switch, comprising in combination:
(A) a rotatable element;
(B) a conductor carried by and extending radially of the axis of the element, said conductor having:
(1) a section having highly conductive characteristics;
(2) a leading section having relatively high resistance to electric arc characteristics;
(C) a yielding contact;
(D) and means for rotatably supporting the rotatable element and for fixedly supporting the yielding contact under tension constantly and spaced from said



element and in a position to be engaged first by said leading section and thereafter by the first mentioned section of the conductor upon rotation of said element.

3,271,534
MULTI-POINT ROTARY SWITCH WITH IMPROVED DETENT ARRANGEMENT
Harold E. McFadden, Dresher, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1965, Ser. No. 442,072
4 Claims. (Cl. 200—11)

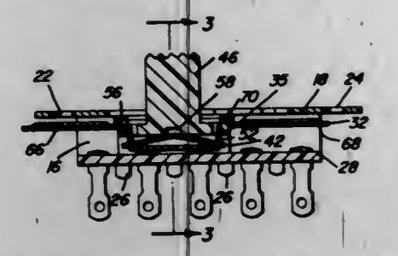


1. A multi-position rotary switch comprising
a housing for at least one group of angularly spaced fixed contacts,
a rotatable shaft carrying at least one movable contact assembly, each of said contact assemblies comprising resilient brush structure extending radially from said shaft for selectively engaging a corresponding group of said fixed contacts and applying contact pressure in direction axially of said shaft,
a pair of carriage members mounted on said shaft for rotation therewith, each of said members having radial slots on opposite sides of the shaft and paired with parallel radial slots of the other carriage member,
a stationary internally-notched annulus mounted on said housing concentric to said shaft and in a plane which extends between said carriage members,
a pair of rollers having axles respectively received by a corresponding one of the pairs of said radial slots, and
a leaf spring structure freely spanning said shaft and having its opposite ends respectively engaging said axles to bias said rollers in opposite directions away from said shaft, each of said spring ends being shaped to provide a bearing for the axle of the associated roller and at least one of said rollers cooperating with said internally notched annulus and said leaf spring structure to apply detent pressure in direction radially of said shaft.

3,271,535
SWITCH DEVICE WITH IMPROVED DETENT STRUCTURE

Joseph M. Vananzi, Meadowbrook, Pa., assignor to Continental-Wirt Electronics Corporation, a corporation of Pennsylvania

Filed June 16, 1965, Ser. No. 464,380
4 Claims. (Cl. 200—16)



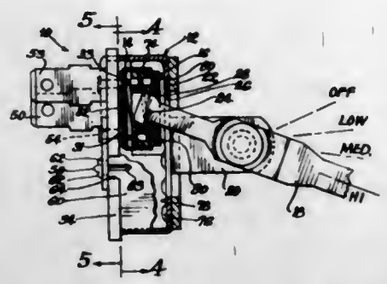
1. In an electrical switch assembly having a rectilinearly slidable switch actuator, electrical contact members held captive by and movable with said actuator, an insulating support underlying said contact members and having paired contact terminals respectively adapted to be bridged by said contact member upon shifting movement of said switch actuation relatively to said support and an enclosing casing for said switch assembly having a substantially flat top wall part overlying the top of said switch actuator and opposed depending side wall parts secured to said insulating support to embrace therebetween said switch actuator, said contact members and said insulated contact terminals, said casing having an elongated slot in its said top wall part extending lengthwise of said casing in parallel relation to said opposite side wall parts thereof, and said switch actuator having an upwardly projecting part integral therewith extending through said slot for shifting movement within the limits of said slot, the improvement comprising a detent plate formed of resilient sheet material disposed in intervening relation between the top wall part of the casing and the top of said switch actuator, said detent plate being centrally apertured to non-rotatably captivate the upwardly projecting part of said switch actuator for shifting movement of the plate with said actuator, said detent plate being provided with laterally spaced relatively narrow parallel coplanar side strips respectively disposed at opposite sides of the central aperture of the plate and extending lengthwise along opposite sides of the upwardly projecting part of the actuator in respective parallel relation to the casing side wall parts, each of said narrow strips of the detent plate substantially mid-point of its length having an integrally formed detent of generally inverted U-shape as viewed from a side edge of said strip, each said detent extending transversely across the full width of its associated strip to provide in the latter a pair of substantially parallel flex lines spaced longitudinally along and extending transversely of the strip to permit flexing of the strip and corresponding movement of the detent orthogonally with respect to the plane of said detent plate.

3,271,536
ELECTRICAL SWITCH WITH CONTACT GROUNDING STRAP

William N. Schink, Crystal Lake, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois

Filed Nov. 8, 1965, Ser. No. 506,699
9 Claims. (Cl. 200—16)

1. An electrical switch,
comprising the combination of a metal casing,
an insulating board mounted on said casing,
a plurality of contacts in said casing and mounted on said insulating board,
a contactor movable in said casing into engagement with said contacts,
a metal strap mounted on said insulating board and connected to one of said contacts,
said strap having a slot therein,

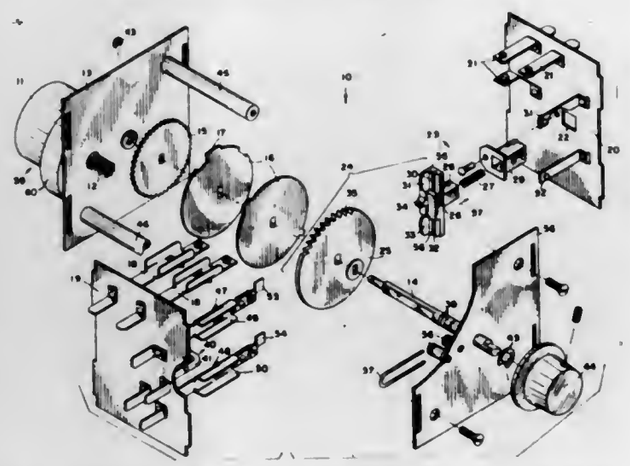


and a tab projecting from said casing and through said slot,
said tab having an upset end portion for securing said strap to said tab to ground said one contact to said casing.

3,271,537
SEQUENTIAL TIMER

Harold T. Simmons and George A. Hamilton, Indianapolis, Ind., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Dec. 3, 1964, Ser. No. 415,697
17 Claims. (Cl. 200—38)



1. A time controlled switching mechanism comprising: mounting means, an axially displaceable cam carrying shaft rotatably journalled in said mounting means; coded indicia means carried by said shaft; a plurality of contact carrying blades carried by said mounting means; fixed contacts spaced from said contacts of said blades and connected to said mounting means; and displaceable actuator means carried by said mounting means and having discrete steps and engaging said coded indicia of said coded indicia means, one of said steps engaging with said blades so as to bias said blades in engagement with said fixed contacts as said shaft is axially displaced, rotational displacement of said coded indicia means causes said actuator means to be displaced from an engaged position with said blades so that said blades disengage with said fixed contacts.

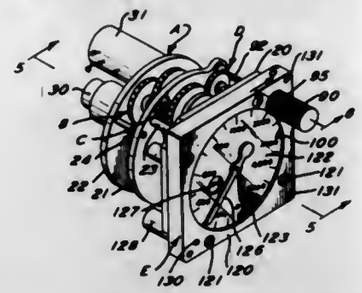
3,271,538
SERVO SYSTEM INDICATOR-CONTROLLER

David A. Burrows, Coral Gables, Fla., assignor to Rex Systems Corporation, a corporation of Florida

Filed Apr. 3, 1964, Ser. No. 357,106
12 Claims. (Cl. 200—52)

1. A servo system indicator-controller comprising a servo gear train; a pointer drive shaft driven by said gear train; rotational stops for said pointer drive shaft; biasing means urging said shaft against one of said stops;

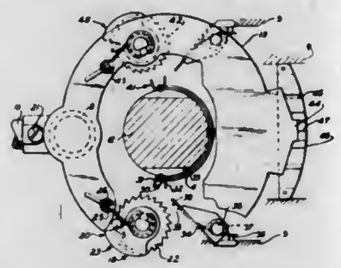
a fixed limit switch; means operating said fixed limit switch when said shaft is against one of said stops; a manually rotatable control shaft; a dial; a first dial pointer driven by said pointer drive shaft; a second pointer on said dial and positioned with respect thereto by rotation of said control shaft; an "on-off" switch operated by rotation of said control shaft; a variable limit switch; and means activating said variable limit switch as a combined function of the position of said pointer drive shaft and the setting of said second pointer.



3,271,539
TURN SIGNALING CANCELING MECHANISM

Robert T. W. Liang, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 19, 1961, Ser. No. 160,581
13 Claims. (Cl. 200—61.34)



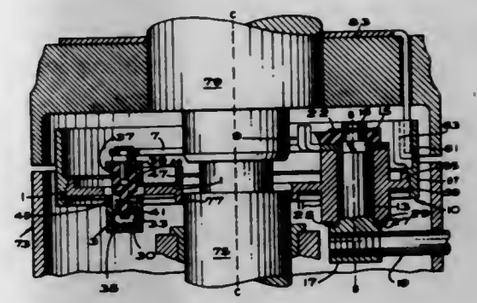
7. In a turn signaling mechanism, the combination comprising: a vehicle steering member, said steering member having a zero position for steering the venicle in a straight path, a movable switch member positioned adjacent said steering member, said switch member having an operative and an inoperative position, a switch operating member connected to said switch member for moving said switch member from an inoperative position to an operative position, means operatively coupling said steering member and said switch member for sensing the small adjustments of said steering member about said zero position and for returning said switch member to an inoperative position when a predetermined number of said small adjustments of said vehicle steering member are sensed.

3,271,540
TURN SIGNALING CANCELING MECHANISM

Hugh R. White, Chelmsford, England, assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 9, 1964, Ser. No. 395,114
9 Claims. (Cl. 200—61.34)

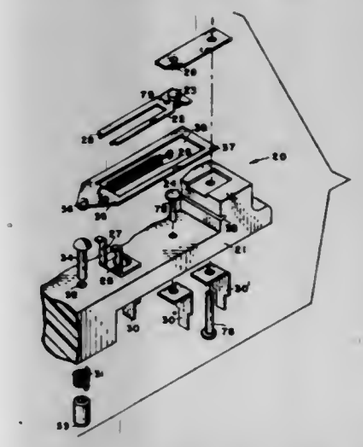
6. In a turn signaling mechanism, a vehicle steering member, said steering member having a zero position for steering the vehicle in a straight path, a base member fixedly mounted and having a central aperture, said steering member extending through said central aperture, a movable switch member pivotally mounted on said base member, said switch member having an operative and an inoperative position, a manual arm connected to said switch member for moving said switch member from an operative to an inoperative position, a cylindrical canceling ring rotatably mounted on said base member about an axis concentric to the axis of said steering member, said cylindrical canceling ring having a pair of spaced inwardly extending projections, means connecting said cylindrical canceling ring and said steering member whereby said cylindrical canceling ring rotates with said steering member, and resilient means mounted on said switch member and engaging said projections on said cylindrical canceling ring for returning said switch member to the inoperative position when said steering member is rotated in the opposite direction of the movement of said manual arm when said switch member is moved from an inoperative to an operative position.



3,271,541
MULTI-POSITION SNAP SWITCH

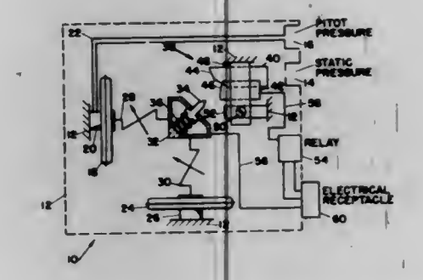
Gianni A. Dotto, Dayton, Ohio, and Wallace Leon Linn, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed June 29, 1964, Ser. No. 378,659
7 Claims. (Cl. 200—67)



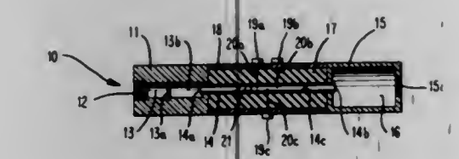
1. A snap action switch means having first, equilibrium and third positions comprising: a mounting means; a means mounted on said mounting means, said means including members extending therefrom; an actuator means having an extremity coupled to said mounting means, said actuator means slidably interfitting with said members and extending therebeyond; a contact carrying blade pivotably coupled to said members; energy storage means connected to said blade and to said actuator means and extending through the plane of said members, said actuator means slidably displaced along said members by a condition thereby causing pivotable displacement of said blade through said energy storage means with a snap action motion until the plane of said blade and the plane of said actuator substantially coincide thereby causing said blade to maintain an equilibrium position, thereafter said blade is displaced with said actuator until a predetermined displacement is attained by said actuator, thereafter said blade is snapped into said third position.

3,271,542
MAXIMUM SAFE SPEED INDICATING SWITCH WITH CONTACT SHAPED AS THE SPEED CURVE
Richard W. Hradek, Davenport, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,402
9 Claims. (Cl. 200—81.5)



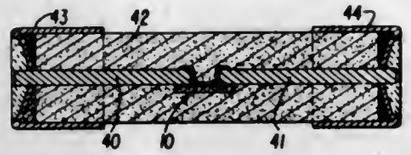
1. An instrument for activation at a predetermined maximum speed of its speed schedule comprising an instrument housing, static pressure responsive means mounted within said housing for producing movement with pressure variations incident to changes in ambient pressure, differential pressure responsive means mounted within said housing for producing movement with pressure variations incident to changes in total pressure and static pressure, a movable contact, first and second mechanical linkage couplings connecting said movable contact with said static pressure responsive means and said differential pressure responsive means respectively, a second contact disposed in the path of said movable contact for engagement therewith when a predetermined maximum speed of said speed schedule is reached, said second contact comprising electrical contact means having its electrical contact surface defining said speed schedule.

3,271,543
PRESSURE RESPONSIVE SWITCH WITH LIQUID CONTACT MEANS
Arnold Schonfeld, Levittown, and John C. Schulte, Maple Glen, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 17, 1964, Ser. No. 383,398
6 Claims. (Cl. 200—81.6)



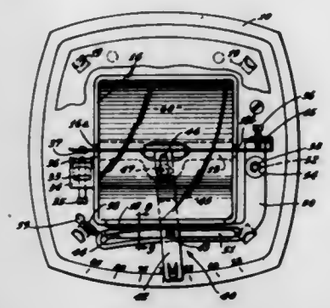
1. Apparatus comprising an open-ended capillary tube; at least two spaced electrical contacts within the bore of said capillary tube; a free segment of conductive liquid enclosed within the bore of said capillary tube and intermediate the ends thereof; means defining a first closed chamber communicating with one open-end of said capillary tube, said first chamber including a first diaphragm portion having an outer face thereof adapted to communicate with the ambient atmosphere; means defining a second closed chamber communicating with the other open-end of said capillary tube, said second closed chamber including a second diaphragm portion having an outer face; and means communicating with said second diaphragm outer face for monitoring gas pressure.

3,271,544
PRECISION ELECTRICAL FUSE
Randall C. Ragan, Tarzana, Calif., assignor to Electra Manufacturing Company, Independence, Kans., a corporation of Missouri
Filed Apr. 14, 1964, Ser. No. 359,569
5 Claims. (Cl. 200—135)



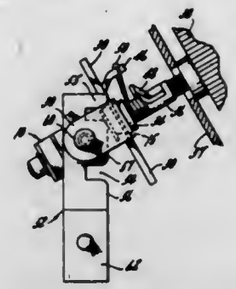
1. A precision electrical fuse for protecting an electric circuit, said fuse comprising the combination of an electrically insulating substrate which has a low thermal conductivity and is resistant to high temperatures, a pair of spaced apart electrically conductive fuse electrodes deposited on the surface of said substrate in intimate contact therewith, a composite metal-glass fuse element extending between said electrodes and including a thin layer of electrically conductive fuse metal selected from the group consisting of gold and platinum on the surface of said substrate, said metal layer extending between and electrically connecting said electrodes, said fuse metal being adapted to blow when the electrical current therethrough exceeds a predetermined level, and a layer of electrically insulating glass having a melting point below that of said substrate bonded to said substrate on opposite sides of said fuse metal and covering said fuse metal in intimate contact therewith for quenching and absorbing the fuse metal as it is blown whereby any arcs which tend to develop between the fuse electrodes are effectively suppressed, said substrate and said fuse element being adapted to maintain an electrical connection between said electrodes until the current through said metal layer increases sufficiently to vaporize the same.

3,271,545
RADIATION AND CONVECTION RESPONSIVE THERMOSTAT
Earle W. Ballentine, 27 Packet Road, Portuguese Bend, Calif.
Filed Jan. 23, 1964, Ser. No. 339,759
16 Claims. (Cl. 200—138)



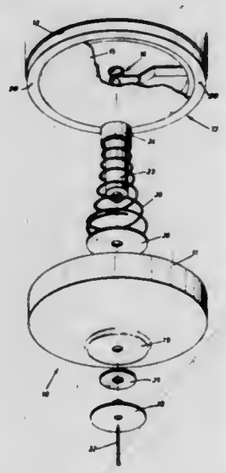
1. A temperature-responsive control device comprising:
a flat element having a thermoradiation-emitting coating and being capable of changing its configuration when subjected to a variable flow of conductive heat transfer;
lever means for pivotally mounting said flat element, there being a curved slot in said lever means;
a pivotally mounted handle having a pin extending into said slot for guidance therein and for pivoting said lever means upon pivoting of said handle; and
optical means positioned to focus incoming radiation onto said flat element and the coating thereon.

3,271,546
PENDULUM ACTUATED TILT RESPONSIVE ELECTRIC SWITCH
Amos E. Chesnut, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Mar. 16, 1964, Ser. No. 352,226
9 Claims. (Cl. 200—138)



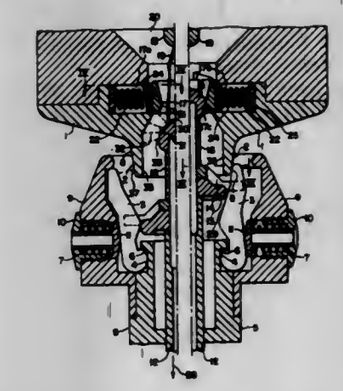
1. An electric switch, comprising a base, first and second blades fixedly mounted at one of their ends on said base and respectively having first and second contacts adjacent their opposite ends, a bimetallic blade mounted on said base and engageable with one of said first and second blades to vary the position of said contacts with respect to each other, a rigid generally L-shaped arm mounted on said base, a screw adjustably mounted on said arm and engageable with one of said first and second blades to vary the position of said contacts relative to each other, and a pendulum having a first portion of electrically insulating material swingably connected to said arm, and a weighted second portion, said pendulum being gravity actuated and said switch being mounted in an attitude wherein said pendulum will hang vertically with said first portion out of engagement with said first and second blades, said first portion being engageable with one of said first and second blades upon tipping of the switch in either direction in a plane generally parallel to the plane of said first portion to cause said first portion to move one of said first and second blades relative to the other to move said contacts into spaced relation to each other.

3,271,547
FIRE DETECTOR DEVICE
Peter L. Seeley, Don Mills, Ontario, Canada, assignor to Fire Devices Manufacturing Limited, Willowdale, Ontario, Canada
Filed June 14, 1965, Ser. No. 469,036
12 Claims. (Cl. 200—142)



1. A fire detector device comprising a head, circuit closing means thereon, a flexible diaphragm supported by said head movable towards said circuit closing means, a shell having an opening and held onto said head, a thin wall tubular member disposed in said opening and turned out at its lower end for a predetermined distance to define a heat collector plate, means securing said tubular member within said opening, means insulating said heat collector plate from the exterior of said shell, a releasable detent member mounted in said shell and adapted on release to move said diaphragm towards said circuit closing means and fusible means in heat conducting relationship sealing said tubular member and holding said detent in inoperative position.

3,271,548
CONTACT CONSTRUCTIONS FOR CIRCUIT INTERRUPTERS
Fritz Kesselring, Kusnacht, Zurich, Switzerland, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 16, 1964, Ser. No. 396,905
Claims priority, application Germany, Oct. 11, 1963, S 87,834
8 Claims. (Cl. 200—148)

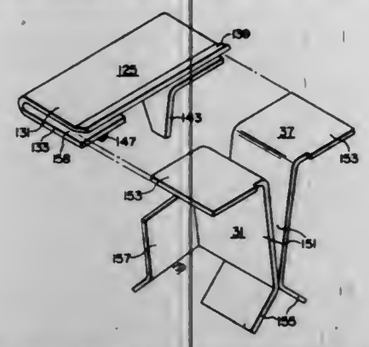


1. Separable contact structure for a circuit interrupter including means defining a conducting nozzle portion having an outlet portion and a tubular depending main contact portion on the upstream side thereof, a plurality of circumferentially-disposed pivotally-mounted contact fingers making main contacting engagement with the external portion of said depending contact portion, a movable arcing contact having a cam actuator for engaging the main contact fingers and effecting opening operation thereof, means providing a relatively stationary arcing contact structure within said nozzle portion, means separating the movable arcing contact from the stationary arcing contact following separation of the main contact fingers from the external sides of the depending main contact portion, whereby restriking of the extinguished arc will take place at a location remote from the main contacting area.

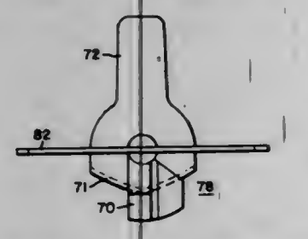
3,271,549
CIRCUIT BREAKER WITH IMPROVED TERMINAL MEANS
Francis L. Gelzheiser, Fairfield, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 30, 1963, Ser. No. 334,089
12 Claims. (Cl. 200—170)

1. In combination, two adjacent insulating compartments, a circuit-breaker mechanism supported in each of said compartments, each of said mechanisms comprising a stationary contact and a movable contact cooperable with the stationary contact to open and close an electric circuit, said mechanisms being independently operable, a separate externally accessible load terminal supported at one end of each of said compartments, a separate line terminal disposed at the other end of each of said compartments,

and a separate unitary spring member biasing said separate line terminals toward each other whereby when said separate line terminals are connected to a common conducting stab said separate unitary spring member provides contact pressure between each of said separate line terminals and the common conducting stab.

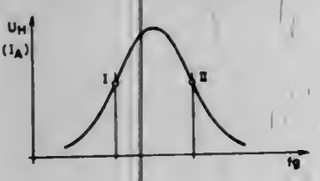


3,271,550
SWITCH DEVICE WITH UNITARY SUPPORT, PIVOT AND ACTUATING STRUCTURE
Roy O. Wiley, Huntington, Conn., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 25, 1964, Ser. No. 377,986
7 Claims. (Cl. 200—172)



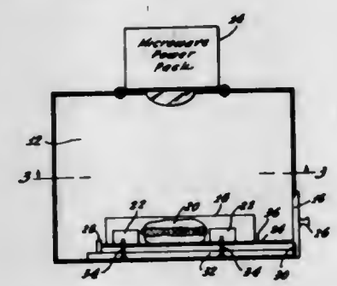
1. A switch device comprising an insulative housing in which circuit making and breaking means are disposed for operation, and an integral actuator unit formed from a single piece of flexible material and having a lever actuator with an actuating portion thereof disposed for operating said circuit making and breaking means, said actuator unit further having a support portion, pivot means integrally interconnecting said support portion with said lever actuator, and means securing said support portion to said housing so as substantially to fix the pivot support points of said lever actuator and thereby substantially eliminate pivot backlash noise.

3,271,551
METHOD FOR CRUCIBLE FREE ZONE MELTING
Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Sept. 8, 1964, Ser. No. 394,834
Claims priority, application Germany, Sept. 6, 1963, S 87,138
1 Claim. (Cl. 219—10.41)



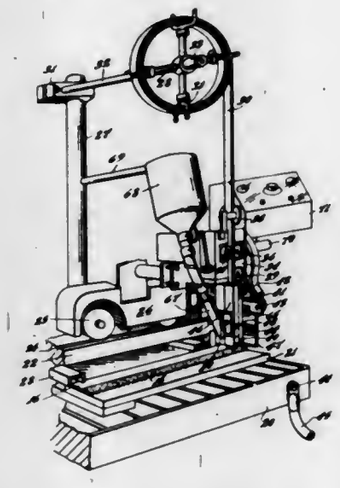
In a method of zone melting a semiconductor rod in which the rod is vertically supported at both ends and a molten zone is formed in the rod by a surrounding inductive heating coil connected in parallel with a capacitor and forming therewith a heating circuit having specific resonance curve characteristics, the heating circuit is energized by current from a high-frequency generator varying in accordance with a change in the diameter of the rod for actuating a regulating device to vary the axial spacing between the rod ends until the current assumes a datum value, and the zone is caused to move lengthwise of the rod, the improvement which comprises operating the high-frequency generator at a frequency in the capacitive leg of the resonant curve of the heating circuit for melting the rod at the zone while moving the zone upwardly along the rod, and operating the high-frequency generator at a frequency in the inductive leg of the resonant curve of the heating circuit for maintaining the zone as an incandescent solid while moving the zone downwardly along the rod.

3,271,552
MICROWAVE HEATING APPARATUS
Edward Z. Krajewski, Belmont, Calif., assignor to Litton Precision Products, Inc., a corporation of Delaware
Filed Feb. 1, 1963, Ser. No. 255,639
5 Claims. (Cl. 219—10.55)



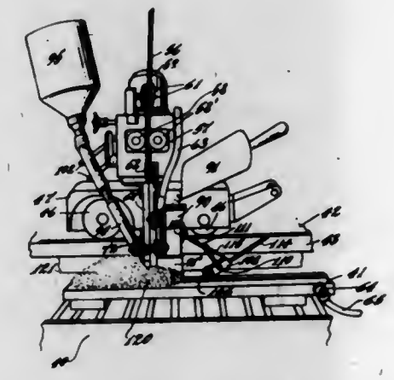
1. In a microwave heating apparatus, a conductively bounded chamber, a plurality of substantially quarter wave length conducting elements mounted in the wall of and extending into said chamber, and means for supporting food to be heated between said elements and spaced from said wall.

3,271,553
OVERLAY WELDING
Wallace C. Johnson, St. Davids, Pa., assignor to Arcos Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 24, 1965, Ser. No. 466,709
4 Claims. (Cl. 219—76)



1. A process of electric arc overlay welding on a base metal which has welded thereto at least one previous overlay weld bead extending along one surface of the base metal, which comprises laying down a layer of metallic particles approximately adjoining the edge of the previous weld bead and against the surface of the base metal, said layer of metallic particles being of uniform height, bringing the end of a strip electrode that is wider than it is thick into arcing proximity to the layer of metallic particles and to the edge of the previous weld bead, said strip electrode overhanging the edge of the previous weld bead and also the layer of metallic particles, maintaining an arc to a weld pool formed by melting the particles, the strip electrode, the edge of the previous weld bead, and the surface of the base metal, and advancing the strip electrode in the general direction of its thickness lengthwise of the layer of metallic particles and the adjoining weld bead.

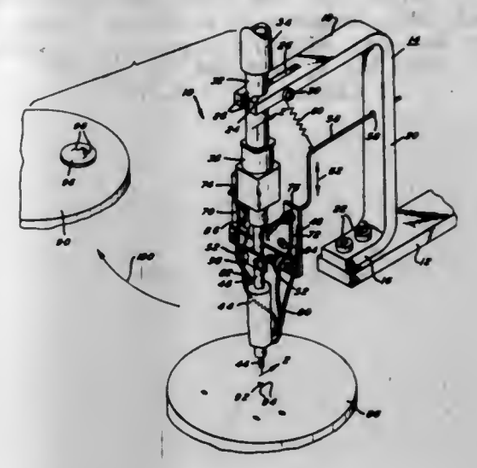
3,271,554
OVERLAY WELDING
Wallace C. Johnson, St. Davids, Pa., assignor to Arcos Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 24, 1965, Ser. No. 466,726
22 Claims. (Cl. 219—76)



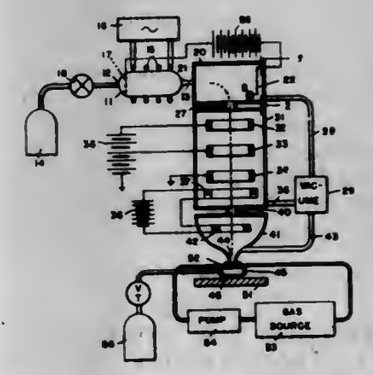
1. A process of overlay welding on a base metal which has welded thereto a previous overlay weld bead extending lengthwise along one surface of the base metal, which comprises laying down a consumable barrier strip adjoining the edge of the previous weld bead and against the surface of the base metal, said barrier strip being wider than it is thick and the thickness of the barrier strip extending transversely to the surface of the base metal, arcing from a strip electrode which is wider than it is thick and which overhangs the barrier strip and overhangs the edge of the previous weld bead, to a weld pool formed by melting all of the barrier strip, all of the strip electrode, the edge of the previous weld bead and the surface of the base metal, and advancing the strip electrode in the direction of its thickness lengthwise of the barrier strip and the adjoining edge of the previous weld bead.

3,271,555
HANDLING AND BONDING APPARATUS
Jack M. Hirshon, Doylestown, Pa., and Philip D. Warner, Melville, N.Y., assignors to International Resistance Company, Philadelphia, Pa.
Filed Mar. 29, 1965, Ser. No. 443,330
8 Claims. (Cl. 219—85)

1. An apparatus for positioning and bonding an electrical component to a supporting plate comprising an elongated, vertical tube, means at the upper end of said tube for connecting the tube to means for drawing air upwardly through said tube, a heater sleeve surrounding said tube and movable longitudinally along said tube, a heater surrounding and secured to said heater sleeve, means supporting the tube and the heater sleeve and adapted to move the tube and the heater sleeve in unison horizontally and vertically, and means independently supporting said heater sleeve on said first supporting means for longitudinal movement along said tube.



3,271,556
ATMOSPHERIC CHARGED PARTICLE BEAM WELDING
William J. Harris, Sunnyvale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 31, 1963, Ser. No. 320,399
8 Claims. (Cl. 219—121)

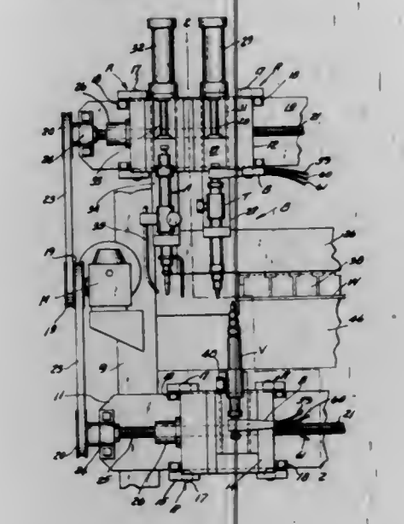


1. In a device for projecting a beam of high-energy positive charged particles including protons;
a plurality of interconnected partially evacuated chambers, said chambers including a first chamber having an input aperture for receiving an incoming flow of gas suitable for ionizing and means for ionizing said gas to produce a flow of plasma;
said partially evacuated chambers further including charged electrode means disposed in the path of said plasma to attract negative charged particles of said plasma thereto and means for extracting the positive charged particles from said plasma, said means including a magnet disposed on the outside portion of a second chamber such that its magnetic field is directed normal to the flow of plasma through the input aperture of said second chamber, said partially evacuated chambers further including means for accelerating the positive charged particles, means for forming said positive charged particles into a highly focused beam and an aperture providing an exit for discharging said beam of high energy particles from said device, said magnet's magnetic field deflecting the positive charged particles out of the flow of plasma and deflected toward said means for accelerating said positive charged particles.

3,271,557
OVER AND UNDER TIG ARC WELDING MACHINES

Robert O. Wight, Bay City, Mich., and Harvey Walsey, Poland, Ohio, assignors to Resistance Welder Corporation, Bay City, Mich., a corporation of Michigan

Filed Jan. 6, 1965, Ser. No. 423,757
1 Claim. (Cl. 219—125)

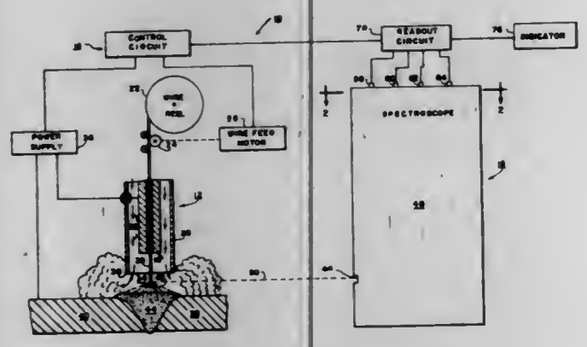


An over and under butt welding machine comprising: a main frame; a work table; vertically spaced top and bottom tracks mounted on said frame; an individual carriage slidably mounted on each track; roller units mounted on each corner of each carriage and having rolling engagement with the side wall and upper edge of the track; an electrode torch mounted on the upper carriage; brackets mounted on the main frame and spring pressure pads pivotally mounted on said brackets for yielding engagement with the "work"; a torch support on the lower carriage; a lower torch adjustably mounted on said support, in advance of the electrode torch, and means for traveling said carriages on said tracks.

3,271,558
SPECTRAL METHOD FOR MONITORING ATMOSPHERIC CONTAMINATION OF INERT-GAS WELDING SHIELDS

Billy K. Davis, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Feb. 19, 1965, Ser. No. 434,143
14 Claims. (Cl. 219—131)



1. The method of monitoring and controlling an arc welding system, comprising the steps of:

(a) positioning the welding means of said welding system above the work piece to be welded;

(b) applying an electrical potential between said welding means and said work piece for establishing a welding arc of such intensity that the foreign materials present within the welding zone are brought to a glowing state;

(c) spectroscopically analyzing said glowing materials as the welding process progresses for the presences of contaminating materials that would adversely affect the quality of the weld bead being formed; and

(d) applying the information derived from said spectroscopic analysis to the control circuit of said welding system for controlling the welding process so that a suitable weld bead is continuously formed.

3,271,559
METHOD OF ARC WELDING

Bernhard W. A. Weber, Scarsdale, N.Y., assignor, by mesne assignments, to Air Reduction Company Incorporated, New York, N.Y., a corporation of New York

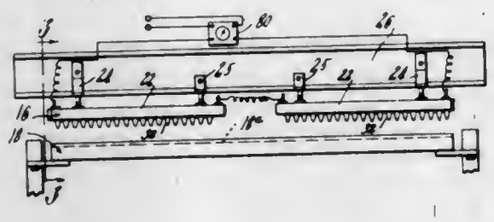
No Drawing. Filed May 9, 1961, Ser. No. 108,713
5 Claims. (Cl. 219—137)

1. The method of welding which comprises juxtaposing a conductive member on which metal is to be deposited and a steel electrode containing 0.01%–1% uranium; melting said electrode at the point of juxtaposition; depositing on said conductive member molten steel containing uranium; and permitting said molten steel containing uranium to coalesce on said conductive member.

3,271,560
DIE

Charles M. Schott, Jr., Gloucester, Mass., assignor, by mesne assignments, to The First National Bank of Boston

Filed Nov. 29, 1963, Ser. No. 326,755
6 Claims. (Cl. 219—243)



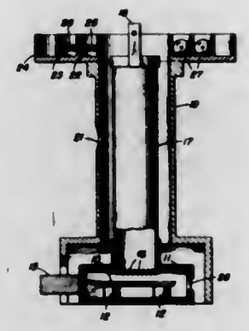
1. A die apparatus comprising first and second die members mounted to be moved together to form spaced-apart holes in plastic film, wherein the first of said die members comprises an elongated support surface terminating at an edge, for supporting the film, and the second die member comprises a thin, elongated, electric resistance means, the means shaped to define a multiplicity of spaced-apart columnar projections directed generally towards said other die member, said projections exposed to engage the film, every projection arranged in electrical series with a multiplicity of other ones, a support means engaging said shaped resistance means at a location spaced from the tips of said projections, reinforcing and positioning said tips in a predetermined free-standing with the face of plastic film arrangement, the opposite ends of said resistance means having electrical connections for passing electric current therethrough, and mounting means adapted to move said second member relative to the first to carry the tips of said projections, when heated, past, and close to the edge of said first member whereby, while said film is supported by said first member, said resistance-heated projections form a corresponding arrangement of holes in said plastic film.

3,271,561
APPARATUS FOR THERMALLY EVAPORATING VARIOUS MATERIALS IN VACUUMS FOR PRODUCING THIN FILMS

Wallace A. Fiedler, Englewood, and Gilbert H. Ross and Robert A. Estock, Denver, Colo., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed Mar. 2, 1964, Ser. No. 348,594
6 Claims. (Cl. 219—271)

1. Apparatus for producing an isothermal vapor from a normally solid coating material comprising:



a hollow chamber formed of an electrically conductive material,

a first set of electrical terminals connected at spaced-apart portions of said chamber for evenly heating all sides of said chamber by the passage of electrical currents therethrough,

a container open at the top for supporting a vaporizable material at the approximate center of said chamber to be heated radiantly from the inner surfaces of said chamber,

an aperture in said chamber over said container, louvered baffle means in electrical contact with said container and covering said aperture to prevent the escape of solid particles therethrough but permitting the passage of vapors therethrough,

a hollow chimney-like extension of electrically conductive material communicating vertically with said aperture in said chamber defining a passage to conduct vaporized substances toward a surface to be coated,

a second set of electrical terminals at opposite extremities of said chimney-like extension for evenly heating all of said extension to the temperature of said chamber by the passage of electrical currents therethrough,

whereby said chamber and said chimney-like extension approximate a perfect black body for the issuance of vaporized substances therefrom.

3,271,562
EVAPORANT SOURCE

Gilbert C. Roberts, Jr., Owego, N.Y., and Giorgio G. Via, Rockville, Md., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 30, 1964, Ser. No. 379,307
8 Claims. (Cl. 219—275)

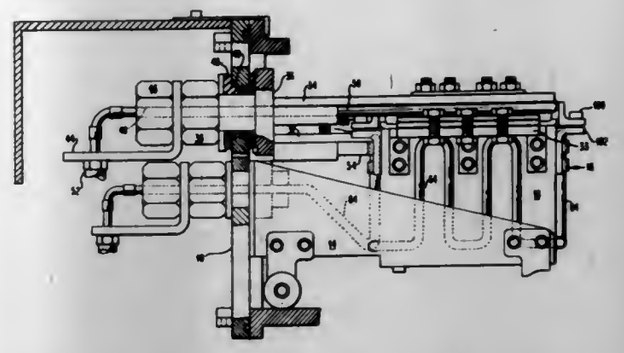
1. In a vacuum deposition apparatus, an evaporant source comprising

an evaporant charge vessel,

said vessel comprising a box structure and an evaporant charge heater mounted by said box structure,

said heater comprising a vertically finned structure of resistance metal formed to provide a plurality of vertically opening pockets,

and means on said heater and on said box structure for maintaining the pocketed configuration of said heater,

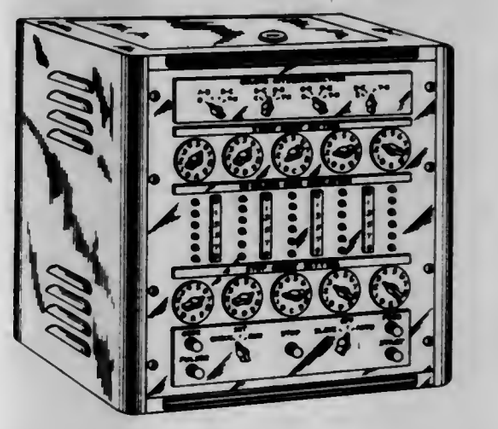


and baffle means disposed to intercept vapors emanating from said vessel.

3,271,563
SEQUENCE COUNTER

Clifford J. Maloney and Douglas H. Walker, Satellite Beach, Fla., assignors to the United States of America as represented by the Secretary of the Army

Filed June 26, 1963, Ser. No. 290,874
4 Claims. (Cl. 235—92)



1. A sequence counter for supplying a sequence of identifying numbers to be impressed on a series of punch cards comprising a series of multiple pole stepping switches in number corresponding to the number of integers in the identifying number, start count switch means for each integer to determine the initial number in the sequential series of numbers, stop count switch means to determine the terminal number in the sequential series of numbers supplied, column interconnecting switch means to enable combining the integers into double and triple integer numbers, switch control means for enabling the counter to be interconnected with and operated with a card punching means, circuit means for interconnecting the several means recited.

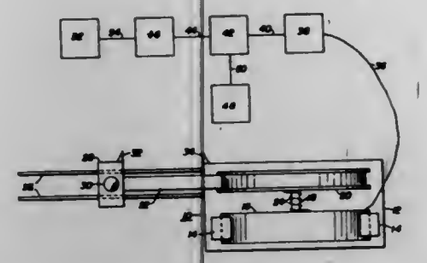
3,271,564
DIGITAL MEASURING APPARATUS

Melvin A. Rosenfeld, Barrington, and Robert G. Moyer, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed June 18, 1962, Ser. No. 203,269
20 Claims. (Cl. 235—151.32)

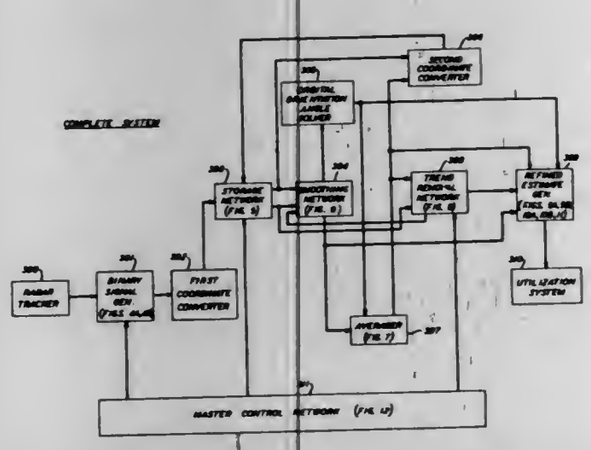
1. A measuring device comprising an elongated flexible member wound on a rotatably mounted carrier and adapted to be extended from said carrier, the extension

of said flexible member from said carrier causing said carrier to rotate, electrical signal-producing means responsive to movement of said flexible member and adapted to produce a plurality of electrical signals as binary



digital quantities, each of said signals being indicative of a discrete distance said flexible member is extended from said carrier, and indicating means electrically connected to said signal-producing means to indicate the output of same.

3,271,565
SYSTEM FOR DETERMINING THE ORBITAL PARAMETERS OF A TERRESTRIAL SATELLITE
Ralph B. Blackman, Cranford, N.J., assignor to Bell Telephone Laboratories, Inc., New York, N.Y., a corporation of New York
Filed Jan. 16, 1962, Ser. No. 166,612
13 Claims. (Cl. 235—152)



2. A system for rapidly determining from a large number of position measurements at different observation times the orbital parameters of a terrestrial satellite at a single predetermined reference time which comprises

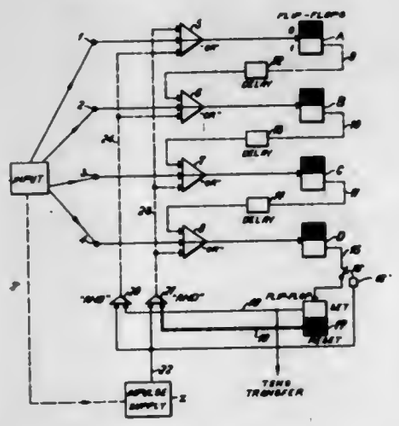
a source of a first plurality of chronological sequences of signals indicative of the observed positions of a terrestrial satellite at various instants of time during a first pass and a second plurality of chronological sequences of signals indicative of the observed positions of said satellite at various instants of time during a second pass,

means supplied with said first and second pluralities of sequences of observed position signals for obtaining first and second sets of orbital parameter signals closely approximating the orbital parameters of said satellite at first and second reference times during said first and second passes, respectively,

means responsive to said first and second pluralities of sequences of observed position signals and said first and second sets of orbital parameter signals for deriving first and second groups of variance and covariance signals respectively representing estimates of the sample-mean variances and sample-mean covariances associated with said first and second sets of orbital parameter signals, respectively, and

means for combining said first and second sets of orbital parameter signals and said first and second groups of variance and covariance signals to obtain a third set of orbital parameter signals and a third group of variance and covariance signals at said second reference time.

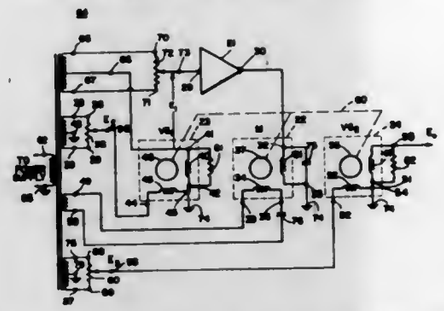
3,271,566
ADDING SYSTEM FOR BINARY CODED EXCESS THREE NUMBERS
Günter Martens, Schliersee, Upper Bavaria, Germany, assignor to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany
Filed Sept. 18, 1962, Ser. No. 224,431
Claims priority, application Germany, Sept. 18, 1961, K 44,737
10 Claims. (Cl. 235—174)



2. An arrangement for parallel adding multi-digit binary coded numbers representing one-digit decimal numbers in terms of an excess-three code comprising, in combination, electronic storage means including a series of flip-flop stages respectively assigned to the binary digit positions of multi-digit numbers according to an excess-three binary code; a plurality of input means respectively associated with said flip-flop stages for applying sequentially in parallel to said flip-flop stages, respectively, electrical input pulses respectively representing binary digits of multi-digit binary numbers respectively representing the decimal numbers to be added, each of said input means comprising an "OR" circuit means having three inputs for receiving input, carry and correction impulses, respectively, and one output connected to the input of the respectively associated flip-flop stage; a plurality of binary carry transmitting means respectively arranged between each of said flip-flop stages and the respective input means of that of the flip-flop stages which is assigned to a binary digit position of respectively next higher significance for applying a transfer representing pulse thereto, and including delay means for delaying for a predetermined time period the carry transmission after such carry appears in the respective one of said flip-flop stages; correction means arranged between a selected flip-flop stage being assigned to the highest binary digit position and said plurality of input means and applying, when actuated to selected ones of said input means electrical correction impulses representing a first predetermined binary correction number when the algebraic sum of said one-digit decimal numbers is less than **10**, and a second predetermined binary correction number when the algebraic sum of said one-digit decimal numbers is at least **10** after two binary numbers have been introduced into said storage means by application of said input pulses; and actuating means for actuating said correction means after two binary numbers have been introduced into said storage means, said actuating

means including switch means for disconnecting said correction means from said selected flip-flop stage when said correction means are actuated.

3,271,567
CONTROL APPARATUS
Daniel J. Sikorra, Champlin, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 11, 1962, Ser. No. 229,791
5 Claims. (Cl. 235—195)



1. A four quadrant analog multiplier-divider device comprising:

an amplifier, having input and output circuits, capable of amplifying an input signal and controlling an electric motor, the input circuit being electrically connected to receive an input E.M.F.;

an electric motor having a main field winding and a control winding, the control winding being connected in electrical circuit to receive control power from the output circuit of said amplifier, the main field winding being connected in electrical circuit to receive fixed phase excitation;

a first tachometer, having an excitation winding and an output winding, mechanically connected to said electric motor so as to rotate at the same speed, the output winding of said first tachometer being connected in electrical circuit to the input circuit of said amplifier so as to provide a negative feedback signal, the excitation winding of said first tachometer being connected in electrical circuit with a first variable control signal; and

a second tachometer, having an excitation winding and an output winding, mechanically connected to said electric motor so as to rotate at the same speed, the excitation winding of said second tachometer being connected in electrical circuit to receive a second variable control signal.

3,271,568
MURAL APPARATUS
George W. Lundberg, Browning Pond Road, Spencer, Mass.
Filed Aug. 29, 1963, Ser. No. 305,467
1 Claim. (Cl. 240—10)

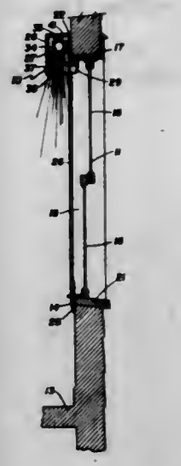
Mural apparatus for use with a window, comprising

(a) a sheet of flexible translucent material adapted to be mounted over the window and to extend substantially over its entire area, the sheet carrying a picture on its surface,

(b) an elongated fluorescent lamp extending along the upper edge of the window,

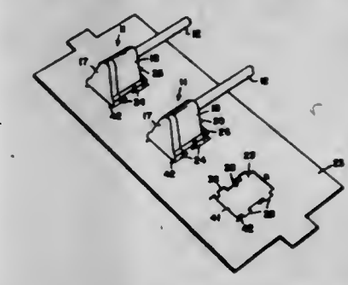
(c) an enclosure for the lamp mounted along the said upper edge of the window and serving to direct the light downwardly in the direction of the surface of the sheet while serving to prevent substantial passage of light in other directions, the enclosure being of an elongated box-like form with a front wall extending parallel to the surface of the sheet and extending above and below the level of the light source by substantial distances, the enclosure being open in a downward direction,

(d) a spring-loaded roller mounted along the said upper edge of the window on which the sheet is mounted, and



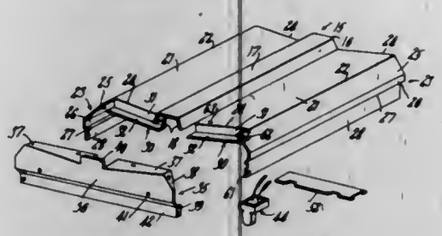
(e) a hook located at the bottom edge of the window and an eye located at the bottom edge of the sheet to hold the sheet tightly across the window.

3,271,569
FLUORESCENT LAMPHOLDER
Richard Eisenhardt, Cheltenham, Pa., assignor to H. H. Fluorescent Parts, Inc., Cheltenham, Pa., a corporation of Pennsylvania
Filed May 4, 1964, Ser. No. 364,394
5 Claims. (Cl. 240—51.11)



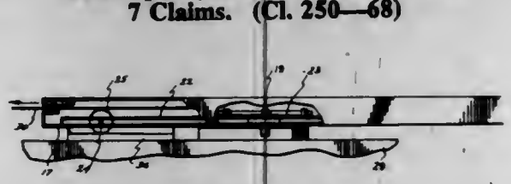
1. A fluorescent lampholder comprising a housing made of insulating material and having a base portion and an upright portion, the upright portion having front, rear and side walls forming a recess with an opening in the front wall providing access thereto for a lamp base, said side walls being tapered inwardly from bottom to head for easy insertion of said upright portion head first into a closed slot of a socket plate, a pair of spaced apart support shoulders projecting from each of the side walls, said base portion of the housing having a ledge extending outwardly from each side wall of the upright portion and said support shoulders being spaced away from said ledges to form a pair of support slots on each side of said housing which are adapted to receive and hold side edges of a closed slot of a socket plate, said support shoulders having a bottom surface parallel to the top surface of said ledges so that, after the lampholder is mounted in the socket plate, said support shoulders and ledges prevent movement of the lampholder through the socket-plate slot in the direction perpendicular to the plane of the socket plate, whereby the lampholder may be inserted head first into a closed slot of a socket plate and the support shoulders passed through shoulder openings therein, and then the lampholder may be moved rearwardly so that its support slots receive and hold the side edges of the closed slot of the socket plate, with the porch of the lampholder covering the portion of said closed slot which is forward of the lampholder upright portion, thereby preventing an unsightly gap.

3,271,570
LIGHT FIXTURE ASSEMBLY
Michael Henry Kruger, Chestnut Hill, Mass., assignor to Smithcraft Corporation, Chelsea, Mass., a corporation of Massachusetts
Filed Nov. 29, 1963, Ser. No. 326,987
8 Claims. (Cl. 240—51.11)



1. A lighting fixture assembly adapted to suspend elongated fluorescent lamps in lamp holders having socket-bearing portions, comprising a main fixture with secondary lamp-holder locating and supporting channels extending along the opposite ends of said housing transverse to the direction of extension of said lamps, each said channel having a pair of transversely extending opposing walls, and primary lamp holder locating and supporting elongated spacer strips sized to slide transversely into said channels, said spacer strips being removably located and supported by said channels between said walls and having openings for receiving and in turn locating and supporting said lamp holders.

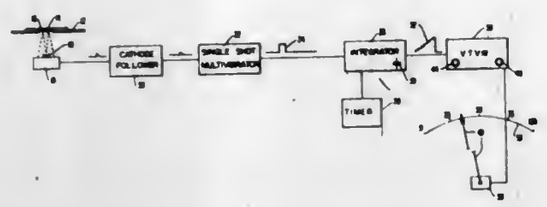
3,271,571
X-RAY FILM CASSETTE WITH FILM FEEDING MEANS
Stanley J. Klem, Jr., and Heinz F. Nitka, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,166
7 Claims. (Cl. 250—68)



1. A cassette for photographic film, comprising a shallow tray structure accommodating a sheet of film, a cover hinged thereto which when closed, exerts pressure on said film and forms a light-tight enclosure, latching means for locking said cover upon closure and means, supported by said cassette, frictionally engaging said film to advance the same partially out of said cassette upon release of said latching means.

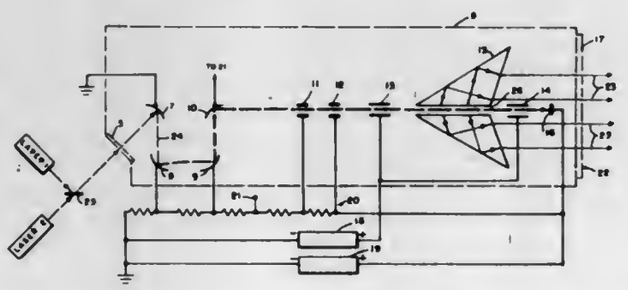
3,271,572
DIRECT READING BETA RAY COMPARATOR
Sidney U. Lieber, Bayside, and Jerome Leiner, Brooklyn, N.Y., assignors to Unit Process Assemblies, Inc., Woodside, N.Y., a corporation of New York
Filed Aug. 24, 1962, Ser. No. 219,322
6 Claims. (Cl. 250—83.3)

1. In a beta backscatter instrument for measuring the thickness of thin coatings on a basal substrate wherein a beta ray detector element emits discrete pulses each representative of randomly received backscattered radiation, means for converting said emitted pulses into a potential whose magnitude is proportional to the summation of the number thereof, indicating means including a removably mountable dial plate member selectively scaled in accordance with the backscatter count characteristics of the composite coating and basal substrate materials being subjected to measurement and a member arcuately displaceable relative thereto in accordance with the magnitude of said potential and means for varying the response band of said arcuately displaceable member to permit selective prealignment of the threshold response characteristic and a predetermined operational response characteristic there-



of relative to said selectively scaled dial independent of said potential for providing direct visual indicia of the magnitude of said potential within a predetermined range of values thereof.

3,271,573
GENERATION OF COHERENT MILLIMETER AND SUB-MILLIMETER WAVELENGTH RADIATION
Emerson L. Frost, Manasquan, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 17, 1963, Ser. No. 309,582
12 Claims. (Cl. 250—84)

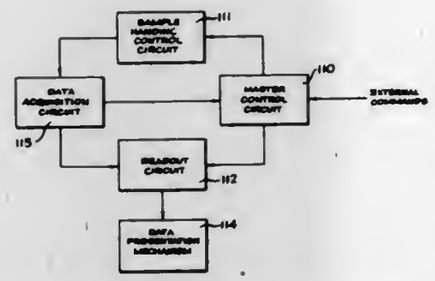


1. A generator of electromagnetic energy at frequencies intermediate the microwave and infra-red regions of the spectrum comprising, an electron beam tube, said tube including a photoemissive cathode, means to simultaneously illuminate said cathode with a plurality of coherent light beams, the frequency of said light beams being separated in steps of the desired output frequency, means to multiply the current of the bunched electron beam emitted by said cathode, means to pass said electron beam through a Cerenkov radiator, means to accelerate said electron beam to a velocity greater than the phase velocity of light in said Cerenkov radiator, said Cerenkov radiator being shaped to unidirectionally collimate the radiation generated therein.

3,271,574
DATA HANDLING AND CONTROL CIRCUIT FOR LIQUID SCINTILLATION SPECTROMETERS
John W. Dawson, Clarendon Hills, and Michael J. Long, Chicago, Ill., assignors to Vanguard Instrument Corporation, Berwyn, Ill., a corporation of Illinois
Filed Apr. 16, 1963, Ser. No. 273,499
2 Claims. (Cl. 250—106)

1. A data handling and control circuit for apparatus for automatically measuring the radioactivity of a series of samples including a sample detection chamber wherein radioactive samples are successively positioned by suitable sample handling devices and wherein detecting operations are effected by means for detecting radioactive decay events which take place in and characterize the samples and for producing output signals corresponding

to said decay events; which control circuit comprises a synchronizing circuit including circuit means conditioned by external commands for producing output signals in a preestablished sequence; a motor control circuit connected electrically to said synchronizing circuit for selectively and sequentially actuating the sample handling devices in response to output signals from said synchronizing circuit so that samples are successively introduced to the detection chamber, maintained therein during a detecting operation and removed therefrom upon the termination of a detecting operation; said synchronizing circuit supplying an output signal to said detecting means to initiate the detection of radioactive decay events thereby in response to the positioning of a sample in the detection chamber; data storage circuitry electrically connected to the output of said detecting means for storing the output signals produced thereby; first circuit means electrically connected to said data storage circuitry for establishing a normal duration for detecting operations to be performed, said first circuit means including means responsive to the termination of a complete detecting operation for producing an output signal corresponding thereto,



said responsive means being electrically connected to said synchronizing circuit so that said output signal is supplied thereto; a second circuit means electrically connected to said synchronizing circuit and said data storage circuitry, said output signal from said responsive means causing an output signal to be produced by said synchronizing circuit that is supplied to said second circuit means to effect the readout of stored information upon the termination of a complete detecting operation; and a reject circuit electrically connected between said data storage circuit and said synchronizing circuit, said reject circuit including timing means and responding to signals from said data storage circuit to produce an output signal when the signals from said data storage at a predetermined elapsed time correspond to the detection of less than a predetermined number of events, said output signal being supplied to said synchronizing circuit, said synchronizing circuit thereupon effecting the premature termination of the detecting operation.

3,271,575
CATOPTRIC RADIOMETRIC DETECTOR
Gerald Falbel, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,817
2 Claims. (Cl. 250—216)

1. An instrument for detecting optical radiation from targets comprising in combination and in optical alignment,

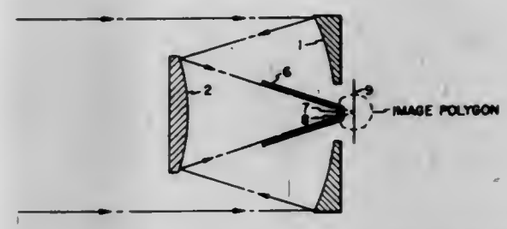
(a) optical imaging means positioned to produce a real image of the targets substantially in the focal plane of the imaging means,

(b) a truncated cone in the optical path between the optical imaging means and the focal plane, the inner surface of said cone being reflective at the wavelength of the radiation to be detected,

(c) a radiation detecting element mounted at the truncated end of the cone,

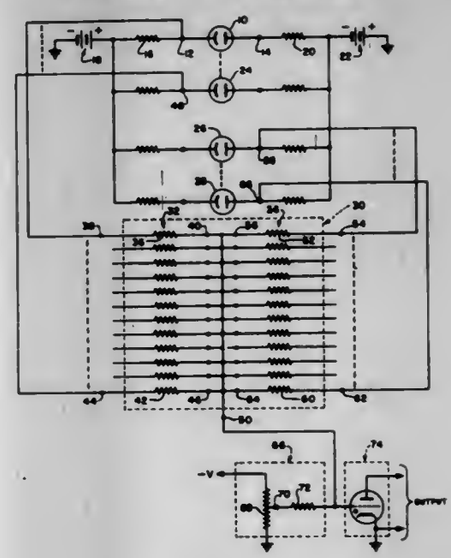
(d) the cone angle and cone location being such that the cone apex, if the cone had not been truncated, would be located in the focal plane, and

(e) the truncation being chosen so that the diameter of a circle circumscribed about an image polygon centered at the point in the focal plane where the



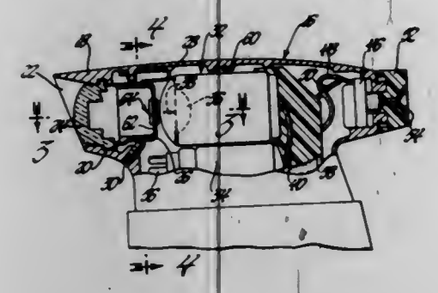
cone apex would have been located if the cone had not been truncated, the sides of the image polygon being equal to the width of the cone truncation, the diameter of said circumscribed circle being large as compared to the length of a polygon side but not more than about fifteen times as large, the diameter of said circumscribed circle, therefore, constituting the field stop for the optical system.

3,271,576
PHOTOELECTRIC MATRIX NETWORK
Frank T. Turner, Hampton Bays, N.Y., assignor to The Western Union Telegraph Company, New York, N.Y.
Filed Jan. 29, 1963, Ser. No. 254,785
3 Claims. (Cl. 250—206)



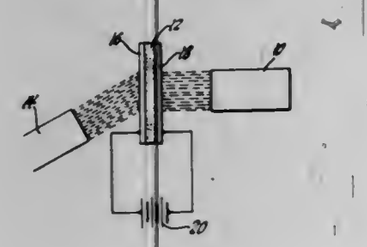
1. A network comprising a plurality of light sensitive means each having an impedance which varies substantially linearly with changes in light intensities arranged to form a matrix each having a first terminal and a second terminal, a source of positive potential coupled to the first terminal of each light sensitive means, a source of negative potential coupled to the second terminal of each light sensitive means, a first impedance interposed between said source of positive potential and the first terminal of each light sensitive means, a second impedance interposed between said source of negative potential and the second terminal of each light sensitive means, a first group of resistors coupled to predetermined first terminals, a second group of resistors coupled to predetermined second terminals, output means fed by said first and second groups of resistors, and bias means coupled to said output means.

3,271,577
LIGHT COLLECTOR FOR PHOTOSENSITIVE ELEMENTS
Charles W. Miller, Anderson, and William E. Griner, Pendletop, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 20, 1963, Ser. No. 289,246
4 Claims. (Cl. 250—239)



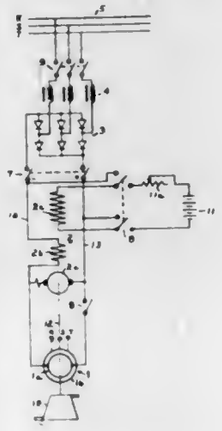
1. A light-gathering device for a photosensitive element mounted in a vehicle, said device comprising a housing enclosing said photosensitive element and having an opening therein, a light-condensing lens in said opening, a shield supported in said housing between said lens and said photosensitive element and having an irregular-shaped aperture therein located at the focal plane of said lens, said aperture limiting the light falling on said photosensitive element to that approaching said opening from within predetermined vertical and horizontal angles, a filter element mounted in said shield to reduce the amount of light falling on said photosensitive element which approaches said opening from a horizontal angle of greater than one degree to the right of the centerline of the vehicle.

3,271,578
RADIATION MODULATOR
Robert R. Bockemuehl, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,465
7 Claims. (Cl. 250—213)



1. Apparatus for modulating electromagnetic energy including: a semiconductor element having an absorption edge wavelength, the element being thin along at least one dimension to be relatively transparent to energy directed along said one dimension and which energy is of a wavelength longer than the absorption edge wavelength; a first source of electromagnetic energy having a predetermined wavelength longer than the absorption edge wavelength and disposed to direct radiation onto the semiconductor element substantially along the one dimension; biasing means to produce a depletion layer in the semiconductor element transverse to the direction of the output from the first source and having therein a high space charge density thereby to effectively shift the absorption edge wavelength to a wavelength longer than said predetermined wavelength; and a second source of electromagnetic energy of a wavelength substantially longer than said predetermined wavelength and positioned to direct the output thereof into the depletion layer thereby to shift the effective absorption edge wavelength toward a wavelength shorter than the predetermined wavelength.

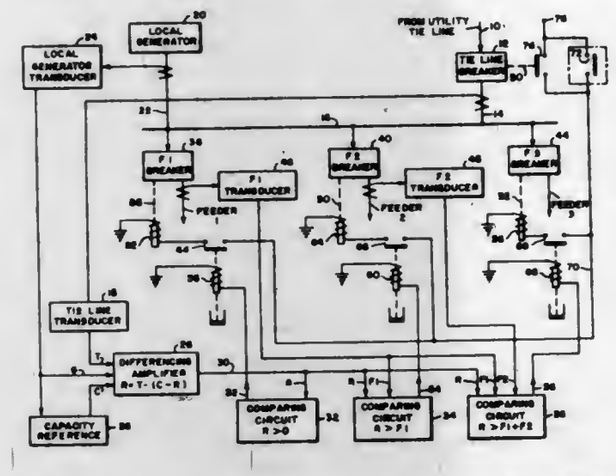
3,271,579
STARTING A GAS TURBINE BY USING AN EXCITER DYNAMO AS THE STARTING MOTOR
Oskar Erismann, Baden, Switzerland, assignor to Aktiengeselischaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Oct. 8, 1963, Ser. No. 314,801
Claims priority, application Switzerland, Nov. 14, 1962, 13,332/62
5 Claims. (Cl. 290—32)



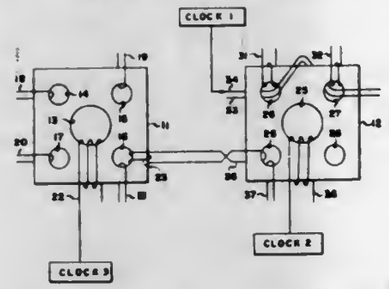
1. An arrangement for starting up a power group comprising a prime mover such as a gas turbine coupled to a synchronous generator for driving the rotor element thereof and an exciter generator for supplying field current to the rotor of said synchronous generator, the rotor of said exciter generator being also coupled to said gas turbine, the improvement wherein a rectifier system is supplied from an alternating current source, there being a variable impedance choke in the circuit connections between said rectifier system and its alternating current supply source and wherein for starting purposes the direct current output from said rectifier system is supplied to the rotor of said exciter generator in series with an auxiliary field winding thereof whereby to cause it to operate temporarily as a series motor, there being a switch provided between the rotor of said exciter generator and the rotor of said synchronous machine for disconnection during the start-up and a second switch between the direct current output side of said rectifier system and the rotor of said exciter generator which is closed only during the start-up.

3,271,580
LOAD SHEDDING APPARATUS
Jack R. Pope, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 15, 1963, Ser. No. 302,414
6 Claims. (Cl. 307—29)

1. In load shedding apparatus for use in a local system receiving energy from a plurality of generating sources and operative to drop circuits from the local system in case of interruption of at least one of the generating sources, the combination of: transducer means for providing supply signals indicative of the power being supplied to the local system; reference means for providing reference signals indicative of the local power supplying capacity; differencing means for receiving said supply and reference signals and providing shedding signals indicative of the amount of load required to be shed in case of interruption of at least one of the generating sources; means for providing load signals indicative of the load being carried by each of a plurality of circuits designated preferentially in the order to be shed in case of interruption of at least one of the generating sources; comparison means to compare said shedding signals with one of said load signals plus the sum of the circuit signals from circuit means of higher preference to be shed in case of interruption of at least one of the generating sources and being operative to provide preset signals; preset means to provide an indication of which circuits are to be shed in case of interruption of at least one of the generating sources in response to said preset signals; and interruption means to drop the indicated circuits from the local system when interruption of at least one of the generating sources occurs.

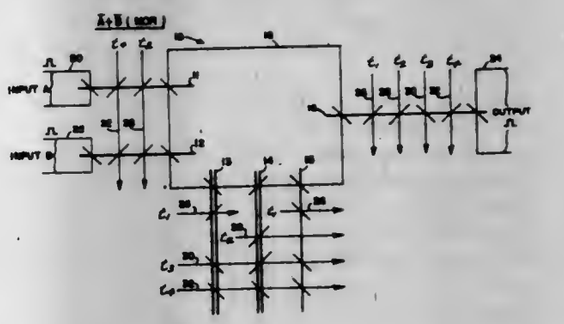


3,271,581
MAGNETIC NOR DEVICE
Paul T. Harper, Los Altos, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 15, 1961, Ser. No. 110,058
3 Claims. (Cl. 307—88)



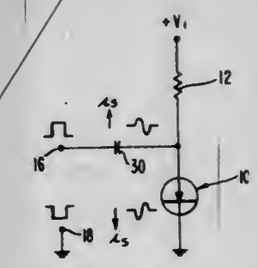
1. A device comprising a first magnetic element having a first minor aperture, a second minor aperture and a major aperture, a second magnetic element having a first minor aperture, a second minor aperture and a major aperture, first, second, and third clock devices for continuously providing first, second and third current pulses at consecutive periods of time, respectively, from said first, second and third clock devices, means for coupling said first pulses from said first device with said second minor aperture of said second element, means for coupling said second pulses from said second device with said major aperture of said second element, means for coupling said third pulses from said third device with said major aperture of said first element, biasing winding means for coupling a direct current source with said second minor aperture of said first element, biasing winding means for coupling a direct current source with said second minor aperture of said second element, means for coupling said second minor aperture of said first element with said first minor aperture of said second element, input means coupling said first minor aperture of said first element for receiving a current pulse and output means coupling said second minor aperture of said second element for providing an output current pulse.

3,271,582
MAGNETIC CORE LOGIC CIRCUITS
Saul B. Yochelson, Northridge, Calif., assignor to Goodyear Aircraft Corporation, Akron, Ohio, a corporation of Delaware
Filed Apr. 10, 1962, Ser. No. 186,527
8 Claims. (Cl. 307—88)



4. A magnetic core circuit capable of performing the logical $\overline{A}+B$ function comprising
an input A and an input B coupling magnetic cores having two stable magnetic states,
said input cores having substantially the same physical dimensions,
an output coupling magnetic core having two stable magnetic states,
first, second and third load cores each having two stable magnetic states,
said second load core being substantially twice the physical size of the input A coupling core,
conductor means connecting the individual cores to each other in a loop,
the polarity of the conductor means windings on the cores being such that the circuit performs the logical $\overline{A}+B$ function, and
means coupled to all the cores to selectively hold and reset the flux patterns of the cores in a four phase time cycle to control the directivity of information flow.

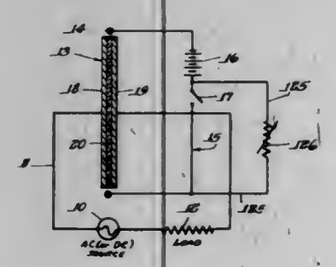
3,271,583
COMPLEMENTING FLIP-FLOP
Robert H. Okada, Hillsborough, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 1, 1961, Ser. No. 156,290
1 Claim. (Cl. 307—88.5)



A complementing flip-flop comprising
(a) a tunnel diode comprising an anode and a cathode element,

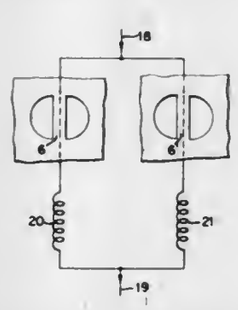
(b) a resistor in series with one of said elements of said tunnel diode,
(c) a bias voltage source and a reference voltage point,
(d) said resistor and tunnel diode being connected between said bias voltage source and said reference voltage point such that the tunnel diode is forwardly biased,
(e) said resistor being of impedance load value such that the tunnel diode may be operated at a first high current and a second low current stable state,
(f) inductor means comprising the lead and tunnel diode natural inductance alone,
(g) a source of input pulses of predetermined magnitude and duration,
(h) means to couple said input pulses to the junction between said resistor and said tunnel diode, said last-named coupling means comprising a differentiating capacitor of value such that bidirectional pulse doublets occur at the junction between the resistor and the tunnel diode,
(i) said source pulses being of magnitude and duration to provide said differentiated bidirectional pulse doublets at said junction of magnitude of excursions and duration and said inductor means and said resistor being selected of inductance and resistance value such as to provide a time constant which is large compared to the duration of one of said pulse doublets such that one of said pulse doublets appearing at said junction causes switching of said tunnel diode from the stable state at which it is then operating until the occurrence of said one of said doublets to the other said stable state and such that said tunnel diode is caused to remain in said other stable state until another pulse doublet is coupled to said junction and such that said another pulse doublet appearing at said junction causes switching back to and remaining in said then operating stable state until still another pulse doublet is coupled to said junction,
(j) the parameters of said tunnel diode resistor and inductance being such that said complementing flip-flop is responsive to pulse doublets wherein selectively and at random a positive excursion or a negative excursion may be the first excursion of each pulse doublet of succeeding pulse doublets.

3,271,584
RESISTANCE SWITCHES AND THE LIKE
Stanford R. Ovshinsky, Detroit, Mich., assignor, by mesne assignments, to Energy Conversion Devices, Inc., Troy, Mich., a corporation of Delaware
Filed May 28, 1962, Ser. No. 198,348
The portion of the term of the patent subsequent to Aug. 17, 1982, has been disclaimed
11 Claims. (Cl. 307—88.5)



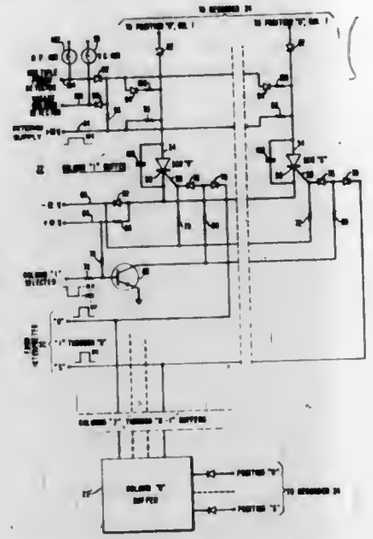
2. A relay switch device for an electrical load circuit, comprising spaced apart metallic electrodes, a solid state composition containing a mixture of at least one lithium compound and a self supporting solid diluent having a melting point higher than said at least one lithium compound and being interposed between and in electrical contact with the electrodes, means connected to said electrodes for connecting said solid state composition in series with the electrical load circuit for controlling the current flow therethrough in accordance with the resistance value of said composition, said solid state composition being in a condition of high resistance to "open" the electrical load circuit when said at least one lithium compound is in a solid condition and being in a condition of low resistance sufficient to "close" the electrical load circuit when said at least one lithium compound is in a molten condition, said self-supporting solid diluent of said composition serving to maintain said at least one molten lithium compound in place at all times in said solid state composition, and means including an electrical control circuit for changing the temperature of said solid state composition to transform it from its said one condition of high electrical resistance to its said other condition of low electrical resistance for selectively "switching" the electrical load circuit from "opened" to "closed" circuit conditions.

3,271,585
SUPERCONDUCTIVE DEVICES
James W. Crowe, Red Hook, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Application Oct. 26, 1959, Ser. No. 848,870, now Patent No. 3,100,267, dated Aug. 6, 1963, which is a continuation of application Ser. No. 680,456, Aug. 27, 1957. Divided and this application Dec. 3, 1962, Ser. No. 250,972
2 Claims. (Cl. 307—88.5)



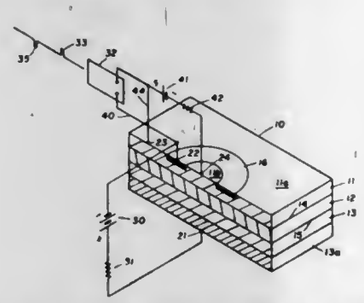
1. A superconductor circuit comprising:
first and second superconductor paths extending in a parallel circuit relationship between first and second terminals;
first and second current supply leads respectively connected to said first and second terminals supplying current to said superconductor paths;
first means for introducing resistance into at least a portion of said first path for a time sufficient to cause the current from said supply leads to flow in said second path and thereafter allow said first path to become superconductive;
said current flowing in said second path being ineffective to introduce resistance into said first path and said first and second paths remaining entirely superconductive with said current flowing in said second path.
second means for thereafter introducing resistance into at least a portion of said second path for a time sufficient to cause the current flowing in said second path to be switched to said first path and thereafter allow said portion of said second path to become superconductive;
said current then flowing in said first path being ineffective to introduce resistance into said second path and said first and second paths remaining entirely superconductive with said current flowing in said first path.

3,271,586
CHARACTER RECOGNITION CONVERTER
Virgil A. Hinds, Farmers Branch, Tex., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 7, 1962, Ser. No. 221,991
8 Claims. (Cl. 307—88.5)



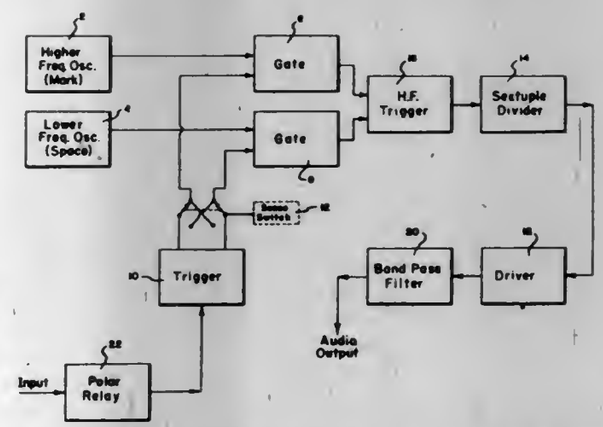
1. A column buffer storage means comprising a plurality of parallel connected silicon controlled rectifiers, means for supplying an interim supply voltage to the anodes of all of said rectifiers, means to apply biasing potentials to the gates and to the cathodes of said rectifiers wherein said cathodes are more positive with respect to the gate potentials but negative with respect to the interim supply voltage on the anodes, a first circuit and a second circuit coupled to the gate of each of said rectifiers and in parallel with said biasing potentials, means included in said first circuit establishing a current path through said rectifier to turn it on when said second circuit is at a first predetermined potential and diverting and maintaining the current path through said second circuit when said second circuit is at a second predetermined potential.

3,271,587
FOUR-TERMINAL SEMICONDUCTOR SWITCH CIRCUIT
Max P. Schreiner, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Nov. 13, 1962, Ser. No. 236,842
12 Claims. (Cl. 307—88.5)



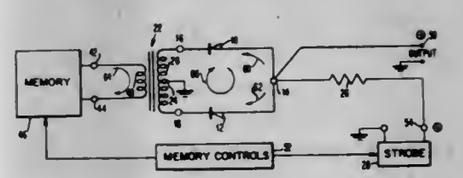
1. A semiconductor switching circuit which comprises:
(a) a four-layer negative resistance device having an anode, cathode and multiple base control terminals, and normally capable of being turned off only by a control pulse of magnitude substantially exceeding the magnitude of a turn-on pulse,
(b) a current source and a load connected in series with the anode and cathode terminals of said device,
(c) means connected between said cathode and one of said base control terminals to apply a bias function to modify the switching character of said device, and
(d) means to apply turn-on and turn-off pulses to at least one of said base control terminals, the relative magnitudes of which are dependent upon the magnitude and polarity of said bias function.

3,271,588
DIGITAL KEYER FOR CONVERTING D.C. BINARY SIGNALS INTO TWO DIFFERENT OUTPUT AUDIO FREQUENCIES
Anatole Minc, Upper Brookville, N.Y., assignor to Tele-Signal Corporation, Hicksville, N.Y., a corporation of New York
Filed Aug. 7, 1963, Ser. No. 300,604
4 Claims. (Cl. 307—88.5)



3. Apparatus for the generation of successive pulses of electric oscillations of two frequencies comprising two independent oscillators producing output signals of unlike frequencies, a plurality of cascaded counters, two gate circuits each coupling one of said output signals to the input of said plurality of counters, and means responsive to two-level input signals to control said gates in opposite phases with one of said gates being opened for one level of said input signals and the other of said gates being opened for the other level of said input signals.

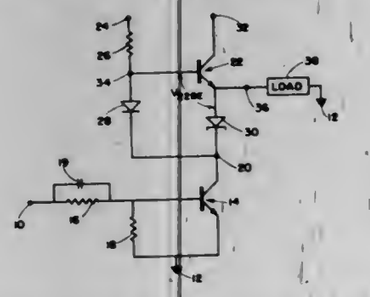
3,271,589
STROBED SENSE AMPLIFIER
Duane W. Baxter, Putnam Valley, Bruce C. Felton, Saugerties, Anton Werner, Greenville, and James R. Winnard, Marbletown, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 9, 1963, Ser. No. 328,823
9 Claims. (Cl. 307—88.5)



1. An electrical signal sensing apparatus comprising,
an electrical current signal source,
a strobe electrical current source,
control means connected to actuate said sources concurrently,
and gating means responsive to concurrent outputs from said sources, said gating means comprising
a pair of tunnel diodes connected in parallel across said strobe source for being forward biased by the output thereof,

the parallel connection of said diodes comprising a circuit loop including said diodes in opposite polarity orientation with respect to each other in said loop,
means adapted to introduce a circulating current component in said circuit loop corresponding to said output of said signal source,
and output means connected to be sensitive to the impedance state of said diodes.

3,271,590
INVERTER CIRCUIT
John C. Sturman, 4336 Granais, Fairview Park 26, Ohio
Filed May 14, 1963, Ser. No. 280,472
2 Claims. (Cl. 307—88.5)



1. A transistor logic inverter circuit consisting of a first stage, said first stage including a first transistor having a collector, a base, and an emitter, said emitter being connected to ground, a first resistor serially connected to said base between an input signal and said base, a capacitor connected parallel to said first resistor, and a second resistor interconnected between ground and said base of said first transistor, and a second stage, said second stage including a second transistor having a collector, a base, and an emitter, a backward diode for connecting the emitter of said second transistor to the collector of said first transistor, a first voltage source impressed on said collector of said second transistor, a second voltage source impressed on base of said second transistor through a first junction, said second voltage source having potential greater than that of said first voltage source, a third resistor interconnected between said second voltage source and said first junction, and a diode interconnected between said first junction and said first transistor collector through a second junction connected to said first transistor collector and said backward diode, the resistance of said backward diode being negligible in the backward direction from the emitter of said second transistor to said second junction whereby the capacitance of a load connected to said second transistor emitter is discharged upon actuation of said first stage, the voltage drop across said backward diode in the opposite direction being quite high so that the resistance in the reverse direction across said diode in series with said backward diode is greater than the base emitter voltage of said second transistor to provide an effective open circuit upon actuation of said second stage.

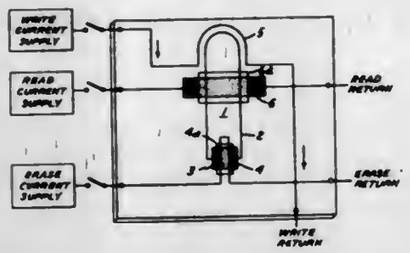
3,271,591
SYMMETRICAL CURRENT CONTROLLING DEVICE
Stanford R. Ovshinsky, Birmingham, Mich., assignor, by mesne assignments, to Energy Conversion Devices, Inc., Troy, Mich., a corporation of Delaware
Filed Sept. 20, 1963, Ser. No. 310,407
33 Claims. (Cl. 307—88.5)

1. A symmetrical current controlling device for an electrical circuit including a mechanism type semiconductor material means and electrodes in non-rectifying contact therewith for connecting the same in series in said electrical circuit, said semiconductor material means being of one conductivity type, said semiconductor material means including means for providing a first condition of relatively high resistance for substantially blocking current therethrough between the electrodes substantially equally in each direction, said semiconductor material means including means responsive to a voltage of at least a threshold value in either direction or alternately in both directions applied to said electrodes for altering said first condition of relatively high resistance of said semiconductor material means for substantially instantaneously providing at least one path through said semi-conductor material means between the electrodes having a second condition of relatively low resistance for conducting current therethrough between the electrodes substantially equally in each direction, said semiconductor material means including means for maintaining said at least one path of said semiconductor material means in its said second relatively low resistance conducting condition and providing



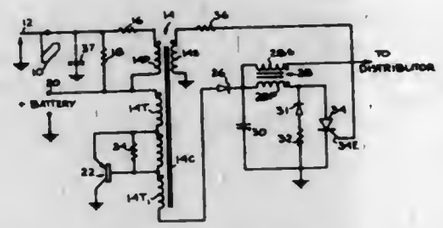
a substantially constant ratio of voltage change to current change for conducting current at a substantially constant voltage therethrough between the electrodes which voltage is the same for increase and decrease in current above a minimum current holding value, and providing a voltage drop across said at least one path in its said second relatively low resistance conducting condition which is a minor fraction of the voltage drop across said semiconductor material means in its said first relatively high resistance blocking condition near said threshold voltage value, and said semiconductor material means including means responsive to a decrease in current, through said at least one path in its said second relatively low resistance conducting condition, to a value below said minimum current holding value for immediately causing realtering of said second relatively low resistance conducting condition of said at least one path to said first relatively high resistance blocking condition.

3,271,592
CRYOGENIC ELECTRONIC MEMORY UNIT
John W. Bremer, Sunnyvale, Calif., and Vernon L. Newhouse, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Original application Aug. 4, 1960, Ser. No. 47,539. Divided and this application Aug. 19, 1963, Ser. No. 311,272
2 Claims. (Cl. 307—88.5)



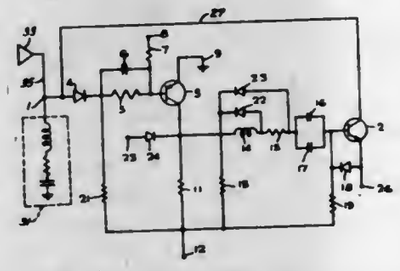
1. A memory device comprising a loop circuit capable of superconduction, a second circuit coupled to said loop circuit for producing a persistent current in said loop circuit in one direction for one type of information and in the opposite direction for a second type of information, a conductor which is normally superconducting crossing said loop circuit, and means for providing a second current through said second circuit which increases the magnitude of the persistent current when the persistent current is in one direction and decreases the magnitude of the persistent current when the persistent current is in the opposite direction to render said conductor non-superconducting for said one direction of said persistent current so that the magnitude of the resistance of said conductor indicates the type of information stored in said loop circuit.

3,271,593
INTERNAL COMBUSTION ENGINE IGNITION SYSTEM
Alan J. De Vilbiss, 2134 N. Marengo, Altadena, Calif.
Filed Dec. 5, 1963, Ser. No. 328,404
4 Claims. (Cl. 307—88.5)



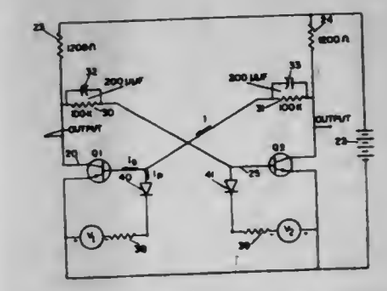
1. In an internal combustion engine of the type wherein breaker points are employed for making and breaking a connection to a battery whereby current is made to flow through the primary winding of a step-up transformer and then interrupted, and the secondary winding of the step-up transformer is connected through a distributor to spark plugs, the improvement comprising a transformer having a common core on which there are wound a primary winding, a secondary winding, a tertiary winding including a first winding portion, a second winding portion, and a step-up winding portion, means connecting said primary winding to said battery through said breaker points, a controlled rectifier having a control electrode, a capacitor, means connecting said control electrode to said secondary winding, means connecting said capacitor and controlled rectifier in series and across said step-up transformer primary winding, means connecting said tertiary winding in series with said primary winding of said step-up transformer, means establishing a blocking oscillator including a transistor having a base emitter, and collector electrodes, means connecting said transistor base and emitter respectively to the opposite ends of said second winding, and means connecting said battery across said tertiary winding, said primary winding of said step-up transformer and said controlled rectifier.

3,271,594
TRANSIENT AUGMENTATION CIRCUIT FOR PULSE AMPLIFIERS
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Richard D. Benedict
Filed June 16, 1964, Ser. No. 375,680
7 Claims. (Cl. 307—88.5)



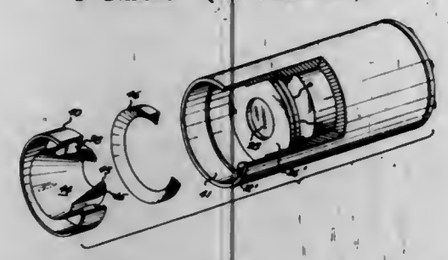
1. A transient augmentation circuit for a pulse amplifier having an equivalent overdamped series resistance-inductance-capacitance load comprising:
a first inverter amplifier having an input and output;
a second inverter amplifier having an input and output;
a resistance-inductance-capacitance network connected between the output of said first inverter amplifier and input of said second amplifier, the current amplitude versus time characteristic of said network, in response to a step change input, being proportional to the negative short circuit current versus time characteristic of an overdamped series resistance-inductance-capacitance load; and
input-output terminal means joining the input of said first inverter amplifier and output of said second inverter amplifier to provide regeneration in said transient augmentation circuit.

3,271,595
SWITCHING CIRCUIT
Gilles J. Overtveld, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed May 14, 1963, Ser. No. 280,403
5 Claims. (Cl. 307—88.5)



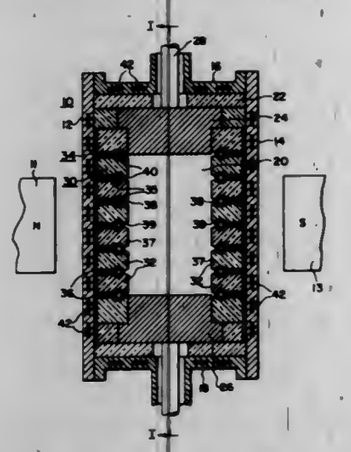
1. In a switching circuit which comprises a pair of current valves each valve comprising a current emitter, a current control electrode, and a current collector, said control electrode controlling current flow between said emitter and said collector in dependence upon electrical bias between said emitter and said control electrode, means connecting each said valve for urging current flow between its respective emitter and collector, means interconnecting said valves for alternate switching between a pair of circuit states, the first state comprising current conduction through the first of said valves and current interruption through the second of said valves and the second state comprising current conduction through said second valve and current interruption through said first valve, said circuit being triggerable for switching from the second to the first state by application of current between said control electrode and said emitter of said second valve; said interconnecting means comprising, means connecting the collector of the first valve and the control electrode of the second valve, the collector of said first valve and said interconnected control electrode of said second valve being low in potential with respect to the emitter of said second valve when said circuit is in said first state and being higher when said circuit is in said second state, the improvement which comprises: a non-linear resistive conducting device presenting a higher impedance when carrying a small direct current in one direction and a lower impedance when carrying a larger direct current in said direction, and means connecting said non-linear resistive device in series with a triggering signal source between said control electrode and said emitter of said second valve for passing said small current through said device when said circuit is in said second state in the absence of a triggering signal from said triggering signal source and for passing said larger current when said circuit is in said second state in the presence of a triggering signal, said non-linear resistance device heightening sensitivity of the circuit to triggering by said triggering signal source from its second to its first state.

3,271,596
ELECTROMECHANICAL TRANSDUCERS
Jesse R. Brinkerhoff, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,941
5 Claims. (Cl. 310—8.7)



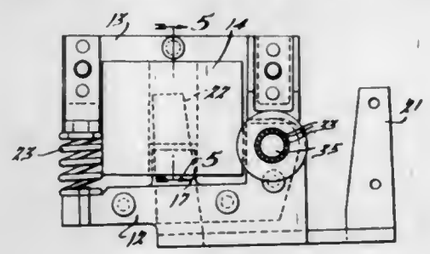
1. In an electromechanical transducer, the combination of a flexural mode transducer element which is mounted in an open-ended housing to transmit or receive a pressure wave in the direction of vibration thereof, the relatively central and peripheral portions thereof tending to vibrate out of phase with one another about a nodal contour of substantially no motion in the direction of vibration, and means on the housing which operate to define a plurality of pathways for the pressure wave between the end opening of the housing and the adjacent face of the element, one of which pathways extends between the end opening and the center portion of the face to carry pressure peaks in the center of the wave, and the other of which extends between the opening and the peripheral portion of the face to carry pressure peaks in the periphery of the wave, said other pathway being approximately 0.5 of a wavelength longer than the one pathway so that corresponding pressure peaks in the center and periphery of the wave are brought into phase with one another in traveling between the end opening of the housing and the face of the element.

3,271,597
MAGNETOHYDRODYNAMIC GENERATING DUCT
Stewart Way, Churchill Boro, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 22, 1963, Ser. No. 303,965
6 Claims. (Cl. 310—11)



1. An elongated generating duct for a magnetohydrodynamic generating system, said duct comprising spaced elongated electrode bearing walls and at least one elongated wall disposed between said electrode bearing walls along the length thereof, said walls cooperatively enclosing at least one elongated channel for flow of conductive fluid therethrough, elongated current barrier means supported on said one wall and including a plurality of elongated members spaced from each other and disposed in a reference plane including the interelectrode direction and the duct longitudinal direction, said elongated members extending in one of said directions and projecting laterally inwardly of said one wall into the space between said electrode bearing walls, and thermally insulative means disposed adjacent said one wall for forming a major inner refractory surface adjacent the elongated channel and conductive fluid and divided into a plurality of electrically separate layers respectively separated by said elongated current barrier members so that current therethrough is substantially impeded at elevated operating temperatures.

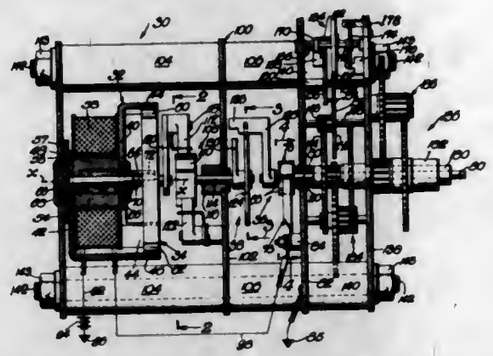
3,271,598
PIVOT MOUNTING FOR OSCILLATORY TOOL
Edward G. Sturgeon, Orchard Lake, Mich., assignor to Syncro Corporation, Oxford, Mich., a corporation of Michigan
Filed Nov. 14, 1963, Ser. No. 323,678
7 Claims. (Cl. 310—29)



5. In a pivot mounting for the armature of an electromagnetic reciprocating motor having an elongated armature, E-shaped core, and coil mounted on the central portion of said core, a pair of legs on one end of said core, said legs being spaced from and on opposite sides of one end of said armature, said legs and the armature portion between the legs having apertured portions, the apertured portion in said armature being of slightly smaller diameter than the apertured portions in said legs, spring means between said armature and core urging the armature away from the core, a plurality of spring-like rods of circular cross-sectional shape extending through said apertured portions and between said armature and legs, said rods being annularly arranged and in closely adjacent relation within the apertured portion of said armature, and plugs within said apertured portions forcing the portions of said rods within said apertured portions against the walls of the apertured portions so as to be in frictional contact therewith, the free lengths of said rods between said apertured portions having some slack and being slightly S-shaped in their unstretched condition when the armature is at rest, at least some of the slack of said free rod lengths being taken up when said armature approaches each end of its arcuate stroke.

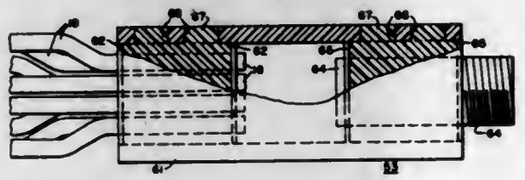
3,271,599
OSCILLATING D.C. MOTOR OF REGULATED OUTPUT TORQUE
Walter Kohlhagen, 818 Oakley Ave., Elgin, Ill.
Filed Apr. 14, 1964, Ser. No. 359,629
11 Claims. (Cl. 310—36)

1. In a motor, the combination with coil means, a rotary element, means operative on successive energizations of said coil means to step said element in one direction into successive positions equally spaced from each other at an angle of less than 360°, a rotary device, preloaded spring means interposed between and drivingly connecting said element and device, and means providing for free operational relative rotation between said element and device through a range within which said spring means remains preloaded and to one end of which said device is urged by said spring means, with said range being in excess of, but less than twice, said angle, of means locking said element in said positions only against rotation opposite to said one direction; and circuit means for said coil means, including brush and commutator units of which one unit is said device, with said units arranged to close said circuit means when in any of said



positions of said element said one unit is in position at either end of an endlength of said range which extends from said one end thereof over a distance substantially equal to said range excess, and to open said circuit means at the end of the drive of said one unit from either of said positions thereof through a distance smaller than said angle.

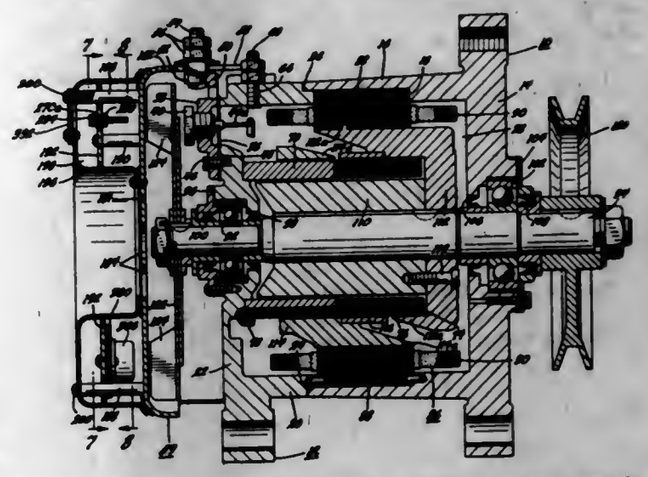
3,271,600
DYNAMOELECTRIC MACHINE
Harold M. Philofsky, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 22, 1964, Ser. No. 376,914
5 Claims. (Cl. 310—55)



1. In a dynamoelectric machine having an annular stator core with a plurality of longitudinal slots therein, a plurality of stator winding members disposed in said slots, each of said winding members including winding conductors and a plurality of duct members disposed in good thermal relation with the winding conductors and insulated from the winding conductors and each other within the slot, coolant supply means for circulating a coolant fluid through said duct members, insulating connector means at each end of each winding member for connecting the duct members to the coolant supply means, said connector means including a mass of insulating material in which the ends of the duct members are embedded to hold the duct members in separated relation and to insulate the duct members from each other, and means independent of the connector means for effecting electrical connection between the winding conductors of different winding members.

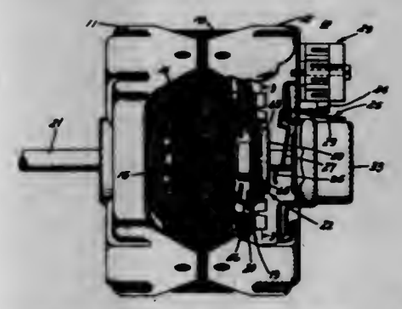
3,271,601
DYNAMOELECTRIC MACHINE
Louis J. Raver, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 28, 1961, Ser. No. 141,448
5 Claims. (Cl. 310—68)

1. In combination, an alternating current generator having an output winding, a rotor and an end frame, diode means supported by said end frame for rectifying the A.C. output of said output winding to direct current, fan means connected with the rotor of said generator, a fan shroud supported by the end frame of said generator enclosing said fan means and positioned to direct air over said diode means, a cover member secured to said fan shroud



forming a sealed chamber, an annular printed circuit board disposed within said chamber, electrical circuit components supported by said printed circuit board and forming a regulating means, and means connecting said regulating means with said generator.

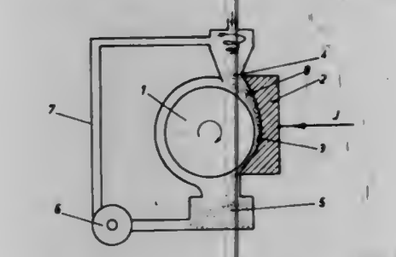
3,271,602
CENTRIFUGAL SWITCHING MECHANISMS FOR DYNAMOELECTRIC MACHINES
James L. Waters, Malta, Ill., assignor to General Electric Company, a corporation of New York
Filed Sept. 5, 1963, Ser. No. 306,815
12 Claims. (Cl. 310—68)



1. A centrifugal switching mechanism for use in a motor having a rotatable assembly including a rotor carried on a shaft, an end shield member rotatably supporting one end of said shaft and a switching means mounted externally on the end shield member and including a movable switch element for actuating said switching means, said centrifugal switching mechanism comprising: a switch actuator pivotally supported on said end shield member and formed with a radial and an axial portion, said radial portion being disposed internally of the end shield member, said axial portion extending through an opening in the end shield member and being disposed in engaging relation to the movable switch element of the switching means, and said radial portion when urged in an axial direction causing a pivotal movement of said switch actuator and effecting a displacement of the switch element to actuate the switching means; and a centrifugal weight assembly mounted on the rotatable assembly for rotation therewith and including a pair of relatively movable centrifugal weight members, a push collar disposed concentrically about the shaft and axially movable with respect to the shaft, said push collar being carried by said centrifugal weight members, and a biasing means joined with said centrifugal

weight members to urge said push collar against said radial portion of the switch actuator and hold the radial portion in an outward position during the starting condition, and said push collar being disengaged from said radial portion of the switch actuator by the retracting action of said centrifugal weight members when the motor reaches a predetermined speed thereby to permit said axial portion of the switch actuator to be moved with the push element of said switching means in non-actuating relation therewith.

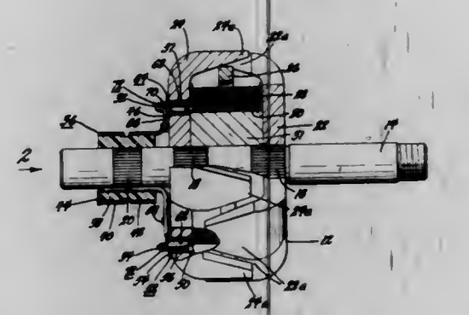
3,271,603
DEVICE FOR TRANSMITTING ELECTRICAL CURRENTS
Eugen Wiedemann, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Dec. 30, 1963, Ser. No. 334,444
Claims priority, application Switzerland, Jan. 7, 1963, 134/63
8 Claims. (Cl. 310—219)



1. A device for transmitting electrical currents from stationary to rotating parts, characterized in that an electrically conductive solid matter finely divided into a pourable state serves as the transmission medium and that between the contact points of said parts a channel for guiding the conductive matter is provided.

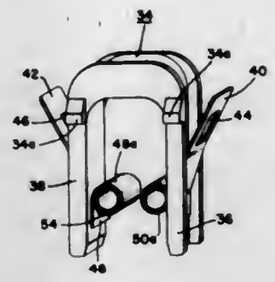
2. A device as in claim 1, characterized in that the channel between the stationary and rotating part is arranged in such a manner, that the solid matter at the contact point is compressed by the centrifugal effect.

3,271,604
ELECTRICAL CONDUCTOR CONNECTING DEVICE
Jack N. Priddy, Middletown, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 21, 1962, Ser. No. 239,184
11 Claims. (Cl. 310—234)



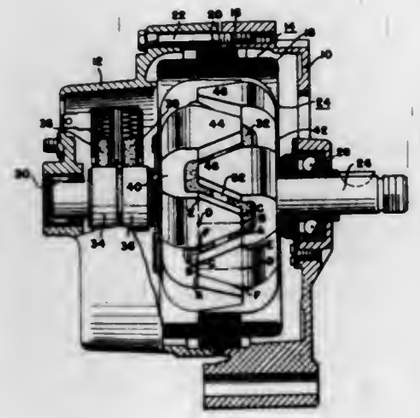
1. An electrical connection for connecting two electrical devices located on opposite sides of a member, an opening in said member, an insulator member having a bore fitted in said opening, a terminal member having a ferrule portion press fitted in the bore of said insulator for urging said insulator into tight engagement with the wall of the opening in said member, first and second conductor means connected with said electrical devices at least one of which passes through the ferrule portion of said terminal, and integral lug means on said terminal member crimped into engagement with said first and second conductor means to hold them in place.

3,271,605
BRUSH HOLDER ASSEMBLY
Walter Drabik, Downers Grove, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,945
13 Claims. (Cl. 310—239)



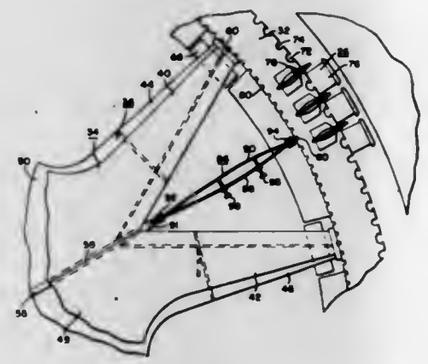
9. A brush holder arrangement for a dynamoelectric machine comprising, a brush holder formed of die cast electrically conductive material, said brush holder having a plurality of brush holding chambers, a pair of brushes disposed in each of said chambers, said brushes engaging each other within each chamber, a brush spring support assembly for each pair of brushes, said assembly including a U-shaped member formed of insulating material, a pair of constant force springs carried by each support assembly and engageable with one end of said brushes for urging said brushes toward a rotating conductor and a pair of spring arms for each of said supports, each of said spring arms having slots which receive integral projecting portions of said brush holder, and conductor means connecting all of said brushes with said brush holder.

3,271,606
ROTOR ASSEMBLY
George C. Collins, Pendleton, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,278
5 Claims. (Cl. 310—263)



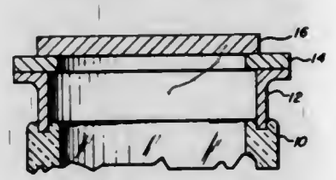
1. A rotor assembly for a dynamoelectric machine or the like comprising, a shaft, a field coil assembly carried by said shaft, first and second rotor segments carried by said shaft having interfitting pole teeth, each of said pole teeth having an outer surface defined by first and second sections, each outer surface being generally V-shaped, said first section being defined by a part of a cylinder having a constant radius and located at the leading edge of said teeth, said second section being defined by a shape having a circumferentially extending non-circular arc which curves in at an increasing rate toward the longitudinal axis of a respective rotor segment and located at the trailing edge of said teeth.

3,271,607
WATERWHEEL DYNAMOELECTRIC MACHINE ROTOR
Barney Slotnick, Irwin, and Albert W. Latham, Murrysville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 15, 1963, Ser. No. 302,416
15 Claims. (Cl. 310—269)



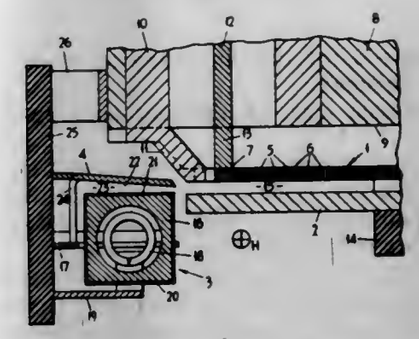
14. A rotor member for a dynamoelectric machine, said rotor member comprising an annular rim member and a spider member, the spider member having a plurality of generally radial arms and the rim member being disposed circumferentially about the ends of the spider arms, and means for securing the rim member to the spider member including a plurality of rigid clamping means extending radially between a portion of the spider member and the rim member, each of said clamping means engaging the spider member and the rim member and being radially extensible to apply a radial clamping force between the spider member and the rim member.

3,271,608
X-RAY VIDICON TARGET ASSEMBLY
Martin Rome and Harold O. W. Jordan, Stamford, Conn., assignors to The Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut
Filed Apr. 30, 1962, Ser. No. 191,099
7 Claims. (Cl. 313—65)



1. An X-ray sensitive electron discharge device comprising an evacuated dielectric envelope, a source of electrons in one end of the envelope, and a faceplate assembly sealing the opposite end of the envelope, said faceplate assembly comprising a beryllium disc on the outer surface thereof, said disc being transparent to X-radiation and opaque to visible light, a layer of X-ray sensitive photoconductive material on the inner surface thereof, said material being noncompatible with beryllium and being exposed to electrons from said source, and means between said beryllium disc and photoconductive material for preventing reaction between the photoconductive material and the beryllium disc.

3,271,609
ELECTRON GUNS
Alan Reddish, Pinner, and Donald William Ward, Watford, England, assignors to The M-O Valve Company Limited, London, England
Filed Jan. 3, 1963, Ser. No. 249,259
Claims priority, application Great Britain, Jan. 16, 1962, 1,632/62
2 Claims. (Cl. 313—82)



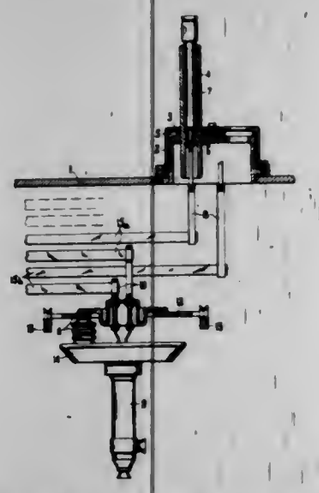
1. A crossed field electron gun including a thermionic cathode having an electron emissive surface and a plate having an operating surface which faces said emissive surface so that the cathode and plate define between them a gun space which is laterally bounded by said surfaces, the gun being arranged to operate with the plate held positive with respect to the cathode so as to establish an electrostatic field within the gun space and with a magnetic field established within the gun space perpendicular to the electrostatic field and to the length of the gun space, the geometry of the electrodes being such that the gun space is of uniform cross-section in planes perpendicular to such magnetic field, whereby in operation electrons emitted from said emissive surface are formed into a beam which travels along the gun space and then emerges from one end of the gun space, and said uniform cross-section being such that the parameters L, D, X, Y, F and S defined below satisfy the following conditions: L is greater than D; for values of X between zero and 0.7 inclusive the value of Y lies between one and $(1+1.5X)$ inclusive; for values of X between 0.7 and one inclusive the value of Y is not less than $(2.5X-0.75)$, the value of Y being finite for values of X up to at least 0.9; for any value of X for which the value of the differential coefficient dY/dX is finite there is no greater value of X for which the value of dY/dX is lower; F is considerably less than D; and S never decreases with increasing values of X, where, in said cross-section: L is the length of the projection of the trace C of said emissive surface on an axis A constituted by that straight line which is tangential to the trace C at that end point E of the trace C which corresponds to the end of the gun space from which the electron beam emerges in operation; D is the distance between the trace C and the trace P of said operating surface along a straight line which is perpendicular to the axis A and which passes through the point E; for any point O on said projection of the trace C, X is the distance between the points O and E divided by the length L, and Y is the distance between the traces C and P along a straight line which is perpendicular to the axis A and which passes through the point O divided by the distance D; F is the distance by which the trace P extends beyond the point E in a direction parallel to the axis A; and S is the spacing between the trace C and the trace P at any point B on the trace C measured along the normal to the trace C at that point B.

3,271,610
COLOR CATHODE RAY TUBE WITH INDEX STRIPES ON ULTRA-VIOLET-EMITTING PHOSPHOR LAYER
Harold B. Law, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 26, 1963, Ser. No. 304,311
8 Claims. (Cl. 313—92)



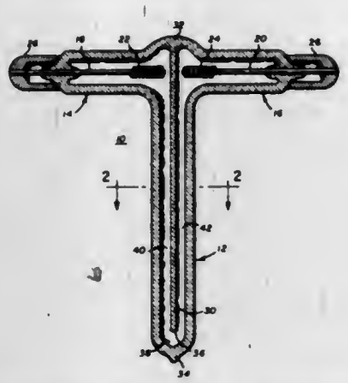
6. A cathode ray tube including an electron-sensitive creen comprising:
(a) a mosaic layer of different color-emitting phosphors,
(b) a layer of phosphor adjacent to said mosaic layer,
(c) a reflective layer between said mosaic layer and said phosphor layer which is reflective of the luminescence of said phosphor layer, and
(d) an array of spaced-apart strips of material which will absorb luminescence from said phosphor layer, said strips being disposed between said reflective layer and said phosphor layer.

3,271,611
ELECTRICAL CONNECTING DEVICE AND ELECTRON GUN EQUIPPED THEREWITH
Paul Thome, Saint-Cloud, Albert Recule, Igny, and René Roudier, Sucy-en-Brie, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed July 15, 1963, Ser. No. 294,976
Claims priority, application France, July 18, 1962, 904,413
4 Claims. (Cl. 313—149)



1. A device for effecting an electrical connection between a terminal movable transversely and longitudinally in a first plane and a fixed terminal disposed adjacent to said first plane, comprising: a generally U-shaped resilient metal strip having a cross-section approximately of circular arc configuration with an angular amplitude of 10° to 90° when said strip is relaxed and no bending stress is applied thereto, said strip including a pair of rectilinear sections extending generally longitudinally of said first plane and connected by a bent, generally semicircular elbow section defining a circular arc of an amplitude ranging from 120° to 210°, all of said sections lying generally in a second plane extending generally parallel to said first plane, the outer ends of said rectilinear sections being secured respectively to said movable terminal and said fixed terminal, and the amplitude of said resilient strip cross-section being substantially zero at a region within said elbow section so that said strip is substantially flat in said region, said region of said strip remaining substantially flat while said rectilinear sections of said strip are moved toward and away from each other during transverse movement of said movable terminal and while the lengths of said rectilinear sections remain generally constant, and said substantially flat region of said strip in said elbow section moving along the length of said resilient strip as the lengths of said rectilinear sections are varied with respect to each other during longitudinal movement of said movable terminal while the portions of said resilient strip on opposite sides of said region retain their curved cross-sections, whereby the portion of said resilient strip extending between the secured outer ends thereof is self-supporting.

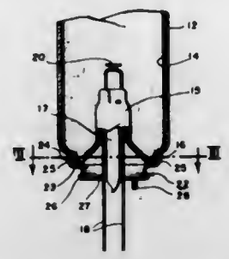
3,271,612
FLASH DEVICE
Charles H. Keller, Sunnyvale, Calif., assignor to PEK Labs, Inc., Sunnyvale, Calif., a corporation of California
Filed Mar. 19, 1963, Ser. No. 266,316
3 Claims. (Cl. 313—220)



1. An arc discharge flash lamp comprising: a sealed T-shaped envelope defining a T-bar portion and a T-leg portion containing a gaseous substance at less than atmospheric pressure, a partition extending centrally along said T-leg portion with the upper end thereof extending into and being sealed transversely across said T-bar portion to form two communicating chambers and the lower end of said partition forming a communication gap with the lower end of said T-leg portion for communicating the partitioned sections of said envelope; a single field emission anode mounted in one end of said T-bar portion and extending into said T-bar portion with its arc end portion facing one side of said partition; and a single field emission cathode mounted in the other end of said T-bar portion and extending into said T-bar portion with its arc end portion facing on the other side of said partition.

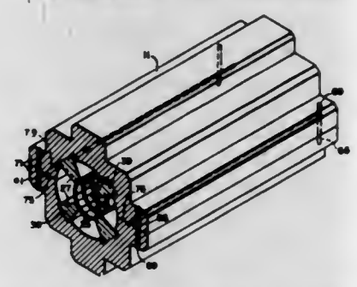
3,271,613
STRESS-RELIEVED SEAL STRUCTURE FOR ARCUATE FLUORESCENT LAMP OR THE LIKE
Daniel M. Spell, Jr., Dunnedin, Fla., and Jack D. Rowe, Fairmont, W. Va., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1962, Ser. No. 242,673
5 Claims. (Cl. 313—318)

1. In an electric lamp or the like, a seal structure comprising;
a vitreous envelope having a closed end portion, and a cap having a metal rim portion that has a different coefficient of expansion than the vitreous material from which the envelope is made and is joined directly to and forms a seal with the closed end portion of said envelope,



said rim portion having an opening therein that extends from its periphery inwardly toward the body of said cap and thereby permits the rim segments of said cap to flex with the joined envelope portions under varying temperature conditions.

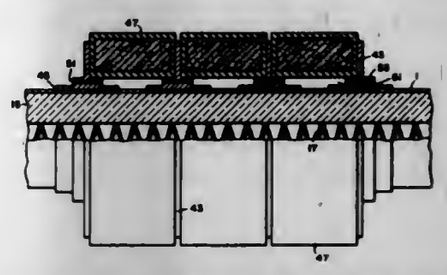
3,271,614
ELECTRON DISCHARGE DEVICE ENVELOPE STRUCTURE PROVIDING A RADIAL FORCE UPON SUPPORT RODS
John M. Scott, Linthicum Heights, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 18, 1961, Ser. No. 132,371
6 Claims. (Cl. 315—3.5)



1. An electron discharge device comprising an envelope, means disposed at one end of said envelope for the production of an electron beam along the length of said envelope, electron collecting means disposed at the opposite end of said envelope, slow wave propagating means disposed within said envelope for the propagation of electromagnetic energy along the length of said envelope, and means inserted between and abutting said envelope and said slow wave propagating means for conducting heat from said slow wave propagating means, said envelope comprising first and second channel members mechanically joined together to exert a radial force upon said means for conducting heat from said slow wave propagating means, and to ensure an efficient heat transfer between said slow wave propagating means and said envelope.

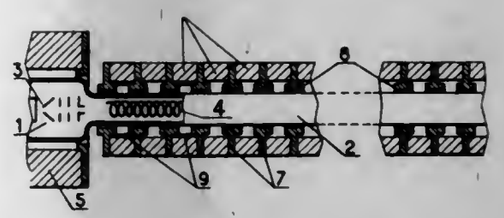
3,271,615
TRAVELING WAVE ELECTRON DISCHARGE DEVICE HAVING MEANS EXERTING A RADIAL FORCE UPON THE ENVELOPE
Frederick L. Washburn, Jr., Round Bay, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1961, Ser. No. 133,346
6 Claims. (Cl. 315—3.5)

1. A traveling wave electron discharge device comprising an envelope made of a deformable, metallic material, means for generating and projecting an electron beam, means disposed for collecting said electron beam, wave propagating means disposed in an interacting relationship with said electron beam, a plurality of electrically insulating, heat conducting support members disposed between and abutting said envelope and said wave propagating means to position said wave propagating means in a spaced relationship with respect to said envelope, and annularly shaped members disposed about said envelope



and having an inside diameter of such size so as to exert a radial compressive force on the outside wall of said envelope whereby good thermal contact is achieved between said wave propagating means, support member, and envelope.

3,271,616
FOCUSING SYSTEMS WITH ALTERNATING MAGNETS FOR TRAVELING WAVE TUBES
Bernard Verger, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed Mar. 20, 1962, Ser. No. 181,035
Claims priority, application France, Apr. 4, 1961, 857,631
7 Claims. (Cl. 315—3.5)

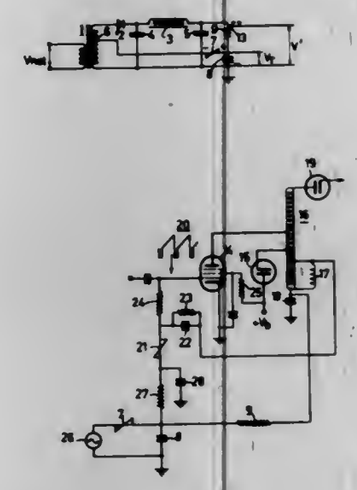


1. An O-type traveling wave tube, comprising:
an elongated, substantially cylindrical envelope,
electron gun means located within a first portion of said envelope;
a wave retarding structure located within a second portion of said envelope substantially adjacent said first portion;
and a focussing system for said tube including a substantially permanent magnet within the area of and surrounding said first portion, a series of substantially identical annular permanent magnets, of alternately opposite polarities, within the area of and surrounding said second portion, pole pieces arranged between adjacent permanent magnets, and a flux-carrying element, disposed on the first and third permanent magnet of said series near said electron gun means interconnecting the pole pieces thereof.

3,271,617
CIRCUIT ARRANGEMENT FOR PRODUCING A DIRECT VOLTAGE BY MEANS OF A RESISTANCE ELEMENT HAVING A NON-LINEAR SYMMETRICAL CURRENT-VOLTAGE CHARACTERISTIC
Antonius Boekhorst, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 176,492
Claims priority, application Netherlands, Apr. 13, 1961, 263,600/61
12 Claims. (Cl. 315—27)

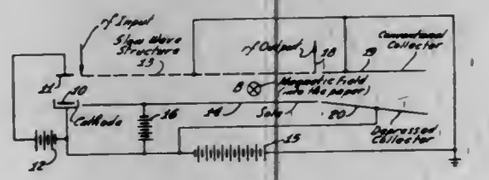
12. A circuit for producing a direct voltage which varies inversely in amplitude with the amplitude of an alternating voltage comprising a resistance element hav-

ing non-linear symmetrical current-voltage characteristics, a capacitor, a source of a symmetrical alternating voltage adapted to supply a given amplitude range of voltages, means serially connecting said resistance element and capacitor to said source of alternating voltage, means providing a direct voltage to said resistance ele-



ment of a magnitude to bias said resistance element to operate over the non-linear region of said characteristic curve for said given amplitude range of voltages whereby a direct voltage is produced across said capacitor which varies inversely in amplitude with the amplitude of said alternating voltage, and output circuit means connected across said capacitor.

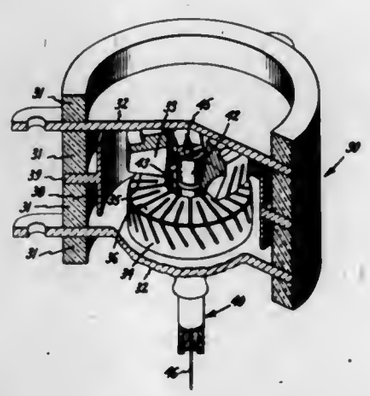
3,271,618
DEPRESSED COLLECTORS FOR CROSSED FIELD TRAVELLING WAVE TUBES
Gerald P. Kooyers, Santa Clara, Calif., assignor to Litton Precision Products, Inc., a corporation of Delaware
Continuation of application Ser. No. 241,396, Nov. 30, 1962. This application Oct. 28, 1963, Ser. No. 319,606
13 Claims. (Cl. 315—39.3)



4. A electron discharge device comprising an interaction region bounded by a slow wave structure and a sole electrode, an electron gun positioned at one end of said interaction region for injecting an electron beam into said interaction region, and first and second collector electrodes having mutually facing surfaces positioned at the other end of said interaction region to define a collector region, the distance between said mutually facing surfaces increasing in the direction away from said interaction region over at least a portion of the length of said collector region.

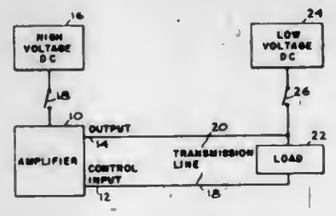
3,271,619
TRIGGERED VACUUM DISCHARGE DEVICE.
James M. Lafferty, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 26, 1963, Ser. No. 297,924
5 Claims. (Cl. 315—111)

1. A triggered vacuum discharge device comprising:
(a) an evacuated, hermetically sealed envelope;
(b) a pair of primary discharge electrodes located within said envelope comprising rings lying in parallel planes and defining a primary gap therebetween;
(c) trigger means located within the area encompassed by said rings for enabling the initiation of a primary discharge therebetween, said trigger means including:
(aa) a trigger gap defined by spaced electrically insulated trigger surfaces on a non-conducting body, each said surface comprising a charged gas-absorbent metal coating;
(bb) said trigger gap being located between said planes of said rings;



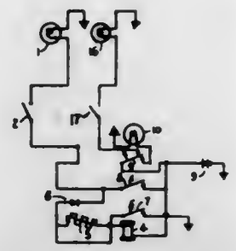
(d) means for applying a triggering potential to said trigger surfaces for establishing a trigger discharge therebetween to release and ionize said gas absorbed in said metal coating; and
(e) means for applying a voltage to said primary electrodes to establish an electric field therebetween so that the release and ionization of said gas by said trigger discharge is effective to initiate a discharge between said primary electrodes.

3,271,620
STARTING CIRCUIT FOR VAPOR LAMPS AND THE LIKE
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of John E. Guisinger
Filed Oct. 1, 1963, Ser. No. 313,136
8 Claims. (Cl. 315—160)



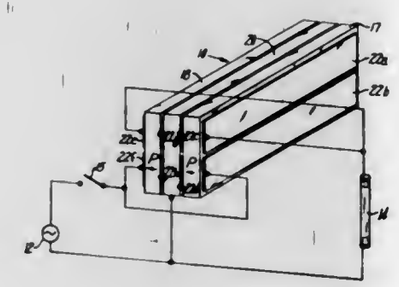
1. In combination with a load defining a substantially open circuit condition prior to the application of a high voltage high frequency signal thereacross and a substantially short circuit condition subsequent to the application of said high voltage high frequency signal thereacross, an oscillator for generating said high voltage high frequency signal, said oscillator comprising an amplifier having an output terminal, a control input terminal; and a transmission line terminated by said load connected between said output terminal and said control input terminal, and means responsive to the establishment of said substantially short circuit condition for maintaining said load in that condition.

3,271,621
BATTERY OPERATED FLASHER
Julian A. McDermott, 1639 Stephen St., New York, N.Y.
Filed Mar. 15, 1961, Ser. No. 141,925
5 Claims. (Cl. 315—210)



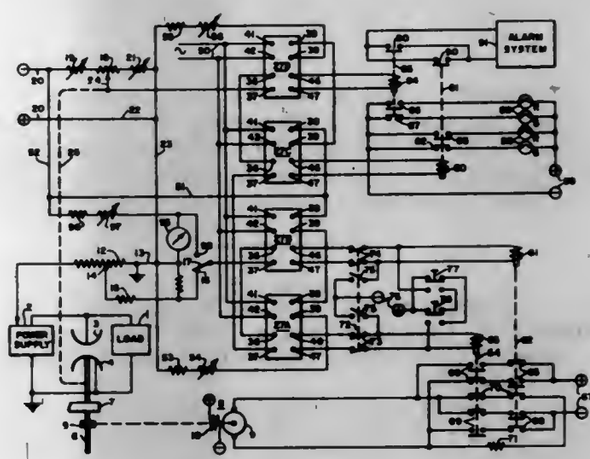
5. In a device to flash lamps including an actuating power source, actuating circuitry and devices connected in series between said power source and a lamp, said circuitry and devices being current responsive to close a circuit providing current directly to said lamp, said circuitry and devices also being responsive to simultaneously connect said circuitry and devices in parallel with said lamp and said circuitry and devices including a current actuated intermittent current interupting means.

3,271,622
PIEZOELECTRIC BALLAST APPARATUS
Robert F. Malagodi, Boston, Mass., and Peter H. Fowler, Midland Park, N.J., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed July 5, 1963, Ser. No. 293,006
10 Claims. (Cl. 315—246)



1. Ballast apparatus for starting and operating a "rapid start" flourescent lamp from an alternating current supply comprising a flourescent lamp having heater filaments at each end thereof, a pair of piezoelectric sheets each sheet having first, second and third spaced electrodes on one surface thereof and fourth and fifth electrodes on the opposite surface thereof, the first and second electrodes being located opposite the fourth electrode and the third electrode being located opposite the fifth electrode, each sheet being oppositely polarized in the thickness direction, means securing the fourth and fifth electrode sides of the sheets together with the electrodes insulated from each other to forcibly constrain the sheets for movement together, the body formed by the joined sheets being mechanically resonant at the approximate frequency of the alternating current supply, means connecting one of the lamp heater filaments between third electrode of each sheet and the fifth electrode of each sheet, means connecting the other lamp heater filament between the second electrode of each sheet and the fourth electrode of each sheet, means for connecting the first and fourth electrodes of each sheet to the alternating current supply whereby on each one-half cycle of applied alternating current voltage, the electrostatic field between the electrodes connected to the alternating current supply is in the same direction as the polarization of one sheet and opposite to the direction of the polarization of the other sheet thereby to bend the composite body and generate the lamp ignition voltage between the third and fourth electrodes and the lamp preheat current between the third and fifth and between the second and fourth electrodes respectively, the load current of the lamp being limited by alteration of the resonant frequency characteristics of the composite body caused by build-up of lamp current after ignition.

3,271,623
DISCHARGE GAP WITH SPACING VARIED DIRECTLY WITH SUPPLY VOLTAGE
Tom L. Dyer, Jr., Norman K. Osmundsen, and John B. Brittain, Bloomington, and Robert T. Innis, Ellettsville, Ind., and Daniel L. Whitehead, Export, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 31, 1962, Ser. No. 220,676
6 Claims. (Cl. 315—357)



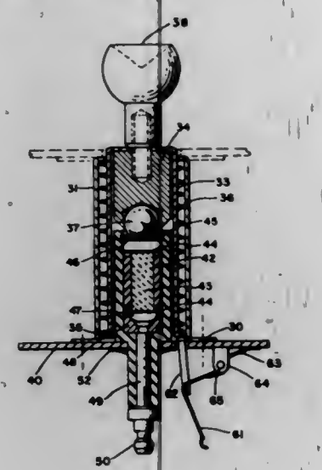
3. A discharge gap device protecting a load connected to a source of supply voltage, the magnitude of which varies over a wide range of voltages under normal operating conditions, said gap device including a pair of electrodes forming a discharge gap connected across the load device, means for sensing changes in the voltage magnitude of said source and producing a signal in response thereto, means for moving at least one of said electrodes to change the spacing of the gap in response to said signal, the movement of said electrode maintaining a predetermined relation between the gap spacing and the magnitude of the supply voltage.

3,271,624
APPARATUS FOR PRODUCING ELECTRIC IMPULSES
Cornelis Sacharias Johannes Kingma, Baambrugge, and Pieter Smid, Haarlem, Netherlands, assignors to Honeywell G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed May 7, 1964, Ser. No. 365,705
Claims priority, application Germany, May 24, 1963, H 49,251
3 Claims. (Cl. 317—81)

1. A piezoelectric spark ignitor, comprising:
a piezoelectric crystal having an axis along which a force is to be applied to generate a high voltage, said crystal having a pair of end faces at spaced ends along said axis,
a metallic impact plate mounted to engage one of said end faces and having a surface generally normal to said axis,

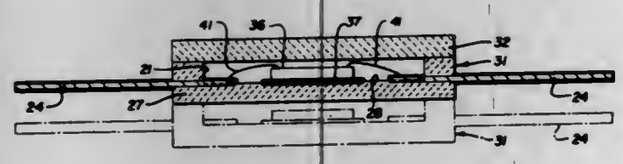
self aligning support members having mating curved sufaces and having a surface to engage the other of said end faces,

means prestressing said crystal between said plate and said support members,



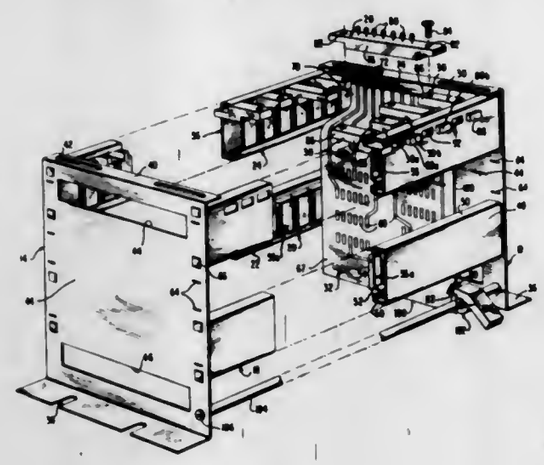
a hammer having a ball-like member spring biased against said plate and engaging the same at a point, and switch means actuated by movement of said hammer away from said plate to short circuit said crystal prior to striking of said plate by said hammer.

3,271,625
ELECTRONIC PACKAGE ASSEMBLY
Edward A. Caracciolo, Santa Clara, Calif., assignor to Signetics Corporation, Sunnyvale, Calif., a corporation of California
Filed Dec. 9, 1963, Ser. No. 329,190
1 Claim. (Cl. 317—101)



In an electronic package assembly adapted to receive a semiconductor device having contact areas, a body, a plurality of conducting metallic leads having inner and outer end portions, the inner end portions of the leads being embedded in the body and having exposed upper surfaces, the outer end portions of the leads extending outwardly away from the body and being free of the body, portions of the leads intermediate the inner and outer end portions being surrounded on all sides by the body, at least the portion of the body in contact with and surrounding the leads being formed of a material having a coefficient of expansion which is substantially identical to that of the leads and serving to electrically insulate the leads from each other, all portions of said leads in said body being in physical contact with and supported by said body, the exposed upper surfaces of the inner portions of the leads lying in a substantially common plane and being disposed in a predetermined pattern adjacent the perimeter of the body, a substantially planar metal conducting pad mounted on the body in a generally central position and being out of contact with at least certain of the exposed upper surfaces of the inner end portions of the leads, said body being adapted to receive the semiconductor device so that the semiconductor device can be mounted directly upon the pad and so that the contact areas of the semiconductor device can be connected to the upper exposed surfaces of the inner portions of the leads, cover means mounted on said body and means forming a hermetic seal between the cover means and the body so that a semiconductor device mounted in the body is hermetically sealed therein, said body having a substantially planar outer surface and said cover means having a substantially planar outer surface parallel to the outer surface of the body to permit one package to be stacked with another package with surfaces in juxtaposition.

3,271,626
PRINTED CIRCUIT CARD RACK
Patrick P. Howrilka, 521 Lowell Drive, Endwell, N.Y.
Filed Dec. 31, 1964, Ser. No. 422,791
9 Claims. (Cl. 317—101)

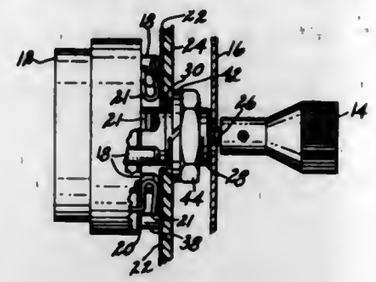


1. An improved rack assembly for housing printed circuit cards having terminal ends carrying spaced conductive terminal leads, said assembly comprising: a pair of spaced end plates, at least one pair of oppositely oriented bars positioned longitudinally between said end plates and affixed thereto, said bars being of channel-like configuration and having the channels directed inwardly toward each other, said channels extending longitudinally of said bars at right angles to said spaced end plates, molded, unitary card spacers carried by each channel-like bar, each of said card spacers being restrained by said bar against transverse movement but slidable longitudinally therein, each spacer extending substantially the entire length of its respective channel, said spacers further being provided with serrated surfaces which protrude from said channels with said serrations acting to receive and guide inserted printed circuit cards, card connectors and means for fixedly positioning said card connectors on said assembly with the terminal ends of said cards coupled to said connectors in circuit completing relationship.

3,271,627
ARRANGEMENT FOR CONNECTING ELECTRICAL CONTROLS TO PRINTED CIRCUITS
John A. McDougal, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,891
10 Claims. (Cl. 317—112)

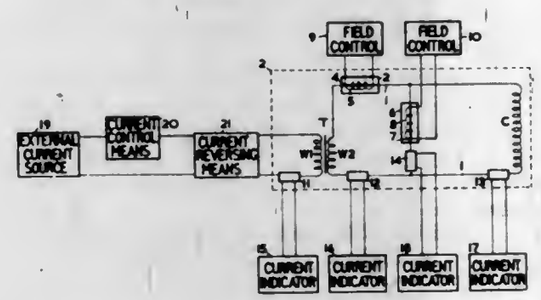
1. In combination, a panel including a printed circuit, an electrical control device disposed on one side of said panel, said control device having a plurality of rigid

contacts and a plurality of resilient contacts engaging said printed circuit conductors, and resilient means on



an opposite side of said panel for urging said rigid and resilient contacts into tight engagement with said printed circuit conductors.

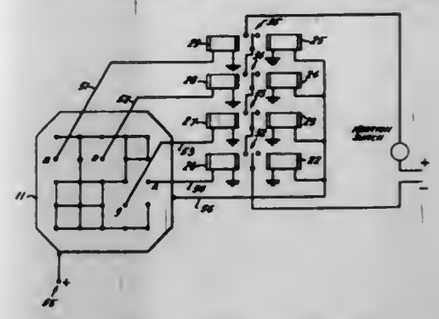
3,271,628
SUPERCONDUCTIVE CIRCUIT ARRANGEMENTS
Arthur Cunningham Prior, Malvern, England, assignor to National Research Development Corporation, London, England
Filed May 20, 1963, Ser. No. 281,450
Claims priority, application Great Britain, May 22, 1962, 19,650/62; Aug. 21, 1962, 32,030/62
10 Claims. (Cl. 317—123)



1. A method of producing enhanced circulating currents in a superconductive circuit comprises the steps of connecting the superconductive circuit in series with a second superconductive circuit, inducing a circulating current in the first and second circuits in series by means of inducing means coupled thereto, localising induced currents in the first and second circuits by short circuiting the first and second circuits with a superconductive link, rendering the second circuit non-superconductive to permit readjustment of the inducing means, restoring the second circuit to its superconductive state, rendering the superconductive link non-superconductive and, inducing a further current in the two circuits in series to aid the circulating current remaining after the short-circuit current has ceased to flow.

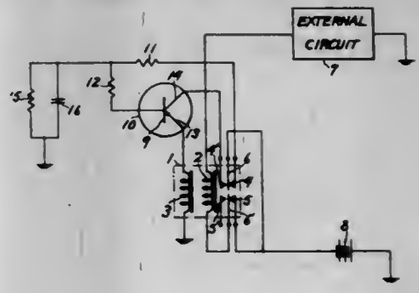
3,271,629
CODED ELECTRIC LOCKING MECHANISM
Stephan Holy, 431 E. 9th St., New York, N.Y.
Filed July 1, 1965, Ser. No. 468,854
1 Claim. (Cl. 317—134)

A coded electrical combination lock comprising, a plurality of electromagnetic relays each having first and second energization coils and each having first and second electrical contacts, said relays being of the type having a pivotal bar whereby energization of the first coil will cause said pivotal bar to close first and second contacts and energization of said second coil will open said contacts, said relays including holding means whereby the pivotal bar will remain in the condition associated with the energization of each respective coil until the subsequent energization of the opposite coil, all of said first and second contacts being in series with a utilization circuit, a plurality of push buttons each having a first and second contact, a first group of said push buttons electrically arranged in such a manner so that to depress any one would energize all of said second relay coils, a second group of said push buttons electrically arranged so that each one will energize a respective first coil of each



of the plurality of said relays so that when every one of said second group of push buttons is depressed the utilization circuit is complete, and if any one of said first group of push buttons is depressed before all of said second group of push buttons, all of said second coils will be energized and the utilization circuit will be opened.

3,271,630
OVERCURRENT INTERRUPTING APPARATUS
Kazumichi Miyazawa, Kawasakishi, Japan, assignor to Torio Company, Limited, Tokyo, Japan, a company of Japan
Filed June 11, 1963, Ser. No. 287,072
2 Claims. (Cl. 317—155)



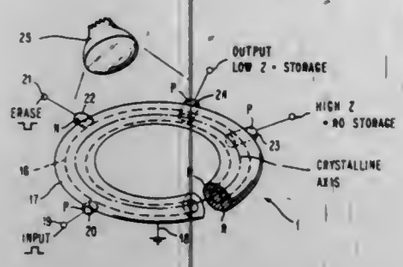
1. An overcurrent interrupting apparatus comprising a relay which consists of a main coil, a holding coil, two pairs of contacts and a pair of armatures, a direct current source which is connected to said main coil through one of said armatures and one of said contacts, a transistor, to the base of which a bias voltage is given by said source through another armature and one of said contacts as well as two resistors, the emitter of said transistor being earthed through said holding coil and the collector of said transistor being connected to one of opened contacts, and a parallel circuit consisting of a resistor and a condenser for providing a suitable time constant, one end of which is connected to the connection point of said two resistors, the other end of said parallel circuit being earthed.

3,271,631
UNIAXIAL CRYSTAL SIGNAL DEVICE
John C. Marinace, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 8, 1962, Ser. No. 193,125
6 Claims. (Cl. 317—234)

1. A semiconductor device comprising:

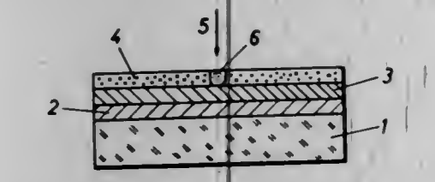
(a) a toroidal semiconductor element comprising a semiconductor crystal whisker shaped in toroidal form and epitaxially joined at its ends;

(b) said whisker having a single crystalline axis following the curvature of said toroid;
(c) said element including a central core portion of a first conductivity type and an outer skin portion of a second conductivity type joined together at a first semiconductor junction surrounding said central core portion;



(d) an input for said device comprising a second semiconductor junction formed in said outer skin portion of said device;
(e) and an output means for said device extending through said outer skin portion to said central core portion of said element.

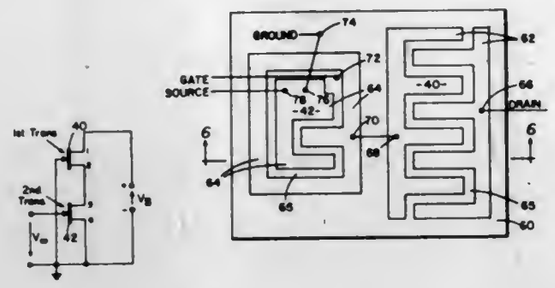
3,271,632
METHOD OF PRODUCING ELECTRICAL SEMICONDUCTOR DEVICES
Horst Joachim Hartmann, Nurnberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 18, 1962, Ser. No. 195,805
Claims priority, application Germany, May 26, 1961, St 17,870
12 Claims. (Cl. 317—234)



1. A semiconductor device comprising a layer of crystalline semiconductor material of one conductivity type, a protective insulating layer of amorphous semicondutor material of another conductivity type deposited thereon, a predetermined limited surface area of said amorphous layer comprising a re-crystallized solidified melt zone of said other conductivity type forming an electrode extending through the full thickness of said amorphous layer in contact with and of the same orientation as said crystalline layer of said one conductivity type and forming a PN-junction therewith.

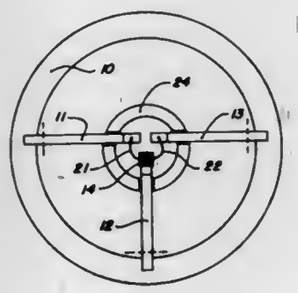
3,271,633
INTEGRATED FIELD EFFECT DEVICE WITH SERIES CONNECTED CHANNEL
Geza Csanky, Mesa, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 29, 1963, Ser. No. 254,652
6 Claims. (Cl. 317—234)

2. Transistor means including in combination: a first field effect transistor having a first region and a second region, first and second contact means affixed to said first region for producing a current flow therethrough, a first gate contact means affixed to said second region for controlling the current flow through said first region; a second field effect transistor having a first region and a second region, third and fourth contact means affixed to said first region of said second transistor for producing a current flow therethrough, and a second gate contact means affixed to said second region of said second transistor for controlling the current flow through said first region thereof, said second field effect transistor having a lower pinch-off current point than said first transistor; means connecting said second contact means



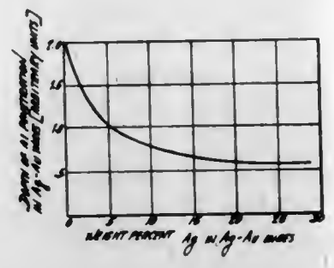
to said third contact means to place said first regions of said first and second transistors in series; means connecting said first gate contact means to said fourth contact means; means for introducing a unidirectional exciting potential across said first and fourth contact means; and means for introducing an input signal between said second gate contact means and said fourth contact means.

3,271,634
GLASS-ENCASED SEMICONDUCTOR
William R. Heaton, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 20, 1961, Ser. No. 146,590
4 Claims. (Cl. 317—234)



1. A semiconductor device comprising a wafer of monocrystalline semiconductor material having regions of opposite conductivity types therein, a hard glass, cup-like shell composed of a glass having a given thermal expansion coefficient and a given softening point, a first conductive member extending through a notch in the vertical wall of said shell into the interior of said shell, said wafer being positioned on said first conductive member within said shell to provide electrical contact to said wafer in a region of one conductivity type, a second conductive member extending through a second notch in the vertical wall of said shell into the interior of said shell, a thin conductive lead connecting a region of said wafer at the opposite conductivity type to said second conductive member within the shell, and a casing of solder glass filling said shell and surrounding said wafer and the portions of said conductive members which are within the shell, said casing being composed of a fused glass powder having a softening point much lower than that of said shell and having a thermal expansion coefficient substantially equal to that of said shell.

3,271,635
SEMICONDUCTOR DEVICES WITH SILVER-GOLD LEAD WIRES ATTACHED TO ALUMINUM CONTACTS
Robert Wagner, Levittown, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 6, 1963, Ser. No. 278,240
3 Claims. (Cl. 317—234)



1. A semiconductor device comprising a crystalline semiconductive wafer; at least one metallic contact comprising aluminum on a portion of said wafer; and an electrical lead wire attached to said contact, said wire consisting essentially of 5 to 25 weight percent silver, balance gold.

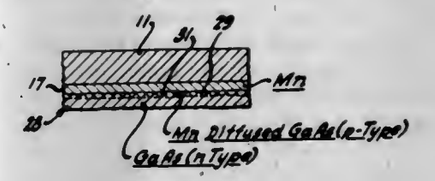
3,271,636
GALLIUM ARSENIDE SEMICONDUCTOR DIODE AND METHOD
John C. Irvin, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 13, 1963, Ser. No. 279,788
4 Claims. (Cl. 317—234)



2. A high frequency capacitive semiconductor diode comprising a wafer of gallium arsenide semiconductor material having a rectifying surface barrier comprising a thin layer of gold of limited extent on said wafer surface, an element of silver in contact with said gold layer and coextensive therewith said silver element being in low resistance electrical contact with said rectifying surface barrier with substantially no penetration of said surface barrier, a second thin layer of gold overlying said silver element, and a conductive member in contact with said second thin overlayer of gold.

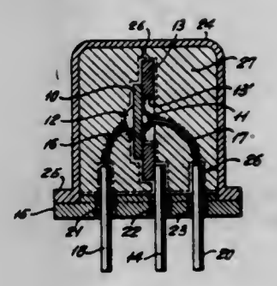
3,271,637
GaAs SOLAR DETECTOR USING MANGANESE AS A DOPING AGENT
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Edward F. Pasierb
Filed July 22, 1963, Ser. No. 296,879
1 Claim. (Cl. 317—234)

A semiconductor device comprising: a molybdenum backing member; a manganese substrate dopant on said member, the dopant having a thickness of less than one micron; and a film of gallium arsenide on said substrate,



the film and substrate providing an electrical p-type junction at the interface thereof.

3,271,638
ENCASED SEMICONDUCTOR WITH HEAT CONDUCTIVE AND PROTECTIVE INSULATIVE ENCAPSULATION
Emil M. Murad, 4011 E. 1st St., Long Beach, Calif.
Filed Nov. 4, 1963, Ser. No. 323,190
1 Claim. (Cl. 317—234)

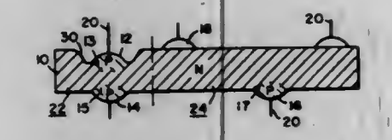


A semiconductor device comprising an element of semiconductor material including at least two regions of different conductivity type forming a PN junction, supporting means for said element, a metallic casing hermetically enclosing said element and electrical terminal means insulatingly mounted in said casing and connecting said regions of different conductivity with the outside of said casing; the improvement consisting in the provision of heat-conducting insulating layer directly upon said element, said supporting means and the portions of said terminal means located within said casing, and a solid body of heat-conducting and neutron and gamma ray absorbing encapsulant consisting of a eutectic alloy having a melting point lower than both the softening point of said insulating layer and the critical temperature substantially affecting irreversibly the electrical operating characteristics of said semiconductor material, said body completely filling the space enclosed by said layer and the inside of said casing, to provide a continuous thermal conducting path from said element to said casing, said insulating layer consisting of a thermoplastic resin containing a finely divided filler of high thermal conductivity, said filler consisting of about 80% by weight of micron-sized particles of mica.

3,271,639
INTEGRATED CIRCUIT STRUCTURES INCLUDING UNIJUNCTION TRANSISTORS
Angel G. Jordan, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 10, 1961, Ser. No. 94,867
2 Claims. (Cl. 317—235)

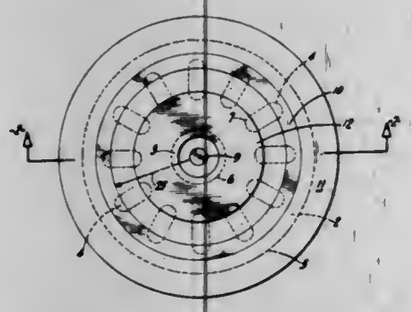
1. A monolithic semiconductor device suitable for use in a tuned amplifier circuit comprising: a first region of semiconductive material of a first type of semiconductivity having first and second integral and continuous portions; second and third regions of semiconductive material of a second type of semiconductivity disposed on opposite sur-

faces of said first portion only of said first region and forming first and second p-n junctions therewith; a fourth region of semiconductive material of said second type semiconductivity disposed on a surface of said second portion of said first region and forming a third p-n junction therewith; first and second ohmic contacts disposed on a surface of said second portion of said first region with said fourth region therebetween so that the path of flow of



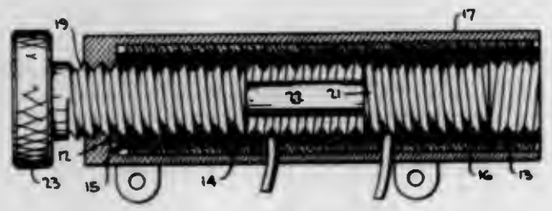
electrical current between said ohmic contacts extends past said third p-n junction; said first portion of said first region and said second and third regions thereby forming the functional equivalent of a bipolar transistor; said second portion of said first region, said fourth region and said first and second ohmic contacts thereby forming the functional equivalent of a unijunction transistor having a common semiconductive region with said bipolar transistor functional equivalent.

3,271,640
SEMICONDUCTOR TETRODE
Gordon E. Moore, Los Altos Hills, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Oct. 11, 1962, Ser. No. 229,839
11 Claims. (Cl. 317—235)



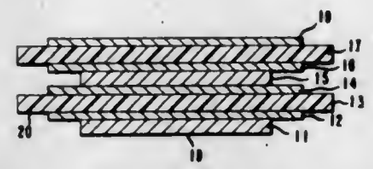
1. A semiconductor device comprising a body of semiconductor having:
a first region of one conductivity type,
a second region of the opposite conductivity type disposed within said first region, extending inwardly from one of the surfaces of said first region and forming a first PN junction with said first region having an edge at the surface of said body of semiconductor,
a third region forming a second PN junction with the opposite surface of said first region, said second PN junction also having an edge at said surface of said body of semiconductor,
an alignment of spaced-apart regions of said opposite conductivity type disposed within said first region extending inwardly from its surface and forming an alignment of PN junctions therewith which have edges at said surface of said body of semiconductor, said edges all lying between said edges of said first and second PN junctions,
a surface channel region adjacent to said first region and extending between said first PN junction and said alignment of PN junctions,
a control electrode capacitatively coupled to the semiconductor in spaced relationship to said surface channel region and the edges of said first PN junction and said alignment of PN junctions, said electrode adapted to change the conductivity type of said surface channel in response to a change in the potential at said electrode, and
means for passing electric current across said first and said second PN junctions.

3,271,641
VARIABLE CAPACITOR
Allan M. Biggar, Arlington, Va., and Maurice Apstein, Bethesda, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Apr. 1, 1965, Ser. No. 444,877
8 Claims. (Cl. 317—249)



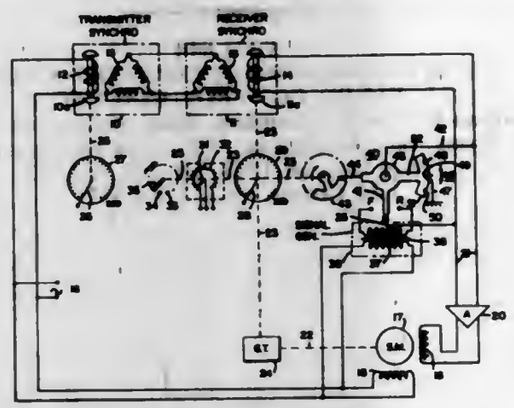
1. A subminiature variable capacitor comprising:
(a) a movable electrode in the form of a continuous screw,
(b) a first thin film of insulating material approximately conforming to the threaded surface of said electrode,
(c) a second thin film of insulating material approximately conforming to said threaded surface and being in superposition with respect to said first film,
(d) a fixed electrode approximately conforming to said threaded surface and being locked in place between said first and second films,
(e) said first film maintaining close contact with said threaded surface but permitting movement thereof,
(f) said first film serving as the dielectric between said fixed electrode and said movable electrode, and
(g) a tubular metallic shield can surrounding said second film.

3,271,642
ELECTRICAL CAPACITORS
Louis Vincent Baldwin, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 4, 1965, Ser. No. 513,629
3 Claims. (Cl. 317—260)



1. An electrical capacitor comprising a convolutely wound laminar structure comprising at least two strips of a metal foil and at least two strips of a sheet dielectric, said foil strips and said dielectric strips being arranged respectively in alternate layers, said dielectric strips having deposited on both sides thereof a layer of metal, said layers of metal being adjacent and in electrical contact with said foil strips and extending beyond the lateral edges of said foil strips, said foil strips having means to couple each respectively to an external electrical circuit, said laminar structure being immersed in a dielectric material contained in a casing adapted to envelope said laminar structure.

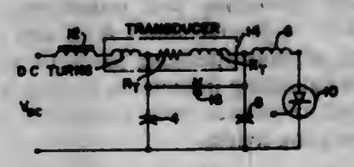
3,271,643
LIMIT STOP CONTROL FOR SYNCHRO SYSTEM
Frederick J. Lingel, Lynnfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,749
8 Claims. (Cl. 318—30)



1. In an electric servomotor system,
a transmitter synchro having a rotor,
a receiver synchro electrically connected to the transmitter synchro and having a rotor with an output winding in which a reversible polarity voltage is induced,
a reversible servomotor connected to drive the receiver synchro rotor,
polarity-senstive electroresponsive means controlling the direction of rotation of the servomotor,
means connecting the receiver synchro output winding to said electroresponsive means so that said servomotor normally drives the receiver synchro rotor to a position corresponding to the position of the transmitter synchro rotor between forward and reverse limits of travel displaced more than 180° but less than 360° of rotary movement of the receiver synchro,
an override signal generator having an output voltage,
means including a reset switch having forward, neutral and reverse positions connecting the override signal generator to the electroresponsive means with a polarity to cause the servomotor to drive the receiver synchro rotor in forward and reverse directions when the reset switch is in the forward and reverse positions, respectively, said override signal generator being disconnected when said reset switch is in the neutral position,
an actuator coupled to rotate with the receiver synchro rotor arranged to engage and actuate the reset switch progressively to the neutral and reverse positions and to the neutral and forward positions as the receiver synchro approaches, respectively, said forward and reverse limits of travel,
and positioning means maintaining said reset switch in said forward, neutral, and reverse positions until actuated to a different position by said actuator when it approaches said forward and reverse limits of travel.

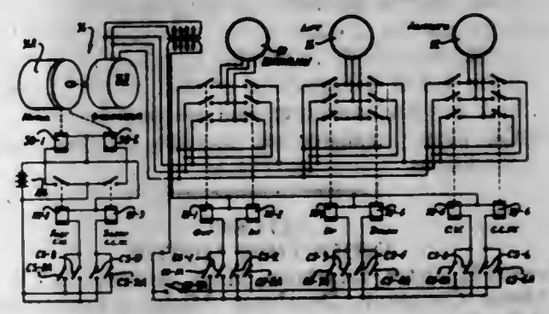
3,271,644
POWER OSCILLATOR FOR AN ELECTROMECHANICAL VIBRATING TRANSDUCER
James L. McShane, Churchill, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1963, Ser. No. 318,263
7 Claims. (Cl. 318—114)

5. In combination, a transducer having D.C. windings and A.C. windings and having electrical characteristics functionally related to the load to be driven thereby; an LC circuit including a capacitor member and an inductor member; a constant current source operably connected across said LC circuit; means responsive to the electrical characteristics of said transducer for controlling the frequency at which energy is interchanged in said LC circuit; an effective A.C. load impedance branch including a first capacitor and a second capacitor connected in circuit relation with the A.C. turns of said transducer across said LC circuit; said first capacitor connected in series



circuit combination with said A.C. turns; and said second capacitor connected across at least part of said A.C. turns; the reactance of said load impedance branch having a magnitude so chosen that the phase angle between the voltage across said capacitor member and the voltage across said power factor capacitor is at a positive rate of change with respect to frequency at the resonant frequency of said transducer.

3,271,645
A.C. GENERATOR-FED VARIABLE FREQUENCY MOTOR CONTROL MECHANISM FOR AN AERIAL LIFT
Jay M. Eitel, Los Altos, Calif., assignor to Telsta Corp., San Carlos, Calif., a corporation of California
Filed Sept. 6, 1962, Ser. No. 221,693
11 Claims. (Cl. 318—148)

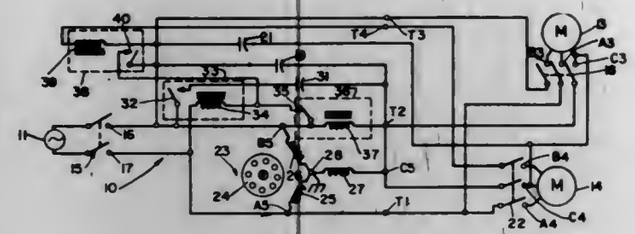


1. In a system for controlling the movement of a boom structure in an aerial lift, first A.-C. motor drive means for rotating the boom structure about a vertical axis, second A.-C. motor drive means for raising and lowering the outer end of the boom structure about a horizontal axis, and third A.-C. drive means for moving the outer end of the boom structure to and fro, a motor generator set having an A.-C. electrical output, and manually operated control means for connecting the electrical output of the motor generator set to the first, second and third drive motors so that the first, second and third drive motors can be selectively energized, said manually operated control means also including means for changing the speed of operation of the motor generator set to change the frequency of the electrical output so that the selected drive motor or motors will be operated at a different speed.

3,271,646
CONVERTER SYSTEMS
Alexander J. Lewus, 1617 S. 47th Court, Cicero, Ill.
Filed July 12, 1965, Ser. No. 470,982
5 Claims. (Cl. 318—218)

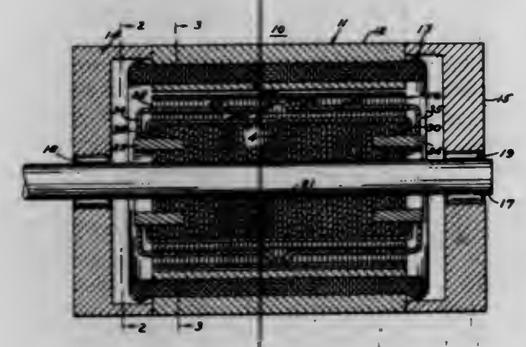
1. A converter system for energizing a plurality of three-phase motors or like three-phase operating loads, each having three input terminals A, B and C, from a single-phase power supply having two output terminals, said converter system comprising:
means for connecting a first one of said power supply output terminals to terminal A of each of said loads;

means for connecting the other power supply output terminal to terminal B of each of said loads;
a main de-phasing capacitor;
means for connecting said main capacitor between terminals B and C of each of said loads;
a three-phase rotary transformer having terminals A', B', and C';
means for connecting said transformer terminals A', B' and C' to the terminals A, B and C, respectively, of each of said operating loads to afford a variable current-balancing inductance having a relatively high reactance-resistance ratio connected in parallel with the operating loads;



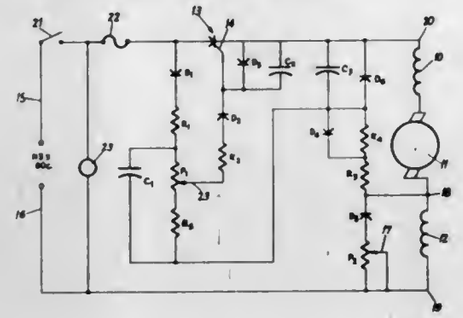
a starting capacitor;
means for automatically connecting said starting capacitor directly in parallel with said main capacitor upon initial energization of one of said loads and for disconnecting said starting capacitor when the load reaches normal operating conditions;
and means for automatically connecting said starting capacitor directly in parallel with said main capacitor upon initial energization of said rotary transformer and for disconnecting said starting capacitor when the rotary transformer reaches normal operating conditions.

3,271,647
INDUCTION MOTOR
Thomas H. Oster, Dearborn, Mich., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,413
9 Claims. (Cl. 318—234)



9. An induction motor comprising a stator, armature windings carried by said stator and adapted to be energized by a source of electrical energy having a wide range of frequencies, a rotor rotatably mounted in said stator, said rotor carrying a plurality of short circuited conductors, said short circuited conductors having end portions movable in a radial direction, a stationary conductor mounted on said rotor, said end portions electrically and mechanically engaging said stationary conductor, said short circuited conductors including bendable means positioned intermediate the end portions and actuated by centrifugal force for moving said end portions radially outwardly out of engagement with said stationary conductor when said rotor is rotated above a predetermined angular velocity whereby the speed of the rotor is limited to a predetermined maximum level.

3,271,648
UNIVERSAL-MOTOR COUNTER E.M.F. SPEED CONTROL CIRCUIT
Herman R. Weed, Columbus, Ohio, assignor to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio
Filed Dec. 26, 1963, Ser. No. 333,451
14 Claims. (Cl. 318—331)

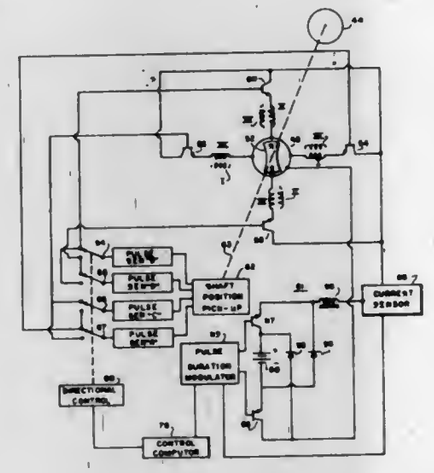


1. A circuit for regulating the speed of an electric motor having series connected armature and at least one field winding, comprising:
(a) power leads connected across said motor,
(b) one of said power leads containing in series a controlled rectifying device having a gate terminal, for controlling the flow of current to said motor,
(c) reference circuit means connected effectively across said power leads and to said gate terminal for deriving a reference voltage characterized by a D.-C. component and an A.-C. ripple,
(d) field discharge circuit means connected across said field winding of said motor for producing a unidirectional field current and resultant magnetic field at all times, and
(e) sensing circuit means for deriving an output voltage proportional to the generated voltage of said motor, said last named circuit means being connected between the cathode of said controlled rectifying device and said reference circuit means, and of a polarity tending to oppose the portion of said reference voltage applied to the gate of said controlled rectifying device,
whereby the difference in voltage between said reference voltage and said output voltage determines the firing point of said controlled rectifying device.

3,271,649
REGENERATIVE BRAKING SYSTEM
Klaus Juergensen, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 6, 1963, Ser. No. 307,270
15 Claims. (Cl. 318—376)

1. A direct current bilateral energy transfer system comprising:
(A) a source of direct current having first and second terminals;
(B) electromechanical means comprising first and second electrical terminals and a mechanically moving element and means for interchanging energy between said electrical terminals and moving element;
(C) a first electrical circuit interconnecting said first terminal of said source and said first terminal of said electromechanical means and including in series first switching means and an inductor,

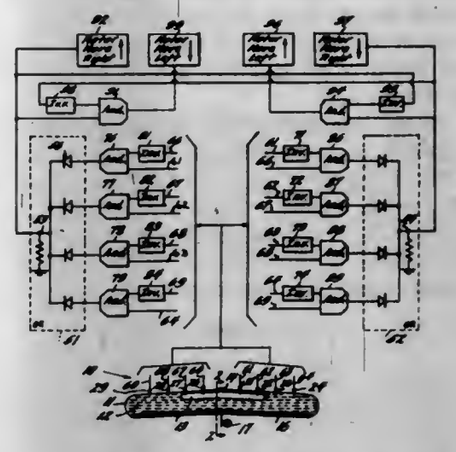
(1) said first switching means comprising means for controllably opening and closing said first electrical circuit;
(D) a second electrical circuit interconnecting said second terminal of said source and said second terminal of said electromechanical means and including in series second switching means,
(1) said second switching means comprising means for controllably opening and closing said second electrical circuit;
(E) a first unidirectional conducting circuit connected between said first terminal of said source and said second terminal of said electromechanical means and poled to permit current flow only from said last named second terminal to said last named first terminal;



(F) a second unidirectional conducting circuit connected between said second terminal of said source and a point on said first electrical circuit between said first switching means and said inductor and poled to permit current flow only from said last named second terminal to said point on said electrical circuit; and
(G) and switch control means having first and second control modes, said switch control means being operative in said first control mode to actuate said first and said second switching means whereby said electromechanical means is permitted to assume a motoring state, said switch control means being operative in said second control mode to actuate said first and said second switching means whereby said electromechanical means is permitted by said first and second unidirectional conducting circuits to assume a generating state.

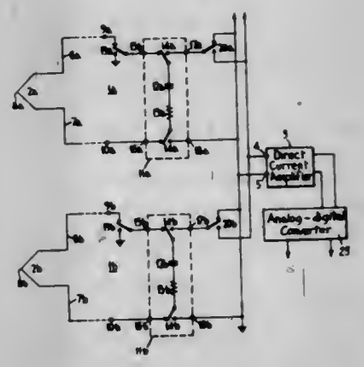
3,271,650
SYSTEM FOR MAINTAINING AN OBJECT IN A PREDETERMINED REFERENCE PLANE
Richard L. Riddle, El Paso, Tex., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 24, 1963, Ser. No. 311,251
3 Claims. (Cl. 318—489)

1. In a system for maintaining an object in a predetermined reference plane,
a level sensor unit, having a plurality of output electrodes, for sensing when the object deviates from the reference plane and for developing binary output voltages at its output electrodes indicative of the deviation,
a pair of gate circuits coupled respectively to each output electrode of the level sensor unit and responsive to the binary voltages developed by the sensor unit for developing binary form output voltages indicative of the object movement necessary to restore the object to the reference plane, and



means responsive to the binary form output voltages of the gate circuits for restoring the object to the reference plane.

3,271,651
SIGNAL TRANSFER APPARATUS INCORPORATING MEANS TO SUPPRESS SPURIOUS INTERFERENCE SIGNALS
Pierre Diederich, Harpenden, England, assignor to International Systems Control Limited, Wembley, England
Filed Sept. 23, 1963, Ser. No. 310,797
Claims priority, application Great Britain, Sept. 24, 1962, 36,257/62
9 Claims. (Cl. 320—1)



5. A signal transfer apparatus for applying to a voltage responsive means a potential difference representative of the output of a voltage generating means, said apparatus comprising:
(A) a first pair of terminals to which is applied said potential difference representative of the output of the voltage generating means;
(B) a second pair of terminals between which the voltage responsive means is connected;
(C) an impedance path including a capacitative element; and
(D) a first switch means having a set of contacts which, in a first condition of the switch means serves to connect said impedance path between the first pair of terminals, and in a second condition of said switch means, serves to connect said impedance path between the second pair of terminals,

(I) said set of contacts providing stray capacitances between the first pair of terminals and the second pair of terminals, and

(E) a second switch means having a set of contacts which serves to connect one of said first pair of terminals to a point of fixed potential when said first switch means is in its second condition and to disconnect said one of the first pair of terminals from said point when said first switch means is in its first condition; and

(F) means connecting the one of the second pair of terminals corresponding to the other of said first pair of terminals to a point of fixed potential when said first switch means is in its second condition,

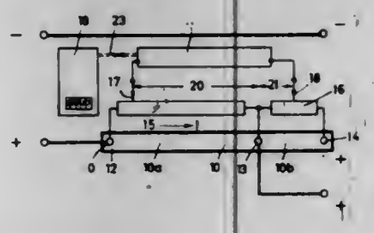
(G) whereby one end of each stray capacitance is maintained at a fixed potential at least when the first switch means is in its second condition.

3,271,652

SUPERVISORY BATTERY CHARGER RESPONSIVE TO THE NUMBER OF CHARGE-DISCHARGE CYCLES

Alfred Walz, Emmendingen, Baden, and Robert Östreicher, Teningen, Baden, Germany, assignors to Messrs. Frako Kondensatoren- und Apparatebau Gesellschaft mit beschrankter Haftung, Teningen, Baden, Germany, a corporation of Germany

Filed July 9, 1963, Ser. No. 293,733
Claims priority, application Germany, July 11, 1962, F 37,293
20 Claims. (Cl. 320—44)



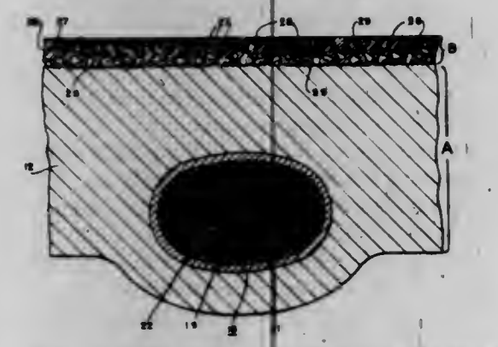
1. In combination with an electric storage battery, having a nominal capacity, and an electric charger therefor: supervisory means comprising an ampere hour measuring means electrically connected to said battery to measure the state of charge thereof; a first counter operable by said measuring means; and a second counter operatively associated with said measuring means to count the charging cycles of said battery.

3,271,653

NON-STICK METALLIC COOKING VESSEL

Robert M. Wolf, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 22, 1961, Ser. No. 133,103
1 Claim. (Cl. 220—64)



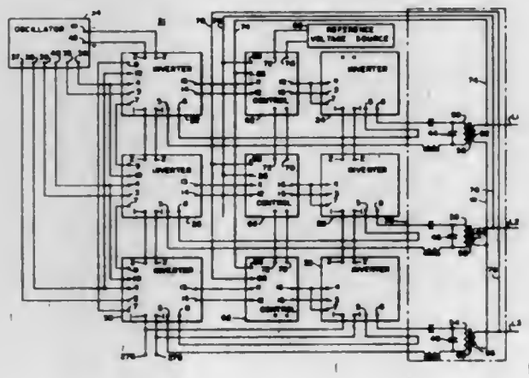
A metallic cooking vessel having a cooking surface consisting of a thin porous layer of aluminum permanently united to the base metal of the vessel, said base metal being aluminum and said thin porous aluminum layer being impregnated with a permanent non-stick agent and the food engaging surface of said impregnated porous aluminum layer comprising minute areas of the porous aluminum surrounded by areas of the non-stick agent.

3,271,654

APPARATUS FOR REGULATING THE PHASE AND MAGNITUDE OF THE OUTPUT VOLTAGE OF A POLYPHASE INVERTER

Leland A. Schlabach, Wilkins Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 25, 1963, Ser. No. 253,814
15 Claims. (Cl. 321—5)



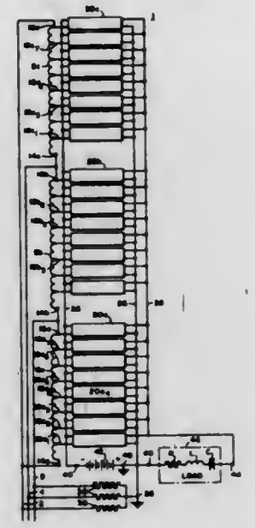
1. In a three-phase voltage generating apparatus; three output terminals; three alternating voltage generating devices having output connections and input connections, means connecting said output connections in Y to said output terminals whereby one of said output connections of each of said devices are connected together and the other of said output connections of said devices are individually connected to said output terminals; each said device comprising a first inverter, a second inverter, a control network for determining the phase difference in the alternating voltages generated by its said first and second inverters, and means connecting the output voltages of its said first and second inverters in series circuit to its said output connections; first means responsive to a first voltage appearing between a first and a second of said output terminals; a first of said devices being the one of said devices connected to said first output terminal and a second of said devices being the one of said devices connected to said second output terminal, said first means being connected to said control network of said first device for actuating said control network of said first device to regulate the phase difference between said first and said second inverters of said first device as a function of said first voltage; means responsive to a second voltage appearing between said second output terminal and the third of said output terminals and connected to said control network of said second device for actuating said control network of said second device to regulate the phase difference between said first and said second inverters of said second device as a function of said second voltage; the third of said devices being the one of said devices connected to said third output terminal; and means responsive to a third voltage appearing between said third output terminal and said first output terminal and connected to said control network of said third device for actuating said control network of said third device to regulate the phase difference between said first and said second inverters of said third device as a function of said third voltage.

3,271,655

APPARATUS FOR GENERATING A PLURALITY OF PHASE DISPLACED PERIODIC ELECTRICAL QUANTITIES

Seymour Salowe, West Caldwell, and Warren J. Schmidt, Upper Montclair, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 8, 1962, Ser. No. 178,324
20 Claims. (Cl. 321—7)



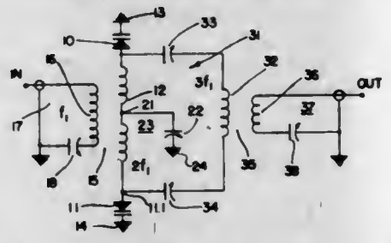
1. In a network for generating periodic electrical quantities, a source of polyphase alternating potential of a first frequency, a plurality of inductors, each said inductor having end taps and at least one intermediate tap, means individually connecting said end taps of said inductors in mesh configuration across the phases of said source, a plurality of impedance devices, means connecting said devices in star connection across the phases of said source to provide a neutral connection, a pair of input terminals, a pair of output terminals, circuit means connecting said input terminals and said output terminals, and including a switching means regulating the flow of energy through said circuit means as a function of the polarity of the potential applied thereto, said switching means including a control means for controlling the initiation of current flow therethrough, said control means being connected between said neutral connection and each of said taps for actuating said switching means at a desired phase angle of the voltage between said neutral connection and each of said taps to provide a sequence of pulses at said output terminals.

3,271,656

ELECTRIC WAVE FREQUENCY MULTIPLIER

Marion E. Hines, Weston, and Frederick P. Collins, Natick, Mass., assignors to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts

Filed Oct. 1, 1962, Ser. No. 227,341
13 Claims. (Cl. 321—69)



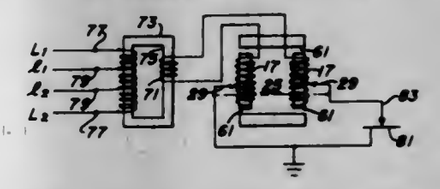
1. Electric circuit for generating from the energy content of an electric wave having a given fundamental frequency a harmonic-frequency wave greater than the second-harmonic, comprising: a pair of non-linear impedance diode means connected in series opposition one to the other, means to apply an input electric wave having said fundamental frequency in push-pull balanced phase across said diode means in series, idler circuit means to derive an electric wave having a frequency which is the second-harmonic of said fundamental frequency from said diode means in parallel with each other, and output circuit means to derive from said diode means an output electric wave having a frequency which is a harmonic of said fundamental frequency greater than said second-harmonic.

3,271,657

WELDING SYSTEMS AND ASSOCIATED ADJUSTABLE WELDING REACTOR

William W. Gibson, Alameda, Calif., assignor, by mesne assignments, to Glenn Pacific Corporation, a corporation of California

Original application Sept. 29, 1958, Ser. No. 763,989, now Patent No. 3,212,040, dated Oct. 12, 1965. Divided and this application June 23, 1965, Ser. No. 466,400
3 Claims. (Cl. 323—44)



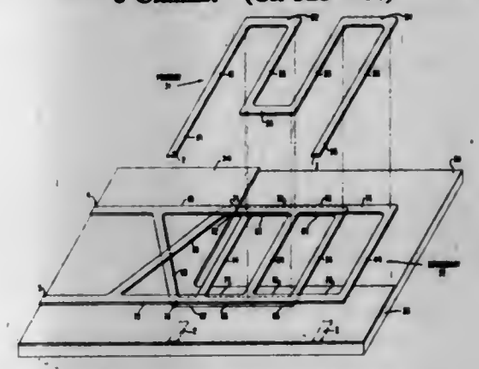
1. A welding circuit comprising means for reducing power line voltage to a welding voltage, an adjustable reactor including a winding on an iron core having air gap space giving said core a reluctance which varies not more than plus or minus 3% from the mean value of current ranging from a minimum value to short circuit current, means for connecting said reactor winding to said voltage reducing means, and an adjustable connection on said reactor winding.

3,271,658

THIN FILM SUPERCONDUCTING TRANSFORMER

Tsung-Hsien Cheng, Croton-on-Hudson, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 25, 1962, Ser. No. 197,718
6 Claims. (Cl. 323—44)



1. A composite transformer comprising,

a primary input,

a secondary output,

a plurality of individual transformers, each individual transformer having a primary conductor, and a secondary conductor juxtaposed to said primary conductor, said secondary conductors being divided into first and second groups,

first means connecting said first group of secondary conductors in parallel with said secondary output,

second means connecting said second group of secondary conductors in parallel, said second means being positioned above said first means,

connecting means connecting said second means in parallel with said secondary output so that current

in adjacent secondary conductors flows in opposite directions,

third means connecting said primary conductors in series with said primary input, said means being positioned over said first and said second means, and

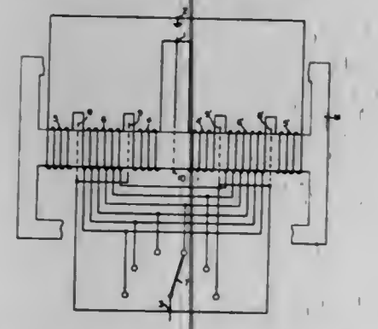
a superconductive shield beneath each conductor where the algebraic sum of the short circuit currents in the various layers of circuitry is not zero.

3,271,659

TAP CHANGING AUTOTRANSFORMER

Henri Joseph Philips, Brussels, Belgium, assignor to ACEC Ateliers de Constructions Electriques de Charleroi, Charleroi, Belgium, a corporation of Belgium

Filed May 7, 1963, Ser. No. 278,644
Claims priority, application France, Mar. 27, 1958, 761,650
4 Claims. (Cl. 323—47)



1. In an autotransformer having a high voltage terminal, a grounded terminal alternatively connected to a neutral point and a medium voltage terminal, two alike symmetrically disposed winding halves electrically connected in parallel between said high voltage terminal and said grounded terminal forming the winding of the autotransformer, said winding having two like symmetrically disposed tapped winding sections each in a respective winding half, each having respective taps so any one of several voltages may be selected therefrom and the taps of the two said tapped winding sections being connected in parallel, for each winding half two winding sections disposed on each side of the tapped section and connected in series therewith, two corresponding sections of the halves being connected to the high voltage terminal and the two other corresponding sections being connected to the grounded terminal, for each winding half a pair of electrostatic shields electrically connected to the medium voltage terminal and sandwiching the tapped winding section in their respective winding half, an electrostatic shield electrically connected to the high voltage terminal and disposed between the two corresponding winding sections connected to said high voltage terminal, each of said tapped winding sections comprising a pair of flat coils in series, said winding sections disposed in each half on each side of the tapped section comprising flat coils in series made of spirally wound conductors, the diameters of the different coils increasing progressively as their potential decreases, and switching means electrically connected to said medium voltage terminal and selectively operable to different positions for electrically connecting individual ones of the taps to the medium voltage terminal.

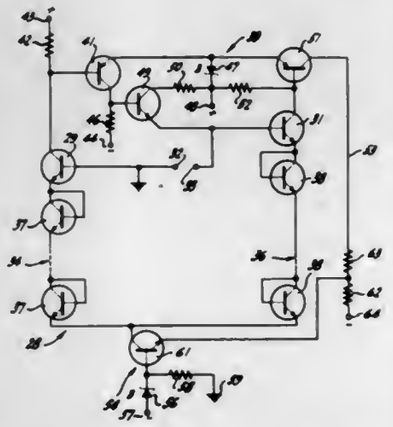
3,271,660

REFERENCE VOLTAGE SOURCE

David F. Hilbiber, Los Altos, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

Filed Mar. 28, 1963, Ser. No. 268,831
16 Claims. (Cl. 323—75)

14. A reference voltage generator comprising first and second NPN transistors, output terminals respectively connected to the bases of said transistors, one of said terminals connected to ground, first and second pluralities of semiconductor diode devices respectively connected in series with the emitters of said first and second transistors, means applying positive potential bias to the collectors of said transistors, first and second NPN transistors having their bases respectively connected to the collectors of said first and second NPN transistors, means applying negative potential bias to the collector said first PNP transistor, a breakdown diode having its positive terminal commonly connected to the emitters of said first and second PNP transistors, means applying positive potential bias to the negative terminal of said breakdown diode, a pair of feedback resistors series connected between the collector of said second PNP transistor and a source of negative potential bias, a third NPN transistor having its base connected to the collector of said first PNP transistor and its emitter connected to the base of said second NPN transistor, means applying positive potential bias to the collector of said third NPN transistor, a fourth NPN transistor having its emitter connected to the juncture between said feedback resistors and its collector commonly connected in series with said first and second pluralities of diode devices, a second breakdown diode having its negative terminal connected to the base of said fourth NPN transistor, means applying negative potential bias to the positive terminal of said second breakdown diode, and a resistor connected between the negative terminal of said second breakdown diode and ground, said first and second pluralities of diode devices respectively having total temperature coefficients at the levels of current flow therethrough which are equal and total potential drops thereacross which are unequal.



3,271,661

IONIZATION PRESSURE GAUGE WITH SECONDARY ELECTRON EMISSIVE RESISTIVE SURFACE AND MULTIPLYING CHANNEL MEANS

George W. Goodrich, Oak Park, James R. Ignatowski, Warren, and Robert R. Thompson, Livonia, Mich., assignors to The Bendix Corporation, Southfield, Mich., a corporation of Delaware

Filed Aug. 18, 1961, Ser. No. 132,333
2 Claims. (Cl. 324—33)

1. A pressure gauge comprising

an emitting source for emitting radiation capable of causing secondary electron emission on a secondary electron emissive surface with said radiation being emitted at a predetermined rate,

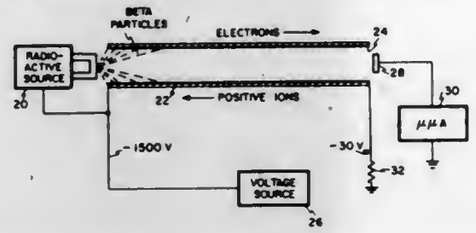
multiplying channel means for defining a multiplying path having an input end and an output end,

said multiplying channel means having an inner secondary emissive resistive surface disposed to receive at the input end said radiation and emit at the output end secondary electrons generated by said radiation,

voltage means connected to said multiplying channel means for providing a voltage differential lengthwise of said multiplying channel means resistive surface so that a positive potential gradient exists from the input end to the output end along said secondary emissive resistive surface to accelerate electrons from the input end to the output end longitudinally of said channel means,

the channel means interior being subject to a medium the pressure of which is to be measured and said medium having molecules therein in proportion to the pressure of said medium,

said channel means having a substantially unobstructed acceleration path so that the positive ions formed by collision between the electrons and the molecules of



the medium can be accelerated to a more negative point on the secondary emissive resistive surface resulting in an impact with said inner secondary emissive surface resulting in secondary emission from said secondary emissive surface thereby providing electrons in proportion to the pressure in said medium,

collecting means disposed at the output end of said multiplying channel means and being at a sufficiently high potential to collect the electrons from said channel means,

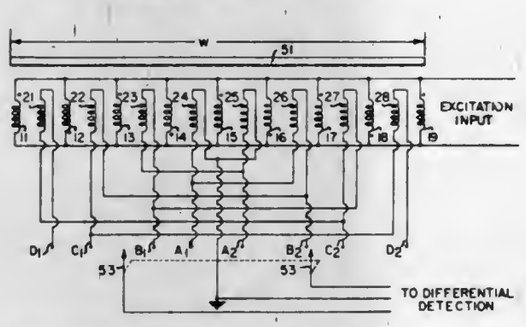
indicating means connected to the collecting means for indicating the amount of the electrons collected by said collecting means which is in proportion to the pressure of the medium.

3,271,662

FLAW DETECTING APPARATUS HAVING MULTIPLE PICK-UP AND EXCITING COILS ON THE SAME SIDE OF THE TEST PIECE

George F. Quittner, Cleveland Heights, Ohio, assignor, by mesne assignments, to API Instruments Company, Chesterland, Ohio, a corporation of Ohio

Filed Aug. 22, 1962, Ser. No. 218,783
2 Claims. (Cl. 324—37)



1. In apparatus for detecting a flaw in a sample material having thickness as its minor dimension and which is ferromagnetic or electrically conductive, the combination of

an alternating current source of power,

plural flux producing exciter coils equal in number to three plus a multiple of two, all of said exciter coils being arranged with their axes substantially perpendicular to said sample material while spaced across the width of said sample material and all being on one side of said sample material as regards the direction of its thickness dimension, said exciter coils being connected to said source so that said exciter coils are oppositely phased as regards their successive adjacency whereby to establish null flux planes between successive coils,

plural sensing coils equal in number to a multiple of two, all of said sensing coils being positioned to have their axes respectively substantially coincident with the respective null planes between sensing coils, while the sensing coils are located on the same side of said sample material in the direction of its thickness dimension as are said exciter coils,

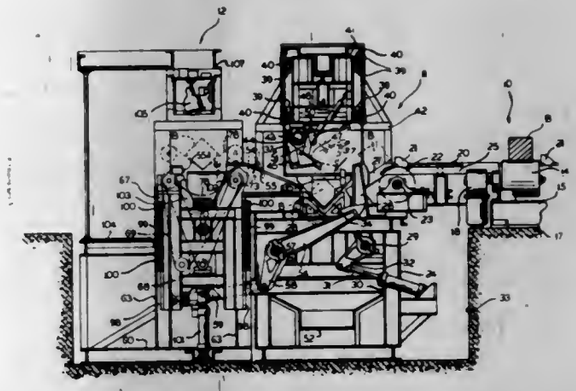
means including a double-make, double-break multiposition selector switch and circuitry separately through separate portions of said switch and through a diminishing number of sensing coils arranged as equal halves of sensing coils in circuit and for comparing, by differencing, the signal of one of plural sensing coil circuits with that of another and analogous sensing coil circuit by switch selection of pairs of different, but equal as between pairs, numbers of sensing coils in circuit, each such circuit, except when the number of sensing coils included therein is unity, being characterized by having sensing coils thereof subtractively connected in series, for further differencing.

3,271,663

APPARATUS FOR INSPECTING BILLETS AND THE LIKE BY MEANS OF MAGNETIC PARTICLES

Richard S. Gewartowski and Joseph L. Deibel, Chicago, Ill., assignors, by mesne assignments, to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware

Filed Apr. 25, 1962, Ser. No. 190,103
6 Claims. (Cl. 324—38)



1. In apparatus for inspecting billets for flaws and imperfections as revealed by the orientation of magnetic particles on the surface of the billet;

means providing a magnetizing station including

means for receiving and cradling a billet,

means for engaging and magnetizing the billet, and

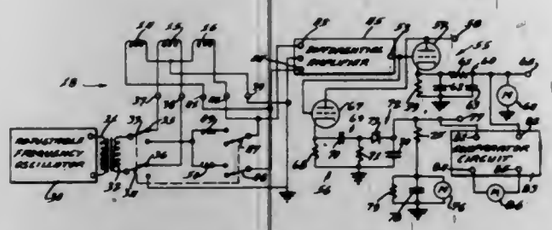
means for applying magnetic particles to the billet;

means for conveying and delivering a billet sidewardly to said magnetizing station and including ease-down means for receiving and depositing the billet in said receiving and cradling means for thereafter magnetizing and application of magnetic particles to the billet, said ease-down means including arms continually supporting in substantially non-sliding engagement said billet during the transfer of said billet to said cradling means;

means for transferring the treated billet from the magnetizing station;

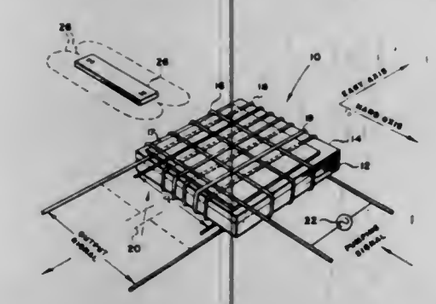
means providing an inspection station situated to receive the treated billet from said transferring means; and means for receiving the inspected billet from said inspection station.

3,271,664
COMBINED LEAKAGE FIELD AND EDDY CURRENT DETECTION SYSTEM
John M. Mountz, Niles, and John J. Flaherty, Elk Grove Village, Ill., assignors, by mesne assignments, to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,680
8 Claims. (Cl. 324—40)



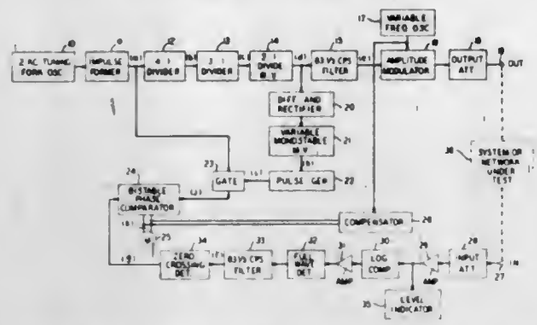
1. In a system for detecting either surface type defects or sub-surface type defects in a test piece of ferrous material having a permeability curve such that with an applied field increasing from zero toward a saturating value the absolute value of the first derivative of the permeability curve increases to a peak value at a first field strength value, then decreases to zero at a second field strength value, then increases to another peak value at a third field strength value and finally decreases to zero at a fourth relatively high saturating field strength value, test coil means disposed in proximity to a surface of said piece for inducing an A.C. field in said portion and inducing eddy currents therein and for developing a signal in response to said field and said eddy currents, and means for applying a unidirectional biasing field in said test piece having a value approximately equal to one of said second and third field strength values for producing a maximum change in said signal in response to one of said types of defects while producing a minimum change in said signal in response to the other of said types of defects.

3,271,665
THIN FILM FIELD SENSOR
Peter S. Castro and Frank F. Stucki, Palo Alto, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Nov. 20, 1963, Ser. No. 324,993
6 Claims. (Cl. 324—43)



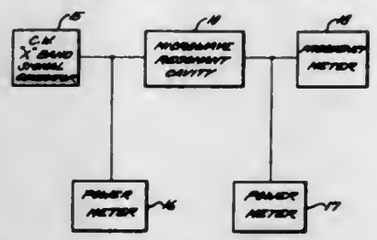
1. An improved flux sensing device for measuring the magnitude of external magnetic fields comprising: an insulative support member; a thin bistable magnetic film deposited on said support member, said film having easy and hard axes of magnetization perpendicular to one another and having square hysteresis loop characteristics along the easy axis; means including a first coil wound about said film and said support member for switching the magnetic vector of said thin magnetic film about said easy axis; and means including a second coil for detecting and recording the magnitude of an external magnetic field directed along the axis of said second coil and the hard axis of said thin magnetic film.

3,271,666
APPARATUS FOR MEASURING ENVELOPE DELAY DISTORTION WHEREIN SELECTED IMPULSES OF A HIGH FREQUENCY STANDARD ARE GATED TO ONE INPUT OF A BISTABLE PHASE COMPARATOR
Theodore C. Anderson, Morristown, and David L. Favin, Whippany, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 419,864
23 Claims. (Cl. 324—57)



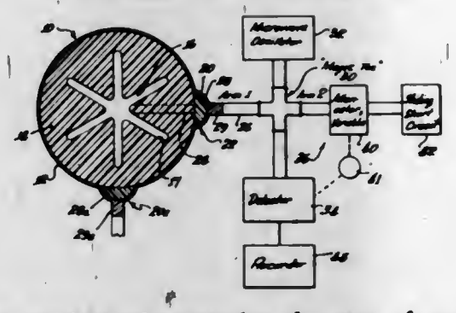
1. Apparatus for measuring the envelope delay distortion of a system comprising means for generating a train of accurately spaced voltage impulses, means responsive to said voltage impulses for producing a low frequency signal having a period which is an integral multiple of the voltage impulse spacing, means for generating variable frequency carrier signal, means for amplitude modulating said carrier signal by said low frequency signal, output means for coupling the resulting modulated signal to said system to be measured, input means for receiving the modulated signal from said system, means for demodulating the received modulated signal to provide a received low frequency signal, means for producing a second train of voltage impulses each of which occurs at a predetermined point in phase of said received low frequency signal, a bistable circuit means having two inputs one of which is connected to receive said second train of voltage impulses, gating means for coupling selected impulses from said first-mentioned generating means to the other input of said bistable circuit means, and means responsive to the duty cycle of said bistable circuit means for indicating the envelope delay of said system for each frequency of said variable frequency carrier signal.

3,271,667
METHOD OF DETERMINING THE DIELECTRIC CONSTANT OF IRREGULARLY SHAPED CRYSTALS
Ernst R. Czerlinsky, Arlington, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 1, 1963, Ser. No. 277,403
6 Claims. (Cl. 324—58)



1. The method of determining at microwave frequencies the dielectric constant of a crystal such as a diamond comprising forming a first series of rods, each having a preselected dielectric constant, measuring the individual frequency shift resulting from the insertion of each of said rods in a microwave resonant cavity, embedding said crystal successively in a second series of rods identical in dielectric constant to said first series of rods, and measuring the frequency shift in said microwave resonant cavity resulting from the successive insertion of each of said second series of rods including said crystal into said microwave resonant cavity.

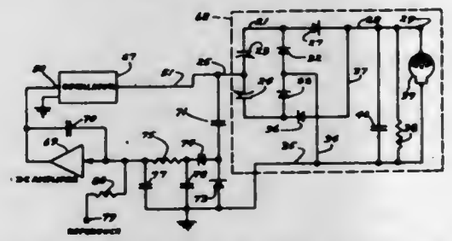
3,271,668
MICROWAVE MEASUREMENT OF SURFACE ATTRITION OF A DIELECTRIC BODY
Claus H. Haake, Altadena, Samuel T. Workman, Glendora, and Donald L. Johnson, West Covina, Calif., assignors to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Filed Aug. 23, 1962, Ser. No. 218,874
4 Claims. (Cl. 324—58.5)



1. The method of measuring the rate of progressive attrition from a surface of a body of solid dielectric material, said method comprising
injecting electromagnetic radiation of microwave frequency into the body in a direction to be internally reflected from the said surface,
receiving radiation reflected from the surface,
and detecting the variations in the relative phase of the injected and reflected radiation that result from attrition at the surface.

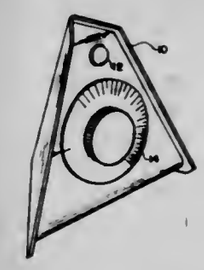
3. A rocket testing system, comprising in combination structure forming a rocket combustion chamber having a wall portion of dielectric material,
a body of solid propellant within the chamber overlying the wall portion and having a free surface opposing the wall portion,
means for initiating combustion at said surface,
means for projecting an incident beam of electromagnetic radiation of microwave frequency through said wall portion into the body of propellant in a direction to be internally reflected from said surface,
and means for comparing the phase of the incident and reflected radiation to detect attrition of said surface during combustion of the propellant.

3,271,669
ALTERNATING CURRENT DIODE LOOP CAPACITANCE MEASUREMENT CIRCUITS
Tenny Lode, Mankato, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 4, 1962, Ser. No. 242,166
22 Claims. (Cl. 324—60)



1. Capacitor comparator circuitry comprising first network including first and second capacitors which are variable relative to each other, said first capacitor being connected for conduction between a first input terminal and a first junction and said second capacitor being connected for conduction between said first input terminal and a third junction, first, second, third and fourth diodes all connected for conduction in the same direction in a closed series loop with a second input terminal on said loop between the first and second diodes, said first junction being on said loop between the second and third diodes, a second junction on said loop between the third and fourth diodes and said third junction being on said loop between the fourth and first diodes, a base load connected between said second input terminal and second junction, alternating voltage supply means having output and base potential terminals for supplying power to said first and second input terminals comprising an oscillator having a signal input, output and base potential terminals, said output being amplitude-controlled by a unidirectional voltage input signal, an amplifier having an input summing point and a unidirectional voltage output coupled to the osciliator signal input for supplying signal input thereto, at least one network energized by the oscillator output, said network comprising a capacitor, having first and second terminals, said first terminal being energized by the oscillator output, said capacitor being of a size such that it is subtsantially fully recharged by each cycle of alternating current imposed thereon, current carrying means coupled to said capacitor second terminal for conduction of capacitor charge and discharge cycles to said base potential and summing point, respectively, and a unidirectional voltage reference connected for conduction to said summing point, whereby said alternating voltage supply means output amplitude is controlled by a summation of currents from said reference and network currents.

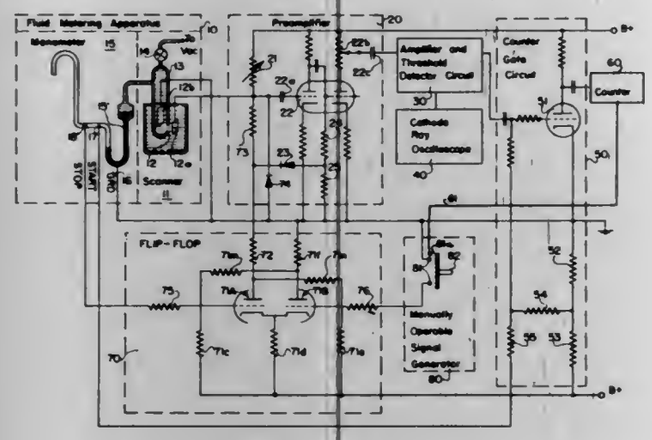
3,271,670
ELECTRONIC BEAT PRODUCING DEVICE
Daniel A. Esakov, West Hartford, and William J. Hildebrandt, Weatogue, Conn., assignors to Connecticut Technical Corporation, Hartford, Conn., a corporation of Connecticut
Filed Apr. 2, 1962, Ser. No. 184,366
6 Claims. (Cl. 324—68)



1. An electronic metronome comprising a transistor having emitter, base and collector terminals, means providing a source of direct current voltage, a transformer having a primary coil connected between said collector terminal and one side of said voltage source and also having a secondary coil connected between said base terminal and the other side of said voltage source, said primary and secondary coils being so arranged as to provide at least part of a regenerative feedback path between said collector and base terminals which causes oscillations in the current flowing through said collector terminal, a resistance and a capacitance connected in parallel between said emitter terminal and said other side of said voltage source for alternately quenching and permitting said oscillations of said collector current so as to produce successive burts of such oscillations, said transformer including an iron core having an armature movable in response to flux changes produced by energization of said transformer

by said bursts of oscillations, and a sounding device connected to said armature for converting the movement of said armature into audible sounds.

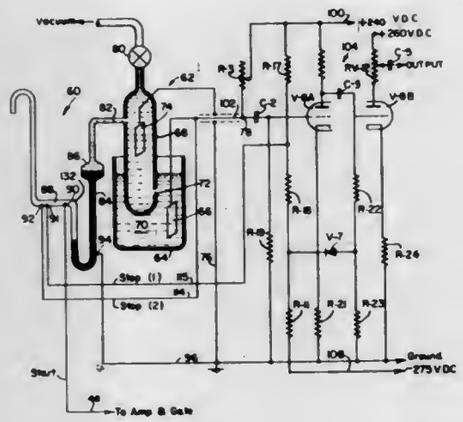
3,271,671
PARTICLE ANALYZING DEVICE
Wallace H. Coulter, Miami Springs, Fla., assignor to Coulter Electronics, Inc., Chicago, Ill.
Original application Apr. 6, 1961, Ser. No. 101,289. Divided and this application Aug. 16, 1965, Ser. No. 479,907
20 Claims. (Cl. 324—71)



1. A particle analyzer, for studying particles suspended in a fluid, comprising:
(a) fluid suspended particle scanning means for generating electric scanner signals, each signal having a parameter which is a function of a physical property of a respective scanned particle, incorporating
(i) a pair of scanner electrodes,
(ii) means for metering the volume of fluid scanned during the period of an analytic run,
(iii) means for generating a start signal at the beginning of an analytic run, and
(iv) means for generating a stop signal at the end of an analytic run;
(b) means for analyzing the scanner signals;
(c) manually operable signal generating means;
(d) means for energizing the scanner electrodes in response to a signal received from the manually operable signal generating means and for de-energizing the scanner electrodes in response to a stop signal received from the stop signal generating means; and
(e) means for activating the analyzing means in response to a signal received from the start signal generating means
whereby the generation of a start signal causes activation of the analyzing means and the generation of a stop signal causes de-energization of the scanner electrodes so that the scanner electrodes are energized only before and during the period of an analytic run when a metered volume of fluid is being scanned.

3,271,672
PARTICLE STUDYING DEVICE CONTROL CIRCUIT
Michael I. Henderson, London, England, assignor to Coulter Electronics, Inc., Chicago, Ill.
Continuation of application Ser. No. 139,516, Sept. 20, 1961. This application Oct. 4, 1965, Ser. No. 492,732
21 Claims. (Cl. 324—71)

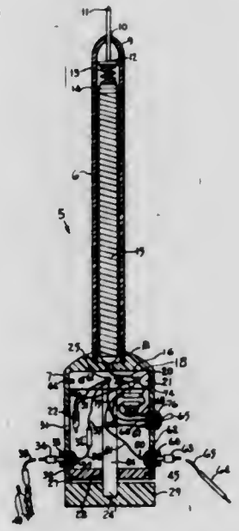
1. A particle analyzer, for studying particles suspended in a fluid, comprising:
(a) fluid suspended particle scanning means, having a pair of scanner electrodes, for generating scanning signals, each signal having a parameter which is a function of a physical property of a respective scanned particle;
(b) means for analyzing the scanning signals;
(c) liquid manometer means for metering the volume of fluid scanned, having a metering section;
(d) means for sensing the passage of the manometer liquid past a first point in the metering section and for generating a first program signal;
(e) means for sensing the passage of the manometer liquid past a second point in the metering section and for generating a second program signal;
(f) means for sensing the passage of the manometer liquid past a third point in the metering section and for generating a third program signal;



(g) means for activating the analyzing means in response to the receipt of the first program signal;
(h) means for de-activating the analyzing means in response to the receipt of the second program signal; and
(i) means for de-energizing the scanning means in response to the receipt of the third program signal;
the first point being separated from the other points by a distance which is a function of the volume of fluid scanned during the period of an analytic run, whereby the analyzing means are activated only during the period of an analytic run and the scanning means are de-energized after an analytic run.

3,271,673
HIGH VOLTAGE TELEVISION TEST PROBE HAVING AN ADJUSTABLE FREQUENCY BLINKER INDICATOR
Joseph Woroble, Kearny, N.J.
(55 Morgan Place, North Arlington, N.J. 07032)
Filed Jan. 12, 1966, Ser. No. 520,281
4 Claims. (Cl. 324—72.5)

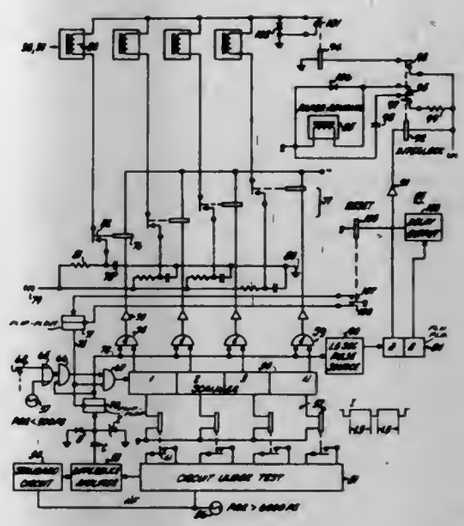
1. A television high voltage testing probe, comprising, in combination,
a narrow elongated insulating tube tapered at one end and terminating with a small opening,
an enlarged hollow insulating housing connected to the other end of said tube and having a window and an index near its open end,
a conductive pointed contact rod disposed within the end of said tube and projecting through the small opening thereof,
a multi-megohm fixed resistance cartridge having an end lead and disposed within said tube and connected at its other end in conducting relation with said rod,
an insulating retainer wall disposed in said enlarged housing adjacent said cartridge end lead and having access therethrough for said cartridge lead,
a variable resistor having a fixed connection, an open end connection, and a variable resistance connection, and a rotatable resistance-varying shaft projecting axially out of said housing and mounted in said housing behind said retainer wall and connected to said cartridge lead at its fixed connection,
a jack receptacle mounted in the wall of said housing and having an internal jack connection,
a fixed fuse resistor connected in series with said jack connection and the variable resistance connection of the variable resistor,
a knob attached to the projecting shaft end of said variable resistor and calibrated to indicate, in conjunction with the index on the housing, the high voltage at the contact rod,



a ground clamp adapted to be plugged into said jack receptacle,
a neon lamp disposed in said housing adjacent said window and having terminals connected across the fixed connection and the variable resistance connection of said variable resistor and designed to light up when the voltage indicated on the knob is near or at the voltage at the contact rod, and
a capacitor connected across the lamp terminals and designed and mounted in a manner so as to cause said neon lamp to blink when said indicated voltage is reached.

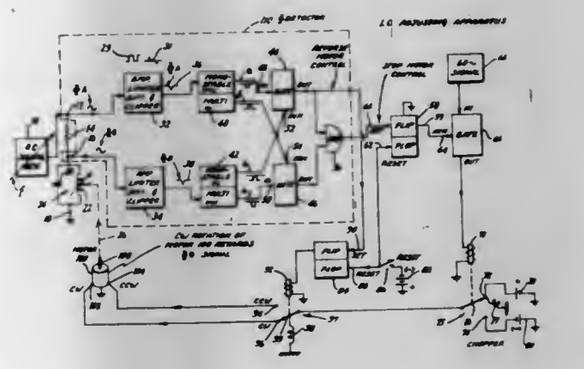
3,271,674
CIRCUIT VARIANCE ANALYZER INCLUDING SCANNER CONTROLLED PARAMETER VARIATION OF THE TEST CIRCUIT
Kenneth R. Horning, Chicago, and John Massey, La Grange Park, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Apr. 28, 1961, Ser. No. 106,326
8 Claims. (Cl. 324—73)

1. A circuit variance analyzer for detecting variations in the output of a circuit under test, comprising a standard circuit having output characteristics corresponding to the desired output characteristics of said circuit under test, scanning means driven at a relatively low rate for providing predictable combinations of scanning outputs, selecting means operated responsive to said combinations of outputs of said scanning means for selecting successive combinations of control circuitry, said control circuitry operated to vary the parameters of said circuit under test, means driven at a relatively high rate for simultaneously, repeatedly energizing the input of said standard circuit and said circuit under test to cause said circuits to produce outputs, comparator means operated responsive to



differences in the outputs of said standard circuit and said circuit under test for providing command signals, printout means operated responsive to said command signals and said scanning outputs for visually indicating said differences on a recording medium.

3,271,675
PHASE DETECTOR AND AUTOMATIC APPARATUS UTILIZING SAID PHASE DETECTOR FOR PERFORMING A ROTATIONAL MECHANICAL ADJUSTMENT TO EFFECT A PHASE COINCIDENCE
Earl R. Kreinberg, Harrisburg, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 13, 1962, Ser. No. 244,416
13 Claims. (Cl. 324—83)



1. A phase coincidence detector for (1) providing an output signal at one lead when two periodic input signals attain phase coincidence, and (2) providing an output signal at another lead when the phase of a predetermined one of said input signals leads the other, comprising:
(a) means for deriving respective pulse trains from said input signals, said pulse trains having the same relative phases as said input signals,
(b) two pulse lengtheners coupled to said means of clause (a) for deriving lengthened pulses from said pulse trains,

(c) means, responsive to said lengthened pulses, and having two output leads, for providing simultaneous pulses on said two output leads when said lengthened pulses are in phase coincidence, and for providing pulses on a predetermined one only of said output leads when said predetermined one of said input signals leads the other, and

(d) an AND gate having two inputs connected to said two output leads whereby said AND gate will provide an output only when said input signals are in phase coincidence.

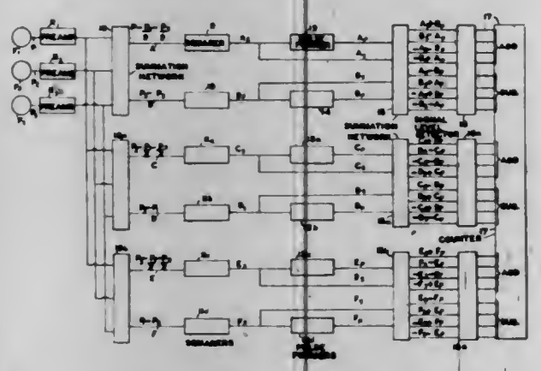
3,271,676

THREE DETECTOR CYCLE COUNTING MEANS

Anwar K. Chitayat, Plainview, N.Y., assignor to Optomechanisms, Inc., Plainview, N.Y.

Original application Jan. 23, 1963, Ser. No. 253,473. Divided and this application Jan. 25, 1963, Ser. No. 254,015

3 Claims. (Cl. 324—83)



3. In a cycle counting means comprising,

means to provide a phase reference signal,

means to measure phase shift of said adjustable phase signal with respect to said reference signal by counting fractional wavelengths comprising,

means connected to receive said adjustable phase signal and to produce first, second and third signals from said adjustable phase signal, said first, second, and third signals being 120° apart in phase,

means connected to said last means to combine said first, second, and third signals with said phase reference signal to provide first, second and third combined signals,

means connected to said last means to detect said first, second and third combined signals and provide detected signals,

first summation network means connected to said last means to combine said detected signals to provide a plurality of pairs of sine wave signals separated by 90° in phase, each of said pair of signals being separated by 120°,

means connected to said last means to make square waves of said pairs of signals,

means connected to said last means to provide pulses from said pairs of signals,

second summation network means connected to said square wave and pulse means to combine said square wave signals and said pulses to provide plus signals when said adjustable phase signal moves in one direction with respect to said phase reference signal and to provide minus signals when said adjustable phase signal moves in the opposite direction, and

plus-minus counter means connected to said last means to count said pulse signals thereby counting fractional cycles of phase shift.

3,271,677

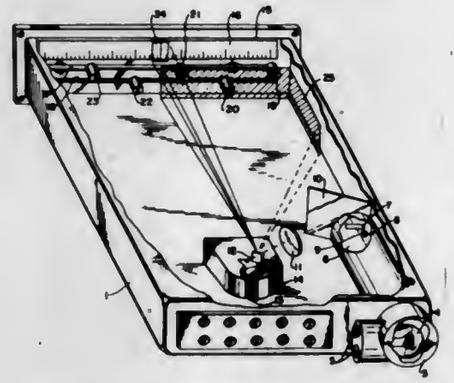
METER MOVEMENT WITH SCALE RANGE INDICATORS ACTUATED BY PHOTORESPONSIVE SWITCHING CIRCUITS

Helmut Peter, 7 Elbestrasse, Erlangen, Germany, and Gotthilf Schrenk, deceased, late of Erlangen, Germany, by Maria-Luise Schrenk geb. Albrecht, executor, 3 Langemarckplatz, Erlangen, Germany, and Hartmut Schrenk, 7 Steinickeweg, Munich 13, Germany; Martin Schrenk, 3 Langemarckplatz, Erlangen, Germany; Monika Schrenk, 30 Dustere Eichen-Weg, Gottingen, Germany; and Friedrich Schrenk and Renate Schrenk, 3 Langemarckplatz, Erlangen, Germany, heirs

Filed June 25, 1965, Ser. No. 467,829

Claims priority, application Germany, Oct. 28, 1959, G 28,251; Nov. 12, 1959, G 28,352

3 Claims. (Cl. 324—96)



1. A photo-responsive switching device for use with a meter movement whose angular displacement is proportional to a variable quantity and indicative of said quantity on an associated scale, comprising a plurality of photo-responsive elements adapted to conduct current therethrough upon illumination by light moveably secured along a path adjacent said scale, the spacing between adjacent elements corresponding to a predetermined range of said scale, means mounted on said meter movement for transmitting an elongated visible beam adapted to travel along said path containing said elements and a marking beam onto said scale, a characteristic line of said marking beam corresponding to the quantity to be measured and travelling in unison with a front edge of said elongated beam, whereby rotation of said meter movement causes said elongated beam to progressively illuminate each of said elements, switching means comprising a normally open and a normally closed switch means serially connected to each of said elements and a source of current for energization upon illumination of said elements by said elongated beam, the arrangement being such that a normally open switch means associated with one element is connected to a normally closed switch means of an adjacent element, and an indicating output means for each of said ranges is connected to said current source through said interconnected normally open and normally closed switch means of the respective adjacent elements, whereby only the indicating output means associated with a range on which said characteristic line of said marking beam is located, is energized.

3,271,678

ELECTRONIC SIGNAL ANALYZER FOR A SERIES OF SUCCESSIVE PULSES

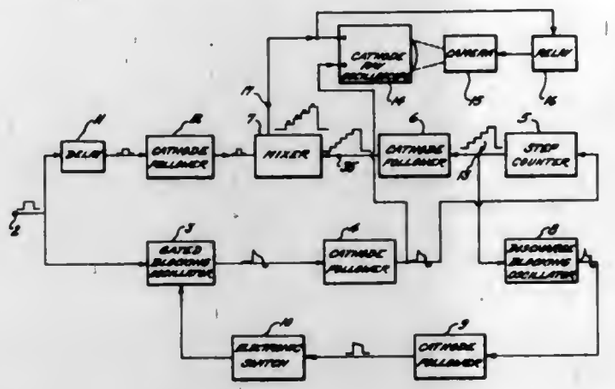
Paul J. Daly, Quincy, and Joseph F. Clark, Lexington, Mass., assignors to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 27, 1962, Ser. No. 176,159

2 Claims. (Cl. 324—121)

1. An electronic signal analyzer, in combination with a cathode ray oscilloscope and a camera, comprising means to generate a successively stepped signal from a series

of pulses, each step being representative of a single pulse of said series, means to trigger the sweep of said cathode ray oscilloscope with each pulse of said series of pulses, means to switch off said triggering means, said switching means being controlled by the last step of said stepped



signal, means to delay each pulse of said series of pulses, means to superimpose each of said delay pulses upon the step of said stepped signal representative thereof, and means to display said superimposed signal on said cathode ray oscilloscope.

3,271,679

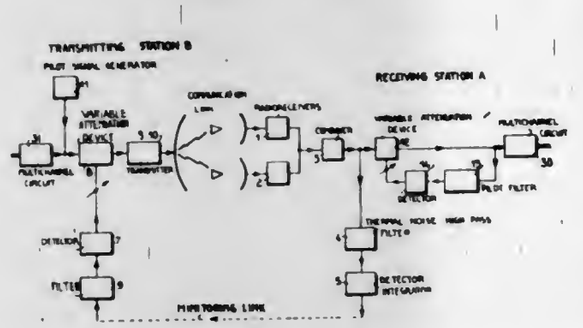
FREQUENCY MODULATION COMMUNICATION SYSTEM HAVING AUTOMATIC FREQUENCY DERIVATION CONTROL IN RESPONSE TO RECEIVED THERMAL NOISE

Boris Fostoff, Maisons-Laffitte, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a French body corporate

Filed Feb. 4, 1963, Ser. No. 255,993

Claims priority, application France, Feb. 6, 1962, 887,070, Patent 1,322,204

9 Claims. (Cl. 325—31)



1. In a frequency-modulation system including a transmitter and a receiver, said transmitter having frequency-modulation means for producing a frequency-modulated intelligence-bearing signal and means for transmitting said signal, the provision of a monitoring arrangement for at all times maximizing the signal-to-noise ratio at the receiver comprising:

a high-pass thermal noise filter connected to the receiver for selectively deriving a signal corresponding to a thermal noise component accompanying the received intelligence-bearing signal as an indication of the strength of said latter;

integrator means connected to the output of the filter means for deriving from said thermal noise signal a monitoring signal corresponding to averaged thermal noise;

variable means connected to said frequency-modulation means for modifying the frequency-deviation of said intelligence-bearing signal; and

means connected for varying said variable means in accordance with variations in said monitoring signal whereby to maintain said frequency-deviation substantially at its optimal value corresponding to minimum noise-to-signal ratio at the receiver.

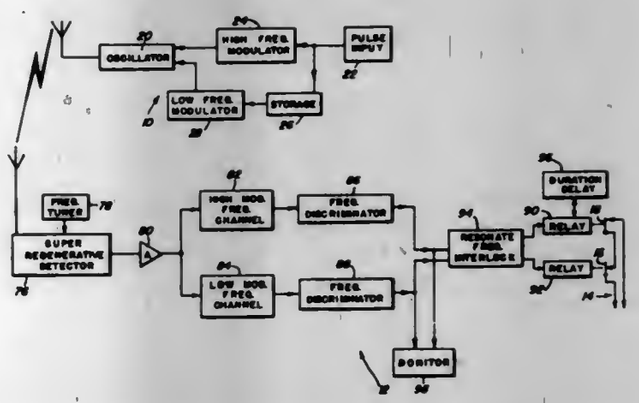
3,271,680

DUAL MODULATED REMOTE CONTROL SYSTEM

Willard S. Reynolds, Hollywood, Fla., assignor to Telectron Company, Division of Elliott & Evans, Inc., Fort Lauderdale, Fla., a corporation of Ohio

Filed Dec. 31, 1963, Ser. No. 334,791

14 Claims. (Cl. 325—37)



1. A private communication system comprising, a transmitter having means for radiating signal energy at a predetermined carrier frequency and modulating means for sequentially modulating said signal energy at lower and higher modulating frequencies, a receiver having means for detecting said lower and higher modulating frequencies when tuned to said predetermined carrier frequency, separate channel means coupled to said detecting means for respectively conducting signal energy at the lower and higher modulating frequencies, a utilization circuit having relay means respectively energized by modulated signal energy at said lower and higher modulating frequencies to complete the circuit, interlock means coupled to said separate channel means for preventing energization of the relay means in response to signal energy simultaneously conducted through the channel means at said lower and higher modulating frequencies, and delay means responsive to energization of the relay means by signal energy at one of said modulating frequencies for prolonging energization thereof to overlap reception of modulated signal energy at the other modulating frequency.

3,271,681

AUTOMATIC SYSTEM FOR CORRECTING FOR DOPPLER SHIFT IN SINGLE SIDEBAND COMMUNICATIONS EQUIPMENT

Robert J. McNair, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Feb. 3, 1964, Ser. No. 342,085

15 Claims. (Cl. 325—65)

10. In a transmitter-receiver communications system, the combination comprising:

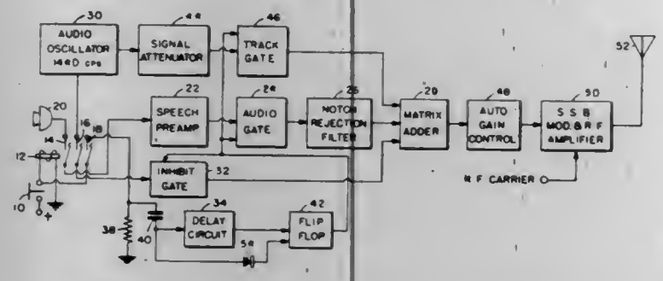
a source of intelligence signal in a given frequency spectrum;

a first source of reference signal within said spectrum;

means for initially transmitting said reference signal to a remote receiver;

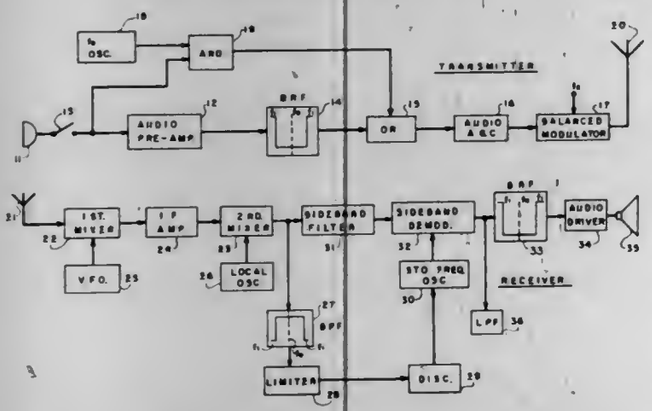
means after a predetermined delay period for inhibiting the transmission of said reference signal and for transmitting said intelligence signal;

a second source of reference signal having a frequency adjacent said spectrum;
means responsive to the power level of said intelligence signal for transmitting said second reference signal when the power level of said intelligence signal is below a predetermined level;
means at said receiver for detecting each of said first and second reference signals and said intelligence signals;



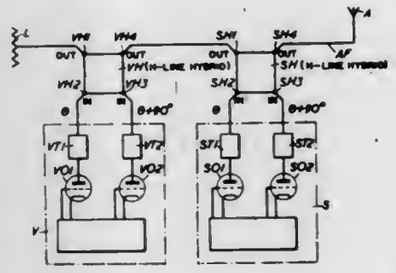
means responsive to a difference in frequency between said detected first reference signal and said transmitted first reference signal for controlling the frequency of operation of said receiver during said delay period;
means responsive to a difference in frequency between said detected second reference signal and said transmitted second reference signal for controlling the frequency of operation of said receiver after said delay period; and
a transducer driven by said detected intelligence signal.

3,271,682
DOPPLER-SHIFT CORRECTOR FOR SINGLE SIDEBAND COMMUNICATIONS SYSTEMS
Charles A. Bucher, Jr., Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Feb. 3, 1964, Ser. No. 342,170
5 Claims. (Cl. 325—65)



1. In a transmitter-receiver communications system, the combination comprising:
a source of signal intelligence having a given frequency spectrum;
means for rejecting a single redundant portion of the frequency spectrum of said signal intelligence;
a single source of reference signal having a frequency substantially at the center of the rejected single redundant portion of said frequency spectrum;
a carrier;
means for modulating said carrier with said reference signal and the non-rejected frequency spectrum of said signal intelligence;
means for transmitting at least one sideband of said modulated carrier;
a receiver for receiving said transmitted sideband, said receiver including demodulator means for demodulating said transmitted sideband, said demodulator means including a controllable oscillator;
means for detecting said reference signal;
reference frequency comparison means pre-established at said receiver, said reference frequency comparison means having an operating frequency which is the same as the frequency of said source of reference signal at the transmitter;
means for developing a control signal responsive to the difference in frequency between said detected reference signal and the operating frequency of said reference comparison means; and
means responsive to said control signal for controlling the frequency of operation of said oscillator.

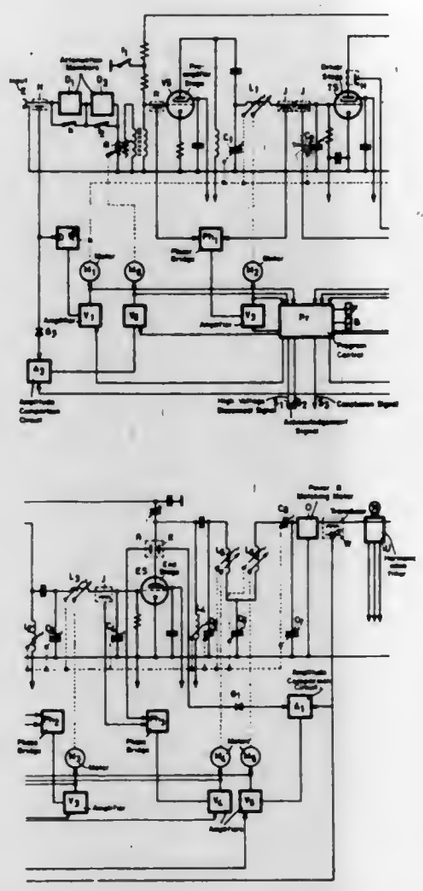
3,271,683
PLURAL HYBRID LOAD COUPLING ARRANGEMENT FOR PLURAL TRANSMITTERS WITH OUTPUTS IN PHASE QUADRATURE
Boleslaw Marian Sosin, Great Baddow, England, assignor to The Marconi's Company Limited, a British company
Filed July 12, 1963, Ser. No. 294,663
Claims priority, application Great Britain, July 17, 1962, 27,331/62
4 Claims. (Cl. 325—130)



1. A circuit for coupling a plurality of transmitters of different frequencies to a common load, said circuit comprising a plurality of four-port hybrids each having two pairs of ports, one pair of ports of each hybrid being coupled in cascade between said common load and a balancing load and each hybrid having one of said ports connected to a corresponding port of the next hybrid in the cascade sequence, and a plurality of transmitters each having two output terminals on which appear output signals in phase quadrature relation with respect to one another, said output signals being fed into the two remaining ports of a corresponding hybrid through circuits tuned to the corresponding output signal frequency, the means coupling said output terminals to said two remaining ports being so chosen in relation to one another that the signals fed in at said two remaining ports combine additively at the port leading to the common load.

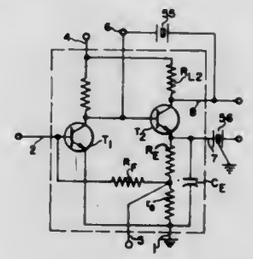
3,271,684
METHOD OF AUTOMATICALLY ADJUSTING A BROADCAST TRANSMITTER
Adolf Simon, Berlin-Steglitz, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Aug. 6, 1962, Ser. No. 215,062
Claims priority, application Germany, Aug. 30, 1961, S 75,507
12 Claims. (Cl. 325—175)

1. A method for automatically adjusting a broadcast transmitted, with transmitter stages having tuned oscillation circuits, and including an end stage, to a control frequency supplied thereto from a central station or the like, which control frequency has a value maintained constant during the tuning adjustment, comprising the steps of adjusting tuning elements of the transmitter stages to a coarse range in dependence upon the frequency of said supplied control frequency, tuning the oscillation circuits in the transmitter stages, by resonance tuning, to the control frequency, adjusting the coupling of the end



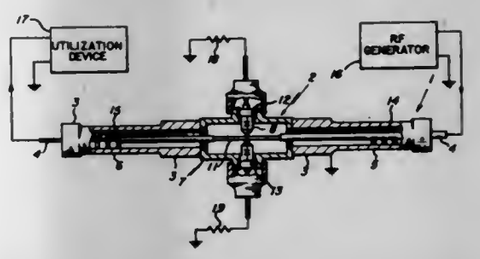
stage by impedance matching to its working impedance, adjusting the total amplification of the transmitter to the desired output power, and transmitting to the central station a signal for effecting holding of the supplied control frequency value to the conclusion of the tuning.

3,271,685
MULTIPURPOSE MOLECULAR ELECTRONIC SEMICONDUCTOR DEVICE FOR PERFORMING AMPLIFIER AND OSCILLATOR-MIXER FUNCTIONS INCLUDING DEGENERATIVE FEEDBACK MEANS
John D. Husher, Greensburg, and James E. McClain, North Belle Vernon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 20, 1963, Ser. No. 289,216



1. Electronic apparatus for providing any one of a plurality of circuit functions including that of an oscillator-mixer comprising: a unitary body of semiconductive material with a plurality of N and P type semiconductive regions therein providing a first transistor functional portion including emitter, base and collector regions, a second transistor functional portion including emitter, base and collector regions distinct from said emitter, base and collector regions of said first transistor functional portion, a capacitance functional portion, and a plurality of resistance functional portions conductively interconnected to various regions of said first and second transistor functional portions including a first resistance functional portion connected to the collector of said first transistor functional portion and a second resistance portion connected to the collector of said second transistor functional portion for the purpose of biasing said transistor functional portions upon application of a suitable supply potential at the extremity of said resistance portions and a degenerative feedback loop comprising at least one of said resistance functional portions interconnected between the emitter of said second transistor functional portion and the base of said first transistor functional portion; a direct conductive interconnection between the collector of said first transistor functional portion and the base of said second transistor functional portion so that said device is capable of signal amplification with a gain at least comparable to that achieved if only said first transistor functional portion is utilized while using a bias resistance connected to the collector of said first transistor functional portion which is less than about 3000 ohms; said capacitance functional portion being connected across the emitter of said second transistor functional portion and a point of common reference potential; frequency stabilizing means connected to said unitary body between two circuit points each effectively associated with one of said regions of said transistor functional portions to provide an oscillatory signal at a first frequency; means to supply a modulated carrier wave at a second frequency to the base of said first transistor functional portion means to derive an output signal at the beat frequency of said first and second frequencies from the emitter of said second transistor functional portion.

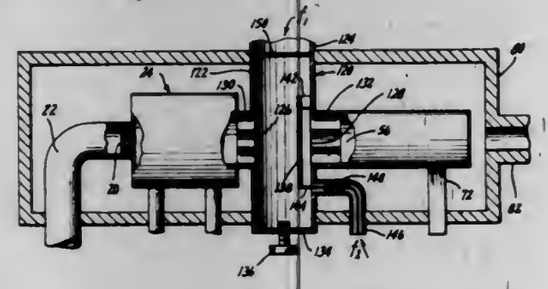
3,271,686
SIGNAL MIXERS
Marvin J. Bock, Santa Barbara, Calif., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 229,047
5 Claims. (Cl. 325—445)



1. An electrical device comprising in combination, an elongated waveguide, a three-element transmission line comprising first and second coaxial conducting elements including center and outer conductors with said outer conductors mounted upon and extending outwardly from opposite sides of the waveguide, and a third element extending through the interior of the waveguide with its opposed ends connected respectively to the center conductors of said first and second elements, said first element comprising means for transmitting a first signal to the third element, the waveguide comprising means for transmitting a second signal to said third element, and mixing means at said third element for mixing said first and second

signals, producing a resultant third signal, and coupling said third signal to only said second element of the three-element transmission line.

3,271,687
FREQUENCY CONVERTER EMPLOYING MOLECULAR CONVERSION MEDIUM
William E. Bradley, Washington, D.C., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 15, 1961, Ser. No. 110,199
10 Claims. (Cl. 325—448)



2. A frequency converter employing a molecular conversion medium for heterodyning first and second oscillatory signals, the frequency of at least one of said signals being other than a characteristic transition frequency of said molecular conversion medium, the sum or difference of the frequencies of said two oscillatory signals being equal to a characteristic transition frequency of said molecular conversion medium, said frequency converter comprising a source of said molecular conversion medium, first means cooperating with said molecular conversion medium supplied by said source for creating an excess of molecules in the upper one of a pair of coupled inversion states, second means responsive to applied signals for subjecting said upper state molecules to an electromagnetic perturbation field, said field having components at frequencies equal to the frequency of each of the signals supplied to said second means, third means separate from said second means for extracting energy from said conversion medium in response to transitions of said upper state molecules to the lower of said two coupled states and means for supplying said first and second signals to be heterodyned to said second means.

3,271,688
FREQUENCY AND PHASE CONTROLLED SYNCHRONIZATION CIRCUIT
Hans W. Gschwind and Rudolf H. Huebel, Alamogordo, N. Mex., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 17, 1963, Ser. No. 273,795
1 Claim. (Cl. 328—55)

A circuit arrangement for achieving bit synchronization from a pulse code modulated input signal comprising:

a trigger generator receiving said input signal and producing a trigger pulse for each change in level of said input signal,

first and second flip-flop circuits,

a clock pulse generator of variable frequency,

first, second and third AND gates each having one input from said generator,

said first flip-flop having one input terminal receiving said trigger pulse and a second input terminal connected to a corresponding input terminal of said second flip-flop and the output of said second AND gate, said first flip-flop being switched to its alternate state each time said trigger pulse is applied thereto,

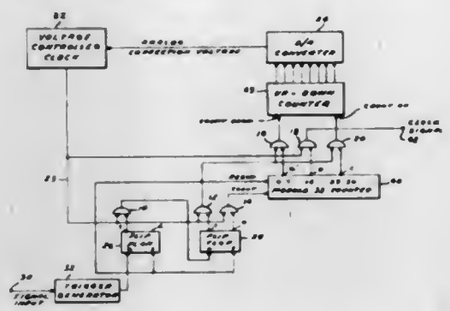
said first and second AND gates having a second input from corresponding output terminals of said first and second flip-flops, respectively,

said third AND gate having a second input from the output terminal of said second flip-flop,

connecting means between the output of said first AND gate and the other input terminal of said second flip-flop,

counting means for advancing in unit steps from a zero reference through an ordered sequence of distinguishable circuit output states and being reset automatically to zero reference each time the maximum count is registered,

said counting means having one input terminal receiving the output of said third AND gate for causing the count to advance and a second input terminal receiving the output of said second AND gate for clearing said counter to zero reference, said counter being cleared to zero by the second clock signal which occurs following the setting of said first flip-flop to said alternate state whereby phase synchronization of said clock pulses and each of said level-changing signals is established within an interval which is no greater than the duration of two successive clock pulse periods,



said counting means including first, second, and third output terminals for sequentially registering counts in the lower, medium, and higher regions of the count interval each time the count interval is traversed,

fourth, fifth and sixth AND gates,

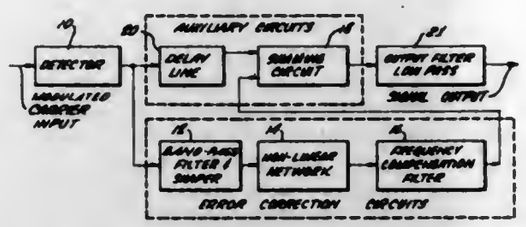
said fourth and sixth AND gates each having an input connected to the output of said second gate and a second input, respectively, from the first and third output terminals of said counter,

digital signal producing means receiving the outputs of said fourth and sixth AND gates for producing a decreasing digital signal when said fourth AND gate is open and an increasing digital signal when said sixth AND gate is open,

and conversion means receiving said digital signal for producing an analog correction signal which accelerates or delays the oscillations of said clock pulse generator in accordance with said correction signal whereby bit synchronization between said input signal and the output bit rate of said fifth AND gate is achieved.

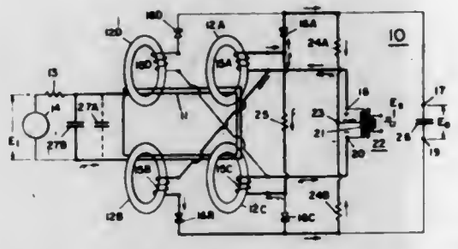
3,271,689
DEMODULATOR FOR TIME MODULATED SIGNALS
Wayne K. Hodder, Glendora, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 6, 1964, Ser. No. 335,727
4 Claims. (Cl. 329—136)

1. A demodulator circuit for demodulating a carrier signal which is time modulated by an information signal, the demodulator including a detector for generating an output signal having frequency components corresponding to the information signal and unwanted side bands, a band-pass filter for passing signals on either side of the carrier frequency, the output of the detector being connected to the filter, a square-law network coupled to the output of the band-pass filter, a low-pass filter for pass-



ing only signals within the frequency range of the information signal, and means for combining the output of the square-law network with the output from the detector and applying the combined outputs to the low-pass filter.

3,271,690
PUSH-PULL FULL-WAVE MAGNETIC AMPLIFIER
James L. Cockrell, Ann Arbor, Mich., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 13, 1963, Ser. No. 258,267
5 Claims. (Cl. 330—8)



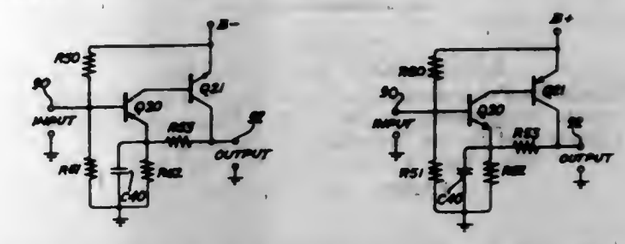
1. A push-pull full-wave magnetic amplifier including two pairs of saturable cores each having an output winding and a source of switching pulses of alternately opposite polarity characterized in that the cores of each pair are inductively coupled in push-pull relation by an input-signal winding common to all cores, and that a coupling resistance means is connected between the output windings of one of the cores of each of said pairs to provide a series-circuit across said source for alternate resetting of said one core of each of the two pairs by current from said source, the other core of each of the two pairs being reset by current induced in said input-signal winding common to all cores in consequence of the current-flow through said series-circuit from said source.

ERRATUM

For Class 330—4.7 see:
Patent No. 3,271,731

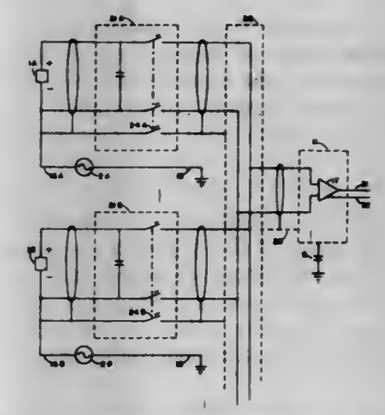
3,271,691
RADIATION MONITOR CIRCUIT INCLUDING AMPLIFIER
Harry H. Hendon, Campbell, and Louis D. Test, Santa Clara, Calif., assignors to General Electric Company, a corporation of New York
Filed May 8, 1961, Ser. No. 108,652
11 Claims. (Cl. 330—17)

1. A doublet transistor amplifier which comprises a first and a second transistor stage having transistors of opposite polarity and each connected in a common emitter configuration, the collector of said first stage being directly connected without any intervening impedance elements to the base of the second stage and having terminals connecting said doublet amplifier to a source of operating potential, a first resistance connected between said terminals, a signal input terminal connected to an intermediate point on said first resistance and to the base of said first stage, a signal output terminal connected to the collector of said



second stage, a second resistance connecting the collector of the second stage to the emitter of the first stage, and means consisting of third resistance and a capacitance in parallel connecting the emitter of the first stage to the common potential terminal.

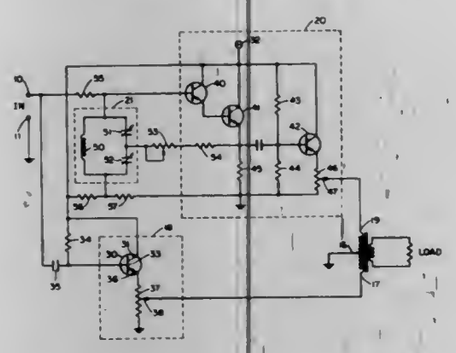
3,271,692
DIFFERENTIAL AMPLIFIER AND COMMUTATOR SYSTEM
David C. Kalbfell, 941 Rosecrans St., San Diego, Calif.
Filed Mar. 15, 1962, Ser. No. 179,878
4 Claims. (Cl. 330—69)



1. In a commutation system, means for measuring true differential signal voltage in the presence of common mode voltage and amplifier back current comprising, in combination, a plurality of differential signal sources, a plurality of shielded two conductor lines each having one of said signal sources connected across the terminals at one end thereof, a plurality of capacitors, each of said conductor lines having one of said capacitors connected across the terminals at the other end of the line, each said capacitor continuously tracking and holding the signal voltage produced by the signal source connected across its line thereby to provide a virtual zero resistance source whereby spurious signal voltage effects due to impedances in the line are substantially avoided and the effective magnitude of the common mode voltages is reduced by at least an order of magnitude, a differential amplifier having two inputs and an output, and commutation means operable to connect said two conductor lines in sequence to said amplifier inputs each respectively at said terminals at said other end thereof thereby to connect said capacitors in sequence across said amplifier inputs whereby the capacitor held voltages are commutated into the amplifier and the amplified signal voltages appear in sequence across said amplifier output, said commutation means having a sampling period which is short compared to the time between samples thereby substantially to avoid depletion of said capacitor held voltages at the amplifier inputs while the same are being commutated into the amplifier, each of said capacitors having a value which lies between minimum and maximum values and providing a signal charging RC time

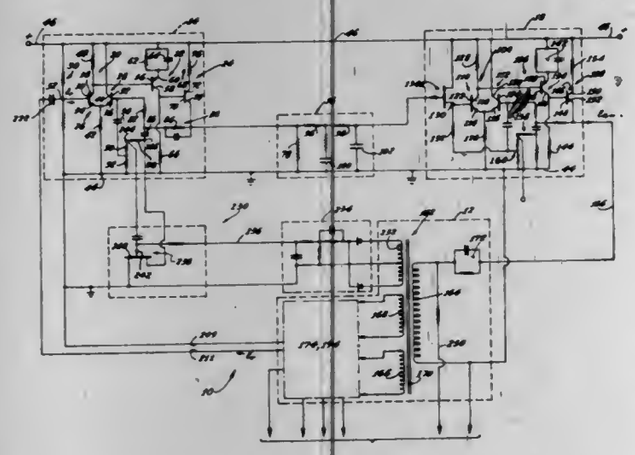
constant which is short compared to said time between samples and a discharge RT time constant with respect to said inputs of the amplifier which is long compared to said sampling period.

3,271,693
BAND REJECTION FILTER
William E. Nicholson, Jr., Penfield, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 1, 1962, Ser. No. 227,343
4 Claims. (Cl. 330—84)



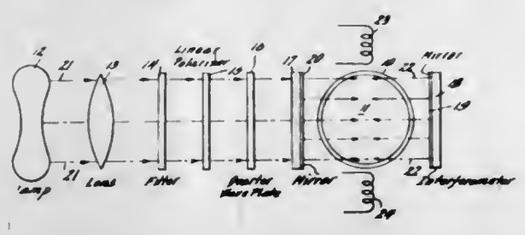
1. A band rejection filter comprising a source of a relatively broad band of signal frequencies, an output coupling transformer, the primary winding of said transformer being center tapped, an untuned amplifier coupled between said source and one terminal of said primary winding, a tuned amplifier coupled between said source and the other terminal of said primary winding, said tuned amplifier comprising a resonant circuit coupled across the input of the amplifier, a feedback circuit coupled between the output of said tuned amplifier and an intermediate point on said resonant circuit for regeneratively recirculating selected frequencies of said spectrum for increasing the selectivity, Q, of said amplifier.

3,271,694
VARIABLE FREQUENCY PHASE SHIFT OSCILLATOR
Neil L. Brown, El Cajon, Calif., assignor to The Bissett-Berman Corporation, Santa Monica, Calif., a corporation of California
Filed Aug. 15, 1963, Ser. No. 302,351
14 Claims. (Cl. 331—66)



3. In combination in an oscillator:
a differential amplifier having a pair of sides each connected to receive an individual signal, the differential amplifier being effective to amplify the difference between the signals introduced to said sides and produce an amplified signal having characteristics representing such difference,
phase shifting means interconnected with said differential amplifier for shifting the phase of said amplified signal, said phase shifting means being responsive to the frequency of said amplified signal for shifting the phase of said amplified signal by an angle dependent upon the frequency of said signal,
first means connected to said phase shifting means to produce a first signal having a particular amplitude and a second signal having a variable amplitude and a fixed phase difference from said first signal,
second means interconnected with said first means to produce a resultant signal having a phase angle that is substantially equal to the phase shift produced in said phase shifting means at said frequency of said amplified signal, said second means being interconnected with one side of said differential amplifier to feed said resultant signal to said side for amplification of the difference between this signal and the signal introduced to the other side, and
feedback means interconnected with the output from said amplifier means to feed a portion of the amplified signal from said amplifier back to the other side of said amplifier means.

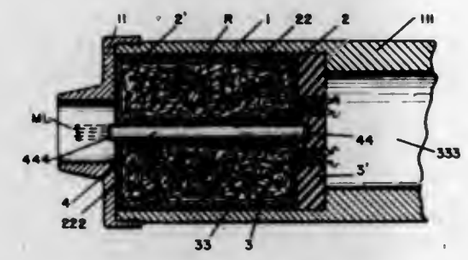
3,271,695
REGENERATIVE OPTICAL PUMPING SYSTEM
John W. Marini, Washington, D.C., assignor to Litton Systems, Inc., College Park, Md.
Filed May 8, 1962, Ser. No. 193,178
5 Claims. (Cl. 331—94.5)



5. An optical pumping system comprising:
an absorption cell containing a microwave resonant medium and being transparent to photon radiation at the resonant frequency of the medium,
an optical system being energizable by a source of photon radiation at the resonant frequency of the medium, and comprising means for producing circularly polarized photon radiation at that frequency,
an interferometer being illuminated by said circularly polarized radiation for regeneratively applying the radiation to the absorption cell,
said interferometer providing a resonant cavity for the photon radiation at the resonant frequency thereby to produce standing waves of circularly polarized radiation within said medium to traverse said medium more than twice in order to increase the photon energy transfer to said medium.

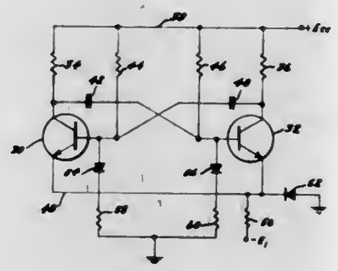
3,271,696
CHEMICALLY PUMPED LASER USING CHEMICAL CARTRIDGE FOR LASER PUMPING
Jack De Ment, 4847 SE. Division St., Portland, Oreg.
Filed July 10, 1962, Ser. No. 208,843
5 Claims. (Cl. 331—94.5)

1. A transducer system for converting chemical energy into light characterized as coherent which comprises a female laser pumping cartridge adapted to receive a male laser light-emitting member, a male laser member within said cartridge, said female laser pumping cartridge comprising a transparent shock-proof envelope having an interior wall adapted to receive and optically couple to the said male laser member, end walls, and an outer wall arranged cooperantly with reflection means, said reflection means characterized as throwing light through the said female laser pumping cartridge and into the said laser light-emitting member, the female laser pumping cartridge being substantially cylindrical and the male laser light-emitting member being substantially the same length as the said female laser pumping cartridge, the said female laser pumping cartridge being longitudinally multisected into segments, a loading of chemically reactive, ignitible



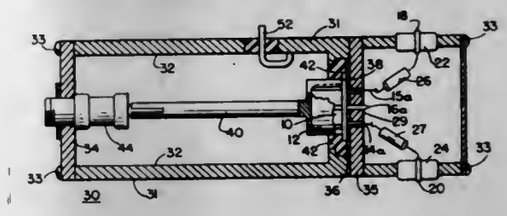
material within said female laser pumping cartridge characterized as emitting light of high intensity and of wavelengths stimulating to the said male laser light-emitting member, ignition electrodes inserted through a wall of the said female laser pumping cartridge and means coupled to the said electrodes for the ignition of the said chemically reactive material.

3,271,697
MULTIVIBRATOR WITH STARTING CIRCUIT
Floyd M. Gardner, Reseda, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 7, 1965, Ser. No. 454,226
1 Claim. (Cl. 331—113)



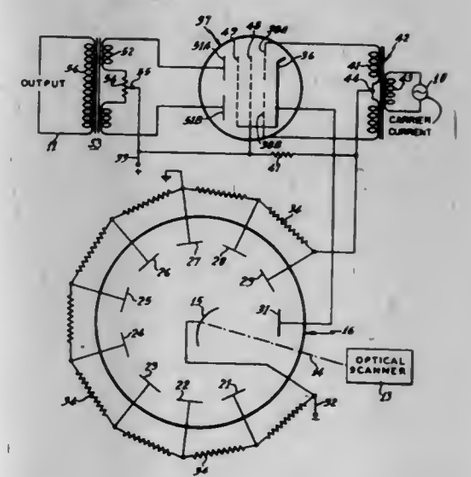
A multivibrator circuit comprising: a pair of transistors having a capacitive coupling between the collector of one transistor and the base of the other transistor; a first and second diode and a corresponding first and second resistance, individually serially connected to the base of the two transistors and to a point of steady potential whereby the base potential is not permitted to rise significantly above the potential of said point of steady potential; a third resistor common to the emitters of the two transistors and connecting them to a second steady potential which is negative with respect to said first point of steady potential and producing part of the emitter current; a third diode common to the emitters of the two transistors and connected to said first point of steady potential and producing the remainder of the emitter current, said third diode being so selected that when the circuit is initially activated it will stop conducting and the transistor emitters will begin to rise toward a positive potential preventing saturation thereof.

3,271,698
OSCILLATOR WITH RESONANT CIRCUIT CONNECTED TO TRANSISTOR HOUSING
Charles A. Adams, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 6, 1965, Ser. No. 423,682
5 Claims. (Cl. 331—117)



1. A resonator structure for an ultra high frequency oscillator employing a transistor having a conducting housing connected to an element thereof, the resonator structure including in combination, a hollow conducting structure having end walls, means supporting the transistor housing on one of said end walls and forming a capacitive coupling therebetween, an elongated conducting member in electrical contact with the transistor housing and extending coaxially within said hollow conducting structure, capacitor means coupling the other end of said hollow conducting structure with said coaxial conducting member, with said conducting structure, said member and said capacitor means conjunctively forming a resonant circuit.

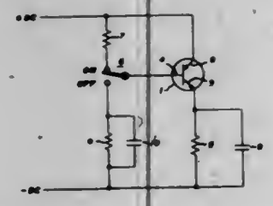
3,271,699
BALANCED MODULATOR HAVING THE ANODE OF A MULTIPLIER PHOTOTUBE DIRECTLY CONNECTED TO THE CATHODE OF THE MODULATOR TUBE
Peter R. Marzan, New City, N.Y., and John R. Shonnard, Montclair, N.J., assignors to Litton Systems, Inc., Beverly Hills, Calif.
Filed July 19, 1963, Ser. No. 296,306
4 Claims. (Cl. 332—3)



1. A balanced modulator comprising
a twin pentode tube provided with a cathode, a pair of control grids and a pair of anodes,
a signal input circuit connected to said cathode,
a source of steady carrier current connected to said pair of control grids,
an output circuit connected to said pair of anodes,
a multiplier phototube having an anode for generating a signal in said signal input circuit, and

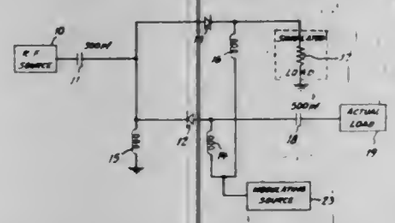
a direct-current source for energizing said twin pentode tube and said phototube, said twin pentode tube, signal input circuit and phototube being connected in series relation across the terminals of said direct-current source, the anode of the phototube being connected to said input circuit.

3,271,700
SOLID STATE SWITCHING CIRCUITS
Frank W. Gutzwiller, Auburn, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 1, 1963, Ser. No. 262,035
16 Claims. (Cl. 332—14)



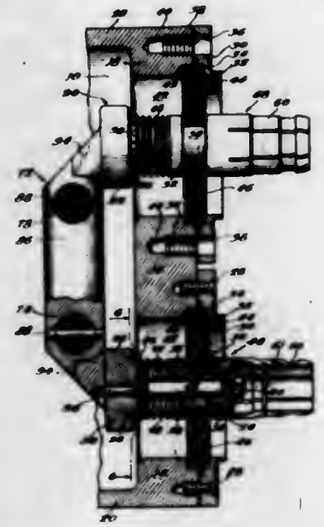
1. A circuit for controlling the state of conduction of a gate turn off switch comprising:
(a) a gate turn off switch having an anode, a cathode, and a gate,
(b) said anode being connected to a positive power supply terminal,
(c) said cathode being connected through a load resistance to a negative power supply terminal,
(d) means to connect said gate to a potential source which renders said gate positive relative to said cathode to turn said gate turn off switch "on" and to connect said gate to said negative terminal to turn said gate turn off switch "off."

3,271,701
RADIO FREQUENCY AMPLITUDE MODULATOR ALTERNATELY PASSING ENERGY TO ONE OF TWO LOADS
Joseph E. Racy, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed May 16, 1963, Ser. No. 280,782
2 Claims. (Cl. 332—42)



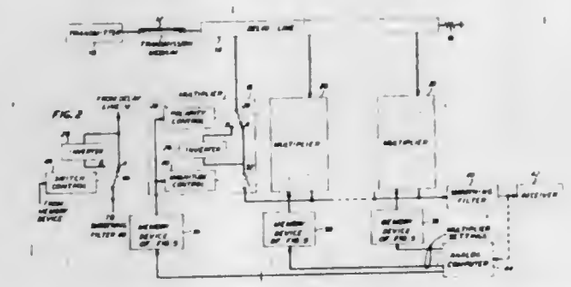
1. A circuit for amplitude modulating a radio frequency signal comprising first and second matched loads, a single-ended alternating current signal modulation voltage source, a radio frequency signal source, a first circuit including a diode connecting said radio frequency source with said first load, a second circuit including a diode connecting said radio frequency source with said second load, said diodes being positioned in said first and second circuits so as to have opposite polarity with respect to said radio frequency signal source, and means for simultaneously applying to said first and second circuits between said diodes and said loads the output of said signal modulating source, said output being applied in the same sense to both diodes so that appropriate diodes conduct alternately.

3,271,702
COAXIAL TRANSFER SWITCH
Eric G. Book, Mokena, Ill., assignor to Andrew Corporation, Orland Park, Ill., a corporation of Illinois
Filed Oct. 17, 1960, Ser. No. 63,029
16 Claims. (Cl. 333—7)



3. A coaxial switch comprising a conducting cavity, a rotor in the cavity, at least four coaxial connectors having outer conductors grounded to the cavity and having stationary inner conductors insulatedly supported symmetrically about the rotor, at least two bridging conductors each adapted to contact a pair of inner conductors and insulatedly mounted on the rotor in positions wherein the respective bridging conductors contact different pairs of inner conductors in each position of the rotor, at least one conducting shield on the rotor substantially entirely in the region between the bridging conductors and extending from the rotor substantially to the side walls of the cavity to divide the cavity into portions each containing a bridging conductor conductively enclosed only by the walls of the cavity and the shield and forming a transmission path of impedance matched to that of the connectors, and means for grounding the shield to the cavity, each bridging conductor being the inner conductor of a coaxial transmission path and the shield forming only the portion of the outer conductor in the direction of the other bridging conductor, the remainder of the outer conductor of each coaxial transmission path being different portions of the faces and side walls of the cavity in each rotary position of the switch.

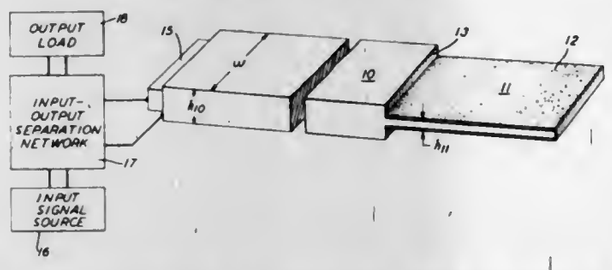
3,271,703
TRANSVERSAL FILTER
Reginald A. Kaenel, Bethesda, Md., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 21, 1962, Ser. No. 246,378
3 Claims. (Cl. 333—28)



2. A transversal filter comprising a delay line, an input terminal connected to said delay line, a signal source having an upper frequency component limit connected to

said input terminal, taps situated along the length of said delay line, a utilization circuit, and a signal multiplier corresponding to each of said taps, for applying a factor between +1 and −1 in multiplying relation with the signal appearing at each tap, said signal multipliers each comprising an input circuit connected to its respective tap, an output circuit connected to said utilization circuit, switching means operable at a rate at least as high as twice said upper frequency component limit for selecting the polarity, inverted or uninverted, of signal transfer between said input circuit and said output circuit, the duty cycle of said switching means determining the multiplying factor and hence extent of signal transfer therethrough, a bistable signal source the output of which controls the duty cycle of said switching means, a high remanence magnetic core the continuity of which is interrupted by an air gap, a strip of saturable magnetic material of much smaller cross section than said core situated to intercept magnetic flux flowing in said core, a read-out coil adapted to produce voltage pulses signifying changes in state of flux density in said strip, said voltage pulses generated by said read-out coil being applied to synchronize said bistable device, a driving coil adapted to magnetize said strip, and a periodic signal source connected to said driving coil, whereby the duration between successive ones of said pulses is a measure of the flux in said core.

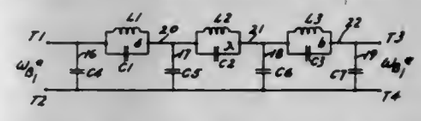
3,271,704
ULTRASONIC DELAY DEVICE
Arthur H. Fitch, Mountain Lakes, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 25, 1963, Ser. No. 267,714
6 Claims. (Cl. 333—30)



2. In combination, an ultrasonic delay line having a parameter that determines the cut-off frequency of the second longitudinal mode of ultrasonic wave propagation therein, means for applying an ultrasonic wave including components of the first and second longitudinal modes to a first portion of said line, said parameter in said first portion determining a cut-off frequency for said second mode therein that is below the lowest frequency component in said wave, said parameter in a second portion of said line determining a cut-off frequency for said second mode therein that is above the highest frequency component in said wave, said first portion having a length which is a function of a predetermined delay characteristic unique to said second longitudinal mode which characteristic is to be introduced to said applied ultrasonic wave, and means coupled to said second portion for damping wave motion therein.

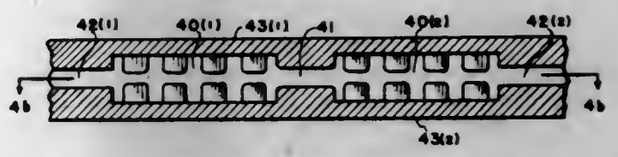
3,271,705
ELECTRIC WAVE FILTER
Edward M. Karkar, San Francisco, Calif., assignor, by mesne assignments, to Communication Equipment Design, Inc., Reno, Nev., a corporation of Nevada
Filed Oct. 6, 1961, Ser. No. 143,371
14 Claims. (Cl. 333—76)

1. In an electric wave filter of the type having a pass band and a stop band, said electric wave filter comprising at least seven impedance arms which are the synthesis of at least a pair of matched indivisible four arm sections characterized by one resonant circuit common to both sections, said filter having two input terminals and two output terminals with predetermined input and output image impedance functions in the pass band, the input and output image impedance functions being capable of being expressed in equations containing poles and zeros where the zeros are the points where the function equals zero and the poles are the points where the function equals infinity, the filter also having a predetermined attenuation function in the stop band, the attenuation function being capable of being expressed in an equation containing poles and zeros, the filter also having a predetermined cut-off frequency, the filter having at least three tuned



circuits forming at least three tuned resonances, the resonances of the tuned circuits providing at least three attenuation poles in the stop band, said attenuation poles being arbitrarily positioned with respect to the poles and zeros defined by the equations of both the input and output image impedance functions of the filter, said attenuation poles also being positioned arbitrarily with respect to the cut-off frequency of the filter and with respect to each other, said filter and pass band having a substantially flat and rippleless attenuation characteristic, a substantially linear and rippleless phase and group delay characteristic, and a substantially resistive image impedance characteristic.

3,271,706
MICROWAVE FILTER
John P. Rooney, Palo Alto, Calif., assignor to General Electric Company, a corporation of New York
Filed Dec. 7, 1964, Ser. No. 416,246
9 Claims. (Cl. 333—73)

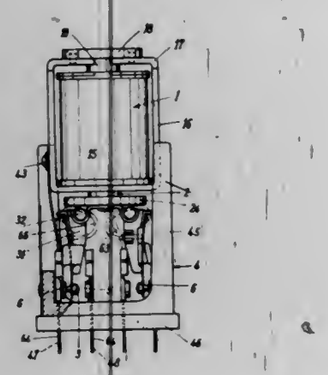


1. A microwave filter system comprising: a plurality of waffle-iron filter sections for preventing passage of predetermined electromagnetic waves, said filter sections having the characteristic of giving rise to spurious responses; and means for suppressing said spurious responses comprising electromagnetic wave transmission means connecting said filter sections, said means being designed to prevent transmission of said spurious responses.

3,271,707
ELECTROMAGNETIC RELAY OF THE BISTABLE TYPE
Gérard Koehler, Saint-Cloud, France, assignor to Société Chauvin Arnoux et Cie, Paris, France
Filed Nov. 9, 1964, Ser. No. 409,781
Claims priority, application France, Nov. 15, 1963, 953,818
8 Claims. (Cl. 345—78)

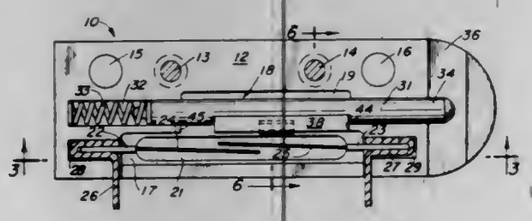
1. A bistable electromagnetic relay comprising an electromagnet having a winding with an axial duct provided therein, means to feed said winding with control impulses of opposite polarities, a magnetic circuit associated with said electromagnet, said circuit comprising a stationary core at least partially housed in said axial duct, a second core slidably mounted along said axial duct between a working position where the airgap between said both cores is minimum and a rest position where said airgap is maxi-

mum, a movable armature fitted on said slidable core, resilient means engaging said armature and tending to return said slidable core toward said rest position, one of said cores being constituted by a magnetic material of low coercivity adapted to be magnetized by those of said impulses having a definite polarity and to be partially demagnetized by those of said impulses having the opposite polarity, the magnetic properties of said one core being so related to said resilient means that when said circuit is open after said magnetization the magnetic



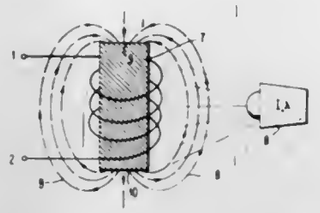
force urging said slidable core toward said working position is greater than the force of said resilient means urging said slidable core toward said rest position both in said working position and in said rest position, and when said circuit is open after said demagnetization the force of said resilient means urging said slidable core toward said rest position is greater than the magnetic force urging said slidable core toward said working position both in said rest position and in said working position.

3,271,708
PLUNGER OPERATED MAGNETIC REED SWITCH
Maurice D. McCormick, Prospect Heights, Ill., assignor to Microdyne, Inc., Wheeling, Ill., a corporation of Illinois
Filed Oct. 29, 1964, Ser. No. 407,434
1 Claim. (Cl. 335—205)



A switching device comprising:
a two-piece molded plastic housing having aligned, substantially totally enclosed, contiguous switch and plunger chambers formed between the two halves of the housing;
a magnetically actuatable switch mounted in said switch chamber and having at least two electrically conductive leads, said switch being actuatable between first and second operating conditions in response to the presence and absence of a magnetic field in given alignment therewith;
at least two spring clip electrical connectors, one for each switch lead mounted in said switch chamber and projecting outwardly thereof;
a plunger assembly comprising a non-magnetic plunger mounted in said plunger chamber for axial movement therein between first and second operating positions, said plunger projecting outwardly of one end of said chamber;
said plunger assembly further comprising a permanent magnet mounted on said plunger in position to actuate said switch, through the field of said magnet, between its first and second operating conditions in response to movement of the plunger between its first and second operating positions;
biasing means normally maintaining said plunger in its first operating position, said biasing means comprising a compression spring mounted in the end of said plunger chamber opposite said one end and biasing said plunger toward said one end;
and a pair of stop members in said housing adjacent opposite ends of said plunger assembly, positioned to engage complementary stop surfaces on said plunger assembly to limit axial movement of said plunger assembly, thereby defining the limits of said first and second operating positions for said plunger,
said switch, said connectors and said plunger assembly all being mounted first in one half of the housing and being secured therein upon mounting of the second half of the housing on said one half.

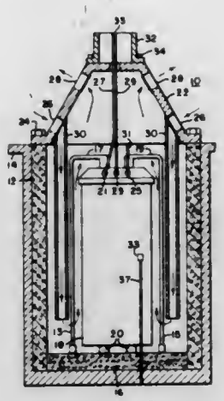
3,271,709
MAGNETIC DEVICE COMPOSED OF A SEMICONDUCTING FERROMAGNETIC MATERIAL
Siegfried J. Methfessel, Montrose, and Frederic Holtzberg, Pound Ridge, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 9, 1963, Ser. No. 307,521
10 Claims. (Cl. 335—209)



1. A variable magnetic flux device comprising:
(a) a body of semiconducting ferromagnetic material;
(b) means for applying a magnetic field to said body;
(c) a variable means operative to vary conduction carrier density in said body in order to vary the magnetic flux of said body in accordance with the variation of said last-named means.

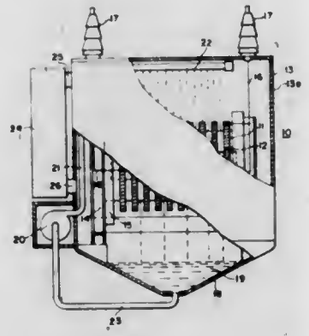
3,271,710
COOLING SYSTEMS FOR UNDERGROUND TRANSFORMERS
Merrill G. Leonard, Brookfield Township, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1964, Ser. No. 349,895
6 Claims. (Cl. 336—55)

1. In combination, an enclosure; electrical inductive apparatus disposed within said enclosure; a cover having a sloping side portion forming a substantially dome shape, with its side portion sloping inwardly from the bottom portion of said cover to its top portion; said cover being disposed over said enclosure; said cover having at least one opening disposed near its top portion, and at least one opening disposed near its bottom portion, with said at least one opening disposed near its bottom portion being disposed in the side portion of said cover; and duct means extending downwardly from said at least one opening near the bottom portion of said cover to the lower portion of said enclosure; said electrical inductive apparatus heating the surrounding air when energized and starting air circulation, with the air heated by said inductive apparatus rising and being discharged through said



at least one opening near the top portion of said cover and air being drawn into the enclosure through said at least one opening near the bottom portion of said cover through said duct means to the lower portion of said enclosure.

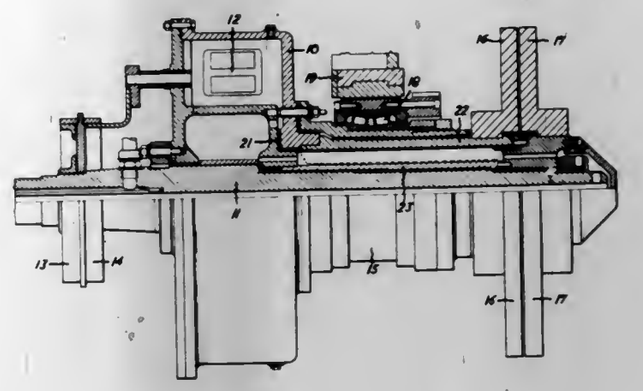
3,271,711
INSULATED ELECTRICAL APPARATUS
Daniel Berg, Churchill Boro, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 260,794, Feb. 25, 1963. This application Mar. 2, 1965, Ser. No. 438,466
3 Claims. (Cl. 336—57)



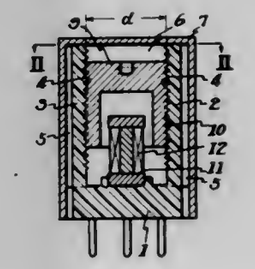
1. An electrical apparatus comprising an enclosed casing, a source of heat disposed within said casing, a supply of liquid for dissipating the heat from said source of heat, said liquid being selected from the group consisting of $C_4F_9SF_5$, $(C_4F_9)_2SF_4$, and $(C_3F_7)_2SF_4$, and means for distributing said liquid over said source of heat to cool it by evaporation of said liquid.

3,271,712
ROTARY ELECTRIC TRANSFORMERS FOR TUBE WELDING
Harry Osborne Bradshaw, Birmingham, England, assignor to Tube Products Limited, Birmingham, England, a British company
Filed Nov. 27, 1963, Ser. No. 326,451
Claims priority, application Great Britain, Nov. 27, 1962, 44,761/62
2 Claims. (Cl. 336—82)

1. A rotary transformer incorporating a single-turn secondary connected electrically to axially offset circular electrodes by conductors passing through a throat of reduced diameter mounted in a bearing, wherein said conductors comprise concentric inner and outer sleeves, longitudinally extending angularly spaced portions on the inner sleeve extending outwardly therefrom, and complementary longitudinally extending angularly spaced portions on the outer sleeve extending inwardly therefrom, said portions on the two sleeves being interengaged when the sleeves are in assembled relationship and the adjacent surfaces of said portions being substantially parallel and spaced from each other.

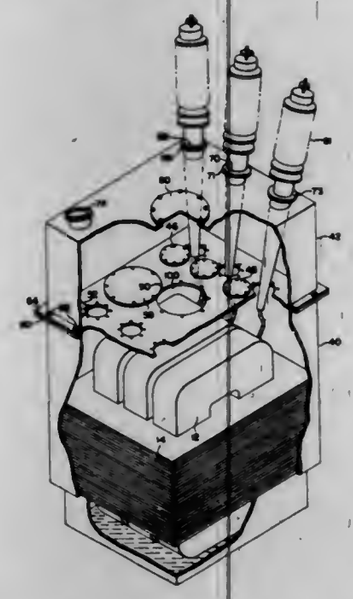


3,271,713
CONSTANT TORQUE ADJUSTMENT FOR VARIABLE IMPEDANCE DEVICES
Masaomi Oshima, Yokohama-shi, Japan, assignor to Oshima Musen Co., Ltd., Yokohama-shi, Japan, a corporation of Japan
Filed Nov. 7, 1963, Ser. No. 322,079
Claims priority, application Japan, Nov. 10, 1962, (utility model), 37/67,126
1 Claim. (Cl. 336—83)



A high frequency coil device comprising an insulating supporting plate, an I-shaped core mounted on said insulating supporting plate, a coil carried by said core, a pair of parallel pillars which extend upwardly from the marginal side portions of said insulating supporting plate and which have screws on the inside thereof, a cylindrical ferrite core having outer screws meshing with said screws of the pillars, a pair of opposed supporting plates, each having curved edges at the both ends thereof which respectively engage with the outer surfaces of said pillars along the entire height thereof, thereby maintaining a predetermined distance between said pillars, and a metallic shield case which covers said opposed supporting plates, said metallic shield case having projections which engage and push said confronting supporting plates inwardly to press the same against the outer sides of said cylindrical ferrite core.

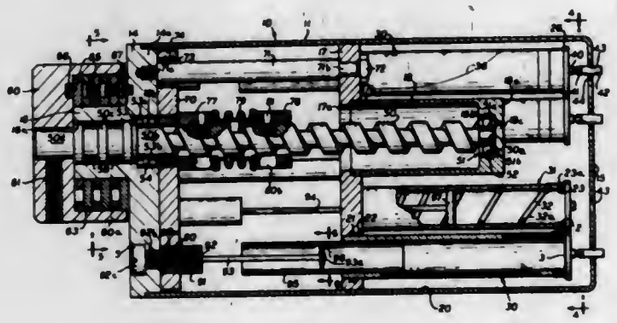
3,271,714
ELECTRICAL INDUCTIVE APPARATUS HAVING MEANS TO PREVENT CONTAMINATION
Raleigh J. Cossaart, Muncie, Ind., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 15, 1965, Ser. No. 425,725
4 Claims. (Cl. 336—90)



1. Electrical inductive apparatus comprising
electrical windings,
a magnetic core,
said electrical windings being disposed in inductive relation with said magnetic core,
a first enclosure section having a top portion which has a plurality of coverable openings therein,
said electrical windings and magnetic core being disposed in said first enclosure section,
a second enclosure section having a top portion and sidewall portions which define a bottom opening,
said second enclosure section being removably secured to said first enclosure section, with the bottom opening in said second enclosure section being disposed over the top portion of said first enclosure,
the top portion of said second enclosure section having a plurality of openings therein,
a plurality of electrical bushing members,
said plurality of electrical bushing members being disposed in the openings in the top portion of said second enclosure section,
means securing said electrical bushing members to the top portion of said second enclosure section,
and means electrically connecting said bushing members with said electrical windings through certain of the openings in the top portion of said first enclosure section.

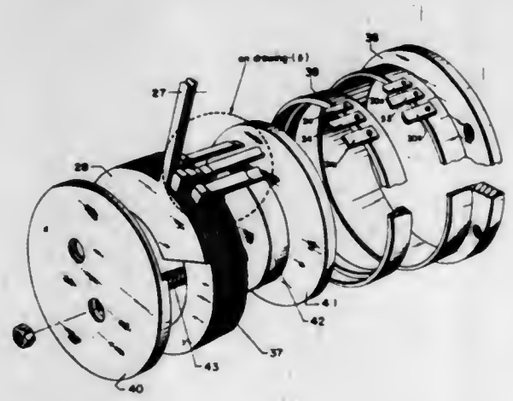
3,271,715
RESILIENTLY MOUNTED CONTACT SLIDABLE ON INDUCTIVE COIL
Nelson Berman, New Hyde Park, and Hugo Selden, Brooklyn, N.Y., and Joseph R. Roy, Wapping, Conn., assignors to JFD Electronics Corporation, Brooklyn, N.Y., an organization of New York
Original application Apr. 18, 1962, Ser. No. 188,458. Divided and this application May 7, 1965, Ser. No. 462,466
2 Claims. (Cl. 336—137)

1. In a tuning device of the type described, an inductor comprising a longitudinally extending insulating tube having a generally spiral groove on the wall of its bore, a conducting first wire embedded in said groove and protruding in said bore and being thereby configured to have inductance, a support outside said tube and longitudinally opposing an end of said tube and having a longitudinal opening, a conducting second wire extending slidably into said opening and also into said tube, means releasably locking said second wire in said opening, a conducting disc fixed to said second wire in said tube and of sufficient diameter so that it engages frictionally between



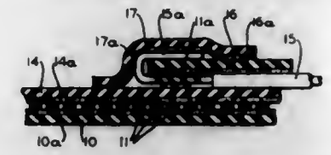
said first wire and the wall of said bore, said disc having its longitudinal dimension substantially less than the pitch of said groove, means mounting said support and said tube so that they are relatively longitudinally movable, said second wire being stiff but somewhat flexible and resilient so as to move to accommodate tracking movement of said disc along said first wire during relative longitudinal movement of said support and said tube.

3,271,716
HIGH-CURRENT PULSE TRANSFORMER
Harold P. Furth, Berkeley, Calif., assignor to Advanced Kinetics, Inc., Costa Mesa, Calif., a corporation of California
Filed May 28, 1962, Ser. No. 198,273
5 Claims. (Cl. 336—181)



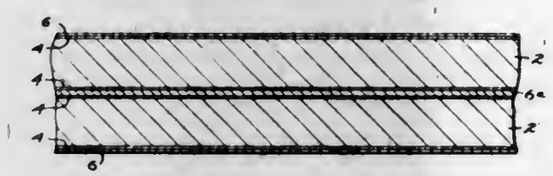
1. A current stepup pulse transformer comprising,
a plurality of multi-turn primary windings in the form of helically wound plates,
means for tapping each said primary winding at its midpoint to provide a pair of midpoint leads,
a plurality of single turn secondary windings in the form of plates, each turn of each said primary winding having an axially adjacent secondary winding,
a pair of output conducting leads coaxial with the axes of said primary and secondary windings,
means for connecting said secondary windings in parallel to said output conducting leads,
and means for connecting said midpoint leads in parallel to said output conducting leads to provide auto transformer operation.

3,271,717
ELECTRICAL COIL CONSTRUCTION EMPLOYING PRESSURE SENSITIVE ADHESIVE
Vincent C. Gilbert, 16800 Quarry Road, Los Gatos, Calif.
Filed June 5, 1961, Ser. No. 114,684
13 Claims. (Cl. 336—192)



1. An electrical coil comprising two sheets of dielectric material each having an adhesive on one face thereof with the adhesive faces being in opposed relationship, a wire wound between the sheets and embedded in each of the adhesive faces to maintain the wire in the assembled relationship relative to the sheets, one of said sheets serving as a form upon which the wire is wound with the second sheet comprising a cover for the wound wire and wherein the adhesive on each sheet is a pressure sensitive adhesive, the wire having ends, the ends of the wire extending outwardly of said sheets, lead wires connected to the extended wires, and means covering and sealing the connection.

3,271,718
MAGNETIC CORES FOR ELECTRICAL DEVICES AND METHOD OF MANUFACTURE
Beverley A. Shaw, North Reading, Mass., assignor to Tyco Laboratories, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Aug. 6, 1962, Ser. No. 215,092
20 Claims. (Cl. 336—219)

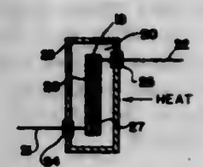


1. A bonded laminated magnetic core comprising a plurality of magnetic iron alloy lamellae each having an insulating coating of silicon monoxide and silicon dioxide bonded thereto by an iron silicate, said lamellae held together by intervening layers of a non-magnetic metal braze bonding material.

6. The method of fabricating a laminated magnetic core comprising the steps of providing a plurality of sheets of magnetic alloy material coated with thin layers of silicon oxide consisting substantially of silicon monoxide, coating said silicon oxide layers with a brazing material, stacking said sheets together, and applying heat sufficient to braze said sheets together whereby to form a single integrated magnetic core.

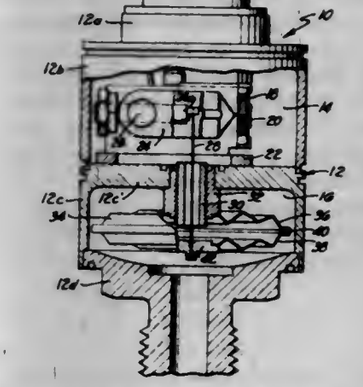
3,271,719
RESISTANCE SWITCHES AND THE LIKE
Stanford R. Ovshinsky, Bloomfield Hills, Mich., assignor to Energy Conversion Devices, Inc., Troy, Mich., a corporation of Delaware
Original application June 21, 1961, Ser. No. 118,642. Divided and this application Oct. 11, 1965, Ser. No. 502,812
7 Claims. (Cl. 338—28)

1. A switch device for an electrical circuit, comprising a closed housing, an element in said housing adapted to be inserted in said circuit, having the characteristics of a predetermined large reversible change of electrical resistance under a predetermined change in temperature, said element comprising a solid metallic material exposed in said housing to an environment confined in said housing and containing a fluid material capable of being adsorbed on the surface thereof in response to said change in temperature, said metallic material having a substantially different electrical resistivity when a substantial amount of said fluid material has been adsorbed thereon than when said fluid material has been substantially desorbed therefrom, spaced apart electrical contacting mem-



bers maintained in electrical contact with the surface of said metallic material, leads extending from said contacting members externally of said housing for connection to said electrical circuit, and means for producing said temperature change, whereby in substantial effect to close and open said circuit without the necessity for mechanical motion of said element to make or break an electrical contact.

3,271,720
CORRECTOR OR PRESSURE-SENSITIVE DIAPHRAGM OR CAPSULE
Stephen A. Hluchan, Riverside, and Werner R. Hofmann, Bloomington, Calif., assignors to Bourns, Inc.
Filed Nov. 16, 1964, Ser. No. 411,272
12 Claims. (Cl. 338—42)

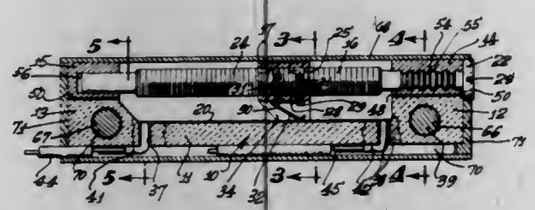


1. A potentiometric transducer comprising, in combination:
first means, including potentiometer means and lever means operably connected to the potentiometer means to operatively vary the latter;
second means, including pressure-sensitive means comprising annularly deformed diaphragm means of substantially circular shape and of material characterized by a predetermined thermal coefficient of expansion, said diaphragm means arranged with a surface to be exposed to fluid under pressure to be deformed thereby to translate a movable portion of said diaphragm means as a measure of the applied pressure, and said second means including connecting means connecting said movable portion to said lever means to operate the latter incident to movement of said movable portion of said diaphragm means incident to deformation of the latter;
third means, including housing and support means for said first and second means, said third means providing a chamber and a fluid-admission passage thereinto and providing a seal and support for said diaphragm means; and

fourth means, including a ring annulus fusion-united to said diaphragm means at the periphery of the latter, said ring annulus being formed of a selected material characterized by a predetermined thermal coefficient of expansion different from that of said diaphragm means;

whereby with constant pressure applied to said diaphragm means the tendency of said diaphragm means to change dimension and move said connecting means and lever means incident to change of the ambient temperature at said transducer is compensated and corrected by the tendencies of said diaphragm means and said ring annulus to expand differently due to the differing thermal coefficients of expansion thereof.

3,271,721
RECTILINEAR POTENTIOMETER
James F. Gordon, San Marino, Calif., assignor to Beckman Instruments, Inc., Fullerton, Calif., a corporation of California
Filed May 10, 1956, Ser. No. 584,088
7 Claims. (Cl. 338—183)



3. In a miniature potentiometer, the combination of: an elongated body having bearing saddles on one side adjacent each end thereof and a channel in a side opposite said one side with a plurality of terminal openings in said body providing communication between said channel and said one side; an elongated film of resistance material fired on said one side between said saddles; an elongated film of conducting material fired on said one side between said saddles substantially parallel to said resistance material; a film of metallic material of relatively high melting temperature fired on each of said bearing saddles; bearings of relatively low melting temperature fixed to each of said metallic films in said bearing saddles; a shaft rotatably mounted in said bearings, said shaft having a threaded section positioned between said bearings; contact means for electrically connecting said resistance material and said conducting material, said contact means being carried by the threaded section of said shaft, said contact means including means engaging said threaded section of said shaft and means preventing rotation of said contact means as said shaft is rotated so that rotation of said shaft advances said contact means along said resistance material; and a plurality of electrical conductors positioned in said channel and extending through said terminal openings for coupling said resistance and conducting films to an electrical circuit.

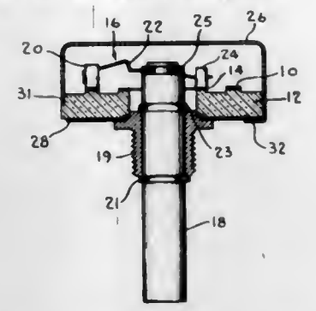
3,271,722
ELECTRICAL COMPONENT AND THERMALLY IMPROVED ELECTRICAL INSULATING MEDIUM THEREFOR
William W. Garstang, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Dec. 3, 1963, Ser. No. 327,692
2 Claims. (Cl. 338—306)

1. An electrical circuit component comprising, in combination,

a substrate of electrical insulating material,

a current carrying circuit element subject to self-generation of heat upon the passage of electrical current therethrough,

said current carrying circuit element supported on said substrate and in direct heat transfer engagement therewith and said substrate effective to draw said self-generated heat from said current carrying circuit element so that said substrate functions as a heat sink for said current carrying circuit element to dissipate said self-generated heat,

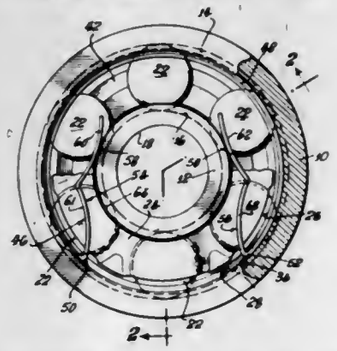


said substrate characterized by having a quantity of beryllium oxide dispersed therein as a filler to enhance the heat transfer properties thereof,

a housing including a portion extending coextensively with and adjacent a portion of said substrate,

and means comprising a quantity of beryllium oxide dispersed in a fluid carrier disposed substantially throughout the juncture between said substrate and housing portions to complete a heat transfer connection between said substrate and housing portions.

3,271,723
CONDUCTIVE BALL BEARING
Richard G. Willing, Los Angeles, Calif., assignor to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan
Filed May 4, 1964, Ser. No. 364,682
10 Claims. (Cl. 339—5)



1. In an electrically conductive bearing having inner and outer bearing race members rotatably supported coaxially of one another by an intermediate complement of rolling bearing members, apparatus comprising:

a radially facing, annular groove formed in one of said bearing race members;

a resilient, arcuate, electrically conductive member retainingly engaged in said annular groove,

and said conductive member having an integrally formed, transversely extending arm positioned in sliding contact with the adjacent surface of the other of said bearing race members.

3,271,724
STAKE ON CONTACT
Louis C. Brieger and Henry R. Barta, Dallas, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1963, Ser. No. 249,282
7 Claims. (Cl. 339—22)

1. An improved geophysical jumper cable adapted to receive a geophone comprising

(a) a cable containing first and second conductors insulated from each other, said cable having notches formed in the sides thereof to expose alternate sections of said conductors, said exposed sections being spaced from each other and positioned generally along the longitudinal axes of their respective unexposed sections,

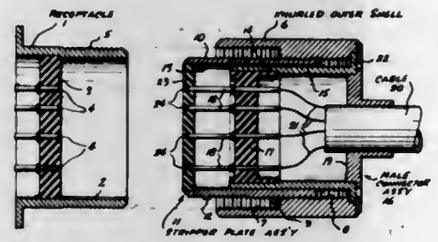
(b) a geophone take out positioned along at least a portion of said cable, said take out including



(1) a first electrically conductive member positioned around a major portion of the cable's periphery, said first member electrically connected to one of said exposed sections of said first conductor,

(2) a second electrically conductive member positioned around a major portion of the cable's periphery, said second member electrically connected to one of said exposed sections of said second conductor located adjacent said first member.

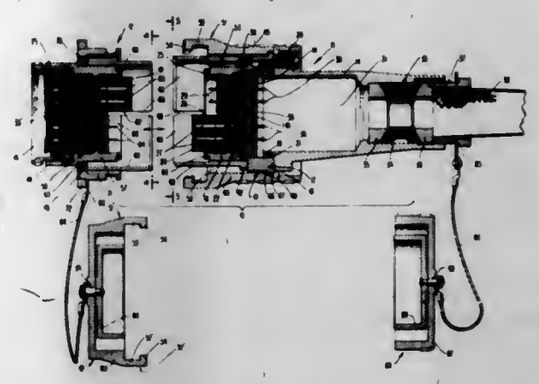
3,271,725
ELECTRICAL CONNECTOR
Joseph T. Bloch, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,522
4 Claims. (Cl. 339—42)



1. An electrical connector comprising in combination: a connector unit and a receptacle unit; said connector unit including a movable outer shell having a pair of threaded portions; a connector assembly including a member operatively connected to said outer shell, and means for holding a plurality of connector pins; a stripper assembly including a housing portion and a plate portion, said housing portion having a threaded portion coacting with one of said threaded portions of said shell, said plate portion having a plurality of apertures through which said pin means are adapted to move; said connector assembly and said stripper assembly being provided with means to prevent rotation therebetween; said receptacle unit including a body member and a plate member, said plate member having a plurality of connector sockets, said body member including a threaded portion adapted to coact with the other thread portion of said shell; and means for aligning said connector unit and said receptacle unit.

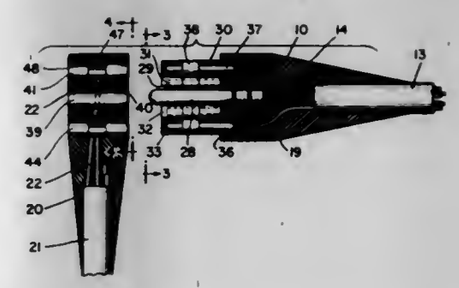
3,271,726
ELECTRICAL CONNECTOR
Donald L. Pfendler, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Nov. 2, 1961, Ser. No. 149,574
4 Claims. (Cl. 339—49)

1. In an electrical connecting device, a laminated stack of thin discs of electrical insulation cemented together, said stack having a plurality of openings therethrough, electrically conductive printed circuit elements applied to surfaces of said discs, each said element having a terminal portion adjacent each of at least two of said openings and being segregated from the other said openings by the cemented together disc surfaces adjacent thereto, a metallic contact extending through each said opening in sliding engagement with the walls thereof, solder means, applied to said elements before lamination of said



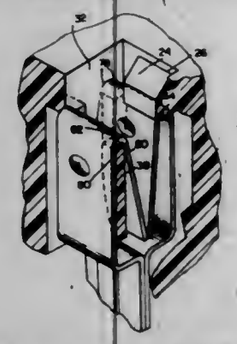
stack and fused after the insertion of said contacts into said openings, for electrically connecting each said contact to only one of said printed circuit elements between any two adjacent discs, and a resilient contact supporting member having openings mating with the openings in said stack for receiving said contacts, said contacts having interlocking relation with said supporting member within the openings in the latter.

3,271,727
FLUID PROOF MULTIPLE CONNECTOR
Arthur L. Nelson, San Diego, Calif., assignor to Winsco Instruments & Controls Company, Inc., a corporation of California
Filed Sept. 27, 1965, Ser. No. 490,250
12 Claims. (Cl. 339—60)



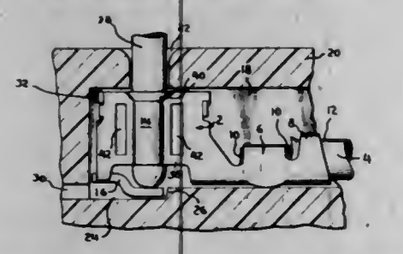
1. A fluid proof multiple connector comprising, in combination: a plug body including at least two elongated plugs of substantially uniform circular cross-sections throughout substantially their lengths and including respectively plug contacts having surface portions exposed in substantially flush relationship with the remaining exterior surfaces of said plugs intermediate their ends; and a socket body including at least two elongated sockets of substantially uniform circular cross-sections throughout lengths corresponding to the circular cross-sections and lengths of said plugs respectively, and including socket contacts having exposed surfaces at areas of the interior walls of said sockets intermediate their ends, whereby said plugs may be received in said sockets respectively while underwater to effect electrical contact between said plug and socket contacts with the remaining engaging portions of the exterior surfaces of said plugs and interior wall surfaces of said sockets on either side of said contacts excluding water from said contacts.

3,271,728
ELECTRICAL CONNECTOR
Alvah D. Beauchaine, Lakeport, N.H., assignor to W. A. Beauchaine & Sons, Inc., Lakeport, N.H., a corporation of New Hampshire
Filed Sept. 12, 1963, Ser. No. 308,437
3 Claims. (Cl. 339—217)



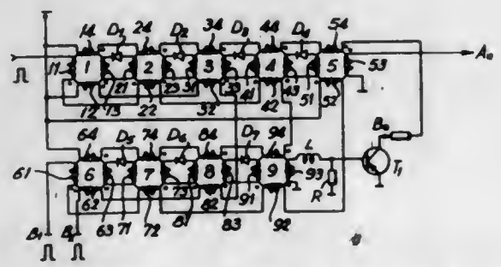
1. An electrical connector assembly comprising: a female contact member having a pair of upwardly diverging legs connected at the lower ends thereof and bent inwardly and downwardly at the upper ends thereof to form abutting spring arms; and a dielectric block housing having a receptacle formed therethrough to receive and mount said female contact member therein, said receptacle having vertical side and end walls and being substantially rectangular in horizontal cross-section, said receptacle having a pair of cam members adjacent diagonal corners thereof integral with said side walls, said receptacle having a pair of vertical recesses adjacent the opposite diagonal corners thereof in said side walls, said cam members and said vertical recesses disposed in facing relationship, and stop members integral with said end walls and extending therefrom, said stop members spaced above said cam members whereby said female contact member is adapted to be assembled into said receptacle by initially being inserted upwardly through the bottom opening of said receptacle, its spring arms then being spread by a male probe inserted downwardly therebetween, its contact legs then being cammed into said vertical recesses by said diagonally opposed cam members, said contact legs then recovering to their original configuration after clearing the top of said cam members, said contact member thereby becoming securely seated into said receptacle and prevented from further upward movement by said stop members.

3,271,729
CLUSTER RECEPTACLE WITH BASAL LANCE AND ONE PIECE HOUSING
Roel Bakker and Luciano Obert, Turin, Italy, assignors to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 30, 1964, Ser. No. 414,758
Claims priority, application Italy, Nov. 30, 1963, 24,446/63
6 Claims. (Cl. 339—217)



1. An electrical connector comprising a housing member of dielectric material formed internally with a channel extending therethrough open at one end, said housing member having an aperture in communication with the channel, the channel opposite said aperture being formed with a shoulder, an electrical connector having a receptacle portion being disposed in said channel with said receptacle portion in alignment with said aperture for receiving a connecting pin therethrough, said receptacle portion being provided with detent means engaging said shoulder to prevent said connector from being withdrawn from said channel, said connecting pin being disposable within said receptacle portion and engageable with said detent means to urge said detent means into locking alignment with said shoulder to prevent withdrawal of the connector from said channel.

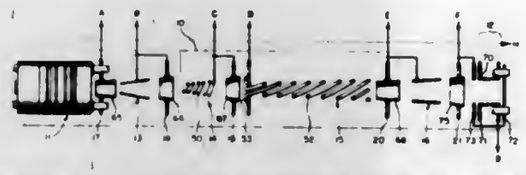
3,271,730
ELECTRICAL COUNTING MECHANISM
Wolfgang Stedtnitz, Bad Ragat, Switzerland, assignor to Aktiebolaget Bofors, Bofors, Sweden
Original application Aug. 24, 1962, Ser. No. 219,345. Divided and this application Oct. 22, 1964, Ser. No. 411,665
Claims priority, application Germany, Aug. 24, 1961, A 38,178
1 Claim. (Cl. 340—3)



For use in echo sounding operations in which impulses are transmitted at the start of successive sounding periods having echo impulse receiving times corresponding to a selected sounding range, and the distance of an object within the selected sounding range is determined by measuring the elapsed time, during each sounding period, at which a transmitted impulse reflected by the object is received as an echo impulse; means for discriminating between disturbance impulses and periodically received echo impulses comprising, in combination, a measurement counter effective to count and store incoming echo impulses; a time counter operable responsive to receipt of successive control impulses of a preselected time sequence, and one of which coincides with a transmitted impulse; means interconnecting said counters; means operable by said time counter to clear said measurement counter when said time counter has counted a first particular number of control impulses during which said measurement counter has not received echo impulses; and means operable by said measurement counter, upon receipt of a second particular number of echo impulses since the last clearance of said measurement counter, or in response to receipt of a particular sequence of echo impulses since the last clearance of said measurement counter, and before said time counter has counted said first particular number of control impulses, to deliver an exit impulse.

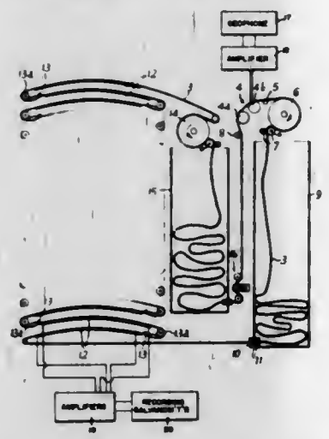
3,271,731
ELECTRON BEAM PARAMETRIC AMPLIFIER WITH POSITIVE ION ELIMINATION
Robert Adler, Northfield, Ill., and Charles B. Crumly, Palo Alto, Leigh C. Foster, Atherton, and John P. Lindley, Redwood City, Calif., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 7, 1964, Ser. No. 336,197
10 Claims. (Cl. 330—4.7)

1. An electron beam device comprising:
a substantially evacuated envelope;
means for projecting an electron stream along a path at a velocity sufficient to ionize residual gas molecules, said stream exhibiting a potential distribution across its width having a positive potential minimum at its axis tending to attract any positive ions of said gas toward said axis;
means for subjecting said stream to a magnetic field having flux lines parallel to said path for establishing a condition of transverse electron resonance;
an amplifying assembly having an input coupler responsive to input signal energy for imparting motion to said electrons establishing transverse-mode electron waves on said stream, a pump section downstream from said input coupler responsive to applied energy for developing a periodic inhomogeneous field having a periodicity phased with said motion to increase the magnitude of said waves, and an output coupler downstream from said pump section for extracting signal energy from said waves;



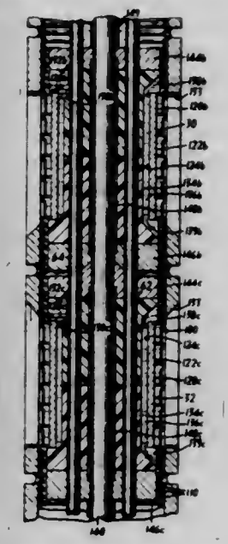
a plurality of conductive structures included in said assembly, spaced along said path, and individually spaced about said path to define a drift region and tapering apart in a given direction along said path;
bias means connected to said conductive structures for establishing, together with the taper of said structures, a negative potential gradient along the portion of said path from one of said couplers through the other, said gradient being sufficiently negative to draw said ions in said direction;
means, spaced along said stream in said direction from said couplers and biased at a potential negative relative to that along said portion, for collecting said positive ions;
and means at the downstream end of said path for collecting said electrons.

3,271,732
METHOD AND APPARATUS FOR CORRELATING SEISMIC DISTURBANCES AGAINST PREVIOUSLY RECORDED SIGNALS
Nigel Allister Anstey and William Edward Lerwill, Kent, England, assignors to Seismograph Service Corporation, Tulsa, Okla.
Filed Jan. 4, 1963, Ser. No. 249,366
Claims priority, application Great Britain, Jan. 8, 1962, 661/62
15 Claims. (Cl. 340—15.5)



1. A method of obtaining information about a seismic signal for use in identifying its source, which method comprises producing from each of a number of prior seismic signals respectively received at a given receiving location from a variety of sources a longitudinally extending transducer assembly having a sensitivity distributed along its length as a function of the waveform of the corresponding prior seismic signal, producing from a subsequent seismic signal arriving at said location an energy pattern representing the waveform of this subsequent signal, causing said energy pattern to pass along each of the transducer assemblies, developing from each transducer assembly a signal representing the effect of said energy pattern upon that transducer assembly, said signal being indicative of the correlation between the waveform of said subsequent seismic signal and that of the prior seismic signal corresponding to the transducer assembly, and recording the correlation signals obtained from each transducer assembly for comparison, thereby to facilitate identification of the source of said subsequent seismic signal by comparison with the seismic signals received at said location from each of said variety of sources.

3,271,733
ACOUSTIC WELL LOGGING DEVICE
Walter E. Cubberly, Jr., Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed July 8, 1964, Ser. No. 381,118
9 Claims. (Cl. 340—17)



1. An acoustic well logging device comprising an elongated support member, electroacoustic transducers mounted at spaced-apart locations on said support member, a sleeve of fluid impermeable material surrounding said transducers and having closely spaced transversely extending convolutions in at least the portion thereof between said transducers for restricting the transmission of sonic signals directly between said transducers, and sealing means between said support member and said sleeve to form a fluid tight chamber for said transducers.

3,271,734
TRAFFIC SIGNAL CONTROLLER
Ray W. Cabe, Manhattan Beach, and William C. Sondergard, Torrance, Calif., assignors to Tamar Electronics Industries, Inc., Anaheim, Calif., a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 352,025
7 Claims. (Cl. 340—37)

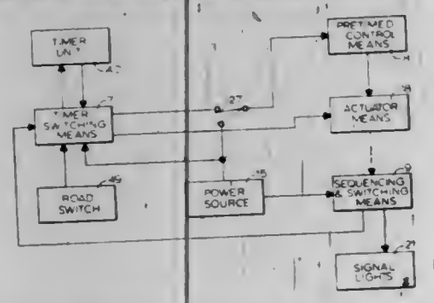
1. In a traffic signal controller for controlling traffic signals at an intersection between streets, said signals including a set of signal lights for each such street,
a power source,
pre-timed control means for providing control signals for said lights in accordance with a predetermined program,

semi-actuated control means for providing control signals for said lights in accordance with traffic conditions on one of said streets,

sequencing and switching means interposed between said power source and said signal lights and said power source and said semi-actuated control means for connecting power to said lights and to said semi-actuated control means in a predetermined sequence,

actuator means responsively connected to said pre-timed for actuating said sequencing and switching means, and

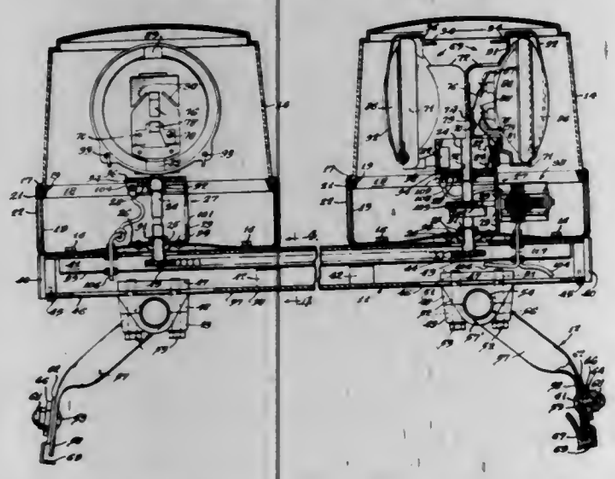
means for alternatively connecting said power source either directly to said pre-timed control means to cause said pre-timed control means to drive said actuator means in accordance with said predetermined program or connecting said pre-timed control means



to said semi-actuated control means to cause said actuator means to be driven in response to said semi-actuated control means,

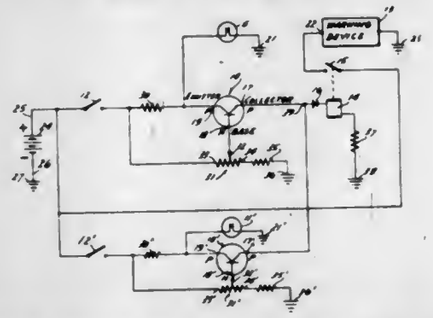
said semi-actuated control means comprising road switch means adapted to be actuated in response to vehicles arriving at said intersection on said one of said streets, timer switching means connected for actuation by said road switch means, and electronic timer unit means connected to said timer switching means for generating predetermined timing signals in response to the actuation of said road switch means, said power source being connected to said electronic timer unit means through said sequencing and switching means and said timer switching means to initiate the generation of said timing signals, said actuator means being actuated by said timer switching means in response to said timing signals.

3,271,735
WARNING DEVICE FOR EMERGENCY VEHICLES
Earl W. Gosswiller, Chicago, Ill., assignor to Federal Sign and Signal Corporation, Blue Island, Ill., a corporation of New York
Filed June 29, 1964, Ser. No. 378,754
10 Claims. (Cl. 340—50)



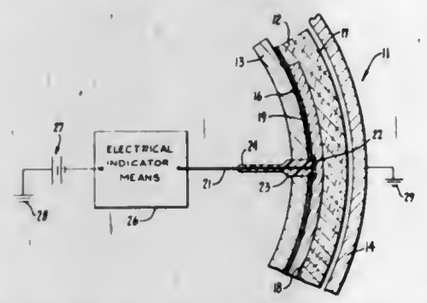
7. Signal light means comprising an elongate hollow mounting bar; a pair of signal lights mounted adjacent the opposite ends of said bar; each light comprising a base, a light transmitting dome on the base, a shaft journalled on the base and extending upwardly into the dome and downwardly into said bar, lamp means on the upper end portion of said shaft within said dome, and sprocket means on the lower end portion of said shaft within said bar; a motor in one of said lights drivingly connected to the shaft therein; a partition within said bar immediately below and extending between said sprocket means; chain means in said bar above said partition reaved over said sprocket means for imparting the movements of the motor driven shaft to the other of said shafts; said bar fitting closely about said sprocket means whereby said bar and said partition prevent disassociation of said chain means from said sprocket means; and power supply means for said lamp means and said motor extending through said bar below said partition.

3,271,736
TRANSISTORIZED CIRCUIT CONDITION WARNING DEVICE FOR VEHICLES
Richard J. Brown, Rte. 4, Box 270, and Raymond G. Schnick, Rte. 4, Box 53, both of Delavan, Wis.
Filed Aug. 30, 1963, Ser. No. 305,694
3 Claims. (Cl. 340—52)



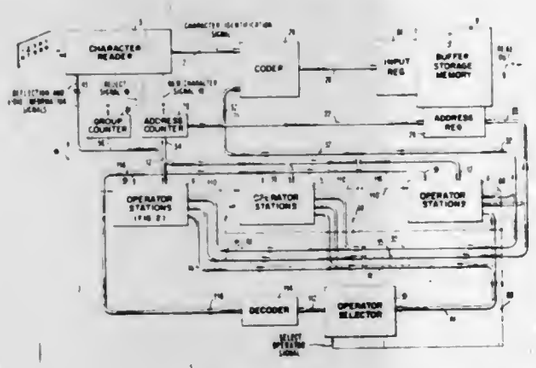
1. A circuit for warning a driver of an undersired condition in an electrical system of an automobile, comprising a battery, an electrical device, a transistor, a warning device and a relay switch having a control coil for actuating the warning device, said control coil being connected to the collector terminal of said transistor, the collector current of said transistor controlling the passage of current through the control coil of said relay; said battery, said switch, said electrical device, and the emitter and base of said transistor being interconnected through conductors and resistors having preselected resistances adapted to permit a collector current to flow in said transistor only when an undesired circuit condition occurs in the circuit between said switch and said electrical device, whereby to close said relay and actuate said warning device, the number of transistors connected to the control coil of said relay being equal to the number of electrical devices and switches, the same terminal of said battery being connected to each said switch, the other terminal of said switch being connected to said electrical device and to the emitter terminal of said transistor through a resistor of a value sufficient to cause a voltage drop of .3 of a volt, the base terminal of said transistor being connected to the center movable contact of a 25 ohm potentiometer, said terminal of said switch which is connected to said electrical device being connected to one end terminal of said potentiometer, and the other end terminal of said potentiometer being connected to a 220 ohm resistor, said 220 ohm resistor being connected to the other terminal of said battery through a ground connection, said control coil of said relay having a resistance of 500 ohms, the terminal of said control coil which is not connected to the collector terminal of said transistor being connected to a 220 ohm resistor, said 220 ohm resistor being connected to the other terminal of said battery through a ground connection, whereby when the said switch is closed and the electrical device is incapable of passing a current a collector current flows in said transistor to actuate said relay and said warning device.

3,271,737
WEAR INDICATING ARRANGEMENT FOR VEHICLE POWER TRANSFER DEVICES
James L. Bezemek, 1454 Dayton Ave., San Leandro, Calif.
Filed Mar. 25, 1964, Ser. No. 354,650
11 Claims. (Cl. 340—52)



1. A wear indicating device for a friction member having a wearing surface for engaging a relatively non-wearing electrically conductive member comprising a conductive region disposed in insulated relation within said friction member at a predetermined depth beneath said wearing surface in a pattern extending under substantially all areas of the surface, insulated lead-in conductor means in electrical connection with said conductive region, an indicator circuit including electrical indicator means and a current source in series, and means for connecting said circuit in conductive relation between said lead-in conductor means and said non-wearing member.

3,271,738
OPERATOR ASSISTED CHARACTER READING SYSTEM
Louis A. Kamentsky, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 13, 1963, Ser. No. 301,852
11 Claims. (Cl. 340—146.3)



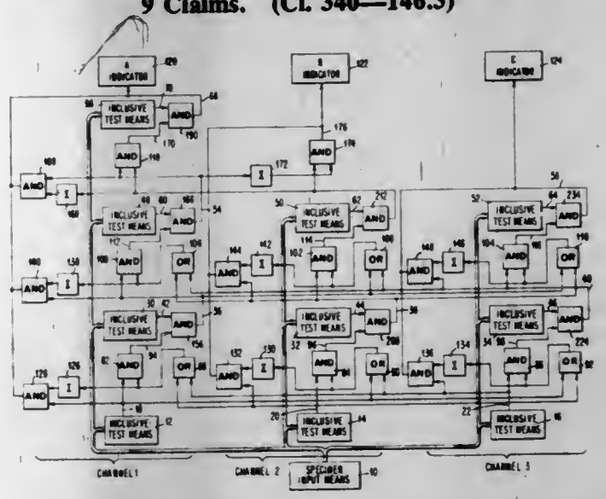
3. In a character reading system wherein a character reader provides an identification signal for each character recognized and a rejection signal when a rejected character cannot be recognized, the combination with said reader of:

addressing means for providing a corresponding address signal for each character presented to said character reader for recognition;

an operator station including, address storage means connected to receive said address and rejection signals for storing the address signal of a rejected character in response to a corresponding rejection signal, means for locating images of rejected characters, keyboard means for storing a character identification signal selected by manual operation of said keyboard means, and readout means associated with said keyboard means for reading out the identification signal stored in said keyboard means and the address signal stored in said address storage means at a time other than when said reader provides an identification signal; and

storage means including a plurality of memory locations for storing the identification signals from said character reader at memory locations determined by the corresponding address signals from said addressing means, and for storing the identification signal from said keyboard means at a memory location determined by the corresponding address signal stored in said address storage means.

3,271,739
MULTI-LEVEL TEST SYSTEM FOR SPECIMEN IDENTIFICATION
Raymond E. Bonner, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 1, 1963, Ser. No. 320,786
9 Claims. (Cl. 340—146.3)



1. A recognition system for identifying input specimens as members of given specimen classes comprising,

an input means responsive to an input specimen selected from said given specimen classes for generating signals characteristic thereof,

a plurality of test channels connected to said input means, each of said test channels being associated with a separate specimen class, each of said test channels including a plurality of test means directly connected to said input means for performing separate specific tests on said characteristic signals, and for producing an output signal when said test is satisfied,

a first test means of said plurality of test means in each one of said test channels including a test designed to be satisfied by all of the members of the specimen class associated with each said given test channel,

a second test means of said plurality of test means in each of said test channels including a test designed to be satisfied by those members of the specimen classes associated with said given test channel which are capable of satisfying the test included in said first test means in said given test channel and at least one other of the first test means in the others of said plurality of test channels,

the remainder of said plurality of test means in each one of said test channels including tests designed to be satisfied by the members of said specimen class associated with said given test channel which are

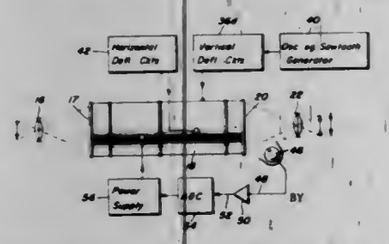
capable of also satisfying each preceding test in said given test channel and at least one other immediately preceding test means in the others of said plurality of test channels,

and gating means connected to each of said test means, said gating means interconnecting the test means in each test channel with given ones of the test means in the other test channels such that said output signals from each test means must be gated by an output signal from the preceding test means in each test channel in combination with an output signal from at least one other preceding test means in said other test channels.

3,271,740
IMAGE REGISTRATION SYSTEM USING AN IMAGE CONVERTER TUBE

Jacob Rabinow, Bethesda, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Apr. 29, 1963, Ser. No. 276,471
2 Claims. (Cl. 340—146.3)



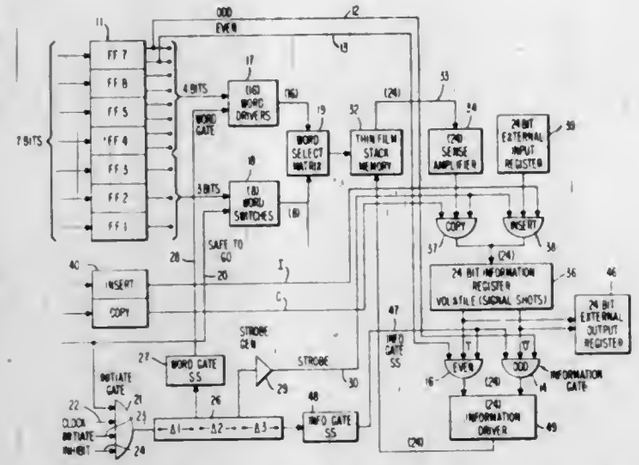
1. In an optical character reading machine for characters on a contrasting background, an image converter tube having a photosensitive emissive surface, means to form a first image of one of said characters on said surface, said tube having a second surface and means responsive to the emissions from said photosensitive surface to form a second image of said character on said second surface, said reading machine including means for examining the character whose image appears on said second surface, optical means in optical alignment with said second surface and said examining means to form an image of the last mentioned character on said examining means for examination by the latter, said image converter tube having vertical deflection means to vertically move the image appearing on said second surface, means including a vertical deflection driving circuit connected to said deflection means to drive said vertical deflection means and thereby vertically move said second image, said tube having a power input terminal, a power supply connected to said terminal, means for controlling the gain of said power supply to thereby regulate the intensity of said second image, photosensitive means exposed to said second surface and arranged to provide a signal corresponding to the light intensity of said second surface on which said second image appears, and means for conducting said signal to said gain controlling means to control the latter.

3,271,741
MAGNETIC MEMORY SYSTEM

Albert M. Bates, Davisville, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Sept. 28, 1962, Ser. No. 226,895
14 Claims. (Cl. 340—172.5)

1. A memory system comprising, in combination, a memory array having rows and columns of bistable state magnetic elements, said array having an even and an odd address portion, input means providing drive current to a selected even or odd address portion, sensing means for detecting "one" or "zero" output information resulting from said drive current, circuit means responsive to said sensing means for directing said sensed output information to an information register, means including an even or odd information gate regenerating said sensed output information back into said memory array at said selected address portion, the output of said even or odd information gate causing an information driver to provide rewrite current in a first or a second direction at said se-

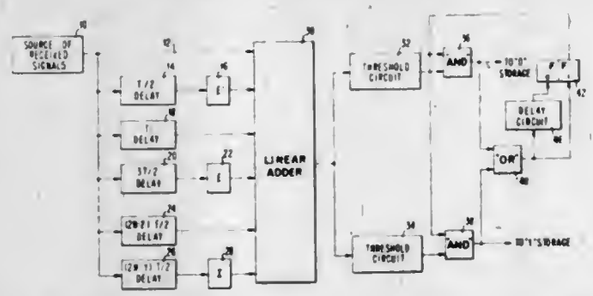


lected address portion, said first or second rewrite current direction being under the control of said even or odd information gate so as to cause said bistable state magnetic elements to be placed in a first reference state in said even address portion and in a second reference state in said odd address portion when storing identical binary information.

3,271,742
DEMODULATION SYSTEM

Dale H. Rumble, Saugerties, and Hans R. Ulander, Woodstock, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 6, 1963, Ser. No. 321,797
12 Claims. (Cl. 340—167)



1. A digital data communication system comprising means for producing binary coded signals including means for generating a first plurality of cycles of waveform having positive and negative excursions from a datum which occur in alternate half-waveform periods representative of a first binary digit and a second plurality of cycles of waveform opposite in polarity to said first plurality of cycles of waveform representative of a second binary digit,

means coupled to said means for producing binary coded signals for adding the positive and negative excursions of each plurality of cycles of waveform together to provide, in a given single half waveform period, a combined excursion from said datum having a polarity dependent on the binary digit represented by each plurality of cycles of waveform,

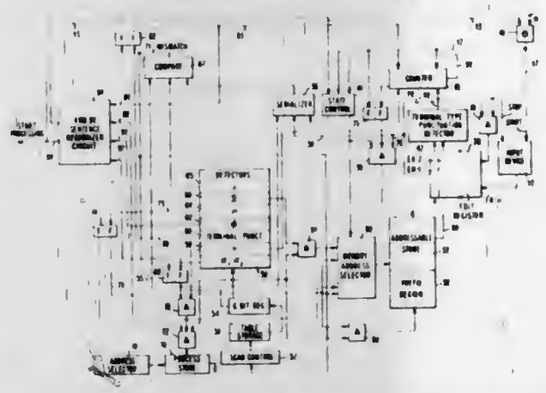
threshold means coupled to the output of said adding means and responsive to the signals therefrom to provide a first signal indicative of one binary digit when said combined excursions exceed a given threshold level in one polarity direction with respect to a datum and to provide a second signal indicative of another binary digit when said combined excursions exceed a given threshold level in the opposite polarity direction with respect to said datum,

and means connected to said threshold means for inhibiting said threshold means for given time intervals between the occurrence of said indicative output signals.

3,271,743
ANALYTIC BOUNDS DETECTOR

John L. Craft, Beacon, and Warren B. Strohm, Hopewell Junction, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,379
10 Claims. (Cl. 340—172.5)



1. A device for determining the end of an information unit in a sequence of coded data where the end-of-unit symbol in the coded data may have other significance comprising:

first storage means;

input means for applying said coded data sequence to said first storage means;

means for detecting an end-of-unit symbol in the data applied to said storage means;

means responsive to the detection of said end-of-unit symbol for causing said input means to apply a predetermined number of symbols following said end-of-unit symbol in said sequence to said storage means and for then inhibiting further operation of said input means;

second storage means containing in a systematic order, an entry representing each possible form in which an end-of-unit symbol may appear with the symbols before and after it;

means for comparing the symbols stored in said first storage means with the symbols stored in said second storage means,

and means responsive to a match being detected between symbols, including an end-of-unit symbol, in said first storage means and a given entry in said second storage means for indicating the end of an information unit.

3,271,744
HANDLING OF MULTIPLE MATCHES AND FENCING IN MEMORIES

Harold E. Petersen, Saratoga, Calif., and Michael Teig, Yonkers, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,595
15 Claims. (Cl. 340—172.5)

1. In a data processing system

a multiple word data memory having n rows and m columns,

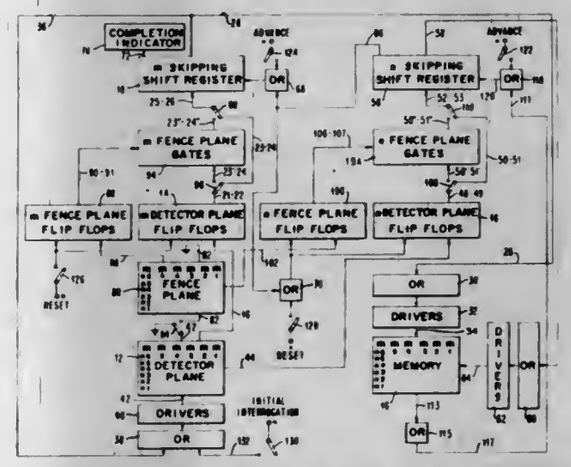
a first register having n rows and m columns of register elements corresponding to the n rows and m columns of said memory, one element corresponding to each word of said memory with selected ones of said elements set to a given state,

a second register having m stages corresponding to the m columns of said first register,

a third register having n stages corresponding to the n rows of said first register,

a first skipping shift register having m stages corresponding to the m stages of said second register, operable in response to the setting of stages of said second register for setting corresponding stages of said first skipping shift register, and operable in response to successive interrogation inputs to provide outputs successively from set stages thereof,

a second skipping shift register having n stages corresponding to the n stages of said third register, operable in response to the setting of stages of said third register for setting corresponding stages of said sec-



ond skipping shift register, and operable in response to successive interrogation inputs to provide outputs successively from set stages thereof,

means for simultaneously interrogating all m columns of said first register to set stages of said second and third registers corresponding to said m columns and n rows respectively which have elements set to said given state,

means for applying resetting inputs to said third register,

means for applying outputs from said m stages of said first skipping shift register to corresponding columns of said memory and said first register,

means for applying outputs from said n stages of said second skipping shift register to corresponding rows of said memory,

means for applying interrogation inputs to said first skipping shift register,

means for applying interrogation inputs to said second skipping shift register.

3,271,745
REGISTER SEARCH AND DETECTION SYSTEM

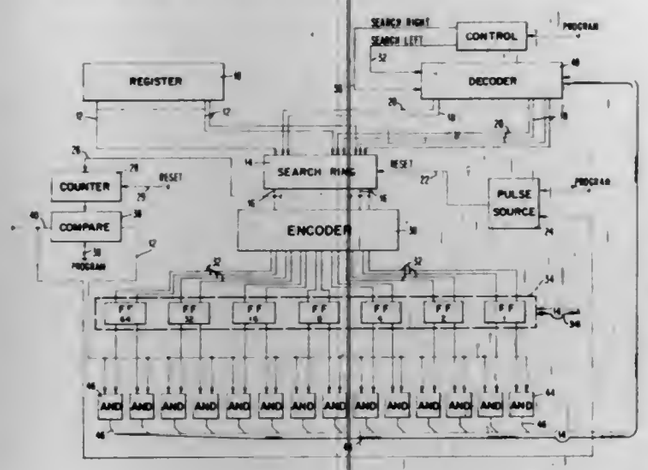
Ralph F. Schauer, Hawthorne, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 20, 1962, Ser. No. 224,966
6 Claims. (Cl. 340—172.5)

1. A multistage circuit for interrogating any selected stage of a multistage register for a bit of information and for continuing the search to succeeding stages of the register until the bit is found, there being a stage in said circuit corresponding to each stage of said register, comprising:

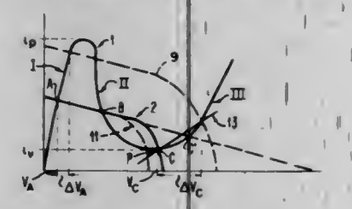
means for interrogating said register to detect the presence of bits in the stages thereof;

means for applying a sampling pulse to said circuit at the stage corresponding to a selected stage of said register;
means responsive to the coincident occurrence of a bit in said selected stage and of said sampling pulse for generating an output signal;



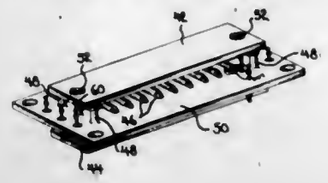
search continuing means normally responsive to the application of said sampling pulse to said circuit stage for applying a sampling pulse to the next succeeding stage of said circuitry in one direction;
and means responsive to the detection of said bit in said selected register stage for inhibiting said search continuing means.

3,271,746
NEGATIVE RESISTANCE MEMORY MATRIX
Jan A. Narud, Scottsdale, Ariz., and Paul E. Stuckert, Katonah, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 5, 1962, Ser. No. 207,647
14 Claims. (Cl. 340—173)



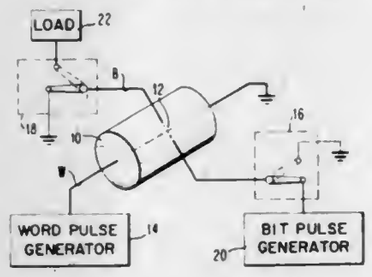
1. In a memory array comprising a plurality of bistable memory elements arranged in a coordinate array, each of said memory elements having a current-voltage characteristic having a negative resistance region between a first and a second positive resistance region, said negative resistance region being continuous with said second positive resistance region along a high-resistance valley region, means for selectively switching each of said memory elements between bistable states defined along said characteristic and indicative of binary information, one of said bistable states being defined along that positive resistance region discontinuous with said valley region, sensing means connected along asymmetrical diode devices to predetermined groups of said memory elements, and means including said sensing means for ascertaining the memory state of selected elements in each of said groups, the improvement comprising means for biasing each of said diode devices connected to memory elements operating in the other of said bistable states beyond the knee of its current-voltage characteristic to define said other binary state in said valley region of said characteristic.

3,271,747
MAGNETIC CORE PACKAGE
Donald R. Harner, Shiremanstown, and Michael Plaxa, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 22, 1961, Ser. No. 133,118
1 Claim. (Cl. 340—174)



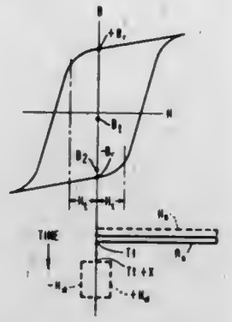
In a magnetic core device of the type utilized to store and shift intelligence the combination comprising a core mounting panel, a series of magnetic cores mounted thereon, windings linking said cores including an input and an output winding linking the first and last of said plurality of cores and coupling windings linking adjacent cores to transfer intelligence stored in said cores between cores, at least another panel secured to said first mentioned panel in an overlying protective relationship to said cores, a recirculating loop linking the last core to the first core through the said output and input windings to recirculate intelligence transferred through said register, the said recirculating loop being comprised of flat conductors insulated from each other secured in said other panel to form a flat strip transmission line matched in impedance to the input and output impedance characteristics of the input and output cores and windings whereby to transmit recirculated intelligence with minimum signal loss.

3,271,748
MAGNETIC ELEMENT AND MEMORY
Robert F. Elfant, Yorktown Heights, and Nicholas J. Mazzeo, Peekskill, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 11, 1963, Ser. No. 250,908
19 Claims. (Cl. 340—174)



8. A magnetic information storage device comprising;
a first conductor;
a second conductor displaced from and in orthogonal relationship with said first conductor;
a magnetic member surrounding said first and second conductors, said member made of material exhibiting different stable states of flux remanence and normally magnetized circumferentially with respect to said first conductor in a datum stable state of remanent flux orientation and distribution with no appreciable remanent flux linkage of said second conductor; and,
means for energizing both said first and second conductors in sequential concurrence to establish said member in a similar stable state of flux orientation but a different remanent state of flux distribution with respect to said datum stable state whereby an appreciable remanent flux linkage of said second conductor is thereafter established.

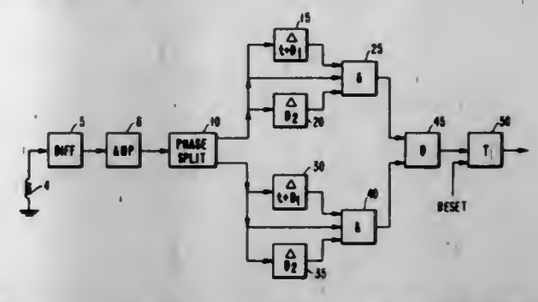
3,271,749
MAGNETIC STORAGE AND SWITCHING SYSTEM
Norbert G. Vogl, Jr., and John A. Parisi, both of Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 31, 1961, Ser. No. 149,050
2 Claims. (Cl. 340—174)



1. A combinational input switching circuit comprising:
(a) a bistable magnetic core having two limiting remanence states and a plurality of intermediate remanence states and having a static switching threshold associated with each said remanence state which must be exceeded by a magnetizing field before the core can be switched from the said state, said core having the characteristic that a sensitizing field sufficient in magnitude to drive the core from an occupied remanence state but not necessarily sufficient in duration to produce a substantial change of state produces a transistory sensitized condition which exists for a finite time after termination of the sensitizing field and during which the switching threshold is reduced to a minor fraction of the static value to which it returns upon termination of the sensitized condition;
(b) sensitizing means for applying a sensitizing field to said core which is larger in magnitude than the static switching threshold to produce the transitory sensitized condition and to drive the core in a first direction to a new remanence state; and
(c) means effective during existence of said sensitized condition for applying to the core, non-coincidentally with said sensitizing field, a magnetizing field which is opposite in polarity to the sensitizing field and is of a magnitude less than the static switching threshold value to which the core would return upon termination of said sensitized condition but greater than the reduced threshold in existence at the time of application of the pulse so as to drive the core in a direction opposite to said first direction back towards the core's original remanence state.

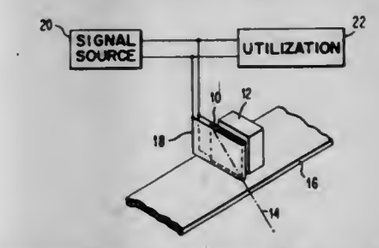
3,271,750
BINARY DATA DETECTING SYSTEM
Marco Padalino, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 13, 1962, Ser. No. 244,355
8 Claims. (Cl. 340—174.1)

1. A reproducing system for binary data recorded on a magnetic medium movable past a transducer, wherein a first predetermined period exists between flux polarity reversals or a second predetermined period exists between flux polarity reversals dependent on the binary data recorded, the second period being half as long as said first period, comprising:
means deriving alternating true and complementary data signals corresponding to the magnetic state of said medium,
means responsive to said true data signal for producing an output pulse indicative of adjacent flux reversals having said first period, the direction of flux reversals having a predetermined sequence,
means responsive to said complementary data signal for producing an output pulse indicative of adjacent



flux reversals having said first period, the direction of flux reversals having a sequence opposite to said predetermined sequence,
and means combining said true and complementary data signal responsive means to produce an output signal indicative of each sequence of flux reversals having said first predetermined period.

3,271,751
MAGNETIC THIN FILM TRANSDUCER
Walter E. Proebster, Chappaqua, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 3, 1962, Ser. No. 241,655
Claims priority, application Switzerland, Dec. 21, 1961, 14,928/61
9 Claims. (Cl. 340—174.1)

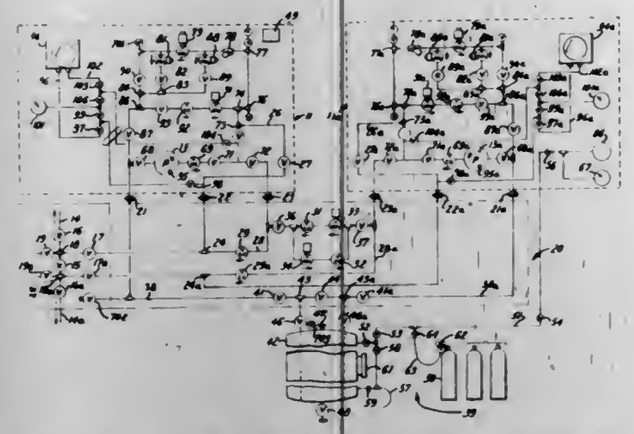


1. In combination with a movable record member having a magnetizable surface, a transducer comprising,
a plane anisotropic thin magnetic film element having an easy axis of remanent flux orientation defining opposite stable states,
said film having at least one edge in close proximity to the surface of said record member with the easy axis being angularly displaced from said one edge, and
a control winding coupling said film.

3,271,752
PIPE-TYPE CABLE CONTROLLER COMPRISING SELF-TESTING FEATURES
John L. Lansch, Nyack, N.Y., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Original application July 25, 1960, Ser. No. 45,115, now Patent No. 3,155,765, dated Nov. 3, 1964. Divided and this application Oct. 1, 1964, Ser. No. 414,042
3 Claims. (Cl. 340—214)

1. Apparatus for controlling the oil pressure in an electric cable comprising an A.-C. bus, a D.-C. bus, a plurality of magnetic relays energizable across said D.-C. bus, sensing means for sensing the conditions of said cable, said relays being responsive to said sensing means, a plurality of signal lamps energizable across said A.-C. bus by means of said relays, electric circuitry associated with each of said relays, at least one receptacle comprising a

plurality of contacts, two of said contacts being electrically connected across said A.-C. bus, another two of said contacts being electrically connected across said D.-C. bus, a plurality of said contacts each being electrically connected to one of said relays, testing means comprising an A.-C. voltmeter connected to engage the contacts across said A.-C. bus, a D.-C. voltmeter con-



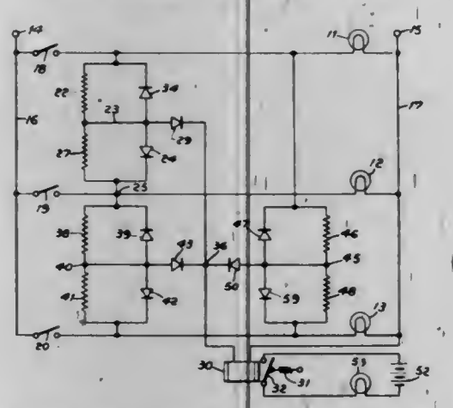
nected to engage the contacts across said D.-C. bus, and switching means for energizing each of said relays and its associated circuitry across said D.-C. bus, whereby the voltage across said A.-C. bus and the voltage across said D.-C. bus may be tested and each of said relays and its associated circuitry may be tested without being removed from said apparatus.

3,271,753

MONITORING CIRCUIT FOR DETECTING CONVERGENCE OF A PLURALITY OF VOLTAGE LEVELS

Rudolf Luce, Ditzingen, Wurttemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of New York

Filed Aug. 19, 1963, Ser. No. 302,790
Claims priority, application Germany, Aug. 30, 1962, St 19,650
15 Claims. (Cl. 340—248)



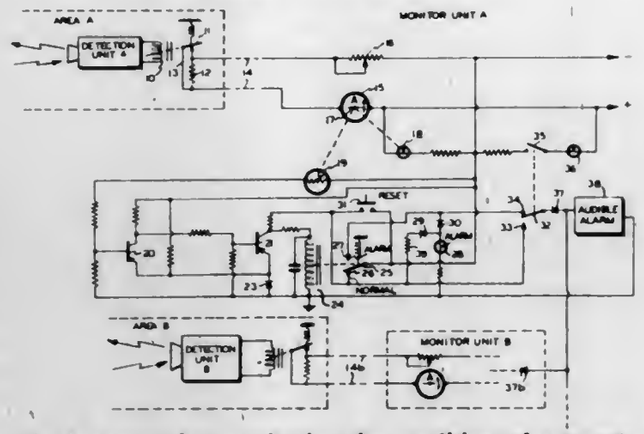
1. A monitoring system comprising a first voltage source, a second voltage source, a plurality of loads, a first terminal of a first one of said loads being connected through switching means to said first voltage source, a second terminal of said first one of said loads being connected to said second voltage source, a first terminal of a second one of said loads being connected through switching means to said first voltage source, a second terminal of said second one of said loads being connected to said second voltage source, and a conductive path from said first terminal of said first load to said second voltage source, said conductive path comprising an impedance in series with a parallel combination of branches, a first one of said branches including first current-control means in series with a utilization device, and a second one of said branches including second current-control means connected to said first terminal of said second one of said loads, said second current control means being shunted by an impedance.

3,271,754

MONITORING SYSTEM

Paul I. Corbell, Rockville, Md., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed July 9, 1963, Ser. No. 293,649
5 Claims. (Cl. 340—258)



1. A system for monitoring the condition of a remote station, comprising a monitoring unit, a line circuit connecting said unit with said station, said unit comprising an electrical meter connected to said line circuit and having a movable member responsive to the current-voltage parameter of said line circuit, a light reflective element associated with said member and movable in response to said member, a light source illuminating said element, photoresponsive means optically coupled to said element, means for adjusting the optical coupling between said element and said photoresponsive means to a desired condition, a bistable circuit electrically coupled to said photoresponsive means, means biasing said bistable circuit to a first state when a given optical coupling is obtained between said photoresponsive means and said element and biasing said bistable circuit to a second state when a lesser optical coupling is obtained, a relay controlled by said bistable circuit to be relatively energized when said bistable circuit is in said first state and relatively deenergized when said bistable circuit is in said second state, a switch biased to a first position and controlled by said relay to be moved to a second position against its bias when said relay is relatively energized, a holding circuit associated with said switch for controlling the application of current to said relay to maintain said relay deenergized once said switch is moved to said first position, reset means for bypassing said holding circuit to permit the application of current to said relay and the resetting of said switch thereby, and indicator means controlled by said switch and activated when said switch is in said first position.

3,271,755

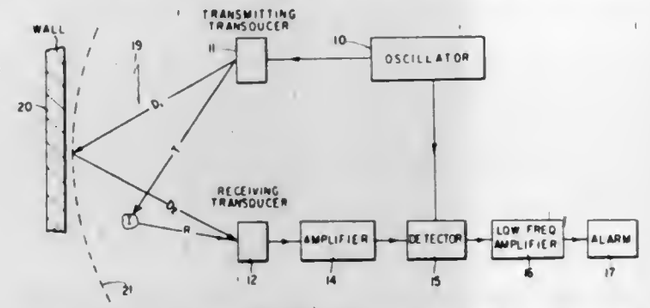
DOPPLER TYPE INTRUDER DETECTION SYSTEM ARRANGED TO ELIMINATE EXTRANEOUS AIR TURBULENCE EFFECTS

Samuel M. Bagno, Belleville, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New York

Filed Mar. 16, 1964, Ser. No. 352,215
1 Claim. (Cl. 340—258)

Apparatus insensitive to air turbulence for detecting the motion of an intruder within an inner portion of an area at least partially bounded by reflective objects, said inner portion being defined by a predetermined perimeter lying inwardly of said reflective objects, said apparatus includ-

ing means for producing ultrasonic energy at a given high frequency of at least about 40,000 cycles per second, transducer means for radiating the ultrasonic energy from a point within said inner portion of said area, transducer means for receiving only reflected ultrasonic energy at a point within said inner portion of said area, said receiving transducer means being positioned with respect to said radiating transducer means to prevent a direct line of transmission of ultrasonic energy through air from said radiating transducer means to said receiving transducer means, means for comparing the frequency of the radiated and reflected energy and for detecting any difference in frequency between the radiated energy and reflected energy having an amplitude at least equal to a predetermined percentage of the amplitude of the radiated energy, said radiating and receiving transducers being located with



respect to any point of said perimeter at fixed distances determined by the frequency of the radiated energy according to the relationship $A=e^{-Rfs}$ so that radiated energy reflected from a point beyond said perimeter is attenuated by the air to an amplitude less than said predetermined percentage of the radiated energy amplitude, in said relationship A being the minimum permissible ratio of received energy amplitude to radiated energy amplitude to produce a detectable signal at said receiving transducer, e being the base of natural logarithms, R being a constant dependent upon the viscosity and density of the air and the velocity of sound through the air, f being the frequency of the radiated energy, and S being the sum of the distances from any point on said perimeter to said transducers, whereby said apparatus is insensitive to radiated energy which is changed in frequency by passage through moving air within said perimeter and is reflected from a point beyond said perimeter.

3,271,756

METHOD AND APPARATUS FOR DETECTING A HAZARDOUS CONDITION

Robert B. P. Crawford, Rosemead, Calif., and Donese B. Tackett, Scottsdale, Ariz., assignors to Harold J. Burke, Lake Forest, Ill.

Filed Mar. 22, 1960, Ser. No. 16,827
8 Claims. (Cl. 340—237)

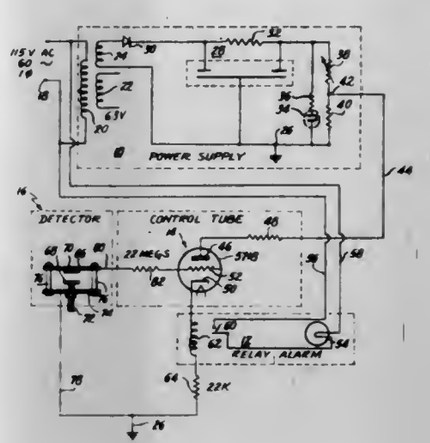
1. A hazardous condition detector comprising:

a pair of charged particle collectors separated to define a space open to the atmosphere of a selected environment,

a source of charged particle emitting material positioned in said space closer to one than the other of said pair of charged particle collectors to produce a greater electrical potential on said one of said pair of charged particle collectors and a smaller electrical potential on said other of said pair of charged particle collectors,

said pair of particle collectors being charged only by the source of charged particle emitting material and being the sole biasing potential for an electron discharge device to enable the relative difference between said greater electrical potential and said smaller electrical potential to be dependent upon the environmental atmosphere in said space,

electrical potential dissipating means operatively associated with said pair of charged particle collectors whereby under normal environmental conditions the relative electrical potentials on said pair of charged particle collectors will remain substantially constant and rapid variations in the environmental atmosphere in said space will modify the relative electrical potentials on said pair of charge particle collectors, and



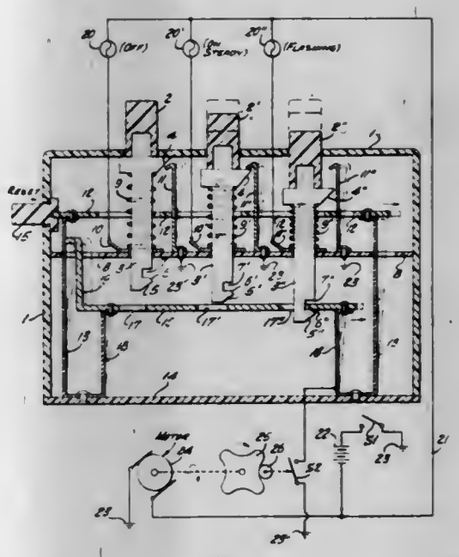
means for connecting the pair of charged particle collectors to the electron discharge device to enable said biasing potential to provide a cut-off bias to the discharge device under normal environmental conditions and to provide less than a cut-off bias thereto under rapidly changing environmental conditions and cause said electron discharge device to conduct and signal an alarm.

3,271,757

MULTI POSITION MANUAL LATCHING SWITCH FOR INDICATING LAST ENTRY

Nathaniel B. Wales, Jr., 66 E. 80th St., New York, N.Y.

Filed Sept. 24, 1965, Ser. No. 489,979
2 Claims. (Cl. 340—332)



1. A multiple position last entry indicating latching switch structure comprising:

a frame;

a plurality of switch operator members each moveably secured to said frame, and each being manually moveable to three sequential positions, namely "off," "on one," and "on two" in that sequential order;

spring means for each said switch operator members urging it into said "off" position from either said "on one" or "on two" position by supplying a force between said frame and said operator;

a first latch means for each said operator secured to said frame and adapted to latch said operator in said "on one" position;

a second latch means for each said operator secured to said frame, and adapted to latch said operator in said "on two" position;

a first electric switch for each said operator secured to said frame, and adapted for actuation by the positioning of its said switch operator member in its said "on one" position;

a second electric switch for each said operator secured to said frame, and adapted for operation by the positioning of its said switch operator member in its "on two" position;

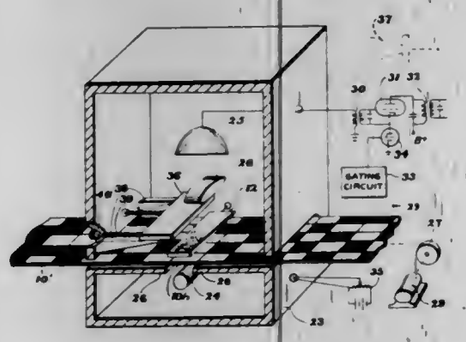
cam means mounted on and moveable with respect to said frame responsive to the positionment of any said operator to said "on two" position to unlatch any other said operator previously positioned in said "on two" position, whereby to return said previously positioned operator by said spring means to said "on one" position; and

a reset actuator moveable with respect to said frame to disengage all said first and second latching means, whereby to return all said switch operators to the said "off" position under the urging of said spring means.

3,271,758
INFORMATION CONVERTER ARRANGEMENT

Keith F. Stultz, Rochester, N.Y., and Hans J. Zweig, Mountain View, Calif., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed July 24, 1963, Ser. No. 297,262
12 Claims. (Cl. 340—347)



4. A digit-to-analog converter for deriving the analog value of a multi-digit number of radix R recorded on a record member with each digit of the number recorded in a separate discrete area, the relative position and light-absorption characteristics of each such area indicating respectively the digit-order and the ordinal value of the corresponding digit, said converter comprising:

a source of illumination,

light-flux sensing means,

means for directing light flux from said source along a predetermined path toward said sensing means,

digit-value weighting means interposed in said path and including a plurality of distinct light-transmitting portions, one corresponding to each digit of said recorded number,

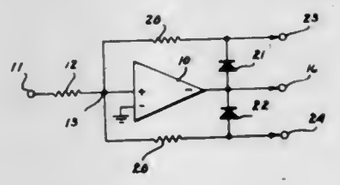
the light-transmitting characteristics of said portions being related to the orders of the digits and the radix of said number so that under equal conditions of illumination the light flux transmitted towards said sensing means by that portion corresponding to any particular-order digit will be R-times greater than that transmitted by the portion corresponding to the next-lower-order digit,

and means for positioning said record member in said path so that the passage of light flux to said sensing means by way of any one of said portions will be controlled by the corresponding discrete digit area of said record member.

3,271,759
ANALOG TO DIGITAL CONVERTER

Bill Hopper, Phoenix, Ariz., assignor to Dynamic System Electronics Corp.

Filed Sept. 13, 1963, Ser. No. 308,705
4 Claims. (Cl. 340—347)

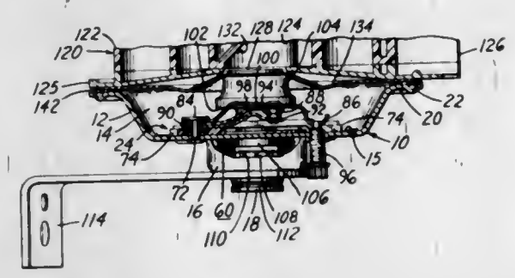


1. In an analog to digital converter comprising: a plurality of summing amplifiers each representing a binary digit of a reflected binary code and each including an input, an output, and a feedback path; means connecting an analog voltage, to be converted to digital representation, to the input of each of said amplifiers; means connecting the feedback path of each amplifier to the input of all other amplifiers representing a less significant digit; and a plurality of zero cross-over detectors, each connected to the output of one of said amplifiers respectively, for providing an indication of polarity of the output signal provided by the corresponding amplifier, and thus the digital value of the output of the corresponding amplifiers.

3,271,760
ELECTROMAGNETIC DIAPHRAGM HORN

Clark E. Sloan, Jr., Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 13, 1962, Ser. No. 209,608
9 Claims. (Cl. 340—388)

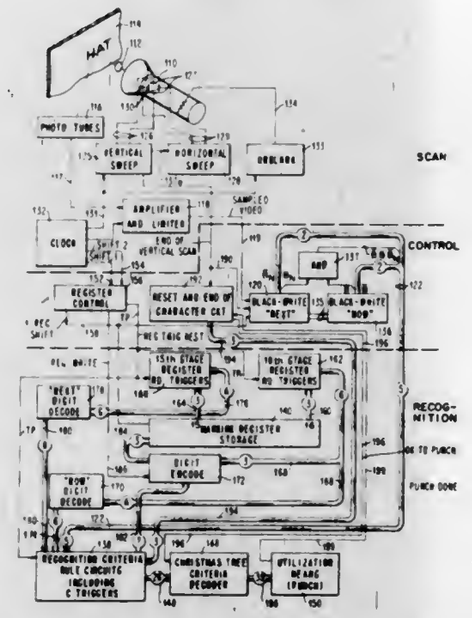


1. An electromagnetic horn comprising, a sound projector, a diaphragm cooperating with said sound projector, a metal housing supporting said sound projector and diaphragm, an electromagnet including a coil winding and an armature, said armature recirprocating said diaphragm, switch contacts for controlling the energization of said coil winding operated by said armature, and a unitary coil winding assembly having a spool supporting said coil winding, said coil winding assembly including insulating portion means integral with the spool to support at least one of said switch contacts and position said coil winding assembly on said metal housing and insulated from said metal housing.

3,271,761
CURVATURE AND SHAPE DETECTION

Kuang-Chi Hu, Hartsdale, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 29, 1963, Ser. No. 326,763
12 Claims. (Cl. 340—146.3)



6. In a system for recognizing two-dimensional patterns, an apparatus for determining the shape of a pattern-defined background region comprising, in combination:

means for providing an indication of the maximum height of the region;

means for providing an indication of the maximum width of the region;

means responsive to the maximum height and maximum width indications for providing an indication of the product of the maximum height and maximum width;

means responsive to the product indication for providing an indication of a predetermined fraction of the product, where the fraction exceeds one-half and is less than one;

means for providing an indication of the area of the region;

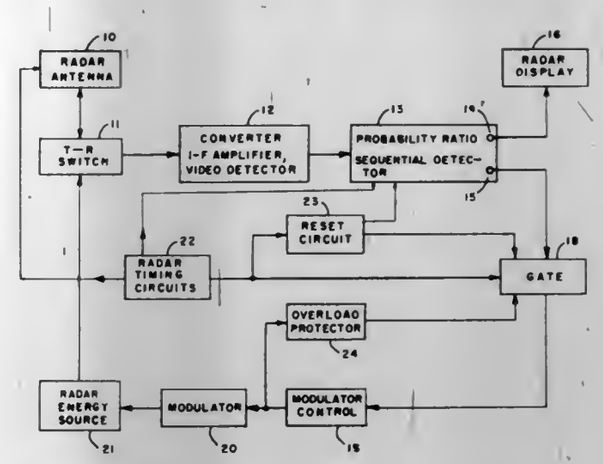
and means responsive to the area indication and the indication of the predetermined fraction of the product, for providing an indication of the larger of these indications, whereby the region is determined to be relatively rectangular when the area indication exceeds the indication of the fraction of the product, and whereby the region is determined to be relatively triangular when the indication of the fraction of the product exceeds the area indication.

3,271,762
ELECTRICAL SYSTEM

Kenneth K. Zelger, Levittown, Pa., assignor to General Atronics Corporation, Wyndmoor, Pa., a corporation of Pennsylvania

Filed June 26, 1963, Ser. No. 290,832
14 Claims. (Cl. 343—7)

1. In a radar system having means for transmitting plural radar pulses at a given effective antenna orientation: probability ratio sequential detector means; means for supplying the returns from each said pulse to said detector means; means for deriving from said detector means a signal indicative of the classification of all said returns at one given orientation as target and no-target

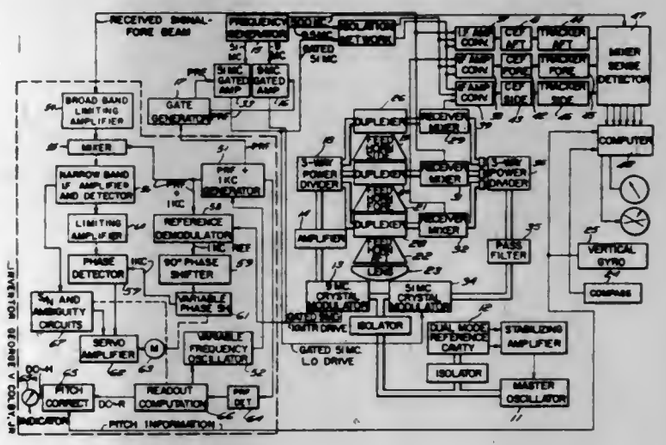


returns; means responsive to said derived signal to terminate the transmission of said pulses and means for restarting said transmission upon assumption by said antenna of another effective orientation.

3,271,763
RADAR ALTIMETER

George V. Colby, Jr., Lexington, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Feb. 25, 1964, Ser. No. 347,290
12 Claims. (Cl. 343—7)



2. A terrain clearance indicator for aircraft comprising:

(a) means including an antenna to produce interrupted continuous waves of electromagnetic energy and to transmit a beam of said waves towards the earth,

(b) receiving means including said antenna to receive echoes of said waves reflected from the earth; phase sensing means connected to said receiving means to generate an output signal as a function of the phase relation between the envelopes of the transmitted wave and the received wave,

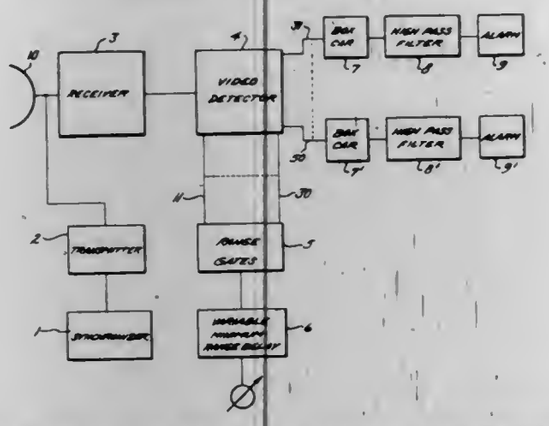
(c) means responsive to said output signal to vary the frequency at which said waves are interrupted so as to produce a predetermined phase relation between the envelopes of the transmitted and received waves,

(d) and means to provide an indication of terrain clearance as a function of the frequency of interruption of said waves.

3,271,764
RADAR TORNADO ALARM

David Atlas, Newton, and Roger M. Lhermitte, Sudbury, Mass.; said Atlas assignor to the United States of America as represented by the Secretary of the Air Force

Filed Apr. 24, 1964, Ser. No. 362,533
7 Claims. (Cl. 343—11)

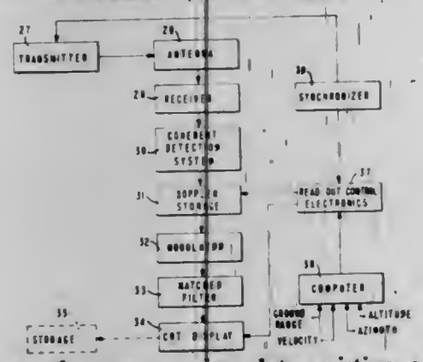


1. A radar tornado detection and alarm system wherein radar pulse returns from said tornado fluctuate in frequency determined by the velocity characteristics of the tornado comprising means for directing radiant energy in the form of pulses toward the region of said tornado, said directed pulses having a repetition frequency larger in magnitude than said fluctuating frequency, means to receive return pulses from said tornado and said region, means to detect said return pulses at preselected range intervals, means to select from said detected pulses only signals exclusively representative of said tornado at the corresponding range interval thereof, said selecting means including a series combination of a boxcar circuit and a high pass filter with said filter passing signals having frequencies exceeding two thousand cycles per second.

3,271,765
DATA COMPRESSION PROCESSING SYSTEM

Samuel R. Pulford, Owego, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 19, 1963, Ser. No. 331,732
9 Claims. (Cl. 343—12)



1. A system for compressing data existing as plural sets of data signals, said signal sets being adapted to have different predetermined frequency versus time characteristics,

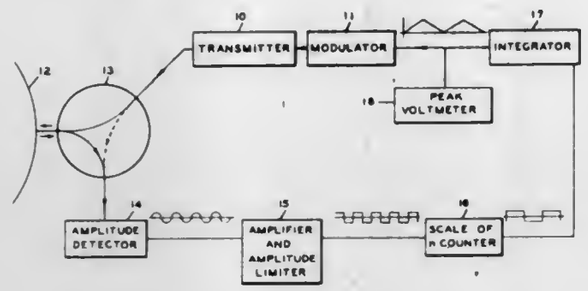
means for converting said data signal sets to respective output signal sets, each of said output signal sets having substantially the same predetermined frequency versus time characteristic, and

matched filtering means responsive to said output signal sets to provide a compressed output signal in response to each of said output signal sets, said matched filtering means having a frequency versus time response characteristic compatible to the frequency versus time characteristic of said output signal sets.

3,271,766
CONTINUOUS WAVE FM RADAR

Ole K. Nilssen, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed May 4, 1964, Ser. No. 364,515
9 Claims. (Cl. 343—14)

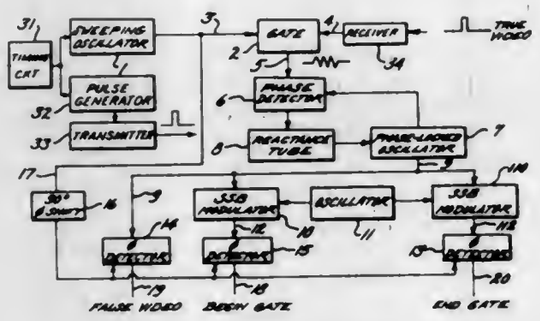


1. A continuous wave radar system for determining range between the system and a target comprising, a transmitting means, modulating means coupled to said transmitting means for frequency modulating said transmitting means, means for receiving and combining a signal transmitted by said transmitting means and a signal reflected from the target, means coupled to said last mentioned means for producing a beat frequency signal that varies as a function of the range between the system and the target and having a frequency equal to the difference between the transmitted signal and the received signal, and means coupled to said last mentioned means and said modulating means for modifying the rate of change of said transmitting means each time a given number of beat cycles is produced, and means connected in circuit with said last mentioned means and said modulating means for determining the frequency swing of said transmitting means required for said given number of said beat cycles whereby range between the system and the target may be determined.

3,271,767
RADAR TRACKING

Norbert D. Larky, Rialto, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Nov. 5, 1963, Ser. No. 321,654
7 Claims. (Cl. 343—17.1)



1. A radar apparatus for converting a true reflected video target pulse into a false video pulse comprising:

(a) means for transmitting a signal pulse;

(b) a sweeping oscillator synchronized with the transmitting means;

(c) means for receiving a true video pulse reflected from the target;

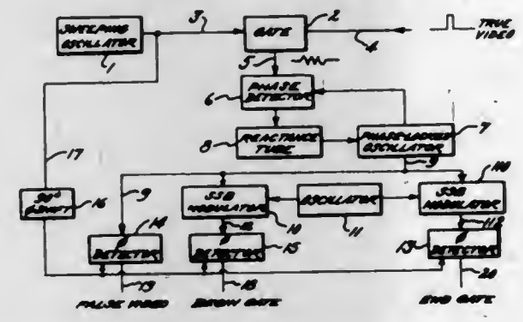
(d) means for generating a continuous signal having a frequency equal to that of the sweeping oscillator at the time of reception of the true video pulse;

(e) and means for producing a false video pulse, the time of occurrence thereof being indicative of target range, the pulse-producing means being fed by the continuous signal generating means and the sweeping oscillator.

3,271,768
RADAR TRACKING SYSTEM

Norbert D. Larky, Rialto, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Apr. 17, 1964, Ser. No. 360,785
2 Claims. (Cl. 343—17.1)



1. A multiple PRF radar system comprising:

(a) a sweeping oscillator;

(b) means for transmitting a repeating sequence of pulses with each pulse having a continually higher frequency dependent upon the instantaneous frequency of the sweeping oscillator at the time of transmitting;

(c) means for receiving the echoed true video pulses;

(d) a plurality of delay lines connected to the sweeping oscillator;

(e) a plurality of frequency gates connected to the delay lines;

(f) a plurality of echo gates connected to the receiving means with each of the echo gates connected to one of the frequency gates wherein only one gate at a time will produce an output pulse frequency dependent upon target range;

(g) a means for generating a continuous signal having a frequency equal to the output frequency of the activated echo gate, the continuous signal generating means including a first phase detector fed by one of the echo gates, a reactance tube fed by the first phase detector, a phase locked oscillator controlled by the reactance tube and connected to the first phase detector, with the first phase detector, the reactance tube, and the phase locked oscillator forming a looped circuit;

(h) a fixed frequency oscillator;

(i) a first single sideband modulator fed by the fixed frequency oscillator and the phase locked oscillator and having a frequency output lower than the frequency of the input pulse by an amount equal to the frequency of the fixed frequency oscillator, the output being used to control the frequency gates and to control activation of the receiving means;

(j) a second single sideband modulator fed by the fixed frequency oscillator and one of the echo gates and having a frequency output higher than the frequency of the input pulse by an amount equal to the frequency of the fixed frequency oscillator, the output being used to control the frequency gates and to control deactivation of the receiving means;

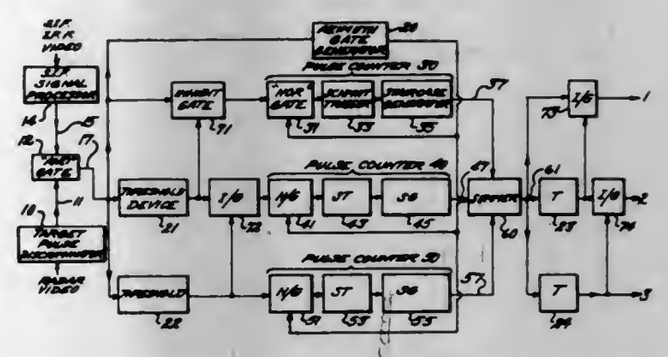
(k) a phase shifter connected to the sweeping oscillator;

(l) and a second phase detector fed by the phase shifter and one of the echo gates for producing an output indicative of range.

3,271,769
RADAR VIDEO PULSE TO PULSE WEIGHTING APPARATUS

Gilmore H. Trafford, Lexington, Mass., and George B. Michel, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Jan. 14, 1965, Ser. No. 425,647
3 Claims. (Cl. 343—17.1)



1. In scanning radar system comprising an antenna and receiver for receiving echo pulses from a target, means for automatically segregating each of said received echo pulses into one of three predetermined grades of signal levels comprising: pulse discriminator means connected to the output of said receiver, target selectivity gate means to which the output from said pulse discriminator means is applied, range and azimuth signal processor means associated with said scanning radar system having an output connected to said target selectivity gate means, said gate means being enabled only when said pulse discriminator output and said signal processor output are simultaneously energized, first, second and third pulse counter means to which the output from said gate means is applied, azimuth gate generator means to which the output from said gate means is applied, said azimuth gate having a width determined by the azimuth scan rate and antenna beamwidth of said scanning radar system, means electrically interposed between the input of each of said pulse counter means and the output of said target selectivity gate means to separate each target pulse return into three different amplitude levels, each of said pulse counters comprising adjustable voltage step generating means for weighting each of said target echo pulses on a pulse to pulse basis over the antenna beamwidth, each of said voltage step generating means having a different signal amplitude from the other, voltage summing means to which the output from each of said pulse counter means is connected, and pulse signal classifying means connected to the output of said summing means comprising first and second threshold means connected in parallel to segregate said summing means output into one of three predetermined output levels.

3,271,770
ANTENNA PHASING CONTROL SYSTEM

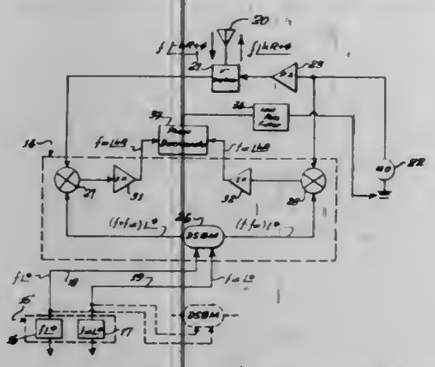
Alan B. Lees, Canoga Park, Calif., assignor to Electronic Specialty Co., Los Angeles, Calif., a corporation of California

Filed July 8, 1963, Ser. No. 293,328
7 Claims. (Cl. 343—100)

1. In radio-frequency communication apparatus including an antenna coupled to means for transmitting and receiving radio-frequency signals, said apparatus including a system for maintaining radio-frequency signals radiated by said antenna in a predetermined phase relationship with a radio-frequency signal received by said antenna, said system comprising, in combination:

(a) means for generating radio-frequency signals coupled to said antenna;

(b) intermediate-frequency signal component producing means coupled to said antenna for heterodyning said received signal with a signal of a predetermined fixed phase and a frequency which is the sum of the received signal frequency and a predetermined intermediate frequency to thereby produce an intermediate-frequency first signal component, and for heterodyning the output of said means for generating radio-frequency signals with a signal of said predetermined fixed phase and a frequency which is the difference between said received signal frequency and said predetermined intermediate frequency to



thereby produce an intermediate-frequency second signal component, and,

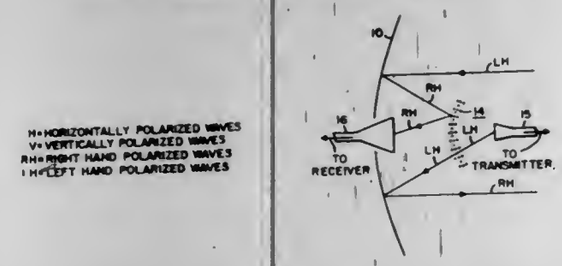
(c) phasing control means intercoupling said intermediate-frequency signal component producing means and said means for generating radio-frequency signals to alter the phasing of the signals generated by said last-mentioned means in accordance with differences in phase between said intermediate-frequency first and second signal components produced by said signal component producing means to maintain the signals radiated by said antenna in said predetermined phase relationship with said received radio-frequency signal.

3,271,771

DOUBLE-REFLECTOR, DOUBLE-FEED ANTENNA FOR CROSSED POLARIZATIONS AND POLARIZATION CHANGING DEVICES USEFUL THEREIN

Peter W. Hannan, Northport, and Harold A. Wheeler, Great Neck, N.Y., assignors to Hazeltine Research Inc., a corporation of Illinois

Filed Feb. 15, 1962, Ser. No. 173,501
13 Claims. (Cl. 343—756)



1. A double-reflector double-feed antenna for radiating signals of a first circular polarization and receiving return signals which have undergone circular polarization reversing action in reflection from an object comprising:

a main reflector;

subreflector means cooperating with said main reflector which is substantially transparent for waves of a first circular polarization and which reflects waves of the opposite circular polarization;

a first feed for waves of said first polarization cooperating with said main reflector substantially independently of said subreflector means;

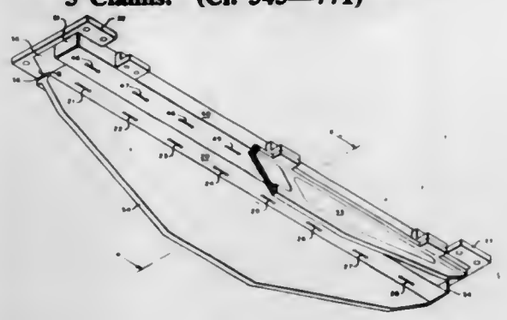
and a second feed for waves of said opposite polarization cooperating with the combination of said main reflector and subreflector means.

3,271,772

SLOT ANTENNA ARRAY WITH SIDE REFLECTORS

Emile J. Deveau and John C. Rolfs, Pleasantville, and Humbert P. Rossero, Peekskill, N.Y., assignors to General Precision, Inc., a corporation of Delaware

Filed Dec. 6, 1962, Ser. No. 242,665
5 Claims. (Cl. 343—771)



2. An antenna, comprising,

two identical linear arrays,

each of said arrays comprising a rectangular waveguide having a plurality of longitudinal slots formed in one broad face,

all of said slots being formed on the same side of the center line of said broad face,

said waveguides being positioned side by side but with one waveguide turned end for end with respect to the other, and

two planar conductive reflectors positioned to that side of each waveguide which is remote from the other waveguide,

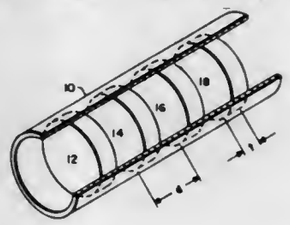
said reflectors being angled outwardly with respect to each other.

3,271,773

MODE-SEPARATION CIRCULAR WAVEGUIDE AND ANTENNAS USING SAME

Harold A. Wheeler, Great Neck, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois

Filed Jan. 22, 1964, Ser. No. 339,408
10 Claims. (Cl. 343—778)



1. A mode-separation waveguide for propagating energy in a predetermined frequency range in a single mode comprising:

coupling means for supplying a signal in a predetermined frequency range;

a hollow cylindrical member having a conductive inner surface for propagating said supplied signal in a circularly polarized wave and having a cross-section which permits propagation of the dominant mode and cuts off all other modes;

and a dielectric medium inside said cylinder comprising transverse regions having a first dielectrc constant separated by transverse regions having a lower dielectric constant arranged so that the effective dielectric constant for transverse electric field components is higher than the effective dielectric constant for axial electric field components by a predetermined factor;

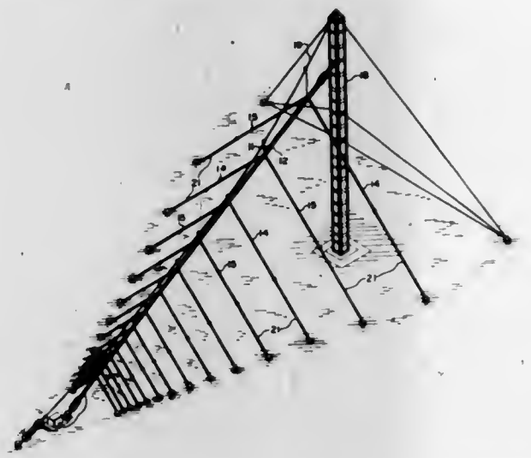
the waveguide being so constructed and arranged that only the dominant mode is propagated and there is increased separation between the cutoff frequencies of the dominant mode and the second mode, as compared to the separation in a circular waveguide completely filled with any homogeneous dielectric.

3,271,774

CATENARY SUPPORTED LOG PERIODIC ANTENNA

Raymond Justice, Lake Barcroft, Falls Church, Va., assignor to Granger Associates, Palo Alto, Calif., a corporation of California

Filed Oct. 17, 1962, Ser. No. 231,200
3 Claims. (Cl. 343—792.5)



1. A log periodic antenna structure comprising, two logarithmically periodic arrays having a common apex substantially at ground level, each of said arrays comprising an electrically conducting feed wire inclined upwardly and away from said apex, a single tower supporting the outer ends of said feed wires, the two feed wires of said arrays lying in a common vertical plane, mutually spaced, electrically conducting, linear radiating elements extending alternately to one side and then to the other side from each of said feed wires, said linear radiating elements of each of said arrays increasing progressively in length from the apex of the array going towards the supporting tower substantially in accordance with the relationship

$$\frac{L_n+1}{L_n}=\frac{X_n+1}{X_n}=\sigma$$

where L_n and L_n+1 are the lengths of the nth element and the element in front of the nth element respectively and X_n and X_n+1 are the distances of the same two radiating elements from the apex of the arrays, and σ is less than 1, the elements extending from the feed wires in such directions that angle θ_n is different from 90° where θ_n is the angle between the nth element and the vertical plane containing both said feed wires and to either side of which said radiating elements extend, said radiating elements inclining downwardly to either side of the feed wires and insulating means connecting their outer ends to the ground.

3,271,775

VERTICALLY POLARIZED LOG-PERIODIC ANTENNA

Richard F. H. Yang, Orland Park, Ill., assignor to Andrew Corporation, Orland Park, Ill., a corporation of Illinois

Filed July 25, 1963, Ser. No. 297,647
7 Claims. (Cl. 343—792.5)

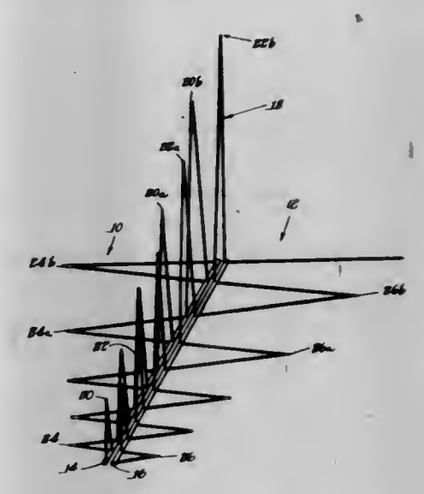
1. A log-periodic antenna having:

(a) an open-wire transmission-line pair,

(b) vertically disposed conductor elements of log-periodic dimensions and spacing extending upward along the transmission-line pair,

(c) alternate upwardly extending conductor elements being connected to respective members of the transmission line and said upwardly extending elements being the sole vertically disposed elements,

(d) and conductor elements of log-periodic dimensions and spacing each extending in only one at least partially horizontal direction from the transmission-line pair, the horizontal component of said outward extension of successive elements being alternated in direction,



(e) the latter conductor elements each being connected to the transmission-line member opposite that to which the vertically disposed conductor element in the corresponding position along the transmission line is connected.

7. In combination with an antenna of the type having a pair of conductors extending along its length and forming an open-wire balanced transmission line, and radiating elements spaced along the line and connected to the respective members of the pair, additional conductors extending parallel with the transmission line pair and means at each point of connection of a member to the radiating elements to selectively connect and disconnect one of the additional conductors and one of the members of the pair to alter the impedance of the antenna.

3,271,776

INTERCOUPLING LINES FOR IMPEDANCE MATCHING OF ARRAY ANTENNAS

Peter W. Hannan, Northport, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois

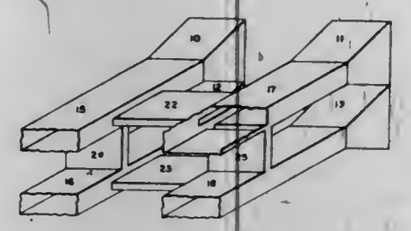
Filed Dec. 28, 1962, Ser. No. 248,074
12 Claims. (Cl. 343—777)

1. An array antenna having closer impedance matching, comprising:

a plurality of radiating elements;

branch transmission lines connecting to said radiating elements;

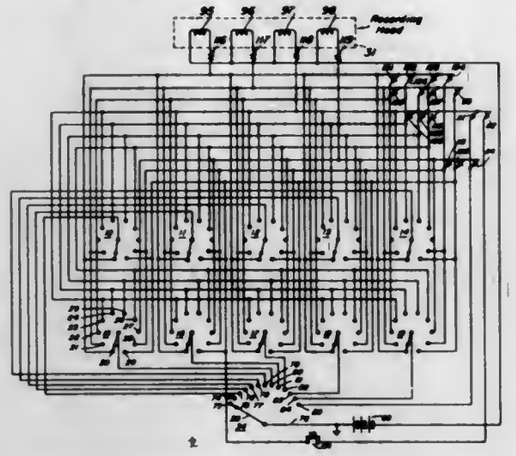
means for exciting said elements through said lines in a plurality of conditions;
and means, substantially independent of the function of said exciting means, for intercoupling said branch



transmission lines so as to provide an effect on impedance which is dependent on differences of excitation between radiating elements so that closer impedance matching results for at least one condition of excitation.

3,271,777
MAGNETIC DIGITAL RECORDER
John R. Davis, Shreveport, La., assignor to United Gas Corporation, a corporation of Delaware
Filed Nov. 15, 1961, Ser. No. 152,452
12 Claims. (Cl. 346—74)

10. A magnetic digital recorder comprising a multichannel recording head, a plurality of symbol switches, each symbol switch having a plurality of contacts corresponding to selected information symbols and being operable to a plurality of positions for closing circuits through said contacts, means including a diode matrix for connecting said contacts of said symbol switches to one or more selected channels of said recording head in accordance with the symbol represented by the respective contact of each respective switch and for preventing energization of other channels, read-out means for sequentially energizing said symbol switches for recording a complete word, said read-out means comprising means for advancing a magnetizable member a substantially predetermined step across said recording head for each recording and for concurrently respectively providing said energization of each symbol switch for a portion of each step of the magnetizable member for each recording whereby the selected channel or channels of said recording head are respectively energized and the recording on the magnetiz-



able member corresponds to the symbol represented by the position of the energized symbol switch, said read-out means providing for energization of channels of said recording head for recording a zero symbol at the start of each new word independently of said symbol switches and through said diode matrix, and means for recording an error symbol in lieu of said zero symbol at the start of a word whereby the last previous recorded word will be disregarded by a computer and the ensuing word substituted therefor.

DESIGNS

SEPTEMBER 6, 1966

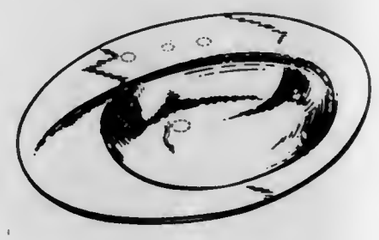
205,651
HAT OR SIMILAR ARTICLE
Bernhardt Stahmer, 1509 Chicago St., Omaha, Nebr.
Substituted for abandoned design application Ser. No. 74,430, Aug. 21, 1964. This application Aug. 20, 1964, Ser. No. 81,402
Term of patent 14 years
(Cl. D3—13)



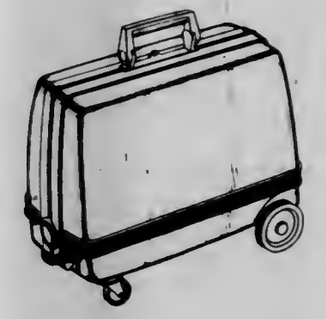
205,652
SAFETY HELMET
Brock F. Brockway, Mill Valley, Calif., assignor to E. D. Bullard Company, Sausalito, Calif., a corporation of California
Filed Dec. 4, 1964, Ser. No. 82,908
Term of patent 14 years
(Cl. D3—13)



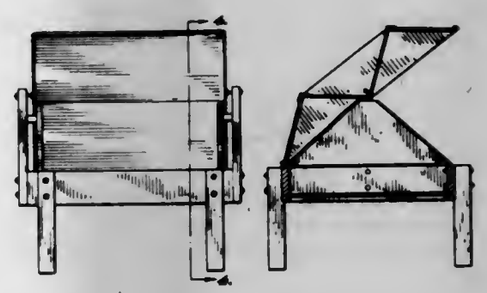
205,653
LAVATORY
James E. Niemann, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Continuation of design application Ser. No. 81,457, Aug. 26, 1964. This application Feb. 15, 1965, Ser. No. 83,820
Term of patent 14 years
(Cl. D4—2)



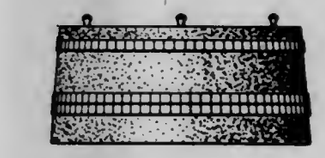
205,654
VACUUM CLEANER
Meyric K. Rogers, La Grange Park, and Norman A. Steinkamp, Chicago Heights, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 15, 1965, Ser. No. 182
Term of patent 14 years
(Cl. D9—2)



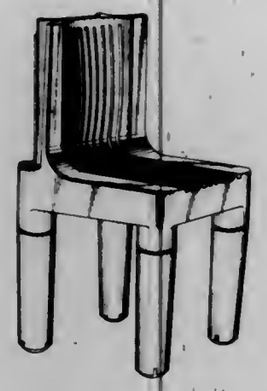
205,655
CATTLE FEEDER
George D. Clugston, 703 E. Quincy, Pittsburg, Kans.
Filed Oct. 12, 1965, Ser. No. 87,441
Term of patent 14 years
(Cl. D12—2)



205,656
HOLDER FOR FOOD PAN FOR PETS
Tony Robert, 5701 Southwest Freeway, Houston, Tex.
Filed Oct. 18, 1965, Ser. No. 87,543
Term of patent 14 years
(Cl. D12—2)



205,657
CHILD'S CHAIR
Marco Zanuso, Via Laveno 6, Milan, Italy
Filed Feb. 24, 1965, Ser. No. 83,964
Term of patent 7 years
(Cl. D15—1)



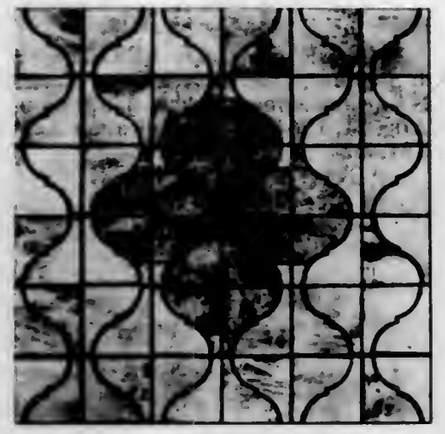
205,658
CHAIR
Walter Muller, Lerchenbergstrasse 123, Erlenbach, Zurich, Switzerland
Filed June 11, 1965, Ser. No. 85,692
Claims priority, application Switzerland Feb. 3, 1965
Term of patent 14 years
(Cl. D15—1)



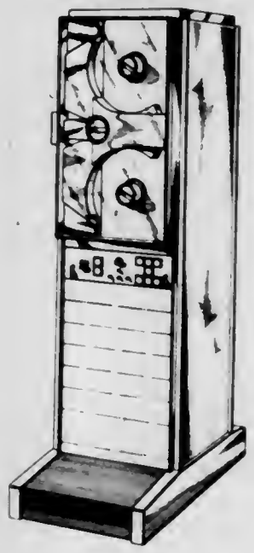
205,659
RE-USABLE BUNDLING STRAP
Raymond F. Piasecki, Hazlet, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Oct. 13, 1965, Ser. No. 87,459
Term of patent 14 years
(Cl. D17—5)



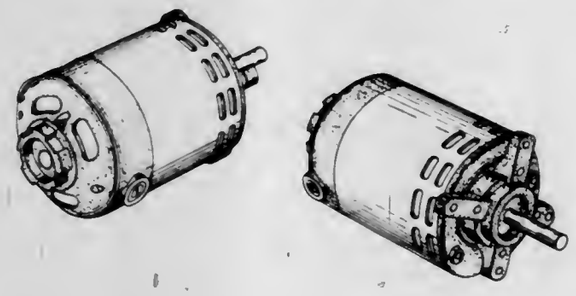
205,660
CERAMIC TILE UNIT
Sidney Goldman, 1786 Schenectady Ave., Brooklyn, N.Y.
Filed May 12, 1965, Ser. No. 85,242
Term of patent 3½ years
(Cl. D18—2)



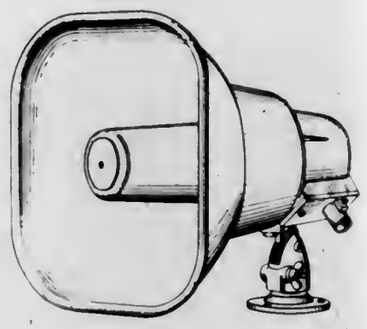
205,661
MAGNETIC TAPE TRANSPORT
Charles F. Grossman, Sunnyvale, Calif., and Marvin A. Southcott, Baltimore, Md., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 14, 1965, Ser. No. 85,728
Term of patent 3½ years
(Cl. D26—5)



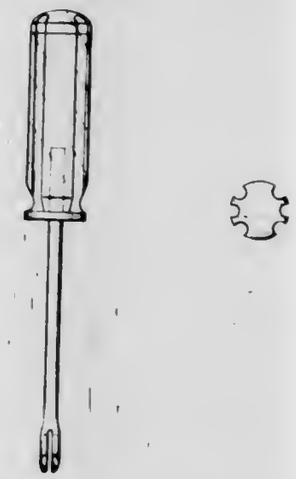
205,662
UNIVERSAL MOTOR SHELL
Gary G. Bluemink, Racine, Wis., assignor, by mesne assignments, to MSL Industries, Inc., Racine, Wis., a corporation of Minnesota
Filed Sept. 10, 1965, Ser. No. 86,939
Term of patent 14 years
(Cl. D26—5)



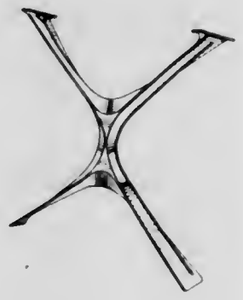
205,663
LOUDSPEAKER OR SIMILAR ARTICLE
Frederick L. Seebinger, West Hempstead, N.Y., assignor to American Trading & Production Corporation, Baltimore, Md., a corporation of Maryland
Filed June 30, 1965, Ser. No. 85,965
Term of patent 14 years
(Cl. D26—14)



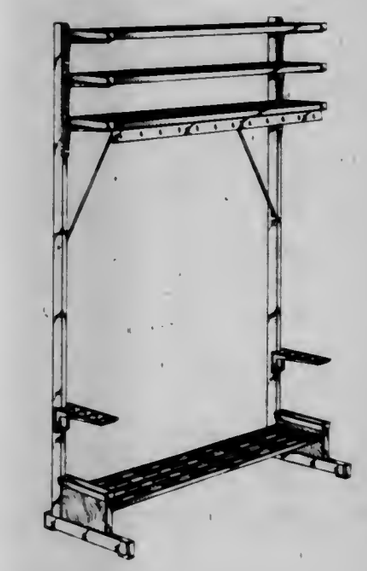
205,664
FISH HOOK REMOVER
Thomas W. Drake, 323 Lindale, Houston, Tex.
Filed Mar. 31, 1965, Ser. No. 84,544
Term of patent 14 years
(Cl. D31—4)



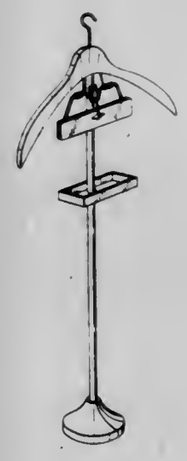
205,665
FURNITURE LEG
George H. Nelson, New York, N.Y., assignor to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Apr. 12, 1965, Ser. No. 84,749
Term of patent 14 years
(Cl. D33—1)



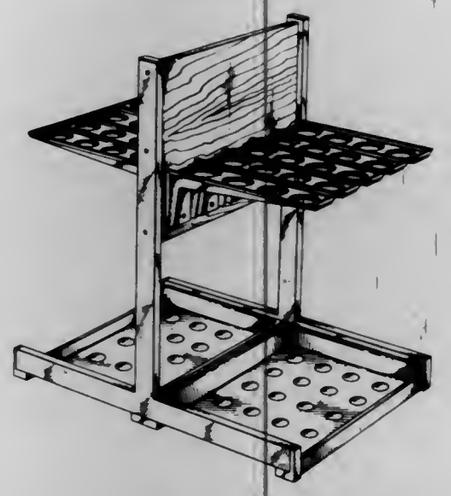
205,666
GARMENT RACK
Raymond A. Magnuson, Hinsdale, and Robert W. Schier, Northbrook, Ill., assignors to Vogel-Peterson Co., Chicago, Ill., a corporation of Illinois
Filed June 15, 1965, Ser. No. 85,746
Term of patent 14 years
(Cl. D33—8)



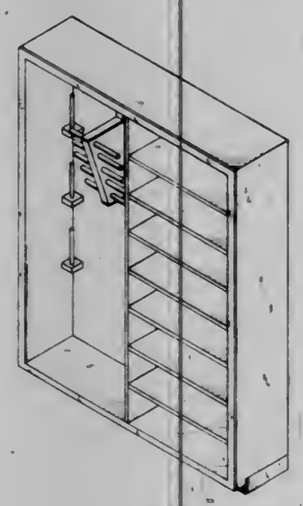
205,667
COMBINED VALET AND CLOTHES HANGER
Harry Ernest Rubens, Gorham Island, Westport, Conn. (2 Sutton Place S., New York, N.Y. 10022)
Filed Oct. 21, 1965, Ser. No. 87,710
Term of patent 14 years
(Cl. D33—8)



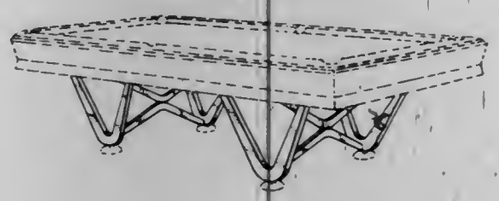
205,668
UMBRELLA STAND
Raymond A. Magnuson, Hinsdale, and Robert W. Schier, Northbrook, Ill., assignors to Vogel-Peterson Co., Chicago, Ill., a corporation of Illinois
Filed June 15, 1965, Ser. No. 85,749
Term of patent 14 years
(Cl. D33—17)



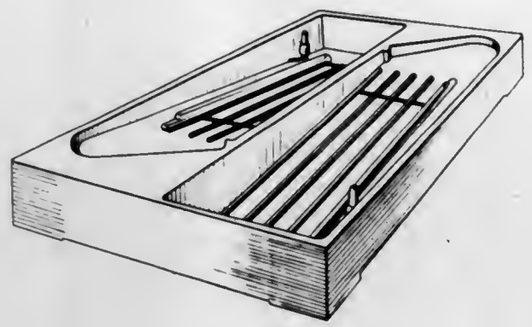
205,669
CABINET FOR ACCOMMODATING X-RAY TECHNICIANS' APPAREL
Jacqueline Mary Motzel, Madison, Wis., assignor to Sisters of St. Mary of the Third Order of St. Francis, St. Louis, Mo.
Filed Dec. 14, 1964, Ser. No. 83,002
Term of patent 14 years
(Cl. D33—19)



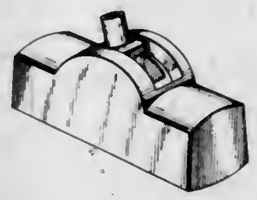
205,670
BILLIARD TABLE OR THE LIKE
Richard G. Reineman, Balboa, Calif., assignor to Brunswick Corporation, a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 87,481
Term of patent 14 years
(Cl. D34—3)



205,671
MARBLE-GAME TRAY
Ernest J. Swimmer, 340 E. 52nd St., New York, N.Y.
Filed July 12, 1965, Ser. No. 86,126
Term of patent 7 years
(Cl. D34—5)



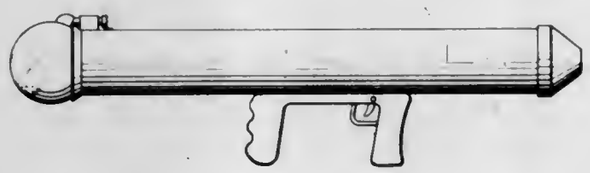
205,672
GOLF CLUB HEAD
Ernest R. Andis, 3528 N. Bay Drive, Racine, Wis.
Filed Oct. 5, 1965, Ser. No. 87,327
Term of patent 14 years
(Cl. D34—5)



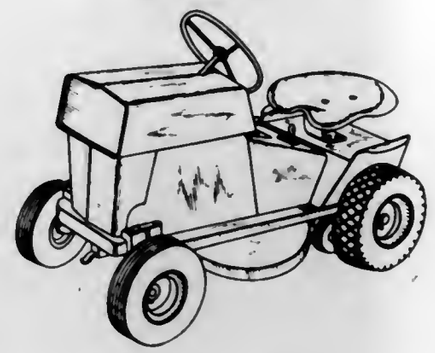
205,673
DISHED STAR KITE
Monroe D. Johnson, Jr., 4620 Oregon Trail, and Warren A. Tuckness, 1007 W. Virginia, both of Amarillo, Tex.
Filed Oct. 5, 1964, Ser. No. 82,027
Term of patent 14 years
(Cl. D34—15)



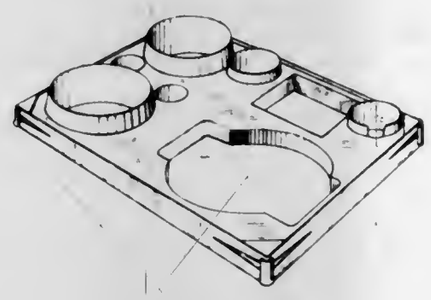
205,674
KALEIDOSCOPE
Edgar A. Powers, 104 Church St., Lake Ronkonkoma, N.Y.
Filed Oct. 7, 1965, Ser. No. 87,355
Term of patent 14 years
(Cl. D34—15)



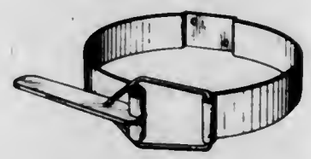
205,675
LAWN TRACTOR
Irving Berger, 1 Constitution St., Bristol, R.I.
Filed Oct. 13, 1965, Ser. No. 87,453
Term of patent 3½ years
(Cl. D40—1)



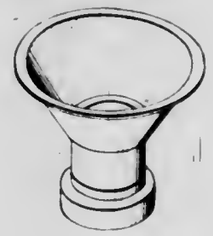
205,676
FOOD SERVING TRAY OR SIMILAR ARTICLE
Robert M. Kirwan, 135 N. 20th Ave., Melrose Park, Ill., and Adam Senese, 9100 S. 55th Ave., Oaklawn, Ill.
Filed Sept. 24, 1965, Ser. No. 87,151
Term of patent 3½ years
(Cl. D44—10)



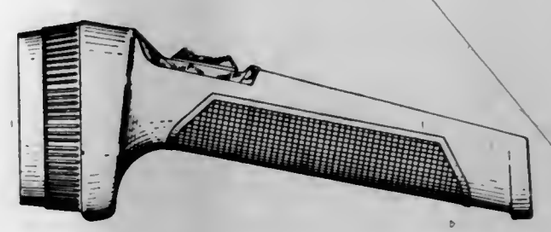
205,677
HOLDER FOR CANS OR THE LIKE
Donald L. Hartshorn, P.O. Box 672, Syracuse, Kans.
Filed Apr. 23, 1965, Ser. No. 84,937
Term of patent 7 years
(Cl. D44—21)



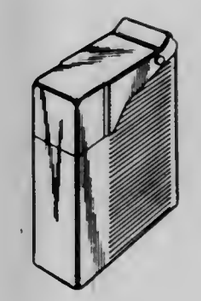
205,678
VISCOUS FLUIDS TRANSFER FUNNEL OR THE LIKE
Daniel S. Williams, 47 S. 3rd St., Reading, Pa.
Filed Oct. 20, 1965, Ser. No. 87,656
Term of patent 3½ years
(Cl. D44—29)



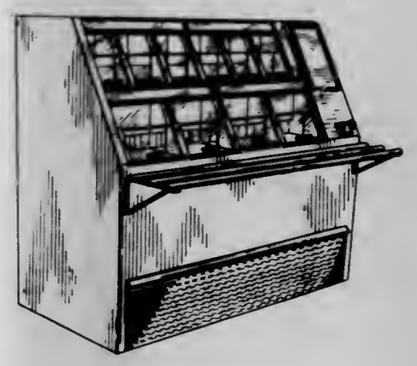
205,679
FLASHLIGHT OR SIMILAR ARTICLE
Arthur H. Moore, Fairfield, and Joseph G. Bacevius, Bridgeport, Conn., assignors to The Bridgeport Metal Goods Manufacturing Company, Bridgeport, Conn., a corporation of Connecticut
Filed Nov. 23, 1965, Ser. No. 88,193
Term of patent 14 years
(Cl. D48—24)



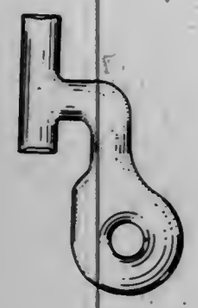
205,680
CIGARETTE LIGHTER OR SIMILAR ARTICLE
Olle E. Haggstrom, Trumbull, Carl N. Johnson, Stratford, and William V. Judson, Westport, Conn., assignors to General Electric Company, a corporation of New York
Filed June 14, 1965, Ser. No. 85,710
Term of patent 3½ years
(Cl. D48—27)



205,681
PRODUCT DISPENSING MACHINE
Boley A. Andrews, Mission, Kans., and Le Roy D. Gore, Independence, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed June 10, 1965, Ser. No. 85,655
Term of patent 3½ years
(Cl. D52—3)



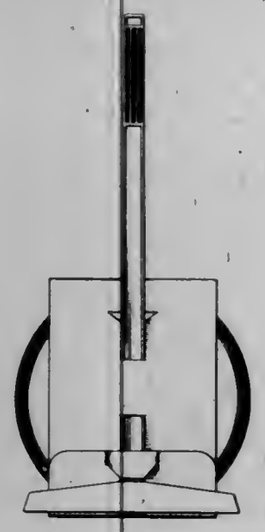
205,682
AUTOMOBILE TIE-DOWN HOOK
Larry Labell, Detroit, Mich., assignor to Vulcan Chain Corporation, Detroit, Mich.
Filed Aug. 11, 1965, Ser. No. 86,539
Term of patent 3½ years
(Cl. D54—11)



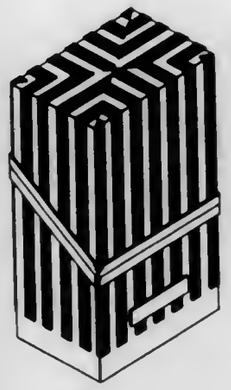
205,683
COMBINED CONTACT LENS INSERTER AND APPLICATOR
Abraham Toran, 620 Pearl St., Oceanside, N.Y.
Filed Oct. 22, 1965, Ser. No. 87,739
Term of patent 14 years
(Cl. D57—1)



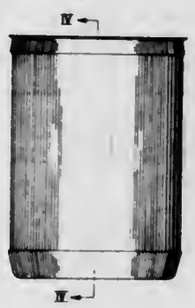
205,684
PACKAGED HOOP AND HOOP STICK
Donald W. Schumm, 7204 Riverton, and Doyle C. Shady, 4916 Golfview, both of Fort Wayne, Ind.
Filed Apr. 19, 1965, Ser. No. 84,873
Term of patent 3½ years
(Cl. D58—2)



205,685
BOX
Wesley W. Simpson, New York, N.Y., assignor to Adele Simpson Inc., New York, N.Y., a corporation of New York
Filed July 16, 1965, Ser. No. 86,244
Term of patent 3½ years
(Cl. D58—12.6)



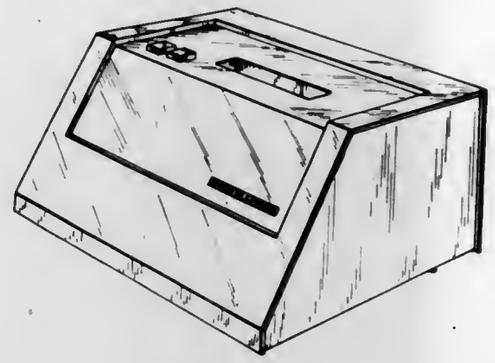
205,686
PLASTIC CAN
Paul A. Marchant, Kansas City, Mo., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Sept. 8, 1964, Ser. No. 81,626
Term of patent 14 years
(Cl. D58—17)



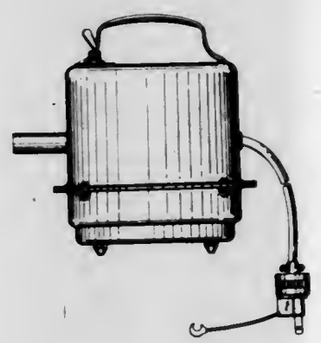
205,687
COMBINED JAR AND COVER THEREFOR
Charley F. Bartlett, Sapulpa, Okla., assignor to Bartlett-Collins Company, Sapulpa, Okla., a corporation of Oklahoma
Filed Oct. 18, 1965, Ser. No. 87,580
Term of patent 14 years
(Cl. D58—25)



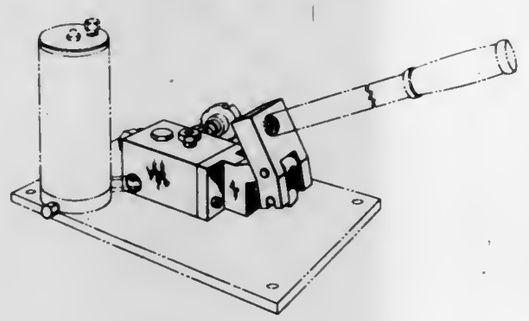
205,688
APPARATUS FOR EXPOSING LIGHT SENSITIVE PHOTOGRAPHIC FILM
Harold Lakin, San Mateo, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 87,073
Term of patent 14 years
(Cl. D61—1)



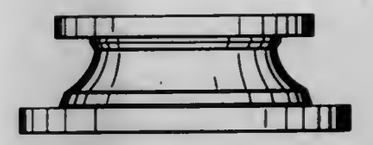
205,689
PORTABLE BLOWER
Julius W. Rubin, 94 Reed Drive, Roslyn, Long Island, N.Y.
Filed Oct. 23, 1965, Ser. No. 87,863
Term of patent 7 years
(Cl. D62—2)



205,690
HAND PUMP
Gordon Allard, Menomonee Falls, Wis., assignor to Applied Power Industries, Inc., a corporation of Wisconsin
Filed July 27, 1965, Ser. No. 86,311
Term of patent 14 years
(Cl. D65—1)



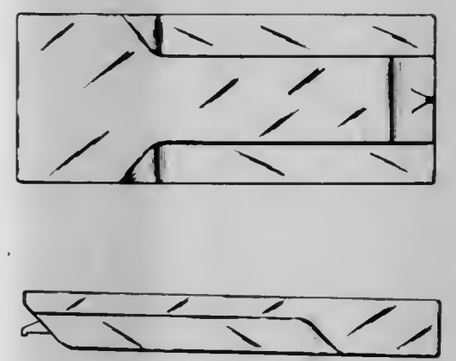
205,691
PUMP TO MOTOR ADAPTER
Allen M. Rullifson, 1411 Morena, San Diego, Calif.
Filed Oct. 21, 1965, Ser. No. 87,665
Term of patent 14 years
(Cl. D65—1)



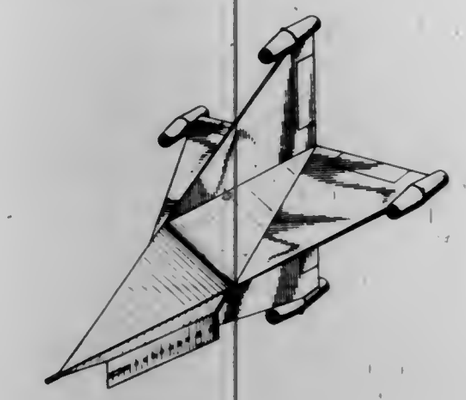
205,692
REFRIGERATOR DOOR HANDLE
Carl W. Sundberg, Bloomfield Hills, and Richard E. Hitchcock, Birmingham, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 87,066
Term of patent 3½ years
(Cl. D67—3)



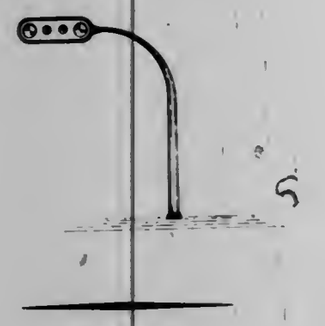
205,693
HULL
William O. Doty, 406 Smedeker Ave., Jerseyville, Ill.
Filed Dec. 9, 1965, Ser. No. 132
Term of patent 14 years
(Cl. D71—1)



205,694
HIGH-SPEED DIRIGIBLE
Frank A. Petry, 1615 Armacost Ave., Los Angeles, Calif.
Filed June 1, 1965, Ser. No. 85,526
Term of patent 14 years
(Cl. D71—1)



205,695
TRAFFIC SIGNAL
Douglas B. Hughes, Montreal, Quebec, Canada, assignor to Canadian Aviation Electronics Ltd., Montreal, Quebec, Canada
Filed Mar. 8, 1963, Ser. No. 73,886
Claims priority, application Canada Nov. 8, 1962
Term of patent 14 years
(Cl. D72—1)



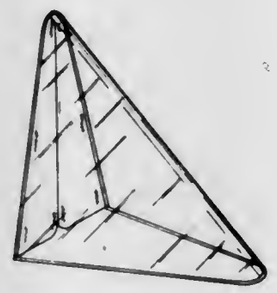
205,696
TRAFFIC SIGNAL
Howard E. Miller, Douglas County Court House, Tuscola, Ill.
Filed Oct. 15, 1965, Ser. No. 87,517
Term of patent 14 years
(Cl. D72—1)



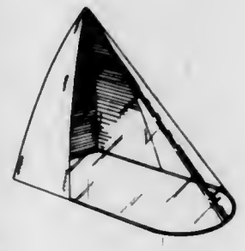
205,697
BASE FOR FIREPLACES, STOVES, BARBECUE GRILLES AND THE LIKE
Robert D. Thulman, 10002 Frederick Ave., Kensington, Md.
Filed July 12, 1965, Ser. No. 86,113
Term of patent 14 years
(Cl. D81—7)



205,698
SOLARIUM
Mike Tecton, 5101 45th St. NW., Washington, D.C.
Filed Mar. 10, 1965, Ser. No. 84,195
Term of patent 14 years
(Cl. D83—1)



205,699
COMBINATION CABANA AND SOLARIUM THEREFOR
Mike Tecton, 5101 45th St. NW., Washington, D.C.
Filed Mar. 16, 1965, Ser. No. 84,288
Term of patent 14 years
(Cl. D83—1)



205,700
COMBINED COMB AND HAIR TONIC HOLDER THEREIN
Homer M. Hare, Jr., 3836 Don Julio Blvd., North Highlands, Calif.
Filed Dec. 1, 1964, Ser. No. 82,860
Term of patent 14 years
(Cl. D86—8)



205,701
FLOOR COVERING OR THE LIKE
Philipp Ross Yost, 1324 Broadway, San Francisco, Calif.
Filed June 29, 1964, Ser. No. 80,637
Term of patent 14 years
(Cl. D92—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 6TH DAY OF SEPTEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bentley, John M., and J. H. Brown, to United States of America, Navy. Direct current digital-to-analogue decoder. Re. 26,076, 9–6–66, Cl. 340—347.

Brown, James H.: *See*—
Bentley, John M., and Brown. Re. 26,076.

Canno, Leonard E., to Equitable Paper Bag Co., Inc. Method of making reinforced plastic bags. Re. 26,075, 9–6–66, Cl. 156—202.

Equitable Paper Bag Co., Inc.: *See*—
Canno, Leonard E. Re. 26,075.

Gouker, Zelbert, and R. C. Storkan, said Gouker assor. to said Storkan. Apparatus for gathering pliofilm sheeting from a field. Re. 26,077, 9–6–66, Cl. 100—97.

Mangone, Ivan W., to Offshore Structures & Service Co. Mobile self-erecting marine platforms. Re. 26,073, 9–6–66, Cl. 61—46.5.

McLean, Robert E., to Rival Mfg. Co. Can opener with improved single-action mechanism and cutter member support. Re. 26,074, 9–6–66, Cl. 30—9.

Offshore Structures & Service Co.: *See*—
Mangone, Ivan W. Re. 26,073.

Rival Mfg. Co.: *See*—
McLean, Robert E. Re. 26,074.

Storkan, Richard C.: *See*—
Gouker, Zelbert, and Storkan. Re. 26,077.

United States of America
Navy: *See*—
Bentley, John M., and Brown. Re. 26,076.

LIST OF PLANT PATENTEES

Armstrong Nurseries, Inc.: *See*—
Swim, Herbert C. 2,668.
Chabert, Andre. 2,669.

Chabert, Andre, to Armstrong Nurseries, Inc. Rose plant. 2,669, 9–6–66, Cl. 18.

Duffett, William E., to O. O. Dunham. Chrysanthemum plant. 2,670, 9–6–66, Cl. 78.

Dunham, Orville O.: *See*—
Duffett, William E. 2,670.

Inter-State Nurseries, Inc.: *See*—
Porter, Albert J. 2,667.

Porter, Albert J., to Inter-State Nurseries, Inc. Crab apple tree. 2,667, 9–6–66, Cl. 34.

Swim, Herbert C., to Armstrong Nurseries, Inc. Camellia plant. 2,668, 9–6–66, Cl. 62.

LIST OF DESIGN PATENTEES

Allard, Gordon, to Applied Power Industries, Inc. Hand pump. 205 690, 9–6–66, Cl. D65—1.

American Radiator & Standard Sanitary Corp.: *See*—
Niemann, James E. 205,653.

American Trading & Production Corp.: *See*—
Seebinger, Frederick L. 205,663.

Ampex Corp.: *See*—
Grossman, Charles F., and Southcott. 205,661.

Andis, Ernest R. Golf club head. 205,672, 9–6–66, Cl. D34—5.

Andrews, Boley A., and L. D. Gore, to The Vendo Co. Product dispensing machine. 205 681, 9–6–66, Cl. D52—3.

Applied Power Industries, Inc.: *See*—
Allard, Gordon. 205,690.

Bartlett, Charley F., to Bartlett-Collins Co. Combined jar and cover therefor. 205,687, 9–6–66, Cl. D58—25.

Bartlett-Collins Co.: *See*—
Bartlett, Charley F. 205,687.

Berger, Irving. Lawn tractor. 205,675, 9–6–66, Cl. D40—1.

Bluemink, Gary G., to M & L Industries, Inc. Universal motor shell. 205,662, 9–6–66, Cl. D26—5.

Bridgeport Metal Goods Mfg. Co., The: *See*—
Moore, Arthur H., and Bacevius. 205,679.

Brockway, Brock F., to E. D. Bullard Co. Safety helmet. 205,652. 9–6–66, Cl. D3—13.

Brunswick Corp.: *See*—
Reineman, Richard G. 205,670.

Bullard, E. D., Co.: *See*—
Brockway, Brock F. 205,652.

Canadian Aviation Electronics Ltd.: *See*—
Hughes, Douglas B. 205,695.

Clugston, George D. Cattle feeder. 205,655, 9–6–66, Cl. D12—2.

Doty, William O. Hull. 205,693, 9–6–66, Cl. D71—1.

Drake, Thomas W. Fish hook remover. 205,664, 9–6–66, Cl. D31—4.

General Electric Co.: *See*—
Haggstrom, Olle E., Johnson, and Judson. 205,680.

Goldman, Sidney. Ceramic tile unit. 205,660, 9–6–66, Cl. D18—2.

Grossman, Charles F., and M. A. Southcott, to Ampex Corp. Magnetic tape transport. 205 661, 9–6–66, Cl. D26—5.

Haggstrom, Olle E., C. N. Johnson, and W. V. Judson, to General Electric Co. Cigarette lighter or similar article. 205,680, 9–6–66, Cl. D48—27.

Hare, Homer M., Jr. Combined comb and hair tonic holder therein. 205,700, 9–6–66, Cl. D86–8.

Hartshorn, Donald L. Holder for cans or the like. 205,677, 9–6–66, Cl. D44—21.

Hughes, Douglas B., to Canadian Aviation Electronics Ltd. Traffic signal. 205,695, 9–6–66, Cl. D72—1.

Johnson, Monroe D., Jr., and W. A. Tuckness. Dished star kite. 205 673, 9–6–66, Cl. D34—15.

Kirwan, Robert M., and A. Senese. Food serving tray or similar article. 205,676, 9–6–66, Cl. D44—10.

Labell, Larry, to Vulcan Chair Corp. Automobile tie-down hook. 205,682, 9–6–66, Cl. D54—11.

Lakin, Harold, to Litton Precision Products, Inc. Apparatus for exposing light sensitive photographic film. 205,688, 9–6–66, Cl. D61—1.

Litton Precision Products, Inc.: *See*—
Lakin, Harold. 205,688.

M & L Industries, Inc.: *See*—
Bluemink, Gary G. 205,662.

Magnuson, Raymond A., and R. W. Schier, to Vogel-Peterson Co. Garment rack. 205,666, 9–6–66, Cl. D33—8.

Magnuson, Raymond A., and R. W. Schier, to Vogel-Peterson Co. Umbrella stand. 205,668, 9–6–66, Cl. D33—17.

Marchant, Paul A., to Rexall Drug and Chemical Co. Plastic can. 205,686, 9–6–66, Cl. D58—17.

Miller, Herman, Inc.: *See*—
Nelson, George H. 205,665.

Miller, Howard E. Traffic signal. 205,696, 9–6–66, Cl. D72—1.

Moore, Arthur H., and J. G. Bacevius, to The Bridgeport Metal Goods Mfg. Co. Flashlight or similar article. 205,679, 9–6–66, Cl. D48—24.

Motzel, Jacqueline M., to Sisters of St. Mary of The Third Order of St. Francis. Cabinet for accommodating X-ray technicians' apparel. 205,669, 9–6–66, Cl. D33—19.

Muller, Walter. Chair. 205,658, 9–6–66, Cl. D15—1.

Nelson, George H., to Herman Miller, Inc. Furniture leg. 205,665, 9–6–66, Cl. D33—1.

Niemann, James E., to American Radiator & Standard Sanitary Corp. Lavatory. 205,653, 9–6–66, Cl. D4—2.

Piasecki, Raymond F., to The Thomas & Betts Co. Re-usable bundling strap. 205,659, 9–6–66, Cl. D17—5.

Petry, Frank A. High-speed dirigible. 205,694, 9–6–66, Cl. D71—1.

Powers, Edgar A. Kaleidoscope. 205,674, 9–6–66, Cl. D34—15.

Reineman, Richard G., to Brunswick Corp. Billiard table or the like. 205,670, 9–6–66, Cl. D34—3.

Rexall Drug and Chemical Co.: *See*—
Marchant, Paul A. 205,686.

Robert, Tony. Holder for food pan for pets. 205,656, 9–6–66, Cl. D12—2.

Rogers, Meyric K., and N. A. Steinkamp, to Sunbeam Corp. Vacuum cleaner. 205,654, 9–6–66, Cl. D9—2.

Rubens, Harry E. Combined valet and clothes hanger. 205,667, 9–6–66, Cl. D33—8.

Rubin, Julius W. Portable blower. 205,689, 9–6–66, Cl. D62—2.

Ruiffson, Allen M. Pump to motor adapter. 205,691, 9–6–66, D65—1.

Schumm, Donald W., and D. C. Shady. Packaged hoop and hoop stick. 205,684, 9–6–66, Cl. 58—2.

Seebinger, Frederick L., to American Trading & Production Corp. Loudspeaker or similar article. 205,663, 9–6–66, Cl. D26—14.

Simpson, Adele, Inc.: *See*—
Simpson, Wesley W. 205,685.

Simpson, Wesley W., to Adele Simpson, Inc. Box. 205,685, 9–6–66, Cl. D58—12.6.

Sisters of St. Mary of The Third Order of St. Francis: *See*—
Motzel, Jacqueline M. 205,669.
Stahmer, Bernhardt. Hat or similar article. 205,651, 9–6–66, Cl. D3—13.
Sunbeam Corp.: *See*—
Rogers, Meyric K., and Steinkamp. 205,654.
Sundberg, Carl W., and R. E. Hitchcock, to Whirlpool Corp. Refrigerator door handle. 205,692, 9–6–66, Cl. D67—3.
Swimmer, Ernest J. Marble-game tray. 205,671, 9–6–66, Cl. D34—5.
Tecton, Mike. Solarium. 205,698, 9–6–66, Cl. D83—1.
Tecton, Mike. Combination cabana and solarium therefor. 205,699, 9–6–66, Cl. D83—1.
Thomas & Betts Co., The: *See*—
Piasecki, Raymond F. 205,659.
Thulman, Robert D. Base for fireplaces, stoves, barbecue grilles, and the like. 205,697, 9–6–66, Cl. D81—7.
Toran, Abraham. Combined contact lens inserter and applicator. 205,683, 9–6–66, Cl. D57—1.
Vendo Co., The: *See*—
Andrews, Boley A., and Gore. 205,681.
Vogel-Peterson Co.: *See*—
Magnuson, Raymond A., and Schier. 205,666.
Magnuson, Raymond A., and Schier. 205,668.
Vulcan Chair Corp.: *See*—
Labell, Larry. 205,682.
Whirlpool Corp.: *See*—
Sundberg, Carl W., and Hitchcock. 205,692.
Williams, Daniel S. Viscous fluids transfer funnel or the like. 205,678, 9–6–66, Cl. D44—29.
Yost, Philipp R. Floor covering or the like. 205,701, 9–6–66, Cl. D92—4.
Zanuso, Marco. Child's chair. 205,657, 9–6–66, Cl. D15—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 6TH DAY OF SEPTEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Tetra Pak: *See*—
Rausing, Anders R. 3,270,876.
AGA Aktiebolag: *See*—
Bergstrom, Axel E., Hallhagen, Soderberg, and Westberg. 3,271,504.
AMP Inc.: *See*—
Bakker, Roel, and Obert. 3,271,729.
Harner, Donald R., and Plaxa. 3,271,747.
Demler, Henry W., and Ziegler. 3,270,392.
API Instruments Co.: *See*—
Quittner, George F. 3,271,662.
A. T. I. Industries, Inc.: *See*—
Dellett, Harold W., and Crump. 3,271,505.
Abbott, Daniel B.: *See*—
Huntington, Andrew B., Abbott, and Brinkel. 3,270,625.
Abegg & Reinhold Co.: *See*—
Kingsbury, Guy W. 3,270,389.
Abrasive Developments Ltd.: *See*—
Ashworth, Stewart I., and Field. 3,270,463.
Acec Ateliers de Constructions Electriques de Charleroi: *See*—
Philips, Henri J. 3,271,659.
Achon, Marco A., and J. A. Price, to Avisum Corp. Catalyst system for the copolymerization of olefins. 3,271,376, 9–6–66, Cl. 260—88.2.
Acker, Richard E., to Huber-Warco Co. Tandem rollers. 3,271,041, 9–6–66, Cl. 280—43.23.
Ackles, Virgil E. Conveyor driving unit. 3,270,863, 9–6–66, Cl. 198—203.
Ackley, John W., to Deere & Co. Sprayer nozzle. 3,270,966, 9–6–66, Cl. 239—550.
Adams, Charles A. Toilet flushing process and apparatus to restore height of water. 3,270,351, 9–6–66, Cl. 4—41.
Adams, Charles A., to Motorola, Inc. Oscillator with resonant circuit connected to transistor housing. 3,271,698, 9–6–66, Cl. 331—117.
Adams, George E., G. H. Whale, and J. H. A. Hanson, to Dunlop Rubber Co. Ltd. Wheel manufacture. 3,270,402, 9–6–66, Cl. 29—159.01.
Adler, Robert, C. B. Crumly, L. C. Foster, and J. P. Lindley, to Zenith Radio Corp. Electron beam parametric amplifier with positive ion elimination. 3,271,731, 9–6–66, Cl. 330—4.7.
Advanced Kinetics, Inc.: *See*—
Furth, Harold P. 3,271,716.
Aebi, Claude M., to International Business Machines Corp. Thermo-developable diazo coatings employing dicyandiamide compositions. 3,271,155, 9–6–66, Cl. 96—75.
Aerojet-General Corp.: *See*—
Henriksen, Erik K. 3,270,556.
Agfa Aktiengesellschaft: *See*—
Engelsmann, Dieter, and Zobel. 3,270,645.
Engelsmann, Dieter. 3,270,648.
Hofmann, Wilfried, and Winkler. 3,270,640.
Jakob, Franz, and Spatz. 3,270,647.
Neudecker, Karl, and Zanner. 3,271,098.
Aghnides, Elie P. Self-sealing and deposit-proof aerator. 3,270,965, 9–6–66, Cl. 239—428.5.
Aghnides, Elie P. Molded water aerators. 3,270,964, 9–6–66, Cl. 239—428.5.
Ahlberg, Richard E., and J. E. Schrems, to The Dow Chemical Co. Traction increaser comprising polydihydroquinolines and rosin. 3,271,170, 9–6–66, Cl. 106—36.
Air Products and Chemical, Inc.: *See*—
McEvoy, James E., and Shalit. 3,271,327.
Air Reduction Co. Inc.: *See*—
Weber, Bernhard W. A. 3,271,559.
Ajam, Mustafa J., to Williams & Hussey Machine Corp. Rotary sliding-vane pump. 3,270,675, 9–6–66, Cl. 103—42.
Akbar, Mohammed A., and H. Simonis, to Hans J. Zimmer Verfahrenstechnik. Process for the polycondensation of furfuryl alcohol. 3,271,421, 9–6–66, Cl. 260—347.8.
Akin, George A., S. J. Rush, and N. C. Russin, to Eastman Kodak Co. Poly (1,4-cyclohexylenedimethylene terephthalate) process using substantially equal proportions of reactants. 3,271,370, 9–6–66, Cl. 260—75.
Albert, Walter, L. Bohn, J. Ebigt, H. Oberst, and H. Pfister, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Vibration damping polymer mixture on metal plate. 3,271,188, 9–6–66, Cl. 117—132.
Albin, Alvina K. Baby exerciser. 3,271,028, 9–6–66, Cl. 272—57.
Alcan Aluminum Corp.: *See*—
Wegner, Herman E. 3,270,620.
Alderson, Edgar D., to General Electric Co. Diverter valve assembly. 3,270,775, 9–6–66, Cl. 137—609.
Allegretti, John E., to Merck & Co., Inc. Producing an N+N junction using antimony. 3,271,208, 9–6–66, Cl. 148—175.
Allen, Robert L., to Georgia Tech Research Institute. Variable displacement pump. 3 270,674, 9–6–66, Cl. 103—38.
Allen, Theodore E., W. R. Baker, R. H. Bidlack, K. N. Gardner, W. E. Mullan, Jr., M. E. Ozenberger, and L. E. Van Damme, to Bell Telephone Laboratories, Inc. Key-type common control telephone switching system. 3,271,524, 9–6–66, Cl. 179—27.
Allen, Thomas C., and H. J. Watson, to Dan River Mills Inc. Textile treatments and treated textiles. 3,271,305, 9–6–66, Cl. 252—8.6.
Allentoff, Norman, and L. M. Minsk, to Eastman Kodak Co. Photographic silver halide emulsions having high wet density retention. 3,271,158, 9–6–66, Cl. 96—67.
Allied Chemical Corp.: *See*—
Bostian, Logan C., and Heffner. 3,271,335.
Hazelton, Russell F. 3,271,116.
Pickens, Donald. 3,271,454.
Poor, John G. 3,271,279.
Allis-Chalmers Mfg. Co.: *See*—
Whisler, Paul A. 3,270,579.
Alloys Unlimited, Inc.: *See*—
Elliott, Charles G. 3,271,507.
Allred, Victor D., to Marathon Oil Co. Process of calcining coke. 3,271,268, 9–6–66, Cl. 201—20.
Almasfuzitoi Timfoldgyar: *See*—
Juhasz, Adam, and Konkoly. 3,270,887.
Alnwick Investments Ltd.: *See*—
Humphrey, Frederick H. 3,270,388.
Alsys, Clarence M. Humidification of shirred artificial sausage casings. 3,271,168, 9–6–66, Cl. 99—176.
American Bosch Arma Corp.: *See*—
Moravek, Joseph J., and Figalora. 3,270,568.
American Cyanamid Co.: *See*—
Chopoorian, John A. 3,271,176.
Frazza, Everett J., and Rapoport. 3,271,408.
Welcher, Richard P. 3,271,449.
Wilkinson, Raymond G., and Shepherd. 3,271,450.
American Enka Corp.: *See*—
De Langen, Lambertus H. 3,270,491.
Hartong, Augustinus L. H. 3,271,348.
Van den Berge, Cornelis. 3,271,493.
American Home Products Corp.: *See*—
Gandler, John C. C. 3,270,714.
Lefebvre, Yvon. 3,271,392.
American Machine & Foundry Co.: *See*—
Dearsley, George. 3,270,856.
Thomas, Robert. 3,270,411.
American Motors Corp.: *See*—
Teague, Richard A. 3,271,066.
Amering, Charles F.: *See*—
Russell, Harold D., and Amering. 3,270,654.
Ametek, Inc.: *See*—
Anderson, Kenneth A. 3,270,885.
Anderson, Kenneth A. 3,270,888.
Amicon Corp.: *See*—
Michaels, Alan S. 3,271,496.
Ampex Corp.: *See*—
Cochran, Donald J., and Patterson. 3,271,526.
Sperry, John D., and Siegel. 3,270,975.
Amut s.p.A. Novara-Veveri: *See*—
Borrini, Geo. 3,270,806.
Anaconda Wire and Cable Co.: *See*—
Burr, Harvey. 3,271,508.
Lanach, John L. 3,271,752.
Anagnostopoulos, Constantine E.: *See*—
Coran, Anbert Y., and Anagnostopoulos. 3,271,358.
Andersen, Harry M., and W. R. Richard, Jr., to Monsanto Co. Polymerization of olefins by use of modified catalysts. 3,271,381, 9–6–66, Cl. 260—94.9.
Anderson, Ben M., to Anderson, Greenwood & Co. Tapered fastener. 3,271,058, 9–6–66, Cl. 287—199.86.
Anderson, Clayton & Co.: *See*—
Bentz, Irvin C. 3,271,433.
Anderson, Greenwood & Co.: *See*—
Anderson, Ben M. 3,271,058.
Anderson, Kenneth A., to Ametek, Inc. Filter. 3,270,885, 9–6–66, Cl. 210—112.
Anderson, Kenneth A., to Ametek, Inc. Rotary leaf filter. 3,270,888, 9–6–66, Cl. 210—329.
Anderson, Theodore C., and D. L. Favin, to Bell Telephone Laboratories, Inc. Apparatus for measuring envelope delay distortion wherein selected impulses of a high-frequency standard are gated to one input of a bistable phase comparator. 3,271,666, 9–6–66, Cl. 324—57.
Andreassen, Alfred E. O., to Chamberlain Corp. Method of making metallic shelving. 3,270,404, 9–6–66, Cl. 29—160.
Andrew Corp.: *See*—
Book, Eric G. 3,271,702.
Yang, Richard F. H. 3,271,775.
Andrews, Dallas R., to Radio Corp. of America. Positioning mechanism. 3,271,034, 9–6–66, Cl. 274—4.
Andt, John J. R., to Stein Hall & Co., Inc. Additive for baked goods to retard staling. 3,271,164, 9–6–66, Cl. 99—90.
Angus, George, & Co. Ltd.: *See*—
Jagger, Ernest T., and Hunter. 3,270,373.
Anstey, Nigel A., and W. E. Lerwill, to Seismograph Service Corp. Method and apparatus for correlating seismic disturbances against previously recorded signals. 3,271,732, 9–6–66, Cl. 340—15.5.

Anwyl, Robert D., and D. M. Peterson, to Eastman Kodak Co. Photometric system. 3,270,638, 9–6–66, Cl. 95—10.

Aoyagi, Tsutomu: *See*—
Harada, Kazuya, and Aoyagi. 3,271,482.

Applegate, Merlin J.: *See*—
Derler, Charles J., and Applegate. 3,270,690.

Apstein, Maurice: *See*—
Biggar, Allan M., and Apstein. 3,271,641.

Aqua-Dart, Inc.: *See*—
Rozanski, Frank G. 3,270,707.

Araujo, Nat E. Screw-threaded freeze plug pull-out tool with work engaging means. 3,270,407, 9–6–66, Cl. 29—259.

Archer-Daniels-Midland Co.: *See*—
Weber, Ralph O., and Horan. 3,271,267.
Cagneron, Lucien J., and Skaradzinski. 3,271,410.

Arcos Corp.: *See*—
Johnson, Wallace C. 3,271,553.

Arima, Asao: *See*—
Goda, Susumu, Gondo, Hiyoshi, and Arima. 3,271,206.

Arledter, Hanns F., C. R. Canfield, Jr., and D. C. Gillespie, to Borg-Warner Corp. Friction member with friction material. 3,270,846, 9–6–66, Cl. 192—107.

Armaki, Yoshitomo: *See*—
Kanazawa, Ken-Ichi, Matsukawa, and Armaki. 3,271,250.

Armfield, George W.: *See*—
Marsh, John A., and Armfield. 3,270,394.

Arcos Corp.: *See*—
Johnson, Wallace C. 3,271,554.

Armstrong Cork Co.: *See*—
Moggio, William A., Sparks, and Miller. 3,271,231.

Armstrong, Theodore, to Pacific Preserving Co. Fruit orienting, halving, and coring machine. 3,270,788, 9–6–66, Cl. 146—52.

Armstrong, Tobert G., to The Ohio Crankshaft Co. Mechanism for an induction heating apparatus. 3,271,019, 9–6–66, Cl. 266—4.

Arnold, Aaron: *See*—
Dennis, Emery W., and Arnold. 3,271,159.

Aronoff, Elihu J., and P. D. Whyzmuzis, to Interchemical Corp. Printing ink based on acrylic or methacrylic acid conolymers and polyoxyethylene. 3,271,347, 9–6–66, Cl. 260—31.4.

Arvesen, Oystein: *See*—
Kehn, Harold B., Sze, Cook, Secord, and Arvesen. 3,270,700.

Arvin Industries, Inc.: *See*—
Chesnut, Amos E. 3,271,546.

Asahi Dow Ltd.: *See*—
Sudo, Michio. 3,271,223.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Wakasa, Ryoichi, Shibata, Ohmura, and Suzuki. 3,271,346.

Ashbrook, Richard L.: *See*—
Freche, John C., Klima, and Ashbrook. 3,271,140.

Ashikaga, Tadao: *See*—
Fujii, Kiyoshi, Imoto, Ukida, and Ashikaga. 3,271,494.

Ashworth, Stewart I., and A. G. Field, to Abrasive Developments Ltd. Blasting machines. 3,270,463, 9–6–66, Cl. 51—8.

Associated Engineering Ltd.: *See*—
Brown, Dennis C., and Dickson. 3,271,281.

Atkins, David N., F. H. G. McCaffrey, and G. D. Taylor, to Canadian Industries. Shotshells. 3,270,669, 9–6–66, Cl. 102—42.

Atlantic Refining Co., The: *See*—
Brieger, Louis C., and Barta. 3,271,724.
Cleary, James M. 3,270,822.

Atlantic Research Corp.: *See*—
Silver, Bernard. 3,270,502.
Silver, Bernard. 3,270,668.

Atlas Copco Aktiebolag: *See*—
Bratt, Sven-Ake. 3,270,834.

Atlas, David, and R. M. Lhermitte, said Atlas assor., to United States of America, Air Force. Radar tornado alarm. 3,271,764, 9–6–66, Cl. 343—11.

Atlas mess-und Analysentechnik G.m.b.H.: *See*—
Brunnee, Curt. 3,270,773.

Atomic Energy of Canada Ltd.: *See*—
Watson, Robert D. 3,270,413.

Atron Corp.: *See*—
Paull, Morris. 3,270,614.

Attwood, Charles W. Building construction. 3,270,478, 9–6–66, Cl. 52—648.

Auer, Jay R., to G. D. Searle & Co. Dispensing means for pharmaceutical tablets. 3,270,915, 9–6–66, Cl. 221—2.

Augstein, Joachim, W. C. Austin, R. J. Boscott S. M. Green, and W. H. Hunter, to Chas. Pfizer & Co., Inc. Phenoxyalkyl aminoguanidines. 3,271,448, 9–6–66, Cl. 260—564.

Austin, John W. Fishing rod and attachment therefor. 3,270,457, 9–6–66, Cl. 43—15.

Austin, William C.: *See*—
Augstein, Joachim, Austin, Boscott, Green, and Hunter. 3,271,448.

Automatic Casting Corp.: *See*—
Madwed, Albert. 3,270,378.

Automatic Timing & Controls, Inc.: *See*—
Barth, Lewis E. 3,270,582.

Avco Corp.: *See*—
Bucher, Charles A., Jr. 3,271,682.
Colby, Ralph S. 3,270,839.
Fuhrwerk, Victor C., and Luthman. 3,270,858.
McNair, Robert J. 3,271,681.

Avisum Corp.: *See*—
Achon, Marco A., and Price. 3,271,376.

Ayers, George W.: *See*—
Krewer, William A., and Ayers. 3,271,465.

Averette, Hervy E., Jr. Cytodiagnosis of ruptured fetal membranes. 3,271,257, 9–6–66, Cl. 167—84.5.

B & W Inc.: *See*—
Solum, James R. 3,270,697.

Bachelder, Albert J., to Polaroid Corp. Composite photographic film roll. 3,270,653, 9–6–66, Cl. 95—89.

Badische Anilin-& Soda-Fabrik Aktiengesellschaft: *See*—
Bartholome, Ernst, Nienburg, Schenk, Scherf, Loesch, Wallis, and Vogel. 3,271,445.
Stilz, Walter, Pommer, Wolff, and Fessmann. 3,271,321.

Baenitz, Wolfgang, to Chemische Werke Witten G.m.b.H. Process for controlling the melting point of hard and brittle fats. 3,271,434, 9–6–66, Cl. 260—410.7.

Bagno, Samuel M., to Specialties Development Corp. Doppler-type intruder detection system arranged to eliminate extraneous air turbulence effects. 3,271,755, 9–6–66, Cl. 340—258.

Bahr, Donald W., to General Electric Co. Liquid-vapor fuel injector flameholder. 3,270,506, 9–6–66, Cl. 60—39.72.

Balzer, Manuel M., to Monsanto Co. Electrolytic reductive coupling of aromatic compounds. 3,271,278, 9–6–66, Cl. 204—72.

Baker, Berkley J., and E. Z. Krajewski, to Litton Precision Products, Inc. Food package for microwave heating. 3,271,169, 9–6–66, Cl. 99—221.

Baker, Eufene E.: *See*—
Richardson, Cecil R., Manson, and Baker. 3,270,814.

Baker, Henry C. Visible margin signal apparatus. 3,270,854, 9–6–66, Cl. 197—187.

Baker, Leonard M., to Union Carbide Corp. Dimerization process. 3,271,471, 9–6–66, Cl. 260—670.

Baker Oil Tools, Inc.: *See*—
Thrane, Gordon E., and McZilkey. 3,270,819.

Baker, Richard W., J. J. Blazek, and F. G. Ciapetta, to W. R. Grace & Co. Silica-alumina-magnesia-magnesium fluoride catalyst and process. 3,271,300, 9–6–66, Cl. 208—120.

Baker, Theodore C., to Continental Can Co., Inc. Article carrier. 3,270,944, 9–6–66, Cl. 229—40.

Bakker, Roel, and L. Obert, to AMP Inc. Cluster receptacle with basel lance and one-piece housing. 3,271,729, 9–6–66, Cl. 339—217.

Baker, Walter R.: *See*—
Allen, Theodore B., Baker, Bidlack, Gardner, Mullan, Ozenberger, and Van Damme. 3,271,524.

Baldwin-Lima-Hamilton Corp.: *See*—
Brown, Erwin C., and Woolman. 3,270,899.

Baldwin, Louis V. to E. I. du Pont de Nemours and Co. Electrical capacitors. 3,271,642, 9–6–66, Cl. 317—260.

Ball Brothers Co.: *See*—
Fogelberg, Clement V., and Dart. 3,271,489.

Ballentine, Earle W. Radiation and convection responsive thermostat. 3,271,545, 9–6–66, Cl. 200—138.

Ballman, Richard L., and A. W. Wotring, to Monsanto Co. Rheometer. 3,270,553, 9–6–66, Cl. 73—56.

Banning, Thomas A., Jr. Multiple supply, balanced valve, pressure reducing valves, and the like. 3,270,762, 9–6–66, Cl. 137—98.

Banning, Thomas A., Jr., E. L. Ranseen, deceased by A. J. Ranseen, executrix, to T. A. Banning, Jr. Recording and playing-back television programs, by wide-band cross-scanning recordings. 3,271,514, 9–6–66, Cl. 178—6.6.

Barbareschi, Carlo. Apparatus for removing solvent from a solution. 3,270,432, 9–6–66, Cl. 34—92.

Bargel, Gunter, to Holstein & Kappert. Apparatus for handling bottles and similar containers. 3,270,859, 9–6–66, Cl. 198—110.

Barker, Donald E. Head rest for motor vehicles. 3,271,072, 9–6–66, Cl. 297—397.

Barkowitz, Harold: *See*—
Liebmann, Jack S., Memole, and Barkowitz. 3,270,442.

Barnes, Donald E., to General Foods Corp. Easy open and reclosable carton. 3,270,941, 9–6–66, Cl. 229—17.

Barnes Engineering Co.: *See*—
Collyer, Philip W. 3,270,612.
Falbel, Gerald. 3,271,575.

Barnett, Eugene J., to Westinghouse Electric Corp. Built-in oven. 3,270,736, 9–6–66, Cl. 126—19.

Barret, William M., and C. H. Clement, to Engineering Research Corp. Chiropractic balance. 3,270,558, 9–6–66, Cl. 73—172.

Barrett, Robert D., G. J. Hamouz, L. I. Frisbie, J. K. Hirakawa, and E. C. Harnach, Jr., to International Harvester Co. Vehicle wide tread axle support. 3,270,830, 9–6–66, Cl. 180—88.

Barta, Henry R.: *See*—
Brieger, Louis C., and Barta. 3,271,724.

Bartha, Kenneth J.: *See*—
Schott, Arthur K., Bartha, and Rovoldt. 3,270,605.

Barth, Lewis E., to Automatic Timing & Controls, Inc. Mechanical device. 3,270,582, 9–6–66, Cl. 74—568.

Bartholome, Ernst, H. Nienburg, W. Schenk, K. Scherf, N. Loesch, A. Wallis, and L. Vogel, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Nitric acid oxidation of benzene compounds containing oxidizable side chains. 3,271,445, 9–6–66, Cl. 260—524.

Bartleson, Christian J., E. J. Breneman, and D. L. MacAdam, to Eastman Kodak Co. Method and apparatus for exhibiting a display. 3,270,451, 9–6–66, Cl. 40—130.

Bassett, Leon H., W. A. Fouser, F. A. Kaman, and F. C. Schrack, to Skil Corp. Power tool. 3,270,821, 9–6–66, Cl. 173—123.

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Bates, Albert M., to Burroughs Corp. Magnetic memory system. 3,271,741, 9–6–66, Cl. 340—172.5.

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Bauer, Peter, to Sperry Rand Corp. Fluid amplifiers. 3,270,758, 9–6–66, Cl. 137—81.5.

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Beach, Willard C. Lightweight harness. 3,270,488, 9–6–66, Cl. 54—39.

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Beesley, Albert E., and J. R. Hitchcock. Sulky vehicle attachment for bicycles. 3,271,048, 9–6–66, Cl. 280—204.

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Anderson, Theodore C., and Favin. 3,271,666.
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Berg, Daniel, to Westinghouse Electric Corp. Insulated electrical apparatus. 3,271,711, 9–6–66, Cl. 336—57.

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Bergstrom, Axel E., R. G. Hallbagen, L. E. R. Soderberg, and J. E. Westberg, to AGA Aktiebolag. Apparatus and method for vulcanizing strips of material containing an elastomer. 3,271,504, 9–6–66, Cl. 264—347.

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Block, Aleck, and J. W. Purcell, Jr., to Merit Products, Inc. Abrasive device. 3,270,468, 9–6–66, Cl. 51—358.

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Bosko, John M. and J. L., and J. B. Lindecker. Portable workbench for hand table tools. 3,271,044, 9–6–66, Cl. 280—79.3.

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Salter, Larry, and Briles. 3,270,410.

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Brown, Neil L., to The Bissett-Berman Corp. Variable frequency phase shift oscillator. 3,271,694, 9–6–66, Cl. 331—66.

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Buchanan, Lee M., to United States of America, Army. Liquid disseminator. 3,271,103, 9–6–66, Cl. 21—92.

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Burt, Robert V., to The Procter & Gamble Co. Display package for bottles and the like. 3,270,870, 9–6–66, Cl. 206—45.33.

Burt, Robert V., to The Procter & Gamble Co. Removable cover for display package. 3,270,875. 9–6–66, Cl. 206—57.

Burt, Robert V., to The Procter & Gamble Co. Display package for collapsible tubes and the like. 3,271,857, 9–6–66, Cl. 206—45.33.

Bush, Vannevar. Hydrofoil craft. 3,270,699, 9–6–66, Cl. 114—66.5.

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Cammarata, Peter S., and S. Eich, to G. D. Searle & Co. Amylopectin sulfates. 3,271,388, 9–6–66, Cl. 260—233.5.

Campbell, Robert A. Adjustable-filter cigarette. 3,270,750, 9–6–66, Cl. 131—10.

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Atkins, David N., McCaffrey, and Taylor. 3,270,669.

Canfield, Carl R., Jr.: *See*—
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Canfield, Sheldon A., to Owen-Corning Fiberglas Corp. Method and apparatus for producing bonded fibrous products. 3,271,485, 9–6–66, Cl. 264—26.

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Capriati, Enrico G., and D. T. Oakes, to Monsanto Co. Method for preventing the formation of insoluble iron compounds. 3,271,308, 9–6–66, Cl. 252—8.55.

Caracciolo, Edward A., to Signetics Corp. Electronic package assembly. 3,271,625, 9–6–66, Cl. 317—101.

Carls, William. Solenoid valve construction. 3,270,776, 9–6–66, Cl. 137—625.64.

Carborundum Co., The: *See*—
Rutt, Richard D., and Carlson. 3,271,909.

Carlson, Dwight B.: *See*—
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McNeely, Lowell A. 3,270,516.
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Caruso, Gerard P., to Shell Oil Co. Grease compositions. 3,271,309, 9–6–66, Cl. 252—21.

Cassel, Thomas R., to General Motors Corp. Exhaust system hanger. 3,270,992, 9–6–66, Cl. 248—60.

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Cattaneo, Jean-Pierre, to Rexall Drug and Chemical Co. Method for fabricating tubes. 3,271,490, 9–6–66, Cl. 264—92.

Caveny, Leonard H., to Thiokol Chemical Corp. Critical condition indicator. 3,270,560, 9–6–66, Cl. 73—344.

Caywood, Stanley W., Jr., to E. I. du Pont de Nemours and Co. Method of removing coordination catalyst residues from hydrocarbon polymer slurries with alcohol. 3,271,372, 9–6–66, Cl. 260—80.5.

Cello Chemical Co., The: *See*—
Okun, Nathaniel N. 3,270,361.

Celmer, Walter D., to Chas. Pfizer & Co., Inc. 3-cyclohexene-1-glyoxylic acid, salts and esters. 3,271,439, 9–6–66, Cl. 260—468.

Cenitch, Eugene, J. E. Lundberg, and R. A. Watson, to International Business Machines Corp. Inertial sensor. 3,270,566, 9–6–66, Cl. 74—5.6.

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Century Mfg. Co.: *See*—
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Chalk, Alan J., and J. F. Harrod, to General Electric Co. Process for reaction of silanic hydrogen with unsaturated organic compounds. 3,271,362, 9–6–66, Cl. 260—46.5.

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Chambers, Worthy L., and J. A. Wright, to Sunbeam Corp. Mixer. 3,271,013, 9–6–66, Cl. 259—131.

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Charlson, Lynn L., to Germane Corp. Rotary fluid pressure device. 3,270,681, 9–6–66, Cl. 103—130.

Charlson, Lynn L., to Germane Corp. Rotary fluid pressure device. 3,270,682, 9–6–66, Cl. 103—130.

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Cheng, Tsung-Hsien, to International Business Machines Corp. Thin film superconducting transformer. 3,271,658, 9–6–66, Cl. 323—44.

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Fischer, William, and Rogge. 3,270,426.
Karl, William J., Lorenzini, and Wingerd. 3,271,240.
Percival, Douglas F., Johnson, and Adams. 3,271,444.

Chicago Bridge & Iron Co.: *See*—
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Chicago Lock Co.: *See*—
Kerr, William J. 3,270,538.

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Chitayat, Anwar K., to Optomechanisms, Inc. Three detector cycle counting means. 3,271,676, 9–6–66, Cl. 324—83.

Chopoorian, John A., to American Cyanamid Co. Composition of matter composed of a cyanolthylated cellulosic material and an inorganic photochromic material. 3,271,176, 9–6–66, Cl. 106—193.

Chottiner, Jacob: *See*—
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Churchill, Wilmer H., and J. B. Wilhelmi, to United-Carr Inc. Coat hook and attachment. 3,270,996, 9–6–66, Cl. 248—224.

Ciampa, Fred A., A. Serafini, and L. Mazzarella, to Standard Box Spring Co. Furniture spring assembly. 3,270,354, 9–6–66, Cl. 5—260.

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Baker, Richard W., Blazek, and Cipetta. 3,271,300.

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Widmer, Franz R., Renner, and Orth. 3,271,476.

Cities Service Research and Development Co.: *See*—
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Cities Service Athabasco, Inc.: *See*—
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Clark, L. M.: *See*—
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Clark, Harold E., to Xerox Corp. Electroviscous recording. 3,270,637, 9–6–66, Cl. 95—1.

Clark, James E., to Bell Telephone Laboratories, Inc. Semiconductor encapsulation. 3,271,124, 9–6–66, Cl. 65—54.

Clark, James L., to Plastronics, Inc. Detachable tube to bag connector means and method of making same. 3,270,790, 9–6–66, Cl. 150—1.

Clark, Joseph F.: *See*—
Daly, Paul J., and Clark. 3,271,678.

Clark, Lincoln, 30% to Cities Service Athabasco, Inc., 30% to Imperial Oil limited, 30% to Atlantic Richfield. Process and apparatus for stripping solids from bituminous sand. 3,271,293, 9–6–66, Cl. 208—11.

Clark, William E., to Carrier Corp. Refrigeration apparatus. 3,270,517. 9–6–66, Cl. 62—115.

Clausen, Ralph L., and D. K. Meyer, to Minnesota Mining and Mfg. Co. Supersensitzed zinc oxide. 3,271,144, 9–6–66, Cl. 96—1.

Cleary, James M., to The Atlantic Refining Co. Percussive unit for earth drilling. 3,270,822, 9–6–66, Cl. 173—137.

Clegg, John M., and B. B. Brown, to S. B. Penick & Co., Inc. Dihalobenzimidazoles for poultry disease treatment. 3,271,249, 9–6–66, Cl. 167—53.1.

Clem, Everett W., to Specialty Equipment Corp. Universal box folding machine. 3,270,628, 9–6–66, Cl. 93—52.
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Clough, Donald K., to Sandoz Ltd. (also known as Sandoz A.G.). Dyeing and printing process. 3,271,100, 9–6–66, Cl. 8—54.
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Brenner, Robert A., Cobb, and Orr. 3,270,533.
Cockrell, Eldridge H.: *See*—
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Cochran, Donald J., and D. M. Patterson, to Ampex Corp. Servo system that is insensitive to tape flutter error. 3,271,526, 9–6–66, Cl. 179—100.2.
Cochrell, James L., to Leeds and Northrup Co. Push-pull full-wave magnetic amplifier. 3,271,690, 9–6–66, Cl. 330—8.
Colby, Ralph S., to Avco Corp. Device for preventing multiple rebounds of an impacting mass. 3,270,839, 9–6–66, Cl. 188—96.
Colby, George V., Jr., to Laboratory for Electronics, Inc. Radar altimeter. 3,271,763, 9–6–66, Cl. 343—7.
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Colle, Ervin R., to Intrusion-Prepakt, Inc. Method of forming piles. 3,270,511, 9–6–66, Cl. 61—53.52.
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Collins, George C., to General Motors Corp. Rotor assembly. 3,271,606, 9–6–66, Cl. 310—263.
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Collins, William T., Jr., to General Motors Corp. Convertible top latching mechanism. 3,271,068, 9–6–66, Cl. 296—120.
Collyer, Philip W., to Barnes Engineering Co. Servo nulled autocollimator having a pair of rotatable wedges. 3,270,612, 9–6–66, Cl. 88—14.
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Hazzard, Noel D. 3,270,803.
Visner, Sidney. 3,271,261.
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Runge, Wallace F. 3,271,105.
Commissariat a l'Energie Atomique: *See*—
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Hopkins, Harold H. 3,270,616.
Compagnie Francaise Thomson-Houston: *See*—
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Cone, Clarence D., Jr., to United States of America, National Aeronautics and Space Administration. Minimum induced drag airfoil body. 3,270,988, 9–6–66, Cl. 244—35.
Conix, Andre J., and L. M. Dohmen, to Gevaert Photo-Producten, N.V. Process of preparing polycarbonates. 3,271,364, 9–6–66, Cl. 260—47.
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Connally, Carl, Jr., and F. R. Scauzillo, to Mobil Oil Corp. Miscible displacement procedure using a water bank. 3,270,809, 9–6–66, Cl. 166—9.
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Esakov, Daniel A., Hilderbrandt. 3,271,670.
Connel, Arlan M.: *See*—
Sand, Darrel R., and Connell. 3,270,679.
Connor, Donald H., to Caterpillar Tractor Co. Apparatus for controlling speed and vibration of engine turbochargers. 3,270,495, 9–6–66, Cl. 60—13.
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Continental Can Co., Inc.: *See*—
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Foster, Charles N., McElroy, and Curry. 3,270,904.
Continental Oil Co.: *See*—
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Continental-Wirt Electronics Corp.: *See*—
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Control Data Corp.: *See*—
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Guenther, Robert F., Jr., and Martin. 3,271,877.
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Cook, Denys, and D. M. Young, to The Dow Chemical Co. Process for separating methylamines. 3,271,455, 9–6–66, Cl. 260—583.
Cook, George L., Sr., and R. H. Bloom, to Julian B. Rozier. Fish scaling device. 3,270,368, 9–6–66, Cl. 17—7.
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Cook, Loren, to Loren Cook Co. Ventilator with air discharge means. 3,270,656, 9–6–66, Cl. 98—43.
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Cook, Loren. 3,270,656.
Cook, Lovedu, and V. N. Farhi. Apparatus for selectively treating hair. 3,270,733, 9–6–66, Cl. 132—9.
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Coover, Harry W., Jr., and R. L. McConnell, to Eastman Kodak Co. Method for producing polymers derived from phosphite and glycols. 3,271,329, 9–6–66, Cl. 260—2.
Cope, Paul E., and C. R. Specter, to The Procter & Gamble Co. Carton. 3,270,942, 9–6–66, Cl. 229—17.
Coope, Robert L. Micrometer caliper. 3,270,422, 9–6–66, Cl. 33—165.
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Coran, Aubert Y., and C. E. Anagnostopoulos, to Monsanto Co. Polyolefins containing di(substituted phenyl) oxalates or carbonates as stabilizers. 3,271,358, 9–6–66, Cl. 260—45.85.
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Langdon, Richard H. 3,270,447.
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Cossaart, Raleigh J., to Westinghouse Electric Corp. Electrical inductive apparatus having means to prevent contamination. 3,271,714, 9–6–66, Cl. 336—90.
Costa, Abraham F. Bandage holder. 3,270,742, 9–6–66, Cl. 128—171.
Cotton, John L., to General Motors Corp. Valve tappet. 3,270,726, 9–6–66, Cl. 123—90.
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Coulter, Wallace H., to Coulter Electronics, Inc. Particle analyzing device. 3,271,671, 9–6–66, Cl. 324—71.
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Cox, Clifford B.: *See*—
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Crabill, Norman L., and J. M. Riebe, to United States of America, National Aeronautics and Space Administration. Control system for rocket vehicles. 3,270,505, 9–6–66, Cl. 60—35.55.
Craft, John L., and W. B. Strohm, to International Business Machines Corp. Analytic bounds detector. 3,271,743, 9–6–66, Cl. 340—172.5.
Crago, Richard A., J. H. Downing, and H. S. Redline, to Union Carbide Corp. Process for the production of low sulfur ferrochromium. 3,271,139, 9–6–66, Cl. 75—130.5.
Crampton, William M., to Honeywell Inc. Control apparatus. 3,270,567, 9–6–66, Cl. 74—5.6.
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Crawford, Joseph H., and W. H. Peters, to General Electric Co. Electrolytic drilling and tapping apparatus. 3,271,288, 9–6–66, Cl. 204—212.
Crawford, Joseph H., and P. A. Cappel, to General Electric Co. Electrochemical machining apparatus with electrolyte flow control means. 3,271,291, 9–6–66, Cl. 204—224.
Crawford, Robert B. P., and D. B. Tackett, to Harold J. Burke. Method and apparatus for detecting a hazardous condition. 3,271,756, 9–6–66, Cl. 340—237.
Cremlyn, Richard J. C.-D., R. S. Elias, M. J. A. Geoghegan, and J. T. Braunholtz, to Imperial Chemical Industries Ltd. N-trichloromethylthiohydantoins for fungicidal compositions and methods. 3,271,245, 9–6–66, Cl. 167—33.
Crowe, James W., to International Business Machines Corp. Superconductive devices. 3,271,585, 9–6–66, Cl. 307—88.5.
Crucible Steel Co. of America: *See*—
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Crumly, Charles B.: *See*—
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Csendes, Ernest, to E. I. du Pont de Nemours and Co. 2,5-di-tert-butyl-N,N'-diaryl-p-phenylene-diamines. 3,271,453, 9–6–66, Cl. 260—576.
Cubberly, Walter E., Jr., to Schlumberger Well Surveying Corp. Acoustic well logging device. 3,271,733, 9–6–66, Cl. 340—17.
Cummins, William F., Sr. Dough cutting and forming device. 3,270,692, 9–6–66, Cl. 107—68.
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Cuozzi, Concetta. Foundation garment. 3,270,747, 9–6–66, Cl. 128—528.
Cuozzi, Concetta, to Corde de Parle, Inc. Foundation garment. 3,270,748 9–6–66, Cl. 128—528.
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Cyba, Henryk A., to Universal Oil Products Co. Stabilization of organic substances. 3,271,312, 9–6–66, Cl. 252—46.7.

Czech, Clifford F., to McGraw-Edison Co. Dry cleaning machine. 3,270,530, 9–6–66, Cl. 68—18.
Czech, Clifford, to McGraw-Edison Co. Dry cleaning machine. 3,270,531, 9–6–66, Cl. 68—18.
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Dahlberg, Reinhard, to International Telephone and Telegraph Corp. Method of making masks for vapor deposition of electrodes. 3,271,488, 9–6–66, Cl. 264—81.
Daimler-Benz Aktiengesellschaft: *See*—
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Gassmann, Johannes, and Ehrhardt. 3,270,717.
Gassmann, Johannes. 3,270,718.
Strifler, Paul E. 3,271,047.
D'Alelio, Gaetano F., to Dal Mon Research Co. Polymerizable triazines and products thereof. 3,271,478, 9–6–66, Cl. 260—898.
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D'Alelio, Gaetano F. 3,271,478.
Daly, Paul J., and J. F. Clark, to United States of America, Air Force. Electronic signal analyzer for a series of successive pulses. 3,271,678, 9–6–66, Cl. 324—121.
Damm, Daniel A., to Owens-Illinois Inc. Implosion resistant cathode ray tube with integral mounting elements to facilitate installation. 3,271,516, 9–6–66, Cl. 178—7.8.
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Wagner, Robert W. 3,270,580.
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Goodrich, Eugene E., Daniels, Burch, and Wilkinson. 3,270,918.
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Dan River Mills Inc.: *See*—
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Daubenspeck, Benjamin K., and E. A. Rickey, to Remington Arms Co., Inc. Cartridge wad and process for the manufacture thereof. 3,270,671, 9–6–66, Cl. 102—95.
Davenport, Alvan F. Driver training apparatus. 3,270,439, 9–6–66, Cl. 35—11.
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Davies, Phineas, and C. M. Stone, to Imperial Chemical Industries Ltd. Catalytic compositions for use in steam reforming of hydrocarbons. 3,271,325, 9–6–66, Cl. 252—466.
Davis, Billy K., to United States of America, National Aeronautics and Space Administration. Spectral method for monitoring atmospheric contamination of inert-gas welding shields. 3,271,558, 9–6–66, Cl. 219—131.
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Davis, Richard, to Monsanto Co. Heat treating process. 3,271,207, 9–6–66, Cl. 148—143.
Daw, Nigel W., to Polaroid Corp. Color television method and apparatus employing different sets of target phosphors, one of which luminesces in a single color and another of which luminesces in different colors. 3,271,512, 9–6–66, Cl. 178—5.2.
Dawson, John W., and M. J. Long, to Vanguard Instrument Corp. Data handling and control circuit for liquid scintillation spectrometers. 3,271,574, 9–6–66, Cl. 250—106.
Daytona Thompson Corp.: *See*—
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De Angelus, Millet R.: *See*—
Dersch, Fritz, and De Angelus. 3,271,154.
Dearsley, George, to American Machine & Foundry Co. Article assembling apparatus. 3,270,856, 9–6–66, Cl. 198—31.
Debiton, Etienne C., to Centre Experimental de Recherches et d'Etudes du Batiment et des T.P. Expansible, removable ground anchoring device. 3,270,469, 9–6–66, Cl. 52—2.
Debrie, Andre V. L. C. Film-guiding tracks or channels in cinematographic apparatus. 3,271,099, 9–6–66, Cl. 352—224.
Decca Ltd.: *See*—
Phillipson, Alan, Spiller, and Smith. 3,271,483.
Dechantsreiter, Max J., to Harnischfeger Corp. Stacker crane weighting mechanism. 3,270,893, 9–6–66, Cl. 212—2.
Decker, Robert M., and L. J. Gierosky. Remotely applied conductor spacer. 3,271,510, 9–6–66, Cl. 174—146.
De Claire, James H., to General Motors Corp. Power operated parking brake having an automatic transmission control gear shift release. 3,270,840, 9–6–66. Cl. 192—4.
Decoulos, John J. Lapping machines. 3,270,465, 9–6–66, Cl. 51—98.
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Ackley, John W. 3,270,966.
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Rohweder, Glen W. 3,270,489.
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Deffrenne, Paul, to Mecanorga S.A. Device for maintaining constant the distance between adjacent surfaces of a reference body and a movable body subject to a variable external force. 3,271,086, 9–6–66, Cl. 308—5.
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Dekker, Frank, to Minnesota Mining and Mfg. Co. Air-cushioned tape guide. 3,270,933, 9–6–66, Cl. 226—97.
Dekker, Frank, to Minnesota Mining and Mfg. Co. Tape transport mechanism for multiple tape widths. 3,270,973, 9–6–66, Cl. 242—55.12.
Delacretaz, Richard E., and S. P. Nemphos, to Monsanto Co. Molecular weight regulation in polymerization of vinylidene monomers using heterocyclic compounds as regulators. 3,271,375, 9–6–66, Cl. 260—85.5.
De Langen, Lambertus H., to American Enka Corp. Apparatus for twisting yarn. 3,270,491, 9–6–66, Cl. 57—77.45.
Delaune, Elaine T., and J. C. Winkler, to Esso Research and Engineering Co. Oxygenated organic compounds of improved odor. 3,271,456, 9–6–66, Cl. 260—593.
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D'Elia, Anthony N., and E. M. Stolarz. Sign with interchangeable characters. 3,270,452, 9–6–66, Cl. 40—140.
Dellett, Harold W., and W. J. Crump, to A. T. I. Industries, Inc. Cable splice case. 3,271,505, 9–6–66, Cl. 174—21.
De Ment, Jack. Chemically pumped laser using chemical cartridge for laser pumping. 3,271,696, 9–6–66, Cl. 331—94.5.
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De Montremy, Jean, and J. V. De Joux. Methods and apparatus for making animated cartoons. 3,271,097, 9–6–66, Cl. 352—133.
Denig, Fred, to Koppers Co., Inc. Method and apparatus for treating gases. 3,271,130, 9–6–66, Cl. 75—60.
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Derham, Leslie J., to The National Smelting Co. Ltd. Extraction of zinc. 3,271,184, 9–6–66, Cl. 75—87.
De Ridder, Ernst J., to Reynolds Metals Co. Hydraulic actuator and locking mechanism. 3,270,621, 9–6–66, Cl. 91—44.
Derler, Charles J., and M. J. Applegate, to Jackson Vibrators, Inc. Railway track grading apparatus. 3,270,690, 9–6–66, Cl. 104—7.
De Rosa, Andrew C., to United States of America, Army. Data transmission. 3,271,517, 9–6–66, Cl. 178—26.
Dersch, Fritz, and M. R. DeAngelus, to General Aniline & Film Corp. Antifogging and stabilising agents for photography. 3,271,154, 9–6–66, Cl. 96—66.
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Roderburg, Gerd, and Steenken. 3,271,356.
Deveau, Emile J., J. C. Rolfs, and H. P. Rossero, to General Precision, Inc. Slot antenna array with side reflectors. 3,271,772, 9–6–66, Cl. 343—771.
De Vilbiss, Alan J. Internal combustion engine ignition system. 3,271,593, 9–6–66, Cl. 307—88.5.
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Diederich, Pierre, to International Systems Control Ltd. Signal transfer apparatus incorporating means to suppress spurious interference signals. 3,271,651, 9–6–66, Cl. 320—1.
Dietz, Richard E., to Phillips Petroleum Co. Process for catalyst residue removal. 3,271,380, 9–6–66, Cl. 260—93.7.
Di Guillo, Guy, J. S. Mathias, and E. F. Schneider, to Sperry Rand Corp. Electrodeposition of a ternary alloy of nickel, iron and molybdenum. 3,271,274, 9–6–66, Cl. 204—43.
Di Guillo, Guy, and J. S. Mathias, to Sperry Rand Corp. Electrodeposition of a magnetic ternary alloy of iron-nickel-arsenic. 3,271,275, 9–6–66, Cl. 204—43.
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Donovan, Marion Two-way envelope. 3,270,948, 9–6–66, Cl. 229—073.

Donovan, Marion. Envlope and writing sheet combination. 3,270,950, 9–6–66, Cl. 229—92.1.

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Dorrance, Joseph J. Disposable holder for smoker's articles. 3,270,752, 9–6–66, Cl. 131—240.

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Lowes, Fred J., Jr. 3,271,344.
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Dreher, Donald F. Non-slip templates. 3,270,715, 9–6–66, Cl. 120—41.

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Dryden, Hugh L., deputy administrator of the National Aeronautics and Space Administration with respect to an invention of S. Hansen. Fluid flow control valve. 3,270,756, 9–6–66, Cl. 137—13.

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Eastman Kodak Co.: *See*—
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Eichhorn, Jacob, to The Dow Chemical Co. Self-extinguishing alkenyl aromatic polymers. 3,271,333, 9–6–66, Cl. 260—2.5.

Eickmann, Karl. Rotary radial piston machine. 3,270,685, 9–6–66, Cl. 103—161.

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Eitel, Jay M., to Telsta Corp. A.C. generator-fed variable frequency motor control mechanism for an aerial lift. 3,271,645, 9–6–66, Cl. 318—148.

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Elliott, Charles G., to Alloys Unlimited, Inc. Flat package for semiconductors. 3,271,507, 9–6–66, Cl. 174—52.

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Elmendorf, Armin, to Elmendorf Research Inc. Method of making a non-porous board composed of strands of wood and Portland cement. 3,271,492, 9–6–66, Cl. 264—122.

Elmendorf Research Inc.: *See*—
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Emblem, Harold G., and E. W. Fothergill, to Philadelphia Quartz Co. Shell mould process. 3,270,382, 9–6–66, Cl. 22—196.

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Engelbrecht, Robert M., J. M. Schuck, and R. G. Schultz, to Monsanto Co. Polymerization process. 3,271,474, 9–6–66, Cl. 260—683.15.

Engelsmann, Dieter, and S. Zobel, to Agfa Aktiengesellschaft. Camera structure for handling film cartridges. 3,270,645, 9–6–66, Cl. 95—31.

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Epperly, William R., and C. W. Tyson, Jr., to Esso Research and Engineering Co. Process for displacing agent containment. 3,271,303, 9–6–66, Cl. 208—310.

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Evans, George D., and L. L. Mitchell, to United States of America, Army. Bogie action torsion bar suspension system. 3,271,046, 9–6–66, Cl. 280—104.5.

Evans, James W. Athletic swing measurement system. 3,270,564, 9–6–66, Cl. 73—482.

Evans, Roger L., to Minnesota Mining and Mfg. Co. High molecular weight phosphonitrile fluoroesters. 3,271,330, 9–6–66, Cl. 260—2.

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Faget, Maxime A., A. J. Meyer, Jr., R. G. Chilton, W. S. Blanchard, Jr., A. B. Kehlet, J. B. Hammack, and C. C. Johnson, Jr., to United States of America, National Aeronautics and Space Administration. Space capsule. 3,270,908, 9–6–66, Cl. 220—15.

Fahrni, Peter, W. Mosimann, and O. Schnider, to Hoffmann-La Roche Inc. 5-higher alkyl-5-lower aliphatic hydrocarbon-2-thiobarbituric acids. 3,271,402, 9–6–66, Cl. 260—260.

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Prange, Charles J. 3,270,982.

Flexible Tubing Corp.: *See*—
Hall, Marcus A. 3,271,064.

Flodin, Allan T.: *See*—
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Flodin, John F., and A. T. 3,270,662.
Flodin, Frank L. 3,271,042.

Flodin, John F., and A. T., to Flodin, Inc. Crab cooking apparatus. 3,270,662, 9–6–66, Cl. 99—404.

Floessel, Dieter, and G. Mauthe, to Brown, Boveri & Cie Aktiengesellschaft. Blast valve structure for an electrical circuit breaker. 3,271,003, 9–6–66, Cl. 251—363.

Flum, Paul L. Point-of-purchase motion display. 3,270,450, 9–6–66, Cl. 40—106.41.

Fogelberg, Clement V., and P. W. Dart, to Ball Brothers Co. Method and apparatus for forming hollow plastic articles. 3,271,489, 9–6–66, Cl. 264—94.

Foll, William A., and A. M. Hancik. Flexible paper tube. 3,270,778, 9–6–66, Cl. 138—144.

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Forney, Albert J., and J. J. Demeter, to United States of America, Interior. Flame spraying of catalytically active pulverized metal oxides on supports. 3,271,326, 9–6–66, Cl. 252—466.

Fort, Marcel R. Floating dry dock. 3,270,698, 9–6–66, Cl. 114—45.

Fortescue, Peter, and D. Nicoll, to United States of America, Atomic Energy Commission. Neutronic reactor with improved release mechanism between control rod and associated drive. 3,271,264, 9–6–66, Cl. 176—36.

Foster, Charles N., R. K. McElroy, and J. J. Curry, to Continental Can Co., Inc. Press-on turn-off cap. 3,270,904, 9–6–66, Cl. 215—43.

Foster, Joseph E., Jr. Vibration die cut stripping machine. 3,270,929, 9–6–66, Cl. 225—97.

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Fox, Sherwood N., and M. B. Sherwin, to Halcon International, Inc. Distillation process for recovering anhydrous hydrogen fluoride. 3,271,273, 9–6–66, Cl. 203—12.

Frame, Alexander G., H. F. Parker, J. Stacey, and P. L. Riley, to United Kingdom Atomic Energy Authority. Nuclear reactor with improved fuel handling apparatus. 3,271,263, 9–6–66, Cl. 176—30.

Frangatos, Gerrassimos, to Mobil Oil Corp. Preparation of benzofuran, benzothiophene, and indoles. 3,271,414, 9–6–66, Cl. 260—319.1.

Frangos, John, and M. Schwarz, to Revlon, Inc. Aerosol dispensing apparatus. 3,270,919, 9–6–66, Cl. 222—82.

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Frazier, Thomas J. Propeller for boats. 3,270,820, 9–6–66, Cl. 170—135.21.

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Freche, John C., S. J. Klima, and R. L. Ashbrook, to United States of America, National Aeronautics and Space Administration. High temperature cobalt-base alloy. 3,271,140, 9–6–66, Cl. 75—170.

Freed, Joseph A. Steering wheel turn indicator. 3,270,708, 9–6–66, Cl. 116—31.

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Frisbey, George W., Jr. Fastening device. 3,271,056, 9–6–66, Cl. 287—53.

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Fugere, George L., to Westinghouse Electric Corp. Water cooler structure. 3,270,518, 9–6–66, Cl. 62—263.

Fuhrwerk, Victor C., and P. A. Luthman, to Avco Corp. Late opening, early closing gate mechanism for bunk feeder. 3,270,858, 9–6–66, Cl. 198—64.

Fujii, Kiyoshi, S. Imoto, T. Ashikaga, and J. Ukida, to Kurashiki Rayon Co., Ltd. Production of shaped products from solutions of polyvinyl formate in a lower alkyl nitrile. 3,271,494, 9–6–66, Cl. 264—184.

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Gardner, Floyd M., to United States of America, Air Force. Multivibrator with starting circuit. 3,271,697, 9–6–66, Cl. 331—113.

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Garnjost, Kenneth D., and H. A. Whitney, to Moog Inc. Fluid powered servomechanism of a redundant, monitor type. 3,270,623, 9–6–66, Cl. 91—387.

Garrett, Edd W. Door guard. 3,271,063, 9–6–66, Cl. 292—346.

Garrison, William E., Jr., to E. I. du Pont de Nemours and Co. Aqueous colloidal dispersions of polymer. 3,271,341, 9–6–66, Cl. 260—29.6.

Garstang, William W., to Globe-Union Inc. Electrical component and thermally improved electrical insulating medium therefor. 3,271,722, 9–6–66, Cl. 338—306.

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Gassmann, Johannes, and R. Ehrhardt, to Daimler-Benz Aktiengesellschaft. Rotary-piston internal combustion engine of trochoidal construction. 3,270,717, 9–6–66, Cl. 123—8.

Gassmann, Johannes, to Daimler-Benz Aktiengesellschaft. Rotary-piston internal combustion engine. 3,270,718, 9–6–66, Cl. 123—8.

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Gelernter, Herbert L., L. A. Kamentsky, and R. J. Potter, to International Business Machines Corp. Apparatus for monitoring relative contrast. 3,270,611, 9–6–66, Cl. 88—14.

Geller, Rodger E., to General Motors Corp. Steering wheel construction. 3,270,581, 9–6–66, Cl. 74—552.

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Katz, Leon, and Schmidt-Nickels. 3,271,423.
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General Gummed Products, Inc.: *See*—
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Cassel, Thomas R. 3,270,992.
Collins, George C. 3,271,606.
Collins, William T., Jr. 3,271,068.
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George, Paul R., Sr., to Golay & Co., Inc. Milking machine claw. 3,270,712, 9–6–66, Cl. 119—14.36.

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Gibson, William W., to Glenn Pacific Corp. Welding systems and associated adjustable welding reactor. 3,271,657, 9–6–66, Cl. 323—44.

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Gilbert, Vincent C. Electrical coil construction employing pressure sensitive adhesive. 3,271,717, 9–6–66, Cl. 336—192.

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Gilchrist, Ralph E., to Phillips Petroleum Co. Ignition and combustion of carbonaceous strata. 3,270,813, 9–6–66, Cl. 166—11.

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Gleasman, Vernon E. and C. H. Remote meter reading device. 3,270,559, 9–6–66, Cl. 73—272.

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Glen, Henry C., to Chemolronics Inc. Contacting fiber bonding. 3,271,220, 9–6–66, Cl. 156—180.

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Glenn, William E., Jr., to General Electric Co. Colored light projection system. 3,270,613, 9–6–66, Cl. 88—24.

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Gloucester Engineering Co., Inc.: *See*—
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Glucksman, Ernst. Air moving devices and air conditioners. 3,270,805, 9–6–66, Cl. 165—122.

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Golay & Co., Inc.: *See*—
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Gonsales, Gerardo A., to Betz Laboratories, Inc. Process of heat transfer. 3,271,296, 9–6–66, Cl. 208—48.

Good, Wayne W., to Harter Corp. Foot stool. 3,271,075, 9–6–66, Cl. 297—439.

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Gosswiller, Earl W., to Federal Sign and Signal Corp. Warning device for emergency vehicles. 3,271,735, 9–6–66, Cl. 340—50.

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Grabovac, Bosko, to Torque Controls, Inc. Predetermined torque release wrench. 3,270,594, 9–6–66, Cl. 81—52.5.

Graboves, Victor M., to E. I. du Pont de Nemours and Co. Surface treatment of organic thermoplastic film and product. 3,271,229, 9–6–66, Cl. 161—164.

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Graser, Earl J., to Olin Mathieson Chemical Corp. Wrap-around carton blank with end panel lock. 3,270,914, 9–6–66, Cl. 220—112.

Grau, Richard, to Conductron Corp. Magnetic particle control unit. 3,270,841, 9–6–66, Cl. 192—21.5.

Gray, Robert H. Reversible hand winch. 3,271,010, 9–6–66, Cl. 254—167.

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Hall, Emery L., and R. H. Kocian, to Skil Corp. Offset drive attachment for tools having rotary driving members. 3,270,596, 9–6–66, Cl. 81—54.

Hall, Harry D., D. C. Salatin, D. R. Sutherland, and C. J. Teible, to General Motors Corp. Method of die casting. 3,270,383, 9–6–66, Cl. 22—200.

Hall, Marcus A., to Flexible Tubing Corp. Method and apparatus for making indefinite length flexible conduit. 3,271,664, 9–6–66, Cl. 264—93.

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Harada, Kazuya, and T. Aoyagi, to Toyo Rayon Kabushiki Kaisha. Process of recovering waste synthetic resin material. 3,271,482, 9–6–66, Cl. 264—15.

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Koster, Roland, to Studiengesellschaft Kohle m.b.H. Process for the production of heterocyclic boron compounds. 3,271,436, 9–6–66, Cl. 260—462.

Krajewski, Edward Z., to Litton Precision Products, Inc. Microwave heating apparatus. 3,271,552, 9–6–66, Cl. 219—10.55.

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Kramer, Fritz, to United States of America, National Aeronautics and Space Administration. Device for suppressing sound and heat produced by high-velocity exhaust jets. 3,270,835, 9–6–66, Cl. 181—52.

Krämer, Rudolf, to Siemens & Halske Aktiengesellschaft. Distortion correction of teleprinter symbols. 3,271,518, 9–6–66, Cl. 178—53.1.

Krammer, Robert, to Taylor & Gaskin, Inc. Apparatus for treating structural members. 3,271,008, 9–6–66, Cl. 254—98.

Kraus, Guido: *See*—
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Krant, Herman G., to The Stanley Works. Method and apparatus for skin packaging articles and packages formed thereby. 3,270,482, 9–6–66, Cl. 53—30.

Kreinberg, Earl R., to Philco Corp. Phase detector and automatic apparatus utilizing said phase detector for preforming a rotational mechanical adjustment to effect a phase coincidence. 3,271,675, 9–6–66, Cl. 324—83.

Krellen, Harry I., to United States of America, Army. Dehumidifying breather system for mobile cargo container. 3,271,089, 9–6–66, Cl. 312—31.

Kresge, Edward N., to Esso Research and Engineering Co. Grafted terpolymers. 3,271,477, 9–6–66, Cl. 260—877.

Kreuz, John A., to E. I. du Pont de Nemours and Co. Preparation of aromatic polyiminolactones. 3,271,366, 9–6–66, Cl. 260—47.

Krewer, William A., and G. W. Ayers, to Union Oil Co. of California. Preparation of chloroalkylated benzenes and alkylsubstituted benzenes. 3,271,465, 9–6–66, Cl. 260—651.

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Kropp, Willis A., to General Time Corp. Rotary oscillatory motion from continuous rotary motion. 3,270,360, 9–6–66, Cl. 15—22.

Kruger, Michael H., to Smithcraft Corp. Light fixture assembly. 3,271,570, 9–6–66, Cl. 240—51.11.

Kubas, Joseph. Stabilized watercraft and stabilizer for minimizing pitching and wave shock of small craft. 3,270,701, 9–6–66, Cl. 114—121.

Kuhn, Hans H., E. D. Bolinger, and E. E. Habib, to Deering Milliken Research Corp. Composition comprising a salt of a styrene-maleic acid copolymer and a polyurethane. 3,271,342, 9–6–66, Cl. 260—29.6.

Kuhner, Max H., to Riley Stoker Corp. Steam generating unit. 3,270,716, 9–6–66, Cl. 122—459.

Kuipers, Heinrich. Vehicle parking system. 3,270,898, 9–6–66, Cl. 214—16.1.

Kujawa, Francis M., A. F. Shepard, and B. F. Dannels, to Hooker Chemical Corp. 2,6-disubstituted primary aryl phosphites and phosphorodi-halidites and processes for the manufacture thereof. 3,271,481, 9–6–66, Cl. 260—980.

Kurachi, Hisaharu. Means for coupling a hose to a pipe. 3,271,053, 9–6–66, Cl. 285—8.

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Kydd, Paul H., and G. J. Mullaney, to General Electric Co. Composite heat exchanger tube structure. 3,270,780, 9–6–66, Cl. 138—148.

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Lachance, Armand A. Automatic grocery cart. 3,270,837, 9–6–66, Cl. 186—1.

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Larky, Norbert D., to United States of America, Air Force. Radar tracking system. 3,271,768, 9–6–66, Cl. 343—17.1.

La Rocca, Aldo V., to General Electric Co. Controllable vaporizing gas accelerator. 3,270,498, 9–6–66, Cl. 60—35.5.

Latham, Albert W., and B. Slotnick, to Westinghouse Electric Corp. Supporting means for bearing pads in a thrust bearing assembly. 3,271,088, 9–6–66, Cl. 308—160.

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Lavin, Edward, and G. E. Mont, to Monsanto Co. Laminated safety glass. 3,271,234, 9–6–66, Cl. 161—199.

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Leadbeater, Howard W., to Universal American Corp. Motion control sheave. 3,270,578, 9–6–66, Cl. 74—230.17.

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Lieber, Sidney U., and J. Leiner, to Unit Process Assemblies, Inc. Direct reading beta ray comparator. 3,271,572, 9–6–66, Cl. 250—83.3.

Liebmann, Jack S., R. Memole, and H. Barkowitz. Decorative cover for women's shoes. 3,270,442, 9–6–66, Cl. 36—2.5.

Liedl, Jerome J., and D. L. Snyder, to Minnesota Mining & Mfg. Co. Stacking device. 3,271,027, 9–6–66, Cl. 271—78.

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Lowes, Fred J., Jr., to The Dow Chemical Co. Flame-resistant acrylonitrile polymer compositions containing polyepihalohydrins and antimony oxide. 3,271,344, 9–6–66, Cl. 260—29.6.

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Mahony, Harold A. Process of preparing lime and a system including means for providing a hot gas for use in the process. 3,271,015, 9–6–66, Cl. 263—1.

Maichen, Karl. Device for applying cleaning and treating materials. 3,270,366, 9–6–66, Cl. 15—559.

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Majeske, John. Corn tenderizer. 3,270,789, 9–6–66, Cl. 146—203.

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Baltes, Josef, Weghorst, and Makus. 3,271,432.

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Marsh, John A., and G. W. Armfield, to Marsh-Armfield. Method of manufacturing cushions. 3,270,394, 9–6–66, Cl. 29—91.1.

Martens, Gunter, to Kiensle Apparate G.m.b.H. Adding system for binary coded excess three numbers. 3,271,566, 9–6–66, Cl. 235—174.

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Martin, Horst-Edgar, and K. Spinler, to Siemens & Halske Aktiengesellschaft. Coaxial high-frequency cable with internal spacers. 3,271,506, 9–6–66, Cl. 174—28.

Martin, James. Ejection seats. 3,270,991, 9–6–66, Cl. 244—122.

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Marsan, Peter R., to Litton Systems, Inc. Facsimile recording system having automatic contrast range control. 3,271,-513, 9–6–66, Cl. 178—6.6.

Marsan, Peter R., and J. R. Shonnard, to Litton Systems, Inc. Balanced modulator having the anode of a multiplier phototube directly connected to the cathode of the modulator tube. 3,271,699, 9–6–66, Cl. 332—3.

Mason, Paul B., L. Rubinstein, and A. J. Sable, to Polaroid Corp. Photographic apparatus support. 3,270,652, 9–6–66, Cl. 95—86.

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McBride, Clarence E., to Eastman Kodak Co. Light-developable direct-print silver halide emulsions. 3,271,157, 9–6–66, Cl. 96—107.

McCabe, Leo J., to Continental Oil Co. Use of hindered esters of carboxylic acids as radiation resistant lubricants. 3,271,-315, 9–6–66, Cl. 252—56.

McCaffrey, Francis H. G.: *See*—
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McCracken, Robert J., to United States of America, Atomic Energy Commission. Hydraulically actuated load carrying apparatus. 3,270,828, 9–6–66, Cl. 180—8.

McDermott, Hugh L., to Char-Lynn Co. Porting arrangement for balancing valve of fluid pressure device. 3,270,683, 9–6–66, Cl. 103—130.

McDougal, John A., to General Motors Corp. Arrangement for connecting electrical controls to printed circuits. 3,271,-627, 9–6–66, Cl. 317—112.

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McEvoy, James E., and H. Shalit, to Air Products and Chemical, Inc. Preparation of supported palladium catalysts. 3,271,327, 9–6–66, Cl. 252—472.

McFadden, Harold E., to Leeds and Northrup Co. Multi-point rotary switch with improved detent arrangement. 3,271,-534, 9–6–66, Cl. 200—11.

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McNeely, Lowell A., to Carrier Corp. Solution heat exchange arrangement in absorption refrigeration system. 3,270,524, 9–6–66, Cl. 62—495.

McNeely, Lowell A., to Carrier Corp. Absorption refrigeration. 3,270,516, 9–6–66, Cl. 62—101.

McNeely, Lowell A., to Carrier Corp. Absorption refrigeration. 3,270,522, 9–6–66, Cl. 62—476.

McNeely, Lowell A., to Carrier Corp. Solution heat exchanger arrangement for absorption refrigeration system. 3,270,523, 9–6–66, Cl. 62—495.

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Block, Aleck, and Purcell. 3,270,468.

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Meyer, Donald K.: *See*—
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Meyer, William K., and J. J. Taber, to Gulf Research & Development Co. Miscible displacement process for petroleum reservoirs containing brine and oil. 3,270,811, 9–6–66, Cl. 166—9.

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Miller, Milford A. Vehicle track sanding device. 3,271,061, 9–6–66, Cl. 291—14.

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North American Philips Co. Inc.: *See*—
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Northern Electric Co. Ltd.: *See*—
Overtveld, Gilles J. 3,271,595.

Norton Co.: *See*—
Whittemore, Osgood J., Jr. 3,271,323.

Norton, Joseph J., Jr. Electrician's flexible clean-out tool. 3,270,362, 9–6–66, Cl. 15—104.3.

Nisbet, Walker R., to A. R. Nisbet & Sons, Inc. Cotton scrapper. 3,270,490, 9–6–66, Cl. 56—28.

Noderer, Lawrence C., to United States of America, Atomic Energy Commission. Liquid metal fast breeder reactor. 3,271,260, 9–6–66, Cl. 176—18.

Nozaki, Kenzie, to Shell Oil Co. Melamine production. 3,271,395, 9–6–66, Cl. 260—249.7.

Nylander, Alfred F., to International Minerals & Chemical Corp. Production of potassium sulfate and potassium chloride. 3,271,106, 9–6–66, Cl. 23—121.

O.K. Tool Co., Inc., The: *See*—
Williams, Thurston V. 3,270,896.

Oakes, David T.: *See*—
Capriati, Enrico G., and Oakes. 3,271,306.

Obadal, Richard D., and J. G. Johnson, to Deere & Co. Closure mounting. 3,270,462, 9–6–66, Cl. 49—257.

Oberst, Hermann: *See*—
Albert, Walter, Bohn, Ebigt, Pfister, and Oberst. 3,271,188.

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Bakker, Roel, and Obert. 3,271,729.

Obst, Charles J., to J. J. Vastano. Aerosol valve and method of manufacture of same. 3,270,925, 9–6–66, Cl. 222—394.

O'Connell, James P. Loose leaf binder and backing construction for notebooks. 3,270,749, 9–6–66, Cl. 129—24.

Oesterreicher, Ignaz. Holder for a stick for a guillotine-type paper-cutter machine. 3,270,607, 9–6–66, Cl. 83—658.

Offenharts, Gilbert L.: *See*—
Tchimenoglov, Alexander S., Iocca, and Offenharts. 3,270,487.

Ogle, Frank T., and D. E. Berger, to Phillips Petroleum Co. Method of controlling a thermal conversion process. 3,271,472, 9–6–66, Cl. 260—683.

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Ohlson, George: *See*—
Elgenstierna, Reinhold M., and Ohlson. 3,271,497.

Ohmura, Jukichi: *See*—
Wakasa, Ryoichi, Shibata, Ohmura, and Suzuki. 3,271,346.

Ohntrup, Frederick F., to Burroughs Corp. Method of fabricating semi-conductor devices. 3,270,399, 9–6–66, Cl. 29—155.5.

Ohtake, Tadashi, T. Muta, T. Zaizen, and T. Nishi, to Yawata Iron & Steel Co., Ltd. Atmospheric corrosion resistant notch ductile high tensile strength steel. 3,271,138, 9–6–66, Cl. 75—125.

Oikawa, Hideo, to Yokohama Seito Kabushiki Kaisha and Takara Kabushiki Kaisha. Solidification of saccharide solutions. 3,271,194, 9–6–66, Cl. 127—60.

Okada, Robert H., to Burroughs Corp. Complementing flip-flop. 3,271,583, 9–6–66, Cl. 307—88.5.

Okun, Nathaniel N., to The Cello Chemical Co. Baseboard scrubbing machine. 3,270,361, 9–6–66, Cl. 15—98.

Olin Mathieson Chemical Corp.: *See*—
Graser, Earl J. 3,270,914.
Kaiser, Donald W., and Zane. 3,271,411.

Olivetti, Ing. C. & C., S.p.A.: *See*—
Perotto, Pier G. 3,270,882.

Olsson, Bror S. Devices for performing rotational movements. 3,270,575, 9–6–66, Cl. 74—142.

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Organon Inc.: *See*—
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O'Rourke, John F., Jr.: *See*—
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Osbrink, R. H.: *See*—
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Oshima, Masaomi, to Oshima Musen Co., Ltd. Constant torque adjustment for variable impedance devices. 3,271,713, 9–6–66, Cl. 336—83.

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Oshima, Masaomi. 3,271,713.

Ord, Thomas E. Transporting and dumping device. 3,270,901, 9–6–66, Cl. 214—314.

Orwin, Olaf J. B., to Fishere & Ludlow Ltd. Overload clutch or torque limiting device. 3,270,844, 9–6–66, Cl. 192—56.

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Oster, Thomas H., to The Ford Motor Co. Induction motor. 3,271,647, 9–6–66, Cl. 318—234.

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Otrhalek, Joseph V., and P. E. Luoma, to Wyandotte Chemical Corp. Silicated sodium hydroxide. 3,271,317, 9–6–66, Cl. 252—135.

Ott, Howard F., and J. J. Heffer, to Eastman Kodak Co. Method of making pre-popped film transparency slides. 3,271,218, 9–6–66, Cl. 156—108.

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Ovshinsky, Stanford R., to Energy Conversion Devices, Inc. Resistance switches and the like. 3,271,584, 9–6–66, Cl. 307—88.5.

Ovshinsky, Stanford R., to Energy Conversion Devices, Inc. Symmetrical current controlling device. 3,271,591, 9–6–66, Cl. 307—88.5.

Ovshinsky, Stanford R., to Energy Conversion Devices, Inc. Resistance switches and the like. 3,271,719, 9–6–66, Cl. 338—28.

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Canfield, Sheldon A. 3,271,485.

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Pacific Flush Tank Co.: *See*—
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Pacific Preserving Co.: *See*—
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Pacific Vegetable Oil Corp.: *See*—
Kopas, George A., and Kneeland. 3,271,160.

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Diouhy, John A., and Springer. 3,271,070.

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Pansing, Nelson J., to General Motors Corp. Dry cleaning apparatus. 3,270,761, 9–6–66, Cl. 137—88.

Pantalone, Vincent R., to Federal Paper Board Co., Inc. Curved front panel display carton. 3,270,868, 9–6–66, Cl. 206—45.19.

Paone, Anthony N.: *See*—
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Papaila, John, to Gulf Research & Development Co. Method and apparatus for installing a permeable well liner. 3,270,817, 9–6–66, Cl. 166—46.

Parham, Fred M., to E. I. du Pont de Nemours and Co. Polyesters of decahydronaphthalenedicarboxylic acid and dihydric phenols. 3,271,365, 9–6–66, Cl. 260—47.

Parisi, John A.: *See*—
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Parker, Frederick R., ½ to J. E. Johnson. Toy device for launching and intercepting rotary wing flying targets. 3,271,033, 9–6–66, Cl. 273—101.

Parker, Horace F.: *See*—
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Pasquali, Jean, Y. Prauthois, and M. Dordain. Piston machine. 3,270,684, 9–6–66, Cl. 103—149.

Patel, Chim, and R. E. Pyle, to Union Starch & Refining Co., Inc. High viscosity starch derivatives. 3,271,387, 9–6–66, Cl. 260—233.5.

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Patterson, Donald M.: *See*—
Cochran, Donald J., and Patterson. 3,271,526.

Patton, Edward L., and R. D. Lundahl, to Shell Oil Co. Process for treating fibrous materials and resulting products. 3,271,101, 9–6–66, Cl. 8—120.

Paull, Morris, to Atron Corp. Sound system for picture slides. 3,270,614, 9–6–66, Cl. 88—28.

Paulus, Howard L. Combination dehumidifying, refrigeration cooling and heating unit. 3,270,804, 9–6–66, Cl. 165—48.

Pawelka, Gustav J., and F. H. Kroll. Coded switch construction. 3,271,529, 9–6–66, Cl. 200—5.

Paxton, Floyd G. Multi-closure label-bearing strip. 3,270,872, 9–6–66, Cl. 206—56.

Paxton, Floyd G. Bag closures and individually attached labels united in strip form. 3,270,873, 9–6–66, Cl. 206—56.

Payne, William J., to Ford Motor Co. Vehicle trailer brake actuating mechanism. 3,271,085, 9–6–66, Cl. 303—18.

Pearson, Arthur S., to United-Carr, Inc. Clip for fastening together two apertured panels. 3,271,059, 9–6–66, Cl. 287—189.36.

Peer, Hendricus G., to Nederlandse Organisatie Voor Toegepast-Natuurweten Schappelijk Onderzoek ten Behoeve van Nijverheid Handel en Verkeer. Process for the preparation of 2-bromo 3-halo propene-1. 3,271,466, 9–6–66, Cl. 260—654.

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Penman, Stanley J., to L. W. Penman Engineering Ltd. Pumps. 3,270,676, 9–6–66, Cl. 103—87.

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Percival, Douglas F., E. E. Johnson, and R. T. Adams, to Chevron Research Co. Salts of c. 10 to c. 20 1,2-sulfonic acids and method for their preparation. 3,271,444, 9-6-66, Cl. 260—513.

Perkins, Glenn H., to Oxford Paper Co. Planographic printing plates and method of making same. 3,270,667, 9-6-66, Cl. 101—149.2.

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Perren, Archie L., E. F. Mokersky, and M. J. Shepard, to Rockwell-Standard Corp. Wire uncoiling apparatus. 3,270,981, 9-6-66, Cl. 242—128.

Perronnet, Jacques: *See*—
Bertin, Daniel, and Perronnet. 3,271,391.

Peter, Helmut, and G. Schrenk, deceased (by M.-L. geb A. Schrenk, executor, H., M., M., F., and R. Schrenk, heirs). Meter movement with scale range indicators actuated by photoresponsive switching circuits. 3,271,677, 9-6-66, Cl. 324—96.

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Petersen, Harold E., and M. Teig, to International Business Machines Corp. Handling of multiple matches and fencing in memories. 3,271,744, 9-6-66, Cl. 340—172.5.

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Anwyl, Robert D., and Peterson. 3,270,638.

Peterson, Harry L. Fluid pressure system and control means thereof. 3,270,673, 9-6-66, Cl. 103—24.

Petlak, Joseph J. Snow melter. 3,270,741, 9-6-66, Cl. 126—343.5.

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Dickson, Woodrow J., and Jenkins. 3,271,307.

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Petrow, Vladimir, C. M. Burgess, and P. Feather, to British Drug Houses, Ltd. 3-desoxy-17 α-chloroethynyl estrogenic steroids and process for making same. 3,271,427, 9-6-66, Cl. 260—397.5.

Petro-Tex Chemical Corp.: *See*—
Brill, William F., and Besozzi. 3,271,459.
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Pfann, William G., to Bell Telephone Laboratories, Inc. Diffused layer transducers. 3,270,554, 9-6-66, Cl. 73—88.5.

Pfendler, Donald L., to The Bendix Corp. Electrical connector. 3,271,726, 9-6-66, Cl. 339—49.

Pfister, Horst: *See*—
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Johnston, Henry E. 3,271,035.
Kreimberg, Earl R. 3,271,675.
Stouffer, Donald C. 3,270,870.

Philips, Henri J., to Acec Ateliers de Constructions Electriques de Charleroi. Tap changing autotransformer. 3,271,659, 9-6-66, Cl. 323—47.

Philips, Michael R., to Temple, Jonathan & Co., Inc. Spool for threads, yarns and the like. 3,270,980, 9-6-66, Cl. 242—118.7.

Phillips, Edwin R., to Sperry Rand Corp. Fluid device. 3,270,759, 9-6-66, Cl. 137—81.5.

Phillips, Edwin R., to Sperry Rand Corp. Fluid sensor. 3,270,960, 9-6-66, Cl. 235—201.

Phillips, James A., Inc.: *See*—
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Gilchrist, Ralph E. 3,270,813.
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Phillipson, Alan, B. H. R. Spiller, and R. Smith, to Decca Ltd. Method and apparatus for discharging static during manufacture of record disks. 3,271,483, 9-6-66, Cl. 264—22.

Philofsky, Harold M., to Westinghouse Electric Corp. Dynamoelectric machine. 3,271,600, 9-6-66, Cl. 310—55.

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Deziel, Fred T., and Pinckaers. 3,270,800.

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Pittman, Forrest C.: *See*—
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Pickens, Donald, to Allied Chemical Corp. Production of unsymmetrical dialkylhydrazines. 3,271,454, 9-6-66, Cl. 260—583.

Pinckaers, Balthasar H., to Honeywell Inc. Burner control apparatus. 3,270,799, 9-6-66, Cl. 158—128.

Pinto, Ross E., to Roman Industries. Cam operated clutches for lawn mower. 3,270,842, 9-6-66, Cl. 192—48.

Planet Instrument, Inc.: *See*—
Young, James R., and Mills. 3,270,959.

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Plastronics, Inc.: *See*—
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Plurien, Pierre, M. Quenault, and R. Rigot, to Commissariat a l' Energie Atomique. Methods of making thin reinforced tubular diaphragms and in diaphragms made according to these methods. 3,270,414, 9-6-66, Cl. 29—527.

Pochopien, Tassie P. Necktie supporting rack. 3,270,889, 9-6-66, Cl. 211—13.

Pohl, Ernest E., Jr., to General Motors Corp. Ice maker with door mounted drive means. 3,270,519, 9-6-66, Cl. 62—353.

Polakowski, Natalis H., to The McKay Machine Co. Machine for flattening and curling of metal strip. 3,270,543, 9-6-66, Cl. 72—162.

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Chen, Richard J., and Gold. 3,271,187.
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Mason, Paul B., Rubinstein, and Sable. 3,270,652.

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Swatek, Edward J., Jr., and Polcyn. 3,270,729.

Polenghi, Roberto. Packing case especially for transporting heavy goods. 3,270,943, 9-6-66, Cl. 229—23.

Polensky, Gerhard, to Siemens & Halske Aktiengesellschaft. Circuit arrangement for determining the call numbers of party line subscribers. 3,271,522, 9-6-66, Cl. 179—17.1.

Poletika, Nicholas V., and R. E. Black, to Union Lumber Co. Method and apparatus for the continuous application of coatings to strip materials. 3,271,184, 9-6-66, Cl. 117—65.2.

Polhamus, Edward C. and A. D. Hammond, to United States of America, National Aeronautics and Space Administration. Variable sweep aircraft. 3,270,989, 9-6-66, Cl. 244—46.

Pollock, Lyle W., to Phillips Petroleum Co. Polymer stabilization. 3,271,185, 9-6-66, Cl. 117—100.

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Pommer, Horst: *See*—
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Poor, John G., to Allied Chemical Corp. Electrodeposition of copper from chromium-containing solution. 3,271,279, 9-6-66, Cl. 204—108.

Pope, Jack R., to Westinghouse Electric Corp. Load shedding apparatus. 3,271,580, 9-6-66, Cl. 307—29.

Post, Wolfgang, to Swiss Aluminium Ltd. Apparatus for annealing and electrolytically treating metallic strip. 3,271,287, 9-6-66, Cl. 204—210.

Postless Steering by Dual Wheels Co., Inc.: *See*—
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Potter, Robert J.: *See*—
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Pottier, Jacques G. Equipment, more particularly for treating plantlets by cold shocks. 3,270,459, 9-6-66, Cl. 47—1.

Poundstone, William N., to Consolidation Coal Co. Idler rollers and method of making the same. 3,270,577, 9-6-66, Cl. 74—230.4.

Powerlock Floors, Inc.: *See*—
Omholt, Ray E. 3,271,916.

Powers, William H., and C. K. Russell, to United States Steel Corp. Dolomite brick and method of making it. 3,271,172, 9-6-66, Cl. 106—61.

Prange, Charles J., to Flexible Servertool Corp. Cable winding apparatus for cable drums of sewer cleaning machines. 3,270,982. 9-6-66, Cl. 242—158.3.

Prauthois, Yvon: *See*—
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Prescon Corp., The: *See*—
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Lavin, Edward, Mont, and Price. 3,271,235.

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Achon, Marco A., and Price. 3,271,376.

Price, Kenneth E., and H. Schmitz, to Bristol-Myers Co. Antibiotic ossamycin and method of preparing same. 3,271,253, 9-6-66, Cl. 167—65.

Priddy, Jack N., to General Motors Corp. Electrical conductor connecting device. 3,271,604, 9-6-66, Cl. 310—234.

Priest, Reid G., to Hyster Co. Trailer sled with retractable wheel assembly. 3,271,043, 9-6-66, Cl. 280—43.23.

Prime Mfg. Co.: *See*—
Hubbard, John R. 3,270,356.

Prior, Arthur C., to National Research Development Corp. Superconductive circuit arrangements. 3,271,628, 9-6-66, Cl. 317—123.

Pritchard, Colin, to Westinghouse Electric Corp. Formation of P-N junctions in silicon. 3,271,210, 9-6-66, Cl. 148—187.

Pritchard, Colin, and S. A. Zeitman, to Westinghouse Electric Corp. Processing semiconductive material. 3,271,211, 9-6-66, Cl. 148—187.

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Burt, Robert V. 3,270,870.
Burt, Robert V. 3,270,875.
Burt, Robert V. 3,271,357.
Cope, Paul E., and Specter. 3,270,942.

Proebster, Walter E., to International Business Machines Corp. Magnetic thin film transducer. 3,271,751, 9-6-66, Cl. 340—174.1.

Pugh, Kells L., Jr. Pitless well adapter assembly. 3,270,818, 9-6-66, Cl. 166—85.

Pulford, Samuel R., to International Business Machines Corp. Data compression processing system. 3,271,765, 9-6-66, Cl. 343—12.

Purcell, Joseph W., Jr.: *See*—
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Block, Aleck, and Purcell. 3,270,468.

Pushkin, Rosalie. Package. 3,270,871, 9-6-66, Cl. 206—46.

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Ingham, Robert M., Jr., Klein, and Putnam. 3,270,397.

Pyle, Ronald E.: *See*—
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Quenault, Maurice: *See*—
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Quimby, George R., and O. Goldschmid, to Rayonier Inc. Recovery of lignosulfonates from spent sulfite liquors. 3,271,382, 9-6-66, Cl. 260—124.

Quinn, James M.: *See*—
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Quittner, George F., to A P I Instruments Co. Flaw detecting apparatus having multiple pick-up and exciting coils on the same side of the test piece. 3,271,662, 9-6-66, Cl. 324—37.

R. L. Molecular Research Ltd.: *See*—
Rapp, Rintje, Lemieux, and Micetich. 3,271,407.

Raap, Rintje, R. U. Lemieux, and R. G. Micetich, to R. L. Molecular Research Ltd. Certain isothiazolylacetic acid compounds. 3,271,407, 9-6-66, Cl. 260—302.

Rabinow, Jacob, to Control Data Corp. Image registration system using an image converter tube. 3,271,740, 9-6-66, Cl. 340—146.3.

Rabinowitz, Jacob G., and V. Yager, to Clairex Corp. Photoelectric target practice pistol. 3,271,032, 9-6-66, Cl. 273—101.1.

Racy, Joseph E., to Sanders Associates, Inc. Radio frequency amplitude modulator alternately passing energy to one of two loads. 3,271,701, 9-6-66, Cl. 332—42.

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Rhinegold, Floyd P. Waste receptacle. 3,270,938, 9-6-66, Cl. 229—7.

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Whitaker, William C., and Thomas. 3,270,945.

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Rom, Frank E., to United States of America, National Aeronautics and Space Administration. Gaseous vortex reactor for a rocket motor. 3,270,496, 9–6–66, Cl. 60—35.5.

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Schmidt, Alfred, to Form-Gesellschaft fur Formgebung m.b.H. Portable container of synthetic material adapted to be stacked. 3,270,922, 9–6–66, Cl. 222—143.

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Scott, John M., to Westinghouse Electric Corp. Electron discharge device envelope structures providing a radial force upon support rods. 3,271,614, 9–6–66, Cl. 315—3.5.

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Selsted, Walter T., and W. I. Girdner, to Hewlett-Packard Co. Tape guide for tape recording and reproducing apparatus. 3,270,936, 9–6–66, Cl. 226—196.

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Smith, Irving. Tiled wall and floor surface covering and method and means for applying same. 3,270,473, 9–6–66, Cl. 52—390.
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Sosin, Boleslaw M., to The Marconi's Co. Ltd. Plural hybrid load coupling arrangement for plural transmitters with outputs in phase quadrature. 3,271,683, 9–6–66, Cl. 325—130.
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ISSUED SEPTEMBER 6, 1966

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4– 41	3,270,351	33– 75	3,270,420	60– 52	3,270,508	75– 60	3,271,129	96– 66	3,271,154	117–132	3,271,188
192	3,270,352	137	3,270,421	54	3,270,509		3,271,130	75	3,271,155	138.8	3,271,189
5– 81	3,270,353	165	3,270,422	61– 45	3,270,510	63	3,271,131	84	3,271,156		3,271,190
260	3,270,354	174	3,270,423	46.5	RE.26,073	68	3,271,132	107	3,271,157	169	3,271,191
8– 54	3,271,100		3,270,424	53.52	3,270,511	84.1	3,271,133	114	3,271,158	217	3,271,192
120	3,271,101	179.5	3,270,425	62– 2	3,270,512	87	3,271,134	98– 36	3,270,655	227	3,271,193
151	3,271,102	180	3,270,426	3	3,270,513	106	3,271,135	43	3,270,656	118– 56	3,270,710
10– 86	3,270,355	199	3,270,427	29	3,270,514	118	3,271,136	110	3,270,657	627	3,270,711
12– 20	3,270,356	34– 4	3,270,428	93	3,270,515	123	3,271,137	99– 2	3,271,159	119– 14.36	3,270,712
142	3,270,357	6	3,270,429	101	3,270,516	125	3,271,138		3,271,160	17	3,270,713
	3,270,358	48	3,270,431	115	3,270,517	130.5	3,271,139	4	3,271,161	95	3,270,714
	3,270,359	92	3,270,432	263	3,270,518	170	3,271,140	50.5	3,271,162	120– 41	3,270,715
15– 22	3,270,360		3,270,433	353	3,270,519	206	3,271,141	60	3,271,163	122–459	3,270,716
98	3,270,361		3,270,434	395	3,270,520		3,271,142	90	3,271,164	123– 8	3,270,717
104.3	3,270,362	117	3,270,435	469	3,270,521	77– 6	3,270,590	118	3,271,165		3,270,718
237	3,270,363	131	3,270,436	476	3,270,522	64	3,270,591		3,271,166		3,270,719
306	3,270,364	168	3,270,437	495	3,270,523	73	3,270,592	140	3,271,167		3,270,720
325	3,270,365	35– 5	3,270,438		3,270,524	81– 52.3	3,270,593	176	3,271,168	32	3,270,721
559	3,270,366	11	3,270,439	63– 1	3,270,525	52.5	3,270,594	221	3,271,169		3,270,722
16– 19	3,270,367	12	3,270,440	65– 3	3,271,122	54	3,270,595	295	3,270,658	43	3,270,723
17– 7	3,270,368	29	3,270,441	54	3,271,124		3,270,596		3,270,659	59	3,270,724
23	3,270,369	35	3,270,430	80	3,271,123	177.9	3,270,597	340	3,270,660	90	3,270,725
18– 12	3,270,370	36– 2.5	3,270,442	145	3,271,125	82– 36	3,270,598	343	3,270,661		3,270,726
14	3,270,371	37– 8	3,270,443	160	3,271,126	83– 63	3,270,599	404	3,270,662		3,270,727
30	3,270,372	38– 49	3,270,444	207	3,271,127	94	3,270,600	100– 97	RE.26,077	102	3,270,728
36	3,270,373	40– 36	3,270,445	66–141	3,270,527	102	3,270,601	117	3,270,663	103	3,270,729
19– .25	3,270,374		3,270,446	172	3,270,526		3,270,602	162	3,270,664	119	3,270,730
21– 92	3,271,103	52	3,270,447	67– 7.1	3,270,528	127	3,270,603	282	3,270,665	148	3,270,731
22– 45	3,270,375	78	3,270,448	68– 18	3,270,529	140	3,270,604	101–128.2	3,270,666	179	3,270,732
57.2	3,270,376	102	3,270,449		3,270,530	522	3,270,605	149.2	3,270,667	188	3,270,733
68	3,270,377	106.41	3,270,450		3,270,531	579	3,270,606	102– 20	3,270,668	124– 20	3,270,734
70	3,270,378	130	3,270,451	45	3,270,532	658	3,270,607	42	3,270,669	26	3,270,735
94	3,270,379	140	3,270,452	244	3,270,533	84–237	3,270,608	79	3,270,670	126– 19	3,270,736
110	3,270,380	305	3,270,453	70– 25	3,270,534	370	3,270,609	95	3,270,671	25	3,270,737
196	3,270,382	308	3,270,454	68	3,270,535	85– 32	3,270,610	103– 1	3,270,672	110	3,270,738
200	3,270,381	42– 1	3,270,455	89	3,270,536	88– 14	3,270,611	24	3,270,673	271	3,270,739
	3,270,383	16	3,270,456	313	3,270,537		3,270,612	38	3,270,674	275	3,270,740
23– 19	3,271,104	43– 15	3,270,457	363	3,270,538	24	3,270,613	42	3,270,675	343.5	3,270,741
87	3,271,105	42.74	3,270,458	414	3,270,539	28	3,270,614	87	3,270,676	127– 60	3,271,194
121	3,271,106	44– 7	3,271,120	72– 31	3,270,540	57	3,270,615	89	3,270,677	128–171	3,270,742
182	3,271,107	62	3,271,121	132	3,270,541		3,270,616	113	3,270,678	215	3,270,743
204	3,271,108	47– 1	3,270,459	160	3,270,542	89– 33	3,270,617	126	3,270,679	303.1	3,270,744
208	3,271,109	2	3,270,460	162	3,270,543	43	3,270,618		3,270,680	325	3,270,745
213	3,271,110		3,270,461	346	3,270,544	90– 13.5	3,270,619	130	3,270,681	404	3,270,746
230	3,271,111	49–257	3,270,462	391	3,270,545	15	3,270,620		3,270,682	528	3,270,747
253	3,271,112	51– 8	3,270,463	419	3,270,546	91– 44	3,270,621		3,270,683		3,270,748
255	3,271,113	15	3,270,464	73– 1	3,270,547	186	3,270,622	148	3,270,684	129– 24	3,270,749
273	3,271,114	98	3,270,465		3,270,548	387	3,270,623	161	3,270,685	131– 10	3,270,750
	3,271,115	289	3,270,466	3	3,270,549	418	3,270,624	162	3,270,686	198	3,270,751
284	3,271,116	358	3,270,467	11	3,270,550	426	3,270,625	178	3,270,687	240	3,270,752
287	3,271,117		3,270,468	38	3,270,551	92–113	3,270,626	255	3,270,688	132– 9	3,270,753
301	3,271,118	52– 2	3,270,469	41.2	3,270,552	93– 1	3,270,627	263	3,270,689	134–110	3,270,754
24– 73	3,270,384	82	3,270,470	56	3,270,553	52	3,270,628	104– 7	3,270,690	135– 1	3,270,755
216	3,270,385	223	3,270,471	88.5	3,270,554	61	3,270,629	105–199	3,270,691	136– 67	3,271,195
217	3,270,386	348	3,270,472		3,270,555	93	3,270,630	106– 36	3,271,170	86	3,271,196
230	3,270,387	390	3,270,473	95	3,270,556	94– 23	3,270,631	39	3,271,171		3,271,197
	3,270,388	395	3,270,474	168	3,270,557		3,270,632	61	3,271,172	89	3,271,198
263	3,270,389	480	3,270,475	172	3,270,558	44	3,270,633	65	3,271,173	157	3,271,199
25– 41	3,270,390	516	3,270,476	272	3,270,559	45	3,270,634	125	3,271,174	137– 13	3,270,756
29– 25.15	3,270,391	627	3,270,477	344	3,270,560	49	3,270,635		3,271,175	64	3,270,757
33	3,270,392	648	3,270,478	388	3,270,561	51	3,270,636	193	3,271,176	81.5	3,270,758
91.1	3,270,393	667	3,270,479	398	3,270,562	95– 1	3,270,637	272	3,271,177		3,270,759
	3,270,394	726	3,270,480	432	3,270,563	10	3,270,638	107– 68	3,270,692		3,270,760
95.1	3,270,395	53– 14	3,270,481		3,270,564		3,270,639	108– 16	3,270,693	88	3,270,761
105	3,270,396	30	3,270,482	497	3,270,565		3,270,640	26	3,270,694	98	3,270,762
121	3,270,397	43	3,270,483	74– 5.12	3,270,568	11	3,270,641	112–240	3,270,695	108	3,270,763
148.4	3,270,398	124	3,270,484	5.6	3,270,566	13	3,270,642	262	3,270,696	116.3	3,270,764
155.5	3,270,399	255	3,270,485		3,270,567		3,270,643	113–116	3,270,697	155	3,270,765
	3,270,400	282	3,270,486	10.2	3,270,569		3,270,644	114– 45	3,270,698	246.22	3,270,766
155.57	3,270,401	393	3,270,487	10.41	3,270,571	31	3,270,645	66.5	3,270,699	268	3,270,767
159.01	3,270,402	54– 39	3,270,488	10.5	3,270,570	36	3,270,646	74	3,270,700	327	3,270,768
159.03	3,270,403	56– 21	3,270,489	89.22	3,270,572	44	3,270,647	121	3,270,701	375	3,270,769
160	3,270,404	28	3,270,490	97	3,270,573	45	3,270,648	125	3,270,702	434	3,270,770
191	3,271,119	57– 77.45	3,270,491	98	3,270,574	63	3,270,649		3,270,703	525.3	3,270,771
208	3,270,405	157	3,270,492	142	3,270,575	64	3,270,650	208	3,270,704	553	3,270,772
237	3,270,406	58–152	3,270,493	191	3,270,576	75	3,270,651	218	3,270,705	561	3,270,773
259	3,270,407	59– 86	3,270,494	230.17	3,270,578	86	3,270,652	115– 35	3,270,706	596.18	3,270,774
408	3,270,408	60– 13	3,270,495	230.4	3,270,577	89	3,270,653	70	3,270,707	609	3,270,775
420.5	3,270,409	35.4	3,270,497	325	3,270,579		3,270,654	116– 31	3,270,708	625.64	3,270,776
446	3,270,410	35.5	3,270,496	475	3,270,580	96– 1	3,271,144	135	3,270,709	138–118	3,270,777
471.1	3,270,411		3,270,498	552	3,270,581		3,271,145	117– 7	3,271,178	144	3,270,778
472.3	3,270,412	35.55	3,270,505	568	3,270,582	1.4	3,271,146	33.3	3,271,179	148	3,270,780
527	3,270,413	35.6	3,270,499	607	3,270,583	1.7	3,271,143	38	3,271,180	139–138	3,270,779
	3,270,414		3,270,500	677	3,270,584	29	3,271,147	46	3,271,181	140– 71.5	3,270,781
558	3,270,415		3,270,501		3,270,585		3,271,148	47	3,271,182	123	3,270,782
30– 9	RE.26,074		3,270,502		3,270,586	35	3,271,149		3,271,183	141– 1	3,270,783
32– 22	3,270,416		3,270,503	732	3,270,587	36.3	3,271,150	65.2	3,271,184	2	3,270,784
26	3,270,417		3,270,504	750	3,270,588		3,271,151	100	3,271,185	143– 43	3,270,785
33– 56	3,270,418	39.72	3,270,506		3,270,589	56.5	3,271,152		3,271,186	151	3,270,786
73	3,270,419	51	3,270,507	75– 60	3,271,128	61	3,271,153	102	3,271,187	144– 34	3,270,787

146– 52	3,270,788	174–146	3,271,510	204– 72	3,271,278	222–394	3,270,925	252– 39	3,271,311	260–289	3,271,403
203	3,270,789	175– 85	3,270,823	108	3,271,279	223– 70	3,270,926	46.7	3,271,312	294.7	3,271,404
148– 11.5	3,271,200	107	3,270,824	142	3,271,280	113	3,270,927	49.8	3,271,313	301	3,271,405
33.3	3,271,201	176– 18	3,271,260	143	3,271,281	224– 4	3,270,928	52	3,271,314		3,271,406
112	3,271,202	20	3,271,261		3,271,282	225– 97	3,270,929	56	3,271,315	302.	3,271,407
113	3,271,203	30	3,271,262		3,271,283	226– 33	3,270,930	62.5	3,271,316	306.6	3,271,408
120	3,271,204		3,271,263	145	3,271,284	49	3,270,931	135	3,271,317	306.7	3,271,409
133	3,271,205	36	3,271,264	192	3,271,285	95	3,270,932	138	3,271,318	307	3,271,411
143	3,271,206	69	3,271,265		3,271,286	97	3,270,933	142	3,271,319	308	3,271,412
	3,271,207	177–217	3,270,825	210	3,271,287	136	3,270,934	301.1	3,271,320	310	3,271,413
175	3,271,208	178– 5.2	3,271,511	212	3,271,288	188	3,270,935	301.2	3,271,321	319.1	3,271,414
	3,271,209		3,271,512	219	3,271,289	196	3,270,936	428	3,271,322	326.13	3,271,416
187	3,271,210	6.6	3,271,513	222	3,271,290	197	3,270,937	432	3,271,323	326.5	3,271,415
	3,271,211		3,271,514	224	3,271,291	229– 7	3,270,938	466	3,271,324	327	3,271,417
149– 92	3,271,212	6.8	3,271,515	263	3,271,292	16	3,270,939		3,271,325	343.5	3,271,418
150– 1	3,270,790	7.8	3,271,516	206– 7	3,270,865	17	3,270,940		3,271,326	343.9	3,271,419
52	3,270,791	26	3,271,517	29	3,270,866		3,270,941	472	3,271,327		3,271,420
151– 23	3,270,792	53.1	3,271,518	45.14	3,270,867		3,270,942	253– 39.1	3,271,004	347.8	3,271,421
41.72	3,270,793	179– 1	3,271,519	45.19	3,270,868	23	3,270,943	59	3,271,005	368	3,271,422
152–153	3,270,794		3,271,520	45.33	3,270,869	40	3,270,944	254– 2	3,271,006	372	3,271,423
211	3,270,795	15	3,271,521		3,270,870	51	3,270,945	78	3,271,007	397.3	3,271,424
156– 3	3,271,213	17	3,271,522		3,271,357		3,270,946	98	3,271,008	397.4	3,271,425
52	3,271,214	22	3,271,523	46	3,270,871		3,270,947	134.3	3,271,009	397.5	3,271,426
62.8	3,271,215	27	3,271,524	56	3,270,872	73	3,270,948	167	3,271,010		3,271,427
72	3,271,216	100.2	3,271,525		3,270,873	92.1	3,270,949	259– 12	3,271,011		3,271,428
98	3,271,217		3,271,526		3,270,874		3,270,950	29	3,271,012		3,271,429
108	3,271,218	100.41	3,271,527	57	3,270,875	230– 9	3,270,951	131	3,271,013	404.5	3,271,430
177	3,271,219	170	3,271,528	65	3,270,876	58	3,270,952	260– 2	3,271,328		3,271,431
180	3,271,220	180– 6.48	3,270,826	72	3,270,877	120	3,270,953		3,271,329	407	3,271,432
190	3,271,221	7	3,270,827	78	3,270,878	145	3,270,954		3,271,330	409	3,271,410
202	RE.26,075	8	3,270,828	208– 11	3,271,293	232	3,270,955	2.5	3,271,331		3,271,433
214	3,271,222	51	3,270,829	46	3,271,294	232– 35	3,270,956		3,271,332	410.7	3,271,434
244	3,271,223	88	3,270,830	48	3,271,295	43.2	3,270,957		3,271,333	458	3,271,435
245	3,271,224	90	3,270,831		3,271,296	235– 61	3,270,958	8	3,271,334	462	3,271,436
315	3,271,225	181– .5	3,270,832	67	3,271,297	92	3,271,563	17.2	3,271,335	464	3,271,437
345	3,271,226		3,270,833	106	3,271,298	110	3,270,959	17.4	3,271,336		3,271,438
556	3,271,227	36	3,270,834	114	3,271,299	151.32	3,271,564	18	3,271,337	468	3,271,439
157– 1.2	3,270,796	52	3,270,835	120	3,271,300	152	3,271,565	23	3,271,338	471	3,271,440
158– 46.5	3,270,797	184– 6	3,270,836	143	3,271,301	174	3,271,566		3,271,339	476	3,271,441
99	3,270,798	186– 1	3,270,837	264	3,271,302	195	3,271,567	28.5	3,271,340	479	3,271,442
128	3,270,799	188– 90	3,270,838	310	3,271,303	201	3,270,960	29.6	3,271,341	501	3,271,443
	3,270,800	96	3,270,839	209– 34	3,270,879		3,270,961		3,271,342	513	3,271,444
160–213	3,270,801	192– 4	3,270,840	73	3,270,880	239–165	3,270,962		3,271,343	524	3,271,445
161–150	3,271,231	21.5	3,270,841	74	3,270,881	242	3,270,963		3,271,344	530	3,271,446
151	3,271,228	48	3,270,842		3,270,882	428.5	3,270,964		3,271,345	533	3,271,447
164	3,271,229	53	3,270,843	329	3,270,883		3,270,965	30.8	3,271,346	564	3,271,448
175	3,271,232	56	3,270,844	210– 15	3,271,304	550	3,270,966	31.4	3,271,347	566	3,271,449
184	3,271,230	81	3,270,845	90	3,270,884	560	3,270,967	32.6	3,271,348	570.5	3,271,450
199	3,271,233	107	3,270,846	112	3,270,885	240– 10	3,271,568	32.8	3,271,350	570.8	3,271,451
	3,271,234	194– 1	3,270,847	189	3,270,886	51.11	3,271,569	33.6	3,271,349	571	3,271,452
	3,271,235	92	3,270,848	225	3,270,887		3,271,570	37	3,271,351	576	3,271,453
162–122	3,271,236	195– 3	3,271,266	327	3,270,888	241–186	3,270,968		3,271,352	583	3,271,454
146	3,271,237	31	3,271,267	211– 13	3,270,889	242– 1.1	3,270,969	40	3,271,353		3,271,455
159	3,271,238	197– 15	3,270,849	58	3,270,890	9	3,270,970	41	3,271,354	593	3,271,456
169	3,271,239	19	3,270,850	59	3,270,891	18	3,270,971	41.5	3,271,355		3,271,457
171	3,271,240	84	3,270,851	113	3,270,892	26.1	3,270,972		3,271,356	604	3,271,458
353	3,271,241	91	3,270,852	212– 2	3,270,893	55.12	3,270,973	45.85	3,271,358		3,271,459
165– 2	3,270,802	98	3,270,853	66	3,270,894	71	3,270,974	46.5	3,271,359	606.5	3,271,460
9	3,270,803	187	3,270,854	71	3,270,895	75.4	3,270,975		3,271,360	614	3,271,461
48	3,270,804	198– 19	3,270,855	214– 2	3,270,896	78.1	3,270,976		3,271,361	615	3,271,462
122	3,270,805	31	3,270,856	6	3,270,897	82	3,270,977		3,271,362	619	3,271,463
156	3,270,806	64	3,270,857	16.1	3,270,898		3,270,978	47	3,271,363	643	3,271,464
174	3,270,807		3,270,858	75	3,270,899		3,270,979		3,271,364	651	3,271,465
166– 9	3,270,808	110	3,270,859	302	3,270,900	118.7	3,270,980		3,271,365	654	3,271,466
	3,270,809	179	3,270,860		3,270,902	128	3,270,981		3,271,366	666	3,271,467
	3,270,811	183	3,270,861	308	3,270,903	158.3	3,270,982	49	3,271,367	668	3,271,468
	3,270,812	189	3,270,862	314	3,270,901	244– 1	3,270,983		3,271,368	669	3,271,469
11	3,270,813	203	3,270,863	215– 43	3,270,904		3,270,984	67	3,271,369	670	3,271,470
21	3,270,814	219	3,270,864	219– 10.41	3,271,551		3,270,985	75	3,271,370		3,271,471
36	3,270,815	200– 5	3,271,529	10.55	3,271,552	4	3,270,986	79.3	3,271,371	683	3,271,472
42	3,270,816		3,271,530	76	3,271,553	31	3,270,987	80.5	3,271,372	683.15	3,271,473
46	3,270,817	6	3,271,531		3,271,554	35	3,270,988		3,271,373		3,271,474
84	3,270,810		3,271,532	85	3,271,555	46	3,270,989	82.1	3,271,374		3,271,475
85	3,270,818	9	3,271,533	121	3,271,556	53	3,270,990	85.5	3,271,375	835	3,271,476
124	3,270,819	11	3,271,534	125	3,271,557	122	3,270,991	88.2	3,271,376	877	3,271,477
167– 17	3,271,242	16	3,271,535	131	3,271,558	248– 60	3,270,992	88.3	3,271,377	898	3,271,478
22	3,271,243		3,271,536	137	3,271,559	147	3,270,993	91.3	3,271,378	901	3,271,479
30	3,271,244	38	3,271,537	243	3,271,560	187	3,270,994	93.7	3,271,379	931	3,271,480
33	3,271,245	52	3,271,538	271	3,271,561	224	3,270,995		3,271,380	960	3,271,481
46	3,271,246	61.34	3,271,539	275	3,271,562		3,270,996	94.9	3,271,381	261– 43	3,271,014
	3,271,247		3,271,540	220– 3	3,270,905	235	3,270,997	124	3,271,382	263– 1	3,271,015
52	3,271,248	67	3,271,541		3,270,906	358	3,270,998	158	3,271,383	3	3,271,016
53.1	3,271,249	81.5	3,271,542	9	3,270,907	249– 61	3,270,999	174	3,271,384	7	3,271,017
65	3,271,250	81.6	3,271,543	15	3,270,908	197	3,271,000	210	3,271,385	33	3,271,018
	3,271,251	135	3,271,544	23.4	3,270,909	250– 68	3,271,571	211.5	3,271,386	264– 15	3,271,482
	3,271,252	138	3,271,545	55	3,270,910	83.3	3,271,572	233.5	3,271,387	22	3,271,483
	3,271,253		3,271,546		3,270,911	84	3,271,573		3,271,388	25	3,271,484
74	3,271,254	142	3,271,547	63	3,270,912	106	3,271,574	239.1	3,271,389	26	3,271,485
	3,271,255	148	3,271,548	64	3,271,653	206	3,271,576	239.5	3,271,390	45	3,271,486
82	3,271,256	170	3,271,549	97	3,270,913	213	3,271,578	239.55	3,271,391	64	3,271,487
84.5	3,271,257	172	3,271,550	112	3,270,914	216	3,271,575		3,271,392	81	3,271,488
89	3,271,258	201– 20	3,271,268	221– 2	3,270,915	239	3,271,577	247.2	3,271,393	92	3,271,490
94	3,271,259	202–160	3,271,269	6	3,270,916	251–139	3,271,001		3,271,394	93	3,271,064
170–135.21	3,270,820		3,271,270	133	3,270,917	259	3,271,002	249.7	3,271,395	94	3,271,489
173–123	3,270,821	173	3,271,271	222– 64	3,270,918	363	3,271,003	251	3,271,396	102	3,271,491
137	3,270,822	236	3,271,272	82	3,270,919	252– 8.55	3,271,306	256.4	3,271,398	122	3,271,492
174– 21	3,271,505	203– 12	3,271,273	95	3,270,920		3,271,307		3,271,399	143	3,271,493
28	3,271,506	204– 43	3,271,274	132	3,270,921	8.6	3,271,305		3,271,400	184	3,271,494
52	3,271,507		3,271,275	143	3,270,922	13	3,271,308		3,271,401	210	3,271,495
113	3,271,508		3,271,276	193	3,270,923	21	3,271,309	256.5	3,271,397	232	3,271,496
121	3,271,509	64	3,271,277	394	3,270,924	32.7	3,271,310	260	3,271,402	253	3,271,497

264–261	3,271,498	287–189.36	3,271,059	310– 29	3,271,598	317–249	3,271,641	330– 4.7	3,271,731	340–146.3	3,271,738
	3,271,499	290– 32	3,271,579	36	3,271,599	260	3,271,642	8	3,271,690		3,271,739
269	3,271,500	291– 3	3,271,060	55	3,271,600	318– 30	3,271,643	17	3,271,691		3,271,740
319	3,271,501	14	3,271,061	68	3,271,601	114	3,271,644	69	3,271,692		3,271,761
320	3,271,502	292–336.3	3,271,062		3,271,602	148	3,271,645	84	3,271,693	167	3,271,742
322	3,271,503	346	3,271,063	219	3,271,603	218	3,271,646	331– 66	3,271,694	172.5	3,271,741
347	3,271,504	296– 23	3,271,065	234	3,271,604	234	3,271,647	94.5	3,271,695		3,271,743
266– 4	3,271,019	76	3,271,066	239	3,271,605	331	3,271,648		3,271,696		3,271,744
13	3,271,020	116	3,271,067	263	3,271,606	376	3,271,649	113	3,271,697		3,271,745
24	3,271,021	120	3,271,068	269	3,271,607	489	3,271,650	117	3,271,698	173	3,271,746
270– 58	3,271,022	297–192	3,271,069	312– 31.2	3,271,089	320– 1	3,271,651	332– 3	3,271,699	174	3,271,747
	3,271,023	194	3,271,070	41	3,271,090	44	3,271,652	14	3,271,700		3,271,748
271– 27	3,271,024	375	3,271,071	231	3,271,091	321– 5	3,271,654	42	3,271,701		3,271,749
45	3,271,025	397	3,271,072	311	3,271,092	7	3,271,655	333– 7	3,271,702	174.1	3,271,750
71	3,271,026	422	3,271,073	313– 65	3,271,608	69	3,271,656	28	3,271,703		3,271,751
78	3,271,027	426	3,271,074	82	3,271,609	323– 44	3,271,657	30	3,271,704	214	3,271,752
272– 57	3,271,028	439	3,271,075	92	3,271,610		3,271,658	73	3,271,706	237	3,271,756
87	3,271,029	445	3,271,076	149	3,271,611	47	3,271,659	76	3,271,705	248	3,271,753
273– 26	3,271,030	298– 22	3,271,077	220	3,271,612	75	3,271,660	335– 78	3,271,707	258	3,271,754
63	3,271,031	25	3,271,078	318	3,271,613	324– 33	3,271,661	205	3,271,708		3,271,755
101	3,271,033	299– 40	3,271,079	315– 3.5	3,271,614	37	3,271,662	209	3,271,709	332	3,271,757
101.1	3,271,032	92	3,271,080		3,271,615	38	3,271,663	336– 55	3,271,710	347	RE.26,076
274– 4	3,271,034	302– 14	3,271,081		3,271,616	40	3,271,664	57	3,271,711		3,271,758
23	3,271,035	37	3,271,082	27	3,271,617	43	3,271,665	82	3,271,712		3,271,759
38	3,271,036	50	3,271,083	39.3	3,271,618	57	3,271,666	83	3,271,713	388	3,271,760
277– 27	3,271,037	303– 8	3,271,084	111	3,271,619	58	3,271,667	90	3,271,714	343– 7	3,271,762
205	3,271,038	18	3,271,085	160	3,271,620	58.5	3,271,668	137	3,271,715		3,271,763
228	3,271,039	307– 29	3,271,580	210	3,271,621	60	3,271,669	181	3,271,716	11	3,271,764
280– 11.35	3,271,040	88	3,271,581	246	3,271,622	68	3,271,670	192	3,271,717	12	3,271,765
43.23	3,271,041		3,271,582	357	3,271,623	71	3,271,671	219	3,271,718	14	3,271,766
	3,271,042	88.5	3,271,583	316– 19	3,271,093		3,271,672	338– 28	3,271,719	17.1	3,271,767
	3,271,043		3,271,584	317– 81	3,271,624	72.5	3,271,673	42	3,271,720		3,271,768
79.3	3,271,044		3,271,585	101	3,271,625	73	3,271,674	183	3,271,721		3,271,769
87	3,271,045		3,271,586		3,271,626	83	3,271,675	306	3,271,722	100	3,271,770
104.5	3,271,046		3,271,587	112	3,271,627		3,271,676	339– 5	3,271,723	756	3,271,771
124	3,271,047		3,271,588	123	3,271,628	96	3,271,677	22	3,271,724	771	3,271,772
204	3,271,048		3,271,589	134	3,271,629	121	3,271,678	42	3,271,725	777	3,271,776
493	3,271,049		3,271,590	155	3,271,630	325– 31	3,271,679	49	3,271,726	778	3,271,773
507	3,271,050		3,271,591	234	3,271,631	37	3,271,680	60	3,271,727	792.5	3,271,774
281– 29	3,271,051		3,271,592		3,271,632	65	3,271,681	217	3,271,728		3,271,775
285– 7	3,271,052		3,271,593		3,271,633		3,271,682		3,271,729	346– 74	3,271,777
8	3,271,053		3,271,594		3,271,634	130	3,271,683	340– 3	3,271,730	351–120	3,271,094
93	3,271,054	308– 5	3,271,086		3,271,635	175	3,271,684	15.5	3,271,732	352– 34	3,271,095
264	3,271,055	6	3,271,087		3,271,636	440	3,271,685	17	3,271,733	72	3,271,096
287– 20.92	3,271,056	160	3,271,088		3,271,637	445	3,271,686	37	3,271,734	133	3,271,097
53	3,271,057	310– 8.7	3,271,596	235	3,271,639	448	3,271,687	50	3,271,735	169	3,271,098
189.36	3,271,058	11	3,271,597		3,271,640	328– 55	3,271,688	52	3,271,736	224	3,271,099
						329–136	3,271,689		3,271,737		

CLASSIFICATION OF DESIGNS

D 3– 13	205,651	D18– 2	205,660	D33– 19	205,669	D44– 29	205,678	D58– 17	205,686	D71– 1	205,694
	205,652	D26– 5	205,661	D34– 3	205,670	D48– 24	205,679	25	205,687	D72– 1	205,695
D 4– 2	205,653		205,662	5	205,671	27	205,680	D61– 1	205,688		205,696
D 9– 2	205,654	14	205,663		205,672	D52– 3	205,681	D62– 2	205,689	D81– 7	205,697
D12– 2	205,655	D31– 4	205,664	15	205,673	D54– 11	205,682	D65– 1	205,690	D83– 1	205,698
	205,656	D33– 1	205,665		205,674	D57– 1	205,683		205,691		205,699
D15– 1	205,657	8	205,666	D40– 1	205,675	D58– 2	205,684	D67– 3	205,692	D86– 8	205,700
	205,658		205,667	D44– 10	205,676	12.6	205,685	D71– 1	205,693	D92– 4	205,701
D17– 5	205,659	17	205,668	21	205,677						

CLASSIFICATION OF PLANTS

P. – 18	2,669	P. – 34	2,667	P. – 62	2,668	P. – 78	2,670

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Kentucky	16	Oregon	36		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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Design Patents

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 6, 1966 Volume 830 Number 1

TRADEMARKS
NOTICES

United States Adopted Names

List No. 14

March 1, 1966 to June 30, 1966

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Assistant Director, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

allobarbital: central nervous system depressant
betamethasone acetate: corticosteroid
betamethasone disodium phosphate: corticosteroid
cloperidone hydrochloride: sedative; tranquilizer
desclnolone acetonide: glucocorticoid
gamfexine: antidepressant
guanethidine monosulfate: hypotensive
hycanthone: schistosomacide
isosorbide: oral osmotic diuretic
lidoflazine: cardiovascular agent
mesterolone: oral androgenic hormone
metyrapone tartrate: diagnostic test of pituitary function
niclosamide: anthelmintic
nitarsone: veterinary histomonastat
nonoxynol: spermatocide
prednival: topical anti-inflammatory
prilocaine hydrochloride: local anesthetic
propiram fumarate: analgesic
pyrantel tartrate: anthelmintic
rifamide: antibacterial
roxarsone: veterinary growth stimulant
sodium ampicillin: antibiotic
sodium edetate: chelating agent
tetroquinone: treatment of keloids
trimoxamine hydrochloride: antihypertensive
trisodium edetate: chelating agent
viridofulvin: antifungal antibiotic

United States Adopted Names (USAN) and United States Adopted Names (Proposed) (USAN)

QUARTERLY CUMULATIVE LIST

January 1, 1966–June 30, 1966

This is a revised alphabetical listing of the nonproprietary names *proposed for adoption* by the USAN Council which were published in the Trademark Bureau Bulletin during the

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]--------- 28,840
Date of oldest new application---------- July 15, 1965
Date of oldest amended application (filing date)---------- July 6, 1962

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF (Acting), Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	7-15-65	2-24-64
(II) F. H. WETHERBEE (Acting), Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	9-25-65	7-6-62
Renewals (All Classes)	6-29-66	----------
Sec. 12(c) Publications (All Classes)	7-7-66	----------

Applications filed during the month of July—2,057

Registrations Issued----------539—No. 814,214 to No. 814,752
Renewals Issued---------- 70

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period indicated. The listing also incorporates the revised lists of *adopted* nonproprietary names issued by the USAN Council, but not published in the Bulletin.

The Quarterly Cumulative List is intended to supplement USAN Cumulative List 4, 1961–1965, published annually for the Council by the United States Pharmacopeia; it is distributed with an issue of the Trademark Bureau Bulletin.

An asterisk (*) before a name indicates an *adopted name;* all other names on the list are *proposed for adoption.*

Since Q.C.L. is cumulative, only the latest issue need be consulted. All preceding lists may be discarded.

Any comments or protests regarding proposed names should be brought promptly to the attention of the USAN Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

*allobarbital: central nervous system depressant
asperlin: antibacterial; antineoplastic
*betamethasone acetate: corticosteroid
*betamethasone disodium phosphate: corticosteroid
*cloperidone hydrochloride: sedative; tranquilizer
*cyheptamide: anticonvulsant
*descinolone acetonide: glucocorticoid
*gamfexine: antidepressant
*guanethidine monosulfate: hypotensive
*hycanthone: schistosomacide
*ibufenac: analgesic; anti-inflammatory
*isosorbide: oral osmotic diuretic
*lidoflazine: cardiovascular agent
*mefruside: diuretic
*mesterolone: oral androgenic hormone
*metyrapone tartrate: diagnostic test of pituitary function
*niclosamide: anthelmintic
*nifuraldezone: antibacterial
*nitarsone: veterinary histomonastat
*nitrasepam: hypnotic; anticonvulsant
*nitromide: veterinary coccidiostat and antibacterial
*nonoxynol: spermatocide
*norgestrel: progestin
*pemoline: central nervous system stimulant
phenobarb: proposed abbreviation for phenobarbital
phthalofyne: veterinary anthelmintic
*prednival: topical anti-inflammatory
*prilocaine hydrochloride: local anesthetic
*propiram fumarate: analgesic
*pyrantel tartrate: anthelmintic
quilaxine maleate: oxytocic
*rifamide: antibacterial
*roxarsone: veterinary growth simulant
seperidol hydrochloride: neuroleptic
*sodium ampicillin: antibiotic
*sodium edetate: chelating agent
*sodium ethacrynate: diuretic
sulfabens: veterinary antibacterial and anticoccidial
sulfafen: antibacterial; anticoccidial agent
*tetramisole hydrochloride: anthelmintic
*tetroquinone: treatment of keloids
thyroglobulin: thyroid preparation
*trimoxamine hydrochloride: antihypertensive
*trisodium edetate: chelating agent
*viridofulvin: antifungal antibiotic
zolertine hydrochloride: vasodilator; anti-adrenergic; antihypertensive

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Gale Hall Engineering, Inc., assignee of Universal Chemists, Inc., sometimes doing business as Gale Hall Engineering, Exeter, N.H., Reg. No. 544,347, Canc. No. 8691.

Mariday Casuals, Inc., New York, N.Y., Reg. No. 746,671, Canc. No. 8705.

Rainbow Aluminum Products, Inc., North Miami Beach, Fla., Reg. No. 764,160, Canc. No. 8707.

Old File Cutlery Company, a corporation, assignee, by mesne assignments, of Old File Cutlery Company, a firm, Havana, Ill., Reg. No. 112,802, Canc. No. 8710.

Carshel, Inc., Pennsauken, N.J., Reg. No. 778,303, Canc. No. 8726.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Extensions of Time

It is ordinarily desirable that notice of the action taken by the Patent Office on requests for extension of time be communicated to the persons making the requests as soon as is reasonably possible. In order to improve Patent Office service to patent and trademark applicants in this regard, the following procedure is being instituted effective immediately. If a request for extension of time is filed in duplicate and accompanied by a stamped return-addressed envelope, the Office will indicate the action taken on the duplicate and return it promptly in the envelope. Utilization of this procedure is optional on the part of applicant.

EDWARD J. BRENNER,
Aug. 3, 1966. *Commissioner of Patents.*

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406(a) (COCA-COLA in script), The Coca-Cola Company, Nutrient or tonic beverages; **Reg. No. 47,189(a)**, same, Tonic beverages and syrups for the manufacture of such beverages; **Reg. No. 238,145(a)** (COCA-COLA), same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 415,755** (COKE), same, Non-alcoholic maltless beverages and the syrups for making such beverages, **filed** June 20, 1966, D.C., W.D. Mo. (Springfield), Doc. 2270, *The Coca-Cola Co.* v. *Sherm Lollar Lanes.* **Same, filed** July 6, 1966, D.C., N. Mex. (Albuquerque), Doc. 6728, *The Coca-Cola Company* v. *Spur Ind., doing business as Spur Lanes, Spur Lanes and Supper Club.*

Reg. No. 22,406(b); **Reg. No. 47,189(b)**; **Reg. No. 238,145(b)**; **Reg. No. 238,146** (COCA-COLA in script), The Coca-Cola Company, Beverages and syrups for the manufacture of such beverages; **Reg. No. 415,755(b)**, **filed** July 14, 1966, D.C., N.D. Tex. (Dallas), Doc. 3–1574, *The Coca-Cola Company* v. *Wade's Rocket Skating Palace et al.* Final judgment—defendant enjoined Aug. 1, 1966. **Same, filed** July 14, 1966, D.C. Colo. (Denver), Doc. 66–C–363, *The Coca-Cola Company* v. *Grand Junction Bowling Lanes, Inc.* **Same, filed** July 27, 1966, D.C. Oreg. (Portland), Doc. 66–380, *The Coca-Cola Company* v. *Theodore B. Bingham et al.*

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406(b).)

Reg. No. 298,697 (GENUINE DUNCAN YO-YO AND DESIGN), Donald F. Duncan, Bandalore toy spinning tops; **Reg. No. 300,504** (YO-YO), Donald F. Duncan, Inc., same; **Reg. No. 685,842** (BUTTERFLY), same, Tops of the bandalore return type, **filed** Sept. 12, 1961, D.C., N.D. Ill. (Chicago), Doc. 61c1532, *Donald F. Duncan, Inc.* v. *Royal Tops Mfg. Co., Inc. et al.* Trademark registrations held valid and infringed; defendants enjoined Jan. 17, 1964. **Appealed** Apr. 6, 1964. Judgment of District Court reversed and remanded May 13, 1965. Judgment for defendants—Trademark registrations, numbered 298,697 and 300,504, held invalid; Trademark Registration No. 685,842 has not been infringed by defendants; defendants' counterclaims dismissed June 30, 1966.

Reg. No. 300,504. (See Reg. No. 298,697.)

Reg. No. 332,324 (MONTE CRISTO HABANA AND DESIGN), Particulares, S.A., Cigars, cigarettes, and cut tobacco, **filed** June 1, 1966, D.C., S.D. Fla. (Miami), Doc. 66–733, *Jose M. Garcia et al.* v. *Montecristi Cigar Co., Inc.*

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 583,864 (BEMBERG 44 AND DESIGN), Beaunit Mills, Inc., Thread and yarn; **Reg. No. 634,410** (BEMBERG PRE-SHRUNK), same, Woven, knitted, netted, textile, and pile fabrics in the piece comprised of rayon, or in substantial part of rayon, combined with cotton, wool, silk, nylon, and other synthetic fibers; **Reg. No. 709,111** (SUPERTEX), Rand Rubber Company, Inc., Crib sheets, **filed** June 22, 1966, D.C., S.D.N.Y., Doc. 66/1811, *Beaunit Corporation* v. *Strauss Linings, Inc.* **Same,** Doc. 66/1812, *Beaunit Corporation* v. *Baigel & Brooks Fabrics, Inc.* **Same,** Doc. 66/1813, *Beaunit Corporation* v. *D. Fried & Sons, Inc.* **Same, filed** June 29, 1966, D.C., S.D.N.Y., Doc. 1935, *Beaunit Corporation* v. *Simon Newall Textiles.*

Reg. No. 634,410. (See Reg. No. 583,864.)

Reg. No. 650,952 (OLEG CASSINI AND DESIGN), Oleg Cassini, Women's dresses, coats, and suits; children's dresses and snowsuits; men's ties and shirts; **Reg. No. 657,489** (OLEG CASSINI), same, **filed** June 22, 1966, D.C., S.D.N.Y., Doc. 66/1806, *Oleg Cassini, Inc.* v. *Casini Enterprises, Inc.*

Reg. No. 657,489. (See Reg. No. 650,952.)

Reg. No. 660,791 (POLAR-PAK), The Coleman Company, Inc., Electric air conditioners; **Reg. No. 668,364** (POLAR SOLAR PAK), same; **Reg. No. 668,365** (POLAR PRINCE), same; **Reg. No. 700,529** (POLAR PRINCE AND DESIGN), same, Air conditioners, **filed** Apr. 7, 1966, D.C., S.D. Fla. (Miami), Doc. 66–487, *The Coleman Company, Inc.* v. *Thermal Industries of Fla., Inc.*

Reg. No. 665,139 (TACH-E-Z), Whaledent, Inc., Attachment for partial dentures; 2,748,480, B. Weissman, ARTIFICIAL DENTURE, **filed** Mar. 11, 1964, D.C., S.D.N.Y., Doc. 64/781, *Whaledent, Inc.* v. *Weinbaum Dental Supply Co., Inc. et al.* Order discontinuing action May 20, 1966.

Reg. No. 668,364. (See Reg. No. 660,791.)

Reg. No. 668,365. (See Reg. No. 660,791.)

Reg. No. 685,842. (See Reg. No. 300,504.)

Reg. No. 695,258 (REB-L), Robinson Company, Fishing tackle, i.e., fishing poles, line, processed bait, hooks, etc., **filed** June 22, 1966, D.C., W.D. Ark. (Fort Smith), Doc. 2001, *Robinson Company* v. *Plastics Research and Development Corporation.*

Reg. No. 700,529. (See Reg. No. 660,791.)

Reg. No. 701,569 (TEMPO), Helene Curtis Industries, Inc., Hair fixative, **filed** June 27, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1177, *Helene Curtis Industries, Inc.* v. *Arno, Incorporated.*

Reg. No. 707,667 (GOLD LITE), The Alumiline Corporation, Aluminum architectural products—namely, store front moldings, doors and door frames, curtain walls, and sliding doors, **filed** June 27, 1966, D.C., S.D.N.Y., Doc. 66/1879, *The Alumiline Corporation* v. *Oremet Chemical Corporation.*

Reg. No. 709,111. (See Reg. No. 583,864.)

Reg. No. 709,385 (KIKI), Kiki Undies Corporation, Ladies' panties; **Reg. No. 767,232** (KIKI KONTROL), same; **Reg. No. 767,242** (KIKI MAGIC), same; **Reg. No. 774,624** (KIKI SATINETTE), same, **filed** June 16, 1966, D.C., S.D.N.Y., Doc. 66/1709, *Kiki Undies Corporation* v. *Alexander's Department Stores, Inc.*

Reg. No. 714,625 (REGUTOL), Pharmaco, Inc., Preparation for the treatment of constipation, **filed** June 27, 1966, D.C., S.D.N.Y., Doc. 66/1888, *Pharmaco, Inc.* v. *Hudson National, Inc.*

Reg. No. 767,232. (See Reg. No. 709,385.)

Reg. No. 767,242. (See Reg. No. 709,385.)

Reg. No. 774,624. (See Reg. No. 709,385.)

Reg. No. 803,921 (LEE) Lee Pen Corp., Ball point pens, refills and erasers therefor, and related accessories, **filed** June 20, 1966, D.C., E.D. Mich. (Detroit), Doc. 28555, *Lee Pen Corp., Inc.* v. *Ira Brawer et al.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 193,666. Halibrand Engineering, Inc., Torrance, Calif. Filed May 18, 1964.



Applicant disclaims the depiction of a wheel apart from the mark as shown.

Class 19—Vehicles

For High Performance Race Car Chassis, and Equipment—Namely, Bodies, Magnesium Wheels, Wheel Hubs and Nuts Therefor, Spot Brakes and Discs and Cylinder Units Therefor, Center Steering Gear Units, and Torsion Bars.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For High Performance Race Car Transmissions, and Equipment—Namely, Rear Ends, Rear End Center Sections, Ring and Pinion Gears, Quick-Change Rear Ends and Gears Therefor, Drive Hubs and Nuts Therefor, Torque Collars, and Axles.

First use 1952.

SN 202,514. Southern Saw Service, Inc., d.b.a. Atlanta Saw Company, Atlanta, Ga. Filed Oct. 23, 1964.



Class 15—Oils and Greases

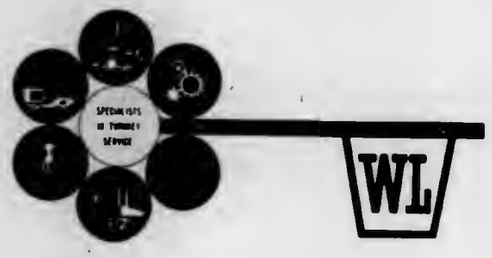
For Silicon Releasing Agents, To Prevent Saws From Sticking.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Meat Saws, Cutlery Sharpeners, Smear Removers for Attachment to Band Saws, Spinal Cord Removers, and Replacement Parts Therefor.

First use on or about Sept. 1, 1964.

SN 206,902. The Wellman-Lord Engineering, Inc., Lakeland, Fla. Filed Nov. 24, 1964.



No claim is made to the exclusive right to use the words "Specialists in Turn Key Service" apart from the mark as shown, but applicant waives none of its common law rights therein. Owner of Reg. No. 731,293.

Class 100—Miscellaneous

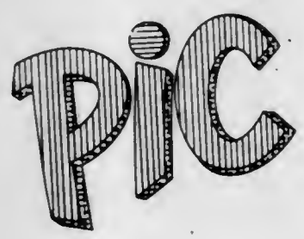
For Advice and Consultation Services Offered to the Chemical Industry in Plant Evaluation, Design, and Layout.

Class 103—Construction and Repair

For Constructing Chemical Plants to the Specifications of Others.

First use Apr. 1, 1963.

SN 221,470. Cook Coffee Company, Maple Heights, Ohio. Filed June 18, 1965.



The drawing is lined for red, yellow, and blue, but no claim is made to color.

Class 6—Chemicals and Chemical Compositions

For Household Bleach.
First use on or prior to Mar. 1, 1965.

Class 52—Detergents and Soaps

For All-Purpose Household Liquid and Powder Detergents, Cleaners, Cleansers, and Soap.
First use on or prior to Dec. 28, 1962.

SN 222,534. Shachihata Kogyo Kabushiki Kaisha, Nishi-ku, Nagoya, Japan. Filed July 2, 1965.



Applicant disclaims the words "Reg'd Trademark" apart from the mark as shown. Owner of U.S. Reg. No. 677,870.

Class 11—Inks and Inking Materials

For Stamp Pads, Rubber Stamps, Ink for Stamp Pads, and Writing Inks, Including Ink Suitable for Fountain and Ball Point Pens.

Class 37—Paper and Stationery

For Writing Instruments—Namely, Fountain Pens, Ball Point Pens, Marking Pens of Both the Felt Core and Synthetic Filament Core Types, Paper Clips and Holders, Stencil Papers, Magnetic Clips and Holders, and Tape Cutters.

First use at least as early as May 5, 1959.

SN 223,202. McCord Corporation, Detroit, Mich. Filed July 13, 1965.



Owner of Reg. Nos. 140,711, 511,687, and others.

Class 19—Vehicles

For Radiators and Radiator Cores.
First use April 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mufflers and Lubricators.
First use October 1964.

Class 31—Filters and Refrigerators

For Refrigeration Condensors and Evaporators.
First use July 1964.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Air Conditioning Units and Parts Thereof.
First use July 1964.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Gaskets.
First use October 1964.

SN 225,845. William J. Bennett, d.b.a. Marble Crete Co., Williamsville, N.Y. Filed June 16, 1965.

MARBLE CRETE

Class 12—Construction Materials

For Ingredients for Making Simulated Marble—Namely, Binder Resin, Millers, Including Sand and Calcium Carbonate, Catalysts, Waxes, Marble Chips, Shells and Pigments Mixed With Said Resin and Fillers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Metal and Fiberglass Molds and Vibrators.

First use July 3, 1964.

SN 229,669. Midwest Tire Distributors, Inc., Adrian, Mich. Filed Oct. 8, 1965.



The tire design in the drawing is disclaimed apart from the mark.

Class 19—Vehicles

For Shock Absorbers, Creepers, Seat Belts, and Brake System Parts—Namely, Master Cylinders, Wheel Cylinders, and Cylinder Repair Kits.
First use Oct. 10, 1963.

Class 21—Electrical Apparatus, Machines, and Supplies

For Voltage Regulators, Generators, Batteries, and Spark Plugs.
First use Oct. 29, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Universal Joints, Exhaust System Parts, Fuel Pumps, and Water Pumps.
First use Jan. 31, 1964.

Class 31—Filters and Refrigerators

For Fuel Filters, Oil Filters, and Air Filters.
First use July 1, 1965.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Fan Belts, Tires, Inner Tubes, Brake Hose, Radiator Hose, and Brake Lining.
First use Sept. 22, 1964.

Subj. to Intf. with SN 224,774.

SN 232,495. Dolly Madison Foods, Inc., Louisville, Ky. Filed Nov. 12, 1965.



The phrase "A Product of Horticultural Research" is disclaimed apart from the mark as shown.

Class 1—Raw or Partly Prepared Materials

For Potting Soil.

Class 10—Fertilizers

For Combination Fertilizer and Mulch.

First use Oct. 19, 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 210,744. Commercial Solvents Corporation, New York, N.Y. Filed Jan. 27, 1965.

AQUAMAC

For Polyvinylacetate Copolymer Latex.
First use Mar. 28, 1961.

SN 220,755. France Packing Company, Philadelphia, Pa. Filed June 9, 1965.

FLUR-O-FRAN

For Plastic Material Comprising Fluorocarbon Polymers Blended With One or More Inert Fillers and in the Form of Molding and Extrusion Compositions, and Fabricated Shapes—Namely, Bars, Cylinders, and Blocks.
First use Mar. 19, 1959.

SN 226,506. Beaunit Corporation, New York, N.Y. Filed Aug. 26, 1965.

VYCRON XTRA-TUF

No exclusive right is claimed to "Xtra-Tuf" apart from the mark as shown. Owner of Reg. Nos. 711,387, 711,594, and 712,193.
For Synthetic Staple Fiber.
First use on or about Aug. 5, 1965.

SN 226,980. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Sept. 2, 1965.

VELVA COAT

No registration rights are claimed for the word "Coat" apart from the mark shown in the drawing, but the applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof.
For Carbonaceous or Non-Carbonaceous Refractory Coating Composition Useful as Washes for Foundry Molds and Cores.
First use in or about December 1963.

SN 229,142. Sinclair-Koppers Company, Pittsburgh, Pa. Filed Oct. 1, 1965.

DYLAR

Owner of Reg. Nos. 631,551 and 645,577.
For Expandable Heterogeneous Thermoplastic Molding Composition.
First use Dec. 21, 1964.

SN 229,777. Embosograf Company of Illinois, Chicago, Ill. Filed Oct. 11, 1965.

EBONITE

For Reflecting Sheets Having Metal Foil Surface for Uses Including the Manufacture of Displays.
First use September 1960.

SN 229,778. Embosograf Company of Illinois, Chicago, Ill. Filed Oct. 11, 1965.

WONDERFLEX

For Reflecting Sheets Having Metal Foil Surface for Uses Including the Manufacture of Displays.
First use July 1964.

SN 233,710. Foseco International Limited, Birmingham, England. Filed Dec. 1, 1965.

SEPAROL

For Chemical Products for Use in Industry—Namely, Liquid Parting Agents for Patterns and Core Boxes and Additives for Foundry Sand Mixes.
First use Dec. 14, 1956; in commerce Dec. 14, 1956.

SN 234,044. Ed. F. Mangelsdorf & Bro., Inc., St. Louis, Mo. Filed Dec. 6, 1965.

BALEBUSTER

For Field Seeds and Grain Seeds.
First use Nov. 16, 1965.

SN 235,593. Sumitomo Bakelite Ltd., d.b.a. Sumitomo Bakelite Company, Ltd., Chiyoda-ku, Tokyo, Japan. Filed Dec. 30, 1965.

SUMILITE

For Plastic Sheets and Sheeting for General Use in the Industrial Arts.
First use December 1954; in commerce October 1964.

SN 236,090. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Jan. 10, 1966.

TUFLENE

Owner of Reg. No. 804,275.
For Synthetic Rubber.
First use Dec. 21, 1965.

SN 236,825. International Paper Company, New York, N.Y. Filed Jan. 19, 1966.

INTERNATIONAL

Owner of Reg. Nos. 732,500, 790,720, and others.
For Wood Pulp.
First use December 1963.

SN 237,433. Dairyland Seed Company, Inc., Campbellsport, Wis. Filed Jan. 27, 1966.

FRENCHEE

For Farm Seeds.
First use on or about Mar. 14, 1960.

SN 238,824. Acme Backing Corporation, New York, N.Y. Filed Feb. 15, 1966.

FLEXLOK

For Laminated Sheet Material, Including Synthetic Resin Films or Foils, Fabric and/or Paper, for General Use in the Industrial Arts.
First use Jan. 26, 1966.

SN 243,031. St. Regis Paper Company, New York, N.Y. Filed Apr. 8, 1966.

ST REGIS

Owner of Reg. Nos. 377,917, 712,869, and others.
For Plastic Film and Sheet Material Comprising Cellophane, and Polyolefins, Laminated Sheet Material Having Fire Extinguishing Properties for Packaging, Construction Purposes and Vapor Barriers.
First use on or about Jan. 19, 1965.

Class 2—Receptacles

SN 188,222. Euclid Spiral Paper Tube Corp., Cleveland, Ohio. Filed Mar. 9, 1964.

EUCLID

No registration rights are claimed for the representation of the goods apart from the mark shown in the drawing, but applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof.
For Paper Tubes, and Combined Paper and Plastic or the Like Laminated Tubes Adapted for Use as Mailing Tubes, Article-Enclosing or Article-Encapsulating Packages, and Cores for Receiving Windings of Paper, Electrical Wiring or Other Material.
First use Nov. 1, 1963.

SN 214,954. Columbia Corrugated Container Corp., Syosset, N.Y. Filed Mar. 25, 1965.

LIVE-PAK

For Corrugated Paper Boxes for Containing Articles of Merchandise.
First use Dec. 1, 1964.

SN 221,188. Lanco Container Corp., Brooklyn, N.Y. Filed June 15, 1965.

LANCO SNAP INS

For Tubular Protective Sleeve Made of Corrugated Paperboard and Open at Both Ends for Supporting Fragile or Breakable Products Such as a Bottle or the Like Between Ends of the Sleeve.
First use May 18, 1965.

SN 221,253. Theresa P. Carey, Minneapolis, Minn. Filed June 16, 1965.

DOLLY-UP

For Cosmetic Trays Sold Empty.
First use May 28, 1965.

SN 222,760. The Harold E. Saper Company, Chicago, Ill. Filed July 6, 1965.

HESCO

For Disposable Vacuum Filter Bags for Vacuum Cleaners.
First use in or about July 1959.

SN 222,799. Albemarle Paper Manufacturing Company, d.b.a. Consumer Bag and Packaging Corporation, Richmond, Va. Filed July 7, 1965.

DUO-SERVICE

For Paper Bags.
First use June 1, 1965.

SN 223,255. Olin Mathieson Chemical Corporation, New York, N.Y. Filed July 13, 1965.

RUFF-RIDER

For Paper and Paperboard Cartons and Boxes.
First use Aug. 29, 1962.

SN 234,664. Edward J. Paprocki, d.b.a. Ever Ready Machine & Die Co., Brooklyn, N.Y. Filed Dec. 15, 1965.

The GOLDEN STEIN

Without waiver of common-law and other rights, no registration rights are claimed for the words "The" and "Stein" apart from the complete mark.
For Combined Coaster and Holder for Converting Beverage Cans and Other Containers Into Stein-Like Objects.
First use Nov. 30, 1965.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 219,406. H. E. Dial and MacDonald Millard (joint owners), Calgary, Alberta, Canada. Filed May 21, 1965.



The expression "Pak-A-Book" is disclaimed apart from the mark as shown.
For Satchels Designed To Carry Books.
First use Apr. 22, 1965; in commerce Apr. 22, 1965.

SN 223,402. Gimbel Brothers, Inc., New York, N.Y. Filed July 15, 1965.

Regency

For Luggage.
First use Oct. 15, 1963.

SN 231,942. Rico Leather Specialty Inc., Chicago, Ill. Filed Nov. 1, 1965.

For my money it's Rico

Owner of Reg. Nos. 442,182 and 627,182.
For Ladies' and Men's Billfolds, Pass Cases, Pocket Secretaries, and Money Clips.
First use October 1955.

Class 4—Abrasives and Polishing Materials

SN 221,908. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed June 24, 1965.

E. FABER

Owner of Reg. Nos. 129,700, 699,426, and others.
For Steel Polish.
First use June 22, 1907.

SN 221,913. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed June 24, 1965.

EBERHARD FABER

Owner of Reg. Nos. 129,700, 699,426, and others.
For Steel Polish.
First use June 22, 1907.

Class 5—Adhesives

SN 221,909. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed June 24, 1965.

E. FABER

Owner of Reg. Nos. 129,700, 699,426, and others.
For Plastic Adhesive.
First use May 20, 1960.

SN 221,914. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed June 24, 1965.

EBERHARD FABER

Owner of Reg. Nos. 129,700, 699,426, and others.
For Plastic Adhesive.
First use May 20, 1960.

SN 222,173. Lowell Bearing Company, Chicago, Ill. Filed June 28, 1965.

BEACON

For Vinyl Adhesive Tapes, Friction Tapes, and Masking Tapes.
First use on or about Apr. 26, 1965.

Class 6—Chemicals and Chemical Compositions

SN 223,027. Daly-Herring Company, Kinston, N.C. Filed July 9, 1965.

D-H

The drawing is lined for red. Owner of Reg. Nos. 501,914 and 525,767.
For Agricultural Chemicals—Namely, Insecticides, Herbicides, Fungicides, and Wood Preservative.
First use 1960.

SN 224,264. Technic, Inc., Cranston, R.I. Filed July 26, 1965.

TARNIBAN

For Chemical Composition for a Tarnish Preventative for Silver, Silver Electroplate, Copper, Copper Alloys, Brass, and Gold Plated Silver and Gold Plated Copper.
First use Nov. 18, 1964.

SN 224,291. American Gas & Chemicals, Inc., New York, N.Y. Filed July 27, 1965.

BUG·IT

For Combination Tamper Indicator and Leak Detector in Chemical Form.
First use July 16, 1965.

SN 224,937. Dade Reagents, Inc., Miami, Fla. Filed Aug. 4, 1965.

ERYTHRO-TROL

Owner of Reg. Nos. 603,181, 779,695, and others.
For Diagnostic Reagent Standardized Suspension of Human Red Blood Cells for Use as a Laboratory Control in Cell-Counting Procedures.
First use on or before June 5, 1965.

SN 225,041. MacCleaster Chemical Company Limited, London, England. Filed Aug. 5, 1965.

DOX-ANODE

Owner of British Reg. No. 781,353, dated Sept. 1, 1958.
For Anti-Corrosive Coatings for Ferrous Metals.

SN 226,880. American Gas & Chemicals, Inc., New York, N.Y. Filed Sept. 1, 1965.

For Chemical Specialties and Impregnated Sheets, Tabs, and Laminate for Detecting Leaks in Fluid Systems.
First use May 12, 1965.

SN 228,449. W. F. Fancourt Co., Inc., Greensboro, N.C. Filed Sept. 23, 1965.

VIBRALURE

For Industrial Chemical, Which Is a Resinous Emulsion, Used To Finish Tricot Textile Fabrics by Softening the Synthetic Fibers Contained in the Knitted Fabric, and by Implanting Anti-Static Properties in Such Fabric.
First use Aug. 24, 1964.

SN 230,529. Fritzsche Brothers, Inc., New York, N.Y. Filed Oct. 19, 1965.

INDOLIQUE

For Fragrances for Use in the Manufacture of Perfume, for Manufacturing and Professional Use Only.
First use Sept. 23, 1965.

SN 232,036. Trager Manufacturing Company, Scranton, Pa. Filed Nov. 2, 1965.

Sea Mist Products
The Household Help Women Can Trust

No exclusive claim is made to the word "Products" or to the words "The Household Help Women Can Trust" apart from the mark as shown. Owner of Reg. Nos. 637,012 and 773,821.
For Household Ammonia With Pine Detergent, Laundry Spray Starch, and Household Liquid Disinfectant Concentrate With Deodorant Properties.
First use Sept. 1, 1962.

SN 232,713. Nease Chemical Company, Inc., State College, Pa. Filed Nov. 15, 1965.

HIO-DINE

Owner of Reg. Nos. 719,842 and 719,843.
For Compositions for Water Purification, Especially Swimming Pool Water Disinfection and Sanitization.
First use May 10, 1960.

SN 233,590. Foseco International Limited, Birmingham, England. Filed Nov. 30, 1965.

STELOTOL

Owner of British Reg. No. 844,755, dated Feb. 6, 1963.
For Chemical Products for Use in the Treatment of Molten Metals—Namely, Compositions for Carbon-Black Coating of Ingot Molds.
First use Aug. 4, 1964; in commerce Aug. 4, 1964.

SN 233,707. Foseco International Limited, Birmingham, England. Filed Dec. 1, 1965.

DEXIL

Owner of British Reg. No. 802,331, dated Feb. 26, 1960.
For Chemical Products for Use in the Foundry Industry—Namely, Breakdown Agents for Sodium Silicate Bonded Sand Cores.
First use Jan. 30, 1961; in commerce Jan. 30, 1961.

SN 233,708. Foseco International Limited, Birmingham, England. Filed Dec. 1, 1965.

DYCOTE

For Chemical Substances Employed in the Foundry Industry—Namely, Surfacing Compositions for Application to Permanent Molds and Furnace Tools for Effecting Heat Insulation, Surface Modification, or Lubrication and Heat Conduction.
First use Nov. 9, 1945; in commerce Nov. 9, 1945.

SN 233,757. Tide Products, Inc., Edinburg, Tex. Filed Dec. 1, 1965.

FARMACY

For Agricultural Chemicals—Namely, an Agricultural Insecticide, an Agricultural Fungicide, an Agricultural Defoliant, and an Agricultural Surfactant.
First use on or about Oct. 29, 1965.

SN 233,779. Casting Materials Company, Inc., White Plains, N.Y. Filed Dec. 2, 1965.

POSTALOY

Owner of Reg. Nos. 636,316 and 637,014.
For Mixture of Chemical Preparations Used in the Processing of Molten Metals.
First use on or about Apr. 15, 1965.

SN 234,215. The Lea Manufacturing Co., Waterbury, Conn. Filed Dec. 8, 1965.

LEA ANTISTAT

Owner of Reg. Nos. 274,639, 722,460, and others.
For Solution for Neutralising Electrostatic Charge Buildup on Plastics and Other Non-Metallic Surfaces.
First use May 7, 1964.

SN 236,616. Masury-Young Company, Melrose Park, Ill. Filed Jan. 17, 1966.

DURATROL

For Chemical Preparation for Treatment of Fabrics To Impart Flame Retardant Properties or Dust Control Properties.
First use Oct. 6, 1965.

SN 236,617. Masury-Young Company, Melrose Park, Ill. Filed Jan. 17, 1966.

SABOA-100

For Chemical Preparation for Waterproofing Fabrics.
First use Oct. 26, 1965.

SN 236,704. American Cyanamid Company, Wayne, N.J. Filed Jan. 18, 1966.

AEROCAT TRIPLE-S

Owner of Reg. Nos. 434,875 and 622,502.
For Cracking Catalyst for Use in Catalytic Cracking Processes for the Refining of Petroleum.
First use Oct. 27, 1965.

SN 236,774. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Jan. 18, 1966.

CHEM HOE

For Selective Herbicides.
First use at least as early as Dec. 3, 1963.

SN 236,834. Mackenzie Chemical Works, Inc., Central Islip, N.Y. Filed Jan. 19, 1966.

EQUOL

For Photographic Developer.
First use Oct. 26, 1965.

SN 236,873. Amchem Products, Inc., Ambler, Pa. Filed Jan. 20, 1966.

BROMINIL

For Herbicides.
First use Sept. 21, 1965.

SN 236,997. The Ironees Company, Philadelphia, Pa. Filed Jan. 21, 1966.

PRESST

For Composition for Imparting Permanent Crease to Fabrics.
First use Jan. 10, 1966.

SN 236,998. The Ironees Company, Philadelphia, Pa. Filed Jan. 21, 1966.

IRONEES

For Composition for Imparting Permanent Crease to Fabrics.
First use Jan. 10, 1966.

SN 237,021. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Jan. 21, 1966.

KROMAROON

Owner of Reg. No. 589,622.
For Finely Divided Pigment Having a Variety of Industrial Uses.
First use Jan. 7, 1964.

SN 237,076. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Jan. 24, 1966.

IMPLENAL

For Chemicals and Chemical Compounds as Tanning Agents for the Leather Industry.
First use Oct. 12, 1911; in commerce Mar. 14, 1963.

SN 237,100. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Jan. 24, 1966.

RYLEX

For Ultraviolet Light Absorbers.
First use Dec. 20, 1965.

SN 237,312. Clay-Adams, Inc., New York, N.Y. Filed Jan. 26, 1966.

HISTOCLAD

For Synthetic Microscopic Mounting Medium.
First use in or about August 1963.

SN 237,419. The Ansul Company, Marinette, Wis. Filed Jan. 27, 1966.

PHYTAR

For Herbicide.
First use Dec. 23, 1965.

SN 237,878. The Sinclair Manufacturing Company, d.b.a. Sinclair Manufacturing Company, Toledo, Ohio. Filed Feb. 2, 1966.

SPRITE

Owner of Reg. No. 544,236.
For Fabric Softener Liquid.
First use Aug. 28, 1965.

SN 237,879. The Sinclair Manufacturing Company, Toledo, Ohio. Filed Feb. 2, 1966.

CINDY

Owner of Reg. No. 746,349.
For Fabric Softener Liquid.
First use Aug. 5, 1965.

SN 238,282. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 7, 1966.

AS-50

Owner of Reg. No. 616,729.
For Antibiotic Preparation for Agricultural Use for Controlling Plant Diseases.
First use in or about April 1958.

SN 238,438. The Met-L-Chek Co., Los Angeles, Calif. Filed Feb. 9, 1966.

MET-L-CHEK

For Chemical Dyes and Developers for Detecting and Making Visible to the Eye Cracks and Other Surface Defects in the Surface of Any Metal, Glass, and Thermo-Setting Plastics.
First use June 15, 1951.

SN 238,480. American Potash & Chemical Corporation, Los Angeles, Calif. Filed Feb. 10, 1966.

TRONOX

Owner of Reg. No. 769,354.
For Titanium Dioxide, Pigments, Titanium Dioxide Pigments and Formulations Containing Titanium Dioxide.
First use Nov. 10, 1965.

SN 243,151. Marlyn Chemical Company, Inc., Lakeview, Ohio. Filed Apr. 11, 1966.



For Powdered Fabric Softener.
First use May 21, 1956.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 235,531. Sasieni Ltd., London, England. Filed Dec. 29, 1965.

Sasieni
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Owner of U.S. Reg. Nos. 188,328 and 568,366.
For Smokers' Pipes.
First use June 11, 1965; in commerce June 11, 1965; April 1922 as to "Sasieni."

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 209,051. American Cyanamid Company, Wayne, N.J. Filed Dec. 30, 1964.

CYAN-FO

Owner of Reg. No. 667,921.
For Blasting Agent.
First use May 28, 1963.

SN 223,340. Penguin Associates, Inc., Malvern, Pa. Filed July 14, 1965.



DEPUTY

For Tear Gas Spray.
First use July 6, 1965.

SN 228,972. American Cyanamid Company, Wayne, N.J. Filed Sept. 30, 1965.

HI-PRIME

For Explosives.
First use June 21, 1965.

Class 11 — Inks and Inking Materials

SN 235,930. Pacific Industries, Inc., New York, N.Y. Filed Jan. 6, 1966.

HOT Spot

For Carbonizing Ink.
First use Dec. 21, 1964.

Class 12 — Construction Materials

SN 189,665. Agway, Inc., Syracuse, N.Y., by merger of Cooperative Grange League Federation Exchange, Ithaca, N.Y. Filed Mar. 26, 1964.

AGWAY

For Ready Mixed Hydraulic Cement, Composition Roofing, Laminated Rafters, Laminated Building Panels, Building Insulating Material, Storm Windows, Storm Doors, Metal Siding, Asphalt Siding, Treated Wood Poles, Sheathing Paper, Steel Posts, Blacktop Driveway Sealer, Wooden Farm Gates, and Caulking Compound.
First use Mar. 5, 1964.

SN 199,365. Hallcraft Homes, Inc., Scottsdale, Ariz. Filed Aug. 6, 1964.

HALLCRAFT HOMES

Applicant disclaims the word "Homes" apart from the mark as shown.
For Homes, Townhouses, Side-By-Side Dwellings, Individual One-Story Dwellings, Multiple One-Story Dwellings, Individual Split-Level Dwellings, and Multiple Split-Level Dwellings.
First use September 1963.

SN 203,170. Hallcraft Homes, Inc., Scottsdale, Ariz. Filed Oct. 2, 1964.

HALLCRAFT TOWNHOUSES

Applicant disclaims the word "Townhouses" apart from the mark as shown.
For Homes, Townhouses, Side-By-Side Dwellings, Individual One-Story Dwellings, Multiple One-Story Dwellings, Individual Split-Level Dwellings, and Multiple Split-Level Dwellings.
First use September 1963.

SN 206,710. The Flintkote Company, New York, N.Y. Filed Nov. 23, 1964.

UNIMASTIC

For Vapor Barrier and/or Breathable Coating and Fibrous Reinforcing Agents Therefor.
First use March 1964.

SN 226,660. Howmet Corporation, New York, N.Y., by change of name from Howe Sound Company, Dallas, Tex. Filed Aug. 27, 1965.

VEE-LITE

For Panels for Use as Facing of Commercial and Industrial Buildings.
First use Apr. 28, 1965.

SN 227,497. Griffolyn Co., Inc., Houston, Tex. Filed Sept. 9, 1965.

TerraTape

For Plastic Tape To Be Laid Over Subterranean Structures as a Locator Device.
First use at least as early as Aug. 16, 1965.

SN 228,453. The Flintkote Company, New York, N.Y. Filed Sept. 23, 1965.

GREEN TAG

For Gypsum Plaster for Pottery and Molds.
First use Nov. 14, 1931.

SN 228,455. The Flintkote Company, New York, N.Y. Filed Sept. 23, 1965.

RED TAG

For Gypsum Plaster for Pottery and Molds.
First use Feb. 29, 1936.

SN 228,872. Amsterdam Corporation, New York, N.Y. Filed Sept. 29, 1965.

VICO CERAM-1-LOK

For Ceramic Tiles Sealed and Bonded in Vinyl Resins and Sold in Sheets.
First use July 30, 1965.

SN 229,243. Hass Wholesale, Inc., South Bend, Ind. Filed Oct. 4, 1965.



For Premixed Concrete and Premixed Mortar.
First use Aug. 26, 1965.

SN 229,983. Oklahoma Cement Company, Dallas, Tex. Filed Oct. 12, 1965.

RICH-MIX

For Masonry Cement.
First use July 27, 1965.

SN 231,704. Societe pour Recherches Scientifiques et Chimiques S.A., Lausanne, Switzerland. Filed Oct. 27, 1965.

FARBOTHERME

Priority claimed under Sec. 44(d) on Swiss Reg. No. 210,131, dated Apr. 29, 1965.
For Products for the Building Industry—Namely, Liquid Coatings for Protection Against Moisture, and for Sound and Heat Insulation.

SN 232,939. Smith Products, Inc., d.b.a. Childers Products Co., Cleveland, Ohio. Filed Nov. 18, 1965.

SLIP-CLIP

For Prefabricated Insulation Jacketing With Fasteners Therefor.
First use Apr. 16, 1965.

SN 233,290. Vesuvius Crucible Company, Pittsburgh, Pa. Filed Nov. 24, 1965.

MORLOK

For Refractory Mixes and Cements.
First use Oct. 28, 1965.

SN 236,733. The Euclid Chemical Company, Cleveland, Ohio. Filed Jan. 18, 1966.

FIRMIX GROUT

The word "Grout" is disclaimed.
For Shrinkproof Grout for Use in the Placement of Machinery and the Erection of Structural Members, Consisting of Graded Iron Aggregates, Set Accelerators, Cement Dispersing Agents, and Oxidizing Catalyst, Cement, and Sand.
First use on or about June 1, 1962.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 226,927. Lavelle Rubber Company, Chicago, Ill. Filed Sept. 1, 1965.

LAVELLE

For Plumbing Specialties in the Nature of Faucet Repair Kits, Sink Stoppers, Tank Balls, Force Cups, Toilet Plungers, and the Like.
First use Jan. 15, 1961.

SN 227,235. Black, Sivalls & Bryson, Inc., Kansas City, Mo. Filed Sept. 7, 1965.

STA-KUL

For Safety Valve.
First use February 1960.

SN 227,357. Taylor Forge & Pipe Works, Bellwood, Ill. Filed Sept. 7, 1965.

TF
Traditionally Dependable

No claim is made to the words "Traditionally Dependable" apart from the mark as a whole. Owner of Reg. No. 535,666.
For Metal Pipe, Pipe Fittings and Flanges.
First use June 25, 1964; Jan. 5, 1949, as to "TF."

SN 232,453. Dorfile Manufacturing Company, Portland, Oreg.. Filed Nov. 10, 1965.

DECORET

For Shelf Brackets, Shelf Standards, and Floor to Ceiling Poles.
First use May 26, 1965.

SN 236,748. William R. Hartnell, Los Angeles, Calif. Filed Jan. 18, 1966.



For Builders' Hardware.
First use Nov. 9, 1964.

SN 237,300. Calumet & Hecla, Inc., Allen Park, Mich. Filed Jan. 26, 1966.

STUB/OUT

For Tubing Spun on the End and Sold as a Complete Unit for Testing Plumbing Systems.
First use Apr. 19, 1965.

Class 15—Oils and Greases

SN 189,667. Agway, Inc., Syracuse, N.Y., by merger of Cooperative Grange League Federation Exchange, Inc., Ithaca, N.Y. Filed Mar. 26, 1964.

AGWAY

For Motor Oil, Gear Oil, Viscous Grease, Diesel Fuel, Heating Fuel Oil, Fuel Additives, Gasoline, and Kerosene.
First use Mar. 5, 1964.

SN 235,425. Quaker Oil Corporation, St. Louis, Mo. Filed Dec. 28, 1965.

PENETREX

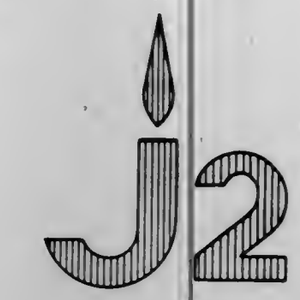
For Motor Oils.
First use February 1953.

SN 241,677. Norton Company, Watervliet, N.Y. Filed Mar. 23, 1966.



Owner of Reg. Nos. 659,968, 684,599, and others.
For Mineral Oil—Namely, a General-Purpose Lubricating and Sharpening Oil.
First use on or before Dec. 1, 1961.

SN 242,017. Japan Gas Lighter Corp., New York, N.Y. Filed Mar. 28, 1966.



The drawing is lined for the color "Red," but this is not claimed as a feature of the mark.
For Butane Fuel Gas in a Dispenser-Container for Cigar and Cigarette Lighters.
First use Aug. 5, 1965.

SN 246,652. Vernon L. Cannon, d.b.a. Hol-Can Oil Company, Dothan, Ala. Filed May 26, 1966.

CANNON

For Lubricating Greases.
First use Apr. 18, 1966.

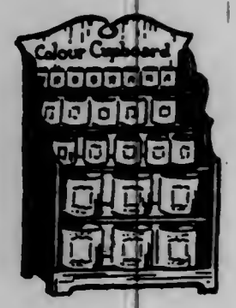
Class 16 — Protective and Decorative Coatings

SN 221,645. Sherman Car Wash Equipment Co., Palmyra, N.J. Filed June 21, 1965.

GLO-WAX

For Rinsing Solution That Leaves a Protective Coating, and Concentrate Therefor, for Use in Car Wash Systems.
First use Mar. 1, 1965.

SN 230,961. Turco Paint & Varnish Co., Inc., Philadelphia, Pa. Filed Oct. 21, 1965.



For Oil or Water Base Semi-Gloss, Low Sheen, All-Purpose Indoor and Outdoor Paints.
First use Aug. 18, 1965.

SN 239,460. Texas Instruments Incorporated, Dallas, Tex. Filed Feb. 23, 1966.

TI-KOTE

For Protective Refractory Coatings—Namely, Silicon Carbide Coatings for Machined Articles of Manufacture Such as Paper-Making Machine Suction Box Covers.
First use May 9, 1962.

Class 17 — Tobacco Products

SN 222,280. Kessing & Thiele, Buende, Westphalia, Germany. Filed June 29, 1965.



The name of the applicant and the pictorial representation of the goods, are disclaimed apart from the mark as shown. The English translation of the words "Die Hand der Firma" is "the hand of the firm." Owner of German Reg. No. 444,337, dated July 2, 1931.
For Tobacco, Cigars and Cigarillos.
First use March 1925; in commerce Aug. 14, 1956.

SN 227,155. Kessing & Thiele, Buende, Westphalia, Germany. Filed Sept. 3, 1965.

SPORTSTUDENT

Owner of German Reg. No. 435,097, dated May 13, 1931.
For Tobacco, Cigars, and Cigarillos.
First use 1925; in commerce 1955.

SN 227,156. Kessing & Thiele, Buende, Westphalia, Germany. Filed Sept. 3, 1965.

GOLDANKER

The English translation of the word "Goldanker" is "gold anchor." Owner of German Reg. No. 616,426, dated June 23, 1950.
For Cigars and Cigarillos.
First use 1935; in commerce 1955.

SN 234,721. Arnold André, Buende, Westphalia, Germany. Filed Dec. 16, 1965.

Prisma

Owner of German Reg. No. 788,121, dated Mar. 20, 1964.
For Raw Tobacco, Tobacco Products—Namely, Cigars, Cigarillos, Cheroots, Smoking and Chewing Tobacco, and Cigarettes.

Class 18 — Medicines and Pharmaceutical Preparations

SN 218,506. The Vitarine Co., Inc., Springfield Gardens, N.Y. Filed May 10, 1965.



For Pharmaceutical and Medicinal Preparations.
First use Sept. 25, 1964; in 1934 as to "Vitarine."

SN 224,507. Byk-Gulden Lomberg Chemische Fabrik GmbH, Konstanz, Germany. Filed July 29, 1965.

BYKONOX

Owner of German Reg. No. 776,666, dated June 26, 1963.
For Drug for the Treatment of Anxiety and Tension, Insomnia, Restlessness, Convulsive Disorders, and Sedative After Operations.

SN 224,821. Vit-A-Way, Inc., Fort Worth, Tex. Filed Aug. 2, 1965.

DAIRY PRIMER

For Protein, Mineral and Vitamin Feed Supplement for Livestock.
First use Jan. 1, 1965.

SN 226,784. Pure Pharmacal Company, Houston, Tex. Filed Aug. 30, 1965.

BIOTEX

For Antibiotic Ointment.
First use at least as early as July 6, 1965.

SN 227,525. Sherman Laboratories, Detroit, Mich. Filed Sept. 9, 1965.



The representation of a caduceus is disclaimed apart from the mark as shown.
For Pharmaceutical Preparations.
First use 1934.

SN 229,164. Wonder-Lin Manufacturing Company, Wilkes-Barre, Pa. Filed Oct. 1, 1965.

WONDER-LIN

For Non-Rubbing Liniment for Relieving Rheumatic Pains, Sprains, Bruises, Swellings, and Congestion.
First use on or about Apr. 1, 1934.

SN 232,838. Imperial Chemical Industries Limited, Millbank, London, England. Filed Nov. 17, 1965.

PARAMEZ

Owner of British Reg. No. 865,919, dated June 23, 1964.
For Pharmaceutical Preparations for the Treatment of Coccidiosis in Poultry.

SN 234,706. William H. Rorer, Inc., Fort Washington, Pa. Filed Dec. 14, 1965.

VARETS

For Throat Losenges.
First use Nov. 9, 1965.

SN 236,855. Cerbini Laboratories, Inc., New Rochelle, N.Y. Filed Jan. 13, 1966.

ACERBINE

For Antiseptic Preparation for Treatment of Burns and Varicose Ulcers.
First use Mar. 3, 1965.

SN 236,705. American Pharmaceutical Company, New York, N.Y. Filed Jan. 18, 1966.

BABY LOVE

The word "Baby" is disclaimed apart from the mark as a whole.
For Medicated Skin Preparation for Diaper Rash.
First use on or about Dec. 20, 1965.

SN 236,943. Youngs Drug Products Corporation, New York, N.Y. Filed Jan. 20, 1966.



Owner of Reg. Nos. 709,267, 726,677, and others.
For Medicinal Preparation To Treat and Prevent Athlete's Foot.
First use May 26, 1960.

SN 236,945. Youngs Drug Products Corporation, New York, N.Y. Filed Jan. 20, 1966.



Owner of Reg. Nos. 709,267, 726,677, and others.
For Medicinal Preparation To Control Foot Odor and To Help Prevent the Recurrence of Athlete's Foot.
First use June 1, 1961.

SN 237,141. Raynor Mead, d.b.a. Mead Laboratory, Bronx, N.Y. Filed Jan. 24, 1966.

BIS-MINT

For Antacid Tablets.
First use Apr. 1, 1927.

SN 237,443. Fisons Pharmaceuticals Limited, Loughborough, England. Filed Jan. 27, 1966.

LOMODEX

Owner of British Reg. No. 866,443, dated July 8, 1964.
For Dextran.

SN 237,716. The Macbick Company, Wilmington, Mass. Filed Feb. 1, 1966.

BARIMEX

For Barium Sulfate Compound and Composition for Use in Enema Preparations.
First use Jan. 18, 1965.

SN 238,050. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and Cole Chemical Company, St. Louis, Mo. Filed Feb. 4, 1966.

DERFULE

For Preparation for Temporary Relief of Minor Aches and Pains Due to the Common Cold.
First use July 17, 1941.

SN 238,052. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and Cole Chemical Company, St. Louis, Mo. Filed Feb. 4, 1966.

ERGOTATROPIN

For Preparation for Relief of Migraine Headaches, Cluster and Vascular Headaches.
First use Aug. 14, 1957.

SN 239,316. Reed & Carnrick, Kenilworth, N.J. Filed Feb. 21, 1966.

PROCTOFOAM

For Pharmaceutical Preparation for the Treatment of Proctological Disorders.
First use on or about Feb. 1, 1966.

SN 239,586. C-B Drug Company, Charlotte, N.C. Filed Feb. 25, 1966.

PRESCRIPTION 98

Applicant disclaims the word "Prescription" apart from the mark as shown, without waiving any of its common law rights thereto.
For Cold Medicine.
First use on or about July 1, 1938.

SN 239,592. Ciba Corporation, New York, N.Y. Filed Feb. 25, 1966.

VETITRAN

For Veterinary Preparation for Tranquilizing Animals.
First use Feb. 18, 1966.

SN 239,620. Harcliffe Laboratories, Inc., Brooklyn, N.Y. Filed Feb. 25, 1966.

GRAVILOSE

For Anti-Nausea Tablets.
First use Feb. 3, 1966.

SN 239,742. The Cramer Chemical Company, Gardner, Kans. Filed Feb. 28, 1966.

MICRO-C

For Antiseptic Foot and Body Powder.
First use Dec. 15, 1965.

SN 239,797. Pure Pharmacal Company, Houston, Tex. Filed Feb. 28, 1966.

HAY-HIST

For Capsules for Relief of Hay Fever Symptoms.
First use at least as early as July 1, 1964.

SN 243,977. Geigy Chemical Corporation, Ardsley, N.Y. Filed Apr. 21, 1966.

RELORIN

For Hematinic Preparation.
First use Apr. 1, 1966.

Class 19—Vehicles

SN 208,543. Chris-Craft Industries, Inc., Oakland, Calif., assignee of Chris-Craft Corporation, Pompano Beach, Fla. Filed Dec. 21, 1964.

SEA SKIFF Chris-Craft

No registration rights are claimed for the words "Sea Skiff" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown nor any feature thereof. Owner of Reg. Nos. 622,581, 737,045, and 774,868.
For Boats.
First use Mar. 17, 1960; Feb. 9, 1954, in a different form.

SN 216,855. Molded Fiber Glass Body Company, Union City, Pa. Filed Apr. 19, 1965.

FORD 20

Applicant disclaims the numeral "20" apart from the mark as shown.
For Small Boats for Cruising and Sailing.
First use in or about September 1962.

SN 217,892. Highway Cruisers, Inc., Covina, Calif., by change of name from Highway Cruisers of California Inc., Covina, Calif. Filed May 3, 1965.

SportsBac

Owner of Reg. No. 691,191.
For Enclosures Adapted To Be Mounted on Beds of Trucks for Converting Trucks Into Campers.
First use Sept. 29, 1964.

SN 221,305. Seilon, Inc., Barberton, Ohio. Filed June 16, 1965.

SEILON 303

Owner of Reg. No. 583,179.
For Vinyl Car Mats.
First use Mar. 10, 1965.

SN 225,254. American Supramar Corporation, Washington, D.C. Filed Aug. 9, 1965.

Suprafoil

For Hydrofoil Used on Water Craft, Such as Ferries, Pleasure Boats, Military Boats, and the Like.
First use Mar. 12, 1965.

SN 225,255. American Supramar Corporation, Washington, D.C. Filed Aug. 9, 1965.

a Supramar product

The word "Product" is disclaimed apart from the mark as shown.
For Hydrofoil Used on Water Craft, Such as Ferries, Pleasure Boats, Military Boats, and the Like.
First use Mar. 12, 1965.

SN 229,177. Arnold, Schwinn & Co., Chicago, Ill. Filed Oct. 4, 1965.

Miss Teen

For Bicycles.
First use Sept. 13, 1965.

SN 229,326. Aeronca Manufacturing Corporation, Middletown, Ohio. Filed Oct. 5, 1965.

MODU-CAR

For Hopper-Type Railroad Cars.
First use Aug. 17, 1965.

SN 235,741. United Distributors Service, Inc., Roanoke, Va. Filed Jan. 3, 1966.

UDS

For Automobile Parts and Accessories—Namely, Pedal Pads, Accelerator Pedals, Stabilizer Repair Kits, and Bushing Repair Kits.
First use Aug. 12, 1964.

SN 243,130. D. P. Harris Hardware & Manufacturing Co., Inc., New York, N.Y. Filed Apr. 11, 1966.

AMERICAN FLYER

Owner of Reg. Nos. 545,154 and 703,164.
For Bicycles.
First use 1907.

Class 20—Linoleum and Oiled Cloth

SN 231,892. Custom Vinyl Ltd., Brooklyn, N.Y. Filed Nov. 1, 1965.

NOBELLE

For Floor Coverings in the Form of Tiles of Vinyl or Vinyl Asbestos of Distinctive Patterns and Colors.
First use Oct. 1, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 197,272. Electronic Treasure Chest Enterprises, Inc., Waukegan, Ill. Filed July 7, 1964.

ELECTRONIC Treasure Chest

No claim is made to the exclusive use of the term "Electronic" apart from the mark as shown.
For Container Provided With One or More Slot-Like Openings for Insertion of a Card Bearing Indicia Which Are Scanned by Electrical Apparatus Within Container.
First use Nov. 7, 1961.

SN 209,725. Phillips Manufacturing Company, Inc., Minneapolis, Minn. Filed Jan. 11, 1965.

ZERO START

Owner of Reg. No. 670,862.
For Electric Stock Tank Heaters, Electrical Starting Aid Kits, Starting Fluid Injectors, Electric Dip Stick Heaters, Electric Head-Bolt Heaters, Electric Frost Plug Heaters, Electric External Tank-Type Heaters, Electric Oil Pan Heaters, Electric Diesel Engine Block Heaters, and Electric Battery Warmers.
First use on or about Jan. 1, 1950.

SN 224,522. CIT—Compagnie Industrielle des Telecommunications, Paris, France. Filed July 29, 1965.

COMPELEC

Owner of French Reg. No. 494,470, dated Feb. 24, 1961 (Seine); Natl. Inst. No. 159,677.
For Semi-Conductors; Sub-Assemblies for Radio and Television, and Parts Thereof.

SN 225,175. Midvale-Heppenstall Company, Philadelphia, Pa. Filed Aug. 6, 1965.

MID MH MAC

For Electrolytic Machining Apparatus.
First use Jan. 15, 1965.

SN 228,971. American Bosch Arma Corporation, Springfield, Mass. Filed Sept. 30, 1965.

MAG-TRONIC

Owner of Reg. No. 777,760.
For Ignition System for Internal Combustion Engines.
First use Aug. 26, 1965.

SN 232,119. Dunkermotoren Prazisions-Kleinstmotoren Gesellschaft mbH, 7823 Bonndorf, Black Forest, Germany. Filed Nov. 4, 1965.

dunkermotoren

The English translation of "Dunkermotoren" is "Dunker motors."
For Electric Motors.
First use in or about January 1957; in commerce in or about December 1957.

SN 232,960. Aluminum Housewares Co., Inc., St. Louis, Mo. Filed Nov. 19, 1965.

V.I.U. LITE

The word "Lite" is disclaimed apart from the mark as shown.
For Electric Lamps.
First use Nov. 16, 1965.

SN 239,187. Zenith Radio Corporation, Chicago, Ill. Filed Feb. 18, 1966.

TOUCH 'N SNOOZE

For Clock Radios.
First use at least as early as May 29, 1965.

Class 22—Games, Toys, and Sporting Goods

SN 215,247. Mile High Game & Toy Co., Inc., Denver, Colo. Filed Mar. 29, 1965.



The drawing is lined for red, green, blue, and yellow, but color is not claimed as a feature of the mark.
For Equipment and Apparatus Sold as a Unit for Playing a Game of the Type Having Game Boards and Marbles and Other Game Members.
First use Jan. 1, 1962.

SN 220,346. American Model Car Raceways, Inc., Beverly Hills, Calif. Filed June 4, 1965.



No claim of an exclusive right is made to "Model Car Raceways" for the goods recited without waiver of any rights that common law in and to either the trade name or the composite mark as shown.
For Slot Racing Tracks.
First use July 29, 1964.

SN 228,090. Uneeda Doll Company, Inc., Brooklyn, N.Y. Filed Sept. 17, 1965.

SEE-MOR

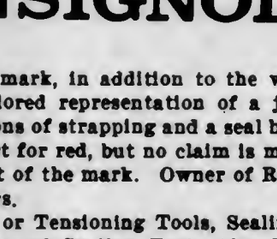
For Dolls.
First use May 28, 1965.

SN 229,139. Shakespeare Company, Kalamazoo, Mich. Filed Oct. 1, 1965.

formula-Six

For Golf Balls.
First use Aug. 23, 1965.

SN 231,927. Old Pal, Inc., Lititz, Pa. Filed Nov. 1, 1965.
For Tackle Boxes.



First use Aug. 4, 1965.

SN 233,470. Dickson and Hannon, New York, N.Y. Filed Nov. 29, 1965.

SPHERE-O-METRICS

For Packaged Exercise Kit, Including a Rubber Ball and a Booklet Illustrating Exercises Employing Said Ball.
First use Nov. 17, 1965.

SN 233,918. S. S. Kresge Company, Detroit, Mich. Filed Dec. 3, 1965.

IO-Hi

For Bowling Balls.
First use on or before July 2, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 211,202. Signode Corporation, Chicago, Ill. Filed Feb. 2, 1965.

SIGNODE

The composite mark, in addition to the word Signode, includes a solid colored representation of a joint uniting the overlapping portions of strapping and a seal blank. The drawing is lined in part for red, but no claim is made to a particular color as a part of the mark. Owner of Reg. Nos. 116,691, 586,568, and others.
For Stretching or Tensioning Tools, Sealing Tools, Combination Tensioning and Sealing Tools Also Known as Strapping Machines; Reels, Holders, and Coil Boxes for Package, Bundle, and Load Binding Strapping; Cutters for Strapping; Automatic and Semi-Automatic Machines for Binding Packages, Bundles, and the Like With Strapping; and Stapling Tools.
First use July 1, 1964.

SN 211,894. Ideal Industries, Inc., Sycamore, Ill. Filed Feb. 12, 1965.

DUAL BLADE

For Wire Strippers.
First use Jan. 31, 1964.

SN 214,165. H. K. Porter Company, Inc., Pittsburgh, Pa. Filed Mar. 15, 1965.

POLY CUT

For Knives for Paper-Cutting Machinery.
First use Jan. 29, 1965.

SN 214,519. Douglas Motors Corporation, Milwaukee, Wis. Filed Mar. 19, 1965.

ISAR

For Hydraulic Control Systems, Both Mechanically and Electrically Powered, as Used in Connection With Snow Plow Blades, Mobile Shop Equipment, Truck and Tractor Accessory Mountings, Material Handling Equipment; and Machine Tools, and Parts Thereof.
First use July 25, 1963.

SN 214,936. Walker Manufacturing Company, Racine, Wis. Filed Mar. 24, 1965.

POWER PIPE

The exclusive right to the word "Pipe" is disclaimed apart from the mark as shown.
For Exhaust System Parts—Namely, Mufflers, Tail Pipes, Exhaust Pipes, Tail Pipe Spouts, Exhaust Elbows, Extensions, Deflectors, Clamps, Brackets, Hangers, Bushings, Grommets, and Insulators; and Cold Chisels and Wrenches.
First use Feb. 18, 1965.

SN 217,901. Lawn Barber Corporation, Hollywood, Calif. Filed May 3, 1965.



For Gardening Implement—Namely, Powered Lawn Edgers and Trimmers.
First use 1953.

SN 218,943. American Monarch Machine Company, Inc., Peoria, Ill. Filed May 17, 1965.

AERO-MATIC

For Automatic Air Feed Device for Use on Any Press, Spot Welder, Drill Press, and the Like, in Feeding Stock Thereto.
First use July 2, 1964.

SN 219,748. Winona Tool & Manufacturing Company, Inc., Winona, Minn. Filed May 11, 1965.

WINONA

For Crankshaft Grinders and Accessories Therefor, Axle Bearing Fixtures, Hydraulic Presses, Hydraulic Jacks, Axle Pullers, Parts Cleaners and Accessories Therefor, Block Head Holders and Racks, Valve Seat Grinders, Valve Spring Compressors, Pin Fitters, and Gasoline Powered Air Car Starters.
First use Aug. 1, 1964.

SN 221,568. Borg-Warner Corporation, Chicago, Ill. Filed June 21, 1965.

DUO-DAMP

For Shaft Support Bearings for Automobile and General Machine Applications.
First use on or prior to May 17, 1965.

SN 224,931. Chemagnetics Controls, Inc., New York, N.Y., assignee of Chemagnetics Corporation, New York, N.Y. Filed Aug. 4, 1965.

CHLORO-GUARD

For Hypochlorination Equipment.
First use June 10, 1965.
Subj. to Intf. with SN 221,543.

SN 225,437. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Aug. 10, 1965.

pressseal

For Installation Kit and Components Therefor for the Replacement of Automobile Glass.
First use at least as early as Mar. 4, 1965.

SN 226,855. Murphy Diesel Company, Milwaukee, Wis. Filed Aug. 31, 1965.

LUGMASTER

For Engine Torque Controls for Earth Moving Equipment.
First use Aug. 18, 1965.

SN 227,855. Mail Systems Corporation, Redwood City, Calif. Filed Sept. 15, 1965.

POSTMASTER

For Machines for Sorting Mail by Weight.
First use May 21, 1965.

SN 228,359. Fuso Keigokin K.K., Itabushi-ku, Tokyo, Japan. Filed July 8, 1966.

ICEPET

Owner of Japanese Reg. Nos. 640,038 and 640,938, dated Apr. 2, 1964, and Apr. 13, 1964, respectively.
For Hand-Operated Ice Shaving Appliances.

SN 228,467. Lewis-Shepard Products, Inc., Watertown, Mass. Filed Sept. 23, 1965.

ORDERMASTER

Owner of Reg. Nos. 119,331, 725,916, and others.
For Materials Handling Equipment—Namely, Electric Fork Lift Trucks.
First use February 1965.

SN 228,578. Time-Mist, Inc., Stamford, Conn. Filed Sept. 24, 1965.

TIME-MIST

For Machines for Periodically Operating the Valve of an Aerosol Can.
First use May 27, 1965.

SN 230,458. Tyco Automotive Corp., Hicksville, N.Y. Filed Oct. 18, 1965.

TYCO

For Automotive Parts—Namely, Starter Drives, and Water Pumps.
First use Sept. 1, 1959.

SN 234,181. Cordem Corporation, Minneapolis, Minn. Filed Dec. 8, 1965.

GOLO

For Winches and Materials Lift.
First use March 1962.

SN 234,399. Dresser Industries, Inc., d.b.a. Pacific Pumps, Inc., Huntington Park, Calif. Filed Dec. 13, 1965.

DI-PAC

For Wear Parts and Components of Pumps—Namely, Shafts, Shaft Sleeves, Rings, and Impellers to Which a Hard Metal Facing Material Has Been Applied.
First use Nov. 4, 1965.

SN 234,537. Can-Tex Industries, Inc., d.b.a. Process Equipment Division, Mineral Wells, Tex. Filed Dec. 14, 1965.

TEX-A-ROBIC

For Sewage Treatment Plants.
First use Jan. 6, 1963.

SN 234,635. Eskimo Radiator Mfg. Co., Los Angeles, Calif. Filed Dec. 15, 1965.

MICRO FLUSH

For Pumping Apparatus for Cleaning Engine Cooling Systems.
First use Apr. 28, 1965.

SN 235,742. United Distributors Service, Inc., Roanoke, Va. Filed Jan. 3, 1966.

UDS

Owner of Reg. Nos. 768,348 and 772,186.
For Propeller Shaft Bearing Supports for Motor Vehicles.
First use Aug. 12, 1964.

SN 237,583. National Stamping & Electric Works, St. Louis, Mo. Filed Jan. 28, 1966.

WHITE CROSS

For Beverage Makers.
First use 1904.

SN 238,384. Appleton Machine Company, Appleton, Wis. Filed Feb. 9, 1966.

HI-SQUEEZ

For Absorbent Rollers and Embossing Rollers.
First use on or about Dec. 3, 1965.

SN 243,064. Worden-Allen Company, Milwaukee, Wis. Filed Apr. 11, 1966.

SANITAIRE

For Aerobic Sewage Treatment Plants.
First use June 22, 1964.

Class 24—Laundry Appliances and Machines

SN 225,398. Edward J. Budavich, d.b.a. E. J. Budavich Co., Carnegie, Pa. Filed Aug. 10, 1965.



For Laundry and Dry Cleaning Equipment—Namely, Clothes Washers, and Clothes Driers.
First use Mar. 30, 1965.

SN 233,930. The Maytag Company, Newton, Iowa. Filed Dec. 3, 1965.

WASHPOWER

For Laundry Appliances—Namely, Automatic Washers and Wringer Washers.
First use Nov. 10, 1965.

Class 26—Measuring and Scientific Appliances

SN 221,467. Clark Metal Products, Inc., Bridgeport, Conn. Filed June 18, 1965.



For Control Monitoring Apparatus for Indicating the Malfunction of Machine Tools.
First use January 1963.

SN 221,774. Aerofeed Incorporated, Chalfont, Pa. Filed June 23, 1965.



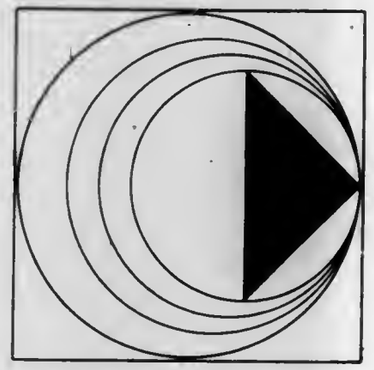
For Air Pressure Operated Apparatus for Metering, Feeding and Dispensing Liquids and Chemical Solutions in Measured Quantities.
First use on or about May 20, 1965.

SN 225,565. Howe Richardson Scale Company, Clifton, N.J. Filed Aug. 12, 1965.

MECHANO-WEIGH

Owner of Reg. No. 613,093.
For Weighing Apparatus—Namely, Bench, Portable, and Counter Scales.
First use July 20, 1964.

SN 226,172. Speedring Corporation, Warren, Mich. Filed Aug. 20, 1965.



For Measuring and Scientific Appliances—Namely, Aerospace Gyro Compasses, Diameter Gages, Concentricity Gages, and Surface Gages.
First use June 30, 1965.

SN 235,713. Precision Scientific Company, Chicago, Ill. Filed Jan. 3, 1966.

PS ALLOY

No claim is made to the term "Alloy" apart from the mark as shown. Owner of Reg. Nos. 661,475 and 698,548.
For Laboratory Equipment—Namely, Clamps.
First use Oct. 5, 1965.

SN 246,157. C-F Equipment Co., Los Angeles, Calif. Filed May 20, 1966.

Pyrograph

For Temperature Indicators for Engine Exhaust.
First use on or about Jan. 25, 1966.

Class 27—Horological Instruments

SN 233,534. Sheffield Watch Inc., New York, N.Y. Filed Nov. 29, 1965.

SHERATON

For Watches and Clocks.
First use Oct. 7, 1965.

Class 29—Brooms, Brushes, and Dusters

SN 189,675. Agway, Inc., Syracuse, N.Y., by merger of Cooperative Grange League Federation Exchange, Inc., Ithaca, N.Y. Filed Mar. 26, 1964.

AGWAY

For House Brooms, Barn Brooms, Household Brushes, Dairy Brushes, and Stock Brushes.
First use Mar. 5, 1964.

Class 30—Crockery, Earthenware, and Porcelain

SN 226,919. International Artware Corporation, Cleveland, Ohio. Filed Sept. 1, 1965.



The drawing is lined for grey and gold.
For Pottery, Ceramics, Crockery, and Earthenware—Namely, Planters, Compotes, Vases, Cups and Saucers, Flower Holders, and Other Similar Decorative Items for Use in Conjunction With Floral Arrangements.
First use May 1961.

Class 31—Filters and Refrigerators

SN 189,676. Agway, Inc., Syracuse, N.Y., by merger of Cooperative Grange League Federation Exchange, Inc., Ithaca, N.Y. Filed Mar. 26, 1964.

AGWAY

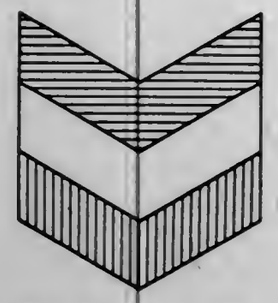
For Water Softeners, Water Filters, Milk Filters, Freezers, Refrigerators, and Water Coolers.
First use Mar. 5, 1964.

SN 237,160. Sel-Rex Corporation, Nutley, N.J. Filed Jan. 24, 1966.

ORASORB

For Filtration and Purification Cartridges.
First use Nov. 10, 1965.

SN 238,457. Standard Oil Company of California, San Francisco, Calif. Filed Feb. 9, 1966.



The drawing is lined for red and blue. Applicant claims the colors red, white, and blue. Owner of Reg. No. 802,701 and others.
For Fuel Filters and Replacement Cartridges Therefor.
First use July 7, 1964.

Class 32 — Furniture and Upholstery

SN 233,268. The Leopold Company, Burlington, Iowa. Filed Nov. 24, 1965.

LEOPOLD

For Furniture—Namely, Chairs, Desks, Tables, Credenzas, Storage Cabinets, and File Cabinets.
First use not later than in or about 1900; not later than in or about 1891 in a different style.

Class 33 — Glassware

SN 196,919. Textron Electronics, Inc., d.b.a. Spectrolab, Sylmar, Calif. Filed July 1, 1964.

SOLAKOTE

For Coating or Filtering Media, Sold Applied to Glass, for Filtering Out Wave Lengths, and the Like.
First use on or before July 1, 1959.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 210,533. Wehr Corporation, Milwaukee, Wis., assignee of Carnes Corporation, Verona, Wis. Filed Jan. 25, 1965.

CURTAINLINE

For Air Handling Equipment, Particularly Linear-Type Diffusers That Can Be Mounted Either in the Ceiling or Side Wall.
First use Dec. 11, 1964.

SN 219,054. Norcross Corporation, Newton, Mass. Filed May 17, 1965.

SIZEOMETER

For Cooking Apparatus for Preparation of Sizing and Components Thereof.
First use May 19, 1962.

SN 221,666. Westinghouse Electric Corporation, Buffalo, N.Y. Filed June 21, 1965.

GOLDEN 21

For Welding Consumable Wire.
First use on or about Apr. 3, 1964.

SN 224,618. Hy-Way Heat Systems, Inc., Youngstown, Ohio. Filed July 30, 1965.

HY-WAY HOT OIL HEATER

The drawing is lined for red, but color is not claimed as a feature of the mark. No claim is made to the word "Heater" apart from the mark as shown, applicant's common law rights however, being reserved. Owner of Reg. No. 628,705.
For Apparatus for Heating Oil, Storing, Circulating, and Transferring Oil.
First use June 5, 1948.

SN 226,294. Schaub Engineering Co., Downers Grove, Ill. Filed Aug. 23, 1965.



For Deaerators, Boiler Feedwater Heaters, Steam Heat Reclaim Systems, Condensate Systems, Hot Water Heating Systems, and Boiler Blowdown Systems.
First use Mar. 29, 1965.

SN 232,246. Standard Oil Company of California, San Francisco, Calif. Filed Nov. 5, 1965.



The drawing is lined for red and blue. Applicant claims the colors red, white, and blue.
For Burners for Oil-Fired Furnaces.
First use Apr. 7, 1965.

SN 233,365. L. Richard Luedeman, d.b.a. Therm-O-Attix, Marysville, Calif. Filed Nov. 26, 1965.

THERM-O-ATTIX

For Ventilation Fans.
First use June 30, 1965.

SN 238,151. Armstrong Cork Company, Lancaster, Pa. Filed Feb. 7, 1966.

GRIDMATE

For Lighting Fixtures.
First use Dec. 28, 1965.

SN 238,829. Babcock-Wilcox and Goldie-McCulloch Limited, Galt, Ontario, Canada. Filed Feb. 15, 1966.

STEAMBLOC

Owner of Canadian Reg. No. 133,822, dated Dec. 13, 1963.
For Boilers.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 220,972. Searle Leather & Packing Co., Los Angeles, Calif. Filed June 11, 1965.

GAS KIT SET

Owner of Reg. No. 684,575.
For Gaskets.
First use Aug. 2, 1956.

SN 224,774. The Midwest Tire Company, St. Louis, Mo. Filed Aug. 2, 1965.

MIDWEST

For Vehicle Tires and Tubes.
First use July 12, 1965.
Subj. to Intf. with SN 229,669.

SN 227,193. Tru-Flex Rubber Products Company, Los Angeles, Calif. Filed Sept. 3, 1965.

SEMICURE (LTC)

The word "Semicure" is disclaimed apart from the mark as shown.
For Repair Patches for Tires or Tubes.
First use Dec. 11, 1964.

SN 227,194. Tru-Flex Rubber Products Company, Los Angeles, Calif. Filed Sept. 3, 1965.

TEE T UNIT

The tire plug design and the word "Unit" are disclaimed apart from the mark as a whole.
For Repair Patches for Tires.
First use Aug. 23, 1965.

SN 232,749. Wolverine Fabricating & Manufacturing Co., Inc., Inkster, Mich. Filed Nov. 15, 1965.

STEEL-N

For Gasket Material and Gaskets.
First use Oct. 19, 1965.

Class 36 — Musical Instruments and Supplies

SN 205,664. Columbia Broadcasting System, Inc., New York, N.Y. Filed Nov. 6, 1964.

DR. FUN'S FUNHOUSE

For Creative and Training Materials for Children, Comprising Phonograph Records, and Booklets Pertaining Thereto.
First use Sept. 1, 1964.

SN 208,946. August H. May, Chicago, Ill. Filed Dec. 28, 1964.

S-F-X

For Sound Reproduction Records.
First use July 1963.

SN 220,828. Bell Records, Inc., New York, N.Y. Filed June 10, 1965.

SPHERE RECORDS SOUND

Applicant disclaims the words "Records" and "Sound" apart from the mark as shown.
For Phonograph Records.
First use Apr. 26, 1965.

SN 223,363. United Artists Records, Inc., New York, N.Y. Filed July 14, 1965.



For Phonograph Records.
First use Feb. 25, 1964.

SN 223,364. United Artists Records, Inc., New York, N.Y. Filed July 14, 1965.



For Phonograph Records.
First use May 9, 1963.

SN 241,074. Gerard James O'Brien, d.b.a. Jerry O'Brien, Jersey City, N.J. Filed Mar. 15, 1966.



The drawing is lined for the color pink.
For Phonograph Records.
First use Feb. 21, 1966.

Class 37 — Paper and Stationery

SN 193,273. Hanson White Publishing Co. Ltd., London, England. Filed May 12, 1964.

ZANY

Priority claimed under Sec. 44(d) on British Reg. No. B859,236, dated Jan. 22, 1964.
For Stationery.

SN 194,939–G. Weyerhaeuser Company, Tacoma, Wash. Filed June 4, 1964.



The mark consists of a stylized coniferous tree in a triangle.
Owner of Reg. Nos. 698,826 and 722,722.
For Text and Cover Papers, Business Papers, Offset and Book Papers, Coated and Uncoated, Bristol Papers, Book Publishing Papers, Coated and Uncoated, Industrial Papers, Technical and Converting Papers, Specialty Papers, Including Plastic Coating Paper and Paperboard.
First use December 1959.

SN 203,310. Lindy Pen Company Incorporated, North Hollywood, Calif. Filed Oct. 5, 1964.

PACESETTER

For Ballpoint Pens.
First use Apr. 2, 1964.

SN 211,573. Polymark Limited, London, England. Filed Feb. 8, 1965.

TRANSTAT

Owner of British Reg. No. 848,000, dated Apr. 19, 1963.
For Heat-Transferable Labels for Attachment to Textiles and Leather.

SN 216,723. Old Town Corporation, Brooklyn, N.Y. Filed Apr. 16, 1965.

COPYMAKER

For Coated Duplicating Sheets for Use in Duplicating Machines, and Copy Paper for Use in Copying Machines.
First use in or about May 1952.

SN 226,145. Gilman Paper Company, New York, N.Y. Filed Aug. 20, 1965.



For Fine Papers—Namely, Bond, Tablet, Mimeograph, High Opaque Offset, Bulking Book, Manifold, Envelope, Endleaf, MF Liner, Place Mat Stock, Tray Cover Stock, Drinking Straw Paper, Adding Machine Stock, Bible Papers, Register Bond, Duplicating Papers, Map Papers, Grease-Resistant Printing Papers, Greeting Card Stock, Gift Wrap, Poster Backing, Box Covering, and Box Liner; Specialty Papers—Namely, Kraft Wrapping, Multiwall Bag Kraft, Water Repellent, Stainless Steel Interleaving, Gumming, Envelope, Neutral Sheets, Anti-Tarnish Papers, Wet-Strength Papers, Masking Paper, Coating Base Stock, Twisting Papers, Creped Papers, Cable Wrap, Creped Closure Tape, Plasticized Paper, Diaper Pad Backing Stock, Hospital Pad Backing Stock, Industrial Wadding Backing, Creping Base Stock, Meatwrap, Bleached Butcher Wrap, Waxing and Wax Laminating, Asphalt Laminating, Bread Wrappers, Printed Ream Wrappers; and Bleached Boards—Namely, Bleached Sulphate Board, Food Board, High Density Cup Stock, Low Density Board, Cigarette Carton Stock, Plate Stock, Specialty Board, Milk Bottle Stock, Manila File Folder, and Polyethylene Laminated.
First use Feb. 17, 1965.

SN 229,266. Sheldon Mermell, d.b.a. S. Mermell Company, Los Angeles, Calif. Filed Oct. 4, 1965.



For Shipping Tags and Labels, Marking Tags and Gum Labels.
First use July 12, 1965.

SN 232,625. Wallace Business Forms, Inc., Chicago, Ill. Filed Nov. 12, 1965.



For Printed Business Forms of All Types.
First use Apr. 23, 1964.

SN 233,155. Weyerhaeuser Company, Tacoma, Wash. Filed Nov. 22, 1965.

HUSKY

Owner of Reg. No. 784,846.
For Paper Products—Namely, Offset, Bond, Mimeograph, and Duplicator.
First use Apr. 20, 1965.

SN 233,158. J. V. Palmer Pen Co. Inc., New York, N.Y. Filed Nov. 19, 1965.

TRIDENT

For Ball Pens and Mechanical Pencils.
First use February 1965.

SN 233,194. Paper Mate Manufacturing Company, Santa Monica, Calif. Filed Nov. 23, 1965.

LIMITED

For Ball Point Pens.
First use Oct. 21, 1965.

SN 235,348. Speedrite Products, Inc., Wichita, Kans. Filed Dec. 27, 1965.

SPEED-E-CLEAN

For Fountain Pens Having Felt Nibs, and Holders Therefor.
First use on or about Nov. 26, 1965.

SN 236,238. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed Jan. 12, 1966.

PALOMA

Applicant disclaims the word "Offset" apart from the mark.
For Coated Printing Paper.
First use Nov. 30, 1965.

SN 236,437. Speedrite Products, Inc., Wichita, Kans. Filed Jan. 10, 1966.

Speed-e-clean

For Fountain-Type Pens Having Felt Nibs, and Holders Therefor.
First use on or about Nov. 26, 1965.

SN 239,517. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Feb. 24, 1966.

Prime-Wrap

For Packaging Film.
First use Nov. 4, 1965.

Class 38 — Prints and Publications

SN 200,015. Meredith Publishing Company, Des Moines, Iowa. Filed Aug. 17, 1964.

BETTER HOMES AND FAMILIES

Owner of Reg. Nos. 203,616, 602,407, and 608,350.
For Quarterly Publications in the Nature of Pamphlets.
First use Apr. 9, 1963.

SN 211,656. Kindler und Schiermeyer Verlag A.G., Munich, Germany. Filed Feb. 9, 1965.

REVUE

The German word "Revue" translated into English means "show."
For German Language Magazine.
First use October 1948; in commerce July 1951.

SN 222,707. Illinois Federation Sportsmen's Clubs, Inc., Blue Island, Ill. Filed July 6, 1965.

ILLINOIS WILDLIFE

For Newspaper.
First use November 1945.

SN 223,374. American Aviation Publications, Inc., Washington, D.C. Filed July 15, 1965.

military export reporter

For Weekly Newsletter Announcing Marketing and Related Developments in Foreign Commerce, With Particular Emphasis on Military Procurement and Export Sales.
First use July 1, 1965.

SN 228,029. Ruth Van Gelder, Cincinnati, Ohio. Filed Sept. 17, 1965.

CURTAIN CALL

For Magazine Which Is Distributed Through Mailing Only in the Ohio-Kentucky-Indiana Area, and Given to Theatre Patrons Prior to and During Stage Performances.
First use Sept. 16, 1963.

SN 229,682. Arthur Schwartz, Washington, D.C. Filed Oct. 8, 1965.

FLASH OF GENIUS

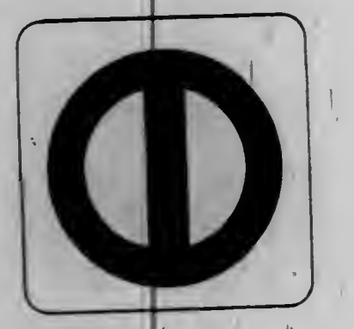
For Pamphlet Issued Periodically Depicting and Commenting on Interesting Patents.
First use Mar. 28, 1965.

SN 230,642. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Oct. 20, 1965.

GI JOE

Owner of Reg. Nos. 773,150 and 787,088.
For Coloring Books.
First use on or about Aug. 6, 1965.

SN 231,671. The Diners' Club, Inc., New York, N.Y. Filed Oct. 27, 1965.



For Periodical Publication—Namely, a Magazine Published Monthly.
First use on or about Sept. 27, 1965.

SN 231,761. The Hearst Corporation, New York, N.Y. Filed Oct. 28, 1965.

MOOSE

For Series of Cartoons.
First use Sept. 20, 1965.

SN 232,626. Wallace Business Forms, Inc., Chicago, Ill. Filed Nov. 12, 1965.



For Books, Catalogues, and Brochures.
First use Apr. 23, 1964.

Class 39—Clothing

SN 194,921. Score XII Inc., Evansville, Ind. Filed June 4, 1964.

SCORE XII

For Bowling Shirts.
First use Mar. 20, 1964.

SN 196,523. Haggar Company, Dallas, Tex. Filed June 26, 1964.



Without waiver of common law rights applicant disclaims the words "Forever Prest" apart from the mark as shown.
Owner of Reg. Nos. 524,051, 794,227, and others.
For Men's and Boys' Clothing—Namely, Slacks.
First use on or about June 15, 1964.

SN 206,221. Boss Manufacturing Company, Kewanee, Ill. Filed Nov. 16, 1964.

TINY MITE

For Work Gloves Made of Leather and Fabric.
First use December 1951.

SN 216,247. Balboa Originals of California, Redwood City, Calif. Filed Apr. 12, 1965.

BOATOGS

For Men's Shirts, Pants, Shorts, Jackets, and Beachwear.
First use Jan. 23, 1963.

SN 221,248. The Bentex Company, New York, N.Y. Filed June 16, 1965.

Angeltogs BY Bentex

The descriptive phrase "By Bentex" is disclaimed apart from the mark as shown.
For Girls' Dresses and Slack Sets.
First use Jan. 1, 1965.

SN 225,905. Morton D. Sullivan, Omaha, Nebr. Filed Aug. 17, 1965.

MONKS by MORT

For Sandals.
First use July 23, 1965.

SN 226,655. The Manhattan Shirt Company, New York, N.Y. Filed Aug. 27, 1965.

DURA-SMOOTH

For Outer Dress and Sport Shirts and Knitted Sport Shirts and Pajamas for Men and Women, and Undershorts for Men.
First use Jan. 25, 1965.

SN 227,820. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Sept. 15, 1965.

Shh···eer!! Secret

Owner of Reg. No. 616,883.
For Ladies' Hosiery.
First use Aug. 24, 1965.

SN 228,201. Spun-Lo Elderlon, Inc., New York, N.Y. Filed Sept. 20, 1965.

POLY-THERM

For Knitted Fabrics Made Up Into Finished Underwear.
First use Apr. 15, 1965.

SN 229,218. Fancee Free Manufacturing Co., Inc., St. Louis, Mo. Filed Oct. 4, 1965.

FANCY ME

Owner of Reg. Nos. 550,616 and 650,807.
For Ladies' Undergarments—Namely, Slips, Brassieres, Girdles, Garter Belts, Pants; and Wraps, Petticoats, Shorty Pajamas, Peignoirs, Nightgowns, Robes, Sport Suits, Sports Blouses, Sport Skirts, and Women's Shirts.
First use February 1960.

SN 230,872. Exquisite Form Industries, Inc., New York, N.Y. Filed Oct. 18, 1965.

SCOOP TREAT

For Brassieres.
First use Oct. 4, 1965.

SN 231,280. Strathmore Shoe Co., Inc., Brockton, Mass. Filed Oct. 22, 1965.

THE VERDE SHOE

Applicant disclaims the word "Shoe" apart from the mark as shown. Owner of Reg. No. 660,155.
For Men's Shoes.
First use about Aug. 1, 1965.

SN 231,347. Matlin Cloak & Suit Co., Inc., New York, N.Y. Filed Oct. 22, 1965.

MATLIN

For Ladies' and Misses' Coats and Suits.
First use on or about Oct. 30, 1935.

SN 231,901. Exquisite Form Industries, Inc., New York, N.Y. Filed Nov. 1, 1965.

TAILORED TREAT

For Brassieres and Girdles.
First use Oct. 26, 1965.

SN 232,346. Regal Apparel, Ltd., New York, N.Y. Filed Nov. 8, 1965.



The drawing is lined for blue.
For Men's and Boys' Sport and Dress Shirts.
First use Nov. 1, 1965; 1946 as to "Regal."

SN 232,579. National Merchandising Corporation, New York, N.Y. Filed Nov. 12, 1965.

NOBLEPRESS

No claim is made to the word "Press" apart from the mark as shown. Owner of Reg. Nos. 629,622 and 750,446.
For Dress and Sports Shirts for Men and Boys.
First use Oct. 21, 1965.

SN 233,441. Bear Brand Hosiery Co., Chicago, Ill. Filed Nov. 29, 1965.

RESIL'FLEX

Owner of Reg. Nos. 775,050 and 798,596.
For Men's, Women's, and Children's Hosiery.
First use Dec. 4, 1964.

SN 233,593. Genesco, Inc., Nashville, Tenn. Filed Nov. 30, 1965.

JOIE DE VIE

For Suits, Top Coats, Overcoats, Slacks, Sport Coats, Jackets, and Raincoats, for Men, Boys, and Youths.
First use Oct. 29, 1965.

SN 233,649. Shoe Corporation of America, Columbus, Ohio. Filed Nov. 30, 1965.

HALF PENNIES

For Men's, Girls', and Boys' Shoes.
First use January 1962.

SN 234,381. Selden Manufacturing Corporation, New York, N.Y. Filed Dec. 10, 1965.



For Boys' Shirts.
First use June 15, 1962.

SN 234,593. Catalina, Inc., Los Angeles, Calif. Filed Dec. 13, 1965.



Owner of Reg. Nos. 254,957, 591,246, and others.
For Men's, Women's, and Children's Swimsuits, Shorts, Slacks, Shirts, Jackets, Sweaters, Beach Robes, Pullovers; Women's and Girls' Swimsuits, Playsuits, Halters, Skirts, Bathing Caps, Shifts and Dresses, Briefs, Contour Pads, Socks, and Blouses.
First use Sept. 12, 1928.

SN 234,707. Henry I. Siegel Co., Inc., New York, N.Y. Filed Dec. 14, 1965.

Double Duo by h.i.s

Owner of Reg. Nos. 549,951, 798,578, and others.
For Boys' and Men's Shirts, Slacks, Pants, and Trousers; and Men's and Boys' Jackets.
First use September 1965.

SN 234,746. Glamorise Foundations, Inc., New York, N.Y. Filed Dec. 16, 1965.

SHAPEFULLY YOURS

For Foundation Garments.
First use Oct. 27, 1965.

SN 237,590. Princess Ann Girl Coat, Inc., New York, N.Y. Filed Jan. 28, 1966.

WEATHER GIRL

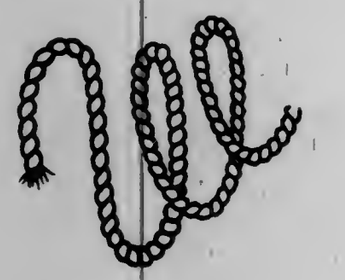
For Children's Overcoats.
First use Dec. 2, 1965.

SN 242,056. Shamrock Knitting Mills, Inc., Marietta, Ga. Filed Mar. 28, 1966.

LITTLE GENERAL

For Children's Socks.
First use Feb. 10, 1966.

SN 245,533. Blue Bell, Inc., Greensboro, N.C. Filed May 13, 1966.



Owner of Reg. Nos. 618,701 and 634,868.
For Jeans, Slacks, and Jackets.
First use May 6, 1966.

SN 246,426. The Alden Mills, Meridian, Miss. Filed May 24, 1966.

SHOCK PROOF

For Men's and Boys' Hosiery.
First use July 1957.

Class 40—Fancy Goods, Furnishings, and Notions

SN 207,005. The Boye Needle Company, Chicago, Ill. Filed Nov. 27, 1964.

Diana



For Art Needlework Products, Sold in Retail Stores for Hand Knitting, Sewing, and Crocheting—Namely, Crochet Hooks, Knitting Needles, Circular Knitting Needles, Yarn Needles, Stitch Holders, Cable Stitch Needles, Knitting Counters, Rubber Point Protectors, Cabone Rings, and Stitch Marker Rings.
First use on or before Aug. 12, 1964.

SN 225,250. Amerace Corporation, New York, N.Y. Filed Aug. 9, 1965.

EXPERT

Owner of Reg. No. 560,200.
For Combs for Use in Dressing, Ornamenting, and Cleaning the Hair.
First use July 9, 1965.

SN 233,626. Optics International Corp., d.b.a. Optico, Philadelphia, Pa. Filed Nov. 30, 1965.

FUN SHADE

For Headbands.
First use Nov. 10, 1965.

SN 233,627. Optics International Corp., d.b.a. Optico, Philadelphia, Pa. Filed Nov. 30, 1965.

FUN SHADE

For Headbands.
First use Nov. 10, 1965.

SN 238,766. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 14, 1966.

SASHEEN

Owner of Reg. No. 550,246.
For Pins for Use in Making Decorative Bows.
First use at least as early as Dec. 31, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 167,110. E. T. Barwick Mills, Inc., Chamblee, Ga. Filed Apr. 19, 1963.

REGENCY

For Rugs and Carpets.
First use at least as early as 1957.
Subj. to Intf. with SN 232,624.

SN 192,591. HMH Publishing Co. Inc. (Delaware corporation), Chicago, Ill., by merger and change of name from HMH Publishing Co., Inc. (Illinois corporation), Chicago, Ill. Filed May 4, 1964.

PLAYBOY PLAYMATE

For Beach Towels.
First use on or about Mar. 12, 1964.

SN 211,786. Troy Mills Inc., Troy, N.H. Filed Jan. 27, 1965.

TROYTUF

Owner of Reg. Nos. 656,263 and 790,766.
For Woven Fabric Rugs With a Plastic Coating Thereon.
First use Dec. 16, 1964.

SN 228,087. Tifton Rug Mills, Inc., East Point, Ga. Filed Sept. 17, 1965.

STEP OFF

For Rugs.
First use on or about Mar. 5, 1963.

SN 228,584. Venetianaire Corporation of America, Yonkers, N.Y. Filed Sept. 24, 1965.

HYGIENT

For Mattress Covers.
First use Aug. 12, 1963.

SN 232,624. United States Rubber Company, New York, N.Y. Filed Nov. 12, 1965.

REGENCY

For Carpet Cushion.
First use September 1962.
Subj. to Intf. with SN 167,110.

SN 233,243. Aronian Hovsepian Stein, Philadelphia, Pa. Filed Nov. 24, 1965.

Kermala

For Hand-Woven, All Wool Pile Oriental Rugs.
First use June 10, 1964.

SN 233,413. J. P. Stevens & Co. Inc., New York, N.Y. Filed Nov. 26, 1965.

6600 SEA GLASS

Applicant does not claim exclusive right to use of "Glass" apart from the mark.
For High Temperature Woven Fabrics Made From Glass Fibers.
First use Nov. 19, 1965.

SN 234,569. Klopman Mills, Inc., Rockleigh, N.J. Filed Dec. 14, 1965.

A FABRIC YOU CAN LEAN ON BY KLOPMAN

No claim is made to the word "Fabric" apart from the mark as shown. Owner of Reg. Nos. 697,510, 736,479, and 754,276.
For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Nov. 12, 1965.

SN 234,640. Victor B. Handal & Bro., Inc., New York, N.Y. Filed Dec. 15, 1965.

BEDDY WHITE

Applicant disclaims the word "White" apart from the mark as shown.
For Sheets, Pillow Cases, Pillow Protectors, and Shower Curtains.
First use May 31, 1950.

SN 236,209. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Jan. 11, 1966.

COHAMA UNITED MERCHANTS

Owner of Reg. Nos. 334,050, 704,028, and others.
For Textile Fabrics in the Piece of Natural or Synthetic or Man-Made Fibers, or Any Combinations Thereof.
First use on or about Nov. 26, 1965.

SN 236,210. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Jan. 11, 1966.

UNITED MERCHANTS

For Natural, Man-Made, and Synthetic Fiber Fabrics, Adapted To Be Made Up Into Articles of Apparel for Men, Women, and Children.
First use on or about Nov. 26, 1965.

SN 236,211. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Jan. 11, 1966.

UNITED MERCHANTS

For Natural, Man-Made, and Synthetic Fiber Fabrics, Adapted To Be Made Up Into Articles of Apparel for Men, Women, and Children.
First use on or about Nov. 26, 1965.

SN 236,258. Hudson Textile Corp., North Bergen, N.J. Filed Jan. 12, 1966.

PIQUELLA

For Jersey Fabric in the Piece.
First use Dec. 17, 1965.

SN 236,668. Tanbro Fabrics Corporation, New York, N.Y. Filed Jan. 17, 1966.

TAN-A-CHECK

For Polyester and Cotton Fabric.
First use about or before Sept. 1, 1965.

SN 246,691. Hong Kong Carpet Manufacturers, Ltd., Hong Kong. Filed May 26, 1966.

TAI PING

The English meaning of the words "Tai Ping" is "peace."
For Textile Hand-Woven Rugs and Carpets.
First use Sept. 1, 1956; in commerce Dec. 25, 1956.

Class 43—Thread and Yarn

SN 237,260. J. P. Stevens & Co., Inc., New York, N.Y. Filed Jan. 25, 1966.

PLUS-SET

Owner of Reg. Nos. 745,541, 776,681, and 800,453.
For Yarn Composed of Natural or Synthetic Fibers, or Blends of the Foregoing.
First use Jan. 17, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 216,788. Brunswick Corporation, Chicago, Ill. Filed Apr. 19, 1965.

RIGIDPAK

For Plastic Containers for Medical, Surgical, and Laboratory Products, Such as Catheters, Stomach and Sump Pumps, Hypodermic Needles, etc.
First use Apr. 11, 1963.

SN 232,207. Hollister Incorporated, Chicago, Ill. Filed Nov. 5, 1965.

PLASTIBELL

For Circumcision Device.
First use Apr. 21, 1955.

SN 246,582. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 25, 1966.

STERI-DRAPE

For Surgical Drapes.
First use Mar. 22, 1962.

Class 45—Soft Drinks and Carbonated Waters

SN 200,599. L. B. Stavis Syrups, Inc., Danvers, Mass. Filed Aug. 25, 1964.

SLIM JIM

For Non-Carbonated Soft Drink Concentrates.
First use June 14, 1963.

SN 229,774. Dolly Fruit Products Corp., Brooklyn, N.Y. Filed Oct. 11, 1965.

PLAY-MATE

For Non-Alcoholic Mix for Use in Making Alcoholic Cocktails.
First use Nov. 17, 1964.
Subj. to Intf. with SN 208,859 and SN 226,054.

SN 242,360. Gold Medal Beverage Company, St. Paul, Minn. Filed Mar. 31, 1966.



The drawing is lined for gold.
For Soft Drinks.
First use Mar. 31, 1960.

Class 46—Foods and Ingredients of Foods

SN 156,703. ABC Vending Corporation, d.b.a. ABC Vending Corp., Long Island City, N.Y. Filed Nov. 6, 1962.



Mr. Dee-lish

Owner of Reg. Nos. 384,733, 619,542, and others.
For Candied, Salted, and Buttered Popcorn.
First use on or about Dec. 1, 1960.

SN 156,704. ABC Vending Corporation, d.b.a. ABC Vending Corp., Long Island City, N.Y. Filed Nov. 6, 1962.



Owner of Reg. Nos. 379,079, 619,542, and others.
For Candied, Salted, and Buttered Popcorn.
First use on or about Dec. 1, 1950.

SN 174,274. Jaross Produce Farms, Inc., Pine Island, N.N.Y. Filed Aug. 2, 1963.



No claim is made to the word "Brand."
For Fresh Lettuce, Onions, and Celery.
First use 1951.

SN 180,539. Sunline, Inc., St. Louis, Mo. Filed Nov. 5, 1963.
For Candy in Tablet Form.

SweeTARTS

First use Apr. 22, 1963.
Subj. to Intf. with SN 184,589 and SN 234,214.

SN 184,589. Sweetarts, Portland, Oreg. Filed Jan. 14, 1964.

SWEETARTS

For Confections—Namely, Dried Prunes, Other Candied Fruits, Dipped Shelled Nuts, Chocolate Candites, Toffee, and Caramels.
First use Nov. 1, 1926.
Subj. to Intf. with SN 184,589 and SN 234,214.

SN 194,638. National Dairy Products Corporation, Chicago, Ill. Filed June 1, 1964.

MILK-BANK

For Feed for Livestock, Poultry, and Pets—Namely, Rabbits, Dogs, Mink, Cats, and Fox.
First use Apr. 17, 1964.

SN 197,476. Cooperatieve Condensfabriek "Gelderland-Overijsel" G.A., Deventer, Netherlands. Filed July 9, 1964.

PAMINA

For Condensed and Evaporated Milk.
First use 1959; in commerce June 5, 1964.

SN 204,297. Schuss Wholesale Grocery Co., Portland, Oreg. Filed Oct. 19, 1964.

'Specially Good

The drawing is lined for the color blue, but no claim is made to the color named. Owner of Reg. No. 676,500.
For Canned and Frozen Fruits, Vegetables, Fruit Juices, Meats and Fish, and Canned Soups.
First use 1952.

SN 206,814. Carnation Company, Los Angeles, Calif. Filed Nov. 24, 1964.

CARNATION

Owner of Reg. Nos. 35,072, 762,844, and others.
For Fish—Namely, Salmon, Tuna, Cod, and Crustaceans and Molluska.
First use Sept. 1, 1905, on canned salmon.

SN 210,400. Adams and Brooks, Inc., Los Angeles, Calif. Filed Jan. 22, 1965.

Golden

For Candied Nuts.
First use Jan. 13, 1965.

SN 213,034. Milwaukee Sausage Co., Inc., Seattle, Wash. Filed Mar. 1, 1965.



Applicant disclaims the representation of the sausage links, as shown in the mark. The drawing is lined for red.
For Prepared Meat Products—Namely, Delicatessen Meats and Sausage Products.
First use Jan. 15, 1965.

SN 213,695. N.V. Biscuit- en Chocoladefabriek "Victoria," Dordrecht, Netherlands. Filed Mar. 9, 1965.

Victoria

parade

Owner of Reg. No. 780,000.
For Biscuits, Cakes, Wafers, and Pastry.
First use 1956; in commerce 1959.

SN 213,750. Erven Lucas Bols Incorporated, Fair Lawn, N.J. Filed Mar. 10, 1965.

BOLS

Owner of Reg. Nos. 74,897, 106,727, and 293,196.
For Fruit Syrups for Soft Drinks and Food Toppings.
First use June 6, 1962.

SN 214,285. Ralston Purina Company, St. Louis, Mo. Filed Mar. 16, 1965.

SEANIP DINNER

The word "Dinner" is disclaimed apart from the mark as shown.
For Cat Food.
First use Jan. 22, 1965.

SN 214,672. Fred Meyer, Inc., d.b.a. Fred Meyer Bakery, Portland, Oreg. Filed Mar. 22, 1965.

FRONTIER

For Bread.
First use at least as early as 1955.

SN 214,676. Fred Meyer, Inc., d.b.a. Fred Meyer Bakery, Portland, Oreg. Filed Mar. 22, 1965.

VITA-BEE

For Bread.
First use at least as early as 1943.

SN 216,639. Virginia Seafoods, Inc., Irvington, Va. Filed Apr. 15, 1965.

KING CARTER

"King Carter" is the nickname of "Robert Carter," an historically well-known plantation owner in eighteenth century Virginia.
For Frozen Packaged Sea Food—Namely, Canned Fish, Canned Frozen Oysters, and Canned Fresh Oysters.
First use 1944.

SN 218,319. Quaker City Chocolate & Confectionery Co., Inc., Philadelphia, Pa. Filed May 7, 1965.



The phrase "Fruit Flavored Candy" and the representation of the goods are disclaimed apart from the mark as shown. The drawing is lined for the colors pink, orange, yellow, and green. Owner of Reg. No. 742,450.
For Candy.
First use Sept. 9, 1959.

SN 219,402. Cook Chocolate Company, Chicago, Ill. Filed May 21, 1965.



Owner of Reg. No. 713,920.
For Candy.
First use in or about July 1964.

SN 220,230. Piedmont Mills, Inc., Lynchburg, Va. Filed June 2, 1965.

HILL CITY

Owner of Reg. No. 418,426.
For Wheat Flour.
First use 1930.

SN 220,984. Lamb-Weston, Inc., Portland, Oreg. Filed June 11, 1965.

LAMB'S

Owner of Reg. No. 519,987.
For Dehydrated Potatoes.
First use 1961.

SN 221,201. Piedmont Mills, Inc., Lynchburg, Va. Filed June 15, 1965.



For Corn Meal.
First use 1905.

SN 222,243. American Food Laboratories, Inc., Brooklyn, N.Y. Filed June 29, 1965.

DO-SPRING

For Conditioning Agent (Lecithin, Carrageenan, Mono and Diglycerides), for Baked Foods.
First use December 1964.

SN 222,841. General Foods Corporation, White Plains, N.Y. Filed July 7, 1965.



For Cereal Breakfast Food.
First use May 28, 1965.

SN 224,273. Viviano Macaroni Company, Carnegie, Pa. Filed July 26, 1965.

Spruance

For Bread Mixes in Many Variations.
First use during 1949.

SN 224,530. General Foods Corporation, White Plains, N.Y. Filed July 29, 1965.

HONEY CRISP

The word "Crisp" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 170,853 and 778,832.
For Cereal Breakfast Food.
First use July 9, 1965.

SN 225,956. Idaho Potato Growers, Inc., Idaho Falls, Idaho. Filed Aug. 18, 1965.



No claim is made to the map outline of the United States or to the letters "U.S.A." The drawing is lined for the colors red and blue.
For Frozen French Fried Potatoes.
First use on or about Sept. 1, 1964.

SN 226,127. Continental Sea Foods, Inc., New York, N.Y. Filed Aug. 20, 1965.

JUMBOLINA

For Frozen Raw Shrimp.
First use Aug. 12, 1964.

SN 226,207. J. Warren Bowman, Inc., St. Petersburg, Fla. Filed Aug. 23, 1965.

SHISHKATINI

For Crackers and Pickled Cocktail Relish Sticks.
First use July 19, 1965.

SN 227,511. National Dairy Products Corporation, New York, N.Y. Filed Sept. 9, 1965.

Co-Co/T

For Vegetable Shortening.
First use July 27, 1965.

SN 229,216. Fairmont Foods Company, Omaha, Nebr. Filed Oct. 4, 1965.

SnacKers

For Snack Items—Namely, Crackers.
First use Sept. 20, 1965.

SN 229,217. Fairmont Foods Company, Omaha, Nebr. Filed Oct. 4, 1965.

CORN CLOUDS

Applicant disclaims the word "Corn" apart from the mark as shown.
For Snack Items—Namely, a Puffed Homogenized Corn Meal Product.
First use Sept. 20, 1965.

SN 229,540. The Morrison Milling Company, Denton, Tex. Filed Oct. 7, 1965.

MORRISON'S

corn-kits

For Prepared Corn Bread Mix.
First use Aug. 28, 1965.

SN 230,173. Francis H. Leggett & Co., d.b.a. Seabrook Farms Co., Carlstadt, N.J. Filed Oct. 14, 1965.

SEABROOK FARMS

The drawing is lined for blue and green. Owner of Reg. Nos. 184,841, 742,455, and others.

For Frozen Prepared Foods—Namely, Broccoli Au Gratin, Lima Beans in Cheese Sauce, Creamed Onions, Green Beans in Mushroom Sauce, Asparagus Hollandaise Style, Peas and Carrots in Cream Sauce, Creamed Spinach, Peas in Onion Sauce, Buttered Parsley Potatoes, Chicken Cacciatore, Beef Stew, Beef Patty, Beef Goulash With Noodles, and Beef With Onions.

First use Sept. 8, 1965; Dec. 23, 1912, as to "Seabrook"; 1931 as to "Seabrook Farms."

SN 230,617. Crawford Candies Inc., d.b.a. Crawford Candies, Ambler, Pa. Filed Oct. 20, 1965.

MISTY MINTS

Applicant disclaims the word "Mints" apart from the mark as shown.

For Mint Candies.

First use Apr. 5, 1965.

SN 232,589. Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. Filed Nov. 12, 1965.

MISTY-MORN

For Refrigerated Prepared Biscuits.

First use Aug. 18, 1965.

SN 232,740. D. Thompson Swing, Inc., Price, Md. Filed Nov. 15, 1965.

Swing

Owner of Reg. Nos. 203,847 and 203,848.

For Canned Vegetables.

First use Aug. 1, 1896.

SN 232,755. Hunt Foods and Industries, Inc., d.b.a. Hunt Foods, Inc., Fullerton, Calif. Filed Nov. 15, 1965.

HUNT—FOR THE BEST

Owner of Reg. Nos. 420,786, 420,951, and 569,818.

For Canned Fruits, Canned Vegetables, Canned Tomato Puree, Canned Pork and Beans With Tomato Sauce, Canned Chili Beans, Canned Tomato Juice, Canned Tomato Sauce, Canned Tomato Paste, Canned Tomato Sauce With Cheese, Canned Tomato Sauce With Mushrooms, Canned Hominy; Bottled White Vinegar, Bottled Cider Vinegar, Bottled Chili Sauce, and Bottled Tomato Catsup.

First use at least as early as 1944.

SN 232,867. Seneca Grape Juice Corp., Dundee, N.Y. Filed Nov. 17, 1965.

WHY LUG A JUG

For Frozen Concentrated Apple Cider in Cans.

First use Sept. 15, 1965.

SN 232,979. Chef Henri, Inc., Chicago, Ill. Filed Nov. 19, 1965.

CHEF HENRI'S

For Frozen Pre-Cut Meat.

First use May 25, 1965.

SN 233,075. Castle & Cooke, Inc., d.b.a. Royal Hawaiian Macadamia Nut Co., Honolulu, Hawaii. Filed Nov. 22, 1965.

ROYAL HAWAIIAN

Owner of Reg. Nos. 536,133 and 608,407.

For Candy.

First use Nov. 10, 1965.

SN 233,175. Farmers Exchange, Inc., Franklintown, La. Filed Nov. 23, 1965.

ARAWAK

For Dairy Feed.

First use June 23, 1965.

SN 233,220. Ralph Samsel, d.b.a. Ralph Samsel Co., El Centro, Calif. Filed Nov. 22, 1965.

RASCAL

For Fresh Lettuce.

First use Oct. 12, 1965.

SN 235,561. Good Humor Corporation, Englewood Cliffs, N.J. Filed Dec. 30, 1965.

BON-JOY CUP

The word "Cup" is disclaimed apart from the mark as shown.

For Ice Cream and Quiescently Frozen Confections in a Cup.

First use Dec. 7, 1965.

SN 236,107. Luck's Incorporated, Seagrove, N.C. Filed Jan. 10, 1966.

LUCK'S

Owner of Reg. No. 608,905.

For Canned Vegetables, Canned Vegetables and Pork, Canned Fruits; Canned Meats and Meat Products, i.e., Pork Barbecue, Steak and Gravy, Chicken and Dumplings, Chicken Brunswick Stew, Potatoes, Beef and Gravy, Beef and Gravy and Chili With Beans.

First use Dec. 1, 1950.

SN 236,183. East India Spice Co., Ltd., Mount Vernon, N.Y. Filed Jan. 11, 1966.

CHATTER BOX

For Tea.

First use Oct. 15, 1965.

SN 238,272. The National Sugar Refining Company, New York, N.Y. Filed Feb. 7, 1966.

TOPPS

Owner of Reg. No. 658,867.

For Flavored Food Product in Granular Form, for Use as a Cereal Topping.

First use Jan. 21, 1966.

SN 239,255. Fritzsche Brothers, Inc., New York, N.Y. Filed Feb. 21, 1966.

EST. 1871 Fritzsche BROTHERS INC NEW YORK

Owner of Reg. Nos. 62,432, 796,044, and others.

For Imitation Citrus Oils for Food Flavoring Purposes; Citrus Oils for Food; Spice Flavorings for Food; Food Flavoring Extracts; Flavorings for Food, Confectionery and Dessert Products; Flavoring Oils and Flavoring Agents for Food; Fruit and Imitation Fruit Flavors for Food; Chemical Compounds and Chemical Preparations for Flavoring Food Products; and Aromatic Additives for Use in the Manufacture of Foods.

First use June 7, 1963.

SN 240,442. Hunt Oil Company, d.b.a. HLH Products, Dallas, Tex. Filed Mar. 8, 1966.

HAPPY CLOWN

For Canned Orange-Flavored Food Beverage.

First use Feb. 9, 1966.

SN 242,906. John Morrell & Co., Ottumwa, Iowa. Filed Apr. 7, 1966.

RED CARPET

For Canned Ham.

First use Oct. 22, 1965.

Class 47—Wines

SN 186,124. Warren B. Strauss, d.b.a. Warren B. Strauss Company, Scarborough-on-Hudson, N.Y. Filed Feb. 5, 1964.

Cor de Rose

The English Translation of "Cor de Rose" is "rose-color." The term "Cor de Rose" is disclaimed apart from the mark as shown.

For Pink Wines.

First use July 14, 1959.

Class 48—Malt Beverages and Liquors

SN 197,501. Metropolis Brewery of N.J., Inc., Trenton, N.J. Filed July 9, 1964.

Trenton Old Stock

Applicant disclaims the words "Old Stock" apart from the mark as shown. The drawing is lined for red and gold, but color is not claimed as a feature of the mark.

For Beer.

First use Aug. 20, 1942.

SN 222,897. Metropolis Brewery of N.J., Inc., Trenton, N.J. Filed June 30, 1965.

CHAMP

For Ale.

First use June 5, 1939.

SN 225,478. G. Heileman Brewing Company, Inc., La Crosse, Wis. Filed Aug. 11, 1965.

Oktoberfest Brau

Applicant disclaims the exclusive right to the word "Brau" apart from the mark as shown.
For Beer.
First use Sept. 29, 1964.

Class 49—Distilled Alcoholic Liquors

SN 219,028. E. Martinoni Company, San Francisco, Calif. Filed May 17, 1965.

GROG SHOPPE

The word "Grog" is disclaimed apart from the mark as shown.
For Bourbon and Scotch Whiskies.
First use Apr. 8, 1965.

Class 50—Merchandise Not Otherwise Classified

SN 205,595. Moultrie Manufacturing Company, Moultrie, Ga. Filed Nov. 5, 1964.

LOVELIEST GIFT FOR A GARDENER

Applicant disclaims "For a Gardener" apart from the mark as shown.
For Decorative Garden Plaques.
First use June 1960.

SN 213,647. Sumner D. Bearman, d.b.a. Space-Ad, Los Angeles, Calif. Filed Mar. 9, 1965.

SPACE-AD

For Quick-Change, Snap-On Signs and Letters Adapted To Be Attached to Vertical Surfaces.
First use July 29, 1964.

SN 219,258. Presque Isle Paper Products, Inc., Erie, Pa. Filed May 19, 1965.

PRESCO

For Foam Plastic and Sheet Plastic Die-Cut Parts, for Protection Against Damage From Impact in Shipping, and Die-Cut Plastic Hangers.
First use Aug. 1, 1964.

SN 229,369. Pan American Hydroponics, Inc., Dallas, Tex. Filed Oct. 5, 1965.

AUTO-GRO SOILESS GARDEN
PAN AMERICAN HYDROPONICS
INCORPORATED
DALLAS, TEXAS

The words "Soiless Garden," "Pan American Hydroponics, Incorporated," and "Dallas, Texas" are disclaimed apart from the mark as shown.
For Hydroponic Vegetable and Plant Fiberglass Trays and Beds, and Indoor Fiberglass Planters.
First use Mar. 19, 1965.

SN 233,809. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Dec. 2, 1965.

3M

Owner of Reg. No. 700,268.
For Decorative Sheet Material.
First use at least as early as Oct. 29, 1965.

SN 235,678. Janet Paper Corp., Brooklyn, N.Y. Filed Jan. 3, 1966.

JAN PAC

Without waiver of common-law or other rights, no claim is made to the word "Pac" separate and apart from the mark as shown.
For Birthday and Everyday Sets Consisting of a Package Containing Paper Plates, Napkins, and Table Covers, Plastic Forks, Spoons, and Knives.
First use at least prior to Aug. 10, 1965.

SN 237,723. George P. Marsden, d.b.a. George Marsden Design, Washington, D.C. Filed Feb. 1, 1966.

gmd

For Exhibition and Display Units in the Nature of Fixed, Portable, Demountable, Display Assemblies for Use at Exhibits, Trade Shows, Conventions, etc.
First use June 1965.

SN 237,902. Z-I-P Corporation, Albuquerque, N. Mex. Filed Feb. 2, 1966.

ZIP STICK

No claim is made to the word "Stick" apart from the mark as shown, without waiving any common law rights therein.
For Personal Protective Device—Namely, Stick With Extendable Coiled Springs for Striking an Attacker.
First use Dec. 8, 1965.

SN 239,064. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 17, 1966.

3M

For Non-Slip Treads for Tub and Shower.
First use Oct. 30, 1964.

Class 51—Cosmetics and Toilet Preparations

SN 170,377. Colgate-Palmolive Company, New York, N.Y. Filed June 5, 1963.

CHIEF

For Deodorant for Personal Use.
First use May 15, 1963.

SN 200,071. Clairol Incorporated, New York, N.Y. Filed Aug. 18, 1964.

KINDNESS FROM CLAIROL

For Hair Conditioner.
First use July 15, 1964.

SN 200,073. Clairol Incorporated, New York, N.Y. Filed Aug. 18, 1964.

COLOR BALANCE

Applicant disclaims the word "Color" apart from the mark as shown. Owner of Reg. No. 721,705.
For Hair Tinting, Dyeing, and Coloring Preparations.
First use July 15, 1964.

SN 200,161. Clairol Incorporated, New York, N.Y. Filed Aug. 19, 1964.

FAIR FAWN

Applicant disclaims the word "Fawn" apart from the mark as shown.
For Hair Tinting, Dyeing, and Coloring Preparation.
First use Mar. 19, 1964.

SN 214,669. Fred Meyer, Inc., Portland, Oreg. Filed Mar. 22, 1965.

LADY EVA

The name "Lady Eva" is fanciful.
For Toiletries—Namely, Bubble Bath and Creme Rinse.
First use 1942.

SN 217,204. Parfums Ciro, Inc., New York, N.Y. Filed Apr. 23, 1965.

GENUINE SPRAY

Applicant disclaims the word "Spray" apart from the mark as shown.
For Perfume.
First use Apr. 5, 1965.

SN 219,798. Javier A. Gomez, Guadalajara, Mexico. Filed May 26, 1965.

JOJOBA

Owner of Mexican Reg. No. 99,227, dated Nov. 19, 1959.
For Liquid and Solid Hair Oil, After-Shave Lotion, Eyelash Oil, and Eyelash Liner.

SN 220,771. Knomark, Inc., Jamaica, N.Y. Filed June 9, 1965.

TORERO

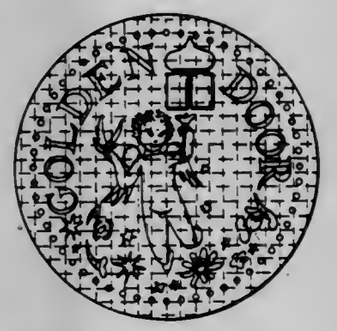
For Cologne.
First use May 26, 1965.

SN 220,830. Bertney Toiletries, Ltd., Dallas, Tex. Filed June 10, 1965.

WHITE LIGHTNIN

For Men's Cologne.
First use May 17, 1965.

SN 221,040. Golden Door Cosmetics, Inc., San Diego, Calif. Filed June 14, 1965.



The drawing is lined for gold.
For Body Oil, Wrinkle Oil, Cleansing Oil, Night Oil, Facial Masque, Eye Oil, Make Up Foundation, Shower Oil, Supersensitive Skin Oil, Deep Cleanser, After Shave Oil, Moisturizer, Bath Oil, Cleansing Cream, Skin Lotion, and Hair Conditioner.
First use Aug. 1, 1958.

SN 221,156. Clairol Incorporated, New York, N.Y. Filed June 15, 1965.

THE BEAUTY PRESCRIPTION FOR TROUBLED HAIR

For Beauty Pack Treatment for General Reconditioning of the Hair.
First use June 1962.

SN 221,912. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed June 24, 1965.

E. FABER

Owner of Reg. Nos. 129,700, 699,426, and others.
For Eyebrow Pencils.
First use Apr. 21, 1931.

SN 221,917. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed June 24, 1965.

EBERHARD FABER

Owner of Reg. Nos. 129,700, 699,426, and others.
For Eyebrow Pencils.
First use Apr. 21, 1931.

SN 222,110. John H. Breck, Inc., Springfield, Mass. Filed June 28, 1965.

ONCE A WEEK

For Hair Dressing Preparation.
First use Mar. 16, 1965.

SN 222,585. King Arthur, Inc., Memphis, Tenn. Filed July 2, 1965.

KING ARTHUR, INC.

For Shaving Cream and Personal Deodorant.
First use June 17, 1965.

SN 231,371. Victor Barouh, d.b.a. Boricua Products Co., New York, N.Y. Filed Oct. 23, 1965.

BORICUA

"Boricua" is the Indian equivalent of "Puerto Rico."
For Shaving Cream, Shaving Soap, Face Cream, Face Lotion, Body Lotion, Face Powder, and Bubble Bath Preparation.
First use Feb. 4, 1964.

SN 231,711. Jean Vigneron, Epinal, Vosges, France. Filed Oct. 26, 1965.

OLIGODENT

Owner of French Reg. No. 1,178, dated Feb. 2, 1963 (Epinal); Natl. Inst. No. 200,211.
For Dentifrice, Toothpaste, and Dental Cream.

SN 232,534. Dep Corporation, Los Angeles, Calif. Filed Nov. 12, 1965.

EAU DE COLOGNE EN WATER

For Cologne for Men.
First use in or about the year 1947.

SN 232,647. Allied Research Corporation, New York, N.Y. Filed Nov. 15, 1965.

MR. PLUSH

For Hair Grooming Product, Hair Dressing or Tonic.
First use July 30, 1965.

SN 236,070. Erich Dybal, Bregenz/Bodensee, Austria. Filed Jan. 10, 1966.

MARION DYBAL

"Marion Dybal" is not the name of a particular individual.
Owner of Austrian Reg. No. 47,821, dated May 7, 1962.
For Skin Cream.

SN 237,653. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed Feb. 1, 1966.

FORMAGEN I

For Hair Set and Conditioner.
First use Nov. 24, 1965.

SN 238,400. Carley, Inc., Haddonfield, N.J. Filed Feb. 9, 1966.

SPORTS CENTER

Owner of Reg. No. 770,077.
For Toilet Water, After-Shave Lotion, Men's Cologne, and Ladies' Cologne.
First use Jan. 22, 1966.

SN 238,535. Invisible Shaving Liquid Corp., Staten Island, N.Y. Filed Feb. 10, 1966.

invisible shave

No claim is made to the word "Shave" apart from the mark.
For Shaving Liquid.
First use Dec. 13, 1965.

SN 238,793. Shulton, Inc., Clifton, N.J. Filed Feb. 14, 1966.

HOMOGENATED

For Aerosol Shave Cream.
First use Dec. 14, 1965.

SN 238,919. Bristol-Myers Company, New York, N.Y. Filed Feb. 16, 1966.

GENTIQUE

For Cosmetics and Toilet Preparations—Namely, a Hair Dressing.
First use Jan. 26, 1966.

SN 238,920. Bristol-Myers Company, New York, N.Y. Filed Feb. 16, 1966.

RED COAT

For Cosmetics and Toilet Preparations—Namely, a Hair Dressing.
First use Jan. 26, 1966.

SN 238,922. Bristol-Myers Company, New York, N.Y. Filed Feb. 16, 1966.

LETTERMAN

For Cosmetics and Toilet Preparations—Namely, a Hair Dressing.
First use Jan. 26, 1966.

SN 239,005. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1966.

BRIGHT NOW

For Cosmetics and Toilet Preparations—Namely, a Dentifrice.
First use Feb. 2, 1966.

SN 239,006. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1966.

INTRO

For Cosmetics and Toilet Preparations—Namely, a Dentifrice.
First use Feb. 4, 1966.

SN 239,060. Maradel Products, Inc., Farmingdale, N.Y. Filed Feb. 17, 1966.

MEDICORE

For Blemish Stick and Lipstick.
First use Jan. 1, 1966.

SN 239,079. The Procter & Gamble Co., Cincinnati, Ohio. Filed Feb. 17, 1966.

EXTEND

For Personal Deodorant.
First use Oct. 28, 1965.

SN 239,127. De Beaufort, Ltd., New York, N.Y. Filed Feb. 18, 1966.

CRESTWOOD

For Men's Cologne.
First use July 30, 1956.

SN 239,930. Josephine K. Preston, d.b.a. Jo Preston Cosmetics, Wantagh, N.Y. Filed Mar. 1, 1966.

ENAJ

For Perfume and Cologne.
First use on or about June 1, 1963.

SN 239,933. Roux Laboratories, Inc., New York, N.Y. Filed Mar. 1, 1966.

VARI-TONE

For Hair Coloring Preparation.
First use Feb. 18, 1966.

SN 240,260. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 7, 1966.

BY CASHMERE BOUQUET

Owner of Reg. Nos. 22,546, 564,401, and others.
For Perfume.
First use Jan. 11, 1966.

SN 240,300. Hi-Fashion, Inc., Atlanta, Ga. Filed Mar. 7, 1966.

HF

For Cosmetics—Namely, Base and Top Coat for Finger Nail Enamel; Finger Nail Enamel, Nail Polish, Sealer for Nail Polish and Enamel, Cuticle Remover, and Lipsticks.
First use on or about Dec. 28, 1965.

Class 52—Detergents and Soaps

SN 189,684. Agway, Inc., Syracuse, N.Y., by merger of Cooperative Grange League Federation Exchange, Ithaca, N.Y. Filed Mar. 26, 1964.

AGWAY

For Egg Washing Cleanser, Household and Dairy Soaps and Detergents, Flea Soap, and Washing Powder.
First use Mar. 5, 1964.

SN 201,043. National Industrial Products Company, Columbus, Ohio. Filed Sept. 1, 1964.

BEACHRITE

Owner of Reg. No. 295,530.
For Detergents Made of Soap, With or Without Alkaline Materials, for Commercial and Institutional Use.
First use on or about Aug. 15, 1931.

SN 222,871. Red Top Maintenance Service, Inc., Denver, Colo. Filed July 7, 1965.

FINALE

For Biodegradable Germicidal Detergent for Hospital and Institutional Use.
First use May 29, 1965.

SN 224,920. Calgon Corporation, Pittsburgh, Pa. Filed Aug. 4, 1965.

CALGON LAUNDRY FRESH AGAIN

Owner of Reg. Nos. 306,582, 699,145, and others.
For Domestic Laundry Composition Including Water Conditioner, Fabric Softener, Optical Brightener, and Detergent.
First use May 27, 1965.

SN 229,692. Summers Laboratories, Inc., Fort Washington, Pa. Filed Oct. 8, 1965.

SEBAQUIN

For Antiseborrheic Shampoo.
First use Oct. 19, 1961.

SN 230,039. E-Z-Est Products Co., Inc., Oakland, Calif. Filed Oct. 13, 1965.

JEWELDIP

Owner of Reg. No. 692,591.
For Liquid Cleaning Compound for Cleaning Jewelry Such as Diamonds and All Precious or Simulated Stones, Rings, Earrings, Brooches, Bracelets, or Necklaces.
First use Oct. 18, 1957.

SN 230,853. Lazarus Laboratories, Inc., Long Island City, N.Y. Filed Oct. 21, 1965.

SUPERSAN

For Liquid Detergent Germicide Cleaner for Cleaning, Sanitizing, and Disinfecting Milking Equipment.
First use Nov. 1, 1962.

SN 232,037. Trager Manufacturing Company, Scranton, Pa. Filed Nov. 2, 1965.

SEA MIST PRODUCTS
THE HOUSEHOLD HELP WOMEN CAN TRUST

No exclusive claim is made to the word "Products" or to the words "The Household Help Women Can Trust" apart from the mark as shown. Owner of Reg. Nos. 637,012 and 773,821.
For Liquid and Spray Glass Cleaner, and Liquid Floor and Wall Cleaner.
First use Sept. 1, 1962.

SN 232,126. Guardian Chemical Company, Atlanta, Ga. Filed Nov. 4, 1965.

IODOX

For Cleaner-Sanitizer of the Controlled Iodine Type.
First use Aug. 13, 1957.

SN 232,734. Douglas L. Snow and Thelma M. Snow (joint owners), d.b.a. Southwestern Chemicals Company, Houston, Tex. Filed Nov. 15, 1965.

SCALEX

For Compound in Liquid Form for Removing Scale and Rust From Boilers.
First use in or about 1956.

SN 233,313. Big Bear, Inc., St. Cloud, Minn. Filed Nov. 26, 1965.

dairy dew

Applicant disclaims the word "Dairy" apart from the mark as shown.
For Cleaners for Dairy Use.
First use Aug. 2, 1965.

SN 234,217. The Lea Manufacturing Co., Waterbury, Conn. Filed Dec. 8, 1965.

LEA INSULSTRIP

Owner of Reg. Nos. 274,639 and 539,247.
For Chemical Preparation for Removing Enamel, Lacquer, and Resinous Insulation From Electrical Wires and Other Conductors.
First use Dec. 3, 1964.

SN 236,899. Lever Brothers Company, New York, N.Y. Filed Jan. 20, 1966.

HEAVYWEIGHT

For Detergent for Laundry and Dishwashing.
First use Dec. 23, 1965.

SN 237,982. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Feb. 3, 1966.

MONSIEUR LANVIN

Owner of Reg. Nos. 510,160, 698,286, and others.
For Toilet Soap.
First use April 1963.

SN 243,822. Redken Laboratories, Inc., Van Nuys, Calif. Filed Apr. 20, 1966.

AMINO-PON "K-11"

For Hair Shampoo Concentrate.
First use Sept. 2, 1960.

SERVICE MARKS

Class 100 — Miscellaneous

SN 148,332. G. J. Sherrard Company, d.b.a. The Parker House, Boston, Mass. Filed July 3, 1962.

PARKER HOUSE

For Hotel Services.
First use 1855.

SN 208,906. Food Host U.S.A., Inc., Lincoln, Nebr. Filed Dec. 28, 1964.

Food Host USA

The term "Food," the expression "USA," and the representation of the map of the United States are disclaimed apart from the mark as shown.
For Restaurant Services.
First use on or about Sept. 1, 1963.

SN 211,925. Quality Courts Motels, Inc., Daytona Beach, Fla. Filed Feb. 12, 1965. COLLECTIVE MARK.

THE MOTEL EMBLEM TRAVELERS TRUST

For Providing Lodging in Tourist Courts.
First use not later than June 15, 1962.

SN 232,947. Trident Engineering Associates, Inc., Annapolis, Md. Filed Nov. 18, 1965.



TRIDENT ENGINEERING ASSOCIATES, INC.

Owner of Reg. No. 770,946.
For Research, Development, Engineering and Design of Commercial and Military Products.
First use Apr. 28, 1960.

SN 238,536. Howard D. Johnson Company, Wollaston, Mass. Filed Feb. 10, 1966.

HoJo

For Restaurant Services.
First use Jan. 26, 1966.

Class 101 — Advertising and Business

SN 171,662. House Furnishing Company, d.b.a. Quality House Stores, Minneapolis, Minn. Filed June 24, 1963.

QUALITY HOUSE

For Retail Furniture Store Outlet Service.
First use July 20, 1962.

SN 206,783. Travelers Directory Service, Inc., Winston-Salem, N.C. Filed Nov. 23, 1964.



For Advertising Hotel, Motel, and Motor Court Services of Others.
First use Mar. 1, 1964.

SN 206,867. La Leche League International Inc., Franklin Park, Ill. Filed Nov. 24, 1964.

LA LECHE LEAGUE

The English translation of the Spanish words "La Leche" is "the milk."
For Advice and Consultation to Mothers, and Dissemination of Information in Regard to Breast Feeding of Infants.
First use Dec. 1, 1957.

SN 206,868. La Leche League International Inc., Franklin Park, Ill. Filed Nov. 24, 1964.



For Advice and Consultation to Mothers, and Dissemination of Information in Regard to Breast Feeding of Infants.
First use May 1, 1961.

SN 211,996. Fast Foods, Inc., Columbus, Ohio. Filed Feb. 15, 1965.



For Services Involving Advice and Consultation in the Establishment and Operation of Retail Grocery Stores.
First use Feb. 15, 1964.

SN 223,112. Fluffy Fresh Prepared Mix Company, Inc., Kansas City, Mo. Filed July 12, 1965.

FLUFFY FRESH

For Retail Doughnut Shop Services.
First use June 1953.

SN 225,386. World Wide Life Insurance Company, Milwaukee, Wis. Filed Aug. 9, 1965.



Applicant disclaims the descriptive depiction of the globe apart from the mark as shown.
For Insurance Agency Services—Namely, Sales and Service of Life Insurance Policies Specifically Designed for College Students.
First use June 7, 1965.

SN 225,387. World Wide Insurance Service Corporation, Milwaukee, Wis. Filed Aug. 9, 1965.



Applicant disclaims the descriptive wording "World Wide" and the descriptive depiction of the globe apart from the mark as shown.
For Insurance Agency Services—Namely, Sales and Service of Life Insurance Policies Specifically Designed for College Students.
First use June 7, 1965.

SN 225,470. Casey Employment Service Corp., Wilmington, Del. Filed Aug. 11, 1965.



For Employment Agency Services, More Particularly for Agency Services for Obtaining Permanent and Temporary Employment.
First use August 1958.

Class 102 — Insurance and Financial

SN 229,104. Medi-Fact Inc., West Peabody, Mass. Filed Oct. 1, 1965.

MEDI-FACT

For Medical Billing and Collecting Services.
First use May 12, 1965.

Class 103 — Construction and Repair

SN 198,446. Volkswagenwerk Aktiengesellschaft, Wolfsburg, Germany. Filed July 23, 1964.

VOLKSWAGEN

Owner of U.S. Reg. No. 617,131.
For Repair, Reconditioning, and Replacement of Motors and Accessories and Parts Thereof, and Repair and Reconditioning of Motor Vehicles, Aircraft, and Boats.
First use 1949; in commerce July 1, 1950.

SN 222,828. William J. Crosby, d.b.a. Crosby Upholstering Co., Cleveland, Ohio. Filed July 7, 1965.



The wording "We Brighten Homes All-Ways" is disclaimed apart from the mark as shown.
For Upholstering and Repairing of Furniture.
First use 1948.

SN 229,258. Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. Filed Oct. 4, 1965.



The drawing is lined for the colors blue and red. Owner of Reg. Nos. 736,562, 749,921, and 790,486.
For Gasoline Station Services.
First use Aug. 1, 1965.

Class 104 — Communication

SN 212,977. Communications, Inc., Rapid City, S. Dak. Filed Mar. 1, 1965.



Applicant disclaims the term "2-Way Mike" apart from the mark as shown.
For Maintaining and Repairing Communication Equipment.
First use Oct. 19, 1964.

SN 220,055. ABC International Television, Inc., New York, N.Y. Filed June 1, 1965.

WORLDVISION

For International Television and Radio Broadcasting Service.
First use August 1962.

Class 105 — Transportation and Storage

SN 190,969. Puget Sound Tug & Barge Company, Seattle, Wash. Filed Apr. 13, 1964.

HYDRO-TRAIN

The word "Train" is disclaimed apart from the mark as shown.
For Rail Barge Service.
First use June 5, 1963.

SN 221,699. Club Car, Inc., Long Island City, N.Y. Filed June 22, 1965.



Applicant disclaims the word "Car" apart from the mark as shown.
For Limousine Transportation Service.
First use Apr. 15, 1965.

SN 228,528. Herrin Transfer & Warehouse Co., Inc., Shreveport, La. Filed Sept. 24, 1965.

TRANSTRIBUTION

For Warehousing, and Arranging for Transportation and Distribution of Goods.
First use Dec. 18, 1964.

Class 106 — Material Treatment

SN 229,043. Alloy Surfaces Company, Inc., Wilmington, Del. Filed Oct. 1, 1965.

TANTALIZED

For Impregnating Metals Belonging to Others With Tantalum.
First use June 25, 1965.

Class 107 — Education and Entertainment

SN 219,262. The Radio Bible Class, Inc., Grand Rapids, Mich. Filed May 19, 1965.



Owner of Reg. No. 630,185.
For Promoting Interest in Religion and the Bible Through the Medium of Radio and Television Programs.
First use Dec. 1, 1964.

SN 230,081. Paul Rubio, d.b.a. Paul Rubio Productions, Hollywood, Calif. Filed Oct. 13, 1965.

THE CHOSEN FEW

For Entertainment—Namely, a Rock and Roll Band.
First use Nov. 20, 1964.

SN 246,021. Jack-in-the-Box, Inc., San Diego, Calif. Filed May 19, 1966.

JACK IN THE BOX

Owner of Reg. Nos. 722,379 and 722,380.
For Entertainment Services Rendered by Means of Television Broadcasts.
First use May 9, 1966.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

814,214. DRISPAC. Drilling Specialties Company. SN 202,425. Pub. 6–21–66. Filed 9–23–64.

814,215. POLY-SET. Morton International, Inc., by change of name from Morton Salt Company. SN 216,868. Pub. 9–28–65. Filed 4–19–65.

814,216. SQUIRE APPLEGATE. Comark Corporation. SN 216,928. Pub. 6–21–66. Filed 4–20–65.

814,217. REHAU AND DESIGN. Rehau-Plastiks G.m.b.H. SN 219,816. Pub. 6–21–66. Filed 5–26–65.

814,218. CONACURE. Conap, Inc. SN 220,638. Pub. 6–21–66. Filed 6–8–65.

814,219. AVANT. Swift & Company, d.b.a. A. C. Lawrence Leather Co. SN 222,221. Pub. 6–21–66. Filed 6–28–65.

814,220. HYSOL AND DESIGN. Hysol Corporation. CONSOLIDATED CERTIFICATE. SN 225,030, pub. 6–14–66, filed 8–5–65, Cl. 1; SN 225,031, pub. 6–14–66, filed 8–5–65, Cl. 5; SN 225,032, pub. 6–14–66, filed 8–5–65, Cl. 12; SN 225,033, pub. 6–14–66, filed 8–5–65, Cl. 16; SN 225,034, pub. 6–14–66, filed 8–5–65, Cl. 21.

814,221. PHAROS. Shell Oil Company. SN 232,244. Pub. 6–21–66. Filed 11–5–65.

814,222. BONDOE. Bonded Fibers, Incorporated. SN 233,675. Pub. 6–21–66. Filed 12–1–65.

814,223. SUNBURST. Koppers Company, Inc. SN 234,207. Pub. 6–21–66. Filed 12–8–65.

814,224. CITADELLE. Randall Fuel Company, Incorporated. SN 234,302. Pub. 6–21–66. Filed 12–9–65.

Class 2—Receptades

814,225. TREE IN A TRIANGLE (DESIGN). Weyerhaeuser Company. SN 194,939–B. Pub. 6–21–66. Filed 6–4–64.

814,226. HOTRAY. Salton, Incorporated. MULTIPLE CLASS (Classes 2, 23, 31, and 33). SN 205,099. Pub. 6–21–66. Filed 10–29–64.

814,227. SUGAR PINE WORKSHOP. Sugar Pine Workshop Inc. MULTIPLE CLASS (Classes 2, 32, and 50). SN 214,383. Pub. 6–21–66. Filed 3–17–65.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

814,228. THE MUSTANG WHIP AND DESIGN. Smith & Marion. SN 219,627. Pub. 6–21–66. Filed 5–24–65.

814,229. CAT NAP-PUR. Barnes-Daugherty and Associates. SN 223,510. Pub. 6–21–66. Filed 7–16–65.

Class 4—Abrasives and Polishing Materials

814,230. CLAIRE AND DESIGN. Claire Manufacturing Company. MULTIPLE CLASS (Classes 4, 6, 18, 51, and 52). SN 197,083. Pub. 2–22–66. Filed 7–6–64.

814,231. TOPCO. Topco Associates, Inc. SN 213,491. Pub. 6–21–66. Filed 3–5–65.

814,232. WIPE 'N GLOW. Colgate-Palmolive Company. SN 224,843. Pub. 6–21–66. Filed 8–3–65.

814,233. MULTI-GLAZE. Brown and Sons Polish Co. SN 226,614. Pub. 6–21–66. Filed 8–27–65.

814,234. REPRESENTATION OF A PURITAN. Puritan Chemical Company. MULTIPLE CLASS (Classes 4, 16, and 52). SN 230,342. Pub. 6–21–66. Filed 10–18–65.

814,235. "SAND-PAK." Minnesota Mining and Manufacturing Company. SN 233,808. Pub. 6–21–66. Filed 12–2–65.

814,236. 3M. Minnesota Mining and Manufacturing Company. SN 234,290. Pub. 6–21–66. Filed 12–9–65.

814,237. CONIFORM. Minnesota Mining and Manufacturing Company. SN 234,291. Pub. 6–21–66. Filed 12–9–65.

Class 5—Adhesives

814,220. CONSOLIDATED CERTIFICATE. See Class 1.

814,238. CONTROLTAC. Minnesota Mining and Manufacturing Company. SN 236,503. Pub. 6–21–66. Filed 1–14–66.

814,239. OXOLAMINA. Aziende Chimiche Riunite Angelini Francesco. SN 178,083. Pub. 9–29–64. Filed 9–30–63.

Class 6—Chemicals and Chemical Compositions

814,230. (See Class 4 for this trademark.)

814,240. THERM-X. Milchem Incorporated, by change of name from Milwhite Mud Sales Company. SN 184,086. Pub. 3–23–65. Filed 1–6–64.

814,241. QUELL. Philadelphia Quartz Company. SN 191,710. Pub. 6–21–66. Filed 4–21–64.

814,242. THIONOL. Imperial Chemical Industries Limited. SN 205,419. Pub. 1–4–66. Filed 11–3–64.

814,243. MIGLYOL. Chemische Werke Witten. SN 211,032. Pub. 6–21–66. Filed 2–1–65.

814,244. CURALON. United States Rubber Company. SN 211,484. Pub. 6–21–66. Filed 2–5–65.

814,245. NEODOL. Shell Oil Company. SN 211,936. Pub. 11–2–65. Filed 2–12–65.

814,246. PERMALOSE. Imperial Chemical Industries Limited. SN 219,713. Pub. 6–21–66. Filed 5–25–65.

814,247. PLUSH. Talsol Corp., d.b.a. Plush Division. SN 222,078. Pub. 6–21–66. Filed 6–25–65.

814,248. POLYFIX. Certified Blood Donor Service Inc. SN 222,341. Pub. 6–21–66. Filed 6–30–65.

814,249. CAMCO QUIK STAIN. Cambridge Chemical Products, Inc. SN 226,036. Pub. 6–21–66. Filed 8–19–65.

814,250. MONI-TROL. Dade Reagents, Inc. SN 227,753. Pub. 5–3–66. Filed 9–14–65.

814,251. VYRASEPT. Churchill Chemical Company. SN 230,779. Pub. 6–21–66. Filed 10–21–65.

814,252. ACRIPEN. Manufacturers Chemicals Corporation. SN 230,856. Pub. 6–21–66. Filed 10–21–65.

814,253. QUINTEX. Manufacturers Chemicals Corporation. SN 230,860. Pub. 6–21–66. Filed 10–21–65.

814,254. +2. Plus Two Corporation. SN 230,891. Pub. 6–21–66. Filed 10–21–65.

814,255. DOT. Dry Oil Treatment, Inc. SN 231,071. Pub. 6–21–66. Filed 10–22–65.

814,256. SINBAR. E. I. du Pont de Nemours and Company. SN 231,072. Pub. 6–21–66. Filed 10–22–65.

814,257. COJECTROL. Moser Paper Company. SN 231,178. Pub. 6–21–66. Filed 10–22–65.

814,258. H/C. Moser Paper Company. SN 231,181. Pub. 6–21–66. Filed 10–22–65.

814,259. EQUALATROL. Moser Paper Company. SN 231,187. Pub. 6–21–66. Filed 10–22–65.

Class 8—Smokers' Articles, Not Including Tobacco Products

814,260. SWEET CLOUD. Wally Frank, Ltd., d.b.a. Holico. SN 211,808. Pub. 6–21–66. Filed 2–11–65.

814,261. PIPE PARTNER. William W. Buckley. SN 229,752. Pub. 6–21–66. Filed 10–11–65.

Class 10—Fertilizers

814,262. UREA-SUL. Kerley Chemical Corporation of Arizona. SN 222,279. Pub. 6–21–66. Filed 6–29–65.

814,263. MISCELLANEOUS DESIGN. Canada Packers Limited. MULTIPLE CLASS (Classes 10, 18, and 46). SN 232,639. Pub. 6–21–66. Filed 11–12–65.

Class 12—Construction Materials

814,220. CONSOLIDATED CERTIFICATE. See Class 1.

814,264. MASTIC AND DESIGN. Mastic Corporation. SN 193,883. Pub. 6–21–66. Filed 5–20–64.

814,265. FLAME-GUARD. Dierks Forests, Inc. SN 198,941. Pub. 2–16–65. Filed 7–31–64.

814,266. MODULINE. Industrial Acoustics Company, Inc. SN 221,933. Pub. 6–21–66. Filed 6–24–65.

814,267. MAR-LINER AND DESIGN. Paddock of California, Inc. SN 222,957. Pub. 6–21–66. Filed 7–8–65.

814,268. TEMPEST. Frontier Fence Corp. SN 231,993. Pub. 6–21–66. Filed 11–2–65.

814,269. FAMILY-TAILORED HOMES, ETC. AND DESIGN. National Homes Corporation. SN 232,136. Pub. 6–21–66. Filed 11–4–65.

814,270. LESCO HOMES AND DESIGN. Lester Brothers, Incorporated. SN 232,465. Pub. 6–21–66. Filed 11–10–65.

814,271. VP. American Colloid Company. SN 232,649. Pub. 6–21–66. Filed 11–15–65.

814,272. STYROFOAM AND DESIGN. The Dow Chemical Company. SN 232,820. Pub. 6–21–66. Filed 11–17–65.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

814,273. SAFE-T-OPEN. Maxon Premix Burner Company, Inc. SN 199,684. Pub. 6–21–66. Filed 8–11–64.

814,274. FOREST VIEW. Wilbur F. Heuser, d.b.a. Forest View Evergreen Nursery. MULTIPLE CLASS (Classes 13 and 23). SN 213,114. Pub. 6–21–66. Filed 3–2–65.

814,275. MAYFAIR. Fesco, Inc. SN 221,812. Pub. 6–21–66. Filed 6–23–65.

814,276. MCCANNA-SAUNDERS. Hills-McCanna Company. SN 222,378. Pub. 6–21–66. Filed 6–30–65.

814,277. UNI-BOLT. Dan Polos Industries, Inc. SN 224,024. Pub. 1–11–66. Filed 7–22–65.

814,278. COMSCO PRODUCTS AND DESIGN. Commerce Supply & Mfg. Co. SN 226,420. Pub. 6–21–66. Filed 8–25–65.

814,279. AMC. Alofs Manufacturing Company. SN 227,220. Pub. 6–21–66. Filed 9–7–65.

814,280. PLUMB RITE AND DESIGN. Sterling Faucet Company. SN 227,718. Pub. 6–21–66. Filed 9–13–65.

814,281. TIF-TYTE. Carol Papé Pinger, d.b.a. The Independent Fitting Company. SN 228,131. Pub. 6–21–66. Filed 9–20–65.

814,282. TRANSOL. FMC Corporation. SN 228,897. Pub. 6–21–66. Filed 9–29–65.

814,283. R AND DESIGN. Rockford Screw Products Co. SN 231,943. Pub. 6–21–66. Filed 11–1–65.

814,284. CHARLEY-BAR. Charles-Bar Lok Corp. SN 232,057. Pub. 6–21–66. Filed 11–3–65.

Class 14—Metals and Metal Castings and Forgings

814,285. ISODISC. Gebr. Bohler & Co., Aktiengesellschaft. SN 193,655. Pub. 6–21–66. Filed 5–18–64.

814,286. FLOWERFLAKE AND DESIGN. Metalflake, Inc. SN 216,319. Pub. 6–21–66. Filed 4–12–65.

814,287. UNISEAL. Cyclops Corporation. SN 229,209. Pub. 6–21–66. Filed 10–4–65.

814,288. AMNIC. American Metal Climax, Inc. SN 230,481. Pub. 6–21–66. Filed 10–19–65.

Class 15—Oils and Greases

814,289. TYRI. A/S Tyri Fabrikker. SN 216,376. Pub. 6–21–66. Filed 4–13–65.

814,290. TRI-AD. Gulf Oil Corporation. SN 219,426. Pub. 6–21–66. Filed 5–21–65.

814,291. HACO. Fred E. Hays, d.b.a. Hays Company. MULTIPLE CLASS (Classes 15 and 23). SN 220,099. Pub. 6–21–66. Filed 6–1–65.

814,292. LUGER. Stoeger Arms Corporation. SN 224,803. Pub. 6–21–66. Filed 8–2–65.

814,293. ATLANTIC. The Atlantic Refining Company. SN 226,716. Pub. 6–21–66. Filed 8–30–65.

814,294. SUPER LONET. Sinclair Refining Company. SN 227,453. Pub. 6–21–66. Filed 9–8–65.

814,295. ATLANTIC AND DESIGN. The Atlantic Refining Company. SN 227,741. Pub. 6–21–66. Filed 9–14–65.

814,296. ATLANTIC AND RED AND BLUE DESIGN. The Atlantic Refining Company. SN 227,742. Pub. 6–21–66. Filed 9–14–65.

814,297. ATLANTIC AND BLACK DESIGN. The Atlantic Refining Company. SN 227,743. Pub. 6–21–66. Filed 9–14–65.

814,298. ATLANTIC. The Atlantic Refining Company. SN 227,744. Pub. 6–21–66. Filed 9–14–65.

814,299. BANDOIL. Reilly-Whiteman-Walton Co. SN 229,679. Pub. 6–21–66. Filed 10–8–65.

814,300. GOLD SEAL. Quaker State Oil Refining Corporation. SN 230,699. Pub. 6–21–66. Filed 10–20–65.

Class 16—Protective and Decorative Coatings

814,220. CONSOLIDATED CERTIFICATE. See Class 1.

814,234. (See Class 4 for this trademark.)

814,301. NEOGARD. Jones-Blair Company, by change of name from Jones-Blair Paint Company, Inc. SN 169,277. Pub. 6–21–66. Filed 5–20–63.

814,302. DURAGLAS. Owens-Illinois Glass Company. SN 180,437. Pub. 3–29–66. Filed 11–4–63.

814,303. COLORSPAN ETC. The Marvelite Paint Company. SN 186,238. Pub. 6–21–66. Filed 2–7–64.

814,304. TREE IN A TRIANGLE (DESIGN). Weyerhaeuser Company. SN 194,939-D. Pub. 6-21-66. Filed 6-4-64.

814,305. ELASTO-GARD. Jones-Blair Company, by change of name from Jones-Blair Paint Company, Inc. SN 210,568. Pub. 6-21-66. Filed 1-25-65.

814,306. CB AND DESIGN. C-B Drug Company. MULTIPLE CLASS (Classes 16, 18, 46, and 51). SN 222,533. Pub. 6-21-66. Filed 7-2-65.

814,307. BLOC-TEX. The Sherwin-Williams Company. SN 225,208. Pub. 6-21-66. Filed 8-6-65.

814,308. MAGNA CHART. Magna Visual, Inc. MULTIPLE CLASS (Classes 16 and 50). SN 227,049. Pub. 6-21-66. Filed 9-2-65.

814,309. 1ST DOWN AND DESIGN. The Davies-Young Soap Company. SN 227,655. Pub. 6-21-66. Filed 9-13-65.

814,310. STIX AND DESIGN. Lasting Products Company. SN 229,825. Pub. 6-21-66. Filed 10-11-65.

814,311. LITHOWAX. Interchemical Corporation. SN 230,251. Pub. 6-21-66. Filed 10-15-65.

814,312. PLUSH. Talsol Corp., d.b.a. Plush Division. SN 237,400. Pub. 6-21-66. Filed 1-26-66.

Class 17—Tobacco Products

814,313. TIPATELLA. Universal Cigar Corporation. SN 212,467. Pub. 6-21-66. Filed 2-19-65.

Class 18—Medicines and Pharmaceutical Preparations

814,230. (See Class 4 for this trademark.)

814,263. (See Class 10 for this trademark.)

814,306. (See Class 16 for this trademark.)

814,314. CARADRIN. Laevosan-Gesellschaft Chem. Pharm. Industrie, Franck & Dr. Freudl. SN 206,947. Pub. 6-21-66. Filed 11-25-64.

814,315. SYNOSMIN. Syntex Laboratories, Inc. SN 220,419. Pub. 6-21-66. Filed 6-4-65.

814,316. DROMISOL. Merck & Co., Inc. SN 221,284. Pub. 6-21-66. Filed 6-16-65.

814,317. CRONOLONE. G. D. Searle & Co. SN 222,624. Pub. 6-21-66. Filed 7-2-65.

814,318. 9 AM. Windsor-Hall Products, Inc. SN 223,055. Pub. 6-21-66. Filed 7-9-65.

814,319. ACN-E-OFF. Samson Drug Co., Inc. SN 223,585. Pub. 6-21-66. Filed 7-16-65.

814,320. PLV-2. Sandoz, Inc. SN 225,202. Pub. 6-21-66. Filed 8-6-65.

814,321. COUGH WHIP. Bristol-Myers Company. SN 228,876. Pub. 6-21-66. Filed 9-29-65.

814,322. ANABOLIN. Warner-Lambert Pharmaceutical Company. SN 229,900. Pub. 6-21-66. Filed 10-11-65.

814,323. CHLOR-ANODYNE. Parke, Davis & Company. SN 230,068. Pub. 6-21-66. Filed 10-13-65.

814,324. VIBRIN. Nordon Laboratories, Inc. SN 231,769. Pub. 4-12-66. Filed 10-28-65.

814,325. PEPS. Fisons Pharmaceuticals Limited. SN 231,992. Pub. 6-21-66. Filed 11-2-65.

814,326. HI-POWER. Morton Manufacturing Corporation, d.b.a. Blair Quality Products. SN 233,371. Pub. 6-21-66. Filed 11-26-65.

814,327. FLASK (DESIGN). Merck & Co., Inc., d.b.a. Quinton Company. SN 233,617. Pub. 5-3-66. Filed 11-30-65.

814,328. EXIT. Nature Food Centres, Inc., d.b.a. Nature Food Centres. SN 235,927. Pub. 6-21-66. Filed 1-6-66.

814,329. MELANATE. The Upjohn Company. SN 236,670. Pub. 6-21-66. Filed 1-17-66.

814,330. MGA. The Upjohn Company. SN 236,671. Pub. 6-21-66. Filed 1-17-66.

814,331. PROMOTE. The Upjohn Company. SN 236,672. Pub. 6-21-66. Filed 1-17-66.

814,332. PROAID. The Upjohn Company. SN 236,673. Pub. 6-21-66. Filed 1-17-66.

814,333. PROFEM. The Upjohn Company. SN 236,674. Pub. 6-21-66. Filed 1-17-66.

814,334. MODESS. Johnson & Johnson, d.b.a. Personal Products Company. SN 237,133. Pub. 6-21-66. Filed 1-24-66.

814,335. BRONKOLIXIR. Breon Laboratories Inc. SN 237,298. Pub. 6-21-66. Filed 1-26-66.

814,336. BRONKOSOL. Breon Laboratories Inc. SN 237,299. Pub. 6-21-66. Filed 1-26-66.

Class 19—Vehicles

814,337. KELSEY-HAYES. Kelsey-Hayes Company. SN 211,815. Pub. 6-21-66. Filed 2-11-65.

814,338. DRAGSTAR. Shore-Calnevar, Inc. SN 223,733. Pub. 6-21-66. Filed 7-19-65.

814,339. SEAL-TITE. Allen Electric and Equipment Company. SN 224,499. Pub. 6-21-66. Filed 7-29-65.

814,340. AMC. Alofs Manufacturing Company. SN 227,221. Pub. 6-21-66. Filed 9-7-65.

814,341. UTLX-PANDABLE. Union Tank Car Company. SN 232,622. Pub. 6-21-66. Filed 11-12-65.

Class 21—Electrical Apparatus, Machines, and Supplies

814,220. CONSOLIDATED CERTIFICATE. See Class 1.

814,342. KWIK-TRIM. General Scientific Corporation. SN 144,484. Pub. 3-19-63. Filed 5-14-62.

814,343. FEDERAL. Federal Sign and Signal Corporation. SN 198,543. Pub. 6-21-66. Filed 7-27-64.

814,344. H AND DESIGN. Kenneth C. Holloway, Inc. SN 198,649. Pub. 6-21-66. Filed 7-28-64.

814,345. THE DIFFERENCE BETWEEN NIGHT AND DAY. Precision Multiple Controls, Inc. SN 200,283. Pub. 6-21-66. Filed 8-20-64.

814,346. ELECTROVERT. Electrovert Ltd. MULTIPLE CLASS (Classes 21 and 34). SN 202,073. Pub. 6-21-66. Filed 9-17-64.

814,347. CONTROL SYSTEMS ETC. AND DESIGN. John C. Walters, d.b.a. Electric Motors Service Co. SN 202,115. Pub. 6-21-66. Filed 9-17-64.

814,348. WIND-O-MATIC. Rival Manufacturing Company. SN 211,932. Pub. 6-21-66. Filed 2-12-65.

814,349. DURAD. Haveg Industries, Inc. SN 212,315. Pub. 6-21-66. Filed 2-18-65.

814,350. ECONOTAN. Components, Inc. SN 212,504. Pub. 6-21-66. Filed 2-23-65.

814,351. TOPCO. Topco Associates, Inc. SN 213,492. Pub. 6-21-66. Filed 3-5-65.

814,352. TOPCO. Topco Associates, Inc. SN 213,913. Pub. 6-21-66. Filed 3-11-65.

814,353. V-RING. Scanwell Laboratories, Inc. SN 214,791. Pub. 6-21-66. Filed 3-23-65.

814,354. MISCELLANEOUS DESIGN. Penn Engineering and Manufacturing Corporation. SN 216,190. Pub. 6-21-66. Filed 4-9-65.

814,355. DA VINCI. Thalberg International, Ltd. SN 216,746. Pub. 6-21-66. Filed 4-16-65.

814,356. ARROWHEAD AND DESIGN. Arrowhead Enterprises, Inc. SN 218,731. Pub. 6-21-66. Filed 5-13-65.

814,357. COLORLITER. United States Camo Corporation. SN 220,043. Pub. 6-21-66. Filed 5-28-65.

814,358. KELMAN SINCE 1908 AND DESIGN. I-T-E Circuit Breaker Company. SN 220,660. Pub. 6-21-66. Filed 6-8-65.

814,359. LECTROETCH. The Lectroetch Company. SN 222,168. Pub. 6-21-66. Filed 6-28-65.

814,360. CONTACT! Vernitron Corporation, d.b.a. United Scientific Laboratories. SN 223,478. Pub. 6-21-66. Filed 7-15-65.

814,361. SILIZED. Siemens-Schuckertwerke Aktiengesellschaft. SN 223,914. Pub. 6-21-66. Filed 7-21-65.

814,362. RONSON AUTOMATICALLY BETTER AND DESIGN. Ronson Corporation. MULTIPLE CLASS (Classes 21 and 23). SN 224,684. Pub. 6-21-66. Filed 6-30-65.

814,363. SUPERSPOT. B. Merritt, Inc. SN 225,337. Pub. 6-21-66. Filed 8-9-65.

814,364. EECOLOGIC. Electronic Engineering Company of California. SN 225,743. Pub. 6-21-66. Filed 8-16-65.

814,365. EECOLOGIC AND DESIGN. Electronic Engineering Company of California. SN 225,744. Pub. 6-21-66. Filed 8-16-65.

814,366. SIERRA-PAK. Sierra Electric Corporation. SN 227,342. Pub. 6-21-66. Filed 9-7-65.

814,367. MULTI-CAP. American Lava Corporation. SN 227,913. Pub. 6-21-66. Filed 9-16-65.

814,368. N-A. Plastic Wire & Cable Corporation. SN 227,956. Pub. 6-21-66. Filed 9-16-65.

814,369. SERVICEL. Servel, Inc. SN 227,965. Pub. 6-21-66. Filed 9-16-65.

814,370. GAS-GLO. Kyp-Go, Inc. SN 234,829. Pub. 6-21-66. Filed 12-17-65.

814,371. J AND DESIGN. Jackson Vibrators, Inc. MULTIPLE CLASS (Classes 21 and 23). SN 240,047. Pub. 6-21-66. Filed 3-3-66.

Class 22—Games, Toys, and Sporting Goods

814,372. MACO TOYS AND DESIGN. Maco Toys Inc. SN 194,627. Pub. 6-21-66. Filed 6-1-64.

814,373. ZOOOM MOBILE. Louis Marx & Co., Inc. SN 216,515. Pub. 1-11-66. Filed 4-14-65.

814,374. MOLTEN. Molten Gomu Kogyo Kabushiki Kaisha, d.b.a. Molten Rubber Industrial Co., Ltd. SN 223,251. Pub. 6-21-66. Filed 7-13-65.

814,375. GO. Nash Manufacturing Company. SN 224,775. Pub. 6-21-66. Filed 8-2-65.

814,376. PFLUEGER AND DESIGN. Pflueger Corporation. SN 225,057. Pub. 6-21-66. Filed 8-5-65.

814,377. POWER GROOVE. Wilson Sporting Goods Co. SN 225,384. Pub. 6-21-66. Filed 8-9-65.

814,378. ATI AND DESIGN. All Tech Industries, Inc. SN 225,853. Pub. 6-21-66. Filed 8-17-65.

814,379. SPRINT. Mattel, Inc. SN 225,975. Pub. 6-21-66. Filed 8-18-65.

814,380. OPERATION "ATTACK." Louis Marx & Co., Inc. SN 226,067. Pub. 6-21-66. Filed 8-19-65.

814,381. FESTIVAL. Festival Products, Inc. SN 228,142. Pub. 6-21-66. Filed 9-20-65.

814,382. MISCELLANEOUS DESIGN. Festival Products, Inc. SN 228,143. Pub. 6-21-66. Filed 9-20-65.

814,383. COMANCHE. Robert Apolan, d.b.a. Catchmore Lures Co. SN 228,316. Pub. 6-21-66. Filed 9-22-65.

814,384. GOGO. Robert H. Wendt, d.b.a. GO Company. SN 228,589. Pub. 6-21-66. Filed 9-24-65.

814,385. LIDDLE KIDDLES. Mattel, Inc. SN 228,715. Pub. 6-21-66. Filed 9-27-65.

814,386. CHEERFUL TEARFUL. Mattel, Inc. SN 228,722. Pub. 6-21-66. Filed 9-27-65.

814,387. AERO-SKIN. Renwal Products, Inc. SN 233,131. Pub. 6-21-66. Filed 11-22-65.

814,388. TEXACO AND DESIGN. Texaco Inc. SN 233,653. Pub. 6-21-66. Filed 11-30-65.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

814,226. (See Class 2 for this trademark.)

814,274. (See Class 13 for this trademark.)

814,291. (See Class 15 for this trademark.)

814,362. (See Class 21 for this trademark.)

814,371. (See Class 21 for this trademark.)

814,389. GOURMET CREST. Kanematsu New York, Inc. SN 204,264. Pub. 6-21-66. Filed 10-19-64.

814,390. KADY. Kinetic Dispersion Corporation. SN 211,542. Pub. 6-21-66. Filed 2-8-65.

814,391. CON-RO-LIFT AND DESIGN. Engineered Models Corporation. SN 211,802. Pub. 6-21-66. Filed 2-11-65.

814,392. MR. AQUA SPRAY. Aqua Spray, Inc. SN 212,179. Pub. 6-21-66. Filed 2-17-65.

814,393. SAF-T-PAK. KVP Sutherland Paper Company. SN 212,418. Pub. 6-21-66. Filed 2-19-65.

814,394. SENTRY. Sentry Hardware Corporation. SN 212,455. Pub. 6-21-66. Filed 2-19-65.

814,395. MICRO-FLO. Harris-Intertype Corporation. SN 212,533. Pub. 6-21-66. Filed 2-23-65.

814,396. SC ROTODRIVE. Kommanditgesellschaft Ski-Craft Motorenbau und Vertriebs Ges. mbH & Co. SN 212,889. Pub. 6-21-66. Filed 2-26-65.

814,397. MOW-RITE. General Appliance Manufacturing Co. SN 213,003. Pub. 6-21-66. Filed 3-1-65.

814,398. BELLE BUOY. Charles W. Ranson. SN 213,044. Pub. 6-21-66. Filed 3-1-65.

814,399. SWIFTACHER. Dennison Manufacturing Company. SN 213,419. Pub. 6-21-66. Filed 3-5-65.

814,400. RUBBUR. Dexco Corporation. SN 213,536. Pub. 6-21-66. Filed 3-8-65.

814,401. E.B.M.I. EARTHWORM BORING MACHINE AND DESIGN. Earthworm Boring Machine, Inc. SN 213,540. Pub. 6-21-66. Filed 3-8-65.

814,402. HYDRO-STRIP AND DESIGN. Industrial Sheet Metal Corp. SN 213,774. Pub. 6-21-66. Filed 3-10-65.

814,403. GOLDEN GRIP. Fuller Tool Company, Inc. SN 213,869. Pub. 6-21-66. Filed 3-11-65.

814,404. PUSHPAK. LeTourneau-Westinghouse Company. SN 213,989. Pub. 6-21-66. Filed 3-12-65.

814,405. SWIFTY. Unity Sewing Supply, Inc. SN 214,044. Pub. 6-21-66. Filed 3-12-65.

814,406. JGY YAHNKE COMPANY ETC. AND DESIGN. J. G. Yahnke Co. SN 214,049. Pub. 6-21-66. Filed 3-12-65.

814,407. FORM-A-CUT. Form-A-Tool Co., Inc. SN 214,103. Pub. 6-21-66. Filed 3-15-65.

814,408. MIL MASTER. Midland Industries Limited. SN 214,273. Pub. 6-21-66. Filed 3-16-65.

814,409. MIL. Midland Industries Limited. SN 214,274. Pub. 6-21-66. Filed 3-16-65.

814,410. "CHIPMUNK." Mill Equipment, Inc. SN 216,524. Pub. 6-21-66. Filed 4-14-65.

814,411. CHIPMUNK ETC. (DESIGN). Mill Equipment, Inc. SN 216,552. Pub. 6-21-66. Filed 4-14-65.

814,412. MEGA FLO AND DESIGN. Mega, Incorporated. SN 219,036. Pub. 6-21-66. Filed 5-17-65.

814,413. CATCLONE. Buell Engineering Company, Inc. SN 220,741. Pub. 6-21-66. Filed 6-9-65.

814,414. UNIVAIR AND DESIGN. New Univair Corporation. SN 222,189. Pub. 6-21-66. Filed 6-28-65.

814,415. WIND SWEPT AND DESIGN. Beloit Corporation. SN 223,514. Pub. 6-21-66. Filed 7-16-65.

814,416. ACROMARK AND DESIGN. Harold O. Bates, d.b.a. The Acromark Company. SN 224,837. Pub. 6-21-66. Filed 8-3-65.

814,417. SUBURBAN. Original Tractor Cab Company, Inc. SN 225,593. Pub. 6-21-66. Filed 8-12-65.

814,418. BATS. Owen-Richards Company, Inc. SN 225,805. Pub. 6-21-66. Filed 8-16-65.

814,419. R AND DESIGN. Revolvator Company. SN 225,895. Pub. 6–21–66. Filed 8–17–65.

814,420. REPLIQUE. Imperial International Corp. SN 226,239. Pub. 6–21–66. Filed 8–23–65.

814,421. AMC. Alofs Manufacturing Company. SN 227,222. Pub. 6–21–66. Filed 9–7–65.

814,422. PERMACHROME AND DESIGN. Southern Plating Company. SN 227,346. Pub. 6–21–66. Filed 9–7–65.

814,423. CONTRA-FLOW. Hobbs Manufacturing Company. SN 227,671. Pub. 6–21–66. Filed 9–13–65.

814,424. AIR-FLYTE. Eastern Cyclone Industries, Inc. SN 228,345. Pub. 6–21–66. Filed 9–22–65.

814,425. SELECTA-VEYOR. Eastern Cyclone Industries, Inc. SN 228,346. Pub. 6–21–66. Filed 9–22–65.

814,426. COMPUT-AIR. Eastern Cyclone Industries, Inc. SN 228,348. Pub. 6–21–66. Filed 9–22–65.

814,427. AIREX AND DESIGN. Aquariums Incorporated. SN 229,629. Pub. 6–21–66. Filed 10–8–65.

814,428. WORK LOK. Page Engineering Company. SN 231,203. Pub. 6–21–66. Filed 10–22–65.

814,429. MOONSPUN. The International Silver Company. SN 232,076. Pub. 6–21–66. Filed 11–3–65.

814,430. M AND DESIGN. Meyer Products, Inc. SN 232,079. Pub. 6–21–66. Filed 11–3–65.

814,431. MEYER-PEITL. Meyer Products, Inc. SN 232,080. Pub. 6–21–66. Filed 11–3–65.

814,432. WEL-CARD. Wellman Combing Company, d.b.a. Wellman Industries. SN 232,099. Pub. 6–21–66. Filed 11–3–65.

814,433. BOST-LUBE. Murray Company of Texas, Inc., d.b.a. Boston Gear Works. SN 237,471. Pub. 6–21–66. Filed 1–27–66.

Class 26 — Measuring and Scientific Appliances

814,434. HANHART AND DESIGN. Willie Hanhart, d.b.a. Adolf Hanhart. SN 162,090. Pub. 6–21–66. Filed 2–5–63.

814,435. DIAL/DATAFAX. Stewart-Warner Corporation. SN 168,644. Pub. 6–21–66. Filed 5–10–63.

814,436. ALCO. Alco Electronic Products Inc. SN 168,998. Pub. 12–22–64. Filed 5–16–63.

814,437. A. D. LEVERIDGE. Athos D. Leveridge, d.b.a. A. D. Leveridge. SN 201,129. Pub. 6–21–66. Filed 9–2–64.

814,438. SPERRY AND DESIGN. Sperry Rand Corporation. SN 203,836. Pub. 6–21–66. Filed 10–12–64.

814,439. SPIKETECTOR. Allen West & Company Limited. SN 210,179. Pub. 6–21–66. Filed 1–18–65.

814,440. SELECTA-SIZE. The Besly-Welles Corporation, assignee of Besly-Welles Corporation. SN 210,389. Pub. 6–21–66. Filed 1–21–65.

814,441. ELHYGEN. Milton Roy Company. SN 211,960. Pub. 6–21–66. Filed 2–12–65.

814,442. MCCROMETER. McCrometer Corporation. SN 214,143. Pub. 6–21–66. Filed 3–15–65.

814,443. CARTOVUE. Denoyer-Geppert Company. MULTIPLE CLASS (Classes 26 and 38). SN 215,822. Pub. 6–21–66. Filed 4–6–65.

814,444. VIC AND DESIGN. Videomark Instrument Corporation. SN 216,902. Pub. 6–21–66. Filed 4–19–65.

814,445. SWIRLMETER. American Radiator & Standard Sanitary Corporation. SN 219,946. Pub. 6–21–66. Filed 5–28–65.

814,446. LASERLIGN. Laser Lign, Inc. SN 220,307. Pub. 6–21–66. Filed 6–3–65.

814,447. LASERLIGN AND DESIGN. Laser Lign, Inc. SN 220,308. Pub. 6–21–66. Filed 6–3–65.

814,448. ASTRO-GEROS. Irving N. Adler and Richard J. Wlodyga (joint owners). SN 220,341. Pub. 6–21–66. Filed 6–4–65.

814,449. CRYSTALAB. Crystal Research Laboratories, Inc. SN 220,360. Pub. 6–21–66. Filed 6–4–65.

814,450. ROTO-RULE AND DESIGN. Frederick G. Carlson and Richard J. Brandt (joint owners). SN 220,458. Pub. 6–21–66. Filed 6–7–65.

814,451. TALKING GLOBE. Replogle Globes, Inc. SN 220,553. Pub. 6–21–66. Filed 6–7–65.

814,452. COQUETTE. C'Bon, Inc. SN 220,911. Pub. 6–21–66. Filed 6–11–65.

814,453. GAMMA/FLO. Precision Scientific Company (Delaware corporation), assignee of Precision Scientific Company (Illinois corporation). SN 221,406. Pub. 6–21–66. Filed 6–17–65.

814,454. PRIVATE EYE. The Kimac Company. SN 221,606. Pub. 6–21–66. Filed 6–21–65.

814,455. DIMPLE. Sequoia Contact Lens, Inc. SN 221,679. Pub. 6–21–66. Filed 6–21–65.

814,456. TEGEA. Kinoptik. SN 224,758. Pub. 6–21–66. Filed 8–2–65.

814,457. OSCILLOMINK. Siemens & Halske Aktiengesellschaft. SN 226,584. Pub. 6–21–66. Filed 8–26–65.

814,458. MAGNA-MATIC. American Hoist & Derrick Company. SN 226,881. Pub. 6–21–66. Filed 9–1–65.

814,459. UDM. Universal Drafting Machine Corporation. SN 227,195. Pub. 6–21–66. Filed 9–3–65.

814,460. MISCELLANEOUS DESIGN. Corning Glass Works. SN 227,562. Pub. 6–21–66. Filed 9–10–65.

814,461. MISCELLANEOUS DESIGN. R. C. Allen Business Machines, Inc. SN 229,479. Pub. 6–21–66. Filed 10–7–65.

Class 27 — Horological Instruments

814,462. B & A. Belove & Arienti Watch Case Company, Inc. SN 221,690. Pub. 6–21–66. Filed 6–22–65.

814,463. ORLEANS. Sunbeam Corporation. SN 222,519. Pub. 6–21–66. Filed 7–1–65.

Class 28 — Jewelry and Precious-Metal Ware

814,464. VALUELINE. Sherwin Diamond Co. SN 222,425. Pub. 6–21–66. Filed 6–30–65.

814,465. STRAND OF BEAUTY. Royal Pearl Corp. SN 222,622. Pub. 6–21–66. Filed 7–2–65.

814,466. BONANZA. Wm. R. Katz Co. SN 228,697. Pub. 6–21–66. Filed 9–27–65.

Class 29 — Brooms, Brushes, and Dusters

814,467. TOPCO. Topco Associates, Inc. SN 213,495. Pub. 6–21–66. Filed 3–5–65.

814,468. DEW-FRESH. All-American Brush Mfg. Corp. SN 225,530. Pub. 6–21–66. Filed 8–12–65.

814,469. V.I.P. All-American Brush Mfg. Corp. SN 225,531. Pub. 6–21–66. Filed 8–12–65.

814,470. PROVOCATION. All-American Brush Mfg. Corp. SN 226,022. Pub. 6–21–66. Filed 8–19–65.

814,471. ROMANTIC. All-American Brush Mfg. Corp. SN 226,023. Pub. 6–21–66. Filed 8–19–65.

814,472. LADY GLAMOUR. All-American Brush Mfg. Co. SN 226,024. Pub. 6–21–66. Filed 8–19–65.

Class 30 — Crockery, Earthenware, and Porcelain

814,473. COUNSELOR. Nichimen Co., Inc. SN 216,525. Pub. 6–21–66. Filed 4–14–65.

Class 31 — Filters and Refrigerators

814,226. (See Class 2 for this trademark.)

814,474. WATER MAKER AND DESIGN. Aqua-Chem, Inc. SN 206,595. Pub. 6–21–66. Filed 11–20–64.

814,475. FARR. Farr Company. SN 207,378. Pub. 6–21–66. Filed 12–3–64.

814,476. MISCELLANEOUS DESIGN. Millipore Filter Corporation. SN 220,122. Pub. 6–21–66. Filed 6–1–65.

814,477. MINIFREEZER. Thermex, Inc., assignee of Modern Electronics, Inc., d.b.a. Schoeffel Instrument Co. SN 224,014. Pub. 5–24–66. Filed 7–22–65.

814,478. PERMAFILTER. Bonded Products, Inc. SN 229,632. Pub. 6–21–66. Filed 10–8–65.

814,479. KLEAR-KING. Aquariums Incorporated. SN 229,726. Pub. 6–21–66. Filed 10–11–65.

814,480. SWINNEX. Millipore Filter Corporation. SN 230,864. Pub. 6–21–66. Filed 10–21–65.

Class 32 — Furniture and Upholstery

814,227. (See Class 2 for this trademark.)

814,481. ELKIRT AND DESIGN. Elkirt Verticals, Inc. SN 215,058. Pub. 6–21–66. Filed 3–26–65.

814,482. CHAIR (DESIGN). BW Chair Company. SN 217,831. Pub. 6–21–66. Filed 5–3–65.

814,483. GRANDORM. Rusco Industries, Inc. SN 218,031. Pub. 6–21–66. Filed 5–4–65.

814,484. BEAU/CRAFT. B-C Manufacturing Corporation. SN 218,059. Pub. 6–21–66. Filed 5–5–65.

814,485. INSUL-FOAM. May & Company, Inc. SN 219,895. Pub. 6–21–66. Filed 5–27–65.

814,486. REAL PEOPLE. Baumritter Corporation. SN 231,719. Pub. 6–21–66. Filed 10–28–65.

814,487. FOAMOLD. Baumritter Corporation. SN 231,720. Pub. 6–21–66. Filed 10–28–65.

Class 33 — Glassware

814,226. (See Class 2 for this trademark.)

814,488. RIG-A-LITE. The Rig-A-Lite Company of Texas, Inc. SN 225,510. Pub. 6–21–66. Filed 8–11–65.

814,489. CIRCLE C AND DESIGN. Chattanooga Glass Company. SN 228,008. Pub. 6–21–66. Filed 9–17–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

814,346. (See Class 21 for this trademark.)

814,490. PANELBLOC DASH 2. The Bettcher Manufacturing Corporation. SN 203,926. Pub. 6–21–66. Filed 10–14–64.

814,491. ATOMASTER AND DESIGN. Master Consolidated, Inc. SN 205,308. Pub. 6–21–66. Filed 11–2–64.

814,492. MODERN-AIRE AND DESIGN. Modern-Aire Ventilating, Inc. SN 211,087. Pub. 6–21–66. Filed 2–1–65.

814,493. NEMCO AND DESIGN. Serv-Well Burner Corporation. SN 215,787. Pub. 6–21–66. Filed 4–5–65.

814,494. WIDGET WELDER AND DESIGN. G. H. Silver & Associates, Inc. SN 216,018. Pub. 6–21–66. Filed 4–7–65.

814,495. STRADDLE UNIT. Kramer Trenton Co. SN 216,414. Pub. 6–21–66. Filed 4–13–65.

814,496. COMBUSTION FOR INDUSTRY. Pyronics, Inc. SN 218,317. Pub. 6–21–66. Filed 5–7–65.

814,497. MINIKAY. Berner Industries, Inc. SN 229,187. Pub. 6–21–66. Filed 10–4–65.

814,498. MINIDRAFT. Berner Industries, Inc. SN 229,188. Pub. 6–21–66. Filed 10–4–65.

814,499. TASTE MASTER. Taste Master Supply Corporation. SN 229,309. Pub. 6–21–66. Filed 10–4–65.

814,500. MARKSMAN. Weller Electric Corporation. SN 229,904. Pub. 6–21–66. Filed 10–11–65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

814,501. CLARK. Clark Equipment Company. SN 216,268. Pub. 6–21–66. Filed 4–12–65.

814,502. GRIPTWIST. Browning Manufacturing Company. SN 228,882. Pub. 6–21–66. Filed 9–29–65.

Class 36 — Musical Instruments and Supplies

814,503. MUSIC EDUCATORS' SERVICE PLAN AND DESIGN. Music Educators' Service Plan, Ltd. MULTIPLE CLASS (Classes 36 and 38). SN 210,505. Pub. 6–21–66. Filed 1–25–65.

814,504. ARCH. Stephen Resz, d.b.a. Castleguard Record Co. SN 214,465. Pub. 6–21–66. Filed 3–18–65.

814,505. MENDAL AND DESIGN. Jose A. Mendigutia. SN 229,107. Pub. 6–21–66. Filed 10–1–65.

Class 37 — Paper and Stationery

814,506. SOUTHERN MAID. Jacksonville Paper Company. SN 125,493. Pub. 4–28–64. Filed 8–7–61.

814,507. NU-WIPE. Nu-Wipe, Inc. SN 194,912. Pub. 6–21–66. Filed 6–4–64.

814,508. PACEMAKER. David Kahn, Inc. SN 195,865. Pub. 3–2–65. Filed 6–17–64.

814,509. TEXPLORE. Cluett, Peabody & Co., Inc. SN 203,575. Pub. 6–21–66. Filed 10–8–64.

814,510. TOPCO. Topco Associates, Inc. SN 213,493. Pub. 6–21–66. Filed 3–5–65.

814,511. TOPCO. Topco Associates, Inc. SN 213,912. Pub. 6–21–66. Filed 3–11–65.

814,512. AUTOBAG. Johnson & Johnson. SN 218,774. Pub. 6–21–66. Filed 5–13–65.

814,513. FOX RIVER HARD WHITE N.P. Fox River Paper Corporation. SN 224,942. Pub. 6–21–66. Filed 8–4–65.

814,514. FOX RIVER SOFT WHITE N.P. Fox River Paper Corporation. SN 224,943. Pub. 6–21–66. Filed 8–4–65.

814,515. OLINBRITE. Olin Mathieson Chemical Corporation. SN 225,993. Pub. 6–21–66. Filed 8–18–65.

814,516. SCANDIA. Giftwrap Corporation of America, Inc. SN 226,049. Pub. 6–21–66. Filed 8–19–65.

814,517. LOKFREZE. Adams Paper Converting Company. SN 227,909. Pub. 6–21–66. Filed 9–16–65.

814,518. SPARKLE MOST. KVP Sutherland Paper Company. SN 227,948. Pub. 6–21–66. Filed 9–16–65.

814,519. TIP-STIK. Micropoint, Inc. SN 228,382. Pub. 6–21–66. Filed 9–22–65.

814,520. DWELF. Dwelf Greetings, Ltd. SN 228,521. Pub. 6–21–66. Filed 9–24–65.

814,521. ENVO-CHECK. Curtis 1000 Incorporated. SN 228,648. Pub. 6–21–66. Filed 9–27–65.

814,522. CONSERV-A-DEX. Supreme Steel Equipment Corporation. SN 230,008. Pub. 6–21–66. Filed 10–12–65.

814,523. FOAM-DRI 54. Fort Howard Paper Company. SN 240,166. Pub. 6–21–66. Filed 3–4–66.

Class 38 — Prints and Publications

814,443. (See Class 26 for this trademark.)

814,503. (See Class 36 for this trademark.)

814,524. SKIING. Ziff-Davis Publishing Company, by change of name and assignment from The Hastings Corporation, d.b.a. Skiing Publishing Company. SN 181,232. Pub. 5–3–66. Filed 11–15–63.

814,525. IFP. Institute for Financial Planning, Inc. SN 197,301. Pub. 6–21–66. Filed 7–7–64.

814,526. HOMEMAKERS GUILD OF AMERICA. Homemakers Guild of America Corporation. SN 200,936. Pub. 6–21–66. Filed 8–31–64.

814,527. HOSPITAL MEDICINE. Carter-Wallace, Inc., by change of name from Carter Products, Inc. SN 202,555. Pub. 6–21–66. Filed 9–24–64.

814,528. "TYGHT TYPE." Electrographic Corporation. SN 219,724. Pub. 6–21–66. Filed 5–25–65.

814,529. PHOTO-GALLEY. Electrographic Corporation. SN 219,725. Pub. 6–21–66. Filed 5–25–65.

814,530. MISCELLANEOUS DESIGN. "Sokagakkai" Religions Corporation. SN 221,322. Pub. 6–21–66. Filed 1–6–65.

814,531. THE RHODE ISLAND TRUSTEE. Rhode Island Hospital Trust Company. SN 224,464. Pub. 6–21–66. Filed 7–28–65.

814,532. OMICRON DELTA EPSILON. Omicron Delta Epsilon—National Honor Society in Economics. SN 225,496. Pub. 6–21–66. Filed 8–11–65.

814,533. MISCELLANEOUS DESIGN. The Reuben H. Donnelley Corporation. SN 227,571. Pub. 6–21–66. Filed 9–10–65.

814,534. KALEIDOLIGHT. Ettilie Wallace. SN 228,797. Pub. 6–21–66. Filed 9–27–65.

Class 39 — Clothing

814,535. BIG YANK AMBLERS AND DESIGN. Puritan Fashions Corporation, assignee of Reliance Manufacturing Company. SN 194,918. Pub. 6–21–66. Filed 6–4–64.

814,536. CLOCK-WISE FASHIONS AND DESIGN. Clock-Wise Fashions. SN 195,262. Pub. 5–24–66. Filed 5–21–64.

814,537. DE MILLUS AND DESIGN. De Millus Comercio e Industria de Roupas S.A. SN 200,309. Pub. 6–21–66. Filed 8–20–64.

814,538. TEEN COQUETTES. A. S. Beck Shoe Corporation. SN 200,898. Pub. 6–21–66. Filed 8–31–64.

814,539. JEAN LEE. Jean Lee Originals, Inc. SN 203,591. Pub. 6–21–66. Filed 10–8–64.

814,540. CURTSIES. Curtis-Stephens-Embry Co., Inc. SN 204,455. Pub. 6–21–66. Filed 10–21–64.

814,541. NAP SACK. Weldon, Inc., by change of name from Weldon Pajamas, Inc. SN 205,475. Pub. 6–7–66. Filed 11–3–64.

814,542. ANGEL WEAR. E. P. Chester Limited. SN 209,143. Pub. 5–3–66. Filed 12–31–64.

814,543. LABEL (DESIGN). Rawlings Sporting Goods Company. SN 209,303. Pub. 6–21–66. Filed 1–4–65.

814,544. FANTASTIKS! Wohl Shoe Company. SN 210,059. Pub. 6–21–66. Filed 1–15–65.

814,545. TOPCO. Topco Associates, Inc. SN 213,494. Pub. 6–21–66. Filed 3–5–65.

814,546. BENCH WARMER. Shutzer Manufacturing Co., Inc. SN 214,187. Pub. 1–11–66. Filed 3–15–65.

814,547. COURTSHIP AND DESIGN. Aylward H. Stockwell, d.b.a. Courtship. SN 214,580. Pub. 6–21–66. Filed 3–19–65.

814,548. UNIVERSITY SEAL ETC. AND DESIGN. Brookfield Clothes, Inc. SN 216,477. Pub. 6–21–66. Filed 4–14–65.

814,549. FEATHER-EZE. The Lovable Company. SN 219,219. Pub. 6–21–66. Filed 5–19–65.

814,550. LOVE LACE. The Lovable Company. SN 219,222. Pub. 6–21–66. Filed 5–19–65.

814,551. CLING. The Fibre-Metal Products Company. SN 221,710. Pub. 6–21–66. Filed 6–22–65.

814,552. RICHLAND AND DESIGN. H. H. Brown Shoe Co., Inc. SN 222,816. Pub. 6–21–66. Filed 7–7–65.

814,553. LADY XLO. F. Jacobson & Sons, Inc. SN 224,312. Pub. 6–21–66. Filed 7–27–65.

814,554. XLO. F. Jacobson & Sons, Inc. SN 224,313. Pub. 6–21–66. Filed 7–27–65.

814,555. THOM MCAN GTO. Melville Shoe Corporation. SN 224,772. Pub. 6–21–66. Filed 8–2–65.

814,556. JACKET KING. Jacket King, Inc. SN 225,325. Pub. 6–21–66. Filed 8–9–65.

814,557. AKUBRA. Arthur P. Stewart (Akubra Hats) Pty. Limited. SN 226,097. Pub. 7–5–66. Filed 8–19–65.

814,558. WOOL'AIRE. Maidenform Sportswear, Inc. SN 225,964. Pub. 5–31–66. Filed 8–18–65.

814,559. TUSCUNA. Palm Beach Company. SN 226,565. Pub. 6–21–66. Filed 8–26–65.

814,560. LITTLE WHIM. Vanity Fair Mills, Inc. SN 226,592. Pub. 6–21–66. Filed 8–26–65.

814,561. NET PROPHET. Vanity Fair Mills, Inc. SN 226,593. Pub. 6–21–66. Filed 8–26–65.

814,562. CISSIE AND DESIGN. Chadbourn Gotham, Inc. SN 227,005. Pub. 6–21–66. Filed 9–2–65.

814,563. STA-C. Louis Eastman Company. SN 227,130. Pub. 6–21–66. Filed 9–3–65.

814,564. PETER PAN PROVOCATIVE. Peter Pan Foundations, Inc. SN 227,176. Pub. 6–21–66. Filed 9–3–65.

814,565. SHORE PATROL. Sea Fashions of California. SN 227,183. Pub. 6–21–66. Filed 9–3–65.

814,566. DRESSMATE. The Barbison Corporation. SN 227,229. Pub. 6–21–66. Filed 9–7–65.

814,567. HALF WAY. Maidenform, Inc. SN 227,426. Pub. 6–21–66. Filed 9–8–65.

814,568. RAIN GLACE. New York Mackintosh Clothing Company, Inc. SN 227,435. Pub. 6–21–66. Filed 9–8–65.

814,569. COUNTRY LOOK. M. and D. Simon Company, Inc. SN 227,527. Pub. 6–21–66. Filed 9–9–65.

814,570. FASHION TIME. Maidenform, Inc. SN 228,055. Pub. 6–21–66. Filed 9–17–65.

814,571. STRETCH TYME. Sunshine Kiddie Knitwear Co., Inc. SN 228,082. Pub. 6–21–66. Filed 9–17–65.

814,572. MISTY LANE. Sandy Shaw, Inc. SN 228,840. Pub. 6–21–66. Filed 9–28–65.

814,573. THE PIPELINE. Creighton Shirt Company, Inc. SN 229,072. Pub. 6–21–66. Filed 10–1–65.

814,574. NPC. New Process Company. SN 229,543. Pub. 6–21–66. Filed 10–7–65.

814,575. MUTINEER BY P & S AND DESIGN. Picariello & Singer, Inc. SN 229,547. Pub. 6–21–66. Filed 10–7–65.

814,576. STEVIE-PREST. Stevie Togs, Inc. SN 229,591. Pub. 6–21–66. Filed 10–7–65.

814,577. DIKES. Tingley Rubber Corporation. SN 229,600. Pub. 6–21–66. Filed 10–7–65.

814,578. LUXUR-PRESS. Auerbach Bath Robe Corp. SN 229,631. Pub. 6–21–66. Filed 10–8–65.

814,579. KIMLON. Kimberly-Clark Corporation. SN 229,661. Pub. 6–21–66. Filed 10–8–65.

814,580. WORLD STARS AND DESIGN. Cabrera Vulcan Shoe Corp. SN 229,754. Pub. 6–21–66. Filed 10–11–65.

814,581. ISLANDERS AND DESIGN. Wellco Ro-Search Industries, Inc. SN 229,903. Pub. 6–21–66. Filed 10–11–65.

814,582. GINALA. Originala Incorporated. SN 239,302. Pub. 6–21–66. Filed 2–21–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

814,583. SPARK-L-LACE. Knitcraft Inc. SN 230,171. Pub. 5–24–66. Filed 10–14–65.

Class 44 — Dental, Medical, and Surgical Appliances

814,584. ELECTROCARDIOCHARTER. Avionics Research Products Corporation. SN 156,552. Pub. 6–21–66. Filed 11–5–62.

814,585. REOGAN. Etablissement Vivadent. SN 208,056. Pub. 6–21–66. Filed 12–14–64.

814,586. MICRO-MEGA AND DESIGN. Micro-Mega S.A. SN 212,131. Pub. 6–21–66. Filed 2–16–65.

814,587. DR. THOMPSON'S. Donald E. Thompson, d.b.a. Great Plains Dental Products Co. SN 213,063. Pub. 6–21–66. Filed 3–1–65.

814,588. VALIANT. Science Laboratories, Inc. SN 214,021. Pub. 6–21–66. Filed 3–12–65.

814,589. CERAMICORE. Porcelain Jackets, Inc. SN 216,434. Pub. 6–21–66. Filed 4–13–65.

814,590. BIOTRONICS. Biotronics, Inc. SN 221,003. Pub. 6–21–66. Filed 6–14–65.

814,591. GEL-TAINER. The Lorvic Corporation. SN 222,490. Pub. 6–21–66. Filed 7–1–65.

814,592. PHYSIOSET. Candulor AG (Candulor S.A.) (Candulor Ltd.). SN 225,402. Pub. 6–21–66. Filed 8–10–65.

814,593. NEW EAR. Audivox, Inc. SN 227,473. Pub. 6–21–66. Filed 9–9–65.

814,594. PLAYTEX. International Latex Corporation. SN 230,053. Pub. 6–21–66. Filed 10–13–65.

814,595. TWEEZE-O-MATIC. Futurex Products, Inc. SN 230,377. Pub. 6–21–66. Filed 10–18–65.

Class 45 — Soft Drinks and Carbonated Waters

814,596. BEE BRAND. McCormick & Company, Incorporated. SN 222,177. Pub. 6–21–66. Filed 6–28–65.

814,597. JUG JUICE. Feigenson, Incorporated, d.b.a. Faygo Beverage Company. SN 227,020. Pub. 6–21–66. Filed 9–2–65.

Class 46 — Foods and Ingredients of Foods

814,263. (See Class 10 for this trademark.)

814,306. (See Class 16 for this trademark.)

814,598. PASTA ROMANA. Buitoni Foods Corporation. SN 171,611. Pub. 6–23–64. Filed 6–24–63.

814,599. ZAMEK AND DESIGN. Bernhard Zamek Kommanditgesellschaft. SN 188,641. Pub. 6–21–66. Filed 3–13–64.

814,600. MRS. GILES AND DESIGN. Harry M. Giles. SN 189,697. Pub. 6–21–66. Filed 3–26–64.

814,601. CONDIMIX. Condimix Corporation. SN 197,262. Pub. 3–22–66. Filed 7–7–64.

814,602. DOLE AND DESIGN. Castle & Cooke, Inc., d.b.a. Dole Company. SN 204,354. Pub. 6–21–66. Filed 10–20–64.

814,603. TIVOLI. Celebrity Food Products, Inc. SN 205,039. Pub. 6–21–66. Filed 10–29–64.

814,604. HOLSUM. Associated Potato Growers, Incorporated. SN 206,210. Pub. 6–21–66. Filed 11–16–64.

814,605. VITALITY MILK. United Dairy Equipment Company. SN 207,995. Pub. 6–21–66. Filed 12–11–64.

814,606. EDY'S BAYO MINTS. Edy's Character Candies of Northern California, d.b.a. Edy's Character Candies of California. SN 208,054. Pub. 6–21–66. Filed 12–14–64.

814,607. IMC AND DESIGN. International Minerals & Chemical Corporation. SN 208,582. Pub. 6–21–66. Filed 12–21–64.

814,608. SGT. SHAKE. General Mills, Inc. SN 208,916. Pub. 6–21–66. Filed 12–28–64.

814,609. SERGEANT SHAKE. General Mills, Inc. SN 208,917. Pub. 6–21–66. Filed 12–28–64.

814,610. COL. SANDERS' RECIPE. Kentucky Fried Chicken Corporation. SN 209,174. Pub. 6–21–66. Filed 12–31–64.

814,611. SCOT MINTS. E. J. Brach & Sons. SN 209,415. Pub. 6–21–66. Filed 1–6–65.

814,612. FLAVOR UP. Armour and Company, d.b.a. Armour Creameries. SN 209,983. Pub. 6–21–66. Filed 1–15–65.

814,613. NEU JAY NATIONAL AND DESIGN. Neu Jay Packing Company, Inc. SN 211,186. Pub. 6–21–66. Filed 2–2–65.

814,614. BALWIN. Balfour, Williamson Inc. SN 216,997. Pub. 6–21–66. Filed 4–21–65.

814,615. PICARDIE. Salada Foods Ltd. SN 217,057. Pub. 6–21–66. Filed 4–21–65.

814,616. RINKY DINKY AND BOY DESIGN. Joseph Maslan, d.b.a. Maslan Enterprises. SN 217,909. Pub. 6–21–66. Filed 5–3–65.

814,617. BOY (DESIGN). Joseph Maslan, d.b.a. Maslan Enterprises. SN 217,910. Pub. 6–21–66. Filed 5–3–65.

814,618. JOHN'S. Anthony J. Pizza Food Products Corp. SN 217,928. Pub. 6–21–66. Filed 5–3–65.

814,619. SEALORD AND DESIGN. Sealord, Inc., assignee of Sealord Products Co., d.b.a. Sealord Frozen Food Products. SN 218,140. Pub. 6–21–66. Filed 5–5–65.

814,620. BAGEL KINGS AND DESIGN. Bagel Kings of Hialeah, Inc. SN 219,390. Pub. 6–21–66. Filed 5–21–65.

814,621. TRI PACER AND DESIGN. Frecker's Ice Cream Co. SN 219,554. Pub. 6–21–66. Filed 5–24–65.

814,622. ANTIOX. Preservaline Manufacturing Company. SN 220,320. Pub. 6–21–66. Filed 6–3–65.

814,623. TRACEIN. Western Dairy Products, Inc. SN 220,431. Pub. 6–21–66. Filed 6–4–65.

814,624. BONTRAE. General Mills, Inc. SN 220,652. Pub. 6–21–66. Filed 6–8–65.

814,625. LOOK AND DESIGN. Wileman Bros. & Elliott, Inc. SN 221,672. Pub. 6–21–66. Filed 6–21–65.

814,626. JOHNNIE SERVETTE, INC. AND DESIGN. Servette, Inc. SN 221,956. Pub. 6–21–66. Filed 6–24–65.

814,627. ANGEL'S DELIGHT AND DESIGN. J. W. Allen & Co. SN 221,983. Pub. 6–21–66. Filed 6–25–65.

814,628. BEE BRAND. McCormick & Company, Incorporated. SN 222,178. Pub. 6–21–66. Filed 6–28–65.

814,629. SHENANDOAH. Shenandoah Valley Produce Co., Inc. SN 222,214. Pub. 6–21–66. Filed 6–28–65.

814,630. KAFE-LA-TE. Victor J. Bergeron, d.b.a. Senor Pico Restaurant. SN 222,332. Pub. 6–21–66. Filed 6–30–65.

814,631. SENOR PICO AND DESIGN. Victor J. Bergeron, d.b.a. Senor Pico Restaurant. SN 222,333. Pub. 6–21–66. Filed 6–30–65.

814,632. BRAZIER. American Dairy Queen Corporation. SN 222,804. Pub. 6–21–66. Filed 7–7–65.

814,633. OLBA. N.V. Bakhuis' Vleeschwaren- en Conservenfabrieken "Olba." SN 222,856. Pub. 6–21–66. Filed 7–7–65.

814,634. JOHNNY CAKE. Johnny Cake Game Farm. SN 224,840. Pub. 6–21–66. Filed 8–3–65.

814,635. HIGH LINER AND DESIGN. Lunenburg Sea Products, Ltd. SN 224,952. Pub. 6–21–66. Filed 8–4–65.

814,636. HI-GRAHAM. National Biscuit Company. SN 225,793. Pub. 6-21-66. Filed 8-16-65.

814,637. TOASTETTES. National Biscuit Company. SN 225,794. Pub. 6-21-66. Filed 8-16-65.

814,638. TOASTERETTES. National Biscuit Company. SN 225,795. Pub. 6-21-66. Filed 8-16-65.

814,639. FIELDCREST. Dean Foods Company. SN 227,262. Pub. 6-21-66. Filed 9-7-65.

814,640. LUCKY FIND. National Fruit Canning Company, d.b.a. Chehalis Packing Company. SN 228,066. Pub. 6-21-66. Filed 9-17-65.

814,641. THEY MOO FOR MORE. Sunl-Citrus Products Company. SN 228,205. Pub. 6-21-66. Filed 9-20-65.

814,642. SLEETEE-POP. Marlan Company. MULTIPLE CLASS (Classes 46 and 50). SN 232,259. Pub. 6-21-66. Filed 11-8-65.

Class 47 — Wines

814,643. SHAW. National Distillers and Chemical Corporation, d.b.a. National Distillers Products Co., and Munson G. Shaw Co. SN 216,967. Pub. 6-21-66. Filed 4-20-65.

Class 48 — Malt Beverages and Liquors

814,644. ULTIMALT. Kurth Malting Company. SN 219,210. Pub. 2-22-66. Filed 5-19-65.

Class 49 — Distilled Alcoholic Liquors

814,645. RANCH BRAND. L & E Wertheimer, Inc., d.b.a. The Old Spring Distilling Company. SN 207,774. Pub. 6-21-66. Filed 12-7-64.

814,646. CHARNOFF. David Sherman Corporation, d.b.a. Charnoff Company. SN 216,736. Pub. 6-21-66. Filed 4-16-65.

814,647. GOLD AWARD. E. Martinoni Company. SN 219,025. Pub. 6-21-66. Filed 5-17-65.

814,648. BEVERLY CLUB. Bohemian Distributing Company, d.b.a. International Distilleries Co. SN 223,631. Pub. 6-21-66. Filed 7-19-65.

814,649. KOSKORVA. Heublein, Inc. SN 227,582. Pub. 6-21-66. Filed 9-10-65.

814,650. THORNE'S. Robt. Thorne & Sons (Whisky Merchants) Limited, by change of name from R. Thorne & Sons Limited. SN 228,086. Pub. 6-21-66. Filed 9-17-65.

Class 50 — Merchandise Not Otherwise Classified

814,227. (See Class 2 for this trademark.)

814,308. (See Class 16 for this trademark.)

814,642. (See Class 46 for this trademark.)

814,651. HILLS HD DALE. Furman E. Ott, d.b.a. The Ott Company. SN 219,808. Pub. 5-3-66. Filed 5-26-65.

814,652. THERMA-ZONE. H. D. Hudson Manufacturing Company. SN 220,374. Pub. 6-21-66. Filed 6-4-65.

814,653. MEDI GUARD. Neadell Demonstration Corp. SN 221,199. Pub. 6-21-66. Filed 6-15-65.

814,654. POLKA DOTS. The Delta Company. SN 221,706. Pub. 6-21-66. Filed 6-22-65.

814,655. FRANKLINIUM. General Numismatics Corporation. SN 222,270. Pub. 6-21-66. Filed 6-29-65.

814,656. INSTANT OCEAN AND DESIGN. Aquarium Systems, Inc. SN 226,401. Pub. 6-21-66. Filed 8-25-65.

814,657. TRANSTIP. American Filtrona Corporation. SN 227,988. Pub. 6-21-66. Filed 9-17-65.

814,658. E-Z MARX. I.D.L. Incorporated. SN 228,911. Pub. 6-21-66. Filed 9-29-65.

814,659. WEATHER-SEAL. Cascade Industries, Inc. SN 232,767. Pub. 6-21-66. Filed 11-16-65.

Class 51 — Cosmetics and Toilet Preparations

814,230. (See Class 4 for this trademark.)

814,306. (See Class 16 for this trademark.)

814,660. CERNITIN. Aktiebolaget Cernelle. SN 204,536. Pub. 6-21-66. Filed 10-22-64.

814,661. DE-FI. Defy, Inc., assignee of A. Ward Allen, d.b.a. Defy. SN 214,746. Pub. 12-14-65. Filed 3-23-65.

814,662. ONLY NATURAL. Merle Norman Cosmetics, Inc. SN 215,996. Pub. 6-21-66. Filed 4-7-65.

814,663. COMPLEXION CLEAR FOR YOUNG MODERNS. Elizabeth Arden Sales Corporation. SN 217,250. Pub. 6-21-66. Filed 4-26-65.

814,664. KERANOVE. Eugene-Gallia S.A. SN 217,327. Pub. 6-21-66. Filed 4-26-65.

814,665. CAMPAIGN. Thomas I. Folger. SN 221,593. Pub. 6-21-66. Filed 6-21-65.

814,666. ADELE SIMPSON AND DESIGN. Adele Simpson Inc. SN 222,428. Pub. 6-21-66. Filed 6-30-65.

814,667. BAIN JOLI. Maradel Products, Inc., d.b.a. House of Tre-Jur. MULTIPLE CLASS (Classes 51 and 52). SN 226,256. Pub. 6-21-66. Filed 8-23-65.

814,668. WHITE-ALL. American Home Products Corporation. SN 226,973. Pub. 6-21-66. Filed 9-2-65.

814,669. VICTORY RED. Elizabeth Arden Sales Corporation. SN 227,810. Pub. 6-21-66. Filed 9-15-65.

814,670. SUDDEN BODY. American Home Products Corporation. SN 232,178. Pub. 6-21-66. Filed 11-5-65.

814,671. BEAUTY CURL. Richard Hudnut. SN 232,208. Pub. 6-21-66. Filed 11-5-65.

814,672. CREME NATALE. Richard Hudnut. SN 232,209. Pub. 6-21-66. Filed 11-5-65.

814,673. GRAND CHAMPION. Rayette Custom Products Inc. SN 232,420. Pub. 6-21-66. Filed 11-9-65.

814,674. IGA. Independent Grocers' Alliance Distributing Co. SN 233,179. Pub. 6-21-66. Filed 11-23-65.

814,675. FIRST TIME. Helene Curtis Industries, Inc. SN 233,781. Pub. 6-21-66. Filed 12-2-65.

Class 52 — Detergents and Soaps

814,230. (See Class 4 for this trademark.)

814,234. (See Class 4 for this trademark.)

814,667. (See Class 51 for this trademark.)

814,676. X-IT. Schalk Chemicals, Inc. SN 201,622. Pub. 6-21-66. Filed 9-10-64.

814,677. APC. Alan Plastics Corp. SN 202,894. Pub. 6-21-66. Filed 9-29-64.

814,678. CRC. Chas. J. Webb Sons Co., Inc., d.b.a. Corrosion Reaction Consultants, and Corrosion Reaction Consultants, Inc. SN 219,935. Pub. 3-8-66. Filed 5-27-65.

814,679. PROTEIN-36. The Mennen Company. SN 220,776. Pub. 6-21-66. Filed 6-9-65.

814,680. CAMPAIGN. Thomas I. Folger. SN 221,594. Pub. 6-21-66. Filed 6-21-65.

814,681. CYLKLEEN. Borg-Warner Corporation. SN 233,068. Pub. 6-21-66. Filed 11-22-65.

814,682. "A PARTRIDGE IN A PEAR TREE." Lander Co., Inc. SN 233,112. Pub. 6-21-66. Filed 11-22-65.

814,683. NULIFE. Abert Products, Inc. SN 233,297. Pub. 6-21-66. Filed 11-26-65.

814,684. WESCODAN. West Chemical Products, Inc. SN 233,425. Pub. 6-21-66. Filed 11-26-65.

Service Marks

Class 100 — Miscellaneous

814,685. COMMUNITY NURSING HOMES INC., ETC. AND DESIGN. Community Nursing Homes, Inc. SN 206,828. Pub. 6-21-66. Filed 11-24-64.

814,686. RMS. Elliot L. Romm, d.b.a. Replica Mail Specialties. SN 210,230. Pub. 6-21-66. Filed 1-19-65.

814,687. WHERE EVERY GUEST IS KING! Imperial House Motels, Inc. SN 222,159. Pub. 6-21-66. Filed 6-28-65.

Class 101 — Advertising and Business

814,688. CP CERTIFIED PROFESSIONAL PHOTOGRAPHER AND DESIGN. Certified Professional Photographer, Inc. SN 146,879. Pub. 6-21-66. Filed 6-14-62.

814,689. CORNELIA. Federated Department Stores, Inc., d.b.a. The Rike-Kumler Company. SN 211,427. Pub. 6-21-66. Filed 2-5-65.

814,690. TEL-PAGE. Tel-Page, Inc. SN 221,762. Pub. 6-21-66. Filed 6-22-65.

814,691. BI-RITE. Bi-Rite Wholesale Merchandisers, Inc. SN 222,336. Pub. 6-21-66. Filed 6-30-65.

814,692. CA AND DESIGN. Collins Associates, Inc. SN 227,010. Pub. 5-3-66. Filed 9-2-65.

814,693. ANTIQUE PRESS (DESIGN). Morris M. Lebowitz, d.b.a. The Antique Press. SN 228,050. Pub. 6-21-66. Filed 9-17-65.

814,694. CALL ARTHUR TREACHER AND DESIGN. Worldwide Home Services, Inc. SN 229,166. Pub. 6-21-66. Filed 10-1-65.

814,695. CIRCUS. Automatic Car Wash Systems, Inc. SN 232,380. Pub. 6-21-66. Filed 11-9-65.

814,696. PLAN AND DESIGN. Programmed Leasing of Assets Nationwide, Inc. SN 233,389. Pub. 6-21-66. Filed 11-26-65.

Class 102 — Insurance and Financial

814,697. INVESTORS AND DESIGN. Investors Syndicate Life Insurance and Annuity Company. SN 218,436. Pub. 6-21-66. Filed 5-10-65.

814,698. BACK OF YOUR INDEPENDENCE STANDS THE PENN MUTUAL AND DESIGN. The Penn Mutual Life Insurance Company. SN 228,179. Pub. 6-21-66. Filed 9-20-65.

Class 103 — Construction and Repair

814,699. SILENT SENTRY. Diebold, Incorporated. SN 220,477. Pub. 6-21-66. Filed 6-7-65.

814,700. MOTOROLA. Motorola, Inc. SN 222,598. Pub. 6-21-66. Filed 7-2-65.

814,701. NATIONAL MOTOROLA RADIO COMMUNICATIONS SERVICE AND DESIGN. Motorola, Inc. SN 222,599. Pub. 6-21-66. Filed 7-2-65.

814,702. POWER BY THE HOUR. Bristol Siddeley Engines Limited. SN 233,247. Pub. 6-21-66. Filed 11-24-65.

Class 104 — Communication

814,703. W/U TELEX AND DESIGN. The Western Union Telegraph Company. SN 210,916. Pub. 6-21-66. Filed 1-28-65.

Class 105 — Transportation and Storage

814,704. TREE IN A TRIANGLE (DESIGN). Weyerhaeuser Company. SN 194,939-M. Pub. 6-21-66. Filed 6-4-64.

Class 107 — Education and Entertainment

814,705. BRUNO J. GRUNION SHOW. Deando Limited. SN 206,425. Pub. 6-21-66. Filed 11-18-64.

814,706. STYLERS. George A. Farias, d.b.a. "Stylers" Dance Band. SN 212,103. Pub. 6-21-66. Filed 2-16-65.

814,707. BOOBY TRAP. JC Sales Co., Inc. SN 212,450. Pub. 12-28-65. Filed 2-19-65.

814,708. BE A SOCIAL LION AND DESIGN. Kaminski and Grimmer, Inc. SN 228,696. Pub. 6-21-66. Filed 9-27-65.

Collective Membership Marks

Class 200

814,709. ODE HONOR SOCIETY ECONOMICS AND DESIGN. Omicron Delta Epsilon—National Honor Society in Economics. SN 225,495. Pub. 6-21-66. Filed 8-11-65.

814,710. OMICRON DELTA EPSILON. Omicron Delta Epsilon—National Honor Society in Economics. SN 225,497. Pub. 6-21-66. Filed 8-11-65.

Certification Marks

Class A — Goods

814,711. CAYELLE. E. I. du Pont de Nemours and Company. SN 196,510. Pub. 3-22-66. Filed 6-26-64.

814,712. AMERICAN SOCIETY OF SANITARY ENGINEERING ETC. AND DESIGN. American Society of Sanitary Engineering. SN 222,807. Pub. 6-21-66. Filed 7-7-65.

814,713. HOLLAND MICHIGAN DE ZWAAN AND DESIGN. City of Holland, Michigan. SN 224,049. Pub. 6-21-66. Filed 6-10-65.

814,714. TCA ETC. AND DESIGN. Tile Council of America, Inc. SN 227,455. Pub. 6-21-66. Filed 9-8-65.

Class B — Services

814,715. U.S. ROAD RACING CHAMPIONSHIP. Sports Car Club of America, Incorporated. SN 222,305. Pub. 6-21-66. Filed 6-29-65.

814,716. UNITED STATES ROAD RACING CHAMPIONSHIP. Sports Car Club of America, Incorporated. SN 222,306. Pub. 6-21-66. Filed 6-29-65.

814,717. USRRC. Sports Car Club of America, Incorporated. SN 222,307. Pub. 6-21-66. Filed 6-29-65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1—Raw or Partly Prepared Materials

814,718. Flex-O-Glass, Inc., d.b.a. Warp Brothers, Chicago, Ill. SN 207,383. Filed P.R. 12-3-64; Am. S.R. 7-5-66. Filed P.R. 12-3-64; Am. S.R. 7-5-66.

POLYWRAP

For Transparent, Translucent, and Colored Flexible Plastic Material in Sheet Form.
First use January 1955.

814,719. Freeport Sulphur Company, New York, N.Y. SN 213,864. Filed P.R. 3-11-65; Am. S.R. 6-23-66.

NUCLAY

For Clay.
First use Aug. 30, 1960.

814,720. Osmose Wood Preserving Co. of America, Inc., Buffalo, N.Y. SN 220,136. Filed P.R. 6-1-65; Am. S.R. 7-8-66.

'POXIE BALLS

For Epoxy Resin and Hardener.
First use Apr. 6, 1965.

814,721. Osmose Wood Preserving Co. of America, Inc., Buffalo, N.Y. SN 220,137. Filed P.R. 6-1-65; Am. S.R. 7-8-66.

'POXIE PELLETS

For Epoxy Resin and Hardener.
First use Apr. 6, 1965.

814,722. Pennington Grain & Seed, Inc., Madison, Ga. SN 226,771. Filed 8-30-65.

PENNINGTON GREEN COATED

For Cotton Seed for Planting Purposes.
First use on or about Jan. 2, 1962.

Class 4—Abrasives and Polishing Materials

814,723. Liquid Luster Auto Polish Company, Chicago, Ill. SN 215,340. Filed P.R. 3-30-65; Am. S.R. 6-30-66.

Liquid LUSTER

For Automobile Polish.
First use Feb. 25, 1965.

Class 17—Tobacco Products

814,724. Freeman & Gossage, Inc., San Francisco, Calif. SN 192,707. Filed P.R. 5-5-64; Am. S.R. 7-5-66.

SPECIFIC NO. 1

For Snuff.
First use Apr. 15, 1964.

Class 18—Medicines and Pharmaceutical Preparations

814,725. Masti-Kure Products Co., Norwich, Conn. SN 198,189. Filed P.R. 7-20-64; Am. S.R. 6-28-66.



For Veterinary Products for Use on Cattle.
First use as early as June 1958.

814,726. Raynor Mead, d.b.a. Mead Laboratory, Bronx, N.Y. SN 225,884. Filed P.R. 8-17-65; Am. S.R. 7-7-66.

TAST-T-MINT

For Antacid Mints for Relief From Indigestion, Heartburn, Sour Stomach, and Bad Breath.
First use 1927.

Class 22—Games, Toys, and Sporting Goods

814,727. Rae Levine, New York, N.Y. SN 200,450. Filed P.R. 8-24-64; Am. S.R. 6-13-66.

PLAY LUCKY—MAH JONGG

For Printed Contest Cards for Promotional Use by Others To Encourage, Facilitate and Stimulate the Sale of Their Goods.
First use Dec. 3, 1963.

Class 36—Musical Instruments and Supplies

814,728. The Seeburg Corporation, Chicago, Ill. SN 216,017. Filed 7-7-66.

SEEBURG

For Organs, Phonograph Records, and Pianos.
First use July 23, 1964, on organs.

Class 38—Prints and Publications

814,729. Western Publications, Inc., Austin, Tex. SN 195,479. Filed P.R. 6-11-64; Am. S.R. 6-20-66.

OLD WEST

For Magazine Published From Time to Time.
First use June 1964.

814,730. The Wurlitzer Company, Chicago, Ill. SN 195,482. Filed P.R. 6-11-64; Am. S.R. 6-27-66.

HOBBY-LESSON COURSE

For Printed Instructional Material for Organ Playing.
First use May 18, 1964.

814,731. Stanley Foster Reed, Washington, D.C. SN 211,577. Filed P.R. 2-8-65; Am. S.R. 1-16-66.

MERGERS AND ACQUISITIONS

For Magazine Published From Time to Time Regarding Corporate Development.
First use Jan. 15, 1965.

814,732. House of Coins, Elizabeth, N.J. SN 214,441. Filed P.R. 3-18-65; Am. S.R. 6-20-66.

THE OFFICIAL BLACK BOOK of UNITED STATES COINS

For Coin Lists.
First use on or about Feb. 15, 1965.

814,733. The Miller Publishing Company, Minneapolis, Minn. SN 215,763. Filed P.R. 4-5-65; Am. S.R. 4-28-66.

THE MAGAZINE OF LONG-TERM CARE

For Monthly Trade Magazine.
First use Oct. 1, 1964.

814,734. Florida Power & Light Company, Miami, Fla. SN 216,157. Filed P.R. 4-9-65; Am. S.R. 7-5-66.

MECHANIZED
ENGINEERING
CONSTRUCTION
ASSEMBLIES

For Engineering Instruction Booklets for the Electric Utilities Industry, Containing Rotatable Calculating Discs for Determining Construction Costs and Providing Information for Engineering and Management Activities Such as Material Control, Plant Accounting, Budgeting and Work Load Projection, Issued From Time to Time for Use Respectively in the Fields of Overhead Distribution, Underground, Transmission, and Sub-Station Construction.
First use Feb. 1, 1965.

814,735. U.S. Industrial Publications, Inc., Stamford, Conn. SN 220,042. Filed P.R. 5-28-65; Am. S.R. 6-28-66.

SUPERMARKET MANAGEMENT

For Periodic Publication—Namely, a Trade Magazine.
First use Apr. 28, 1965.

814,736. Putman Publishing Company, Chicago, Ill. SN 221,953. Filed P.R. 6-24-65; Am. S.R. 6-24-66.



The drawing is lined for yellow, but color is not an essential feature of the mark.
For Magazine.
First use Feb. 26, 1965.

814,737. L. Teweles Seed Co., Milwaukee, Wis. SN 230,457. Filed P.R. 10-18-65; Am. S.R. 6-16-66.

FARM LIFE

For Periodically Issued Pamphlet.
First use Feb. 17, 1964.

Class 39—Clothing

814,738. The Lovable Company, Atlanta, Ga. SN 219,217. Filed P.R. 5-19-65; Am. S.R. 6-30-66.

TOTAL STRETCH

For Women's Foundation Garments.
First use Apr. 23, 1965.

Class 45—Soft Drinks and Carbonated Waters

814,739. Derry Products, Inc., Brooklyn, N.Y. SN 217,866. Filed P.R. 5-3-65; Am. S.R. 7-1-66.

DIET SOUR

For Sugarless, Non-Alcoholic Cocktail Mix.
First use Nov. 18, 1964.

814,740. Coldwell Beverage Corporation, Buffalo, N.Y. SN 222,344. Filed P.R. 6-30-65; Am. S.R. 7-1-66.

CALFREE

For Artificially Sweetened Carbonated Soft Drinks.
First use June 5, 1964.

Class 46—Foods and Ingredients of Foods

814,741. Harts Mountain Products Corp., New York, N.Y. SN 207,492. Filed P.R. 12-4-64; Am. S.R. 6-29-66.

SEED BELL

For Bird Food.
First use Oct. 1, 1964.

814,742. Kane-Miller Corporation, d.b.a. Tested-Best Frozen Food Products and Tested-Best Frosted Food Company, Yonkers, N.Y. SN 224,210. Filed P.R. 7–26–65; Am. S.R. 6–9–66.

TESTED-BEST

For Frozen Vegetables.
First use 1928.

Class 49 — Distilled Alcoholic Liquors

814,743. Standard Food Products Corp., d.b.a. W. & R. Poole Ltd., Long Island City, N.Y. SN 221,217. Filed P.R. 6–15–65; Am. S.R. 6–29–66.

POOLE'S

For Gin.
First use May 28, 1965.

Class 50 — Merchandise Not Otherwise Classified

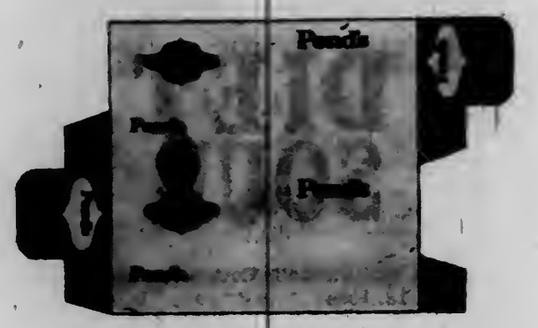
814,744. Mallinckrodt Chemical Works, St. Louis, Mo. SN 170,922. Filed P.R. 6–13–63; Am. S.R. 7–5–66.

DISPENSAR

For Bottle Caps Sold as a Component of Bottles Containing Analytical Reagents.
First use May 29, 1963.

Class 51 — Cosmetics and Toilet Preparations

814,745. Chesebrough-Pond's Inc., New York, N.Y. SN 227,250. Filed P.R. 9–7–65; Am. S.R. 6–22–66.



For Skin Creams.
First use July 15, 1965.

814,746. Sybil Ives Incorporated, White Plains, N.Y. SN 228,038. Filed P.R. 9–17–65; Am. S.R. 7–1–66.

BLONDE CHIFFON

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Dec. 8, 1964.

814,747. Sybil Ives Incorporated, White Plains, N.Y. SN 228,040. Filed P.R. 9–17–65; Am. S.R. 7–1–66.

PALE PONGEE

For Hair Tinting, Dyeing, and Color Preparation.
First use Dec. 8, 1964.

814,748. Sybil Ives Incorporated, White Plains, N.Y. SN 228,041. Filed P.R. 9–17–65; Am. S.R. 7–1–66.

ANTIQUE SATIN

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Dec. 8, 1964.

814,749. Sybil Ives Incorporated, White Plains, N.Y. SN 228,042. Filed P.R. 9–17–65; Am. S.R. 7–1–66.

SILVER RIBBON

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Dec. 8, 1964.

814,750. Sybil Ives Incorporated, White Plains, N.Y. SN 228,043. Filed P.R. 9–17–65; Am. S.R. 7–1–66.

WHITE LACE

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Dec. 8, 1964.

Class 52 — Detergents and Soaps

814,751. Sta Clean Chemical Company, Orchard Lake, Mich. SN 239,551. Filed P.R. 2–24–66; Am. S.R. 5–16–66.



For Toilet Bowl Cleaner.
First use Nov. 1, 1962.

Service Mark

Class 102 — Insurance and Financial

814,752. Pacific Standard Life Insurance Company, Burlingame, Calif. SN 200,592. Filed P.R. 8–25–64; Am. S.R. 3–21–66.

TIMELY BENEFITS FOR THE LIVING

For Underwriting of Life, Accident, and Health Insurance.
First use 1960.

TRADEMARK REGISTRATIONS RENEWED

29,261. BOSISTO'S PARROT BRAND AND LABEL. Cl. 18. 12–8–1896.
51,682. WREATH (DESIGN). Cl. 33. 4–24–06.
52,982. DESIGN OF BULL'S HEAD WITH WORDING "MOLASSINE." Cl. 46. 5–22–06.
53,066. SPIROFORM. Cl. 18. 5–22–06.
54,868. DE LAVAL. Cl. 23. 7–31–06.
55,690. LISTERINE. Cl. 51. 8–21–06.
56,714. CURTICE. Cl. 46. 10–16–06.
58,148. POINT LOMA AND DESIGN. Cl. 46. 12–4–06.
58,207. TIP TOP. Cl. 21. 12–11–06.
58,249. COLT. Cl. 9. 12–11–06.
58,277. RAMPANT COLT (DESIGN). Cl. 9. 12–11–06.
58,278. COLT'S PT. F.A. MFG. CO. HARTFORD, CT. U.S.A. Cl. 9. 12–11–06.
58,721. STANDARD. Cl. 36. 12–25–06.
212,182. VITRALOID. Cl. 12. 4–27–26.
212,733. GYNODYNE. Cl. 18. 5–11–26.
213,936. COLAS. Cl. 12. 6–8–26.
214,791. TIGER AND DESIGN. Cl. 46. 7–6–26.
215,086. LION. Cl. 39. 7–13–26.
215,198. ALL-IN-ONE. Cl. 37. 7–13–26.
215,552. HANDY DANDY. Cl. 39. 7–20–26.
215,795. "FRUTAL." Cl. 46. 7–27–26.
216,101. SLATER MAID. Cl. 42. 8–3–26.
216,160. SILVER CUP AND DESIGN. Cl. 46. 8–3–26.
216,404. DEWKIST. Cl. 46. 8–10–26.
217,005. LANDMATIC. Cl. 23. 8–24–26.
217,006. LANCO. Cl. 23. 8–24–26.
217,620. A.M.C. Cl. 39. 9–7–26.
218,549. CA-VEL. Cl. 42. 9–28–26.
218,550. CAVEL. Cl. 42. 9–28–26.
218,858. CADET. Cl. 23. 10–5–26.
220,284. TUF-TEX. Cl. 13. 11–9–26.
220,709. DOUBLE-GRIP. Cl. 23. 11–16–26.
220,717. SPRING TONGUE. Cl. 23. 11–16–26.
221,396. TOY TOWN. Cl. 46. 11–30–26.
221,438. ROSE IN HAND (DESIGN). Cl. 43. 11–30–26.
221,835. ALWAYS MILES AHEAD MILES AND DESIGN. Cl. 39. 12–14–26.
221,910. TILT-A-WHIRL. Cl. 22. 12–14–26.
222,199. MOHAWK. Cl. 1. 12–28–26.
222,337. URITONE. Cl. 18. 12–28–26.
416,741. CALBETTE. Cl. 39. 9–25–45.
420,372. KROMEX. Cl. 13. 4–9–46.
420,499. CARRIAGE TRADE. Cl. 50. 4–16–46.
421,222. HUMIPAK. Cl. 2. 5–21–46.
421,223. SNOWITE. Cl. 2. 5–21–46.
421,224. SUNLINED. Cl. 2. 5–21–46.
422,152. ARGUS. Cl. 21. 7–9–46.
422,174. COBRA. Cl. 21. 7–9–46.
422,239. COQUETTE. Cl. 2. 7–9–46.
422,346. PAQUA. Cl. 16. 7–14–46.
422,368. DR. FENNER'S. Cl. 18. 7–16–46.
422,369. FOLVITE. Cl. 18. 7–16–46.
422,482. VANITY FAIR. Cl. 2. 7–23–46.
422,602. "SUPERSTITION." Cl. 51. 7–30–46.
423,001. TABU AND DESIGN. Cl. 51. 8–20–46.
423,019. OVATION. Cl. 17. 8–20–46.
423,271. OVATION. Cl. 8. 8–27–46.
423,354. UTOPIE. Cl. 51. 8–27–46.
423,463. PERMASET. Cl. 42. 9–3–46.
423,546. PAIR OF OVER-LAPPING CIRCLES (DESIGN). Cl. 26. 9–3–46.
424,244. LIGHTNING SYMBOL IN CIRCLE (DESIGN). Cl. 22. 9–24–46.
424,473. THE DIPSTICK TELLS THE STORY. Cl. 31. 10–8–46.
424,734. PEPTON. Cl. 6. 10–22–46.
424,876. SUN PLAY. Cl. 42. 10–29–46.
425,581. PAMELA AND DESIGN. Cl. 46. 11–26–46.
425,654. AC AND DESIGN. Cl. 51. 11–26–46.
425,940. YARDBIRD. Cl. 23. 12–10–46.
426,102. MICROCUT. Cl. 15. 12–17–46.
426,140. BANTAM BOOKS AND DESIGN. Cl. 38. 12–17–46.
426,147. JOY. Cl. 40. 12–17–46.
426,283. INTRADERM SKIN PENETRANT SULFUR SOLUTION. Cl. 18. 12–24–46.

TRADEMARK REGISTRATIONS CANCELED

Section 8

687,244. AUDITOR'S POINT. Cl. 37. 10–27–59.

The following registrations issued July 19, 1960

701,158. MILANO. Cl. 1.
701,160. CHEST OF MEMORIES. Cl. 2.
701,164. ROTEX. Cl. 2.
701,170. EEG SOL. Cl. 6.
701,184. VITA-LIFE. Cl. 10.
701,190. METRIC ALUMINUM SIDING AND DESIGN. Cl. 12.
701,193. STAR AND DESIGN. Cl. 12.
701,197. K-G. Cl. 13.
701,198. K-G AND DESIGN. Cl. 13.
701,201. UV AND DESIGN. Cl. 13.
701,202. RACINE-SECO. Cl. 13.
701,207. CARBORID. Cl. 14.
701,208. INVACUTRODE. Cl. 14.
701,210. GROTESQUE OF DRAGON BREATHING FIRE. Cl. 15.
701,217. LEOLA MAY'S EPSOM SALT POULTICE AND DESIGN. Cl. 18.
701,218. SUPER EXTRAFORT. Cl. 18.
701,222. ILP. Cl. 18.
701,223. FIBRINITOL. Cl. 18.
701,224. PYRODIONE. Cl. 18.
701,226. PYRIPYRIL. Cl. 18.
701,227. D.A.S. Cl. 18.
701,235. CALCIMELS. Cl. 18.
701,236. SULFADUROL. Cl. 18.
701,239. CYFER. Cl. 18.
701,240. BEQUIN. Cl. 18.
701,241. P AND P. Cl. 18.
701,242. CHRONOTABS. Cl. 18.
701,243. DOPTREN. Cl. 18.
701,244. REDWATRIN. Cl. 18.
701,250. SWEET-CELL. Cl. 18.
701,254. PORT-A-GAS. Cl. 19.
701,257. SOCK. Cl. 19.
701,259. NICKEY. Cl. 19.
701,261. VORTEX-RING. Cl. 19.
701,262. NICKEY. Cl. 19.
701,267. FILTERSCAN. Cl. 21.
701,269. PAK-TROL. Cl. 21.
701,270. TEMPENSATOR. Cl. 21.
701,275. INVISA-LINE. Cl. 21.
701,277. SOCKET POCKET. Cl. 22.
701,278. CAPE CANAVERAL. Cl. 22.
701,281. PHYS-EXERCISER. Cl. 22.
701,286. SLAP-STIK. Cl. 22.
701,288. ELY CHORDETTE. Cl. 22.
701,294. I.C.U. Cl. 22.
701,295. PLAYSAFE. Cl. 22.
701,296. TOWNECRAFT. Cl. 23.
701,300. SILVER KING. Cl. 23.
701,304. RACINE SECO. Cl. 23.
701,306. REFUND-O-MATIC. Cl. 23.
701,313. GYDEWAY. Cl. 26.
701,321. SIGHT-SAFE. Cl. 26.
701,323. MOVIMATIC. Cl. 26.
701,324. CC CIRCUM-CHANNELED AND DESIGN. Cl. 26.
701,325. CIRCUM-CHANNELED. Cl. 26.
701,339. PLAY-TEMPS. Cl. 26.
701,342. KERN-DUOMATIC. Cl. 26.
701,344. AUTOPOT. Cl. 26.

701,347. KALFAX. Cl. 26.
701,351. DATEX AND DESIGN. Cl. 26.
701,354. DATS. Cl. 26.
701,355. THERMO-GRAV. Cl. 26.
701,360. SCEPTER. Cl. 27.
701,361. CALICO HORSE. Cl. 27.
701,368. CULTURETTE. Cl. 28.
701,373. HAPPINESS. Cl. 28.
701,383. GOLDSPUN. Cl. 32.
701,385. K-G. Cl. 34.
701,386. K-G AND DESIGN. Cl. 34.
701,388. PLACAIR. Cl. 34.
701,389. PERIM-AIR-PAC. Cl. 34.
701,401. K. Cl. 37.
701,406. SEMAC. Cl. 38.
701,416. MR. EDD. Cl. 39.
701,418. CARICATURE OF BEE. Cl. 39.
701,423. MOON GOON. Cl. 39.
701,429. SEK-CEE. Cl. 39.
701,432. GIFTHANKS. Cl. 39.
701,433. ALBURY. Cl. 39.
701,438. RENAITRE. Cl. 42.
701,439. EMBRACE. Cl. 42.
701,440. EBONATA. Cl. 42.
701,442. STAR AND DESIGN. Cl. 42.
701,443. VISCANA. Cl. 42.
701,449. RAYVE. Cl. 44.
701,452. ANZIO. Cl. 46.
701,462. DONA. Cl. 46.
701,463. VITASHAKE. Cl. 46.
701,464. RICQLES AND DESIGN. Cl. 46.
701,465. MARY-LOU POTATO BOATS. Cl. 46.
701,466. HANS DE STRASBOURGE. Cl. 46.
701,468. MCDONNELL AND DESIGN. Cl. 46.
701,471. WONDER WHEAT. Cl. 46.
701,472. RED WINDMILL AND DESIGN. Cl. 46.
701,473. BLUE WINDMILL AND DESIGN. Cl. 46.
701,479. SUNLIGHT. Cl. 46.
701,483. VALLEY FLAME. Cl. 46.
701,486. DUTCH DELIGHT AND DESIGN. Cl. 46.
701,489. SEA BREEZE. Cl. 46.
701,492. VILLAGE SQUARE. Cl. 46.
701,496. ADOLF'S HALF N' HALF. Cl. 48.
701,501. NYLONOLYN. Cl. 50.
701,502. ECONOMARKER. Cl. 50.
701,505. FABULACE. Cl. 50.
701,507. DRIPOMAT. Cl. 50.
701,511. MASCARA EYE MAGIC. Cl. 51.
701,513. GANJAH. Cl. 51.
701,523. QUADRA-SOLV. Cl. 52.
701,524. QUADRA-SHEEN. Cl. 52.
701,528. NATIONAL FOOD SERVICE ASSOCIATION AND REPRESENTATION OF OUTLINE OF UNITED STATES. Cl. 101.
701,529. SCOTCH SAVER. Cl. 101.
701,531. IC AND DESIGN. Cl. 102.
701,532. SCRIBERLIFE. Cl. 102.
701,533. SCRIBERSURANCE. Cl. 102.
701,535. EAGLE SF AND DESIGN. Cl. 102.
701,536. CONSTELLATION ETC. AND DESIGN. Cl. 102.
701,539. SPOTLITE ON HOMES. Cl. 107.
701,540. UA ETC. AND DESIGN. Cl. 107.
701,542. TWINOLIZED WITH TWINOL 335 ETC. AND DESIGN. Cl. A.
701,549. SCHOOLFLOR. Cl. 12.
701,550. RIST-KEE. Cl. 13.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

53,577. STAR AND DESIGN. Cl. 2. 6–5–06. The Union Bag & Paper Company, New York, N.Y. Amended: In the statement, column 1, lines 11 and 12 are deleted, and the drawing is amended to appear:

STAR

164,168. NUGRAPE. Cl. 45. 2–13–23. Nugrape Company of America. National NuGrape Company, Atlanta, Ga. Amended: In the statement, column 1, line 11 through column 2, line 1, "no claim being made to the words 'A Flavor You Can't Forget' apart from the mark shown on the drawing," is deleted, and the drawing is amended to appear as follows:

NuGRAPE

210,594. PALMOLIVE. Cl. 52. 3–16–26. The Palmolive Company. Colgate-Palmolive Company, New York, N.Y. Amended to appear:

PALMOLIVE

211,425. THIN-EX. Cl. 37. 4–13–26. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, before "Joseph" *The* should be inserted.

214,110. THE DAYTONIAN. Cl. 38. 6–15–26. The Dayton Company, Minneapolis, Minn. Amended to appear:

the Daytonian

321,533. HW. Cl. 12. 2–5–35. Harbison-Walker Refractories Company, Pittsburgh, Pa. Amended: In the statement, column 2, line 8, after "pressed" *or by painting or stamping the trademark on refractory articles or shipping cartons containing them* is inserted, and the drawing is amended to appear as follows:

H-W

349,228. G AND DESIGN. Cl. 21. 8–24–37. Guardian Electric Manufacturing Co., Chicago, Ill. Amended: In the statement, column 1, lines 8 through 24, the description of goods, is deleted and *Electric control equipment—namely, protective and signalling devices such as relays of all types such as stepping, keying, break-in, control, and multipole; switches such as automatic, mechanical, manual, and electrical; solenoids; automatic rotary contactors; time delay units* is inserted.

506,406. CORRECT CRAFT. Cl. 19. 2–8–49. Correct Craft, Inc., Pinecastle and Titusville, Fla. Amended to appear:

Correct Craft

540,314. LOOMCREST. Cl. 42. 4–3–51. Butler Brothers. City Products Corporation, Des Plaines, Ill. Amended to appear:

LOOMCREST

544,315. WONDER CREAM. Cl. 51. 6–26–51. Sally Lewis Newstead, doing business as Sally Lewis. Lander Co., Inc., New York, N.Y. Amended: In the statement, column 2, line 11, "Creme" is deleted and *Cream* is inserted, and the drawing is amended to appear as follows:

WONDER CREAM

612,724. FUNSTEN. Cl. 46. 9–20–55. R. E. Funsten Company. Pet Milk Company, St. Louis, Mo. Amended to appear:

FUNSTEN

697,828. CARTOON. Cl. 37. 5–17–60. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the statement, column 1, line 1, before "Joseph" *The* should be inserted.

698,899. RAM PAK AND DESIGN. Cl. 19. 6–7–60. Baughman Manufacturing Company, Inc., Jerseyville, Ill. Corrected: In the statement, column 1, line 1, after "Company", *Inc.* should be inserted.

707,177. POZ-I-DRIV. Cl. 23. 11–15–60. American Screw Company. Phillips Screw Company, East Boston, Mass. Amended to appear:

POZIDRIV

793,159. DURABORD. Cl. 12. 7–27–65. Johns-Manville Corporation, New York, N.Y. Amended to appear:

DUROBORD

808,887. ACTIVEAID. Cl. 41. 5–24–66. Carl W. Oja, doing business as Activeaid, St. Paul Minn. Corrected: In the statement, column 1, line 1, "Activaid" should be deleted and *Activeaid* should be inserted.

811,188. ANTICORR. Cl. 6. 7–19–66. Ing. W. Oertli Aktiengesellschaft, Dubendorf, Zurich, Switzerland. Corrected: In the statement, column 1, line 1, "Obertli" should be deleted and *Oertli* should be inserted.

811,194. BUG-TOX. Cl. 6. 7–19–66. Geigy Chemical Corporation, Ardsley, N.Y. Corrected: In the statement, column 2, line 3, "1968" should be deleted and *1965* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1—Raw or Partly Prepared Materials

54,454. June 26, 1906. The United States Graphite Company, Saginaw, Mich. Pub. by The Wickes Corporation, Saginaw, Mich.

205

For Pulverized Graphite.

Class 4—Abrasives and Polishing Materials

385,469. Mar. 4, 1941. Midwest Manufacturing Company, Detroit, Mich. Pub. by Samuel H. Klee, d.b.a. Midwest Manufacturing Co., Detroit, Mich.

ENDURO

For Floor Wax, Scratch Remover Preparation for Furniture, Furniture Cream Polish, Car Polish, and a Wax Polishing and Cleaning Preparation for Automobiles and the Like.

Class 12—Construction Materials

54,476. June 26, 1906. Pacific Portland Cement Co., San Francisco, Calif. Pub. by Ideal Cement Company, Denver, Colo.



For Portland Cement.

212,075. Apr. 27, 1926. The Marbleloid Company, New York, N.Y., Pub. by The Marbleloid Corp., North Bergen, N.J.

MARBLELOID

For Construction Materials—Namely, Plastic and Tile Flooring, Art Tile, Wainscoting, etc.

215,981. Aug. 3, 1926. Western Waterproofing Company, Inc., Boston, Mass. Pub. by registrant.

WESTERN'S DAMPPROOFING

For Asphalt Preparation for Rendering Walls and Other Surfaces Proof Against the Passage of Moisture Therethrough.

220,447. Nov. 9, 1926. Carolina Refractories Company, Hartsville, S.C. Pub. by registrant.

CARECO ONE-PIECE FURNACE LINING

For Furnace Linings, etc.

Class 14—Metals and Metal Castings and Forgings

421,303. May 28, 1946. The Lennox Foundry Company Limited, Kent, England. Pub. by registrant.

TANTIRON

For Unwrought and Partly Wrought Nonferrous Metal, etc.

Class 15—Oils and Greases

54,647. June 26, 1906. The United States Graphite Company, Saginaw, Mich. Pub. by The Wickes Corporation, Saginaw, Mich.

MEXICAN



For Plumbago Axle Grease.

55,468. Aug. 14, 1906. The United States Graphite Company, Saginaw, Mich. Pub. by The Wickes Corporation, Saginaw, Mich.

GRAFITA

For Lubricating Graphite.

422,080. July 2, 1946. E. I. du Pont de Nemours and Company, Wilmington, Del. Pub. by registrant.

DUPONT

For Penetrating, Lubricating Composition Containing a Mixture of a Vegetable Oil and a Solvent Therefor.

Class 16—Protective and Decorative Coatings

213,806. June 8, 1926. E. I. du Pont de Nemours and Company, Wilmington, Del. Pub. by registrant.

PYRALIN

For Proxylin Enamels.

Class 17—Tobacco Products

420,894. May 7, 1946. Lane Tobacco, Ltd., New York, N.Y. Pub. by Lane Limited, New York, N.Y.

ECONOMY

For Smoking Tobacco.

Class 18—Medicines and Pharmaceutical Preparations

212,878. May 18, 1926. J. C. Eno, Limited, London, England. Pub. by Beecham Products Inc., Clifton, N.J.



For Medicinal Saline Preparation for Human Use.

Class 21—Electrical Apparatus, Machines, and Supplies

422,755. Aug. 13, 1946. Duro-Test Corporation, North Bergen, N.J. Pub. by registrant.



For Incandescent and Fluorescent Lamps.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

56,563. Oct. 9, 1906. Norman Mellor, Philadelphia, Pa. Pub. by Arguto Oilless Bearing Company, Philadelphia, Pa.

Arguto

For Machine-Bearings.

57,124. Nov. 6, 1906. National Needle Co., Springfield, Mass. Pub. by The Torrington Company, Torrington, Conn.

STANDARD

For Sewing-Machine Needles.

Class 25—Locks and Safes

216,950. Aug. 24, 1926. The Mosler Lock Company, Covington, Ky. Pub. by The Mosler Safe Company, Hamilton, Ohio.

5700

For Locks, Particularly Locks for Safe Deposit Boxes.

Class 26—Measuring and Scientific Appliances

421,476. June 4, 1946. Wm. Ainsworth & Sons, Inc., Denver, Colo. Pub. by registrant.

D.W. BRUNTON'S

For Pocket Transits.

421,734. June 18, 1946. Ernest J. Abbott, d.b.a. Physicists Research Company (Not Inc.), Ann Arbor, Mich. Pub. by The Bendix Corporation, Detroit, Mich.

ANDEROMETER

For Apparatus for Testing Rotatable Bearings, and Parts Thereof.

423,472. Sept. 3, 1946. Wm. Ainsworth & Sons, Inc., Denver, Colo. Pub. by registrant.

BRUNTON

For Pocket Transits.

Class 27—Horological Instruments

421,181. May 21, 1946. Waltham Watch Company, Chicago, Ill. Pub. by registrant.



For Watches.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

54,550. June 26, 1906. Gorham Rubber Company, San Francisco, Calif. Pub. by United States Rubber Company, New York, N.Y.

AMAZON

For Rubber Hose.

57,005. Oct. 30, 1906. Revere Rubber Company, Boston, Mass. Pub. by United States Rubber Company, New York, N.Y.

SECURITY

For Belting, Hose, and Machinery Packings.

Class 37—Paper and Stationery

215,318. July 13, 1926. The Northwest Paper Company, Cloquet, Minn. Pub. by registrant.

NORTHWEST

For Book Paper, etc.

Class 38—Prints and Publications

214,260. June 15, 1926. C. R. Moen, La Crosse, Wis. Pub. by Moen Photo Service, Incorporated, La Crosse, Wis.

ENAMEL MOEN-TONE PRINTS

For Photoprints.

Class 39—Clothing

212,132. Apr. 27, 1926. The Mallory Hat Company, Danbury, Conn. Pub. by John B. Stetson Company, Philadelphia, Pa.

MALLORY

For Hats for Men, Women, and Children.

Class 43—Thread and Yarn

265,952. Jan. 7, 1930. S. S. Kresge Company, Detroit, Mich. Pub. by registrant.

GREEN OAK

For Thread.

265,953. Jan. 7, 1930. S. S. Kresge Company, Detroit, Mich. Pub. by registrant.

GREEN OAK

For Thread.

Class 44 — Dental, Medical, and Surgical Appliances

53,258. May 29, 1906. The S. S. White Dental Mfg. Co., Philadelphia, Pa. Pub. by S. S. White Company, Philadelphia, Pa.

CROWN

For Wax.

53,360. May 29, 1906. The S. S. White Dental Mfg. Co., Philadelphia, Pa. Pub. by S. S. White Company, Philadelphia, Pa.

SUMP

For Investment and Impression Compounds.

53,361. May 29, 1906. The S. S. White Dental Mfg. Co., Philadelphia, Pa. Pub. by S. S. White Company, Philadelphia, Pa.

CAVITINE

For Cavity-Linings.

Class 46 — Foods and Ingredients of Foods

57,618. Nov. 13, 1906. Whipple Co-Operative Company, Natick, Mass. Pub. by The Whipple Company, Natick, Mass.

Grandmother's



For Mince Meat.

Class 47 — Wines

305,648. Aug. 22, 1933. Virginia Dare Extract Co., Inc., Brooklyn, N.Y. Pub. by registrant.



For Wines.

Class 49 — Distilled Alcoholic Liquors

418,812. Jan. 8, 1946. Ron Zorro Distillers, St. Thomas, Virgin Islands. Pub. by West Indies Distillers, Ltd., St. Amalie, Virgin Islands.

Carousel

For Rum.

Class 51 — Cosmetics and Toilet Preparations

422,330. July 16, 1946. Socialite Cosmetics, Inc., New York, N.Y. Pub. by Arthur Matney, Brooklyn, N.Y.

JAMBOREE

For Perfume, Toilet Water, Lipstick, etc.

422,999. Aug. 20, 1946. Socialite Cosmetics, Inc., New York, N.Y. Pub. by Arthur Matney, Brooklyn, N.Y.

COSMOPOLITAN

For Perfume, Toilet Water, etc.

423,000. Aug. 20, 1946. Socialite Cosmetics, Inc., New York, N.Y. Pub. by Arthur Matney, Brooklyn, N.Y.

SOCIALITE

For Perfume, Toilet Water, etc.

INDEX OF REGISTRANTS

SEPTEMBER 6, 1966

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.: New Certificates: 12c Publications.)

A/S Tyri Fabrikker, Drammen, Norway. 814,289, pub. 6–21–66. Cl. 15.
Abbott, Ernest J., d.b.a. Physicists Research Co. (Not Inc.), Ann Arbor, by The Bendix Corp., Detroit, Mich. 421,734, 12(c) pub. 9–6–66. Cl. 26.
Abert Products, Inc., New York, N.Y. 814,683, pub. 6–21–66. Cl. 52.
Acromark Co., The: *See*—
Bates, Harold O.
Adams Paper Converting Co., Monroe, La. 814,517, pub. 6–21–66. Cl. 37.
Adler, Irving N., and Richard J. Wlodyga, Highland Park, Mich. 814,448, pub. 6–21–66. Cl. 26.
Aimcee Wholesale Corp.: *See*—
Associated Merchandising Corp.
Ainsworth, Wm., & Sons, Inc., Denver, Colo. 421,476, 12(c) pub. 9–6–66. Cl. 26.
Ainsworth, Wm., & Sons, Inc., Denver, Colo. 423,472, 12(c) pub. 9–6–66. Cl. 26.
Air Products, Inc., Emmaus, Pa. 701,197–8, canc. Cl. 13.
Air Products, Inc., Emmaus, Pa. 701,385–6, canc. Cl. 34.
Air Devices, Inc., New York, N.Y. 701,388, canc. Cl. 34.
Aktiebolaget Cernelle, Vegeholm, Sweden. 814,660, pub. 6–21–66. Cl. 51.
Aktiebolaget Jonkoping-Vulcan, Jonkoping, Sweden. 701,193, canc. Cl. 12.
Aktiebolaget Jonkoping-Vulcan, Jonkoping, Sweden. 701,442, canc. Cl. 42.
Aktiebolaget Wicanders Korkfabriker, Linkoping, Sweden. 701,306, canc. Cl. 23.
Alan Plastics Corp., Canton, Mass. 814,677, pub. 6–21–66. Cl. 52.
Alco Electronic Products Inc., Lawrence, Mass. 814,436, pub. 12–22–64. Cl. 26.
Allegheny Ludlum Steel Corp., Pittsburgh, Pa. 701,208, canc. Cl. 14.
All-American Brush Mfg. Corp., Newark, N.J. 814,468–72, pub. 6–21–66. Cl. 29.
All Tech Industries, Inc., Hialeah, Fla. 814,378, pub. 6–21–66. Cl. 22.
Allen Electric and Equipment Co., Kalamazoo, Mich. 814,339, pub. 6–21–66. Cl. 19.
Allen, A. Ward: *See*—
Defy, Inc.
Allen, J. W., & Co., Chicago, Ill. 814,627, pub. 6–21–66. Cl. 46.
Allen, R. C., Business Machines, Inc., Grand Rapids, Mich. 814,461, pub. 6–21–66. Cl. 26.
Alofs Mfg. Co., Grand Rapids, Mich. 814,279, pub. 6–21–66. Cl. 13.
Alofs Mfg. Co., Grand Rapids, Mich. 814,340, pub. 6–21–66. Cl. 19.
Alofs Mfg. Co., Grand Rapids, Mich. 814,421, pub. 6–21–66. Cl. 23.
American Colloid Co., Skokie, Ill. 814,271, pub. 6–21–66. Cl. 12.
American Cyanamid Co.: *See*—
Lederle Laboratories, Inc.
American Cyanamid and Chemical Corp.
American Cyanamid and Chemical Corp., to American Cyanamid Co., New York, N.Y., to American Cyanamid Co., Wayne, N.J. 424,734, ren. 9–6–66. Cl. 6.
American Dairy Queen Corp., Minneapolis, Minn. 814,632, pub. 6–21–66. Cl. 46.
American Filtrona Corp., Richmond, Va. 814,657, pub. 6–21–66. Cl. 50.
American Hoist & Derrick Co., St. Paul, Minn. 814,458, pub. 6–21–66. Cl. 26.
American Home Products Corp., New York, N.Y. 814,668, pub. 6–21–66. Cl. 51.
American Home Products Corp., New York, N.Y. 814,670, pub. 6–21–66. Cl. 51.
American Instrument Co., Inc., Silver Spring, Md. 701,355, canc. Cl. 26.
American Lava Corp., Chattanooga, Tenn. 814,367, pub. 6–21–66. Cl. 21.
American Metal Climax, Inc., New York, N.Y. 814,288, pub. 6–21–66. Cl. 14.
American Radiator & Standard Sanitary Corp., New York, N.Y. 814,445, pub. 6–21–66. Cl. 26.
American Scientific Laboratories, Inc., Madison, Wis. 701,244, canc. Cl. 18.
American Society of Sanitary Engineering, Cleveland, Ohio. 814,712, pub. 6–21–66. Cl. A.
American Trading and Production Corp.: *See*—
Kromex Corp.
Anderson, W. E., Inc., Kansas City, Mo. 701,254, canc. Cl. 19.
Antique Press, The: *See*—
Lebowitz, Morris M.
Apoian, Robert, from Catchmore Lures Co., Levittown, N.Y. 814,383, pub. 6–21–66. Cl. 22.
Aqua-Chem, Inc., Waukesha, Wis. 814,474, pub. 6–21–66. Cl. 31.
Aqua Spray, Inc., Pittsburgh, Pa. 814,392, pub. 6–21–66. Cl. 23.
Aquarium Systems, Inc., Wickliffe, Ohio. 814,656, pub. 6–21–66. Cl. 50.
Aquariums Inc., Maywood, N.J. 814,427, pub. 6–21–66. Cl. 23.
Aquariums Inc., Maywood, N.J. 814,479, pub. 6–21–66. Cl. 31.
Arden, Elizabeth, Sales Corp., New York, N.Y. 814,663, pub. 6–21–66. Cl. 51.
Arden, Elizabeth, Sales Corp., New York, N.Y. 814,669, pub. 6–21–66. Cl. 51.
Argus, Inc., Ann Arbor, Mich., to Argus Inc., Chicago, Ill. 422,152, ren. 9–6–66. Cl. 21.
Arguto Oilless Bearing Co.: *See*—
Mellor, Norman.
Arkwright, Inc.: *See*—
Dry Goods Alliance, Inc., The.
Armour and Co., d.b.a. Armour Creameries, Chicago, Ill. 814,612, pub. 6–21–66. Cl. 46.
Armour Creameries: *See*—
Armour and Co.
Arrowhead Enterprises, Inc., Westport, Conn. 814,356, pub. 6–21–66. Cl. 21.
Arvin Industries, Inc., Columbus, Ind. 701,275, canc. Cl. 21.
Asphalt Cold Mix (1925) Ltd. of London, England: *See*—
Asphalt Cold Mix Ltd.
Asphalt Cold Mix Ltd., to Asphalt Cold Mix (1925) Ltd. of London, England, to The Flintkote Co., New York, N.Y. 213,936, ren. 9–6–66. Cl. 12.
Associated Merchandising Corp., to Aimcee Wholesale Corp., New York, N.Y. 217,620, ren. 9–6–66. Cl. 39.
Associated Potato Growers, Inc., Grand Forks, N. Dak. 814,604, pub. 6–21–66. Cl. 46.
Ateliers Partiot, S.A., Rueil-Malmaison, Seine, France. 701,207, canc. Cl. 14.
Atlantic Refining Co., The, Philadelphia, Pa. 814,293, pub. 6–21–66. Cl. 15.
Atlantic Refining Co., The, Philadelphia, Pa. 814,295–8, pub. 6–21–66. Cl. 15.
Audivox, Inc., Boston, Mass. 814,593, pub. 6–21–66. Cl. 44.
Auerbach Bath Robe Corp., New York, N.Y. 814,578, pub. 6–21–66. Cl. 39.
Authement, Louis, d.b.a. Sea Breeze Restaurant, Houma, La. 701,489, canc. Cl. 46.
Automatic Car Wash Systems, Inc., Youngstown, Ohio. 814,695, pub. 6–21–66. Cl. 101.
Avionics Research Products Corp., Los Angeles, Calif. 814,584, pub. 6–21–66. Cl. 44.
Aziende Chimiche Riunite Angelini Francesco, Rome, Italy. 814,239, pub. 9–29–64. Cl. 6.
B-C Mfg. Corp., Tacoma, Wash. 814,484, pub. 6–21–66. Cl. 32.
BW Chair Co., Council Bluffs, Iowa. 814,482, pub. 6–21–66. Cl. 32.
Bagel Kings of Hialeah, Inc., Miami, Fla. 814,620, pub. 6–21–66. Cl. 46.
Balfour, Williamson, Inc., New York, N.Y. 814,614, pub. 6–21–66. Cl. 46.
Baloian, Charles, Co., Inc.: *See*—
Shippers Sales Service.
Bantam Books, Inc., New York, N.Y. 426,140, ren. 9–6–66. Cl. 38.
Barbison Corp., The, New York, N.Y. 814,566, pub. 6–21–66. Cl. 39.
Barnes-Daugherty and Associates, Sausalito, Calif. 814,229, pub. 6–21–66. Cl. 3.
Barnett, William, Chicago, Ill. 701,277, canc. Cl. 22.
Bates, Harold O., from The Acromark Co., St. Elizabeth, N.J. 814,416, pub. 6–21–66. Cl. 23.
Baumritter Corp., New York, N.Y. 814,486–7, pub. 6–21–66. Cl. 32.
Beck, A. S., Shoe Corp., New York, N.Y. 814,588, pub. 6–21–66. Cl. 39.
Beecham Products Inc.: *See*—
Eno, J. C. Ltd.
Beloit Corp., Beloit, Wis. 814,415, pub. 6–21–66. Cl. 23.
Belove & Arienti Watch Case Co., Inc., Brooklyn, N.Y. 814,462, pub. 6–21–66. Cl. 27.
Bendix Corp., The: *See*—
Abbott, Ernest J.
Bergeron, Victor J., d.b.a. Senor Pico Restaurant, San Francisco, Calif. 814,630–1, pub. 6–21–66. Cl. 46.
Berner Industries, Inc., New Castle, Pa. 814,497–8, pub. 6–21–66. Cl. 34.
Berry Refining Co., Chicago, Ill. 701,210, canc. Cl. 15.
Besly-Welles Corp.: *See*—
Besly-Welles Corp., The.
Besly-Welles Corp., The, from Besly-Welles Corp., South Beloit, Ill. 814,440, pub. 6–21–66. Cl. 26.
Bettcher Mfg. Corp., The, Cleveland, Ohio. 814,490, pub. 6–21–66. Cl. 34.
Bigelow-Sanford, Inc.: *See*—
Bigelow-Sanford Carpet Co., Inc.
Bigelow-Sanford Carpet Co., Inc., Thompsonsville, Conn., to Bigelow-Sanford, Inc., New York, N.Y. 423,463, ren. 9–6–66. Cl. 42.
Biotronics, Inc., Oakland, Calif. 814,590, pub. 6–21–66. Cl. 44.
Bi-Rite Wholesale Merchandisers, Inc., Manchester, N.H. 814,691, pub. 6–21–66. Cl. 101.

Bischoff, Ernst, New York, N.Y., to Miles Laboratories, Inc., Elkhart, Ind. 53,066, ren. 9–6–66. Cl. 18.
Blunden, Alfred G., London, England. 215,198, ren. 9–6–66. Cl. 37.
Boehringer, C. F., & Soehne G.m.b.H., Mannheim-Waldhof, Germany. 701,236, canc. Cl. 18.
Boehringer, C. H., Sohn, Ingelheim (Rhine), Germany. 701,-235, canc. Cl. 18.
Bohemian Distributing Co., d.b.a. International Distilleries Co., Los Angeles, Calif. 814,648, pub. 6–21–66. Cl. 49.
Bonded Fibers, Inc., Buena Vista, Va. 814,222, pub. 6–21–66. Cl. 1.
Bonded Products, Inc., Providence, R.I. 814,478, pub. 6–21–66. Cl. 31.
Booth Fisheries Corp., d.b.a. Sunlight Fisheries, Inc., Chicago, Ill. 701,479, canc. Cl. 46.
Borg-Warner Corp., Chicago, Ill. 814,681, pub. 6–21–66. Cl. 52.
Bosisto, J., & Co., Richmond, Victoria, Australia, to Drug Houses of Australia Ltd., Melbourne, Australia. 29,261, ren. 9–6–66. Cl. 18.
Boston Gear Works: *See*—
Murray Co. of Texas, Inc.
Brach, E. J., & Sons, Chicago, Ill. 814,611, pub. 6–21–66. Cl. 46.
Breon Laboratories Inc., New York, N.Y. 814,335–6, pub. 6–21–66. Cl. 18.
Bristol-Myers Co., New York, N.Y. 814,321, pub. 6–21–66. Cl. 18.
Bristol Siddeley Engines Ltd., Filton, Bristol, England. 814,-702, pub. 6–21–66. Cl. 103.
Brookfield Clothes, Inc., Long Island City, N.Y. 814,548, pub. 6–21–66. Cl. 39.
Brown and Sons Polish Co., Fullerton, Calif. 814,233, pub. 6–21–66. Cl. 4.
Brown, H. H., Shoe Co., Inc., Worcester, Mass. 814,552, pub. 6–21–66. Cl. 39.
Brown Mfg. Co.: *See*—
Wells, S. C., & Co.
Browning Mfg. Co., Maysville, Ky. 814,502, pub. 6–21–66. Cl. 35.
Buckley, William W., Santa Ana, Calif. 814,261, pub. 6–21–66. Cl. 8.
Buell Engineering Co., Inc., Lebanon, Pa. 814,413, pub. 6–21–66. Cl. 23.
Buitoni Foods Corp., South Hackensack, N.J. 814,598, pub. 6–23–64. Cl. 46.
C-B Drug Co., Charlotte, N.C. 814,306, pub. 6–21–66. Multiple Class (Classes 16, 18, 46, and 51).
C.S.W. Plastic Types, Inc., Rocky Hill, Conn. 701,501, canc. Cl. 50.
Cabrera Vulcan Shoe Corp., Hialeah, Fla. 814,580, pub. 6–21–66. Cl. 39.
Calbert Dress Co., Inc.: *See*—
Calbert Dress Co.
Calbert Dress Co., to Calbert Dress Co., Inc., New York, N.Y. 416,741, ren. 9–6–66. Cl. 39.
Cambridge Chemical Products, Inc., Detroit, Mich. 814,249, pub. 6–21–66. Cl. 6.
Canada Packers Ltd., Toronto, Ontario, Canada. 814,263, pub. 6–21–66. Multiple Class (Classes 10, 18, and 46).
Candulor Ag (Candulor S.A.) (Candulor Ltd.), Zurich, Switzerland. 814,592, pub. 6–21–66. Cl. 44.
Caribe Vitamin Corp., New York, N.Y. 701,218, canc. Cl. 18.
Carlson, Frederick G., and Richard J. Brandt, Park Ridge, Ill. 814,450, pub. 6–21–66. Cl. 26.
Carolina Refractories Co., Hartsville, S.C. 220,447, 12(c) pub. 9–6–66. Cl. 12.
Carter Products, Inc.: *See*—
Carter-Wallace, Inc.
Carter-Wallace, Inc.: *See*—
Wallace Laboratories, Inc.
Carter-Wallace, Inc., from Carter Products, Inc., New York, N.Y. 814,527, pub. 6–21–66. Cl. 38.
Cascade Industries, Inc., Edison, N.J. 814,659, pub. 6–21–66. Cl. 50.
Castle & Cooke, Inc., d.b.a. Dole Co., Honolulu, Hawaii. 814,602, pub. 6–21–66. Cl. 46.
Castleguard Record Co.: *See*—
Resz, Stephen.
Catchmore Lures Co.: *See*—
Apoian, Robert.
C'Bon, Inc., Boston, Mass. 814,452, pub. 6–21–66. Cl. 26.
Celebrity Food Products, Inc., New York, N.Y. 814,603, pub. 6–21–66. Cl. 46.
Certified Blood Donor Service Inc., Jamaica, N.Y. 814,248, pub. 6–21–66. Cl. 6.
Certified Professional Photographer, Inc., Harlingen, Tex. 814,688, pub. 6–21–66. Cl. 101.
Circum-Channeled Contact Lens Specialists, Inc., Philadelphia Pa. 701,324–5, canc. Cl. 26.
City Bank and Trust Co.: *See*—
Sporting Goods, Inc.
City of Holland, Holland, Mich. 814,713, pub. 6–21–66. Cl. A.
Chadbourn Gotham, Inc., Charlotte, N.C. 814,562, pub. 6–21–66. Cl. 39.
Charles-Bar Lok Corp., Chicago, Ill. 814,284, pub. 6–21–66. Cl. 13.
Chattanooga Glass Co., Chattanooga, Tenn. 814,489, pub. 6–21–66. Cl. 33.
Chehalis Packing Co.: *See*—
National Fruit Canning Co.
Chemische Werke Witten, Witten/Ruhr, Germany. 814,243, pub. 6–21–66. Cl. 6.
Chesebrough-Pond's Inc., New York, N.Y. 814,745. Cl. 51.
Chester, E. P., Ltd., Port Credit, Ontario, Canada. 814,542, pub. 5–3–66. Cl. 39.
Chiris, Antoine, Co., Inc., New York, N.Y., to Universal Oil Products Co., Des Plaines, Ill. 425,654, ren. 9–6–66. Cl. 51.
Churchill Chemical Co., Galesburg, Ill. 814,251, pub. 6–21–66. Cl. 6.
Coldwell Beverage Corp., Buffalo, N.Y. 814,740. Cl. 45.
Condimix Corp., Arecibo, Puerto Rico. 814,601, pub. 3–22–66. Cl. 46.
Claire Mfg. Co., Chicago, Ill. 814,230, pub. 2–22–66. Multiple Class (Classes 4, 6, 18, 51, and 52).
Clark Equipment Co., Buchanan, Mich. 814,501, pub. 6–21–66. Cl. 35.
Clock-Wise Fashions, Dallas, Tex. 814,536, pub. 5–24–66. Cl. 39.
Cluett, Peabody & Co., Inc., New York, N.Y. 814,509, pub. 6–21–66. Cl. 37.
Colgate-Palmolive Co., New York, N.Y. 814,232, pub. 6–21–66. Cl. 4.
Collins & Aikman Corp.: *See*—
Collins & Aikman Co.
Collins & Aikman Co., Philadelphia, Pa., to Collins & Aikman Corp., New York, N.Y. 218,549–50, ren. 9–6–66. Cl. 42.
Collins Associates, Inc., Cincinnati, Ohio. 814,692, pub. 5–3–66. Cl. 101.
Colt's Inc.: *See*—
Colt's Patent Fire Arms Mfg. Co.
Colt's Patent Fire Arms Mfg. Co., to Colt's Inc., Hartford, Conn. 58,249, ren. 9–6–66. Cl. 9.
Colt's Patent Fire Arms Mfg. Co., to Colt's Inc., Hartford, Conn. 58,277–8, ren. 9–6–66. Cl. 9.
Comark Corp., Syracuse, N.Y. 814,216, pub. 6–21–66. Cl. 1.
Commerce Supply & Mfg. Co., Philadelphia, Pa. 814,278, pub. 6–21–66. Cl. 13.
Community Nursing Homes, Inc., Baltimore, Md. 814,685, pub. 6–21–66. Cl. 100.
Components, Inc., Biddeford, Maine. 814,350, pub. 6–21–66. Cl. 21.
Conap, Inc., Allegany, N.Y. 814,218, pub. 6–21–66. Cl. 1.
Consolidated Cosmetics, Chicago, Ill., to Les Parfums de Dana, Inc., New York, N.Y. 423,001, ren. 9–6–66. Cl. 51.
Consolidated Enterprise Distributing Corp., Erie, Pa. 701,-190, canc. Cl. 12.
Constellation Life Insurance Co., Norfolk, Va. 701,536, canc. Cl. 102.
Continental Can Co., Inc., New York, N.Y. 421,222–4, ren. 9–6–66. Cl. 2.
Cope, Martin H., Co., Rheems, Pa. 701,486, canc. Cl. 46.
Corning Glass Works, Corning, N.Y. 814,460, pub. 6–21–66. Cl. 26.
Coro, Inc., New York, N.Y. 422,239, ren. 9–6–66. Cl. 2.
Coro, Inc., New York, N.Y. 422,482, ren. 9–6–66. Cl. 2.
Corrosion Reaction Consultants: *See*—
Webb, Chas. J., Sons Co., Inc.
Corrosion Reaction Consultants, Inc.: *See*—
Webb, Chas. J., Sons Co., Inc.
Courtaulds, Ltd., London, England. 701,443, canc. Cl. 42.
Courtship: *See*—
Stockwell, Aylward H.
Creighton Shirt Co., Inc., New York, N.Y. 814,573, pub. 6–21–66. Cl. 39.
Crystal Research Laboratories, Inc., Hartford, Conn. 814,449, pub. 6–21–66. Cl. 26.
Curtice Brothers Co., to Curtice-Burns, Inc., Rochester, N.Y. 56,714, ren. 9–6–66. Cl. 46.
Curtice-Burns, Inc.: *See*—
Curtice Brothers Co.
Curtis, Helene, Industries, Inc., Chicago, Ill. 814,675, pub. 6–21–66. Cl. 51.
Curtis 1000 Inc., St. Paul, Minn. 814,521, pub. 6–21–66. Cl. 37.
Curtis-Stephens-Embry Co., Inc., Reading, Pa. 814,5.0, pub. 6–21–66. Cl. 39.
Cyclops Corp., Bridgeville, Pa. 814,287, pub. 6–21–66. Cl. 14.
Dade Reagents, Inc., Miami, Fla. 814,250, pub. 5–3–66. Cl. 6.
Dare, Virginia, Extract Co., Inc., Brooklyn, N.Y. 305,648, 12(c) pub. 9–6–66. Cl. 47.
Datex Corp., Monrovia, Calif. 701,351, canc. Cl. 26.
Davies-Young Soap Co., The, Dayton, Ohio. 814,309, pub. 6–21–66. Cl. 16.
Daystrom Inc., Murray Hill, N.J. 701,344, canc. Cl. 26.
Dean Foods Co., Franklin Park, Ill. 814,639, pub. 6–21–66. Cl. 46.
Deando Ltd., St. Louis, Mo. 814,705, pub. 6–21–66. Cl. 107.
Defy, Inc., from A. Ward Allen, d.b.a. Defy, New Bern, N.C. 814,661, pub. 12–14–65. Cl. 51.
De Laval Separator Co., The, Poughkeepsie, N.Y. 54,868, ren. 9–6–66. Cl. 23.
Delta Co., The, Wheeling, Ill. 814,654, pub. 6–21–66. Cl. 50.
De Millus Comercio e Industria de Roupas S.A., Rio De Janeiro, Guanabara, Brazil. 814,537, pub. 6–21–66. Cl. 39.
Dennison Mfg. Co., Framingham, Mass. 814,399, pub. 6–21–66. Cl. 23.
Denoyer-Geppert Co., Chicago, Ill. 814,443, pub. 6–21–66. Multiple Class (Classes 26 and 38).
Derry Products, Inc., Brooklyn, N.Y. 814,739. Cl. 45.
Dexco Corp., Detroit, Mich. 814,400, pub. 6–21–66. Cl. 23.
Diebold, Inc., Canton, Ohio. 814,699, pub. 6–21–66. Cl. 103.
Dierks Forests, Inc., Kansas City, Mo. 814,265, pub. 2–16–65. Cl. 12.
Dole Co.: *See*—
Castle & Cooke, Inc.
Donnelley, Reuben H., Corp., The, New York, N.Y. 814,533, pub. 6–21–66. Cl. 38.
Donnelly Garment Co., to Nelly Don, Inc., Kansas City, Mo. 215,552, ren. 9–6–66. Cl. 39.
Douglas Furniture Corp., Chicago, Ill. 701,383, canc. Cl. 32.

Dow Chemical Co., The, Midland, Mich. 814,272, pub. 6–21–66. Cl. 12.
Drilling Specialties Co., Bartlesville, Okla. 814,214, pub. 6–21–66. Cl. 1.
Dry Goods Alliance, Inc., The, to Arkwright, Inc., New York, N.Y. 215,086, ren. 9–6–66. Cl. 39.
Dry Oil Treatment, Inc., Tulsa, Okla. 814,255, pub. 6–21–66. Cl. 6.
Drug Houses of Australia Ltd.: *See*—
Bosisto, J., & Co.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 213,-806, 12(c) pub. 9–6–66. Cl. 16.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 422,-080, 12(c) pub. 9–6–66. Cl. 15.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 814,-256, pub. 6–21–66. Cl. 6.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 814,-711, pub. 3–22–66. Cl. A.
Duro-Test Corp., North Bergen, N.J. 422,755, 12(c) pub. 9–6–66. Cl. 21.
Dwelf Greetings, Ltd., Albany, N.Y. 814,520, pub. 6–21–66. Cl. 37.
Earthworm Boring Machine, Inc., Santa Monica, Calif. 814,-401, pub. 6–21–66. Cl. 23.
Eastern Cyclone Industries, Inc., Clifton, N.J. 814,424–6, pub. 6–21–66. Cl. 23.
Eastman, Louis, Co., San Antonio, Tex. 814,563, pub. 6–21–66. Cl. 39.
Economarker Safety Corp., Cincinnati, Ohio. 701,502, canc. Cl. 50.
Edton, Inc., Long Beach, Calif. 701,507, canc. Cl. 50.
Edy's Character Candies of Calif.: *See*—
Edy's Character Candies of Northern Calif.
Edy's Character Candies of Northern Calif., d.b.a. Edy's Character Candies of Calif., Oakland, Calif. 814,606, pub. 6–21–66. Cl. 46.
Electric Motors Service Co.: *See*—
Walters, John C.
Electrographic Corp., New York, N.Y. 814,528–9, pub. 6–21–66. Cl. 38.
Electronic Engineering Co. of Calif., Santa Ana, Calif. 814,-364–5, pub. 6–21–66. Cl. 21.
Electrovert Ltd., Montreal, Quebec, Canada. 814,346, pub. 6–21–66. Multiple Class (Classes 21 and 34).
Elkirt Verticals, Inc., Des Moines, Iowa. 814,481, pub. 6–21–66. Cl. 32.
Elwell, Edward, Ltd., Wednesbury, England. 701,300, canc. Cl. 23.
Ely, T. J., Mfg. Co., Girard, Pa. 701,288, canc. Cl. 22.
Engineered Models Corp., Indianapolis, Ind. 814,391, pub. 6–21–66. Cl. 23.
Eno, J. C., Ltd., London, England, by Beecham Products Inc., Clifton, N.J. 212,878. 12(c) pub. 9–6–66. Cl. 18.
Etablissement Vivadent, Schaan, Liechtenstein. 814,585, pub. 6–21–66. Cl. 44.
Etablissements Clodrey "Polyflex" Corp., Paris, France. 701,-294, canc. Cl. 22.
Eugene-Gallia S.A., Paris (Seine), France. 814,664, pub. 6–21–66. Cl. 51.
FMC Corp., San Jose, Calif. 814,282, pub. 6–21–66. Cl. 13.
Farias, George A., d.b.a. "Stylers" Dance Band, Sacramento, Calif. 814,706, pub. 6–21–66. Cl. 107.
Farr Co., El Segundo, Calif. 814,475, pub. 6–21–66. Cl. 31.
Faygo Beverage Co.: *See*—
Feigenson, Inc.
Federal Sign and Signal Corp., Blue Island, Ill. 814,343, pub. 6–21–66. Cl. 21.
Federated Department Stores, Inc., d.b.a. The Rike-Kumler Co., Dayton, Ohio. 814,689, pub. 6–21–66. Cl. 101
Feigenson, Inc., d.b.a. Faygo Beverage Co., Detroit, Mich. 814,597, pub. 6–21–66. Cl. 45.
Fesco, Inc., New York, N.Y. 814,275, pub. 6–21–66. Cl. 13.
Festival Products, Inc., Skokie, Ill. 814,381–2, pub. 6–21–66. Cl. 22.
Fibre-Metal Products Co., The, Chester, Pa. 814,551, pub. 6–21–66. Cl. 39.
Flex-O-Glass, Inc., d.b.a. Warp Bros., Chicago, Ill. 814,718. Cl. 1.
Flintkote Co., The: *See*—
Asphalt Cold Mix Ltd.
Florida Power & Light Co., Miami, Fla. 814,734. Cl. 38.
Folger, Thomas I., Upper Montclair, N.J. 814,665, pub. 6–21–66. Cl. 51.
Folger, Thomas I., Upper Montclair, N.J. 814,680, pub. 6–21–66. Cl. 52.
Ford, F. R., & Co., Inc., New York, N.Y. 701,339, canc. Cl. 26.
Forest View Evergreen Nursery: *See*—
Heuser, Wilbur F.
Form-A-Tool Co., Inc., Cleveland, Ohio. 814,407, pub. 6–21–66. Cl. 23.
Fort Howard Paper Co., Green Bay, Wis. 814,523, pub. 6–21–66. Cl. 37.
Foster Grant Co., Inc., Leominster, Mass. 701,321, canc. Cl. 26.
Fountain Foods, Brooklyn, N.Y. 701,463, canc. Cl. 46.
Fox River Paper Corp., Appleton, Wis. 814,513–14, pub. 6–21–66. Cl. 37.
Fram Corp., East Providence, R.I. 424,473, ren. 9–6–66. Cl. 31.
Frank, Wally, Ltd., d.b.a. Hollco, New York, N.Y. 814,260, pub. 6–21–66. Cl. 8.
Fisons Pharmaceuticals Ltd., Loughborough, Leicestershire, England. 814,325, pub. 6–21–66. Cl. 18.
Frecker's Ice Cream Co., Columbus, Ohio. 814,621, pub. 6–21–66. Cl. 46.
Freeman & Gossage, Inc., San Francisco, Calif. 814,724. Cl. 17.
Freeport Sulphur Co., New York, N.Y. 814,719. Cl. 1.
Frontier Fence Corp., Smithtown, N.Y. 814,268, pub. 6–21–66. Cl. 12.
Fuller Tool Co., Inc., Whitestone, N.Y. 814,403, pub. 6–21–66. Cl. 23.
Futurex Products, Inc., Detroit, Mich. 814,595, pub. 6–21–66. Cl. 44.
Gancel, M., Co., Inc., New York, N.Y. 701,250, canc. Cl. 18.
Gebr. Bollier & Co., Aktiengesellschaft, Vienna, Austria. 814,-285, pub. 6–21–66. Cl. 14.
General Appliance Mfg. Co., Omaha, Nebr. 814,397, pub. 6–21–66. Cl. 23.
General Cable Corp.: *See*—
Standard Underground Cable Co.
General Mills, Inc., Minneapolis, Minn. 814,608, pub. 6–21–66. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 814,609, pub. 6–21–66. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 814,624, pub. 6–21–66. Cl. 46.
General Numismatics Corp., Yeadon, Pa. 814,635, pub. 6–21–66. Cl. 50.
General Scientific Corp., San Fernando, Calif. 814,342, pub. 3–19–63. Cl. 21.
General Time Corp., New York, N.Y. 701,360–1, canc. Cl. 27.
Gerrard, W. A., Co.: *See*—
Gerrard, William A.
Gerrard, William A., d.b.a. W. A. Gerrard Co., Minneapolis, Minn. 701,549, canc. Cl. 12.
Giftwrap Corp. of America, Inc., Philadelphia, Pa. 814,516, pub. 6–21–66. Cl. 37.
Giles, Harry M., Lynchburg, Va. 814,600, pub. 6–21–66. Cl. 46.
Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 701,449, canc. Cl. 44.
Go Co.: *See*—
Wendt, Robert H.
Gordon-Allen Co.: *See*—
Hood, H. P., & Sons, Inc.
Gordon Baking Co., to Silvercup Bakers Inc., Detroit, Mich 216,160, ren. 9–6–66. Cl. 46.
Gorham Rubber Co., San Francisco, Calif., by United States Rubber Co., New York, N.Y. 54,550, 12(c) pub. 9–6–66. Cl. 35.
Great Plains Dental Products Co.: *See*—
Thompson, Donald E.
Gulf Oil Corp., Pittsburgh, Pa. 814,290, pub. 6–21–66. Cl. 15.
Gustav Lohse A.G., Berlin-Charlottenburg, Germany. 701,-513, canc. Cl. 51.
Halperin, Irving J., d.b.a. Winston Cosmetics, Natick, Mass. 701,511, canc. Cl. 51.
Hanhart, Adolf: *See*—
Hanhart, Willie.
Hanhart, Willie, d.b.a. Adolf Hanhart, Schwenningen, Neckar, Germany. 814,434, pub. 6–21–66. Cl. 26.
Hardman, Peck & Co.: *See*—
Harrington, E. G., & Co.
Harrington, E. G., & Co., to Hardman, Peck & Co., New York, N.Y. 58,721, ren. 9–6–66. Cl. 36.
Harris-Intertype Corp., Cleveland, Ohio. 814,395, pub. 6–21–66. Cl. 23.
Hart, Alfred V., executor under the will of Edward L. Megill, d.b.a. Edward L. Megill, to Alfred L. Megill, d.b.a. The Edward L. Megill Co., Brooklyn, N.Y. 220,709, ren. 9–6–66. Cl. 23.
Hart, Alfred V., executor under the will of Edward L. Megill, d.b.a. Edward L. Megill, to Alfred L. Megill, d.b.a. The Edward L. Megill Co., Brooklyn, N.Y. 220,717, ren. 9–6–66. Cl. 23.
Hartleys (Stoke-on-Trent) Ltd., Stoke-on-Trent, England. 701,164, canc. Cl. 2.
Hartz Mountain Products Corp., New York, N.Y. 814,741. Cl. 46.
Hastings Corp., The: *See*—
Ziff-Davis Publishing Co.
Haveg Industries, Inc., Wilmington, Del. 814,349, pub. 6–21–66. Cl. 21.
Hays Co.: *See*—
Hays, Fred E.
Hays, Fred E., d.b.a. Hays Co., San Jose, Calif. 814,291, pub. 6–21–66. Multiple Class (Classes 15 and 23).
Herman, I. C., & Co., Inc., New York, N.Y. 701,432, canc. Cl. 39.
Heublein, Inc., Hartford, Conn. 814,649, pub. 6–21–66. Cl. 49.
Heuser, Wilbur F., d.b.a. Forest View Evergreen Nursery, Germania, Pa. 814,274, pub. 6–21–66. Multiple Class (Classes 13 and 23).
Hills-McCanna Co., Carpentersville, Ill. 814,276, pub. 6–21–66. Cl. 13.
Hobbs Mfg. Co., Worcester, Mass. 814,423, pub. 6–21–66. Cl. 23.
Hollco: *See*—
Wally Frank, Ltd.
Holloway, Kenneth C., Inc., Pasadena, Calif. 814,344, pub. 6–21–66. Cl. 21.
Homemakers Guild of America Corp., Denver, Colo. 814,526, pub. 6–21–66. Cl. 38.
Hood, H. P., & Sons, Inc., Boston, Mass., to Gordon-Allen Co., Quincy, Mass. 701,452, canc. Cl. 46.
House of Coins, Elizabeth, N.J. 814,732. Cl. 38.
House of Tre-Jur: *See*—
Maradel Products, Inc.

Hudnut, Richard, Morris Plains, N.J. 420,499, ren. 9–6–66. Cl. 50.
Hudnut, Richard, Morris Plains, N.J. 814,671–2, pub. 6–21–66. Cl. 51.
Hudson, H. D., Mfg. Co.: *See*—
Hudson Mfg. Co.
Hudson, H. D., Mfg. Co., Chicago, Ill. 814,652, pub. 6–21–66. Cl. 50.
Hudson Mfg. Co., Minneapolis, Minn., to H. D. Hudson Mfg. Co., Chicago, Ill. 218,858, ren. 9–6–66. Cl. 23.
Hysol Corp., Olean, N.Y. 814,220, pub. 6–14–66. Multiple Class (Classes 1 and 5).
I.D.L. Inc., Pittsburgh, Pa. 814,658, pub. 6–21–66. Cl. 50.
ILP: *See*—
Lichtenstein, Catharine S.
I-T-E Circuit Breaker Co., Philadelphia, Pa. 814,358, pub. 6–21–66. Cl. [redacted]
Ideal Cement Co.: *See*—
Pacific Portland Cement Co.
Imperial Chemical Industries Ltd., Millbank, London, England. 814,242, pub. 1–4–66. Cl. 6.
Imperial Chemical Industries Ltd., Millbank, London, England. 814,246, pub. 6–21–66. Cl. 6.
Imperial House Motels, Inc., Dayton, Ohio. 814,687, pub. 6–21–66. Cl. 100.
Imperial International Corp., New York, N.Y. 814,420, pub. 6–21–66. Cl. 23.
Independent Fitting Co., The: *See*—
Pringer, Carol P.
Indpendent Grocers' Alliance Distributing Co., Chicago, Ill. 814,674, pub. 6–21–66. Cl. 51.
Industrial Acoustics Co., Inc., New York, N.Y. 814,266, pub. 6–21–66. Cl. 12.
Industrial Sheet Metal Corp., Long Island City, N.Y. 814,402, pub. 6–21–66. Cl. 23.
Interchemical Corp., New York, N.Y. 814,311, pub. 6–21–66. Cl. 16.
Inter-Continental Automative Service Co., Inc., Flushing, N.Y. 701,531, canc. Cl. 102.
International Distilleries Co.: *See*—
Bohemian Distributing Co.
International Latex Corp., Dover, Del. 814,594, pub. 6–21–66. Cl. 44.
International Minerals & Chemical Corp., Skokie, Ill. 814,607, pub. 6–21–66. Cl. 46.
International Silver Co., The, Meriden, Conn. 814,429, pub. 6–21–66. Cl. 23.
Institute For Financial Planning, Inc., New York, N.Y. 814,525, pub. 6–21–66. Cl. 38.
Investors Syndicate Life Insurance and Annuity Co., Minneapolis, Minn. 814,697, pub. 6–21–66. Cl. 102.
Irwin, Neisler & Co., Decatur, Ill. 701,243, canc. Cl. 18.
Ives, Sybil, Inc., White Plains, N.Y. 814,746–50. Cl. 51.
JC Sales Co., Inc., Anderson, Ind. 814,707, pub. 12–28–65. Cl. 107.
Jacket King, Inc., Chicago, Ill. 814,556, pub. 6–21–66. Cl. 39.
Jackson Vibrators, Inc., Ludington, Mich. 814,371, pub. 6–21–66. Multiple Class (Classes 21 and 23).
Jacksonville Paper Co., Jacksonville, Fla. 814,506, pub. 4–28–64. Cl. 37.
Jacobson, F., & Sons, Inc., New York, N.Y. 814,553–4, pub. 6–21–66. Cl. 39.
Johnny Cake Game Farm, Burlington, Conn. 814,634, pub. 6–21–66. Cl. 46.
Johnson & Johnson, d.b.a. Personal Products Co., New Brunswick, N.J. 814,334, pub. 6–21–66. Cl. 18.
Johnson & Johnson, New Brunswick, N.J. 814,512, pub. 6–21–66. Cl. 37.
Johnson, Robert A., Co., Milwaukee, Wis. 701,492, canc. Cl. 46.
Jones-Blair Co., from Jones-Blair Paint Co., Inc., Dallas, Tex. 814,301, pub. 6–21–66. Cl. 16.
Jones-Blair Co., from Jones-Blair Paint Co., Inc., Dallas, Tex. 814,305, pub. 6–21–66. Cl. 16.
Jones-Blair Paint Co., Inc.: *See*—
Jones-Blair Co.
KVP Sutherland Paper Co., Kalamazoo, Mich. 814,393, pub. 6–21–66. Cl. 23.
KVP Sutherland Paper Co., Kalamazoo, Mich. 814,518, pub. 6–21–66. Cl. 37.
Kahn, David, Inc., North Bergen, N.J. 814,508, pub. 3–2–65. Cl. 37.
Kalvar Corp., New Orleans, La. 701,347, canc. Cl. 26.
Kaminski and Grimmer, Inc., Buffalo, N.Y. 814,708, pub. 6–21–66. Cl. 107.
Kane-Miller Corp., d.b.a. Tested-Best Frozen Food Products and Tested-Best Frosted Food Co., Yonkers, N.Y. 814,742. Cl. 46.
Kanematsu New York, Inc., New York, N.Y. 814,389, pub. 6–21–66. Cl. 23.
Katz, Wm. R., Co., Dallas, Tex. 814,466, pub. 6–21–66. Cl. 28.
Keen-Eye Co., Inc, Butler, Wis. 701,286, canc. Cl. 22.
Kelsey-Hayes Co., Romulus, Mich. 814,337, pub. 6–21–66. Cl. 19.
Kentucky Fried Chicken Corp., Shelbyville, Ky. 814,610, pub. 6–21–66. Cl. 46.
Kerley Chemical Corp. of Arizona, Phoenix, Ariz. 814,262, pub. 6–21–66. Cl. 10.
Kern & Co. Ltd., Aarau, Switzerland. 701,342, canc. Cl. 26.
Kimac Co., The, Old Greenwich, Conn. 814,454, pub. 6–21–66. Cl. 26.
Kimberly-Clark Corp., Neenah, Wis. 814,579, pub. 6–21–66. Cl. 39.
Kinetic Dispersion Corp., Buffalo, N.Y. 814,390, pub. 6–21–66. Cl. 23.
Kinoptik, Paris, France. 814,456, pub. 6–21–66. Cl. 26.
Kitcheneat Foods: *See*—
Prepackage Sales Corp.
Kitcheneat Products: *See*—
Prepackage Sales Corp.
Klampert, Irving, Co., New York, N.Y. 701,373, canc. Cl. 28.
Klauber Wangenheim Co., San Diego, Calif. 58,148, ren. 9–6–66. Cl. 46.
Klee, Samuel H.: *See*—
Midwest Mfg. Co.
Knitcraft Inc., West New York, N.J. 814,583, pub. 5–24–66. Cl. 42.
Kommanditgesellschaft Ski-Craft Motorenbau und Vertriebs Ges. mbH & Co., Hamburg, Germany. 814,396, pub. 6–21–66. Cl. 23.
Koppers Co., Inc., Pittsburgh, Pa. 814,223, pub. 6–21–66. Cl. 1.
Kramer Trenton Co., Trenton, N.J. 814,495, pub. 6–21–66. Cl. 34.
Kresge, S. S., Co., Detroit, Mich. 265,952–3, 12(c) pub. 9–6–66. Cl. 43.
Kress, S. H., and Co., New York, N.Y. 701,401, canc. Cl. 37.
Kromex Corp., Cleveland, Ohio, to American Trading and Production Corp., Baltimore, Md. 420,372, ren. 9–6–66. Cl. 13.
Kroydon Revocable Income Trust, The: *See*—
Sporting Goods, Inc.
Kurth Malting Co., Milwaukee, Wis. 814,644, pub. 2–22–66. Cl. 48.
Kyp-Go, Inc., Lombard, Ill. 814,370, pub. 6–21–66. Cl. 21.
Laevosan-Gesellschaft Chem. Pharm. Industrie, Franck & Dr. Freudl, Linz, Austria. 814,314, pub. 6–21–66. Cl. 18.
Lambert Pharmacal Co., St. Louis, Mo., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 55,690, ren. 9–6–66. Cl. 51.
Lander Co., Inc., New York, N.Y. 814,682 pub. 6–21–66. Cl. 52.
Landis Machine Co., Waynesboro, Pa. 217,005–6, ren. 9–6–66. Cl. 23.
Lane Ltd.: *See*—
Lane Tobacco, Ltd.
Lane Tobacco, Ltd., by Lane Ltd., New York, N.Y. 420,894. 12(c) pub. 9–6–66. Cl. 17.
Lane Tobacco, Ltd., New York, N.Y., to Reemtsma Cigarettenfabriken G.m.b.H., Hamburg, Germany. 423,019, ren. 9–6–66. Cl. 17.
Lane Tobacco, Ltd., New York, N.Y., to Reemtsma Cigarettenfabriken G.m.b.H., Hamburg, Germany. 423,271, ren. 9–6–66. Cl. 8.
Larsen Co., The, Green Bay, Wis. 221,396, ren. 9–6–66. Cl. 46.
Laser Lign, Inc., Wheeling, Ill. 814,446–7, pub. 6–21–66. Cl. 26.
Lasting Products Co., Baltimore, Md. 814,310, pub. 6–21–66. Cl. 16.
Lawrence, A. C., Leather Co.: *See*—
Swift & Co.
Lebowitz, Morris M., d.b.a. The Antique Press, North Bellmore, N.Y. 814,693, pub. 6–21–66. Cl. 101.
Lectroetch Co., The, Cleveland, Ohio. 814,359, pub. 6–21–66. Cl. 21.
Lederle Laboratories, Inc., New York, N.Y., to American Cyanamid Co., Wayne, N.J. 422,369, ren. 9–6–66. Cl. 18.
Lee, Jean, Originals, Inc., Goshen, Ind. 814,539, pub. 6–21–66. Cl. 39.
Lennox Foundry Co. Ltd., The, Kent, England. 421,303, 12(c) pub. 9–6–66. Cl. 14.
Leola May's: *See*—
Satterlee, Leola.
Les Parfums de Danna, Inc.: *See*—
Consolidated Cosmetics.
Les Parfums de Dana, Inc., New York, N.Y. 422,602, ren. 9–6–66. Cl. 51.
Les Parfums de Dana, Inc., New York, N.Y. 423,354, ren. 9–6–66. Cl. 51.
Lester Bros., Inc., Martinsville, Va. 814,270, pub. 6–21–66. Cl. 12.
LeTourneau-Westinghouse Co., Peoria, Ill. 814,404, pub. 6–21–66. Cl. 23.
Leveridge, A. D.: *See*—
Leveridge, Athos D.
Leveridge, Athos D., d.b.a. Leveridge, A. D., Pompton Plains, N.J. 814,437, pub. 6–21–66. Cl. 26.
Levine, Rae, New York, N.Y. 814,727. Cl. 22.
Lichtenstein, Catharine S., d.b.a. ILP, Baldwin, N.Y. 701,222, canc. Cl. 18.
Liquid Luster Auto Polish Co., Chicago, Ill. 814,723. Cl. 4.
Lloyd Brothers, Inc., Cincinnati, Ohio. 701,239–240, canc. Cl. 18.
Lorvic Corp., The, St. Louis, Mo. 814,591, pub. 6–21–66. Cl. 44.
Lovable Co., The, Atlanta, Ga. 814,549–50, pub. 6–21–66. Cl. 39.
Lovable Co., The, Atlanta, Ga. 814,738. Cl. 39.
Lunenburg Sea Products, Ltd., Lunenburg, Nova Scotia, Canada. 224,952, pub. 6–21–66. Cl. 46.
Lynndale Co., The, Stratford, Conn. 701,170, canc. Cl. 6.
Maco Toys Inc., Brooklyn, N.Y. 814,372, pub. 6–21–66. Cl. 22.
Madeja, Michael G., Pittsburgh, Pa. 701,423, canc. Cl. 39.
Maeco Productions, Inc., Dallas, Tex. 701,539, canc. Cl. 107.
Magna Visual, Inc., St. Louis, Mo. 814,308, pub. 6–21–66. Multiple Class (Classes 16 and 50).
Maidenform, Inc., New York, N.Y. 814,567, pub. 6–21–66. Cl. 39.
Maidenform, Inc., New York, N.Y. 814,570, pub. 6–21–66. Cl. 39.
Maidenform Sportswear, Inc., New York, N.Y. 814,558, pub. 5–31–66. Cl. 39.

Maison Olida, Societe Anonyme, Paris, France. 701,466, canc. Cl. 46.
Mallinckrodt Chemical Works, St. Louis, Mo. 814,744. Cl. 50.
Mallory Hat Co., The, Danbury, Conn., by John B. Stetson Co., Philadelphia, Pa. 212,132, 12(c) pub. 9–6–66. Cl. 39.
Manon Pearls, New York, N.Y. 701,368, canc. Cl. 28.
Manufacturers Chemicals Corp., Cleveland, Tenn. 814,252–3, pub. 6–21–66. Cl. 6.
Maradel Products, Inc., d.b.a. House of Tre-Jur, Farmingdale, N.Y. 814,667, pub. 6–21–66. Multiple Class (Classes 51 and 52).
Marbleloid Co., The, New York, N.Y., by The Marbleloid Corp., North Bergen, N.J. 212,075, 12(c) pub. 9–6–66. Cl. 12.
Marbleloid Corp., The: *See*—
Marbleloid Co., The.
Marlan Co., Chicago, Ill. 814,642, pub. 6–21–66. Multiple Class (Classes 46 and 50).
Martinoni, E., Co., San Francisco, Calif. 814,647, pub. 6–21–66. Cl. 49.
Marvelite Paint Co., The, Baltimore, Md. 814,303, pub. 6–21–66. Cl. 16.
Marx, Louis, & Co., Inc., New York, N.Y. 701,278, canc. Cl. 22.
Marx, Louis, & Co., Inc., New York, N.Y. 814,373, pub. 1–11–66. Cl. 22.
Marx, Louis, & Co., Inc., New York, N.Y. 814,380, pub. 6–21–66. Cl. 22.
Masian Enterprises: *See*—
Masian, Joseph.
Master Consolidated, Inc., Dayton, Ohio. 814,491, pub. 6–21–66. Cl. 34.
Mastic Corp., South Bend, Ind. 814,264, pub. 6–21–66. Cl. 12.
Masti-Kure Products Co., Norwich, Conn. 814,725. Cl. 18.
Matney, Arthur: *See*—
Socialite Cosmetics, Inc.
Mattel, Inc., Hawthorne, Calif. 814,379, pub. 6–21–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,385–6, pub. 6–21–66. Cl. 22.
Maxon Premix Burner Co., Inc., Muncie, Ind. 814,273, pub. 6–21–66. Cl. 13.
May & Co., Inc., Indianapolis, Ind. 814,485, pub. 6–21–66. Cl. 32.
McCormick & Co., Inc., Baltimore, Md. 814,596, pub. 6–21–66. Cl. 45.
McCormick & Co., Inc., Baltimore, Md. 814,628, pub. 6–21–66. Cl. 46.
McCrometer Corp., Hemet, Calif. 814,442, pub. 6–21–66. Cl. 26.
McDonnell Seed Co., Spokane, Wash. 701,468, canc. Cl. 46.
McGregor, Paul M., d.b.a. Scotch Saver Stamp Co., Clarksville, Tenn. 701,529, canc. Cl. 101.
Mead Laboratory: *See*—
Mead, Raynor.
Mead, Raynor, d.b.a. Mead Laboratory, Bronx, N.Y. 814,726. Cl. 18.
Medart, Fred, Products, Inc., St. Louis, Mo. 701,281, canc. Cl. 22.
Mega, Inc., Milford, Conn. 814,412, pub. 6–21–66. Cl. 23.
Megill, Alfred L.: *See*—
Hart, Alfred V.
Megill, Edward L.: *See*—
Hart, Alfred V.
Megill, Edward L., Co., The: *See*—
Hart, Alfred V.
Mellor, Norman, by Arguto Oilless Bearing Co., Philadelphia, Pa. 56,563, 12(c) pub. 9–6–66. Cl. 23.
Melville Shoe Corp.: *See*—
Miles, W. H., Shoe Co., Inc.
Melville Shoe Corp., New York, N.Y. 814,555, pub. 6–21–66. Cl. 39.
Mendigutia, Jose A., Miami, Fla. 814,505, pub. 6–21–66. Cl. 36.
Mennen Co., The, Morristown, N.J. 814,679, pub. 6–21–66. Cl. 52.
Merck & Co., Inc., Rahway, N.J. 814,316, pub. 6–21–66. Cl. 18.
Merck & Co., Inc., d.b.a. Quinton Co., Rahway, N.J. 814,327, pub. 5–3–66. Cl. 18.
Merritt, B, Inc, Chicago, Ill 814,363, pub. 6–21–66. Cl. 21.
Metalflake, Inc., Haverhill, Mass. 814,286, pub. 6–21–66. Cl. 14.
Meyer Products, Inc., Cleveland, Ohio. 814,430–1. pub. 6–21–66. Cl. 23.
Micro-Mega S.A., Besancon, Doubs, France. 814,586, pub. 6–21–66. Cl. 44.
Micropoint, Inc., Sunnyvale, Calif. 814,519, pub. 6–21–66. Cl. 37.
Midland Industries Ltd., Wolverhampton, Stafford, England. 814,408–9, pub. 6–21–66. Cl. 23.
Midwest Mfg. Co., by S. H. Klee, d.b.a. Midwest Mfg. Co., Detroit, Mich. 385,469, 12(c) pub. 9–6–66. Cl. 4.
Milchem Inc., from Milwhite Mud Sales Co., Houston, Tex. 814,240, pub. 3–23–65. Cl. 6.
Miles Laboratories, Inc.: *See*—
Bischoff, Ernst.
Miles, W. H., Shoe Co., Inc., Richmond, Va., to Melville Shoe Corp., New York, N.Y. 221,835, ren. 9–6–66. Cl. 39.
Mill Equipment, Inc, Seattle, Wash. 814,410–11. pub. 6–21–66. Cl. 23.
Miller Publishing Co., The, Minneapolis, Minn. 814,733. Cl. 38.
Millipore Filter Corp., Bedford, Mass. 814,476, pub. 6–21–66. Cl. 31.
Millipore Filter Corp., Bedford, Mass. 814,480. pub. 6–21–66. Cl. 31.
Milwhite Mud Sales Co.: *See*—
Milchem Inc.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 814,235–7, pub. 6–21–66. Cl. 4.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 814,238, pub. 6–21–66. Cl. 5.
Mr. Edd, Inc., from Mr. Edd, Inc., New York, N.Y. 701,416, canc. Cl. 39.
Modern-Aire Ventilating, Inc., North Hollywood, Calif. 814,492, pub. 6–21–66. Cl. 34.
Modern Electronics, Inc.: *See*—
Thermex, Inc.
Modern Pen Mfg. Co., Inc., New York, N.Y. 687,244, canc. Cl. 37.
Moen, C. R., by Moen Photo Service, Inc., La Crosse, Wis. 214,260, 12(c) pub. 9–6–66. Cl. 38.
Moen Photo Service, Inc.: *See*—
Moen, C. R.
Molassine Co. Ltd., The: *See*—
Molassine Co., Ld., The.
Molassine Co., Ld., The, to The Molassine Co. Ltd., London, England. 52,982, ren. 9–6–66. Cl. 46.
Molten Gomu Kogyo Kabushiki Kaisha, d.b.a. Molten Rubber Industrial Co., Ltd., Nakahiro-cho, Hiroshima-shi, Japan. 814,374, pub. 6–21–66. Cl. 22.
Molten Rubber Industrial Co. Ltd.: *See*—
Molten Gomu Kogyo Kabushiki Kaisha.
Moore, Benjamin, & Co., New York, N.Y. 422,346, ren. 9–6–66. Cl. 16.
Morton International, Inc., from Morton Salt Co., Chicago, Ill. 814,215, pub. 9–28–65. Cl. 1.
Morton Mfg. Corp., Lynchburg, Va. 814,326, pub. 6–21–66. Cl. 18.
Morton Salt Co.: *See*—
Morton International, Inc.
Motorola, Inc., Franklin Park, Ill. 814,700–1, pub. 6–21–66. Cl. 103.
Moser Paper Co., Chicago, Ill. 814,257–9, pub. 6–21–66. Cl. 6.
Mosler Lock Co., The, Covington, Ky., by The Mosler Safe Co., Hamilton, Ohio. 216,950, 12(c) pub. 9–6–66. Cl. 25.
Mosler Safe Co., The: *See*—
Mosler Lock Co., The.
Murray Co. of Texas, Inc., d.b.a. Boston Gear Works, North Quincy, Mass. 814,433, pub. 6–21–66. Cl. 23.
Music Educators' Service Plan, Ltd., New York, N.Y. 814,503, pub. 6–21–66. Multiple Class (Classes 36 and 38).
N.V. Bakhuis' Vleeschwaren- en Conservenfabrieken "Olba," Oist, Netherlands. 814,633, pub. 6–21–66. Cl. 46.
Nash Mfg. Co., Fort Worth, Tex. 814,375, pub. 6–21–66. Cl. 22.
National Biscuit Co., New York, N.Y. 814,636–8, pub. 6–21–66. Cl. 46.
National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., and Munson G. Shaw Co., New York, N.Y. 814,643, pub. 6–21–66. Cl. 47.
National Distillers Products Co.: *See*—
National Distillers and Chemical Corp.
National Food Service Association, The, Columbus, Ohio. 701,528, canc. Cl. 101.
National Fruit Canning Co., d.b.a. Chehalis Packing Co., Seattle, Wash. 814,640, pub. 6–21–66. Cl. 46.
National Homes Corp., Lafayette, Ind. 814,269, pub. 6–21–66. Cl. 12.
National Needle Co., Springfield, Mass., by The Torrington Co., Torrington, Conn. 57,124, 12(c) pub. 9–6–66. Cl. 23.
National Resistance Corp., Pearl River, N.Y. 701,270, canc. Cl. 21.
Nature Food Centres, Inc., d.b.a. Nature Food Centres, Cambridge, Mass. 814,328, pub. 6–21–66. Cl. 18.
Nature Food Centres: *See*—
Nature Food Centres, Inc.
Nelly Don, Inc.: *See*—
Donnelly Garment Co
Neudell Demonstration Corp., New York, N.Y. 814,653, pub. 6–21–66. Cl. 50.
New Jay Packing Co., Inc., Washington, D.C. 814,613, pub. 6–21–66. Cl. 46.
New Day Products Co.: *See*—
Parks, Tom W.
New Process Co., Warren, Pa. 814,574, pub. 6–21–66. Cl. 39.
New Univair Corp., Hasbrouck Heights, N.J. 814,414, pub. 6–21–66. Cl. 23.
New York Mackintosh Clothing Co., Inc., New York, N.Y. 814,568, pub. 6–21–66. Cl. 39.
Nichimen Co., Inc., New York, N.Y. 814,473, pub. 6–21–66. Cl. 30.
Nickey Chevrolet, Inc., Chicago, Ill. 701,259, canc. Cl. 19.
Nickey Chevrolet, Inc., Chicago, Ill. 701,262, canc. Cl. 19.
Noell, B. F., Industries, Inc., New York, N.Y. 701,505, canc. Cl. 50.
Nordon Laboratories, Inc., Lincoln, Nebr. 814,324, pub. 4–12–66. Cl. 18.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 814,662, pub. 6–21–66. Cl. 51.
Northfield Mills, Inc., Northfield, Vt. 701,438–40, canc. Cl. 42.
Northwest Paper Co., The, by The Northwest Paper Co., Cloquet, Minn. 215,318, 12(c) pub. 9–6–66. Cl. 37.
Nu-Wipe, Inc., Plainville, Conn. 814,507, pub. 6–21–66. Cl. 37.
Old Spring Distilling Co., The: *See*—
Wertheimer, L & E, Inc.
Olin Mathieson Chemical Corp., New York, N.Y. 814,515, pub. 6–21–66. Cl. 37.
Omicron Delta Epsilon-National Honor Society In Economics, New York, N.Y. 814,532, pub. 6–21–66. Cl. 38.
Omicron Delta Epsilon-National Honor Society in Economics, New York, N.Y. 814,709–10, pub. 6–21–66. Cl. 200.

Opfermann, Johann G. W., & Sohn, Bergisch-Gladbach, Germany. 701,226, canc. Cl. 18.
Original Tractor Cab Co., Inc., Arlington, Ind. 814,417, pub. 6–21–66. Cl. 23.
Originala Inc., New York, N.Y. 814,582, pub. 6–21–66. Cl. 39.
Ortho Pharmaceutical Corp., Raritan, N.J. 701,223, canc. Cl. 18.
Osmose Wood Preserving Co. of America, Inc. Buffalo, N.Y. 814,720–1. Cl. 1.
Owens-Illinois Glass Co., Toledo, Ohio. 814,302, pub. 3–29–66. Cl. 16.
Owen-Richards Co., Inc., Birmingham, Ala. 814,418, pub. 6–21–66. Cl. 23.
Pacific Portland Cement Co., San Francisco, Calif., by Ideal Cement Co., Denver, Colo. 54,476, 12(c) pub. 9–6–66. Cl. 12.
Pacific Standard Life Insurance Co., Burlingame, Calif. 814,752. Cl. 102.
Paddock of California, Inc., Colonie, N.Y. 814,267, pub. 6–21–66. Cl. 12.
Page Engineer Co., Chicago, Ill. 814,428, pub. 6–21–66. Cl. 23.
Palm Beach Co., Portland, Maine. 814,559, pub. 6–21–66. Cl. 39.
Panther Oil & Grease Mfg. Co.: *See*—
Texas Refinery Corp.
Parke, Davis & Co., Detroit, Mich. 222,337, ren. 9–6–66. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 814,323, pub. 6–21–66. Cl. 18.
Parks, Tom W., d.b.a. New Day Products Co., Anderson, S.C. 701,241, canc. Cl. 18.
Patons and Baldwins, Ltd., Darlington, England. 221,438, ren. 9–6–66. Cl. 43.
Penn Engineering and Mfg. Corp., Doylestown, Pa. 814,354, pub. 6–21–66. Cl. 21.
Penn Mutual Life Insurance Co., The, Philadelphia, Pa. 814,698, pub. 6–21–66. Cl. 102.
Pennington Grain & Seed, Inc., Madison, Ga. 814,722. Cl. 1.
Perry's Valet Service: *See*—
Reichman, Perry.
Personal Products Co.: *See*—
Johnson & Johnson.
Peter Pan Foundations, Inc., New York, N.Y. 701,418, canc. Cl. 39.
Peter Pan Foundations, Inc., New York, N.Y. 814,564, pub. 6–21–66. Cl. 39.
Pflueger Corp., Akron, Ohio. 814,376, pub. 6–21–66. Cl. 22.
Philadelphia Quartz Co., Philadelphia, Pa. 814,241, pub. 6–21–66. Cl. 6.
Philco Corp., Philadelphia, Pa. 701,267, canc. Cl. 21.
Physicists Research Co.: *See*—
Abbott, Ernest J.
Picariello & Singer, Inc., East Boston, Mass. 814,575, pub. 6–21–66. Cl. 39.
Pierce, S. S., Co., Boston, Mass. 701,471, canc. Cl. 46.
Pinger, Carol P., d.b.a. The Independent Fitting Co., Portland, Oreg. 814,281, pub. 6–31–66. Cl. 13.
Pioneer Parachute Co., Inc., Manchester, Conn. 701,261, canc. Cl. 19.
Pizza, Anthony J., Food Products Corp., Chicago, Heights, Ill. 814,618, pub. 6–21–66. Cl. 46.
Plastic Wire & Cable Corp., Jewett City, Conn. 814,368, pub. 6–21–66. Cl. 21.
Plus Two Corp., Newark, N.J. 814,254, pub. 6–21–66. Cl. 6.
Plush Division: *See*—
Talsol Corp.
Polak's Frutal Works, Inc.: *See*—
Polak's Frutal Works.
Polak's Frutal Works, Amersfoort, Netherlands, to Polak's Frutal Works, Inc., Middletown, N.Y. 215,795, ren. 9–6–66. Cl. 46.
Polaquimia S. A. de C. V., Mexico City, Mexico. 701,542, canc. Cl. A.
Polaroid Corp., Cambridge, Mass. 423,546, ren. 9–6–66. Cl. 26.
Polos, Dan, Industries, Inc., Addison, Ill. 814,277, pub. 1–11–66. Cl. 13.
Poole, W. & R., Ltd.: *See*—
Standard Food Products Corp.
Porcelain Jackets, Inc., New York, N.Y. 814,589, pub. 6–21–66. Cl. 44.
Pratt & Lambert, Inc., Buffalo, N.Y. 212,182, ren. 9–6–66. Cl. 12.
Precision Multiple Controls, Inc., Ridgewood, N.J. 814,345, pub. 6–21–66. Cl. 21.
Precision Scientific Co., from Precision Scientific Co., Chicago, Ill. 814,453, pub. 6–21–66. Cl. 26.
Prepackage Sales Corp., d.b.a. Kitcheneat Products and Kitcheneat Foods, Denver, Colo. 701,465, canc. Cl. 46.
Preservaline Mfg. Co., Flemington, N.J. 814,622, pub. 6–21–66. Cl. 46.
Programmed Leasing of Assets Nationwide, Inc., New York, N.Y. 814,696, pub. 6–21–66. Cl. 101.
Puritan Chemical Co., Atlanta, Ga. 814,234, pub. 6–21–66. Multiple Class (Classes 4, 16, and 52).
Puritan Fashions Corp., from Reliance Mfg. Co., New York, N.Y. 814,535, pub. 6–21–66. Cl. 39.
Putman Publishing Co., Chicago, Ill. 814,736. Cl. 38.
Pyronics, Inc., Cleveland, Ohio. 814,496, pub. 6–21–66. Cl. 34.
Ott, Furman E., d.b.a. The Ott Co., Laurens, S.C. 814,651, pub. 5–3–66. Cl. 50.
Quaker Chemical Corp.: *See*—
Quaker Chemical Products Corp.
Quaker Chemical Products Corp., to Quaker Chemical Corp., Conshohocken, Pa. 426,102, ren. 9–6–66. Cl. 15.
Quaker Oats Co., The, Chicago, Ill. 214,791, ren. 9–6–66. Cl. 46.
Quaker State Oil Refining Corp., Venango, Pa. 814,300, pub. 6–21–66. Cl. 15.
Quinton Co.: *See*—
Merck & Co., Inc.
Racine Hydraulics & Machinery, Inc., Racine, Wis. 701,202, canc. Cl. 13.
Racine Hydraulics & Machinery, Inc., Racine, Wis. 701,304, canc. Cl. 23.
Radio Corp. of America, New York, N.Y. 701,354, canc. Cl. 26.
Rand Rubber Co., Brooklyn, N.Y. 426,147, ren. 9–6–66. Cl. 40.
Randall Fuel Co., Inc., Atlanta, Ga. 814,224, pub. 6–21–66. Cl. 1.
Ranson, Charles W., Los Angeles, Calif. 814,398, pub. 6–21–66. Cl. 23.
Rawlings Sporting Goods Co., St. Louis, Mo. 814,543, pub. 6–21–66. Cl. 39.
Rayette Custom Products Inc., Jersey City, N.J. 814,673, pub. 6–21–66. Cl. 51.
Reed, Stanley F., Washington, D.C. 814,731. Cl. 38.
Reemtsma Cigarettenfabriken G.m.b.H.: *See*—
Lane Tobacco, Ltd.
Rehau-Plastiks G.m.b.H., Rehau, Bavaria, Germany. 814,217, pub. 6–21–66. Cl. 1.
Reichman, Perry, d.b.a. Perry's Valet Service, Cincinnati, Ohio. 701,160, canc. Cl. 2.
Reilly-Whiteman-Walton Co., Conshohocken, Pa. 814,299, pub. 6–21–66. Cl. 15.
Reliance Mfg. Co.: *See*—
Puritan Fashions Corp.
Renwal Products, Inc., Mineola, N.Y. 814,387, pub. 6–21–66. Cl. 22.
Replica Mail Specialties: *See*—
Romm, Elliot L.
Replogle Globes, Inc., Chicago, Ill. 814,451, pub. 6–21–66. Cl. 26.
Resz, Stephen, d.b.a. Castleguard Record Co., Old Bridge, N.J. 814,504, pub. 6–21–66. Cl. 36.
Revere Rubber Co., Boston, Mass., by United States Rubber Co., New York, N.Y. 57,005, 12(c) pub. 9–6–66. Cl. 35.
Revolator Co., North Bergen, N.J. 814,419, pub. 6–21–66. Cl. 23.
Rhode Island Hospital Trust Co., Providence, R.I. 814,531, pub. 6–21–66. Cl. 38.
Rig-A-Lite Co. of Texas, Inc., The, Houston, Tex. 814,488, pub. 6–21–66. Cl. 33.
Rike-Kumler Co., The: *See*—
Federated Department Stores, Inc.
Ring, Rose, Dallas, Tex. 701,550, canc. Cl. 13.
Rival Mfg. Co., Kansas City, Mo. 814,348, pub. 6–21–66. Cl. 21.
Rockford Screw Products Co., Rockford, Ill. 814,283, pub. 6–21–66. Cl. 13.
Roddenbery, W. B., Co., Inc.: *See*—
Roddenbery Bros.
Roddenbery Bros., to W. B. Roddenbery Co., Inc., Cairo, Ga. 216,404, ren. 9–6–66. Cl. 46.
Romm, Elliot L., d.b.a. Replica Mail Specialties, Dobbs Ferry, N.Y. 814,686, pub. 6–21–66. Cl. 100.
Ronson Corp., Woodbridge, N.J. 814,362, pub. 6–21–66. Multiple Class (Classes 21 and 23).
Rose, L., & Co., Ltd., St. Albens, England. 51,682, ren. 9–6–66. Cl. 33.
Roy, Milton, Co., Philadelphia, Pa. 814,441, pub. 6–21–66. Cl. 26.
Royal Pearl Corp., New York, N.Y. 814,465, pub. 6–21–66. Cl. 28.
Rueping, Fred, Leather Co., Fond du Lac, Wis. 222,199, ren. 9–6–66. Cl. 1.
Rusco Industries, Inc., Bedford Heights, Ohio. 814,483, pub. 6–21–66. Cl. 32.
Sandy Shaw, Inc., New York, N.Y. 814,572, pub. 6–21–66. Cl. 39.
Salada Foods Ltd., Don Mills, Ontario, Canada. 814,615, pub. 6–21–66. Cl. 46.
Salton, Inc., New York, N.Y. 814,226, pub. 6–21–66. Multiple Class (Classes 2, 23, 31, and 33).
Samson Drug Co., Inc., New York, N.Y. 814,319, pub. 6–21–66. Cl. 18.
Sandoz, Inc., Hanover, N.J. 814,320, pub. 6–21–66. Cl. 18.
Satterlee, Leola, d.b.a. Leola May's, San Francisco, Calif. 701,217, canc. Cl. 18.
Scanwell Laboratories, Inc., Springfield, Va. 814,353, pub. 6–21–66. Cl. 21.
Schalk Chemicals, Inc., Union, N.J. 814,676, pub. 6–21–66. Cl. 52.
Schering & Glatz, Inc., New York, N.Y., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 212,733, ren. 9–6–66. Cl. 18.
Schlichtinger, Carl, Staten Island, N.Y. 701,496, canc. Cl. 48.
Schoeffel Instrument Co.: *See*—
Thermex, Inc.
Science Laboratories, Inc., Skokie, Ill. 814,588, pub. 6–21–66. Cl. 44.
Scotch Saver Stamp Co.: *See*—
McGregor, Paul M.
Sea Breeze Restaurant: *See*—
Authement, Louis.
Sea Fashions of Calif., Los Angeles, Calif. 814,565, pub. 6–21–66. Cl. 39.
Sealord Frozen Foods Products: *See*—
Sealord, Inc.
Sealord, Inc., from Sealord Products Co., d.b.a. Sealord Frozen Food Products, Warwick, R.I. 814,619, pub. 6–21–66. Cl. 46.
Sealord Products Co.: *See*—
Sealord, Inc.

Searle Chemicals, Inc., Skokie, Ill. 701,224, canc. Cl. 18.
Searle, G. D., & Co., Skokie, Ill. 814,317, pub. 6–21–66. Cl. 18.
Seeburg Corp., The, Chicago, Ill. 814,728. Cl. 36.
Seeburg, N. Marshall, and Sons, Inc., Chicago, Ill. 701,535, canc. Cl. 102.
Sek-Cee Girdle Co., Inc., Brooklyn, N.Y. 701,429, canc. Cl. 39.
Sellner, Herbert W., d.b.a. Sellner Mfg. Co., to Sellner Mfg. Co., Inc., Faribault, Minn. 221,910, ren. 9–6–66. Cl. 22.
Sellner Mfg. Co., Inc.: *See*—
Sellner, Herbert W.
Senor Pico Restaurant: *See*—
Bergeron, Victor J.
Sentry Hardware Corp., Cleveland, Ohio. 814,394, pub. 6–21–66. Cl. 23.
Sequoia Contact Lens, Inc., Reedley, Calif. 814,455, pub. 6–21–66. Cl. 26.
Servel, Inc., Freeport, Ill. 814,369, pub. 6–21–66. Cl. 21.
Servette, Inc., Los Angeles, Calif. 814,626, pub. 6–21–66. Cl. 46.
Serv-Well Burner Corp., Manchester, Conn. 814,493, pub. 6–21–66. Cl. 34.
Shaw, Munson G., Co.: *See*—
National Distillers and Chemical Corp.
Shell Oil Co., New York, N.Y. 814,221, pub. 6–21–66. Cl. 1.
Shell Oil Co., New York, N.Y. 814,245, pub. 11–2–65. Cl. 6.
Shenandoah Valley Produce Co., Inc., New York, N.Y. 814,629, pub. 6–21–66. Cl. 46.
Sherman, David, Corp., d.b.a. Charnoff Co., St. Louis, Mo. 814,646, pub. 6–21–66. Cl. 49.
Sherwin Diamond Co., New York, N.Y. 814,464, pub. 6–21–66. Cl. 28.
Sherwin-Williams Co., The, Cleveland, Ohio. 814,307, pub. 6–21–66. Cl. 16.
Shippers Sales Service, Nongales, Ariz., to Charles Baloian Co., Inc., Fresno, Calif. 425,581, ren. 9–6–66. Cl. 46.
Shore-Calnevar, Inc., Paramount, Calif. 814,338, pub. 6–21–66. Cl. 19.
Shrage, Max, Co., Inc., New York, N.Y. 701,433, canc. Cl. 39.
Shutzer Mfg. Co., Inc., Lawrence, Mass. 814,546, pub. 1–11–66. Cl. 39.
Siemens & Halske Aktiengesellschaft, Munich, Germany. 814,457, pub. 6–21–66. Cl. 26.
Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany. 814,361, pub. 6–21–66. Cl. 21.
Sierra Electric Corp., Gardena, Calif. 814,366, pub. 6–21–66. Cl. 21.
Silver, G. H., & Associates, Inc., Newtonville, Mass. 814,494, pub. 6–21–66. Cl. 34.
Silvercup Bakers Inc.: *See*—
Gordon Baking Co.
Simon, M. and D., Co., Inc., Cleveland, Ohio. 814,569, pub. 6–21–66. Cl. 39.
Simpson, Adele, Inc., New York, N.Y. 814,666, pub. 6–21–66. Cl. 51.
Sinclair Refining Co., New York, N.Y. 814,294, pub. 6–21–66. Cl. 15.
Skiing Publishing Co.: *See*—
Ziff-Davis Publishing Co.
Slater, S., & Sons, Inc., Webster, Mass., to J. P. Stevens & Co., Inc., New York, N.Y. 216,101, ren. 9–6–66. Cl. 42.
Smith, Denis A., Blytheville, Ark. 701,227, canc. Cl. 18.
Smith & Marion, Dallas, Tex. 814,228, pub. 6–21–66. Cl. 3.
Socialite Cosmetics, Inc., New York, N.Y., by Arthur Matney, Brooklyn, N.Y. 422,330, 12(c) pub. 9–6–66. Cl. 51.
Socialite Cosmetics, Inc., New York, N.Y., by Arthur Matney, Brooklyn, N.Y. 422,999, 12(c) pub. 9–6–66. Cl. 51.
Socialite Cosmetics, Inc., New York, N.Y., by Arthur Matney, Brooklyn, N.Y. 423,000, 12(c) pub. 9–6–66. Cl. 51.
Societe a Responsabilite Limitee Le Bec Fin, Marseilles, Bouches du Rhone, France. 701,464, canc. Cl. 46.
Sock Boat Corp., Cold Spring Harbor, N.Y. 701,257, canc. Cl. 19.
"Sokagakkai" Religious Corp., Tokyo, Japan. 814,530, pub. 6–21–66. Cl. 38.
Southern Plating Co., Anniston, Ala. 814,422, pub. 6–21–66. Cl. 23.
Sperry Rand Corp., New York, N.Y. 814,438, pub. 6–21–66. Cl. 26.
Sporting Goods, Inc., Springfield, Mass., to City Bank and Trust Co. (Trustee), d.b.a. The Kroydon Revocable Income Trust, Boston, Mass. 424,244, ren. 9–6–66. Cl. 22.
Sports Car Club of America, Westport, Conn. 814,715–17, pub. 6–21–66. Cl. B.
Sta Clean Chemical Co., Orchard Lake, Mich. 814,751. Cl. 52.
Standard Food Products Corp., d.b.a. W. & R. Poole Ltd., Long Island City, N.Y. 814,743. Cl. 49.
Standard Playground Equipment Co., Inc., Anderson, Ind. 701,295, canc. Cl. 22.
Standard Underground Cable Co., Pittsburgh, Pa., to General Cable Corp., New York, N.Y. 58,207, ren. 9–6–66. Cl. 21.
Sterling Faucet Co., Morgantown, W. Va. 814,280, pub. 6–21–66. Cl. 13.
Stetson, John B., Co.: *See*—
Mallory Hat Co.
Stevens, J. P., & Co., Inc.: *See*—
Slater, S., & Sons, Inc.
Vandam, Albert H., Co., Inc.
Stevie Togs, Inc., Lenexa, Kans. 814,576, pub. 6–21–66. Cl. 39.
Stewart, Arthur P., (Akubra Hats) Pty. Ltd., Rosebery, New South Wales, Australia. 814,557, pub. 7–5–66. Cl. 39.
Stewart-Warner Corp., Chicago, Ill. 814,435, pub. 6–21–66. Cl. 26.
Stockwell, Aylward H., d.b.a. Courtship, Darien, Conn. 814,547, pub. 6–21–66. Cl. 39.
Stoeger Arms Corp., South Hackensack, N.J. 814,292, pub. 6–21–66. Cl. 15.
"Stylers" Dance Band: *See*—
Farias, George A.
Sugar Pine Workshop Inc., Long Island City, N.Y. 814,227, pub. 6–21–66. Multiple Class (Classes 2, 32, and 50).
Sunbeam Corp., Chicago, Ill. 814,463, pub. 6–21–66. Cl. 27.
Sunl-Citrus Products Co., Haines City, Fla. 814,641, pub. 6–21–66. Cl. 46.
Sunlight Fisheries, Inc.: *See*—
Booth Fisheries Corp.
Sunshine Kiddie Knitwear Co., Inc., New York, N.Y. 814,571, pub. 6–21–66. Cl. 39.
Supreme Steel Equipment Corp., Brooklyn, N.Y. 814,522, pub. 6–21–66. Cl. 37.
Swift & Co., d.b.a. A. C. Lawrence Leather Co., Chicago, Ill. 814,219, pub. 6–21–66. Cl. 1.
Syntex Laboratories, Inc, Palo Alto, Calif. 814,315, pub. 6–21–66. Cl. 18.
Talsol Corp., d.b.a. Plush Division, Cincinnati, Ohio. 814,247, pub. 6–21–66. Cl. 6.
Talsol Corp., d.b.a. Plush Division, Cincinnati, Ohio. 814,312, pub. 6–21–66. Cl. 16.
Taste Master Supply Corp., Appleton, Wis. 814,499, pub. 6–21–66. Cl. 34.
Tavor Aids, New York, N.Y. 701,406, canc. Cl. 38.
Taylor Instrument Companies, Rochester, N.Y. 701,313, canc. Cl. 26.
Temco, Inc., Nashville, Tenn. 701,389, canc. Cl. 34.
Texas Refinery Corp., to Panther Oil & Grease Mfg. Co., Fort Worth, Tex. 701,523–4, canc. Cl. 52.
Thalberg International, Ltd., New York, N.Y. 814,355, pub. 6–21–66. Cl. 21.
Thermex, Inc., from Modern Electronics, Inc., d.b.a. Schoeffel Instrument Co., Westwood, N.J. 814,477, pub. 5–24–66. Cl. 31.
Thompson, Donald E., d.b.a. Great Plains Dental Products Co., Cunningham, Kans. 814,587, pub. 6–21–66. Cl. 44.
Thorne, R., & Sons Ltd.: *See*—
Thorne, Robt., & Sons (Whiskey Merchants) Ltd.
Thorne, Robt., & Sons (Whisky Merchants) Ltd., from R. Thorne & Sons Ltd., Glasgow, Scotland. 814,650, pub. 6–21–66. Cl. 49.
Tingley Rubber Corp., South Plainfield, N.J. 814,577, pub. 6–21–66. Cl. 39.
Title Council of America, Inc., New York, N.Y. 814,714, pub. 6–21–66. Cl. A.
Toni Co., The: *See*—
Gillette Co., The.
Torrington Co., The: *See*—
National Needle Co.
Townecraft Industries, Inc., New York, N.Y. 701,296, canc. Cl. 23.
Trostel, Albert, & Sons Co., Milwaukee, Wis. 701,158, canc. Cl. 1.
Tyler, W. S., Inc.: *See*—
Tyler, W. S., Co., The.
Tyler, W. S., Co., The, Cleveland, to W. S. Tyler, Inc., Mentor, Ohio. 220,284, ren. 9–6–66. Cl. 13.
Tel-Page, Inc., Palo Alto, Calif. 814,690, pub. 6–21–66. Cl. 101.
Tested-Best Frosted Food Co.: *See*—
Kane-Miller Corp.
Tested-Best Frozen Food Products: *See*—
Kane-Miller Corp.
Teweles, L., Seed Co., Milwaukee, Wis. 814,737. Cl. 38.
Texaco, Inc., New York, N.Y. 814,388, pub. 6–21–66. Cl. 22.
Topco Associates, Inc., Skokie, Ill. 814,231, pub. 6–21–66. Cl. 4.
Topco Associates, Inc., Skokie, Ill. 814,351–2, pub. 6–21–66. Cl. 21.
Topco Associates, Inc., Skokie, Ill. 814,467, pub. 6–21–66. Cl. 29.
Topco Associates, Inc., Skokie, Ill. 814,510–11, pub. 6–21–66. Cl. 37.
Topco Associates, Inc., Skokie, Ill. 814,545, pub. 6–21–66. Cl. 39.
Union Fork and Hoe Co., The, Columbus, Ohio. 425,940, ren. 9–6–66. Cl. 23.
Union Tank Car Co., Chicago, Ill. 814,341, pub. 6–21–66. Cl. 19.
United Artists Television, Inc., New York, N.Y. 701,540, canc. Cl. 107.
United Dairy Equipment Co., West Chester, Pa. 814,605, pub. 6–21–66. Cl. 46.
United Scientific Laboratories: *See*—
Vernitron Corp.
United States Camo Corp., Blue Springs, Mo. 814,357, pub. 6–21–66. Cl. 21.
United States Graphite Co., The, by The Wickes Corp., Saginaw, Mich. 54,454, 12(c) pub. 9–6–66. Cl. 1.
United States Graphite Co., The, by The Wickes Corp., Saginaw, Mich. 54,647, 12(c) pub. 9–6–66. Cl. 15.
United States Graphite Co., The, by The Wickes Corp., Sawinaw, Mich. 55,468, 12(c) pub. 9–6–66. Cl. 15.
U.S. Industrial Publications, Inc., Stamford, Conn. 814,735. Cl. 38.
United States Rubber Co.: *See*—
Gorham Rubber Co.
Revere Rubber Co.
United States Rubber Co., New York, N.Y. 814,244, pub. 6–21–66. Cl. 6.
Unity Sewing Supply, Inc., New York, N.Y. 814,405, pub. 6–21–66. Cl. 23.
Universal Cigar Corp., New York, N.Y. 814,313, pub. 6–21–66. Cl. 17.
Universal Drafting Machine Corp., Bedford Heights, Ohio. 814,459, pub. 6–21–66. Cl. 26.
Universal Oil Products Co.: *See*—
Chiris, Antoine, Co., Inc.

Universal Valve Co., Inc., Elizabeth, N.J. 701,201, canc. Cl. 13.
Upjohn Co., The, Kalamazoo, Mich. 814,329–33, pub. 6–21–66. Cl. 18.
Valley Fruit Distributors, Inc.: *See*—
Valley Fruit Distributors.
Valley Fruit Distributors, d.b.a. Valley Fruit Distributors, Inc., Victor, Calif. 701,483, canc. Cl. 46.
Vandam, Albert H., Co., Inc., to J. P. Stevens & Co., Inc., New York, N.Y. 424,876, ren. 9–6–66. Cl. 42.
Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. 814,560–1, pub. 6–21–66. Cl. 39.
Vernitron Corp., d.b.a. United Scientific Laboratories, Long Island City, N.Y. 814,360, pub. 6–21–66. Cl. 21.
Vickers Inc., Detroit, Mich. 701,269, canc. Cl. 21.
Videomark Instrument Corp., Hawthorne, Calif. 814,444, pub. 6–21–66. Cl. 26.
Vita Life Corp., The, Enid, Okla. 701,184, canc. Cl. 10.
Wallace, Ettilie, San Diego, Calif. 814,534, pub. 6–21–66. Cl. 38.
Wallace Laboratories, Inc., New Brunswick, N.J., to Carter-Wallace, Inc., New York, N.Y. 426,283, ren. 9–6–66. Cl. 18.
Walters, John C., d.b.a. Electric Motors Service Co., Jamestown, N.Y. 814,347, pub. 6–21–66. Cl. 21.
Waltham Watch Co., Waltham, Mass., by Waltham Watch Co., Chicago, Ill. 421,181, 12(c) pub. 9–6–66. Cl. 27.
Warner-Lambert Pharmaceutical Co.: *See*—
Lambert Pharmacal Co.
Schering & Glatz, Inc.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 814,322, pub. 6–21–66. Cl. 18.
Warp Brothers: *See*—
Flex-O-Glass, Inc.
Webb, Chas. J., Sons Co., Inc., d.b.a. Corrosion Reaction Consultants, and Corrosion Reaction Consultants, Inc., Philadelphia, Pa. 814,678, pub. 3–8–66. Cl. 52.
Weinberg, Deane, & Co., Los Angeles, Calif. 701,532–3, canc. Cl. 102.
Weldon, Inc., from Weldon Pajamas, Inc., New York, N.Y. 814,541, pub. 6–7–66. Cl. 39.
Weldon Pajamas, Inc.: *See*—
Weldon, Inc.
Wellco Ro-Search Industries, Inc., Waynesville, N.C. 814,581, pub. 6–21–66. Cl. 39.
Weller Electric Corp., Easton, Pa. 814,500, pub. 6–21–66. Cl. 34.
Wellman Combing Co., d.b.a. Wellman Industries, Johnsonville, S.C. 814,432, pub. 6–21–66. Cl. 23.
Wellman Industries: *See*—
Wellman Combing Co.
Wells, S. C., & Co., to Brown Mfg. Co., Le Roy, N.Y. 422,368, ren. 9–6–66. Cl. 18.
Wendt, Robert H., d.b.a. GO Co., Skokie, Ill. 814,384, pub. 6–21–66. Cl. 22.
Wertheimer, L & E. Inc., d.b.a. The Old Spring Distilling Co., Cincinnati, Ohio. 814,645, pub. 6–21–66. Cl. 49.
West, Allen, & Co. Ltd., Brighton, Sussex, England. 814,439, pub. 6–21–66. Cl. 26.
West Chemical Products, Inc., Long Island City, N.Y. 814,684, pub. 6–21–66. Cl. 52.
West Indies Distillers, Ltd.: *See*—
Zorro, Ron, Distillers.
Western Dairy Products, Inc., San Francisco, Calif. 814,623, pub. 6–21–66. Cl. 46.
Western Publications, Inc., Austin, Tex. 814,729. Cl. 38.
Western Union Telegraph Co., The, New York, N.Y. 814,703, pub. 6–21–66. Cl. 104.
Western Waterproofing Co., Inc., Boston, Mass. 215,981, 12(c) pub. 9–6–66. Cl. 12.
Weyerhaeuser Co., Tacoma, Wash. 814,225, pub. 6–21–66. Cl. 2.
Weyerhaeuser Co., Tacoma, Wash. 814,304, pub. 6–21–66. Cl. 16.
Weyerhaeuser Co., Tacoma, Wash. 814,704, pub. 6–21–66. Cl. 105.
Whipple Co., The: *See*—
Whipple Co-Operative Co.
Whipple Co-Operative Co., by The Whipple Co., Natick, Mass. 57,618, 12(c) pub. 9–6–66. Cl. 46.
White Laboratories, Inc., Kenilworth, N.J. 701,242, canc. Cl. 18.
White, S. S., Dental Mfg. Co., The, by S. S. White Co., Philadelphia, Pa. 53,258, 12(c). pub. 9–6–66. Cl. 44.
White, S. S., Co.: *See*—
White, S. S., Dental Mfg. Co., The.
White, S. S., Dental Mfg. Co., The, by S. S. White Co., Philadelphia, Pa. 53,360–1. 12(c) pub. 9–6–66. Cl. 44.
Wiccopee Farms, Inc., Manteca, Calif. 701,462, canc. Cl. 46.
Wickes Corp., The: *See*—
United States Graphite Co., The.
Wileman Bros. & Elliott, Inc., Cutler, Calif. 814,625, pub. 6–21–66. Cl. 46.
Wilson Sporting Goods Co., River Grove, Ill. 814,377, pub. 6–21–66. Cl. 22.
Windsor-Hall Products, Inc., Mount Vernon, N.Y. 814,318, pub. 6–21–66. Cl. 18.
Wohl Shoe Co., St. Louis, Mo. 814,544, pub. 6–21–66. Cl. 39.
Woodward & Dickerson, Inc., Philadelphia, Pa. 701,472–3, canc. Cl. 46.
Worldwide Home Services, Inc., Union, N.J. 814,694, pub. 6–21–66. Cl. 101.
Wurlitzer Co., The, Chicago, Ill. 814,730. Cl. 38.
Yahnke, J. G., Co., Chicago, Ill. 814,406, pub. 6–21–66. Cl. 23.
Zamek, Bernhard, Kommanditgesellschaft, Duesseldorf-Reisholz, Germany. 814,599, pub. 6–21–66. Cl. 46.
Zeiss Ikon A.G., Stuttgart, S. Germany. 701,323, canc. Cl. 26.
Zenith Radio Corp., to Zenith Radio Corp., Chicago, Ill. 422,174, ren. 9–6–66. Cl. 21.
Ziff-Davis Publishing Co., New York, N.Y., from The Hastings Corp., d.b.a. Skiing Publishing Co., Lakewood, Colo. 814,524, pub. 5–3–66. Cl. 38.
Zorro, Ron, Distillers, St. Thomas, Virgin Islands, by West Indies Distillers, Ltd., St. Amalie, U.S., Virgin Islands. 418,812, 12(c) pub. 9–6–66. Cl. 49.

U.S. GOVERNMENT PRINTING OFFICE 0—1966

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 13, 1966 Volume 830 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of July 1966

Examiner affirmed	215
Examiner affirmed in part	49
Examiner reversed	63
Total	327

United States Adopted Names

List No. 14

March 1, 1966 to June 30, 1966

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Assistant Director, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

allobarbital: central nervous system depressant
betamethasone acetate: corticosteroid
betamethasone disodium phosphate: corticosteroid
cloperidone hydrochloride: sedative; tranquilizer
descinolone acetonide: glucocorticoid
gamfexine: antidepressant
guanethidine monosulfate: hypotensive
hycanthone: schistosomacide
isosorbide: oral osmotic diuretic
lidoflazine: cardiovascular agent
mesterolone: oral androgenic hormone
metyrapone tartrate: diagnostic test of pituitary function
niclosamide: anthelmintic
nitarsone: veterinary histomonastat
nonoxynol: spermatocide
prednival: topical anti-inflammatory
prilocaine hydrochloride: local anesthetic
propiram fumarate: analgesic
pyrantel tartrate: anthelmintic
rifamide: antibacterial
roxarsone: veterinary growth stimulant
sodium ampicillin: antibiotic
sodium edetate: chelating agent
tetroquinone: treatment of keloids
trimoxamine hydrochloride: antihypertensive
trisodium edetate: chelating agent
viridofulvin: antifungal antibiotic

United States Adopted Names (USAN) and United States Adopted Names (Proposed) (USAN)

QUARTERLY CUMULATIVE LIST

January 1, 1966–June 30, 1966

This is a revised alphabetical listing of the nonproprietary names *proposed for adoption* by the USAN Council which were published in the Trademark Bureau Bulletin during the period indicated. The listing also incorporates the revised lists of *adopted* nonproprietary names issued by the USAN Council, but not published in the Bulletin.

The Quarterly Cumulative List is intended to supplement USAN Cumulative List 4, 1961–1965, published annually for the Council by the United States Pharmacopeia; it is distributed with an issue of the Trademark Bureau Bulletin.

An asterisk (*) before a name indicates an *adopted name*; all other names on the list are *proposed for adoption*.

Since Q.C.L. is cumulative, only the latest issue need be consulted. All preceding lists may be discarded.

Any comments or protests regarding proposed names should be brought promptly to the attention of the USAN Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

*allobarbital: central nervous system depressant
asperlin: antibacterial; antineoplastic
*betamethasone acetate: corticosteroid
*betamethasone disodium phosphate: corticosteroid
*cloperidone hydrochloride: sedative; tranquilizer
*cyheptamide: anticonvulsant
*descinolone acetonide: glucocorticoid
*gamfexine: antidepressant
*guanethidine monosulfate: hypotensive
*hycanthone: schistosomacide
*ibufenac: analgesic; anti-inflammatory
*isosorbide: oral osmotic diuretic
*lidoflazine: cardiovascular agent
*mefruside: diuretic
*mesterolone: oral androgenic hormone
*metyrapone tartrate: diagnostic test of pituitary function
*niclosamide: anthelmintic
*nifuraldezone: antibacterial
*nitarsone: veterinary histomonastat
*nitrazepam: hypnotic; anticonvulsant
*nitromide: veterinary coccidiostat and antibacterial
*nonoxynol: spermatocide
*norgestrel: progestin
*pemoline: central nervous system stimulant
phenobarb: proposed abbreviation for phenobarbital
phthalofyne: veterinary anthelmintic

New Applications Received During July 1966

Patents	6925
Designs	380
Plant Patents	2
Reissues	14
Total	7321

Issue—September 13, 1966

Patents	1,384	No. 3,271,778 to No. 3,273,161, incl.
Designs	48	No. 205,702 to No. 205,749, incl.
Plant Pats.	1	No. 2,671
Total	1,433	

•prednival : topical anti-inflammatory
•prilocaine hydrochloride : local anesthetic
•propiram fumarate : analgesic
•pyrantel tartrate : anthelmintic
quilasine maleate : oxytocic
•rifamide : antibacterial
•roxarsone : veterinary growth simulant
seperidol hydrochloride : neuroleptic
•sodium ampicillin : antibiotic
•sodium edetate : chelating agent
•sodium ethacrynate : diuretic
sulfabens : veterinary antibacterial and anticoccidial
sulfafen : antibacterial ; anticoccidial agent
•tetramisole hydrochloride : anthelmintic
•tetroquinone : treatment of keloids
thyroglobulin : thyroid preparation
•trimoxamine hydrochloride : antihypertensive
•trisodium edetate : chelating agent
•viridofulvin : antifungal antibiotic
zolertine hydrochloride : vasodilator ; anti-adrenergic ; anti-hypertensive

Second Action Rejection

Effective Sept. 1, 1966, on a trial basis until further notice, second actions on the merits will not be made final where the Examiner introduces new art or a new ground of rejection not necessitated by an amendment or change in the claims or specification. Also, a shortened statutory period of three months will be set in such actions. The third action should then be made final and include a three-month shortened statutory period. Thus, no shortened statutory period in excess of three months will be set in any action.

RICHARD A. WAHL,
Assistant Commissioner

Discontinuation of a Service by Mail Room

Effective Sept. 1, 1966, the privilege that has been extended to applicants and their representatives with respect to personal service in the Mail Room will be modified. Amendments and other papers may continue to be hand delivered to the Mail Room where they will be dated and then processed in the normal manner. However, in the interest of Office efficiency, the special privilege of having these documents returned to the applicant or his representative for the purpose of hand delivery to other Branches or Examining Groups will be discontinued. If it is considered necessary to discuss the subject matter of any document that has been officially deposited in the Mail Room, it would be appropriate to use a copy of the document for that purpose.

EDWARD J. BRENNER,
Aug. 8, 1966. *Commissioner.*

Notification Re Conflict in Assignment in Certain Applications

Effective September 12, 1966, Assignment Branch will discontinue mailing notification in cases where there is a conflict in assignment between an original application and its divisional, continuation, substitute, or continuation-in-part application.

Assignments from original applications are applied without charge ONLY to divisional, continuation, or substitute applications where the date of the assignment is prior to the filing date of the later-filed application. (Continuation-in-part applications require separate assignments if they are to be issued to the assignee.)

Practitioners are reminded of the provisions of Rule 334. Unless an assignment is filed at or prior to the date of payment of the issue fee, the patent will normally be issued in the name of the inventor.

Section 306 of the Manual of Patent Examining Procedures will be amended appropriately.

W. R. ARMSTRONG,
Director, Office of Patent Services.

Concurred :
(Signed) R. A. WAHL,
Assistant Commissioner.

Dedications

2,775,945.—*Armais Arutunoff*, Bartlesville, Okla. SAND RESISTANT PUMP. Patent dated Jan. 1, 1957. Dedication filed June 23, 1966, by the assignee, *Byron Jackson Pumps, Inc.*

Hereby dedicates to the Public the remaining term of said patent.

2,783,400.—*Armais Arutunoff*, Bartlesville, Okla. PROTECTING UNIT FOR OIL-FILLED SUBMERGIBLE ELECTRIC MOTORS. Patent dated Feb. 26, 1957. Dedication filed June 23, 1966, by the assignee, *Byron Jackson Pumps, Inc.*

Hereby dedicates to the Public the remaining term of said patent.

2,920,203.—*Joseph L. Switzer*, Gates Mills, Ohio, and *Donald W. Parker, Jr.*, Park Ridge, Ill. FLUORESCENT PENETRANT INSPECTION MATERIALS AND METHODS. Patent dated Jan. 5, 1960. Dedication filed June 27, 1966, by the assignee, *Switzer Brothers, Inc.*

Hereby dedicates to the Public the terminal portion of said patent.

Disclaimers

Des. 198,185.—*Arthur R. Bentsen*, Liverpool, N.Y. PHONOGRAPH OR SIMILAR ARTICLE. Patent dated May 12, 1964. Disclaimer filed June 1, 1966, by the assignee, *General Electric Company.*

Hereby enters this disclaimer to the claim of said patent.

2,670,145.—*John M. Biddison*, Dayton, Ohio. ARMATURE WINDING MACHINE. Patent dated Feb. 23, 1954. Disclaimer filed June 3, 1966, by the assignee *Harry W. Moore.*

Hereby enters this disclaimer to claims 1, 2, 3, 4, 14, 19 and 20 of said patent.

2,996,704.—*Thomas L. Dimond*, Rutherford, and *Harold M. Pruden*, Maplewood, N.J., and *Calvin O. Vogt*, Augusta, Ga. METHOD OF AND APPARATUS FOR GENERATING CODED SIGNALS. Patent dated Aug. 15, 1961. Disclaimer filed June 30, 1966, by the assignee, *Bell Telephone Laboratories, Incorporated.*

Hereby enters this disclaimer to claims 1, 2, 3, 5 and 6 of said patent.

3,086,242.—*Paul M. Cook*, Atherton, and *Richard W. Muchmore*, Redwood City, Calif. PROCESS AND APPARATUS FOR PRODUCING MATERIALS HAVING PLASTIC MEMORY. Patent dated Apr. 23, 1963. Disclaimer filed June 24, 1966, by the assignee, *Raychem Corporation.*

Hereby enters this disclaimer to claims 11 and 12 of said patent.

3,130,430.—*Jacob S. Kamborian*, West Newton, Mass. METHOD OF LASTING A SHOE. Patent dated Apr. 28, 1964. Disclaimer filed June 17, 1966, by the inventor.

Hereby enters this disclaimer to claims 1, 2, 3, 5 and 6 of said patent.

3,140,523.—*Raymond G. Taylor, Jr.*, Santa Monica, Calif. SLIP ELEVATORS. Patent dated July 14, 1964. Disclaimer filed June 9, 1966, by the assignee, *Byron Jackson Inc.*

Hereby enters this disclaimer to claims 1 through 18 of said patent.

3,144,387.—*Eldon M. Jones*, Ann Arbor, Mich. ANTI-INFLAMMATORY COMPOSITIONS. Patent dated Aug. 11, 1964. Disclaimer filed June 2, 1966, by the assignee, *Parke, Davis & Company.*

Hereby enters this disclaimer to claims 1, 2 and 5 of said patent.

3,167,314.—*Arthur R. Bentsen*, Liverpool, N.Y. PORTABLE PHONOGRAPH. Patent dated Jan. 26, 1965. Disclaimer filed June 1, 1966, by the assignee, *General Electric Company.*

Hereby enters this disclaimer to claims 1–7 of said patent.

3,188,533.—*Jork Bretting*, Ulm (Danube), and *Hans-Jurgen Griem*, Ehrenstein, Germany. FOCUSSING SYSTEM FOR AN ELECTRON BEAM INCORPORATING AXIALLY MAGNETIZED ANNULAR MAGNETS. Patent dated June 8, 1965. Disclaimer filed May 6, 1966, by the *assignee, Telefunken Patentverwertungs G.m.b.H.*

Hereby enters this disclaimer to claim 11 of said patent.

3,209,098.—*Henry S. Wingard*, Cranford, N.J. CIRCUIT BREAKERS HAVING IMPROVED TRIPPING MECHANISMS. Patent dated Sept. 28, 1965. Disclaimer filed June 30, 1966, by the assignee, *Federal Pacific Electric Company.*

Hereby enters this disclaimer to claims 10, 11 and 13 of said patent.

3,241,701.—*Le Roy R. Boggs*, Bristol, Tenn. SECTIONAL TANK. Patent dated Mar. 22, 1966. Disclaimer filed June 3, 1966, by the assignee *Universal Moulded Fiber Glass Corp.*

Hereby enters this disclaimer to claims 7, 8, 9 and 10 of said patent.

Classification Order No. 383

Classification Order No. 383, dated August 11, 1966, incorporates changes in the following classes :

179, TELEPHONY
200, ELECTRICITY, CIRCUIT MAKERS AND BREAKERS
312, SUPPORTS, CABINET STRUCTURES
317, ELECTRICITY
335, ELECTRICITY, MAGNETICALLY OPERATED SWITCHES, MAGNETS AND ELECTROMAGNETS—Established (Bulletin No. 471)

All of the above changes will be incorporated in the Manual of Classification replacement pages dated October 1966.

G. A. GORECKI,
Director, Office of Patent Classification.

Reorganization of Examining Corps

As a result of a recent reorganization of the Examining Corps several Groups have been dissolved and merged with one or more other Groups and/or given new designations. One isolated case of an Art Unit transfer was that of 351 which was transferred to Group 320. Please note the following Group changes and address mail accordingly.

Group 130—Dissolved ; 2 art units to 110 ; 2 art units to 120.
150—Dissolved ; 3 art units to 140 ; 1 art unit to 160.
180—Merged with 170.
Group 240—Merged with 230.
260—Merged with 250.
270—Merged with 210.
Group 370—Redesignated as 340.
Group 410—Redesignated as 330.
420—Merged with 350.
430—Redesignated as 280.
440—Merged with 360.
450—Merged with 310.
460—Dissolved ; 2 art units to 310 ; 2 art units to 350.
470—Dissolved ; 2 art units to 360 ; 2 art units to 330.
490—Redesignated as 290.

With respect to the various classes assigned to specific Art Units within the Groups, this information will be reflected in the index pages of the forthcoming October revision to the Manual of Classification.

Correspondence originating within the Office is now indicating the Art Unit number (i.e., 113) rather than just the Group (i.e., 110) ; please use this in return correspondence as it will facilitate mail service within the Office.

All correspondence addressed to the Patent Office should include the ZIP Code numbers of both the addressor and the Patent Office (20231).

RICHARD A. WAHL,
Aug. 23, 1966. *Assistant Commissioner.*

Patents Available for Licensing or Sale

2,758,650. DEVICE FOR TRIMMING WALL PAPER OR THE LIKE. William Lowens, 118 Hillside Ave., Mount Vernon, N.Y.

3,067,310. MICROFILM ELECTRIC HEATERS. Frank C. Walz, et al. Correspondence to : Anderson, Spangler & Wymore, Suite 2114, 1700 Broadway, Denver, Colo., 80202.

3,114,204. APPARATUS FOR UNLOADING AND STORING RAZOR BLADES. Joseph N. La Tulip, Oswego, N.Y. Correspondence to : Hopgood & Calimafde, 60 E. 42nd St., New York, N.Y., 10017.

3,190,596. SUPPORTED STRUCTURE AND MECHANISM THEREFOR Oscar H. Kaminky, 908 S. 6th St., Goshen, Ind., 46526.

3,205,749. HYDRAULIC CUTTING AND PUNCHING PRESS. Horst Dieter Schenk, 4 Dusseldorf-Rath, Am Gatherhof 12, Germany.

3,215,917. ELECTRICALLY-DRIVEN TIMING DEVICE. Willard E. Buck. Correspondence to : Anderson, Spangler & Wymore, Suite 2114, 1700 Broadway, Denver, Colo., 80202.

3,237,655. CUTTING DEVICE FOR CUTTING THE SELVEDGE TUBE OF A FABRIC. Kuno Felder, et al. Correspondence to : Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,238,139. METHOD OF MAKING A TRITIATED SELF-LUMINESCENT BODY. Trilux Lenze K.G., Nehein-Husten, Germany. Correspondence to : Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,259,422. SLEEPER UNIT FOR STATION WAGONS AND THE LIKE. Rush L. Canon, 3445 Dickens St., San Diego, Calif., 92106.

3,261,315. METHOD OF PRODUCING SHELLS OF COMPLEX CONFIGURATION. William Felten. Correspondence to : Michael, Best & Friedrich, 626 E. Wisconsin Ave., Milwaukee, Wis., 53201.

The Pillsbury Company is prepared to grant non-exclusive licenses under the following 4 patents at a reasonable royalty.
Applications for license may be addressed to : The Pillsbury Company, 608 2nd Ave. S., Minneapolis, Minn., 55402.

2,957,632. METHOD OF PREPARING PROTEIN RICH FLOUR.
3,077,308. PROCESS OF REDUCING AND SURFACE TREATING CEREAL ENDOSPERM PARTICLES AND PRODUCTION OF NEW PRODUCTS THROUGH ATTENDANT SEPARATIONS.
3,077,407. WHEAT FLOUR FRACTIONATION PROCESSES.
3,077,408. CEREAL FLOUR FRACTIONATION PROCESSES.

General Electric Company is prepared to grant non-exclusive licenses under the following 24 patents upon reasonable terms to domestic manufacturers.
Applications for license under the following 10 patents may be addressed to : Patent Counsel, Major Appliance & Hotpoint Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,134,386. WASHING MACHINE WITH SELECTIVELY VARIABLE WASHING ACTION.
3,197,982. WASHING MACHINE.
3,239,698. THERMAL PROTECTION FOR FOOD WASTE DISPOSER.
3,242,643. METHOD AND APPARATUS FOR DEGASIFYING EPOXY RESIN.
3,249,252. DEVICE FOR REMOVABLY COVERING AN OPENING IN A STRUCTURAL MEMBER.
3,257,822. AIR CONDITIONING APPARATUS FOR COOLING OR DEHUMIDIFYING OPERATION.
3,257,955. FLOW CONTROL FOR TURBINE PUMP.
3,258,095. CENTRIFUGAL CLUTCH WITH LATCH OPERATED WEIGHTS.
3,258,127. RACK STRUCTURE FOR DISHWASHER.
3,259,764. DISHWASHER CONTROL MEANS.

Applications for license under the following 14 patents may be addressed to : Patent Counsel, Light Military Electronics Department, General Electric Company, Utica, N.Y., 13503.

3,046,465. NON-LINEAR INTEGRATOR FOR A CONTROL SYSTEM.

3,072,370.	AUTOPILOT AIRCRAFT CONTROL APPARATUS.	3,136,992.	FIRE CONTROL SYSTEM HARMONIZATION.
3,074,435.	FAIL-SAFE PRESSURE SENSING DEVICE.	3,152,313.	ELASTIC HEATER FOR COMPOUND CURVES.
3,087,125.	COAXIAL REED RELAY FOR INTERRUPTING THE CENTER CONDUCTOR AND SIMULTANEOUSLY TERMINATING ITS OPENED ENDS.	3,152,612.	PIEZOELECTRIC CRYSTAL TRANSDUCER FOR CONTROLLING FLUID FLOW.
3,088,191.	METHOD OF AND APPARATUS FOR MAKING PUNCH BOARD WIRING CIRCUITS.	3,164,338.	ATMOSPHERE RE-ENTRY SYSTEM FOR SPACECRAFT.
3,124,796.	ARMAMENT EVALUATOR.	3,182,244.	ZEROING APPARATUS FOR INERTIALLY GUIDED PILOTLESS CRAFT.
3,125,000.	AIRFOIL CONTROLLING ACTUATOR.	3,196,291.	PRECISION A.C. TO D.C. CONVERTER.
		3,203,259.	VISCOUS DAMPED SENSING DEVICE.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JULY 1, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-1-63	11-14-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	1-29-63	2-20-61
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-1-63	4-13-62
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	7-1-63	7-11-60
COMPOSITIONS AND MOLDING, GROUP 150—M. STERMAN, Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	7-23-63	2-26-60
COATING AND LAMINATING, GROUP 160—J. R. LIBERMAN, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	6-4-63	12-4-61
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	11-16-62	10-11-61
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-11-63	12-18-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER AND ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	12-31-62	10-19-61
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	8-26-63	1-16-62
INFORMATION TRANSMISSION, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	4-4-63	12-22-61
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—E. J. SAX, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	12-28-62	2-6-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	12-17-62	7-31-61
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	1-8-63	8-8-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	9-18-63	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	5-17-65	9-21-64

Total number of pending applications (excluding Designs)	196,314
Total number of Design applications pending	4,534
Total number of applications awaiting action (excluding Designs)	145,101
Total number of Design applications awaiting action	2,563
Date of oldest new application awaiting action	Nov. 16, 1962
Date of oldest amended application awaiting action	Feb. 26, 1960

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during August 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents	Numbers 2,477,558 to 2,490,820, inclusive
Plant Patents	Numbers 858 to 869, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	10-5-64	2-19-64
MANUFACTURING; METAL, PLASTICS WORKING; MACHINE TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders.	3-3-64	3-6-62
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	7-7-64	4-30-63
FLUID HANDLING, GROUP 360—T. J. HICKEY, Manager Fluid Handling; Valves, Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	5-18-64	11-7-62
HEAT AND POWER ENGINEERING, GROUP 370—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration, Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	8-17-64	11-14-63
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	10-14-63	1-3-62
CIVIL ENGINEERING, GROUP 420—T. J. HICKEY, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	7-1-64	6-25-62
TEXTILES AND APPAREL, GROUP 440—W. S. COLE, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	7-1-64	6-21-62
TRANSPORTATION, GROUP 450—A. BERLIN, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	7-16-64	7-22-63
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	7-1-64	1-24-63
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—A. RUEGG, Manager Printing; Typewriters; Stationery; Material Treatment.	7-1-64	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ANDRE FOURNET, RENE VICTOR JULIEN ACHARD AND PIERRE LAFONT

No. 7587. Decided March 17, 1966

[53 CCPA—; 357 F.2d 392; 148 USPQ 740]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—CLAIMS TREATED TOGETHER.

"The appealed claims were considered together before the Board and in the briefs before us; hence we will treat them likewise."

2. PATENTABILITY—OBVIOUSNESS—TEACHINGS OF ALL REFERENCES WEIGHED AS A WHOLE.

"Appellants have not come forward with any showing which would suggest that the claimed process would not have been obvious to one of ordinary skill in this art. In the final analysis, the person of ordinary skill in the art is required to evaluate and weigh the teachings of all the references as a whole. The general teachings of references relied on by appellants are not such that one of ordinary skill in the art would consider the claimed process to be unobvious."

3. SAME—SAME—FACTUAL GAP BETWEEN CLAIMED SUBJECT MATTER AND PRIOR ART.

"In Mills we rejected any doctrine of 'legal presumption of obviousness.' In analyzing the deficiencies of the prior art teachings relied on as establishing the composition claimed as obvious we stated: 'On the record before us, to reach the conclusion reached by the Board, we are required in some way to bridge the factual gap between the Lewis disclosure of the C_8 to C_{12} alkyl sulfates and applicant's claim for use of the C_1 alkyl sulfate with respect to a specific property, i.e., the inhibiting of caking in a detergent composition containing an alkyl aryl sulfonate detergent. The Board and the Examiner have substituted what the Board terms a "legal presumption" for factual data, which is missing from the record, and without which a proper decision as to obviousness cannot be made.' We think the factual gap found in the prior art teachings in Mills has been filled here. The references in support of the rejection [of claims to a process of oxidizing cyclododecane] teach analogous processes employing specific reactants having 7 or 8 carbon atoms in the ring and also disclose generally that reactants possessing 4 to 20 carbon atoms in the molecule may be employed. The principles in Mills are applicable here and the art of record conforms to those principles."

4. SAME—SAME—TEACHINGS OF ALL REFERENCES EVALUATED AS A WHOLE—REFERENCES CONSIDERED REGARDLSS BY WHOM OFFERED—35 U.S.C. 103.

"* * * we regard the use of prior art teachings under 35 U.S.C. 103 as a two-way street, available to both parties. We are required to evaluate the reference *as a whole* regardless of the party offering the references. In *Lunsford*, we refused to ignore specific teachings which we believed would be given greater weight than general teachings by one of ordinary skill in the art. We evaluated the references against the invention as a whole as required by 35 U.S.C. 103 and gave effect to the uncontraverted specific teachings which were contrary to the position of the Patent Office. Here, we think that the specific teachings offered by the Patent Office show the obviousness of the claimed process to the satisfaction of one of ordinary skill in the art."

5. SAME—PARTICULAR SUBJECT MATTER—PROCESS FOR OXIDIZING CYCLODODECANE.

The refusal of certain claims in an application to a process for oxidizing cyclododecane, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 44,836.

AFFIRMED.

Donald G. Welsh for appellants.

Clarence W. Moore (*Jack E. Armore* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

The issue here is whether the invention defined in the seven appealed claims,[1] a chemical process, is obvious within the meaning of 35 U.S.C. 103.

The appealed claims define a process for the production of cyclododecanone and cyclododecanol. The broadest claim on appeal, claim 1, defines a process "which comprises oxidizing cyclododecane in the liquid phase with molecular oxygen at a temperature of 90°–150° C."

[1] The appealed claims were considered together before the Board and in the briefs before us; hence we will treat them likewise.

The prior art references relied on as a basis for the rejection are as follows:

Moell et al. [Moell], 2,927,135, March 1, 1960.

Badische Anilin et al. [France], 1,070,846, February 24, 1954.

Dougherty et al. [Dougherty], 2,615,921, October 28, 1952.

The parties do not disagree as to the teachings of the above references. Dougherty discloses the oxidation of C_4 to C_{20} hydrocarbons with oxygen under pressure and at a temperature in the range of 230° to 450° F. The specification in Dougherty provides:

> The hydrocarbons that are oxidized in accordance with our process are those hydrocarbons that are liquid at the reaction conditions. These hydrocarbons preferably contain from 4 to 20 carbon atoms per molecule, and they include aromatics, aliphatics, cycloaliphatics, aralkyls and alkaryls. Typical examples of these hydrocarbons are butane, pentane, hexane, heptane, octane, cyclobutane, cyclopentane, cyclohexane, methylcyclohexane, cycloheptane, benzene, toluene, xylene, ethylbenzene, tertiarybutylisopropyl benzene, diisopropylbenzene, cyclohexylbenzene, propylbenzene and butylbenzene. * * *

Moell and French disclose the oxidation of cyclooctane with oxygen.

It is readily apparent that the process defined by the appealed claims is analogous to each of the processes disclosed by the references. Appellants do not argue otherwise. Rather, appellants argue that considering the claimed process as a whole, including the starting material, it would be unobvious to substitute cyclododecane for cyclooctane or cycloheptane.[2] In support of this argument, appellants have submitted certain references:

Ziegler et al., Annalen der Chemie, vol. 513, pp. 43–64 (1934) [Ziegler].

Prelog, Jour. Chem. Soc. (London, 1950), pp. 420–428.

According to appellants, Ziegler

> * * * describes a series of comparative experiments with the members of a homologous series of ring compounds containing from 5 to 20 carbon atoms showing that as a group there is a rather sharp divergence in properties as between the C_9–C_{12} members and the others, both higher and lower.

[1] In application Ser. No. 44,836, filed July 25, 1960. No claims have been allowed.

[2] Appellants appear to argue that the invention defined by the appealed claims is a new and useful process within the meaning of 35 U.S.C. 101 and not a new use of a known process. See 35 U.S.C. 100. We will consider the issue raised under 35 U.S.C. 103 on that basis.

As to the Prelog publication, appellants state:

> * * * This paper likewise describes a series of comparative tests with ring compounds containing from 5 to 20 carbon atoms. These data, while different in certain respects from those obtained in the earlier work of Ziegler et al., nevertheless carry forward and confirm the finding that a sharp and unpredictable discontinuity in the chemical and physical properties of the C_9–C_{12} ring compounds exists.

The references of record may be summarized as follows: Dougherty, Moell and French teach the general process steps claimed by appellants. Moell and French teach specifically the utilization of cyclooctane, C_8H_{16}, as a starting material. Dougherty discloses the oxidation of C_4–C_{20} hydrocarbons and teaches specifically cycloheptane, C_7H_{14}, as a starting material. Ziegler and the Prelog publication teach generally, without relation to the process claimed here, that a sharp and unpredictable discontinuity in the chemical and physical properties of the C_9–C_{12} ring compounds exists.

The question here is whether, considering the differences between the subject matter as a whole and the prior art, the subject matter would be obvious to one of ordinary skill in the art under the conditions stated in 35 U.S.C. 103. The subject matter as a whole includes the claimed process in relation to the starting material.

In view of both the general and specific teachings of the prior art relied on by the Patent Office, we think appellants' claimed process would be obvious to one of ordinary skill in the art. The more *general* teachings of the references cited by appellants fall short of dispelling the prima facie case of obviousness of the claimed process in view of both the general and specific teachings cited by the Patent Office.

[2] Appellants have not come forward with any showing which would suggest that the claimed process would not have been obvious to one of ordinary skill in this art. In the final analysis, the person of ordinary skill in the art is required to evaluate and weigh the teachings of all the references as a whole. The general teachings of references relied on by appellants are not such that one of ordinary skill in the art would consider the claimed process to be unobvious.

Appellants argue that our decision in *In re Mills*, 47 CCPA 1185, 281 F.2d 218, 126 USPQ 513, is persuasive authority for holding the invention in this appeal is unobvious. The Solicitor in reply argues that Mills may be distinguished on the ground that in Mills a *composition* was claimed while here the claim is to a *process*.

[3] In Mills we rejected any doctrine of "legal presumption of obviousness." In analyzing the deficiencies of the prior art teachings relied on as establishing the composition claimed as obvious we stated:

> On the record before us, to reach the conclusion reached by the Board, we are required in some way to bridge the factual gap between the Lewis disclosure of the C_8 to C_{12} alkyl sulfates and applicant's claim for use of the C_1 alkyl sulfate with respect to a specific property, i.e., the inhibiting of caking in a detergent composition containing an alkyl aryl sulfonate detergent. The Board and the Examiner have substituted what the Board terms a "legal presumption" for factual data, which is missing from the record, and without which a proper decision as to obviousness cannot be made.

We think the factual gap found in the prior art teachings in Mills has been filled here. The references in support of the rejection teach analogous processes employing specific reactants having 7 or 8 carbon atoms in the ring and also disclose generally that reactants possessing 4 to 20 carbon atoms in the molecule may be employed. The principles

in Mills are applicable here and the art of record conforms to those principles.

[4] Here, as in *In re Lunsford* (PA 7512), 53 CCPA —, — F.2d —, — USPQ —, decided concurrently herewith, we regard the use of prior art teachings under 35 U.S.C. 103 as a two-way street, available to both parties. We are required to evaluate the references *as a whole* regardless of the party offering the references. In *Lunsford*, we refused to ignore specific teachings which we believed would be given greater weight than general teachings by one of ordinary skill in the art. We evaluated the references against the invention as a whole as required by 35 U.S.C. 103 and gave effect to the uncontraverted specific teachings which were contrary to the position of the Patent Office. Here, we think that the specific teachings offered by the Patent Office show the obviousness of the claimed process to the satisfaction of one of ordinary skill in the art.

[5] The decision of the Board is therefore *affirmed*.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE IVAR JEPSON

No. 7575. Decided March 17, 1966

[53 CCPA—; 357 F.2d 406; 148 USPQ 736]

1. REJECTION—BASIS—WORDS AND PHRASES—"UNPATENTABLE OVER"—35 U.S.C. 102 AND 103.

"The term 'unpatentable over,' standing alone, means only that the claims are rejected in view of the reference and each case must be examined to ascertain the precise grounds of rejection [whether under 35 U.S.C. 102 or 103]."

2. SAME—SAME—STATUTORY GROUNDS OF REJECTION SHOULD BE STATED—35 U.S.C. 132.

"It must be said, however, that there is no justifiable reason that a case should appear in this court absent a statement of the position of the Patent Office as to the statutory grounds of rejection. It is contrary to statute (35 U.S.C. 132) and involves a needless waste of time of the appellant and the Solicitor's Office, briefing and arguing the question; and of the court's time, deciding the question."

3. PATENTABILITY—PARTICULAR SUBJECT MATTER—"LAWN SPRINKLER."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Lawn Sprinkler" as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 188,407.

REVERSED.

Neil A. Rose, Homer M. Rose, George R. Clark (*Homer R. Montague* of counsel) for appellant.

Joseph Schimmel (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, *Jr., Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

SMITH, *J.*, delivered the opinion of the court.

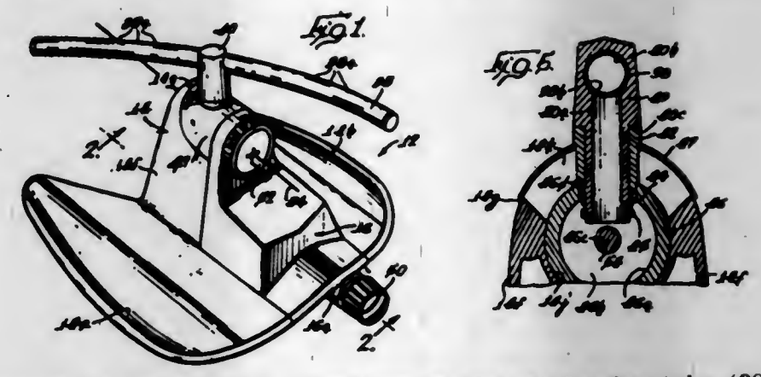
This appeal presents two issues for determination: first we must decide, in the light of the arguments presented to this court, the opinions of the Board of Appeals, and the record, whether the appealed

claims[1] stand rejected on 35 U.S.C. 102 or 103; and second, whether the rejection may be sustained.

We hold on the first issue that the rejection is under the terms of 35 U.S.C. 103 and on the second issue that it cannot be sustained.

The Invention and the Prior Art

The invention defined by the appealed claims is an oscillating water sprinkler for watering lawns. Claim 1, quoted by the Board, describes the invention when considered with Figs. 1 and 5 herein reproduced:



1. An oscillating sprinkler comprising an elongated spray tube (38), carrier means (46, etc.) for said spray tube pivotal about a horizontal axis (54), a water motor (inside housing) operable to oscillate said carrier about said axis, means (40, 42) mounting said spray tube on said carrier for selective manual positioning (47) at various angles to said axis, and means (40, 46, etc.) defining a water conduit for supplying water to said spray tube, said last-mentioned means being water sealed (40, 42, 46) at any of said various angles of positioning of said spray tube.

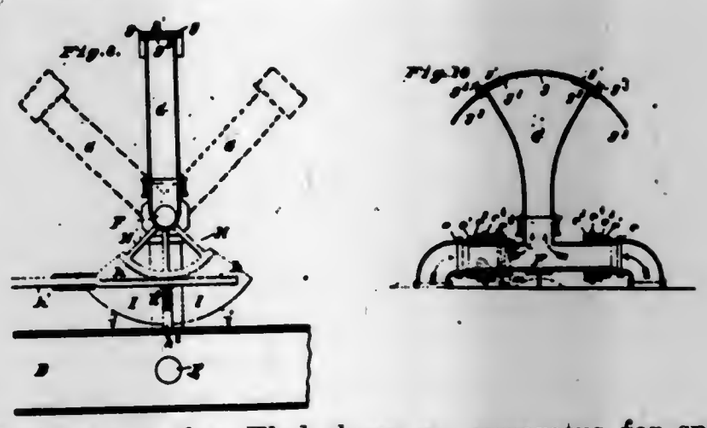
According to appellant,

The present invention provides means for varying the length and width of the spray pattern while at the same time utilizing a rigid spray tube. This variation in the width of the spray pattern is accomplished by rotating the spray tube about an axis which, in the preferred embodiment, is perpendicular to the axis about which it oscillates. As a result of this rotation, the spray tube is not always parallel to the axis of oscillation as in the conventional oscillating sprinkler.

The appealed claims stand rejected in view of the teaching of one patent:

Flad, 288,222, Nov. 13, 1883.

The teachings of Flad, describing an "Apparatus for Sprinkling Streets," are best understood by considering portions of Figs. 8 and 10 of that reference:



The parties agree that Flad shows an apparatus for sprinkling streets wherein rack *h* causes oscillation of nozzle G (Fig. 8) and

[1] In application Ser. No. 188,407, filed April 18, 1962, entitled "Lawn Sprinkler." The Examiner allowed three claims. Claims 1–9 are here on appeal.

curved plates g^2 may be moved for adjustment of the width of the spray pattern. The Board concerned itself with a single structural feature of Flad. It observed that if the nozzle of Flad, which Flad stated was "screwed" to hollow shaft F, was rotated the *width* of the spray pattern could be controlled in proportion to the amount of rotation without utilizing the curved plates g^2.

The Rejection

The Board in its decision reversed the rejection of the Examiner. It then stated:

> Under the provisions of Rule 196(b) claims 1 to 9 are rejected as unpatentable over the Flad patent. * * *

The Board did not elaborate further on its rejection of "unpatentable over" and, so far as relevant here, considered the appealed claims together.

Appellant, interpreting the Board's decision in his petition for rehearing, stated:

> While the rejection seems to tacitly admit that there is no actual disclosure or contemplation in the Flad patent of rotating the nozzle G with respect to the hollow shaft F, the position is taken that Flad "provides a means which mounts to spray tube on the carrier F for selective manual positioning." The gist of the rejection appears to be that there is no invention involved in providing an adjustable connection between the spray nozzle and the oscillating carrier.

The Board, in its decision on rehearing, stated in answer:

> Appellant states * * * that our rejection involves "providing" an adjustable connection in Flad. This is in error since our rejection is based on the fact that a threaded connection is of itself an adjustable connection and the claims read directly on Flad without anything being "provided" therein.

The Board also stated the rejection was proper despite the "different structure" shown in the reference in view of the structure appellant "broadly claimed."

Appellant argues that while he suspected the basis of the Board's new rejection was section 103 after the Board's first decision, the language ("the claims read directly on Flad") used by the Board in its second opinion clearly establish that section 102 was intended.

The Solicitor's arguments in rebuttal are fourfold: First, it is argued that "The Board's rejection of claims 1–9 'as unpatentable over the Flad patent' signifies a section 103 rejection," citing in support thereof the *dissenting* opinion in *In re Hughes*, 52 CCPA 1355, 345 F.2d 185, 145 USPQ 467, "particularly footnote 5. [sic, footnote 2?]" We are unconvinced by this argument or the citations in support thereof. The majority opinion in *Hughes* rejected a like argument and even the dissenting opinion in *Hughes* does not support this proposition. Moreover, the Solicitor's argument here that "unpatentable over" *per se* means section 103 is contrary to the position argued by the Solicitor in *In re Molnar*, PA 7590, presently pending before this court. In *Molnar* it is urged that "unpatentable over" *per se* means *both* sections 102 and 103, citing *In re Foster*, 52 CCPA 1808, 343 F.2d 980, 145 USPQ 166. [1] The term "unpatentable over" standing alone, means only that the claims are rejected in view of the reference and each case must be examined to ascertain the precise grounds of rejection.

Second, it is argued that appellant had adequate notice of the statutory ground of rejection, meaning section 103, and his remedy, if any,

was by way of Rule 196(b), citing the following principle from *Hughes*, supra, at 145 USPQ 469:

> * * * And if the new ground of rejection is properly identified as such, the applicant is in no way prejudiced, for he has the benefit of the adequate procedural safeguards of Rule 196(b).

The above principle is applicable where new grounds of rejection are *properly identified as such*. This argument is of no help in surmising what statutory ground of rejection the Board intended.

Third, it is argued as follows:

> Before the Patent Office, at least, this lack of concern over statutory sections is common. Many practitioners realize that success in establishing some difference over a given reference merely invites consideration of a larger question, viz. whether or not "the differences . . . are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. . . ." Hence, the more comprehensive section 103 question is oftentimes argued, rather than leave the job half done.

Apparently this argument has two aspects: first, it is offered in candor and honesty to explain the practice before the Patent Office; and second, it seeks to establish that appellant argued the "section 103 * * * question rather than leave the job half done." We think it would be directly contrary to the express terms of 35 U.S.C. 132, to condone such a "lack of concern" if it does exist and, further, would be contrary to our decision in *Hughes*, supra, to *assume* that appellant argued section 103.

Finally, it is argued as follows:

> * * * Contrary to appellant's position * * * the aforesaid portion of the Board's statement concerning readability of the claims on Flad should not be broadly construed, out of context and in a literal sense. * * * There remain acknowledged and manifest differences which belie any reasonable inference that the Board was characterizing its rejection here as being under 35 U.S.C. 102.

Proceeding in the proper manner to determine the statutory ground of rejection intended, from the records and briefs before us, and considering the oral argument, we are convinced that the Board intended section 103. As we find that this rejection may not be sustained we need not consider the possible prejudice to appellant arising from the failure of the Patent Office to comply with 35 U.S.C. 132. [2] It must be said, however, that there is no justifiable reason that a case should appear in this court absent a statement of the position of the Patent Office as to the statutory grounds of rejection. It is contrary to statute (35 U.S.C. 132) and involves a needless waste of time of the appellant and the Solicitor's Office, briefing and arguing the question; and of the court's time, deciding the question.

The Merits of This Appeal

Appellant's position is clear: the subject matter defined in the italicized portion of appealed claim 3, set forth below, differs from Flad and would not be obvious in view of Flad.

> 3. An oscillating sprinkler comprising an elongated spray tube, carrier means for said spray tube pivotal about a horizontal axis, power means drivingly connected to oscillate said carrier means about said axis, a water conduit extending from said spray tube transversely of the length of said spray tube, and *means mounting said water conduit on said carrier means for rotation about an axis perpendicular to said horizontal axis to vary the size of the spray pattern of said sprinkler, said means mounting said water conduit including a rotary water seal and retaining means for holding said spray tube in any selected rotary position with respect to said carrier means.*

Appellant explains:

The italicized portion of the claim represents the significant aspect of the claim by means of which it defines patentably over the prior art. Owing to the fact that Appellant's invention in its broadest aspect involves the addition of the spray pattern width adjustment means to a conventional oscillating sprinkler, the elements of claim 3 which are not italicized above are admittedly conventional and old in the art of oscillating sprinklers. The other claims on appeal are similar in reciting more or less conventional oscillating sprinkler structure and including in the combination the novel mounting of the spray tube which provides the heretofore unknown width adjustment of the spray pattern.

Each and every one of the claims on appeal recites the structure permitting this adjustment between the spray tube and the oscillating means supporting the spray tube. * * *

The Solicitor argues:

* * * There is no warrant for assuming Flad did not appreciate that a normal pipe joint connection between carrier F and nozzle G would afford suitable positioning of the latter. On the other hand, he [Flad] was apparently unaware of its possible use in varying the width of the spray pattern in appellant's manner, relying instead on slide plates g' therefor. This is of no consequence here, since an ordinary threaded pipe joint between his carrier F and nozzle G could be used to effect a width adjustment in appellant's manner. This was recognized by the Board (R-59). "A mechanical patent is anticipated by a prior device of like construction and *capable of performing the same function*," *Carnegie* v. *Cambria*, 185 U.S. 403, 424 * * *.

We do not think that the Flad device, as interpreted by the Solicitor, is of like construction which performs the same function as appellant's device nor does it make obvious "a rotary water seal and retaining means for holding said spray tube in any selected rotary position with respect to said carrier means," as defined in claim 3. We think it is too strained an argument to maintain that an adjustable width spray pattern may be obtained in the Flad device, by initially ignoring the teachings of Flad, and construing a "screwed" connection to mean "a rotary water seal and retaining means." See *In re Thornhill*, 49 CCPA 1179, 305 F.2d 463, 134 USPQ 181.

Considering the differences between the subject matter sought to be patented and the teachings of the *single* prior art reference of record, we do not find that the subject matter *as a whole* would have been obvious at the time the invention was made to a person having ordinary skill in this art. 35 U.S.C. 103.

[3] The decision of the Board is reversed.

REVERSED.

KIRKPATRICK, *J.*, dissenting.

I cannot agree with the decision of the majority as to the non-obviousness of the invention. The majority opinion points out that the sprinkler nozzle of Flad is attached by a threaded connection to his oscillating carrier, and it appears to me quite obvious that, if the nozzle is turned on its thread, the width of the spray pattern will vary. The fact that Flad preferred other means to vary the width of the pattern does not affect the obviousness of this physical fact.

Given this disclosure, providing a joint which permits the rotation of the nozzle, means to make the joint water-proof and means to keep it in the desired position, produces no new functions with respect to the parts individually nor any new or surprising result of the parts assembled as a whole. The Supreme Court in *Graham* v. *John Deere Co.*, February 21, 1966, has set forth the tests for obviousness under 35

U.S.C. 103 which, when applied to the facts here, should, I believe, result in the affirmance of the Board.

U.S. Court of Customs and Patent Appeals

IN RE HAROLD W. ADAMS

No. 7611. Decided March 17, 1966

[53 CCPA —; 356 F.2d 998; 148 USPQ 742]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JUDICIAL NOTICE OF COMMON-PLACE CONSUMER ITEMS.

"Under the circumstances of this case, which includes the availability of Aghnides' aerator nozzles for 13 years before the Mencacci cooler was disclosed, not only as presumptively available prior art by virtue of the issued patent but, we judicially notice, as commercially available and very common-place consumer items, we deem it very significant that Adams was the first to suggest, as far as the record shows, the use of aerated streams in a water spray cooler for cans or other rounded objects."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"HEAT TRANSFER METHOD."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Heat Transfer Method" as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 81,082.

REVERSED.

Almon S. Nelson for appellant.

Joseph Schimmel (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 11–15 of application Serial No. 81,082, filed January 6, 1961, for "Heat Transfer Method." No claims have been allowed. The sole issue is the obviousness of the invention under 35 U.S.C. 103.

The invention is exemplified by reference to the cooling of cans of food as they emerge in a continuous stream from a cooker in which the food has been cooked in sealed cylindrical cans. Cooling takes place in apparatus upon which appellant has improved, the basic machine being described in the principal reference relied on to support the rejection, U.S. Patent No. 2,794,326, entitled "Method and Apparatus for Cooling Canned Goods," issued June 4, 1957, to Mencacci, assignor to Food Machinery and Chemical Corporation, San Jose, California. Appellant Adams, according to his affidavit of record, is a staff research chemist employed by the "Canning Machinery Division of FMC Corporation at San Jose, California." At argument it appeared that the Mencacci patent and the present application are in common ownership.

A brief description of the Mencacci cooler will aid in understanding appellant's admittedly novel method since one of the principal ways of practicing it, as described in the application, is by modifying the Mencacci apparatus and the method it carries out.

The application describes the involved cooler as of "the well known reel and spiral type * * *." It is a large horizontal cylindrical ma-

chine having within the supporting framework an exterior helical track for cans inside of which is a reel, coextensive with the helix, having can-holding compartments formed by longitudinal angle bars. Cans are fed in at one end and drop into the compartments on the reel and as the reel rotates the helical tracks cause the cans supported on the reel to move in a helical path from one end of the cooler to the other. The helical track pushes them along the compartments on the reel and the angle bars which form the compartments push the cans around the track as the reel rotates. At the bottom portion of each revolution the cans roll on the track so that their contents are stirred up which helps to dissipate heat from the inside.

From the drawings of appellant's application and Mencacci it would appear that two or three dozen cans would be present in each turn of the helix and that there might be fifty or sixty turns. One or two thousand cans would therefore be going through the cooler at the same time. As they progress from the hot to the cold end, they are cooled by the application of water. It is in the mode of this application that the invention resides.

In the Mencacci cooler water is sprayed onto the cans from spray nozzles, said to produce "jets" of water, the nozzles being attached to headers which extend along the top of the cooler. It would seem that one nozzle is used for each revolution of the helical track. The headers are arranged in three groups or cooling zones. The used water is caught in the bottom of the cooler in these zones and is recirculated by pumps in a selective way so that, for instance, the water at the cold end of the cooler, which becomes warmed in cooling the cans, is reused in the middle zone where the cans are hotter and the water from that zone is reused at the hot entrance end so that the hotter the cans the warmer is the water sprayed on them. Thus the temperature differential between the cans and the water is about the same in each zone. It is said that an excessive differential might damage the cans. In addition to the above-described sprays, which impinge upon the upper sides of the cylindrical cans at the top of the machine, Mencacci has header pipes coaxial with the reel, in the center of the cooler, provided with nozzles which spray water "radially in substantially all directions," which water impinges on the surrounding cans as they traverse their helical paths.

Appellant's application, referring to known coolers, evidently of the Mencacci type, says that the water is sprayed onto the containers "by fan type sprays or the like, as the cans pass continuously through the cooler."

Appellant has substantially increased the efficiency of coolers of the above type, by 26% he alleges in his specification, through the seemingly simple expedient of replacing the fan spray nozzles with a ubiquitous little device, the no-splash water aerator common to household kitchen sinks for a generation and now even more common in the modern washbasin. The broad statement of his invention is:

> In accordance with the present invention, it has been discovered that replacement of the fan-type spray nozzles with aerating or foam nozzles greatly improves the cooling efficiency of the above cooler.

The Patent Office says this invention is obvious, citing an Aghnides patent, No. 2,811,340, issued October 29, 1957, the same year the Mencacci patent issued, but also relying more heavily on an earlier

Aghnides patent, No. 2,210,846, issued August 6, 1940, and mentioned in the "Aghnides patent of record." [1]

Both Aghnides patents relate to and describe various forms of the now commonplace water aerating attachment for faucets and it is not seen that we need describe them further other than to make clear that what they do is to entrain in the stream of water issuing from the faucet a multitude of air bubbles and break up the air-water mixture into fine streams by means of screens, thus producing "white water" with no-splash characteristics. We believe most everyone is familiar with this phenomenon as described in the passage from the Aghnides patent not "of record" before the Board on which the Patent Office now particularly relies as the most significant prior art teaching, reading:

> When my device is functioning, the water, due to the thorough admixture of air, has characteristics which are surprisingly different from those of water as ordinarily discharged from a faucet. For example, if one's hand is put in the course of the water, the water will flow evenly and uniformly over the surface and will wet the entire surface without splashing.

This suprising result was disclosed to the Patent Office in December 1937, in a corresponding Belgian application in 1934 (according to the patent heading), and to the world in the issued U.S. patent in 1940. Thirteen years later, June 26, 1953, Mencacci applied for his patent on the can cooler employing jet spray nozzles and six and a half years after that appellant filed his application teaching how to improve its efficiency by 26%, primarily by using Aghnides' aerator on it instead of sprays. It is now contended that that improvement has always been obvious by reason of certain "axiomatic" principles. We disagree.

Illustrative of the claims on appeal is claim 13, which reads:

> A method of cooling containers having rounded exterior surfaces consisting of the steps of
>
> moving the containers along a helical path generated about a horizontal axis,
>
> directing cooling water tangentially of said path and downward at spaced points along said helical path toward the exterior surfaces of the containers as they move downwardly,
>
> introducing air into said water prior to the contact of water with the containers to form a foam coolant having qualities which minimize splashing and encourage the even spreading of the foam upon contact with the containers to more effectively follow the contour of the containers and wet the containers,
>
> and forming coatings of said foam in heat-transfer relation substantially entirely around the exterior surfaces of the containers.

The meaning of this claim will best be appreciated by reference to sketches in Adams' affidavit explaining the difference in action of a regular jet spray and a foam spray when projected at a rounded exterior surface such as a food can.

FIG. 1

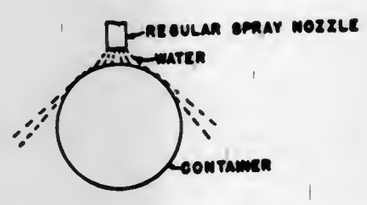
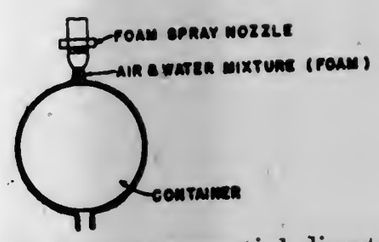


FIG. 2



What appellant means in his claims by the tangential direction of the water streams will be understood from his description of the

[1] According to appellant's brief, the Examiner had also relied on a third Aghnides patent, No. 2,633,343. We have not seen this patent.

apparatus in which he places two water headers above the cooler, one at 30° to the right of the vertical axis, as viewed from one end, and the other 60° to the left, or 90° apart. The aerator nozzles thereon are positioned to direct streams downwardly and along paths substantially tangent to the reel on opposite sides of the cooler. Of course the cans are moving beneath the streams as the reel revolves, and are wetted once on coming up and again on going down.

In the application Adams says:

> Although it is not completely understood why the foam spray improves the cooling rate, the above tests and visual observations indicate that the air entrained in the cooling water cushions the impact of water upon the cans thereby greatly minimizing the splashing of water from the cans and also causing the water to follow the contour of the cans to wet substantially the entire surface thereof.

There are two significant facts with respect to the references. Mencacci says nothing whatever about using aerated water for cooling. Aghnides says nothing whatever about using any of his nozzles or the aerated streams produced thereby for cooling or for heat exchange.

The Examiner in his answer said the only real issue is whether the Mencacci and Aghnides patents "can be combined in rejecting the claims." This quite common but relatively meaningless statement does not state the real issue at all and it is not now and never has been clear what the expression "can be combined" is supposed to mean. The real and only issue under 35 U.S.C. 103 is whether the invention as a whole would have been obvious to those skilled in the art at the time Adams made it in view of the state of the art as we are able to glean it from the references cited. Of course *all* of the references may be used to show what the art knew, and in that sense "combined" but the fact remains that neither reference contains the slightest suggestion to use what it discloses in combination with what is disclosed in the other.

[1] Under the circumstances of this case, which includes the availability of Aghnides' aerator nozzles for 13 years before the Mencacci cooler was disclosed, not only as presumptively available prior art by virtue of the issued patent but, we judicially notice, as commercially available and very commonplace consumer items, we deem it very significant that Adams was the first to suggest, as far as the record shows, the use of aerated streams in a water spray cooler for cans or other rounded objects.

The Patent Office presents a number of hindsight arguments. It says Adams was not the first to *use* foam for *heat transfer* as fire departments and fire extinguisher users have been squirting foam on fires for years and housewives have been pouring aerated hot water on cold plates in the kitchen sink for years, in both of which operations heat transfer is *inherent*. Of course it is inherent, otherwise appellant's invention would not work. But patentability here does not hinge on inherency. It depends on the unexpected and unsuggested increase in heat transfer *efficiency*. No reference suggesting this has been produced, only ex post facto explanations as to why anyone should have been able to see that it would be more efficient to use aerated water. But even Adams, with a college degree in chemistry and a doctorate in food technology eight years before he made his invention, explained, after the completion of his invention, that it was not quite clear why the improved efficiency results. The Examiner made no attempt to explain why it would be obvious, other than to say aerating or foaming *rinse* water is commonplace. The Board opined that "it is axiomatic that heat transfer will be improved by subjecting articles to be cooled to a stream of cooling liquid with minimum waste by splashing and a stream which is so formed that the contact between the articles and the stream particles is increased." It felt using Aghnides nozzles to reduce splashing and increase contact would be an obvious change in a heat transfer method but we regard this as mere hindsight analysis of appellant's teaching with no basis at all in the absence of access to his teachings. It seems to us that one of the primary objects of Mencacci was to *splash* water on his cans. In his cooling method, as carried out in his cooler, the wetting is not continuous but intermittent and an important part of the cooling method as described in the Mencacci patent is in the use of air, produced by a blower, to evaporate liquid from the cans after wetting them. He says:

> The cool air thus supplied displaces the warm air within the chamber and accelerates the dissipation of heat from the cans by both *convection* and *conduction*. * * * The fresh air supplied by the fan therefore promotes *evaporation* of moisture on the can surfaces, and thereby increases to a very considerable degree the amount of heat which is absorbed from each can in the process of vaporization of the moisture. Dissipation of heat by each of *the three principles of heat loss* by the cans and their contents is still further expedited by the tumbling * * *. [Emphasis ours.]

This evaporation is a function of the machine throughout the cooling process and the machine was designed to wet the cans from all sides, the water dripping from the cans being recirculated. We see nothing to suggest any need for an improved wetting of the cans. We find no teaching, axiomatic or otherwise, to suggest the greater efficiency which Adams has discovered.

Finally, the Solicitor adds the argument that the *superiority* of appellant's heat transfer is *inherent* in the use of foam. Again we observe that, of course, it is. But the art does not suggest the use of foam in heat transfer of any kind and there is not the slightest suggestion that anyone *knew* of the existence of this inherent superiority until Adams disclosed it. After all, Bell's telephone was "inherently" capable of transmitting speech, De Forest's triode was "inherently" capable of amplification, and, to come down to date, so was the tiny transistor which is rapidly supplanting it. Two of our decisions are cited as supporting the erroneous notion that "subject matter cannot be patented on the basis of an inherent property." We think the proposition thus broadly stated and as applied here is so transparently erroneous as not to require discussion.

We deem it unnecessary to deal with the differences in scope and the broadest claim as effectively distinguishes from the references as any of the others.

[2] The decision of the Board is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

WALDES KOHINOOR, INC. *v.* ASSOCIATED SPRING CORPORATION

No. 7602. Decided March 24, 1966. Petition for rehearing denied May 5, 1966

[53 CCPA —; 357 F.2d 404; 149 USPQ 68]

1. TRADEMARK—CONFUSING SIMILARITY—"TRU-TRAC" FOR SPRINGS AND "TRUARC" FOR RETAINING RINGS.

"Here we are confronted with a situation where the goods of the parties are substantially similar and sold to the same class of purchasers through

the same channels of trade, with use on the part of the appellant over a long period of time involving the expenditure of a large sum of money in establishing its mark. In our view, the mark TRU-TRAC is sufficiently similar to the mark TRUARC in sound, appearance and over-all impression so that the simultaneous usage in trade of the respective marks is likely to cause confusion within the meaning of section 2(d) of the Trademark Act of 1946. Any doubt as to likelihood of confusion should be resolved in favor of the first user and against the newcomer."

APPEAL from the Patent Office. Opposition No. 42,799.

REVERSED.

Arthur H. Siedel for appellant.

David S. Schrivener for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

ALMOND, *J.*, delivered the opinion of the court.

Waldes Kohinoor, Inc., appeals from the decision of the Trademark Trial and Appeal Board dismissing its opposition [1] to the application of Associated Spring Corporation to register "TRU-TRAC" for springs [2] asserting use since May 22, 1961. Appellant (opposer) is the registrant of the mark "TRUARC" for retaining rings for locking, securing, or positioning moving parts, such as shafts, gears and bearings [3] and for tools, namely, grooving tools, and pliers, applicators, and dispensers for retaining rings.[4] Only appellant took testimony. There is no issue relating to priority of use.

Under the provisions of Trademark Rule 2.123(c), appellee (applicant) submitted copies of a number of third-party registrations for marks which either comprise the terms TRU-ARC and TRU-TRAC, or include TRU as a prefix, or ARC or TRAC as suffix portions. In substance, these registrations cover goods such as various hand tools, items of hardware and machinery.

The record supports the finding of the Board that since long prior to appellee's asserted date of first use, appellant has used the mark TRUARC on the goods recited in its registrations; that it had extensively advertised its TRUARC retaining rings in nationally known and circulated trade publications as well as in catalogs and at trade shows; that sales of TRUARC rings and tools therefor have averaged three million dollars per year during the past five years, and that said rings are, in effect, springs, since they have a spring action as an essential characteristic. The record also shows that customers, in placing orders for retaining rings, sometimes mistakenly write appellant's trademark as TRU-ARC or as TRU ARC.

Appellee contended before the Board, as it does here, that there is a difference in the goods of the parties because its springs are sold in a tightly wound coil form and the goods would move through different channels of trade and be used for different purposes. The Board noted, however, that the goods recited in the application are springs per se, and that appellee admitted in its answer to the notice of opposition that a retaining ring is a specific form of spring and further admitted that both parties manufactured retaining rings and

[1] Opposition No. 42,799, filed April 26, 1963.
[2] Serial No. 146,779, filed June 13, 1962.
[3] Reg. No. 402,923, issued August 24, 1943.
[4] Reg. No. 595,877, issued September 28, 1954.

are therefore competitors in that field of manufacture. The Board concluded, and we agree, that in view of the above:

* * * and in the absence of any evidence to support applicant's claim as to the limited nature of its goods, it must be held that the goods of the parties would move through the same trade channels to the same purchaser for the same or related uses.

The only issue here is likelihood of confusion within the meaning of section 2(d) of the Trademark Act of 1946 (15 U.S.C. 1052).

A majority of the Board, one member dissenting, concluded that confusion or mistake would not be likely to occur. The majority reasoned that the competing marks were readily distinguishable whether considered as one word, two words or in hyphenated form and that the term TRUARC is highly suggestive of a desired characteristic of appellant's goods and could not, therefore, be accorded the broad scope of protection applicable to entirely arbitrary terms. It considered both marks highly suggestive as applied to springs but did not believe such marks convey the same or similar meanings as applied thereto.

We are, however, inclined to agree with the views stated and the conclusion reached by the dissenting member of the Board that while appellant's mark may be in some manner suggestive as applied to its goods, there is nothing in the record to show that it is in any way lacking in trademark significance. He pointed out that none of the third-party registrations, relied on by appellee to establish the weakness of appellant's TRUARC mark, were for retaining rings or springs and hence irrelevant for this purpose. He noted, as do we, the extensive sales and advertising disseminations with unsolicited references in trade publications as indicative of the fact that the wark TRUARC has achieved a considerable measure of commercial recognition as identifying appellant's retaining rings or springs. He pointed, we think significantly, to the fact that more than twenty years had elapsed after appellant's adoption and use of TRUARC before appellee, a competitor, adopted the mark TRU-TRAC for similar goods, and that there is no evidence of adoption or use of marks similar thereto by others in the trade here involved.

Comparing the marks TRU-TRAC and TRUARC in their entireties, we are in agreement with the dissenting member of the Board that:

* * * they are substantially similar in appearance, each comprising two syllables, of which the initial syllable is identical, and considering that the suffixes have three identical letters and both end in a hard "c" sound, they also are somewhat alike in sound. In view of these similarities, and considering that purchasers of springs or retaining rings do not ordinarily have the opportunity for a side-to-side comparison of the marks under which such goods are sold, it is not unreasonable to assume that persons familiar over the years with "TRUARC" retaining rings or springs, who on occasion, as the record discloses, have written opposer's mark as "TRU-ARC" or "TRU ARC," might well upon encountering other springs under the mark "TRU-TRAC" mistakenly assume that they originate with the same producer * * *.

[1] Here we are confronted with a situation where the goods of the parties are substantially similar and sold to the same class of purchasers through the same channels of trade, with use on the part of the appellant over a long period of time involving the expenditure of a large sum of money in establishing its mark. In our view, the mark TRU-TRAC is sufficiently similar to the mark TRUARC in sound,

appearance and over-all impression so that the simultaneous usage in trade of the respective marks is likely to cause confusion within the meaning of section 2(d) of the Trademark Act of 1946. Any doubt as to likelihood of confusion should be resolved in favor of the first user and against the newcomer. *American Grease Stick Co.* v. *Chemplast*, 52 CCPA 1103, 341 F.2d 942, 944, 144 USPQ 676, 677.

The decision of the Trademark Trial and Appeal Board is reversed.

REVERSED.

SMITH, *J.*, dissenting.

The cumulative effect of the specific differences in the marks and in the goods on which they are used when considered in the light of the reasonably expected sophistication of the purchasers leads me to the conclusion that there is no likelihood of confusion in the present case. The marks themselves possess only a common similarity in prefix such as is found in other marks used with various kinds of goods. Viewed as wholes, the marks in issue have distinctive differences as well as similarities in meaning. In my opinion the differences in the technical meanings attributable to the suffix portions of the marks when considered with the specific goods to which they are applied would be more likely to accentuate these differences than it would their similarities. The technically oriented purchasers of such goods would not be likely to confuse the marks or the goods.

I would therefore affirm the decision of the majority of the Trademark Trial and Appeal Board to dismiss the opposition.

U.S. Court of Customs and Patent Appeals

IN RE EDWARD S. BLAKE AND WILLIAM C. HAMMANN

No. 7555. Decided April 7, 1966

[53 CCPA —; 358 F.2d 750; 149 USPQ 217]

1. PATENTABILITY—AFFIDAVIT UNDER RULE 131—SUPPLEMENTARY AFFIDAVITS FILED SUBSEQUENT TO BOARD'S DECISION.

"The Solicitor urges this court not to consider the affidavits filed subsequent to the Board's decision. Under the facts of this case, we are unable to agree with the Solicitor. The affidavits filed subsequent to the Board's decision did not contain any additional material averments or factual evidence. Rather, the affidavits consisted of original compilation sheets on which was written the data recited in the earlier affidavits. Thus, the Board was not faced with the task of considering evidence which had not been considered by the Examiner and by the Board itself in its original decision. Moreover, at no time did the Examiner criticize the affidavits for their lack of showing that the data was not obtained prior to Diamond's filing date. This matter was raised for the first time by the Board. Additionally, the earlier filed affidavits contained averments that the data set forth therein was obtained prior to Diamond's filing date."

2. SAME—SAME—REDUCTION TO PRACTICE—TESTS.

"This court has made it clear that whether or not testing of an invention is required to establish utility, and if so, the nature and extent of such testing, depends on the facts of the particular case. No a priori rules can be formulated to meet the exigencies of each case. Thus, we reject the Solicitor's contention that testing, presumably in or closely simulating the intended environment, is an *absolute* requirement when the inventor's aim is to produce a new product superior to a then-existing product."

3. SAME—SAME—SAME—SAME—PROOF OF DISCLOSED UTILITY.

"The evidence necessary to prove a particular utility depends, inter alia, on the nature of the invention sought to be patented. In this case, the utility sought to be proved is that the claimed compounds are suitable as high-temperature functional fluids. This utility, though not specified in the claims, is mentioned in appellants' specification and was contemplated by applicants at the time of their alleged reduction to practice prior to the filing date of Diamond. Thus, the ultimate issue in this case is whether or not the evidence is such that one of ordinary skill in the art would be satisfied to a reasonable certainty that the subject matter necessary to antedate the reference possessed the alleged utility. Stated in this manner, testing is not an arbitrary requirement but is merely one form of evidence relevant to the issue of proof of utility. If testing of the kind insisted on here is found to be a requirement in a particular case, it is because one of ordinary skill in the art would not otherwise be satisfied to a reasonable certainty that the subject matter in question possessed the requisite utility."

APPEAL from the Patent Office. Serial No. 766,685.

REVERSED.

John D. Upham for appellants.

Joseph Schimmel (*Jack E. Armore* of counsel) for the Commissioner of Patents.

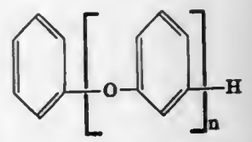
Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1, 3–10 and 12–17 in appellants' application Serial No. 766,685, filed October 13, 1958, entitled "Functional Fluid Compositions." Appellants have withdrawn the appeal as to claims 7, 9, 10, and 13–17, leaving claims 1, 3–6, and 12 for our consideration.

Claim 1 is generic and reads as follows:

1. A meta-linked, unsubstituted poly(m-oxyphenylene)benzene defined by the structural formula



wherein *n* is an integer of at least 3, and mixtures of the aforesaid poly(m-oxyphenylene)benzenes.

Claims 3–6 define species encompassed by claim 1, while claim 12 defines unsubstituted poly(m-oxyphenylene)benzenes having the structural formula set forth in claim 1 where *n* is an integer from 3 to 6. Like claim 1, claim 12 also includes mixtures of compounds of the structure set forth in the respective claims.

According to appellants' specification, the claimed compounds are high-temperature functional fluids suitable for use as synthetic lubricants for jet engines, hydraulic fluids for supersonic aircraft and missiles, and coolants for electronic equipment.

The claims stand rejected as being fully met by Diamond, United States Patent No. 2,940,929, filed June 26, 1958, and issued June 14, 1960.

Diamond relates to lubricating compositions especially designed for use at elevated temperatures and under oxidizing conditions. The compositions comprise broadly:

* * * a major proportion of polyphenyl ethers and minor proportions sufficient to stabilize said ethers against oxidation at temperatures in excess of about

450° F., said additive material being basic and neutral indium salts of fatty acids, thiafatty acids, and of alkylated benzoic acids * * *.

The polyphenyl ethers may have from 3 to 8 phenyl radicals per molecule. The phenyl radicals may be substituted with either a tertiary butyl or alpha-cumyl radical or unsubstituted. Diamond specifically discloses bis(m-phenoxyphenyl) ether and m-bis(m-phenoxyphenoxy)benzene, the compounds of appealed claims 3 and 4, respectively. Diamond also contemplates mixtures of unsubstituted and substituted polyethers. Further discussion of Diamond with regard to mixtures will be undertaken, infra.

In an effort to overcome Diamond, appellants submitted two series of affidavits under Rule 131, one series by Hammann and the other by Blake, the joint applicants in the case at bar. The corresponding affidavits of the joint applicants are substantially identical. The Hammann affidavits of April 16, 1962, and February 4, 1963, and the Blake affidavits of April 17, 1962, and February 7, 1963, were filed prior to the original decision of the Board of Appeals on March 31, 1964.

The affidavits of April 16 and April 17, 1962, accompanied by Exhibits I and II, allege that "certain subject matter of the above-identified application was conceived and reduced to practice in this country prior to or under a U.S. Government contract for the 'Development of High Temperature Base Stock for Hydraulic Fluids and Lubricants' prior to June 26, 1958"; that Exhibits I and II are copies of portions from Hammann's research notebooks; that Exhibits I and II show, respectively, the preparation of bis(m-phenoxyphenyl) ether and m-bis(m-phenoxyphenoxy)benzene; that both compositions "were observed to be colorless fluids at room temperature useful as functional fluids"; and that a progress report completed prior to June 26, 1958, indicated that a major manufacturer of jet engines has a great interest in the all-meta unsubstituted aromatic ethers, wherefore the above compositions were synthesized in an attempt to reduce prospective costs.

The Examiner criticized the foregoing affidavits stating that the exihits "are not legible and therefore should be accompanied by typewritten copies." In response to this objection, supplemental affidavits were filed February 4 and February 7, 1963, accompanied by typewritten copies of Exhibits I and II.

The supplemental affidavits contain the following averments:

Deponent [Blake] further states that the products of Exhibits I and II were evaluated prior to June 26, 1958, under his and/or Dr. William C. Hammann's direction and/or supervision for thermal decomposition points * * * and for viscosity in centistokes (cs.) at several temperatures, with the following results:

Exhibit I.—The bis(m-phenoxyphenyl) ether * * * sample was found to be a light-yellow colored liquid having a refractive index (n_D^{25}) of 1.6194, a thermal decomposition point above 700° F. and a viscosity respectively at 100°, 210°, 400° and 700° F. of 67.708, 6.29, 1.37, and 0.473 centistokes. The sample was observed to still be a liquid after storage for more than one (1) year.

Exhibit II.—The m-bis(m-phenoxyphenoxy)benzene * * * sample was found to be a colorless liquid having a refractive index (n_D^{25}) of 1.6300, a thermal decomposition point of 792° F. and a viscosity respectively at 100°, 210° and 400° F. of 343.62, 12.948 and 2.087 centistokes.

The Examiner held that the foregoing affidavits were insufficient to overcome Diamond for the following reasons:

(1) The affidavits and exhibits are limited to 2 species, however, as previously noted the Diamond reference discloses a range of polyphenyl ethers and the instant claims are directed to more than 2 species.

(2) The said affidavits do not cover the mixtures of polyphenyl ethers as disclosed in Diamond and instantly claimed.

(3) The affidavits do not contain an adequate showing of utility of the compounds. It is not evident how the mere disclosure of properties for the two species disclosed in the affidavits establishes utility as functional fluids. It is clear from *Wilkinson et al.*, 1962 C.D. 689, that an adequate showing of utility is necessary in an affidavit under Rule 131 and particularly when, as in the instant case, the reference discloses utility for the compounds.

The Board made the following holdings with regard to the three reasons advanced by the Examiner:

The first point raised by the Examiner is clearly not applicable to claims 3 and 4 which are drawn to the species disclosed in the affidavits and accompanying exhibits. We are further of the opinion that in the instant case the two species prepared by appellants are sufficiently representative of the generic class of compounds claimed to warrant claiming the class. Therefore, we will not sustain point 1.

We will sustain the second point raised by the Examiner. This criticism of the affidavits applies only to those claims drawn to mixtures, namely claims 10, 12, 13, 15, 16 and 17. We deem the limitation to a mixture to be a pertinent limitation disclosed in Diamond. Therefore, the affidavits are insufficient to remove Diamond in that they do not disclose this limitation. * * *

An establishment of utility requires testing the compounds in the specific use for which they are designed or laboratory tests may be made which must simulate actual service conditions with sufficient clearness to render it reasonably certain that the subject matter will perform its intended function in actual service. We do not consider that merely determining the thermal decomposition points and viscosity at certain temperatures of two of the compounds claimed constitutes such tests as to warrant the conclusion that there has been a reduction to practice of the subject matter claimed for the purposes in view. * * * We further fail to find in the affidavits submitted any factual evidence to show that the thermal decomposition points and viscosities mentioned were actually determined prior to the filing date of the Diamond patent. * * *

Subsequent to the Board's decision, and coincident with the filing of a petition for rehearing, appellants filed supplemental affidavits apparently in response to the Board's statement that factual evidence was lacking that the data in the earlier filed affidavits was obtained prior to Diamond's filing date.

In disposing of the petition, the Board adhered to its original decision without commenting on the newly filed affidavits.

[1] The Solicitor urges this court not to consider the affidavits filed subsequent to the Board's decision. Under the facts of this case, we are unable to agree with the Solicitor. The affidavits filed subsequent to the Board's decision did not contain any additional material averments or factual evidence. Rather, the affidavits consisted of original compilation sheets on which was written the data recited in the earlier affidavits. Thus, the Board was not faced with the task of considering evidence which had not been considered by the Examiner and by the Board itself in its original decision. Moreover, at no time did the Examiner criticize the affidavits for their lack of showing that the data was not obtained prior to Diamond's filing date. This matter was raised for the first time by the Board. Additionally, the earlier filed affidavits contained averments that the data set forth therein was obtained prior to Diamond's filing date.

As to the merits of the utility requirement in the affidavits, it was the Board's view that testing of the claimed compounds, either in the specific environment for which they were designed or under laboratory conditions sufficiently simulating such environment, was necessary to establish utility and that determining thermal decomposition points and viscosity at certain temperatures did not suffice.

Appellants agree with the Board to the extent that a showing of utility is necessary when, as here, the reference discloses a utility for the subject matter being used to reject the claims. It is appellants' position, however, that the information known to the inventors concerning the claimed compounds was sufficient to make their utility obvious to themselves and others having ordinary skill in the functional fluid art.

[2] This court has made it clear that whether or not testing of an invention is required to establish utility, and if so, the nature and extent of such testing, depends on the facts of the particular case. No a priori rules can be formulated to meet the exigencies of each case. Thus, we reject the Solicitor's contention that testing, presumably in or closely simulating the intended environment, is an *absolute* requirement when the inventor's aim is to produce a new product superior to a then-existing product.

[3] The evidence necessary to prove a particular utility depends, inter alia, on the nature of the invention sought to be patented. In this case, the utility sought to be proved is that the claimed compounds are suitable as high-temperature functional fluids. This utility, though not specified in the claims, is mentioned in appellants' specification and was contemplated by applicants at the time of their alleged reduction to practice prior to the filing date of Diamond. Thus, the ultimate issue in this case is whether or not the evidence is such that one of ordinary skill in the art would be satisfied to a reasonable certainty that the subject matter necessary to antedate the reference possessed the alleged utility. Stated in this manner, testing is not an arbitrary requirement but is merely one form of evidence relevant to the issue of proof of utility. If testing of the kind insisted on here is found to be a requirement in a particular case, it is because one of ordinary skill in the art would not otherwise be satisfied to a reasonable certainty that the subject matter in question possessed the requisite utility.

As we stated above, the utility which appellants must establish is that their claimed compounds are suitable as high-temperature functional fluids. With regard to such utility, appellants' specification states:

> The present critical requirements for high-temperature functional fluids are extremely restrictive. Thus, the functional fluid may be required as a synthetic lubricant for jet engines, as a hydraulic fluid for supersonic aircraft and missiles, as coolants for electronic equipment, etc., wherein the fluid is often required to function at extreme temperature ranges up to 800° F. and higher and down to normal atmospheric temperatures. These requirements pose the very difficult problem of finding suitable compositions which are thermally stable at the very high temperatures, but are still fluid at the lower temperatures. The fluids must also possess adequate temperature-viscosity properties and suitable lubricity, i.e., the fluids must not get too thin at the very high temperatures and/or too thick at the lower temperatures, and must possess adequate lubricating characteristics over the range of temperatures to which the system is subjected.

In addition to the characteristics for functional fluids set forth in the foregoing portion of appellants' specification, it is also stated that functional fluids must be "substantially free from corrosive action." With these characteristics in mind, we now turn to an analysis of the evidence of record bearing on the issue of utility.

First to consider is the requirement that the composition be liquid at low temperatures. This requirement appears met by the fact that the compounds bis(m-phenoxyphenyl) ether and m-bis(phenoxyphenoxy)benzene were observed to be colorless oils at room temperature as is demonstrated by the fact that their refractive indices could be and were measured at 25° C. (n_D^{25}) of 1.6194 and 1.6300, respectively. As to the latter compound, further evidence on this point is supplied by the fact that its pour point was determined to be about 50° F.

The second requirement concerns the thermal stability of the composition at elevated temperatures. We believe this requirement is met by the fact that the thermal decomposition points for bis(m-phenoxyphenyl) ether and m-bis(m-phenoxyphenoxy)benzene were measured and determined to be above 700° F. for the former and 792° F. for the latter.

The third requirement is that the composition must have adequate temperature-viscosity and lubricity properties. We think this requirement is also met as to both compounds in question. As to bis-(m-phenoxyphenyl) ether, the viscosity at 100° F., 210° F., 400° F. and 700° F. was measured and determined to be, respectively, 67.708, 6.29, 1.37, and 0.473 centistokes. As to m-bis(m-phenoxyphenoxy) benzene, the viscosity at 100° F., 210° F., and 400° F. was measured and determined to be, respectively, 343.62, 12.948, and 2.087 centistokes. The Patent Office has not challenged the adequacy of this data to establish the requisite lubricity and viscosity-temperature properties for high-temperature functional fluids, and we perceive no reason to do so.

The fourth requirement is that the composition must be noncorrosive. While the Rule 131 affidavits are silent as to this specific property, there is of record several pages of the text Kirk and Othmer, Encyclopedia of Chemical Technology (1957). Pages 392 and 557–569 of this text were presented to the Board and the Solicitor has expressly indicated no objection to their consideration in this appeal. On page 392, there appears the following:

> *Dowtherm A* (see *diphenyl; phenolic ethers*) is a trade-marked name for a eutectic mixture of 73.5% diphenyl ether (diphenyl oxide) and 26.5% diphenyl (biphenyl). The mixture solidifies at 54° F.; the recommended working range is 450–725° F. Since decomposition at higher temperature levels is by thermal cracking, the rate of decomposition is dependent on temperature; the equipment should therefore be properly designed so that excessive film temperatures will not be encountered.
>
> Dowtherm A is noncorrosive, and therefore equipment for its use may be fabricated of carbon steel. * * *

With regard to this passage from the encyclopedia, appellants' state:

> Appellants also submit that lower polyphenyl ethers which are outside the scope of their invention and claims, e.g. wherein *n* in appellants' generic formula * * * would be 1, have long been known to those skilled in the art as the principal component of the heat-transfer fluid sold under the trademark "Dowtherm A." This commercial functional fluid product is a eutectic mixture of approximately 75% diphenyl ether and 25% of biphenyl, is a noncorrosive fluid solidifying at about 54° F. and is employed over a working range of from about 450° to 725° F., i.e., the chemical structure of the benzenoid rings joined through an ether linkage was known to have a high degree of thermal stability and to be relatively chemically inert prior to appellants' invention. * * *

We see no reason to doubt appellants' assertions on this point; certainly the Patent Office has not provided us with any reason. Appellants' compositions do not contain any different functional groups

from those present in "Dowtherm A." This closeness in structure is, in our view, persuasive that one of ordinary skill in the art would be satisfied to a reasonable certainty that the claimed compositions were noncorrosive.

From the foregoing, we think it clear that sufficient evidence was presented to satisfy one of ordinary skill in the art to a reasonable certainty that the subject matter necessary to antedate the Diamond reference (here the compositions of claims 3 and 4) possessed the alleged utility.

There remains for consideration the Board's decision affirming the rejection of claims drawn to mixtures of polyphenyl ethers. Initially, there is a dispute as to whether the Board's decision applied to appealed claims 1 and 12 or merely to claim 12. This dispute arises because the Board failed to mention claim 1 in passing on the issue regarding mixtures. However, the Examiner's answer clearly stated that this aspect of the rejection applied, inter alia, to claims 1 and 12.

With regard to mixtures, Diamond states:

> The unsubstituted polyphenyl ethers have been found to be outstandingly stable but may be improved in their operating life at temperatures above 400° F. by the presence of the subject classes of additives as described herein. However, the major use of the present invention is with respect to the two other types of polyphenyl ethers, namely, those containing tertiary butyl substituents, alpha-cumyl substituents or both. Mixtures of the unsubstituted polyphenyl ethers with the tertiary butyl or alpha-cumyl substituted ethers is contemplated.

As to the purpose for utilizing mixtures of substituted and unsubstituted polyethers, Diamond states:

> When utilizing mixtures of unsubstituted polyphenyl ethers with the tertiary butyl or alpha-cumyl substituted polyphenyl ethers, it is preferred that the composition contain from 10 to 90% of unsubstituted ethers containing 2–6 phenyl radicals per molecule together with 90–10% by weight based on the total composition of the substituted polyphenyl ethers as defined above. The principal function of the unsubstituted polyphenyl ethers is to enhance the outstanding high-temperature stability which this class of compounds has been found to exhibit. The substituted polyphenyl ethers as outlined above impart low melting points and in mixture with the unsubstituted polyphenyl ethers causes the melting point of the entire composition to be substantially lower than that of the unsubstituted polyphenyl ethers themselves.

The above-quoted passages from Diamond amply support appellants' contention that "* * * Diamond does not disclose mixtures restricted to the unsubstituted all-meta linked polyphenyl ethers," as called for by appealed claims 1 and 12. Thus, it was unnecessary for appellants to show mixtures of their claimed polyethers in a Rule 131 affidavit. *In re Stempel*, 44 CCPA 820, 241 F.2d 755, 113 USPQ 77.

The Board's decision is reversed.

REVERSED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,546,354(*a*), Bacon and Kent, NAILING MACHINE, **filed** Aug. 2, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1244–WPG, *Richard Grosten et al.* v. *Lee Epps.*

2,546,354(*b*); **2,679,044**, same, NAIL-DRIVING MACHINE WITH MOVABLE NOSEPIECE; **2,799,858**, same, NAIL-DRIVING MACHINE, **filed** July 27, 1966, D.C., N.D. Calif. (San Francisco), Doc. 45455, *GBC Designs* v. *Robert Danner et al.*

2,679,044. (See 2,546,354(*b*).)

2,799,858. (See 2,546,354(*b*).)

2,905,945, L. Winter, COLLAR CONSTRUCTION FOR SHIRTS; **Reg. No. 709,660** (SNAP TAB), Mabs, Inc., doing business as Lancer of California, Outer shirts having a tab collar construction, **filed** Aug. 26, 1964, D.C., S.D.N.Y., Doc. 64/2641, *Piedmont Shirt Co.* v. *Snap-Tab Corp.* Order dismissing action June 10, 1966.

2,993,780, G. Shinefeld, MULTIPLE PANE WINDOW UNITS, **filed** June 23, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–597, *Multipane, Inc.* v. *Hygrade Metal Moulding Mfg. Corp.*

2,943,869, O. L. Nordin, COUPLINGS AND SAFETY DEVICES THEREFOR, **filed** June 9, 1965, D.C., S.D. Tex. (Houston), Doc. 65–H–338, *Thornhill Craver Company, Inc.* v. *National Tank Company.* Stipulation and order dismissing action June 28, 1966.

2,950,016, A. J. Thomas, CRANE BOOM GUARD ATTACHMENT; **2,989,194**, same; **3,100,575**, S. A. Coffey, CRANE BOOM LIFE GUARD, **filed** Apr. 6, 1962, D.C., E.D. Ark. (Little Rock), Doc. LR62–C–66, *Saf-T-Boom Corp.* v. *Crane-Boom Guard Co., Inc. et al.* Consent decree; defendants enjoined May 21, 1962. **Appealed,** Nov. 5, 1965, C.C.A., 8th Cir., Doc. 18209, *Crane Boom Life Guard Co., Inc. et al.* v. *Saf-T-Boom Corporation et al.* Judgment of District Court affirmed June 30, 1966.

2,952,060, H. E. Allen, CONCRETE FORM SECURING MEANS; **3,218,687**, C. E. Barnes, WALL FORM CLAMP; **3,236,486**, H. E. Allen, deceased, by H. M. Allen, executrix, WALER BRACKETS, **filed** June 15, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1084, *Allenform Corp.* v. *Charles E. Barnes Corp. et al.*

2,954,073, B. B. Junkunc, FOLDING TABLET ARM CHAIR, **filed** June 10, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1046, *Bela Seating Company, Inc.* v. *Textron, Inc.*

2,961,185, R. L. Seigle, SUPPLY HOLDER, **filed** June 9, 1966, D.C., E.D. Pa. (Philadelphia), Doc. 40441, *Leesona Corp.* v. *Robert Lewis Seigle.*

2,963,276, E. S. Nelson, FINNED HEATING UNIT WITH GUIDE RAILS, **filed** June 14, 1966, D.C.N.J. (Newark), Doc. 600–66, *Embassy Engineering Corp.* v. *Edwards Engineering Corp.* **Same, filed** June 29, 1966, D.C. Conn. (New Haven), Doc. 11507, *Embassy Industries, Inc.* v. *Argo Fabricators, Inc. et al.*

2,970,618, W. L. Mitchell, GUIDE MEANS FOR HAND ROUTERS, **filed** Jan. 27, 1966, D.C., W.D. Wash. (Seattle), Doc. 6652, *William L. Mitchell* v. *Skil Corporation.* Stipulated order of dismissal July 29, 1966. **Same,** Doc. 6653, *William L. Mitchell* v. *Sears, Roebuck and Co.* Settled and case dismissed May 12, 1966.

2,970,783, D. A. Cheyette, COMPOSITION WEARING PARTS FOR CRUSHERS AND THE LIKE, **filed** June 17, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1114, *Nordberg Manufacturing Co.* v. *Esco Corp.*

2,971,286, W. B. Ernst, FOLDABLE WIRE BOOK STUDY DEVICE, **filed** June 8, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–529, *Dawn Products Co. et ano.* v. *Forest Distributors, Inc.* **Same, filed** June 30, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–612, *Dawn Products Co.* v. *ADI, Inc.*

2,985,936, B. Hillberg, HANGER ASSEMBLY FOR SUSPENDED CONCRETE FORMS; **2,985,937**, same, OUTSIDE HANGER ASSEMBLY FOR SUSPENDED CONCRETE FORMS, **filed** Oct. 25, 1962, D.C., W.D. Mo. (St. Joseph), Doc. 1176, *Superior Concrete Accessories, Inc.* v. *Richmond Screw Anchor Co., Inc.* Patent No. 2,985,936 held infringed; defendant enjoined; Patent No. 2,985,937 held invalid (notice Sept. 7, 1965.) **Appealed,** Jan. 28, 1966, C.C.A., 8th Cir., Doc. 18280, *Richmond Screw Anchor Co., Inc.* v. *Superior Concrete Accessories, Inc.* Appeal dismissed on motion of appellant June 3, 1966. **Same, Appealed,** Jan. 28, 1966, C.C.A., 8th Cir., Doc. 18281, *Superior Concrete Accessories, Inc.* v. *Richmond Screw Anchor Co., Inc.*

2,985,937. (See 2,985,936.)

2,988,848, J. H. Lemelson, NOISEMAKING TOYS, **filed** Mar. 4, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–218, *Jerome H. Lemelson* v. *Gerber Products Co. et al.* Order of discontinuance June 28, 1966.

2,989,194. (See 2,950,016.)

2,990,616, Balamuth and Kuris, ULTRASONIC CUTTING TOOL; **3,075,288**, same, DENTAL INSTRUMENT; **3,076,904**, C. Kleesattle et al., ACOUSTICALLY VIBRATED MATERIAL CUTTING AND REMOVING DEVICES; **3,213,537**, L. Balamuth et al., SUPPLY AND CONTROL APPARATUS FOR VIBRATORY CUTTING DEVICE; **Re. 25,033**, Balamuth and Kuris, VIBRATORY MACHINE TOOL AND VIBRATORY ABRASION METHOD, **filed** May 24, 1966, D.C., S.D. Fla. (Miami), Doc. 66–715, *Cavitron Ultrasonics, Inc.* v. *Black Dentaprises, Inc. et al.* **Same, filed** July 14, 1966, D.C., S.D. Fla. (Miami), Doc. 66–856, *Cavitron Ultrasonics, Inc.* v. *Ultrasonic Research Corp.* **Same, filed** July 14, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–656, *Cavitron Ultrasonics, Inc.* v. *Union Broach Company, Inc.* **Same, filed** July 14, 1966, D.C., S.D.N.Y., Doc. 66/2125, *Cavitron Ultrasonics, Inc.* v. *Ultrasonic Research Corp.*

2,998,611, W. E. Schuessler, CUFFED CAP AND FACE HOOD AND METHOD OF FORMING, **filed** Aug. 28, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1473, *American Needle and Novelty Co.* v. *Schuessler Knitting Mills, Inc.* Judgment for defendant; complaint dismissed with prejudice June 7, 1966.

3,075,288. (See 2,990,616.)

3,076,904. (See 2,990,616.)

3,100,575. (See 2,950,016.)

3,213,537. (See 2,990,616.)

3,218,687. (See 2,952,060.)

3,236,486. (See 2,952,060.)

Re. 25,033. (See 2,990,616.)

PLANT PATENTS

GRANTED SEPTEMBER 13, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,671
PEACH TREE
George C. Kircher, 19941 Sunset Drive, Saratoga, Calif.
Filed Feb. 19, 1965, Ser. No. 434,153
1 Claim. (Cl. Plt.—42)

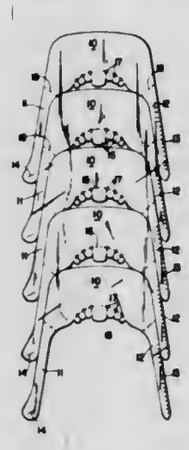
A new and distinct variety of peach tree of the freestone, white-fleshed, fruit-bearing type, substantially as herein shown and described, and particularly characterized by its relatively abundant production of large fruit of substantially uniform size; its sturdy form and rapid growth of strong wood; its habit of producing fruit early in its growth; and the late August ripening period for the fruit which is distinguished by the firm juicy character of its white flesh, its unusually large size, its excellent flavor and very pronounced aroma, its freely peelable skin, its very light yellow color, and the coarse wiry nature of its pubescence.

PATENTS

GRANTED SEPTEMBER 13, 1966

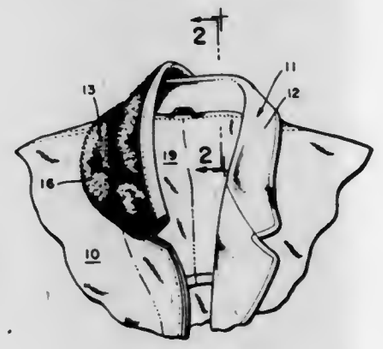
GENERAL AND MECHANICAL

3,271,778
SUN SHIELD
Martin J. Ferguson, Rye Colony, Rye, N.Y.
Filed May 26, 1961, Ser. No. 113,039
3 Claims. (Cl. 2—12)



1. A plurality of nesting, flat-cut one piece flexible sun visors consisting of the same material and each comprising in their flat position a wide eye-shading front piece having a front edge in the shape of a flattened curve having a width adapted to be wider than the forehead of the intended wearer, said front piece having narrower backwardly extending outwardly flaring arms, suitable for attachment to each other and sufficiently long to overlap at the back of the head of the wearer, the inside edge of the arms of each surmounting sun visor conforming to the outside edge of the next adjacent sun visor.

3,271,779
METHOD OF MAKING AN UNDERCOLLAR
John P. Dougherty, Teaneck, N.J., assignor to Monsanto Company, a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,969
1 Claim. (Cl. 2—98)



A method for manufacturing an undercollar for maintaining the shape of a deformable material in a collar comprising the steps of:

(a) placing battings composed of a plurality of loose fibers disposed in a randomly oriented relationship on both faces of a foundation scrim composed of interlocking fibers formed in a web;
(b) needle-punching said battings into said web thereby locking said battings to said web and forming a coherent non-woven fabric;
(c) fusing said fibers together at their points of contact by subjecting said non-woven fabric to a bonding agent which is a solvent to the fibers of said batting and said scrim;
(d) drying and curing said bonded, non-woven fabric;
(e) subjecting said fabric to desired textile finishing operations; and
(f) cutting undercollars to desired dimensions from said fabric by die stamping.

3,271,780
TIE LOCATING DEVICE
Edgar K. De Jean, 102 N. Harrison, Salem, Ind.
Filed Oct. 22, 1964, Ser. No. 405,655
3 Claims. (Cl. 2—146)

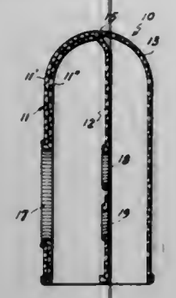


3. The method of providing for a customized fitting of a necktie comprising the steps of mounting an elongated strip on the undersurface of one end of the tie, aligning a predetermined point on the strip with a predetermined extrinsic point, tying the tie in the conventional manner, comparing the length of the tie ends, untying the tie and repeating the above steps, utilizing a vertically adjusted point on the strip, if necessary, until the larger end of the tie is of the same length as or slightly longer than the small end of the tie, and providing an indelible mark on the strip at the last used predetermined point thereon.

3,271,781
CAP CONSTRUCTION
Sheldon Sontag, Brooklyn, and Albert B. Peck, Tarrytown, N.Y., assignors to Peck Manufacturing Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 15, 1965, Ser. No. 448,293
13 Claims. (Cl. 2—202)

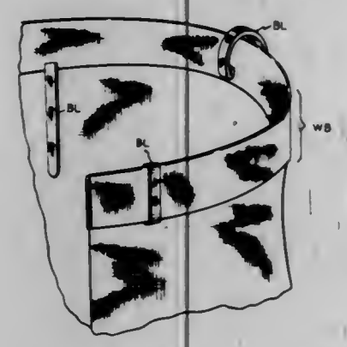
1. A convertible head covering comprising first and second superposed panel members forming a tubular body portion, a third panel member disposed intermediate said first and second panel members and selectively disposable in abutting facing relationship with either of said first and second panel members, said first panel member hav-

ing a relatively large face opening therein for exposing a substantial portion of the wearer's face when disposed in overlying abutting facing relation therewith and one of said remaining panel members having at least one



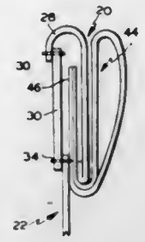
aperture which is small in relation to said face opening in said first panel member for effecting selective and limited exposure of at least one facial element when said last mentioned panel member is disposed in overlying abutting facing relation with the wearer's face.

3,271,782
TROUSER WAISTBAND CONSTRUCTION
Charles R. Mallett, Box 483, Raceland, La.
Filed Jan. 21, 1964, Ser. No. 339,305
5 Claims. (Cl. 2—236)



1. Trousers that can be used with or without a belt comprising in combination:
(a) a waistband section around the uppermost portion of said trousers,
(b) said waistband section being defined by at least two layers of material,
(c) said two layers of material being joined together along upper and lower circumferential lines that are vertically spaced apart,
(d) said two layers forming a space therebetween having a substantial vertical height,
(e) a plurality of openings located at spaced intervals adjacent said lower circumferential line which provides access from the exterior of said trousers into said space,
(f) a plurality of narrow elongated belt loops disposed around the top of said trousers,
(g) the inner end of each belt loop being attached to spaced apart points interior of said openings around the upper interior portion of said trousers,
(h) the outer end of each belt loop being loose and being movable from the interior side to the exterior side of the trousers,
(i) said outer end of each belt loop having sufficient length and rigidity so that it can be inserted through one of said openings into said space.

3,271,783
TROUSER AND BELT LOOP ARRANGEMENT
Charles R. Mallett, P.O. Box 483, Raceland, La., and Coy F. Glenn, P.O. Box 58, Amory, Miss.
Filed Mar. 30, 1964, Ser. No. 355,591
2 Claims. (Cl. 2—236)

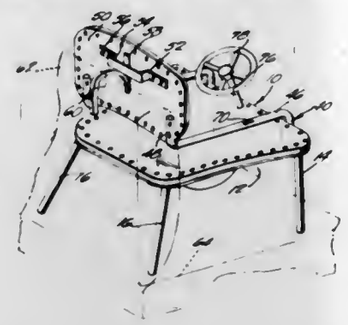


1. Trousers that can be used both with and without a belt comprising in combination:
(a) a waistband section secured to the uppermost portion of said trousers, said waistband section being defined by at least two layers of material,
(b) the lower circumferential portion of said waistband section being joined to the upper edge portion of the main body of the trouser material by stitching that is disposed along a generally circumferential seam line,
(c) the circumferential seam line holding the lower edge of the outermost layer of said waistband in place being interrupted at spaced apart intervals thus providing a plurality of exteriorly accessible openings,
(d) said openings being wide enough to accommodate a belt loop member,
(e) a plurality of removable belt loop members located at spaced intervals around said waistband section,
(f) said belt loop members being associated with the waistband section in a non-permanent manner so that each belt loop can be associated with and removed from said waistband section in a matter of seconds,
(g) each belt loop member comprising (1) a closed loop portion consisting solely of layers of textile material and (2) an elongated stiff portion attached to said closed loop portion,
(h) the elongated stiff portions of said belt loops extending inwardly and upwardly through said plurality of exteriorly accessible openings so that they remain positioned under the outer layer of cloth forming said waistband section,
(i) the closed loop portions of said belt loops extending upwardly from said exteriorly accessible openings on the outside of said waistband in a position generally parallel to said elongated stiff portions and separated therefrom by the outer layer of cloth forming said waistband.

3,271,784
CONVERTIBLE COMMODE CHAIR
Geneat Medley Harvey Peffley, Rte. 2, Covington, Ohio
Filed May 13, 1964, Ser. No. 367,014
1 Claim. (Cl. 4—134)

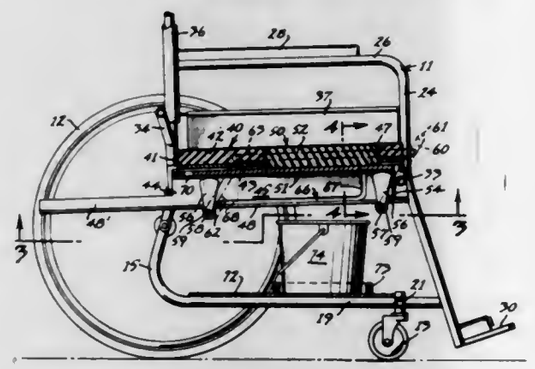
In a chair including a pair of front legs, a pair of rear legs, and a horizontally disposed seat panel having spaced parallel side edges, said panel extending over the adjacent ends of said front and rear legs, said seat panel having an opening centrally thereof, there being a recess extending about said opening and the upper face of said seat panel, a toilet seat seated in said recess, said toilet seat having an opening therethrough, means embodying a sheet of metal shaped to form a bowl receiving socket, said sheet depending from said seat panel and adapted to support an opened top toilet bowl below said opening, a seat and seat cover conformably shaped to said seat panel normally

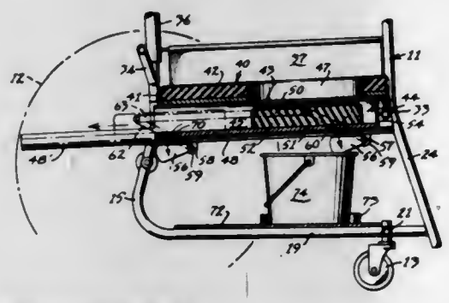
resting upon and hingedly engaged to swing upward of said seat panel and in covering relation wtih respect to said toilet seat and clippingly engaged to be secured to said seat panel, a horizontally disposed U-shaped support disposed adjacent each of said seat panel side edges, one leg of said support being secured to the underside of said panel and the free end portion of the other leg of said support extending vertically, a seat back secured to said



other leg free end portions, a strap member bent to have an offset midportion secured by the end portions thereof to one face of said seat back so that the offset portion with the adjacent portion of said seat back one face forms a slot, an inverted U-shaped hanger element adapted to be disposed in straddling relation with respect to the upper end portion of an automobile seat, and an upright bar connected to one leg of said element, said bar being insertable into and withdrawable from said slot.

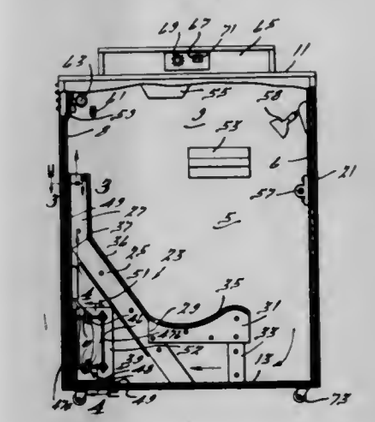
3,271,785
CONVERTIBLE WHEEL CHAIR AND COMMODE
Robert F. Du Bose, 611 Ronnie Road, Madison, Tenn.
Filed Dec. 30, 1964, Ser. No. 422,306
3 Claims. (Cl. 4—134)





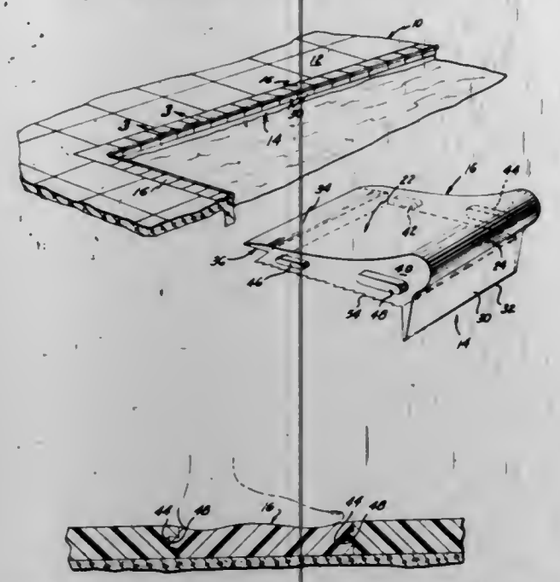
1. A chair comprising:
(a) a frame having a front and a rear,
(b) a primary seat member fixed in said frame,
(c) said primary seat member having an opening therethrough,
(d) a secondary seat member comprising a base and a plug mounted on said base,
(e) said plug being adapted to fill said opening flush with said primary seat member when said secondary seat member is in raised closed position,
(f) a pair of elongated runners mounted on said frame spaced beneath said primary seat member and on opposite sides of said opening for slidably supporting said base for longitudinal movement between a first lowered position within the vertical projection of and beneath said opening and a second lowered inoperative position behind and removed from said vertical projection, said plug being beneath said primary seat member in said first lowered position and during its longitudinal movement therefrom,
(g) cam means for engaging said base to vertically move said secondary seat member between said first lowered position and said raised position,
(h) first handle means operatively connected to said cam means and accessible to an occupant of said chair for operating said cam means,
(i) second handle means operatively fixed to said base for moving said secondary seat member longitudinally of said runners between said first lowered position and said second lowered position,
(j) a receptacle having an open top, and
(k) means mounted on said frame for supporting said receptacle in vertical alignment with said opening so that said top is beneath the plane of said runners.

3,271,786
PORTABLE SAUNA CABINET
William M. Joy, 1615 N. River Road, St. Clair, Mich.
Filed Feb. 7, 1964, Ser. No. 343,286
12 Claims. (Cl. 4—160)



1. A portable, self-contained heating cabinet for the therapeutic treatment of a human comprising:
a plurality of wall members defining an interior chamber within said cabinet assembly,
means for supporting a human within the interior chamber,
vertical means supported spaced from one of said walls and cooperating therewith to form a vertical chimney like chamber in pneumatic communication with said interior chamber, and
a heating chamber having electrical heating means contained therein for convection heating air in said heating chamber,
said heating chamber being positioned below said chimney like chamber and in pneumatic communication with both said interior chamber and said chimney like chamber,
establishing a flow of air from said interior chamber, through said heating chamber and through said chimney like chamber.

3,271,787
RESILIENT SWIMMING POOL COPING
Arthur L. Clary, 4 Lewis Drive, San Dimas, Calif.
Filed Apr. 6, 1964, Ser. No. 357,353
10 Claims. (Cl. 4—172)



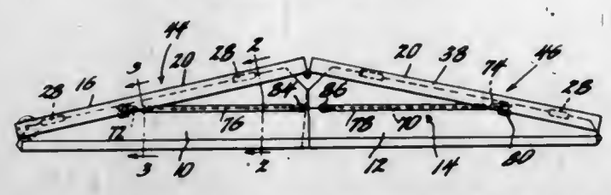
1. Coping for the edge of a swimming pool, said coping comprising a plurality of individual coping blocks formed of a resilient spongy material, said blocks being configured to provide coping along the edge of the pool, each of said blocks having an arcuate upper surface, a rounded front portion adjacent to the pool water and a rear portion tapering rearwardly, and means on the undersides of the respective coping blocks for securing the blocks to the decking structure of the pool edge.

3,271,788
TRACKLESS SWIMMING POOL COVER
Emil A. Bender, P.O. Box 52, Bakersfield, Calif.
Filed June 26, 1964, Ser. No. 378,120
8 Claims. (Cl. 4—172)



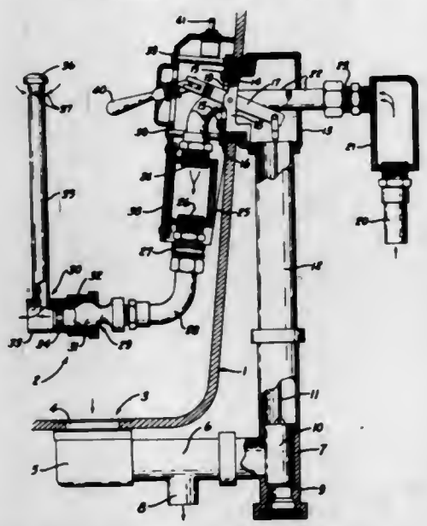
1. In a trackless swimming pool cover system having a series of hingedly connected panels, means on the supporting end of each of the panels, a panel carrier mounted on a wheel arrangement and having the transverse dimension thereof slightly greater than said length dimension of the pool, hook means on the end of said series of panels remote from the panel carrier when the series of panels are in covering position, latch means for being secured to the pool deck about the said pool and for receiving said hook means when it is desired to offload the panels from the carrier as well as for securing firmly an end of the series of panels in place when in their covering position, and a scoop assembly positioned on the forward edge of said carrier and having an inclined surface disposed to engage the panels and to remove the hook means from the latch means when said inclined surface of said scoop assembly makes an overpass of said latch means, said latch means including mounted thereon a roller disposed to rotate about a generally vertical axis; said panel carrier having a lateral edge disposed in a tapered relation for engaging said roller of said latch means for adjusting the alignment of the panel carrier to a corrected position as it engages said roller, and slide bar means to stop the panel carrier in a position adjacent the latch means.

3,271,789
SWIMMING POOL COVER
Emil A. Bender, P.O. Box 52, Bakersfield, Calif.
Filed June 26, 1964, Ser. No. 378,124
5 Claims. (Cl. 4—172)



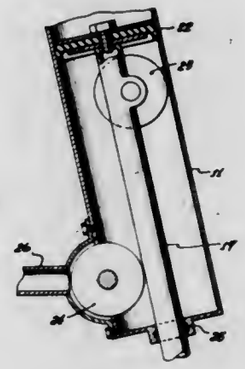
1. A swimming pool cover comprising a plurality of elongated panel members extending transversely of the pool and hingedly connected to each other in accordion-fold arrangement defining alternate hip and valleys when in an extended position, a pair of resilient cables with its ends connecting proximate ends of adjacent panel members, a pair of generally triangularly configured protective shields for each end of said hips and each protective shield of said pair having one side thereof in abutting engagement with the other of said pair, having another side hingedly engaging the ends of the panel members proximate to said resilient cables, and having the remaining side thereof for extending toward the ground for providing substantial contact therewith when the pool cover is in its extended position, a tubular member mounted on each of said protective shields for holding one of said cables in position adjacent said protective shields so that as the panel members are folded from their extended position, the protective shields fold upwardly against the underside of the panel members to allow the pool cover to conform to its closed position.

3,271,790
THERAPEUTIC BATH FLUID CIRCULATING APPARATUS
Richard C. Schneider, 804 NE. 15th Ave., Fort Lauderdale, Fla., and Douglas C. Steltz, 13385 Kenmar Court, Brookfield, Wis.
Continuation of application Ser. No. 307,636, Sept. 9, 1963. This application Aug. 3, 1965, Ser. No. 476,893
7 Claims. (Cl. 4—180)



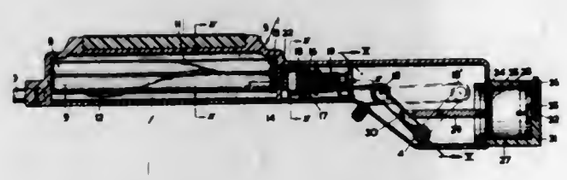
1. A hydrotherapeutic apparatus, a tub to contain water and having a waste drain opening in the bottom surface and having an opening spaced upwardly of said bottom surface, conduit means connected to the drain opening and communicating with the inlet of a pumping means for conducting water from the tub to said pumping means, a nozzle assembly located within the tank and including a discharge nozzle and having means for mixing air with the water being discharged by said discharge nozzle, and second conduit means providing communication between the outlet of said pumping means and said nozzle assembly, said second conduit means extending through said opening of the tub.

3,271,791
BATHTUB ELEVATING SEAT
Forest M. Sarff, Los Angeles County, Calif. (19109 Newhouse St., Saugus, Calif.)
Filed July 10, 1964, Ser. No. 381,849
2 Claims. (Cl. 4—185)



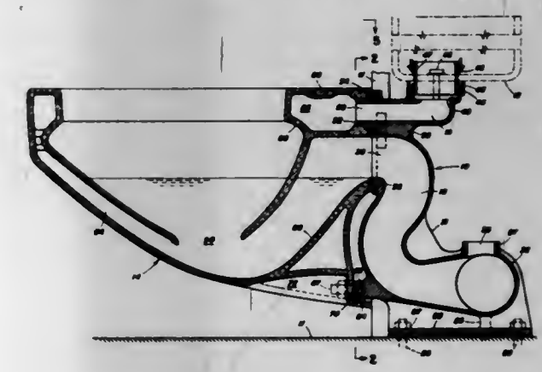
1. An elevating seat for a bathtub including: a pair of cylinders, means to securely hold said cylinders adjacent to said bathub, pistons within said cylinders, movable seals mounted on each piston to seal between each said piston and each said cylinder, piston rods attached at one end to said pistons and at the other end extending outwardly from said cylinders, a roller secured to each piston rod to movably hold said piston a desired distance from said cylinder, a roller secured to the lower inside end of each cylinder to movably hold said piston rod a desired distance from said cylinder, a seal mounted to seal between said cylinder and said piston rod, a seat movably attached to said other outside end of said piston rod, hydraulic power means to move said piston upwardly of said cylinders to raise said seat and means to connect said power means to a source of water and to control said power means.

3,271,792
SANITARY TOILET SEAT
Gerardus Marinus Tromp, 1132 Van Alkemadelaan, The Hague, Netherlands
Filed July 3, 1963, Ser. No. 292,706
7 Claims. (Cl. 4—247)



1. A toilet seat adapted to be pivoted about a substantially horizontal axis between a substantially vertical and a substantially horizontal position relative to a toilet bowl, said seat being formed with two hollow seat cushions, each housing a web of paper, a strip of which being adapted to be drawn over the seat cushion, clamped and cut off on the other side of the seat cushion by a mechanism comprising two rolls, at least one roll being adapted to be rotated by means of the swinging movement of the seat, through a coupling engaging in one rotational direction between the roll and a spindle driven by the swinging movement of the seat, by means of a flexible pull member, one end of which is secured to the body of the seat, the flexible pull member being guided successively over a first sheave having a fixed position relative to the bowl and a second sheave having a fixed position relative to the seat body, the other end of the flexible pull member wound about the spindle and secured thereto, one roll being provided with at least one rib extending substantially the length of the said one roll, the other roll being provided with a groove corresponding with the rib on the said one roll.

3,271,793
BATHROOM STRUCTURE AND FIXTURE
Gilbert McMurtrie and Robert William Nagel, Louisville, Ky., and Edward Walter Forth, New Canaan, Conn., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,571
2 Claims. (Cl. 4—252)

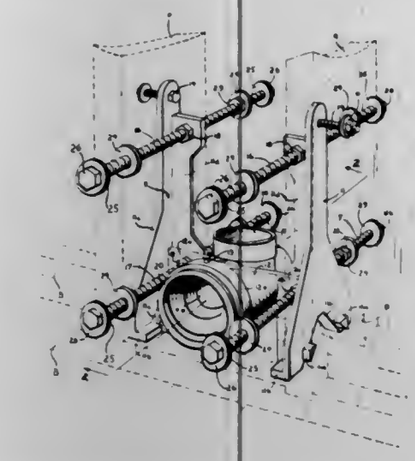


1. A water closet structure comprising a water closet bowl having a rear end substantially vertical mounting face, said bowl having an upper flushing water inlet opening through the mounting face and a water outlet below said inlet also opening through the mounting face, a carrier bodily supporting said closet bowl close to floor level and having a bottom horizontal mounting plate for rigid attachment to a floor, said carrier being generally upstanding and having an upwardly facing top flange adjacent the top of said bowl for the mounting and support of a flush tank, a generally vertical forward face on said carrier adapted to abut with said rear end mounting face of the bowl, bolt means detachably rigidly interconnecting said bowl and carrier with said faces in abutting relation, said carrier having a substantially horizontal flushing water inlet passage leading from said top flange in direct communication with said upper inlet of the bowl, said carrier having a serpentine syphoning leg immediately rearwardly of the bowl including a top forwardly facing opening in direct communication with said bowl outlet, and a lower end horizontal generally T-shaped discharge head on said carrier including a horizontal transverse sleeve connected at its forward side and near its midpoint with the bottom of the syphoning leg, either end of said sleeve adapted for connection with a soil pipe while the opposite end is suitably closed, said T-shaped head being immediately above the mounting plate of the carrier and adjacent the bottom of the bowl.

3,271,794
PLUMBING FIXTURE CARRIER

George J. Flegel, Michigan City, Roger L. Mielbeck, La Porte, and Richard D. Dirks, Michigan City, Ind., assignors to Josam Manufacturing Co., Michigan City, Ind., a corporation of Delaware

Filed Jan. 13, 1964, Ser. No. 337,337
13 Claims. (Cl. 4—252)



1. In a carrier structure for support of a plumbing fixture of the wall-hung type and having a discharge connection to a drainage line within a building wall,

a pair of spaced carrier upright members entirely within the wall structure secured to respective spaced vertical parallel surfaces within and supported on horizontally spaced portions within the wall structure;

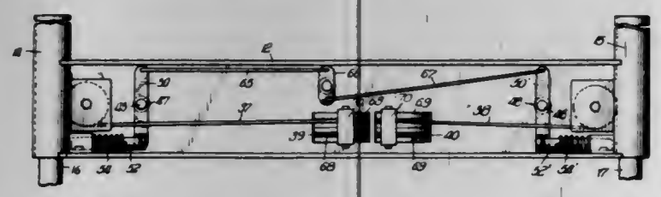
each upright comprising as an integral structure a vertically extended portion adapted to be secured against a corresponding said vertical surface of the wall structure and having a lower portion widening out to provide at the bottom a widened base for support on horizontal structure within the wall structure, said extended portion having a bolt hole through an upper part thereof for an anchor bolt securing the same to a respective said vertical surface and also having a pair of horizontally spaced lugs projecting from said lower portion outwardly into the wall structure at said respective vertical surface, a second vertically extending portion projecting perpendicularly from the first and having therethrough a vertically spaced pair of apertures;

and fixture mounting stud bolts received in and secured to the uprights at respective said apertures.

3,271,795
HI-LOW FRAME FOR HOSPITAL BED

William A. Hillenbrand, Franklin Township, Francis J. Burst and William D. Drew, Batesville, Ind., assignors to Hill-Rom Company, Inc., Batesville, Ind., a corporation of Indiana

Original application June 15, 1964, Ser. No. 374,974. Divided and this application June 10, 1965, Ser. No. 462,803
7 Claims. (Cl. 5—63)



1. A hospital bed comprising:

(a) a rectangular frame including cross members at the head and foot ends of the frame;

(b) a post fixed on each end of each cross members;

(c) a leg telescoped into each post for supporting the bed upon a floor;

(d) a spring frame supported above said frame and normally disposed parallel thereto;

(e) power means for raising and lowering said posts and frame upon said legs;

(f) a plunger journaled in each post at one end of the frame;

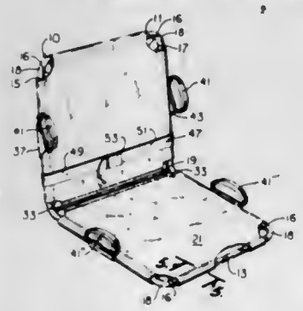
(g) manual means for moving said plungers into slots in the associated legs that are aligned with the plungers when the posts are in elevated positions on the legs;

(h) and means for holding said plungers engaged in the slots while said power means lowers the other end of the frame to move the spring frame downwardly from horizontal into a downwardly inclined position.

3,271,796
STRETCHER CHAIR

Avis M. Dillman, 911 W. 3rd, Indianola, Iowa

Filed June 22, 1964, Ser. No. 376,702
7 Claims. (Cl. 5—82)



1. In a chair for carrying a person in a sitting position,

a frame having elongated spaced apart side members and spaced apart end members extending therebetween,

a cross brace secured to and extending between said side members along their length parallel to said end members,

said frame having each of its side members bent adjacent the juncture of said side members with said cross brace to form a substantially U-shaped horizontal frame member and a substantially U-shaped inclined frame member extending upwardly therefrom,

a substantially rectangular cover on said frame having a seat portion with top and bottom surfaces mounted on said horizontal frame members and having a back portion with front and back surfaces mounted on said inclined frame member,

a first strap secured to the bottom surface of said seat portion adjacent one side thereof extending diagonally thereacross and thence diagonally upwardly of said back portion; said first strap having its upper end extending outwardly of one of said side members at a point between said cross brace and one of said end members,

a second strap secured to the bottom surface of said seat portion adjacent the other side thereof extending diagonally thereacross and thence diagonally upwardly across the back surface of said back portion; said second strap having its upper end extending outwardly of the other side member at a point between said cross brace and said one of said end members,

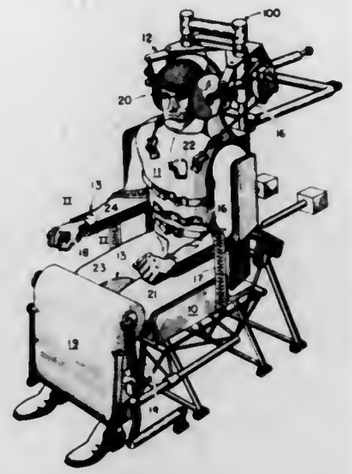
a third strap secured to and extending across the bottom surface of said seat portion between said cross brace and the other end member and parallel thereto; said third strap having each of its ends extending outwardly of said side members,

and a handle means secured to the upper ends of each of said first and second straps and to each of the ends of said third strap.

3,271,797
IMPACT PROTECTIVE DEVICE

William C. Boyce, Dallas, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware

Filed Dec. 6, 1962, Ser. No. 242,824
7 Claims. (Cl. 5—348)



1. A pad comprising:

an open-celled, foamed, flexible, plastic body having first and second faces connected by edge surfaces;

a rigid, fluid-impervious backing covering and bonded to substantially all the area of the foamed body first face;

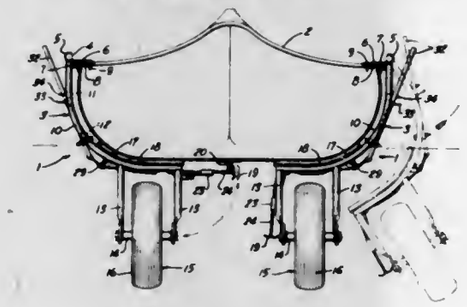
a pliable, fluid-impervious skin covering and bonded to substantially all the area of the foamed body second face and edge surfaces and sealingly attached to the fluid-impervious material to form therewith a fluid-impervious enclosure containing the foamed body;

and a liquid filling the foamed body.

3,271,798
DEVICE FOR LAUNCHING, LANDING AND PORTAGING A BOAT

Max A. Zoretic, P.O. Box 23, Ely, Minn.

Filed Aug. 6, 1964, Ser. No. 387,948
8 Claims. (Cl. 9—1)

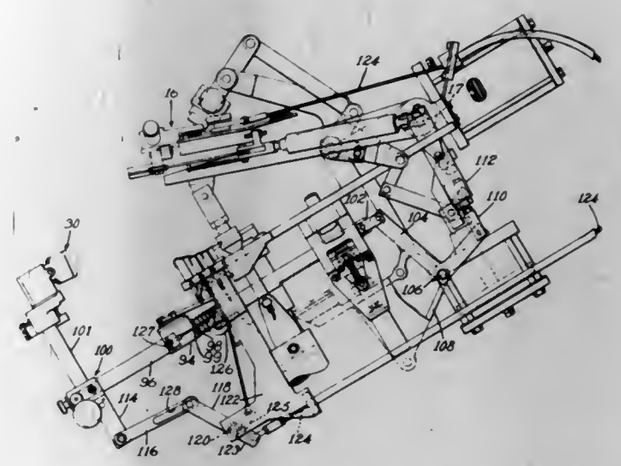


1. In combination with a boat having a keel strip disposed adjacent the longitudinal centerline of the hull, a wheel assembly to be attached to the boat to aid in launching, landing and transporting the boat, said wheel assembly comprising a supporting frame pivotally attached to and extending downwardly from the gunwale of the boat along the hull and the lower end of said supporting frame extending inwardly beneath the hull toward the longitudinal centerline of the hull, wheel means carried by the lower end of the supporting frame and located in a vertical plane between a vertical plane passing through said centerline and the vertical plane passing through said gunwale, and locking means extending laterally from the wheel means toward said centerline and disposed to engage the keel strip on said boat.

3,271,799
ADHESIVE ACTIVATOR FOR SHOE LASTING MACHINES

Arthur R. Hubbard, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed June 9, 1965, Ser. No. 462,602
14 Claims. (Cl. 12—12)



1. In a shoe lasting machine having wipers arranged to wipe the margin of an upper on a last inwardly over the bottom of an insole coated with heat activatable adhesive for securing the upper margin to the insole bottom at the ball region of a shoe,

a support for the shoe including a member engagable with the forepart of the insole, and

means for heat activating the adhesive at marginal portions of the insole bottom at opposite sides of the ball region comprising,

substantially continuous heated surfaces arranged to engage said marginal portions at opposite sides widthwise of the insole, said surfaces each being formed by flexible plates having overlapping ends and disposed to conform substantially to the lengthwise contour of the ball region of the insole bottom,

and means carrying each of said plates for movement lengthwise of the shoe into greater or lesser overlapping relationship and relative to the toe end of the ball region for extending and shortening said surfaces according to the size of said shoe.

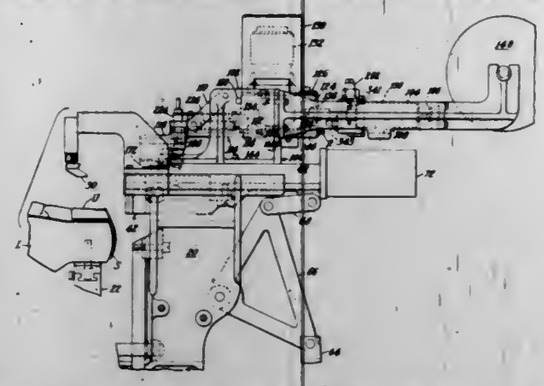
3,271,800
SHOE MACHINES

Jules N. Allard, Tyngsboro, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed May 25, 1965, Ser. No. 458,616
15 Claims. (Cl. 12—12.5)

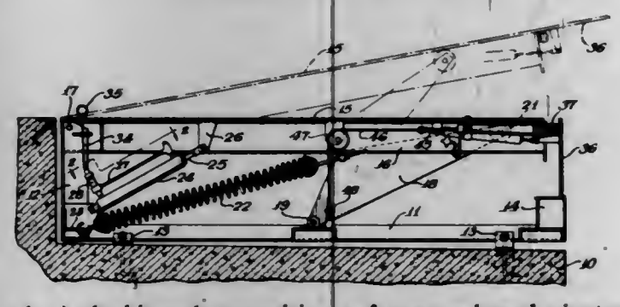
13. In a shoe machine having means for supporting a shoe comprising a last with an insole and upper materials assembled thereon, in an inclined position with its toe end lowermost, a molding band, wipers and power operated mechanism for actuating said band and wipers, means for applying adhesive to the heel end of an insole of a shoe on the supporting means, said means comprising a U-shaped nozzle having an operating surface formed with a U-shaped groove, said nozzle being disposed with its operating surfaces substantially parallel to, and being movable into contact with, the heel end of the insole of a shoe on the supporting means with the ends of its groove lower-

most, means for extruding adhesive into the groove and thence onto the heel end of the insole of the shoe while the nozzle is in contact therewith, and means associated



with each end of the groove in the nozzle for collecting and retaining adhesive not withdrawn from the groove and applied to the insole.

3,271,801
DOCKBOARD
Donald P. Dieter, Chicago, and Harris P. Moyer, Deerfield, Ill., assignors to Unarco Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 3, 1963, Ser. No. 327,755
5 Claims. (Cl. 14—71)



1. A dockboard comprising a frame, a board pivoted at one end on a horizontal axis to the frame, resilient means urging the other end of the board upwardly, a lip pivoted to the other end of the board to move from a dependent position to a raised position forming an extension of the board, a first extensible hydraulic unit connecting the lip and the board to raise the lip when the unit is extended, a second hydraulic unit including relatively movable parts, a fluid connection from the first hydraulic unit to the second hydraulic unit, means connecting the parts of the second hydraulic unit respectively to the board and the frame so that the second hydraulic unit will be operated by raising of the board to force fluid from the second unit through the fluid connection into the first unit to extend it, a check valve in the fluid connection opening toward the first unit, and manual means to open the check valve to permit flow of fluid from the first unit to the second unit.

3,271,802
GOLF BALL WASHER
Woodrow F. Thompson, Highway 80 W., Forest, Miss.
Filed July 30, 1965, Ser. No. 475,967
13 Claims. (Cl. 15—21)

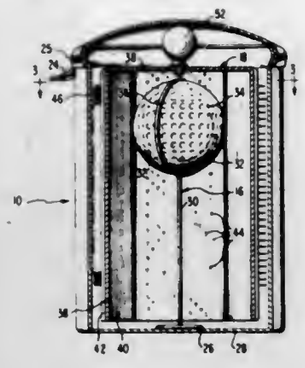
1. A portable golf equipment cleaning unit comprising:

(a) a casing having an inner surface;

(b) a golf ball holding means disposed in said casing at approximately the center thereof, and adapted to loosely hold a golf ball;

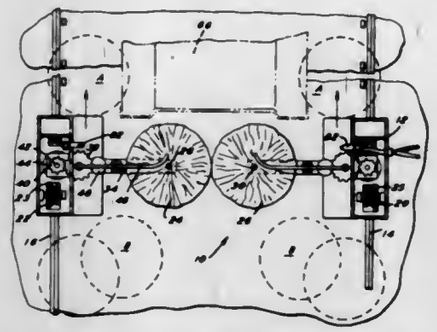
(c) means for holding a plurality of golf ball cleaning bristles disposed in said casing around said golf ball holding implement;

(d) means allowing relative reciprocating movement between said golf ball cleaning bristle holding means and said golf ball holding means, whereby said bristles will clean a golf ball held in said holding implement; and



(e) a plurality of auxiliary cleaning bristles secured to one of said relatively reciprocable means for cleaning golf shoes, golf clubs, golf bags or other golfing equipment.

3,271,803
VEHICLE WASHING APPARATUS
John F. Cirino, Churchville, and Charles Brenner, Overbrook Hills, Pa., assignors to Universal Robot Inc., Bala Cynwyd, Pa., a corporation of Pennsylvania
Filed Oct. 11, 1965, Ser. No. 494,452
7 Claims. (Cl. 15—21)



7. Apparatus for washing a vehicle comprising a reciprocatory substantially U-shaped housing, a pair of arms mounted on each of the legs of said U-shaped housing for oscillation about a vertical axis, a rotatable brush mounted on each of said pairs of arms for rotation about a vertical axis, means biasing said pairs of arms toward each other so that said rotatable brushes are in engagement with a vehicle, motor means for oscillating said arms to a position wherein said brushes are out of engagement with the vehicle, and position responsive means carried by said housing for actuating said motor means.

3,271,804
SPONGE MOP AND WRINGER
Raymond C. Tillinghast, Memphis, Tenn., assignor to Gem, Incorporated, Byhalia, Miss., a corporation of Mississippi
Filed Apr. 26, 1965, Ser. No. 450,646
2 Claims. (Cl. 15—119)

2. In a mop, a pair of plates hingedly connected together, a spring member operatively connected to said plates for urging said plates into coplanar position, sponges affixed to said plates, a curved connector secured to one of said plates, a shaft connected to said connector, a bracket

connected to the other of said plates, a lever pivotally connected to said bracket and said lever having an inclined cam surface, a manually movable slide slidably mounted on said shaft, a pin connected to said slide for selective



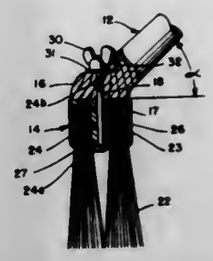
engagement with said lever cam surface, said lever having a rounded shouldered end portion, and said shaft having an indented recess portion for selectively receiving said shouldered portion.

3,271,805
TOOTHBRUSH HAVING A REMOVABLE BRUSH HEAD
Leslie F. Sawyer, Winter Park, Fla., assignor to Colonial Silver Company, Inc., Orlando, Fla., a corporation of Florida
Filed Apr. 24, 1964, Ser. No. 362,273
4 Claims. (Cl. 15—176)



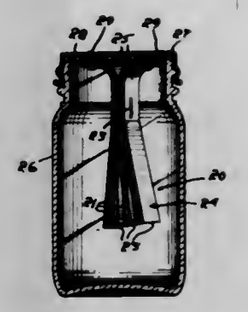
1. A toothbrush comprising a hollow handle, a brush head holding device fixed to one end of the handle, said brush head holding device having an end wall fixed to said one end of the handle, a base plate extending axially forwardly of the handle from one edge of the end wall, a flange at the outer end of the base plate having a rearwardly extending projection thereon, and a tongue extending forwardly from the end wall generally parallel to the base plate and having a fixed end portion extending rearwardly through an opening in said end wall and into the handle, the tongue being secured to portions of said end wall surrounding its opening for fixing the tongue against axial movement and for sealing the handle to prevent bacterial growth therein, and a separate brush head comprising a base seated on the base plate and having a longitudinally extending socket receiving the tongue, the base having one end engaging the end wall of the holding device and its opposite end being recessed to receive the projection on the flange, said base plate of the holding device being flexible for bending the base plate away from the tongue to permit the brush head to be inserted into and removed from the holding device.

3,271,806
BRUSH
Heinz Helmken, 2921 S. 12th Ave., Broadview, Ill.
Filed May 27, 1964, Ser. No. 370,434
1 Claim. (Cl. 15—176)



A brush comprising an elongated handle having a head-engaging planar circular surface at one end angularly disposed to the longitudinal axis of said handle and provided with a concentric through aperture normal to said surface; and a brush-head including a cylindrical metal sleeve open at both ends, a plurality of bristles extending axially out one end of said sleeve, a screw extending concentrically through said sleeve and extending axially out the other end of said sleeve, potting material filling said sleeve securing said bristles and imbedding a portion of said screw, said screw extending through said aperture in said handle, and nut means on said screw securing said brush-head to said handle at an angle to the longitudinal axis thereof.

3,271,807
DEVICES FOR USE IN APPLYING SURFACE TREATING LIQUIDS
Samuel Cabot, Boston, Mass.
(241 Perkins St., Jamaica Plain 30, Mass.)
Filed Apr. 1, 1963, Ser. No. 269,615
1 Claim. (Cl. 15—223)

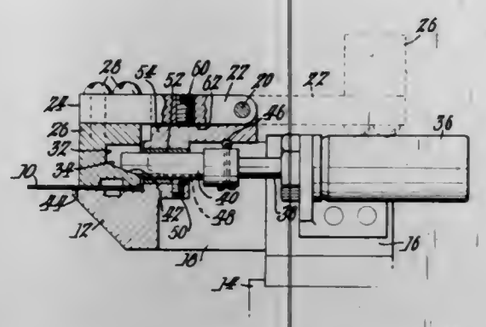


A device for applying a surface treating material, such as paints, varnishes, and the like, said device comprising a plurality of flexible paper sheets, each having a surface-engaging end in the form of a torn edge, means interconnecting said sheets in mutually reinforcing relationship with their surface-engaging ends lined up, one behind another, said means interconnecting said sheets above said ends to form a capillary surface between adjacent free end portions of said sheets.

3,271,808
POWER OPERATED DOCTOR BLADE HOLDER
Roger E. Bedard, Auburn, Mass., assignor to Lodding Engineering Corporation, Auburn, Mass., a corporation of Massachusetts
Filed June 8, 1964, Ser. No. 373,377
11 Claims. (Cl. 15—256.5)

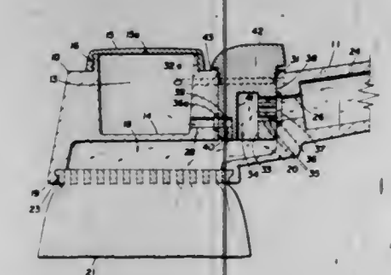
1. A doctor blade holder for a doctor blade comprising an elongated bar, means supporting the bar, a supporting surface on the bar against which the doctor blade is to be clamped, a member to cooperate with said supporting surface for clamping the doctor blade between the member and the surface, said member being movable to and

from said clamping surface, means for moving the member from a blade-release position to a blade-clamping position, said means including a fluid-operated cylinder, a rod actuated thereby, cooperating cam means between the rod



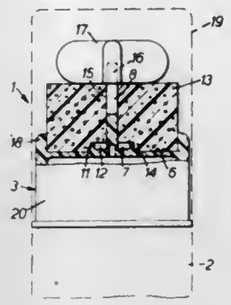
and the member operative to urge the member to blade-holding position upon motion of the rod under influence of the fluid-operated cylinder, said rod having a retracted, inoperative position completely free of the member.

3,271,809
FOUNTAIN BRUSH WITH A SOAP RESERVOIR AND VALVE
Janusz Morawski, Toronto, Ontario, Canada, assignor to Ernest Vincent Matura, barrister-at-law, in trust
Filed Mar. 23, 1964, Ser. No. 354,061
14 Claims. (Cl. 15—526)



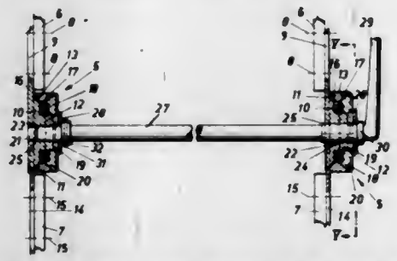
1. A fountain brush device for use in washing with water and with mixtures of soap and water and comprising: a body portion defining a soap well therewithin and including a skirt with a brush secured therebelow to define a mixing compartment, said brush defining egress from said compartment; a handle secured to said body to define a first conduit along the length thereof said first conduit being in communication with a valve recess defined by said handle by means of a first passageway of reduced cross-section, said valve recess communicating with said mixing compartment and said body defining a second passageway to provide communication from said well to said valve recess; a valve member rotatably located within said valve recess to project thereabove; an interior wall within said valve member to define a cavity therewithin in communication with said mixing compartment, said valve member defining a plurality of comparatively small diameter holes to register with said passageway in said handle to provide communication between said first conduit and said cavity upon said valve member being rotated; and, a portion of said valve member defining a second conduit in communication with said compartment to register with said second passageway, said second conduit being spaced circumferentially from said plurality of holes an amount less than 180 degrees, whereby upon said second conduit being in registration with said second passageway and said soap thereby passing through, said first passageway will be in partial registration with said plurality of holes, thereby to reduce flow of water therethrough.

3,271,810
DISPENSERS FOR LIQUID, POWDER OR THE LIKE MATERIALS
Joseph Peter Raffe, London, England, assignor to Reckitt & Colman (Overseas) Limited, Yorkshire, England, a British company
Filed July 6, 1964, Ser. No. 380,227
Claims priority, application Great Britain, July 4, 1963, 26,626/63
12 Claims. (Cl. 15—539)



1. A dispenser head comprising a closure element for a container of flowable material, a rod member integral with said closure element and upstanding therefrom to project outwardly of the container, a sealed dispensing hole extending through said closure element and part way into said rod member, a thin-walled region of weakness defined in said rod member by said hole which enables said rod member to be readily broken off from said closure element to unseal said hole, a sponge-form applicator secured on said closure element to apply the material and through which said rod passes completely, and an end of said rod thus projecting from said applicator whereby the said rod can be broken off and withdrawn.

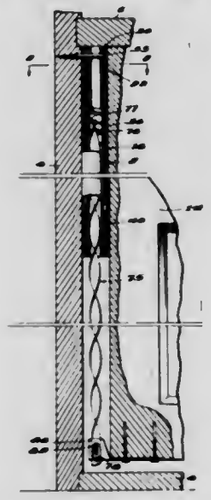
3,271,811
HINGE CONNECTION BETWEEN THE BACK AND THE SEAT OF A CHAIR AND SIMILAR ARTICLES OF FURNITURE
Stig Axel Rune Flodell, Vastra Frolunda, Sweden, assignor to Karl Anders Davidson, Orkelljunga, Sweden
Filed Jan. 30, 1964, Ser. No. 341,261
Claims priority, application Sweden, Feb. 5, 1963, 1,226/63; Jan. 23, 1964, 818/64
7 Claims. (Cl. 16—140)



1. In a hinge connection between the back portion and the seat portion of a chair or a similar article of furniture, in particular the front seat of a car, bearing supports each having a conical surface and an arm connected to said seat portion, a bearing housing rotational in relation to said bearing support and having an arm connected to said back portion of said article of furniture, and a bearing washer with a conical surface, said bearing housing further provided with two conical surfaces turned from each other, said bearing support having its conical surface resting against one of said conical surfaces of said bearing housing, the other conical surface of said bearing housing resting against the conical surface of the bearing washer, said bearing washer having a central aperture with a non-circular cross section fitting a central stud shaped in a corresponding way on said bearing support,

said hinge connection further comprising a lever on a screw capable of pressing said bearing washer, said bearing housing and said bearing support axially against each other with their conical surfaces contacting each other, a helical spring attached with one end to said stud, the other end of said spring attached to the said bearing housing, said spring adapted to fold said back portion in forward direction.

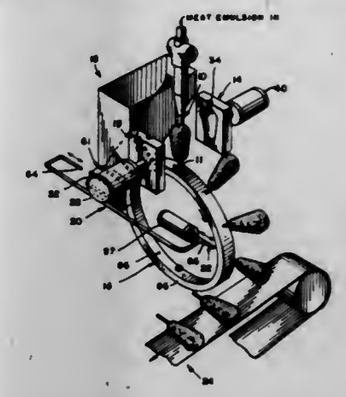
3,271,812
WINDOW SASH BALANCES
Phil Skolnik, 13131 Almeda Road, P.O. Box 45558, Houston, Tex.
Filed Mar. 13, 1964, Ser. No. 351,639
10 Claims. (Cl. 16—197)



1. A sash balance for use with a window sash, said balance comprising an elongated casing having a longitudinal axis and including aperture means in one end thereof, said aperture means having an axis transverse to said longitudinal axis, a coil spring one end of which is fixed in another end of said casing, spring anchor means fixed to another end of said spring, a spiral rod, means operatively associating said spiral rod with said spring anchor means so that longitudinal movement of said rod relative to said spring anchor means causes rotary movement of said spring anchor means, and bearing means in said aperture means transverse to said longitudinal axis of said casing, said bearing means longitudinally restraining but rotatably mounting said spring anchor means.

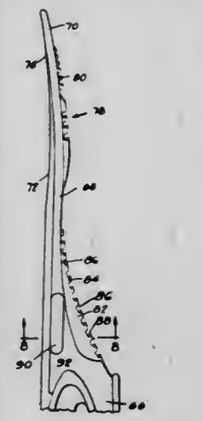
3,271,813
DEVICE FOR MOLDING MEAT PRODUCTS
Louis E. Gernandt and William J. Oestreich, Eau Claire, Wis., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,364
4 Claims. (Cl. 17—1)

1. An apparatus for molding soft plastic materials such as ground meat about a stick handle, comprising a frame, a wheel mounted for rotation in relation to said frame, means for driving said wheel to rotate intermittently to three stations and for locking said wheel firmly against movement in each station, said wheel being provided with apertures spaced equally around and extending through the wheel, said aperture being of substantially the same diameter as said stick handles to permit a tight gripping of said sticks, means at the first of said stations for forcing one end of a stick handle snugly into each of said apertures, two mold halves at the second of said stations located transversely of and adjacent the plane of said wheel, nozzle means at said second station located between and extending into said mold halves when together for dispensing a metered amount of soft plastic material into said mold halves around said stick, each of said mold halves comprising a mold base including a mold cavity communicating with a first channel for receiving the end of said nozzle means, and with a second channel for receiving the other end of said stick handle, a flexible resilient diaphragm covering the entire



mold face, and means for holding said diaphragm tautly over said mold face, means for moving said mold halves together around said stick and said nozzle means at the second station and for moving the mold halves apart, and means at the third of said stations for ejecting said stick from said apertures.

3,271,814
INSTRUMENT FOR DEVEINING AND SHELLING SHRIMP
Thomas S. Gorton, Jr., Cambridge, Mass., assignor to Riverside Inc., Boston, Mass., a corporation of Massachusetts
Original application May 18, 1961, Ser. No. 110,955, now Patent No. 3,178,765, dated Apr. 20, 1965. Divided and this application Nov. 17, 1964, Ser. No. 411,884
15 Claims. (Cl. 17—7)



6. An instrument for deveining and removing the shell from shrimp having a handle portion and an operating tool portion, the forward portion of the tool portion being slightly arcuate in shape and concaved downwardly and the remaining portion of the tool portion being straight, said tool portion having an upper cutting surface extending forwardly from the handle portion.

3,271,815
POULTRY HEAD REMOVER
Eldon Ray Hooley, P.O. Box 246, Creswell, Oreg.
Filed July 10, 1964, Ser. No. 381,795
1 Claim. (Cl. 17—12)

In a poultry processing machine for severing the head of a bird from its neck at the base of the skull while the neck is in longitudinal tension as the bird is advanced

along a rectilinear path of travel suspended from a conveyor, the improvement comprising:

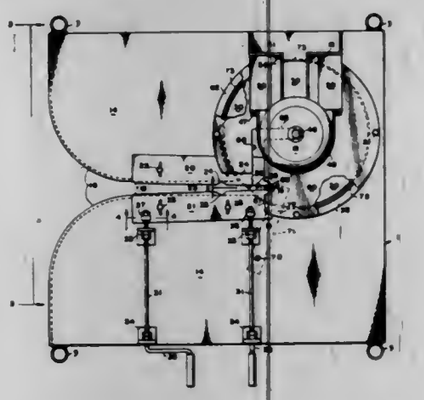
a horizontally disposed table top having a forward end and rearward end,

a horizontally disposed power driven cutting knife rotatably mounted relative to the table top and having a cutting edge on the same horizontal plane as the table top,

said table top having a slot extending from its forward end toward its rearward end,

a pair of opposing flat plates mounted upon the table top in angular spaced relation to each other to provide a passageway converging toward the rearward end of the table top with the rearward end of the plates terminating in overlapping relation to said cutting knife with minimal clearance therebetween,

the opposing edges of said plates being smooth surfaced throughout their length having a pair of opposing notches intermediate their ends and thereat dividing said converging passageway into a first zone and second zone,



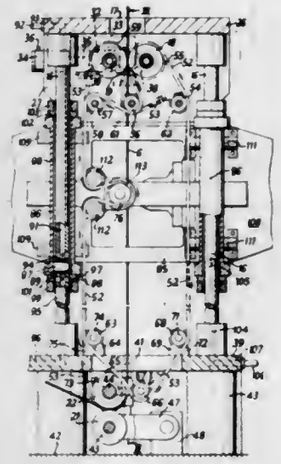
whereby the neck of a bird being dealt with will be put in gradually increasing tension as it is drawn uninterruptedly through the convergence of said first zone upwardly toward and into sliding contact with the underside of said plates until the skull reaches said notches where the neck tension is momentarily released to position the skull for firm sliding engagement with the underside of the plates with the neck in greater tension in being drawn through said second zone and into the cutting knife, and whereby decapitation will occur precisely at the base of the skull,

a guard for the cutting knife superimposed upon said table top and having a notch therein superjacent the converged ends of said plates to resist movement of the neck out of said converged ends of the plates, and

a stabilizing plate for said cutting knife secured to the underside of said table top with one end thereof in underlying contact with the cutting knife whereby to prevent dragging of any residual skull, neck or flesh particles between the cutting knife and the table top beyond said converging ends of said plates.

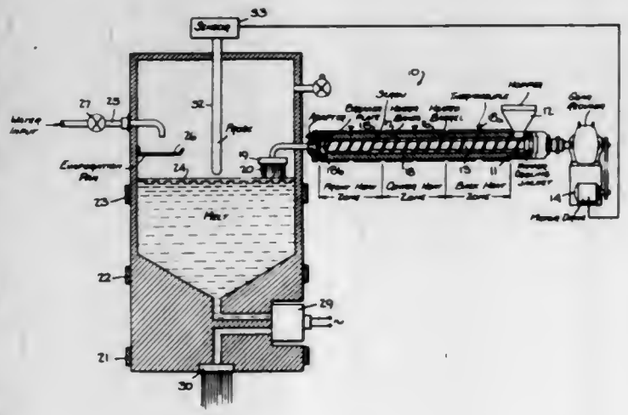
3,271,816
APPARATUS FOR MOULDING ARTICLES FROM PLASTIC MATERIALS
Jack M. Schneider, Kingswood, England, assignor to Calmec (Manufacturing) Limited
Filed Apr. 16, 1965, Ser. No. 448,759
Claims priority, application Great Britain, Apr. 22, 1964, 16,731/64; Oct. 21, 1964, 42,903/64
21 Claims. (Cl. 18—4)

1. Apparatus for moulding articles from thermoplastic material comprising an elongated supporting structure which, when disposed close to the outlet of an extrusion apparatus, provides a path along which material emerging from said outlet can be driven, means for driving material emerging from said outlet along the said path, said driving means including means which are adapted to engage material emerging from said outlet and to draw material into said path at a rate which is adjusted relative to the rate of supply of material from said extrusion apparatus so that material of predetermined thickness is supplied to said path, tool means reciprocably mounted on said supporting structure, means for causing said tool means to engage a section of heated material close to said outlet, means for advancing said engaged tool



means along said path in a direction away from said outlet, said tool means effecting a forming operation on the material while in engagement therewith, means coupling said tool advancing means to said material driving means so that said tool means is advanced at a rate substantially equal to the rate of travel of material along said path, means for releasing said tool means from said section of material after travel through a predetermined distance, whereby said section of material retains its formed shape, and means for rapidly returning said tool means along said path to its initial position for engagement with a succeeding section of material.

3,271,817
NYLON MELT-SPINNING APPARATUS
Maurice S. Kanbar, 105 E. 15th St., New York, N.Y.
Filed May 27, 1963, Ser. No. 283,236
6 Claims. (Cl. 18—8)



1. Apparatus for spinning polyamides, comprising:

(a) a melt extruder having a predetermined maximum capacity and including variable speed means to operate said extruder in a range extending from a minimum rate to a rate in accordance with said predetermined maximum capacity, an input and an output,

(b) means to feed polyamide flake into the input of said extruder,

(c) means to heat the flake within said extruder to a temperature level sufficient to melt same whereby said polyamide emerges from the output of said extruder in molten form,

(d) a steam treatment chamber,

(e) means coupling the output of said extruder to said chamber to introduce a stream of molten polyamide therein which collects as a melt pool,

(f) means to feed water into said chamber above said pool,

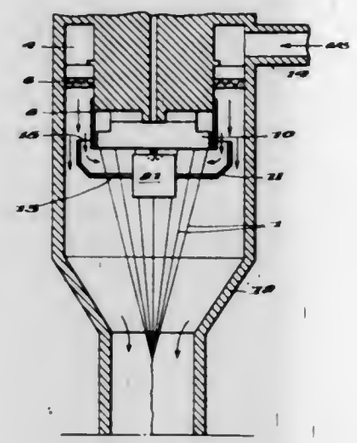
(g) means to apply heat to said chamber at a temperature level maintaining the molten condition of said pool and vaporizing said water to form steam subjecting said pool to steam pressure,

(h) means to regulate said steam pressure in said chamber to maintain a predetermined steam pressure level therein,

(i) a spinneret, and

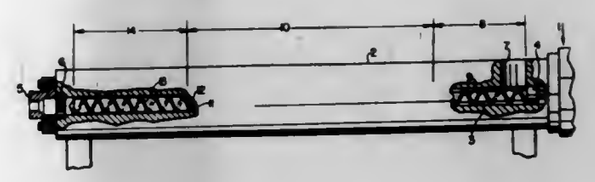
(j) a metering pump intercoupling said chamber with said spinneret to pass said molten polyamide therethrough to form polyamide filaments, said pump being operable at different rates, the highest of which removes less of said molten polyamide from said chamber than said melt extruder is capable of introducing therein at its maximum capacity.

3,271,818
QUENCHING APPARATUS
James Clarence Bryan, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 17, 1965, Ser. No. 440,532
3 Claims. (Cl. 18—8)



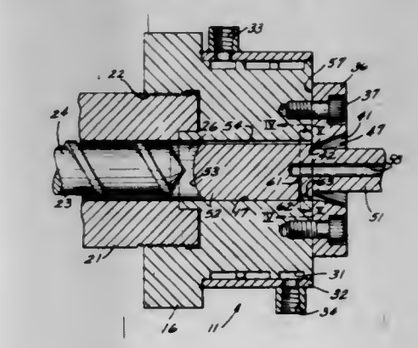
1. In an apparatus for the dry spinning of filaments comprising a spinneret assembly having a plurality of filament-producing orifices arranged in a generally circular pattern, wall means encircling said spinneret assembly and positioned coaxially thereof to define a spinning cell, said wall means being spaced from said spinneret assembly in the region thereof to define an annular passageway for providing a cocurrent stream of heated gas to the spinning cell to evaporate solvent from extruded filaments; the improvement comprising the combination of (a) an obstruction positioned at the center of said circular pattern of orifices to restrict the cross-sectional area of the spinning cell for a substantial distance along the path of filament travel, and (b) a gas-deflecting band positioned internally and coaxially of said wall means and spaced therefrom to divide the flow of gas in said annular passageway, said band having an inwardly flared lip to direct a portion of said gas to the filaments immediately upon their extrusion from the orifices.

3,271,819
EXTRUDER
Frederick K. Lacher, Akron, Ohio, assignor to NRM Corporation, a corporation of Ohio
Filed Feb. 26, 1962, Ser. No. 175,754
3 Claims. (Cl. 18—12)



1. An extruder comprising a cylinder having an inlet for introduction of plastic and like material; a feed screw rotatable in said cylinder having a helical flight effective, upon rotation of said feed screw, to advance material through said cylinder for plasticizing during the course of its flow; said feed screw having successive feed, transition, and metering sections in the direction of advance of the material; said flight, in said feed and transition sections, defining a first helical channel through which material is advanced from said feed section into said transition section and, in said transition and metering sections, defining a second helical channel through which material is advanced from said transition section through said metering section; said channels having restricted communication with each other in said transition section for buildup of pressure in said first channel and for flow of refined material from said first channel into said second channel; said first channel being of progressively decreasing axial width and progressively decreasing radial depth in said transition section; and said second channel being of progressively increasing axial width and progressively decreasing radial depth in said transition section.

3,271,820
PELLETIZER WITH STEAM EJECTION OF PELLETS
James W. Hendry, Scottsburg, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 6, 1964, Ser. No. 387,833
9 Claims. (Cl. 18—12)



1. In a mechanism for making pellets of plasticizable material, the combination comprising:

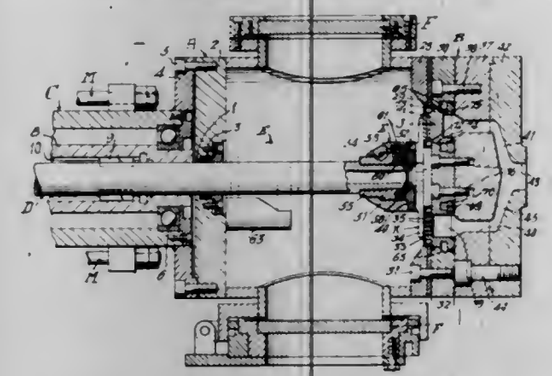
a chamber and feed means for forcing material through said chamber toward one end thereof;

die means at said one end of said chamber having an opening therein for receiving material thereinto from said chamber;

rotatable means independent of said feed means for interrupting the flow of material into said opening; and

ejection means including means forming a passage and rotatable with said rotatable means to register an end of said passage with said opening for ejecting previously received material from said opening, and means for directing a pressure fluid into said passage and toward said opening.

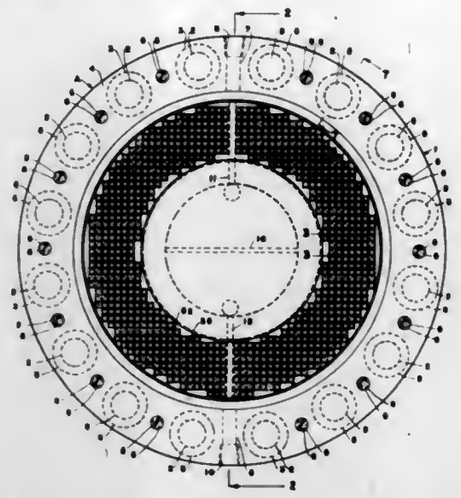
3,271,821
UNDERWATER PELLETIZER
Louis F. Street, Hampton, N.J., assignor to Frank W. Egan & Company, Somerville, N.J., a corporation of New Jersey
Filed July 24, 1964, Ser. No. 384,881
7 Claims. (Cl. 18—12)



1. Apparatus for pelletizing thermoplastic materials comprising a housing, an extrusion die in said housing having a flat face through which extends a plurality of extruding orifices, a drive shaft journaled in said housing with its axis of rotation perpendicular to the face of said die, a cutter head adapter on said shaft and a cutter head having a universal connection to the end of said cutter head adapter rotatable therewith and tiltable thereon and movable relative to said cutter head adapter longitudinally thereof, a plurality of cutting blades mounted on said cutter head and extending outwardly beyond the periphery thereof and adapted to slide over and in contact with said face of the die upon rotation of said drive shaft to cut material extruded from said orifices, yielding means pressing said cutter head toward said die to maintain constantly yielding contact of the blades with said die face, and means limiting movement of said cutter head toward the die face comprising a shoulder on said cutter head and a shoulder on said cutter head adapter, both of said shoulders being disposed at the side of said universal connection opposite said die face, said shoulders abutting each other under the influence of said yielding means upon movement of the cutter blades out of contact with the die face and being held in spaced apart relation to each other so long as said cutter blades are held in contact with said die face by said yielding means.

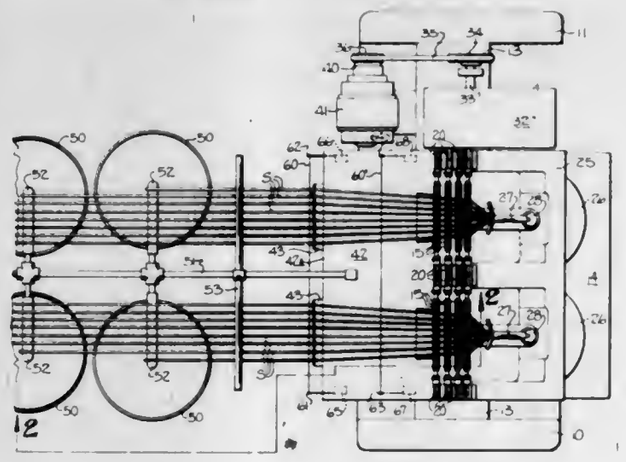
3,271,822
CARBIDE FACING FOR EXTRUSION DIES
Del H. Rhino, Rogers, Ark., assignor to United-Greenfield Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 15, 1965, Ser. No. 425,722
6 Claims. (Cl. 18—12)

2. An extrusion die comprising a die-body having a forwardly presented face and provided with a plurality of extrusion ports which terminate at the forwardly presented face, and a plurality of discrete wafers formed from a different and substantially harder material than the die-body, the wafers being brazed to the forward face and having extrusion apertures which register with the terminal portions of the extrusion ports, whereby extrusion



material in a plastic state will pass in order through the extrusion ports, through the extrusion apertures, and out of the die in an extruded configuration.

3,271,823
STOP MOTION FOR TEXTILE FIBER DRAFTING MACHINE
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed Nov. 29, 1963, Ser. No. 326,780
9 Claims. (Cl. 19—.25)



1. In a drawing frame having sets of fiber drafting rolls through which a plurality of side-by-side fibrous textile strands are adapted to be passed from a strand supply source, drive means for imparting movement to said drafting rolls, guide means disposed between said drafting rolls and the strand supply source and engageable with the moving textile strands to guide the strands along a predetermined path into said drafting rolls, and actuator means operable to stop said drive means and rotation of said drafting rolls, the combination therewith of strand actuated stop motion means operatively connected to said actuator means and comprising

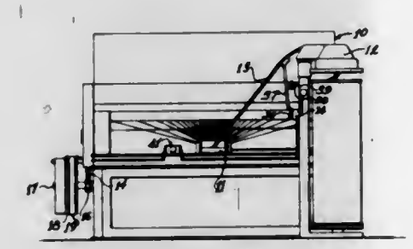
(a) an elongated detector element comprising a pliable strand positioned in advance of said drafting rolls and extending in a substantially straight condition transversely beneath and normally out of engagement with the moving strands as the same move along said predetermined path toward said drafting rolls,

opposite ends of said pliable strand being positioned closer together when a moving textile strand moves a certain distance below said predetermined path and engages the pliable strand and exerts a pulling force thereon, and wherein said pliable strand is a monofilament nylon line having a diameter of about 15 thousandths of an inch, and wherein the moving textile strands have a diameter on the order of one-half inch,

(b) means supporting opposite ends of said detector element and including a movable support for at least one end of said detector element, said movable support being movable in response to a force being applied to said detector element by any of the strands, and

(c) switch means operatively connected to said movable detector element support and to said actuator means and being operable in response to movement of said movable detector element support to operate said actuator means and stop rotation of said drafting rolls.

3,271,824
STOP MOTION FOR CARDS
Elmer D. South, Columbus, Ga., assignor to Swift Manufacturing Company, a corporation of Georgia
Filed Jan. 16, 1964, Ser. No. 338,033
1 Claim. (Cl. 19—.22)



In apparatus for stopping the carding operation of a card upon interruption of the running of its sliver in a predetermined path between its calender rolls and coiler, said card having a driven element, a driving element and a movable member disposed to engage said driving element with said driven element upon movement of said movable member in one direction whereby the carding operation is carried on and disposed to disengage said driving element and said driven element upon movement in another direction whereby the carding operation is stopped, the improvement which comprises:

(a) a sliver engaging lever provided with an adjustable counter-balance thereon mounted in position to engage the sliver between the calender rolls and the coiler and move laterally in response to the resistance of the sliver to lateral deflection decreasing so that the sliver moves out of said predetermined path between the calender rolls and the coiler,

(b) a normally open switch element mounted in position to be closed by said sliver engaging lever upon lateral movement of said sliver engaging lever,

(c) an electrical solenoid operatively connected to said movable member whereby upon energizing said solenoid said movable member moves in said another direction to disengage said driving element and said driven element and thereby stop the carding operation,

(d) a spring member urging said movable member toward said one direction whereby the carding operation is carried on while said solenoid is deenergized,

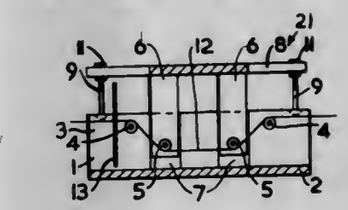
(e) an electrical circuit having said normally open switch therein and disposed to supply electrical current to said solenoid upon closing said normally open switch,

(f) an electrically actuated signal device in said circuit disposed to emit a signal when said normally open switch is closed,

(g) a normally closed switch element in said circuit having a laterally projecting member disposed to move in a horizontal plane at an elevation to be opened by a knee of an operator whereby said solenoid is deenergized which said normally open switch is closed, and

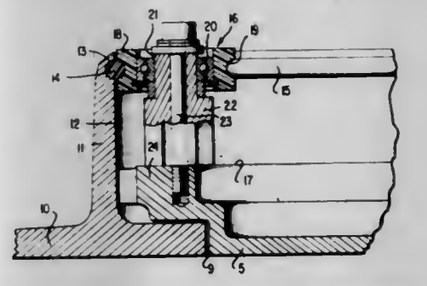
(h) a spring member urging said laterally projecting member outwardly to close said normally closed switch immediately upon release of said laterally projecting member.

3,271,825
METHOD OF CONDITIONING GLASS FIBER STRANDS
William Joseph Dennis, Guelph, Ontario, Canada, assignor to Fiberglas Canada Limited, Toronto, Ontario, Canada
Filed Oct. 3, 1963, Ser. No. 313,632
6 Claims. (Cl. 19—65)



1. A method of tensioning and spreading filaments of a sized glass fiber strand to improve permeability thereof for subsequently applied liquid material, said method comprising the steps of feeding the strand under tension along a first linear path, deviating said strand from said first linear path into a second linear path by moving said strand in a first arcuate path 1/8 to 3/16 inch in diameter and engaging said strand along said first arcuate path with a smooth continuous surface, deviating said strand from said second linear path into a third linear path by moving said strand in a second arcuate path 1/8 to 3/16 inch in diameter and engaging said strand along said second arcuate path with a smooth continuous surface, moving said surfaces at the same speed as said strand to avoid creation of excess heat and thereby effecting a separation of the filaments in the strand to obtain maximum permeability therein.

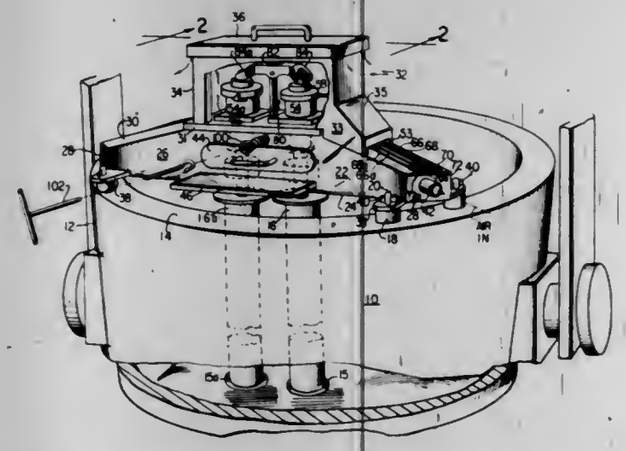
3,271,826
TEXTILE COILER TUBE GEAR MOUNTING
Harold P. Jackson, McDonough, Ga., assignor, by mesne assignments, to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed Feb. 27, 1964, Ser. No. 347,828
3 Claims. (Cl. 19—159)



1. A textile coiler comprising a stationary spectacle having a vertically extending spectacle ring, a tube gear rotatable about a vertical axis, resilient annular track means on the inner surface of said spectacle ring projecting radially inward therefrom toward said vertical axis, a plurality of rollers mounted on the upper surface of said tube gear near the outer periphery thereof for

rotation therewith and for rotation about their respective axes, each roller having a groove in the rim portion thereof engaging said track means to support said tube gear for rotation with respect to said spectacle and to maintain said tube gear against axial or radial movement with respect to said spectacle while accommodating slight misalignment therebetween, and each roller mount including eccentric means for adjusting the roller radially with respect to said tube gear to position said tube gear accurately with respect to said spectacle ring.

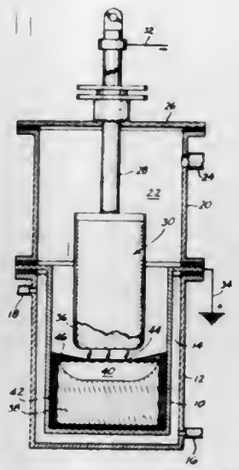
3,271,827
STOPPER ROD ACTUATING DEVICE
Richard S. Crowell, Bloom Township, Ill., and Thomas A. Cuscino, Baldwin, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Apr. 22, 1964, Ser. No. 361,673
3 Claims. (Cl. 22—85)



3. For a bottom pour ladle containing molten metal having at least one discharge nozzle in the bottom, a hollow supporting beam extending over the ladle between two predetermined points on the rim thereof and secured to said rim, stopper rod means comprising one stopper rod assembly for each discharge nozzle depending from said supporting beam, hydraulic means comprising a fluid actuated cylinder operatively connected to each stopper rod assembly and supported by said supporting beam, and means for circulating air through said hollow supporting beam to cool said hydraulic means and related mechanism.

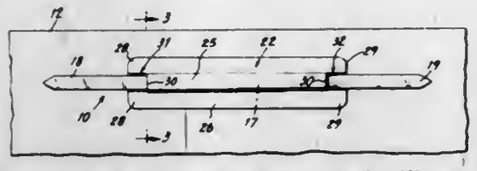
3,271,828
CONSUMABLE ELECTRODE PRODUCTION OF METAL INGOTS
Stephen Matheson Shelton, Henry Gordon Poole, and Frank Roy Wagy, Albany, Oreg., assignors to Oregon Metallurgical Corporation, Albany, Oreg., a corporation of Oregon
Filed Sept. 20, 1963, Ser. No. 310,425
3 Claims. (Cl. 22—200)

1. In a consumable electrode method of forming metal ingots from a metal body and a flux, wherein an ingot mold is supported beside a metal body in a position to collect a pool of molten metal arc fused off from said body, the method comprising establishing a controlled non-atmospheric environment extending from the metal body to the ingot mold, with said environment established, arc-fusing off successive portions of said metal body by passing an electric arc from said body to said ingot mold with said arc producing a heat zone extending from the body to the mold; concurrently with the arc-fusing of said body, adding progressively successive increments of flux to said heat zone with such flux melting and floating on said molten pool; concurrently with the progressive addition of such flux, continuously removing the flux from the heat zone by distributing the flux while molten and with the flux separated from the metal to regions spaced outwardly of the heat zone, to leave an area on the surface of the molten pool contacted by the arc which tends to remain free of flux; and while arc



fusing off the metal and distributing the flux, maintaining the controlled non-atmospheric environment which extends from the metal body to the ingot mold, which environment embraces said area on the surface of the molten pool which tends to remain free of flux.

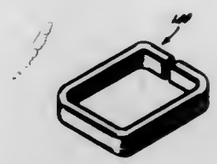
3,271,829
FASTENER MEANS
Joseph T. Corey, Williamsville, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,525
2 Claims. (Cl. 24—153)



1. A device for fastening papers or the like to a backing member, said device comprising
(a) an elongated strip member disposed on the backing member and having spaced and parallel longitudinally extending upper and lower straight edges,
(b) said strip member having an intermediate portion and spaced prong end portions extending from said intermediate portion,
(c) an elongated overlay member disposed over the intermediate portion of said strip member with said prong portions projecting beyond the transverse side edges of said overlay member,
(d) said overlay member having spaced and parallel longitudinally extending marginal portions each arranged on the backing member in substantially coplanar relationship with said strip member and each disposed adjacent a said longitudinal straight edge thereof,
(e) adhesive means provided on the underside of said overlay member securing said overlay member to the intermediate portions of the strip member and said marginal portions thereof to the backing member, and
(f) positioning arms on opposite ends of said marginal portions projecting beyond the transverse edges of the overlay member with adjacent arms of said marginal portions each positioning therebetween one of said prong portions to prevent transverse movement of said prong portions on said backing member,

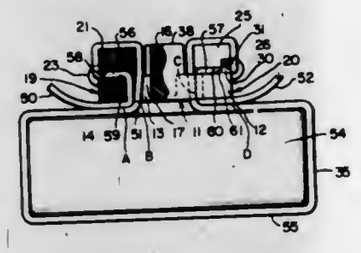
(g) said prong portions disposed in coplanar relationship with said positioning arms and adapted to be bent toward or away from said backing member.

3,271,830
BUCKLE FORMING STOCK
Ragnar W. Winberg, 115 W. Elder Ave., Floral Park, N.Y.
Original application Mar. 10, 1960, Ser. No. 14,047, now Patent No. 3,111,156, dated Nov. 19, 1963. Divided and this application Sept. 19, 1963, Ser. No. 310,090
4 Claims. (Cl. 24—163)



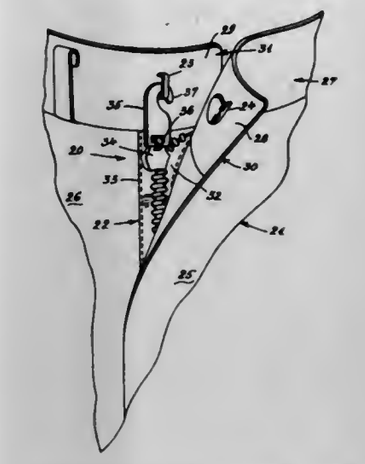
3. A buckle body formed from a length of buckle-forming stock comprising an elongated core strip including a main core section and a clinching section extending along one side edge thereof, and an elongated facing strip of a width in excess of said core strip and including a main facing section medially of said facing strip and confronting one face of said main core section and auxiliary facing sections along opposite sides of said main facing section, one of said auxiliary facing sections being wrapped about said clinching section and folded back to extend over the opposite face of said core strip, the other of said auxiliary facing sections being folded back to extend over said opposite face of said core strip, said clinching section being folded back against said opposite face of said main core section and said auxiliary facing sections extending between said folded back clinching section and said main core section to clinch said facing strip about said core strip to form said length of buckle-forming stock, said length of buckle-forming stock being bent into the polygonal form to form said buckle body.

3,271,831
BUCKLE MEANS
Walter J. Litwin, 4465 N. Forest View, Chicago, Ill.
Filed Apr. 20, 1964, Ser. No. 361,090
8 Claims. (Cl. 24—200)



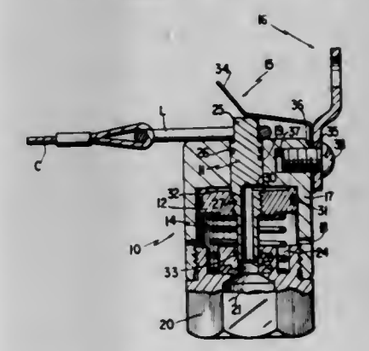
1. A buckle comprising a planar flexible plastic structure comprising a center section, a pair of end clamp bars, and a pair of hinge means each hingedly connecting each clamp bar to a respective opposite end of the center section, said center section comprising a body portion having a pair of end bars adjacent to and generally parallel with the respective clamp bars, said body portion having an intermediate reaction bar generally parallel with the end bars and defining belt passages therewith, said clamp bars being spaced transversely from the respective end bars in the open position of the buckle and being adapted to be swung over and toward said end bars with a belt looped thereabout and drawn through the respective belt passages to hold the belt between the clamp and end bars.

3,271,832
LOCKING SLIDE FASTENER
Francis J. Yankers, 26 Hix Ave., Newton, N.J. 07860
Filed May 5, 1965, Ser. No. 453,264
10 Claims. (Cl. 24—205.11)



1. In a garment, the combination of a pair of flaps, an opening formed between said flaps, one of said flaps overlapping the other of said flaps to form an overlapping flap and an underlapping flap, and a slide fastener assembly secured to said flaps, said slide fastener assembly comprising a slide fastener unit, a loop and a hook, wherein said slide fastener unit comprises a pair of slide fastener elements, a locking slide for securing said slide fastener elements together, a pull tab hingedly secured at one end to said locking slide and hooking means carried by said pull tab for hooking to said loop, wherein one of said slide fastener elements and said loop are secured to the front side of said underflap and the other of said slide fastener elements and said hook are secured to the rear side of said overflap, the opening of said loop lying on an axis substantially perpendicular to the longitudinal axis of said slide fastener assembly, and said hooking means being so formed as to be moveable into said loop and engageable therein.

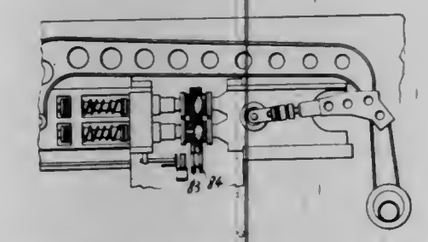
3,271,833
PRESSURE OPERATED RELEASE DEVICE
Benjamin Wendroff, Teaneck, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed Nov. 20, 1964, Ser. No. 412,787
4 Claims. (Cl. 24—230)



1. A pressure operated release device comprising a body formed with a cylinder having an opening in one end thereof, a piston slidably mounted in said cylinder having a stem secured thereto, means in said cylinder for admitting fluid medium under pressure into said cylinder to effect operation of said piston from one position to another position, said stem being extended through and outwardly of said opening when said piston is in one position to support a link connected to a cable and being retracted within said opening when said piston is

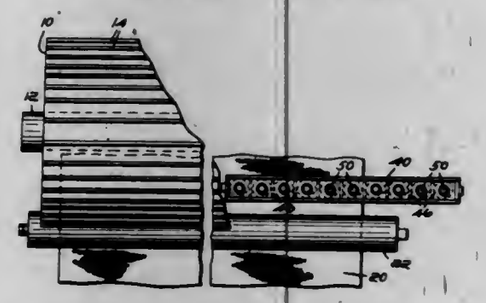
in another position to release the link, and a resilient guard attached at one end on said body having a section positioned across said opening and engaged by the free end of said stem when extended to hold the link captive while said stem is extended.

3,271,834
MACHINES FOR STAMPING TABLETS OF SUBSTANCES HAVING A PASTY CONSISTENCY
Carlo Mazzoni, 10/12 Viale Trentino, Busto Arsizio, Varese, Italy
Filed May 21, 1965, Ser. No. 457,695
Claims priority, application Italy, May 23, 1964, 11,423/64; Oct. 19, 1964, 22,405/64
12 Claims. (Cl. 25—7)



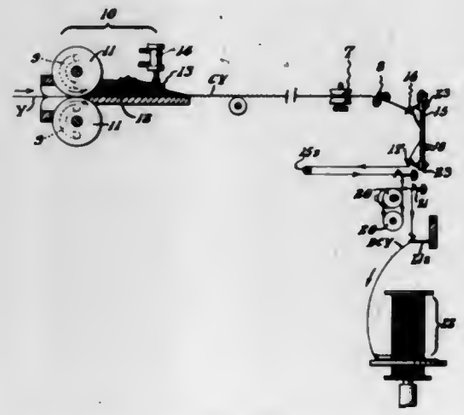
1. A machine for stamping tablets from substances having a pasty consistency which comprises:
(A) interacting die halves operable to compress the substance, and to eject the excess quantity of said substance therefrom;
(B) at least one revolving box defining a plurality of apertures; said apertures defining channels; said revolving box having an inside wall;
(C) rotating means to rotate said revolving box on an axis parallel to the die halves;
(D) said revolving box connected in operable position with respect to said die halves so that the excess substance ejected by said die halves upon compression thereof, is translated into said channels defined by the apertures of said revolving box to the inside wall of said revolving box, said excess substance adhering to said inside wall;
(E) means to eject the formed tablets from said die halves into the apertures of said revolving box, the excess substance causing the tablets to adhere to the apertures when the die halves are withdrawn from each other;
(F) means for discharging the stamped tablets from the apertures of said revolving box.

3,271,835
FABRIC TENSIONING DEVICE FOR SHEARING MECHANISMS
Wilfred N. Hadley, Springfield, Vt., assignor to Hadley Company, Inc., Springfield, Vt., a corporation of Vermont
Filed Feb. 27, 1964, Ser. No. 347,758
4 Claims. (Cl. 26—15)



1. In a cloth shearing machine, a rotatably mounted cylinder having a plurality of spaced shearing blades extending longitudinally thereof at its periphery, a ledger knife disposed longitudinally of the cylinder and having one longitudinal margin in shearing relation with the blades, means for supporting in full width and conducting longitudinally at predetermined tension through the machine to and past the ledger knife and blades a strip of fabric to be sheared, a series of juxtaposed elements disposed in alignment forwardly of the ledger knife and extending transversely of the strip to a limited extent less than the full width thereof and in contact with one face of the strip at one marginal portion thereof, and common housing means supporting the elements for limited independent movement toward and in fabric tensioning contact with said face whereby said elements remove slack from said marginal portion and hold the strip taut as it passes to the ledger knife and shearing blades.

3,271,836
METHOD OF MAKING DISTORTED CRIMPED YARN
Nathan Rosenstein, West Hartford, Conn., assignor to Spunize Company of America, Inc., Unionville, Conn., a corporation of Connecticut
Filed Apr. 6, 1965, Ser. No. 445,998
3 Claims. (Cl. 28—72)

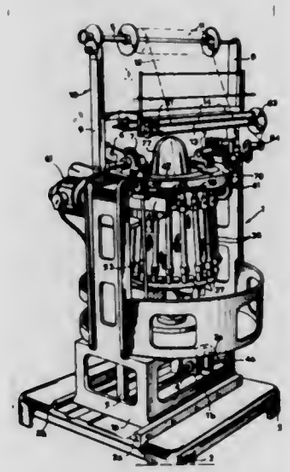


1. In a method of making distorted crimp synthetic thermoplastic yarn the steps which comprise
folding said yarn upon itself and subjecting it to pressure while folded, thus forming the yarn with a multiplicity of successive V-shaped crimps of unequal lengths which are slightly flattened at the apices of the V's
drawing the crimps while under tension over an edge, and controlling said tension to an amount for physically distorting the apices of the V-shaped crimps by wiping action under tension into portions of greater width than the diameter of the uncrimped portion of the yarn.

3,271,837
METHOD OF MANUFACTURING STOCKINGS FROM TWO-COMPONENT FILAMENTS
Tin Yam Au and Earl Herbert Olson, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 25, 1964, Ser. No. 399,401
3 Claims. (Cl. 28—74)

1. A process for manufacturing a stocking knit from a nylon two-component crimpable filament whose two components are of fiber-forming molecular weight and have dissimilar shrinkage values, comprising in order the steps of (1) knitting a stocking from the said two component filament, (2) relax-steaming said stocking at a temperature of from about 215° F. to 250° F. with substantially saturated steam for a period of at least about one minute, (3) dyeing the said stocking and (4) postboarding the said stocking in a steam chest at a temperature of from about 230° F. to 255° F. for a period of at least about 30 seconds, whereby the stocking exhibits a stress retention of at least about 60% in the knee and ankle region subsequent to said postboarding.

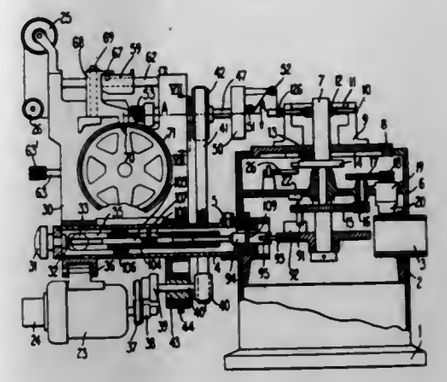
3,271,838
MACHINE FOR CUTTING TUBULAR FABRIC
Luigi Pisani and Giuseppe Spaltini, both of Cilavegna, Pavia, Italy, assignors to S.p.A. Virginio Rimoldi & C., Milan, Italy, and Officina Meccanica Pisani & Spaltini, Cilavegna, Pavia, Italy
Filed May 18, 1965, Ser. No. 456,622
Claims priority, application Italy, May 21, 1964, 11,140/64; Apr. 14, 1965, 9,237/65
15 Claims. (Cl. 29—2.16)



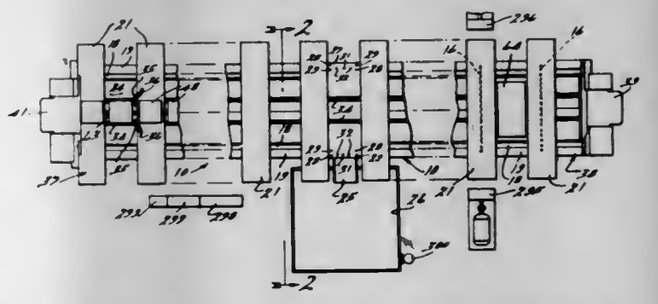
1. Machine for cutting upon the bias an endless band from a tubular, more particularly knitted fabric, comprising a top frame rotating about a vertical axis and supporting a horizontally extending roll of tubular fabric, from which the fabric is unrolled and is slipped after resuming its tubular form over an underlying rotary member comprising a plurality of articulated arms arranged to form an upwardly tapering conical frustum and supporting at their bottom ends radially orientated rollers idly rotating about horizontal axes, means for varying the inclination of said conical frustum, a plurality of arms articulated by their top ends to the base of the rotary frame, extending downwardly in a substantially parallel relationship to the arms forming the rotating conical frustum, against which they are held close by the action of resilient means, said arms articulated to the top frame supporting at their bottom ends rollers rotatable about horizontal axes, tangential to the circular development of the fabric slipped over the conical frustum and cooperating with the rollers on the internal rotary member, means for rotating at an adjustable speed the outer rollers in order to feed the fabric downwardly and a circular cutter cooperating with a backing roller, both supported by stationary supports, for cutting an endless band from the bottom edge of the tubular fabric.

3,271,839
CONTINUOUS COIL WINDING MACHINE
Giuseppe Camardella, Via E. Biondi 1, Milan, Italy
Filed Sept. 30, 1965, Ser. No. 491,801
Claims priority, application Italy, Oct. 3, 1964, 21,342/64
18 Claims. (Cl. 29—33)

1. Continuous coil winding machine adapted for mass production of entirely finished coils on supports or in air, and provided with a carousel conveying the coils, a series of finishing stations, in which the coil, conveyed by the carousel, will be operated and an easily interchangeable control cam, one of said stations comprising a wire guide associated with a control device for the rotation of the wire guide, adapted to ensure the displacement of the latter in the direction of its rotating axis under the control of said cam, said control device having a rotary but axially stationary hollow driving shaft, driving means to set in rotation said driving shaft, a driven shaft associated with the wire guide and disposed inside the driving shaft both said shafts being provided with longitudinal grooves on the opposite faces, inside which rolling means engage, having key function for the rotating motion drive.



3,271,840
AUTOMATIC MACHINING DEVICE
Frank A. Solski, Bloomfield Hills, Mich., and Lyman K. Shepard, Upper Saddle River, N.J., assignors to Standard Tool & Manufacturing Company
Filed Mar. 19, 1963, Ser. No. 266,264
10 Claims. (Cl. 29—33)

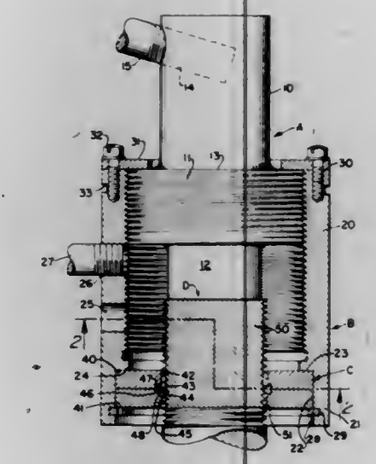


1. In a machine, a base structure made of a plurality of like sections having a cooling trough thereon, a plurality of bridge members disposed transversely of said structure and spaced the same predetermined interval apart, trough means about the edge of said bridge members having discharge ends located above said base structure trough, a series of pallets, rail members on said bridging members disposed parallel to said base structure for supporting said pallets at said intervals, means for simultaneously advancing said pallets to said intervals, means independent of said advancing means for locating and clamping said pallets after each advancement, and means on at least some of said bridge members for performing a machining operation on a workpiece supported by said pallets.

3,271,841
TOOL FOR BROACHING SPLINE NOTCHES INTO BOLT OR SHAFT THREADS
Frederick W. Rohé, 5191 S. Bradford, Placentia, Calif., and Charles S. Phelan, Tustin, Calif.; said Phelan assignor to said Rohé
Filed June 8, 1964, Ser. No. 373,333
11 Claims. (Cl. 29—95.1)

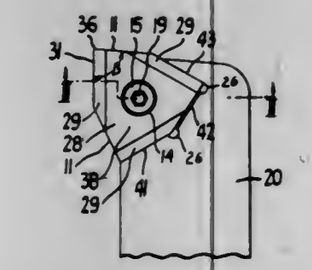
1. In a tool for broaching spline notches in threads of a threaded element, in combination: a sleeve having an

internal thread extending inwardly from one end thereof and having a socket in its other end; an annular broach plate secured in said socket; and a ram having a male threaded part coupled in said internal thread and means on the outer end of said threaded part for transmitting axial pressure to said sleeve so as to effect a broaching pass of said broach plate over threads of a threaded element supported in opposed axially aligned relation to



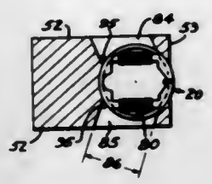
said broach plate, said ram further including a stop on the inner end of said threaded part, engageable with the end of said threaded element to limit the axial extent of said pass, said ram being rotatable in said sleeve with a threading action for adjusting the depth of said stop within the sleeve, thereby to vary the extent of said pass as limited by said engagement of the stop against the threaded element.

3,271,842
EXCHANGEABLE TOOL BIT
Robert Breuning, Hauptstrasse 58, Besigheim (Neckar), Germany
Filed May 25, 1964, Ser. No. 369,913
Claims priority, application Germany, July 16, 1960, B 58,624; Aug. 20, 1960, K 41,512
10 Claims. (Cl. 29—96)



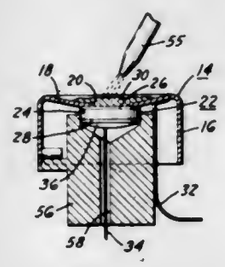
1. An exchangeable tool bit adapted to be attached to a tool holder, comprising, in combination, a plate of hexagonal contour having an upper face and a lower face substantially parallel to each other and six side faces of substantially equal length and extending between said upper and lower faces substantially perpendicular thereto, said side faces intersecting said upper and lower faces along upper and lower edges, respectively, every second one of said upper edges and every second one of said lower edges being formed as a cutting edge, said plate of hexagonal contour having three substantially equal corner angles of a magnitude between 82° and 88° and defined each by a pair of two adjacent ones of said side faces, and means for attaching said plate to a tool holder.

3,271,843
METHOD OF MAKING A MAGNETIC RECORDING HEAD
Charles L. Vice, Pasadena, Calif. (85 Gresham Lane, Atherton, Calif.)
Filed Sept. 27, 1962, Ser. No. 226,542
8 Claims. (Cl. 29—155.5)



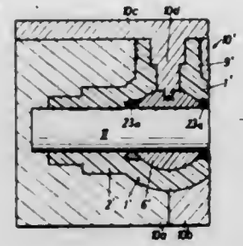
1. A method for making a magnetic recording head assembly of the type which includes a body support having a face and an outer wall and with a magnetic core secured therein, comprising: boring a hole into the body near the face and parallel thereto, the radius of the hole being smaller than the distance of the center of the hole from the face; undercutting a groove into the wall of defining the hole from within said hole and substantially concentric thereto, the depth of the groove being greater than the difference between the radius and said distance, so that the groove forms an opening in the face; forming an entry port through the outer wall of the body into the groove; providing said core gap in the opening and the core seated in the groove, with at least a portion of the periphery of said core having an arc of radius substantially equal to that of the groove, and having a pair of parallel sides spaced apart by a distance less than the width of the entry port; inserting said core through the entry port with the said parallel sides aligned therewith, then rotating the core in position in the groove; and securing the core to the body in the groove.

3,271,844
METHOD OF MAKING HEAT SENSOR UNIT
Robert W. Smith, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 15, 1963, Ser. No. 295,145
3 Claims. (Cl. 29—155.63)



2. In a method for manufacturing sensor units the steps comprising, forming a thermistor element, forming a support element having a dished surface with a central opening therethrough, locating a portion of said thermistor element in engagement with the thermistor support element around the opening therethrough, spray metalizing the juncture between the support element and the thermistor element, and filling the support element opening and the dished surface by spray metalizing to form a substantially planar surface on the dished surface adapted to be located in direct heat transfer contact with an object whose temperature is to be sensed by the thermistor element.

3,271,845
METHOD OF MANUFACTURING ROTARY VALVES
Rudolf Breher, Hausberge an der Porta, Germany, assignor to Friedrich Stubbe, Vlotho (Weser), Germany
Filed Jan. 23, 1962, Ser. No. 168,105
Claims priority, application Germany, Feb. 11, 1961, St 17,453; Sept. 6, 1961, St 18,290
4 Claims. (Cl. 29—157.1)



1. A method of manufacturing a rotary valve having a molded housing of synthetic material formed integrally with connecting branches and a rotary member having a spindle rotatably mounted in said housing, comprising the steps of

prefabricating a rotary member with a passage therethrough,

prefabricating sealing rings of plastic material,

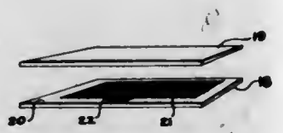
mounting said rotary member and said sealing rings on a core extending through and beyond both ends of the passage of said rotary member with said sealing rings tightly engaging said rotary member,

inserting said rotary member jointly with said core and said sealing rings into a confined space of an inner configuration complementary to the outer configuration of said housing, said core being adapted to form passages for said connecting branches,

molding said housing within said confined space around said rotary member and around said core and said sealing rings, and

removing the finished product from said confined space and removing said core from said rotary member, said housing and said sealing rings after said synthetic material of said housing has set.

3,271,846
MULTI-LAYER LAMINATES AND METHOD OF MANUFACTURING HOLLOW ARTICLES THEREFROM
Calvin F. Buechele, Louisville, and John R. Westwood, Erlanger, Ky., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Continuation of application Ser. No. 177,688, Feb. 7, 1962. This application Nov. 10, 1965, Ser. No. 510,442
12 Claims. (Cl. 29—157.3)



1. In making hollowed products by selective expansion of areas of a multi-layer laminate, the process which comprises

supporting in a die a multi-layer laminate characterized by having adjacent layers peelably bonded together at the interface therebetween including at least a substantial part of said interface in the areas thereof to be expanded,

introducing fluid under pressure between said adjacent layers where the bond is,

breaking said bond in an increment of the area to be expanded,

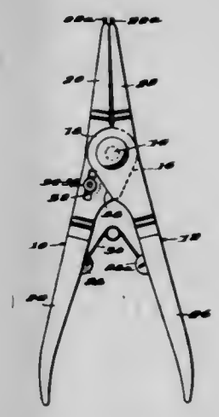
progressively working and expanding the thus separated portion of at least one of said layers into said die by the pressure of said fluid while said layers in an adjacent increment of said area to be expanded are restrained from peeling by said bond,

continuing to progressively break said bond in successive increments of the area to be expanded, along the direction in which the fluid flows,

and to work and expand the thus separated successive portions of at least one of said layers,

whereby there is accomplished said selective expansion without exposing the separated portions of said laminate, along the boundaries of said area to be expanded, to the full load of expansion pressure.

3,271,847
ADJUSTABLE STOP MEANS FOR PLIERS
Melvin Millheiser, Rockaway, N.Y., assignor to Waldes Kohinoor, Inc., Long Island City, N.Y., a corporation of New York
Filed Feb. 2, 1965, Ser. No. 429,757
6 Claims. (Cl. 29—229)

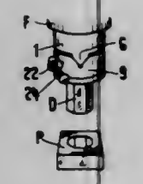


1. A pliers for assembling and disassembling split spring retaining rings comprising, in combination, a pair of lever arms having hub-like portions intermediate their ends and being pivotally connected for relative angular motion by a pivot passing through said hub portions, the ends of the arms extending to one side of said hub portions terminating in tips adapted to be inserted in the apertures conventionally provided in the free ends of said split retaining rings to be assembled and disassembled and the ends of the arms extending to the other side of said pivot mounting handles, spring means operatively associated with said handles for normally maintaining same in said spread-apart position, and stop means for limiting the maximum permissible spacing of said tips comprising a set screw-slide nut combination adjustable along a longitudinal slot provided in the hub portion of one lever arm and adapted to be secured in a desired position of adjustment therealong, and abutment-edge means on the hub portion of the other lever arm normally spaced from the set screw but adapted to abut said set screw and thereupon to prevent relative angular motion of said hubs and working tips in one direction, the construction and arrangement being such that said set screw-slide nut combination and said abutment edge means is encompassed within the dimensional confines of said hub portions.

3,271,848
PROCESS AND APPARATUS FOR DETACHABLY FIXING A DEVICE ON A MACHINE AND INSTALLATION FOR PUTTING THIS PROCESS INTO PRACTICE

Louis Montandon, Loveresse, Bern, Switzerland, assignor to Boillat S.A., Reconvilier, Switzerland

Filed Aug. 15, 1963, Ser. No. 302,384
Claims priority, application Switzerland, Aug. 25, 1962, 10,131/62; June 1, 1963, 6,905/63
19 Claims. (Cl. 29—407)



1. A process for removably fixing a device on a machine in a prescribed position, comprising providing a pair of complementary brackets, said pair of brackets including a male bracket having trued prisms on its one end face with the trued prism surfaces inclined relatively to the general plane of said free end face and a female bracket having trued prismatic grooves of a shape complementary to the said trued prisms on its one end face and inclined relatively to the general plane of said one end face, fixing the one of said brackets to the machine in a perfectly specified position relatively to the machine and with its said end face fully accessible, fixing said device on the other of said brackets in a perfectly specified position relatively to said other bracket and with said end surface of said other bracket fully accessible, interconnecting said brackets with their complementary end faces engaging each other without clearance, the relative position of said brackets being thereby perfectly specified in three dimensions, the position of said device on the machine being thus perfectly predetermined by fixing it on said other bracket in a perfectly specified position and by interconnecting said brackets in a perfectly specified relative position.

3,271,849
IRIDIUM-SHEATHED WIRE FOR ELECTRON TUBES

Edward George Price, Chiswick, London, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

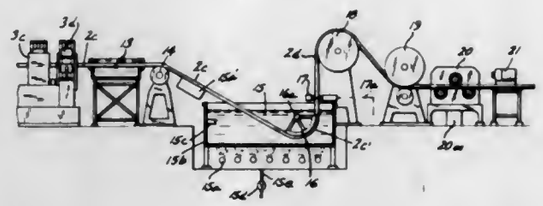
No Drawing. Filed Nov. 8, 1963, Ser. No. 322,541
Claims priority, application Great Britain, Nov. 26, 1962, 44,639/62
3 Claims. (Cl. 29—420.5)

1. A process for making iridium-sheathed wire especially adapted for use as grid wire in a high power electron tube comprising compacting and sintering iridium powder into a tube having outside and inside diameters in a ratio from 5:3 to 2:1, a Vickers Diamond Penetration hardness of 220 to 310 and a sintered density from 16 grams per cubic centimeter to 20 grams per cubic centimeter, providing a rod of metal characterized by tensile strength of 5000 pounds per square inch to 12,000 pounds per square inch and selected from the group consisting of sintered tungsten, swaged molybdenum containing up to about 0.5% titanium and swaged and drawn molybdenum containing up to about 0.5% titanium, fitting said metal rod into said iridium tube to make a filled tube, hot swaging said filled tube at about 1450° C. to about 1550° C. and then hot drawing the filled tube at about 500° C. to about 750° C. to wire.

3,271,850
PROCESS AND APPARATUS FOR THE PRODUCTION OF PLATED PIPE

Heinrich Menne and Wolfgang Weinreich, Paderborn, Germany, assignors to Benteler-Werke A.G., Schloss Neuhaus, Germany

Filed Oct. 2, 1963, Ser. No. 313,246
Claims priority, application Germany, Oct. 4, 1962, B 69,083
32 Claims. (Cl. 29—460)



1. A process for the production of internally plated small-caliber metallic pipe, comprising the steps of advancing a continuous length of metallic pipe endwise along an elongated path, an intermediate portion of which path is disposed at a level below the portions which are located upstream and downstream of said intermediate portion; feeding a nonferrous plating metal into the interior of the pipe upstream of said intermediate portion of the path so that the plating metal advances toward said intermediate portion; and heating that section of the pipe which advances along said intermediate portion of the path to a temperature which is sufficient to maintain the plating metal in molten condition whereby the plating metal forms in the interior of said pipe section a pool and automatically coats the pipe so that the pipe emerging from said intermediate portion of the path is plated along the internal surface thereof.

20. An apparatus for the production of plated small-caliber metallic pipe, comprising means for producing a continuous length of pipe; means for advancing the pipe end-wise along an elongated path an intermediate portion of which path is disposed at a level below the portions which are located upstream and downstream of said intermediate portion; means for feeding a plating metal into the advancing pipe at a point upstream of said intermediate portion so that the metal advances toward said intermediate portion; and means for heating that section of the pipe which advances along said intermediate portion so that the plating metal melts to form a pool of molten plating metal which remains in said intermediate portion of the path and to automatically coat the internal surface of the pipe.

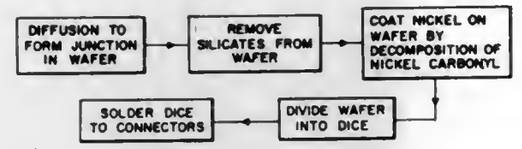
3,271,851
METHOD OF MAKING SEMICONDUCTOR DEVICES

Robert G. Hays, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Continuation of application Ser. No. 251,421, Jan. 14, 1963. This application June 7, 1965, Ser. No. 461,936
7 Claims. (Cl. 29—492)

1. A process for making an ohmic connection between a semiconductor element of silicon and a metal member, including the steps of, treating a silicon semiconductor element to remove oxides and silicates by at least one treatment selected from the group consisting of sand blasting and washing in a solution containing hydrofluoric acid, depositing a flash film of nickel from gaseous nickel carbonyl on a surface of the semiconductor element to a thickness of between 1 and 20 microinches, subsequently dividing said element into semiconductor die units, assembling individual ones of said die units with solder and metal connector members, and soldering said members to said die units by heating and then cooling

the assemblies to melt and solidify the solder with said nickel plating being sufficiently thin to act as a wetting



agent for the solder to facilitate soldering to the silicon die units.

3,271,852
METHOD AND COMPOSITION FOR EXOTHERMIC BRAZING OF METAL JOINTS

Roger A. Long, San Diego, Calif., assignor to Whittaker Corporation, a corporation of California

No Drawing. Continuation of application Ser. No. 686,870, Sept. 30, 1957. This application Sept. 6, 1963, Ser. No. 306,993
17 Claims. (Cl. 29—494)

1. An exothermic brazing composition comprising a mixture of at least two metal oxides and a hydride reducing agent, said metal oxides and said hydride reducing agent being present in proportions which will react exothermically to substantially completely reduce said oxides to native metals while liberating hydrogen and to generate sufficient heat to cause said native metals to flow.

5. A method of brazing two metal pieces comprising placing a material comprising a mixture of a plurality of metal oxides and a hydride reducing agent capable of generating hydrogen protective gas in close proximity to the area of the metal pieces, the metal oxides and hydride reducing agent in said mixture being present in proportions which will react exothermically to substantially completely reduce the oxides to native metals and generate sufficient heat to cause said metals to flow; heating the material to a temperature below that necessary for brazing the materials but sufficient to initiate a reaction in said mixture; cleaning the metal pieces with the hydrogen gas formed by said reaction; allowing said reaction to continue until the heat produced by the reaction is sufficiently high to braze the metal pieces; and cooling said metals to solidify the braze, whereby substantially no residue other than a braze alloy remains.

3,271,853
AUTOMATIC TOOL CHANGING MECHANISM FOR MACHINE TOOL

Stanley A. Pfister, Wilmington, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed Jan. 26, 1965, Ser. No. 428,086
5 Claims. (Cl. 29—568)

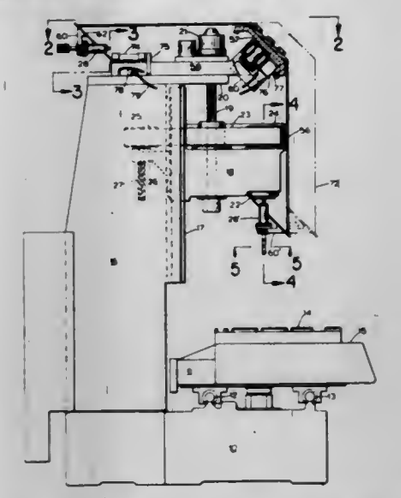
1. Apparatus for interchanging a selected one of a plurality of cutting tools in a machine tool comprising in combination:

(a) a spindle rotatable on a fixed axis and adapted to receive and releasably hold each of the cutting tools when inserted axially into said spindle,

(b) means for supporting said cutting tools in a circular array around said spindle with the longitudinal axis of each cutting tool lying along the slope of a conical surface,

(c) means for rotating said circular array of tools through a series of positions in each of which series of positions one of the tools defining the selected tool is oriented with its longitudinal axis parallel to the fixed axis of said spindle,

(d) means for shifting said circular array of tools in a direction transverse to said spindle to shift said selected tool to and from a position wherein the longitudinal axis thereof is coincident with the fixed axis of said spindle, and

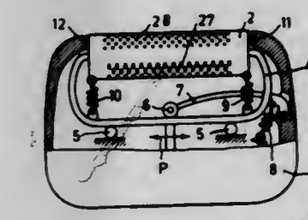


(e) means for moving said spindle along the fixed axis thereof for insertion of the selected tool therein.

3,271,854
RECIPROCATING DRY SHAVER WITH MOVABLE SHEAR PLATE AND ADDITIONAL CUTTING MEANS

Gerrit Starre, Drachten, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 24, 1964, Ser. No. 339,916
Claims priority, application Netherlands, Feb. 21, 1963, 289,315
3 Claims. (Cl. 30—34.1)



1. A dry shaver comprising a housing, a reciprocable cutting member, a relatively thin, cylindrical shear plate having spaced groups of apertures therein, said cylindrical shear plate being constituted of a pair of flexible portions, a common fillet between a pair of side edges of said flexible portions whereby said flexible portions are supported at an angle relative to each other and are bowed outwardly, a toothed hair-clipping blade projecting from said side edges of said flexible portions and coupled to said reciprocable cutting member, and a projecting edge of said fillet being provided with teeth which co-act with said toothed hair-clipping blade, a pair of abutments on said housing, means supporting said shear plate between said abutments whereby said shear plate is prevented from displacement along its longitudinal axis but is adapted to move at right angles to said axis, said supporting means for said shear plate being solely said reciprocable cutting member mounted within said cylindrical shear plate, and resilient biasing means connected to said shear plate whereby the latter is held in engagement with the cutting member.

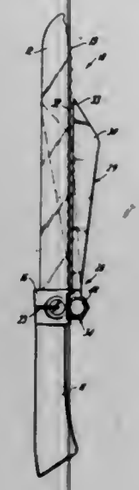
3,271,855
SLICING KNIFE

Henry J. Stolbach, 176 E. 77th St., New York, N.Y.

Filed Mar. 20, 1964, Ser. No. 353,405
10 Claims. (Cl. 30—283)

1. An adjustable guide slicing knife comprising a handle, a longitudinally extending slicing blade affixed to and projecting forwardly of said handle, a longitudinally

extending guide arm transversely spaced from and parallel to said slicing blade and terminating at its rear in a bracket section, a transversely extending screw member supported by said bracket section, an internally-threaded



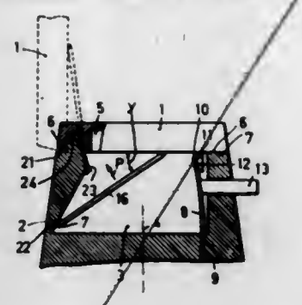
collar member mounted on said handle and engaging said screw member for movably mounting said bracket section on said handle, and means for rotating one of said members relative to the other member whereby to transversely adjust said guide arm.

3,271,856
KITCHEN IMPLEMENT HANDLE
Charles A. Rowley, 7803 E. Harper, Downey, Calif.
Filed Apr. 20, 1964, Ser. No. 361,107
4 Claims. (Cl. 30—343)



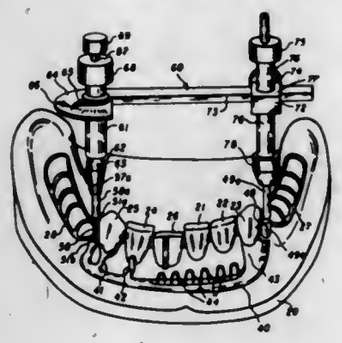
1. The combination with a kitchen implement having a metallic shank with a lower end and an upper end, of an elongated handle of a translucent material having a socket extending inwardly from one end thereof, the upper end of said shank being secured in said socket, said translucent handle having flecks of light-reflecting material dispersed therethrough beneath the outer surface thereof, the translucency of the material of said handle and the diffusion of light by said flecks of light-reflecting material being such that visibility of said upper end of the shank is obscured.

3,271,857
DRY RAZOR HAVING A SPRING MEANS TO OPEN THE RAZOR HEAD
Johannes Hubertus Poletiek, Drachten, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 348,942
Claims priority, application Netherlands, Mar. 6, 1963, 289,891
4 Claims. (Cl. 30—41.6)



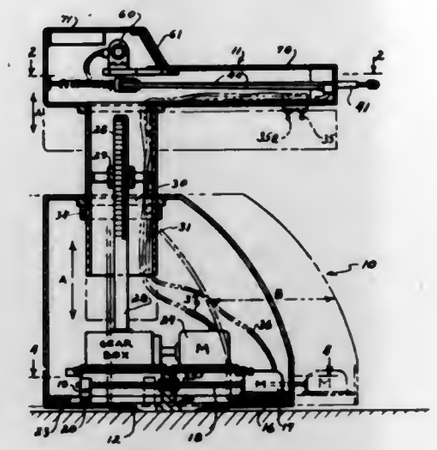
1. A shaving head for a dry shaver having a housing and including a shear plate adapted to swing open from a normally closed horizontal position to an open, generally vertical position, said housing being provided with an inclined wall, means mounting said shaving head on the housing of said dry shaver with the peripheral lower edge thereof abutting and engaging a portion of the edge of the opening of said housing, said means comprising a spring having one end secured to the underside of said shaving head and another portion thereof freely and slidably engaging the inclined wall of said housing, the moment of force on said spring being so directed by said inclined wall that the shaving head is swung open when said portion of the spring slides up said inclined wall.

3,271,858
REMOVABLE DENTAL APPLIANCES AND METHODS OF MAKING SAME
Joe J. Simmons, Dallas, Tex., assignor to Idea Development Company, Dallas, Tex., a corporation of Texas
Filed Jan. 28, 1964, Ser. No. 340,635
25 Claims. (Cl. 32—5)



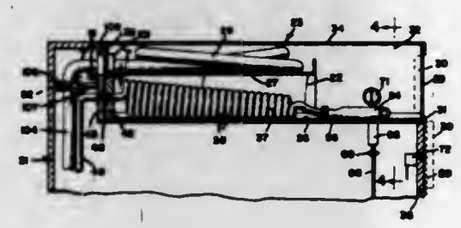
1. A dental appliance including: a lingual section adapted to engage an abutment tooth; a labial bar adapted to engage said abutment tooth; a first hinge member carried by said lingual section; a second hinge member carried by said labial bar at one end thereof and hingedly secured to said first hinge member whereby the free end of said labial bar may swing with respect to said lingual section; and a latch member carried by said lingual section and a catch member carried by the free end of said labial bar and engageable with said latch member of said lingual section for releasably securing said free end of said labial bar to said lingual section to clamp the abutment tooth therebetween.

3,271,859
DENTAL EQUIPMENT STAND
Norman Horowitz, 111—21 77th Road, Forest Hills, N.Y., and Philip Spigner, 1460 Park St., Atlantic Beach, N.Y.
Filed Sept. 7, 1962, Ser. No. 222,127
3 Claims. (Cl. 32—22)



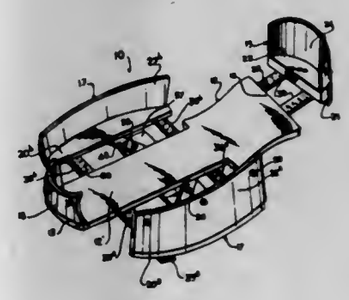
1. A dental equipment stand comprised of a base portion, a head portion mounted on said base portion to receive the dental equipment, said head portion having a pedestal extending therebelow fitting within a collar at the top of said base portion, first means in association with said base portion to move said base portion in a substantially horizontal plane, and second means in cooperative association with said base portion and said pedestal of said head portion to vertically move said head portion relative to said base portion, wherein said first means includes a stand within said base portion resting on the ground, the remainder of said base portion resting on said stand, and motor means within said base portion, actuating connections between said motor means and said stand, said motor means and said actuating connections effecting movements relative between said stand and said base portion, and switch means on said head portion for energizing said motor means.

3,271,860
CABINET HAVING STERILIZABLE INSTRUMENT TRAY
William E. Burton, 616 Ventura Ave., San Mateo, Calif.
Filed May 7, 1965, Ser. No. 453,929
10 Claims. (Cl. 32—22)



1. In a container for sterilizable instruments, a tray, support means for supporting said tray, a first manifold positioned in said support means, a first port in said first manifold, at least one source of fluid under pressure differential for an instrument located in said support means and terminating in said first port, a second manifold on said tray, a second port in said second manifold, means for removably interconnecting said first and second ports, means mounting said tray in said support means with said first and second ports in registry, an extensible and contractable instrument conduit in said tray connected to said second port at one end and adapted for connection and transmission of fluid under pressure differential to an instrument at its end opposite said second port, and a cover for said tray enclosing said instrument, second manifold and conduit, whereby said tray, conduit, and second manifold may be sterilized and then kept in a sterile state when said cover is closed and said instrument conduit may be partially withdrawn from said tray by extension of said conduit when said cover is opened.

3,271,861
PORTABLE DEMONSTRATION SHOE MEASURING DEVICE
Rosario Fusco, 34 Kentucky St., Long Beach, Long Island, N.Y. 11561
Filed Dec. 9, 1963, Ser. No. 328,958
8 Claims. (Cl. 33—3)

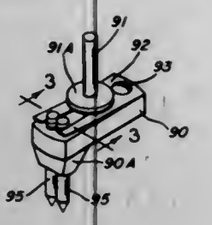


1. A device for measuring a person's foot, comprising a main central section, a heel portion, and two side portions defining a generally shoe-shaped structure; said central section having a flat, elongated generally rectangular main sole, and an upstanding curved flange wall at one end of said sole defining a toe for said structure; said heel portion having a first sole portion, and an upstanding curved other flange wall at the rear end of said sole portion defining a back for said structure; said side portions each having an elongated other sole portion, and an upstanding curved further flange wall defining a side for said structure; and a linkage assembly movably connecting said heel portion and side portions to said sole for adjusting said structure in length and width, said linkage assembly comprising a first pair of links secured to said first sole portion, a pair of trackways secured to and longitudinally of said main sole and slidably receiving said first links for guiding said heel portion in movement lengthwise of said main central section; a second pair of links secured respectively to forward ends of said other sole portions, a second trackway secured to and transversely of said main sole near said one end thereof and slidably receiving said second pair of links respectively, a third pair of links secured to rear ends of said other sole portions, a third trackway secured to and transversely of said main sole near the other end thereof and slidably receiving said third pair of links respectively, whereby the side portions are guided in movement laterally with respect to said main central section, a fourth pair of links pivotally connected together by a pin at rear ends thereof, forward ends of said fourth links being connected respectively to intermediate points of said other sole portions, said main sole having a longitudinally extending groove slidably receiving said pin to guide said fourth links, a cross bar extending transversely of said main sole, said cross bar having a central slot, two other pins respectively engaged with said fourth pair of links and slidably disposed in said central slot, and a third other pin engaged in said central slot and said groove, whereby the side portions are prevented from twisting in the plane of said main sole when the side portions are moved laterally with respect to said main central section.

3,271,862
SCRIBING INSTRUMENTS

Charles H. Stein, Westwood, and William Krause, Secaucus, N.J., assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

Original application Apr. 20, 1961, Ser. No. 104,482. Divided and this application Mar. 1, 1965, Ser. No. 443,743
9 Claims. (Cl. 33—18)



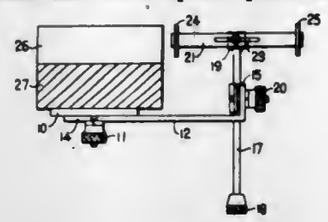
1. A scribing device for simultaneously making two lines in substantially parallel relation comprising a first L-shaped body, a second L-shaped body hingedly connected to said first L-shaped body adjacent the free end of corresponding legs by a pivot stud parallel to the planes of the L-shaped bodies whereby the other legs remain parallel and are movable toward and away from one another, a tubular support shank fixedly mounted on said first L-shaped body for support of the instrument from a lead holder or clamp, a shouldered shaft rotatably mounted in said tubular support shank providing for pivotal support of said scribing instrument on a lead holder or clamp secured to said shouldered shaft, means to secure said shaft against axial displacement in said tubular support shank while permitting rotative movement therein, resilient means normally urging the other legs of said L-shaped body together, means to positively and adjustably separate said other legs of said L-shaped bodies, said other legs of said L-shaped bodies being provided with scribing element receiving bores therein open at both ends with said bores being of restricted size at the free extremity of said second legs whereby a shouldered scribing element will be retained in said bores while permitting longitudinal movement thereof, a leaf spring mounted on said first body and having leaf spring elements overlying said bores and engageable with said scribing elements urging said scribing elements outwardly towards said reduced ends of said bores, a guide stud portion integral with said pivot stud projecting in the direction of said other legs whereby the scribing element in said one L-shaped body and said guide stud portion may engage a guide edge for accurately guiding said instrument in a predetermined path, said separating means providing for changing the angular relation between said L-shaped bodies and thereby changing the spacing between the scribing elements and the bores scribed thereby so that parallel lines may be simultaneously scribed in one operation.

3,271,863
BOW SIGHT

Charles M. Harrington, 1107 W. Pine St., Hattiesburg, Miss.

Filed Oct. 6, 1964, Ser. No. 401,792
2 Claims. (Cl. 33—46)

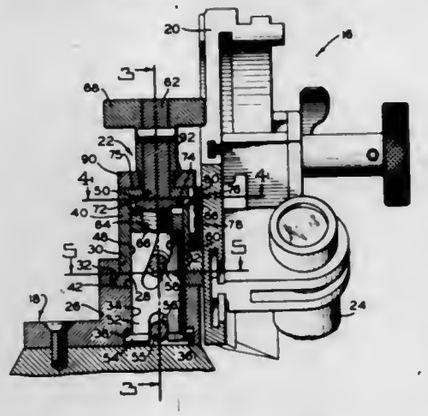
1. A bow sight of the character described, comprising a square plate to the center of which is secured one end of an arm that has its other end formed at right angles thereto, and terminating in a U-shaped holding member that adjustably supports a structure embodying a pair of spaced sights one of which is equipped with a horizontally disposed hair-line, and the other of which is equipped with a vertically disposed hair-line and said arm being secured to said square plate by means of a knurled head screw, and said bow sight being secured to the handle of a bow by means of screws passing through said square plate and said square plate having a horizontal line having an arrow thereon that is in alignment with the marking on the peripheral face of said disk-like member of said arm.



3,271,864
AZIMUTH ADJUSTMENT DEVICE WITH LOCK FOR FIREARM SIGHTS

John G. Rocha, Westfield, Mass., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 17, 1964, Ser. No. 352,696
3 Claims. (Cl. 33—56)



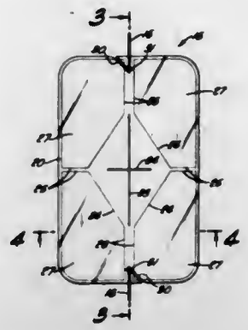
1. A firearm sight having a base plate, a mount mounted on said base plate for rotational displacement respective thereto around a vertical axis, a sector member fixed to one side of said mount, a sight tube mounted on said sector member for calibrated range adjustment, an azimuth adjustment device having a pintle received by a mating hole in said mount and a bore in said base plate so as to act as a bearing for the rotational displacement of said mount and means for adjustably rotating said mount around said pintle, and means for releasably locking said mount at its adjusted position including a transverse pin through said base plate slidingly received by a vertical slot in said pintle to prevent rotation thereof respective to said base plate, means for displacing said pintle vertically, a pair of cam slots formed in said pintle, and a pair of cam followers on said mount having sliding engagement with said cam slots for converting vertical displacement of said pintle to rotational displacement of said mount.

3,271,865
SURVEYOR'S TARGET

Roger D. Glidden, 708 Bettyhill Ave., Duarte, Calif., and Charles E. Glidden, 1231 Lyman Ave., Glendora, Calif.

Filed July 2, 1964, Ser. No. 379,945
5 Claims. (Cl. 33—74)

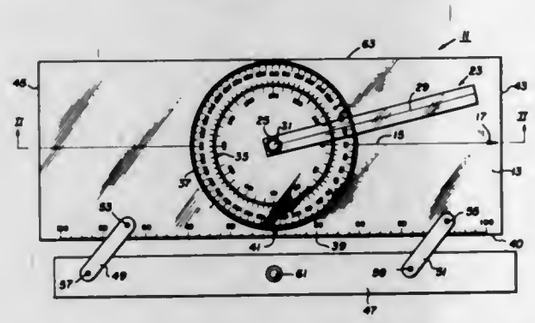
1. A surveyor's target for use on a plumb line, said target comprising a plaque of stiff plastic material, said plaque being divided into opaque areas and other areas of transparent-fluorescent material so arranged relative to said opaque areas as to facilitate alignment of the cross-hairs of a sighting instrument thereon with the vertical cross hair coincident with a plumb line, said plaque being substantially transparent throughout the thickness of said transparent-fluorescent areas whereby the latter are activated in the daytime by the light rearward thereof, and said transparent-fluorescent area lying generally centrally of said plaque and including two pairs of corners aligned, respectively, with the vertical and horizontal center lines of said plaque.



3,271,866
POSITION LOCATOR FOR AIRPLANES AND THE LIKE

Leslie G. Gruber, 4530 Shady Grove Road, Memphis, Tenn., and Lynton L. Scharff, 3001 Ozark Ave., Little Rock, Ark.

Filed Jan. 3, 1962, Ser. No. 163,982
5 Claims. (Cl. 33—75)

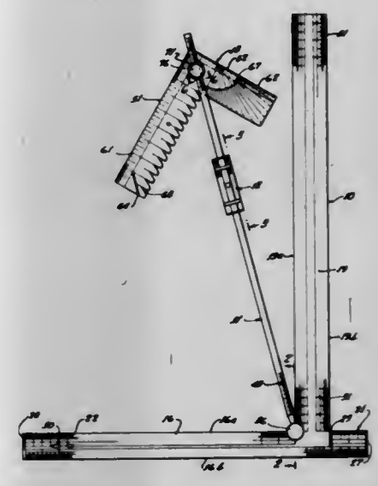


1. A position locator for locating the position of an airplane and the like on navigational charts and maps from readings indicated on ADF and/or Omni instruments and by the compass carried by the airplane and the like, said position locator comprising a transparent base plate having a base plate azimuth scale reading from zero degrees to 360 degrees and having a center line extending longitudinally of said base plate in alignment with the zero line of said base plate azimuth scale and having an arrow thereon pointing outwardly from the zero line, a transparent disc having a disc azimuth scale reading from zero degrees to 360 degrees, said disc azimuth scale being subdivided into an inner scale and an outer scale, an elongated transparent pointer having an index line thereon; means having a bore therethrough rotatably mounting said disc and said pointer on top of said base plate for 360 degree rotation of said disc and said pointer, respectively, relative to said base plate with the center of the bore coinciding with the centers of said base plate azimuth scale and said disc azimuth scale, with said index line, if extended, intersecting the center of the bore, and with said inner scale being adjacent said base plate azimuth scale, said disc and said pointer being supported by said base plate with said base plate being adapted to rest on navigational charts and maps whereby said disc and said pointer are rotatable relative to the navigational charts and maps; said base plate having a distance scale thereon with the zero point thereof being opposite the center of said bore and increasing in readings in opposite directions therefrom, a ruler and a pair of arms of equal length pivotally connected adjacent opposite ends thereof respectively to said ruler and said base plate whereby said ruler is adapted to be moved in parallel relationship to said base plate.

3,271,867
COMBINATION LAYOUT TOOL

Ralph C. Morris, 1572 Hazelwood Ave., Los Angeles, Calif.

Filed Sept. 30, 1964, Ser. No. 400,344
5 Claims. (Cl. 33—94)



1. A combination layout tool comprising, in combination:
(a) a base member;
(b) an upright arm member perpendicularly and integrally mounted on said base member to form a first square;
(c) each of said members having parallel inner and outer edges which intersect at right angles with an apex at the intersection of said inner edges and each member having at least one scale thereon;
(d) a rotating arm member pivoted coincident with said apex and having a scale with zero indexed at said apex formed thereon;
(e) a second relatively small square slideably and movably connected to said rotating arm and having scaled inner and outer edges with protracting means and spacing means provided thereon;
(f) means to read out the interior angle between said rotating arm member and said base member;
(g) marking means slideable on said rotating arm for positioning it at different predetermined scale positions along the arm intermediate said first and said second squares;
(h) guide means associated with said first square to permit it to move along a work piece; and,
(i) a measuring aperture formed in said base member adjacent said upright arm member and extending across said base member to said guide means.

3,271,868
DEVICE FOR MEASURING TWO-DIMENSIONAL REPRESENTATIONS

Gerhard Küntscher, Hamburg-Blankenese, and Benno Lotz, Kiel, Germany, assignors to Ortopedia Gesellschaft mit beschrankter Haftung, Kiel-Dietrichsdorf, Germany

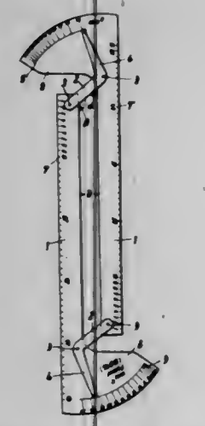
Filed Mar. 3, 1964, Ser. No. 349,068
Claims priority, application Germany, Aug. 7, 1963, O 9,602
3 Claims. (33—143)

1. A measuring instrument for application to an X-ray photograph of an anatomical bone, and for directly indicating both the true dimensions of the X-ray photographic image, and the corrected dimensions of said

bone, allowing for the enlargement factor due to the central projection distortion resulting from the X-ray technique, said instrument comprising:

(a) a pair of elongated, flat ruler-like legs carrying respective lengthwise scales of true photographic length and of corrected actual length, and each leg having at one end thereof an integral, arcuate enlarged scale-bearing extension which is coplanar with and extends lengthwise beyond the body of said leg;

(b) a pair of shorter flat links respectively pivotally connected at one end of each said link to a point near one end of each of said respective legs which is at the arc center of its said extension, said links being respectively pivotally connected at the other end of each such link to a point near the opposite



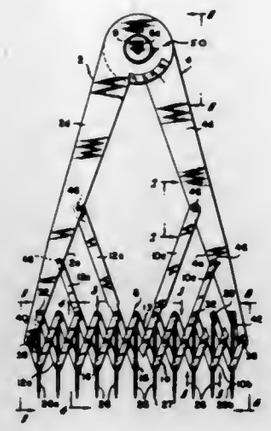
end of each respective leg, to form with said legs a shiftable parallelogram;

(c) each of said links having an integral pointer element adapted to move along a respective arcuate scale marked on the corresponding one of said extensions, as said parallelogram is shifted, the relation of the pointer element length to the scale factor of each arcuate scale being such as to provide, at the respective arcuate scales, simultaneous indications both of true photographic width and of corrected actual width of the bone as measured on said photograph between the facing edges of said legs, when said device is applied to the photograph with the facing edges of said legs overlying the longitudinal margins of the image of the bone.

3,271,869
PRECISION SPACING DIVIDERS
Nathaniel C. Ratner, 220 E. 63rd St., New York, N.Y.
Filed July 15, 1965, Ser. No. 472,080
9 Claims. (Cl. 33—151)

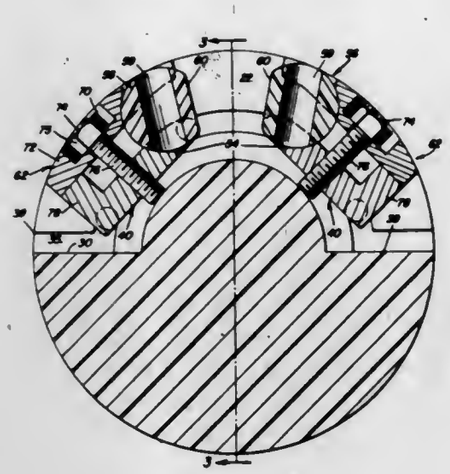
1. Proportional divider apparatus, comprising

a pair of pivotally connected legs (**2, 4**); and lazy tong means (**8**) connected between said legs, comprising a plurality of coplanar first links (**10**) extending generally parallel with a first one (**2**) of said legs, a plurality of coplanar second links (**12**) extending generally parallel with the other of said legs (**4**), said first and second links being arranged in spaced parallel planes, respectively, means (**26, 32**) pivotally connecting at least some of said first and second links at the ends thereof adjacent the pivotal connection of said legs, respectively, said connecting means including a plurality of parallel linear elements (**26**) contained in a common plane between and parallel with the planes containing said first and second links, respectively, and a plurality of coplanar guide members (**16**) arranged between and pivotally connecting said first and second links at the ends thereof remote from the pivotal connection of said legs, respectively, at least some of said guide members containing bores



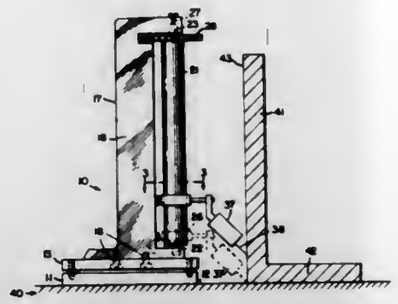
(**18**) slidably receiving portions of said linear elements, respectively.

3,271,870
BOWLING BALL HOLE GAUGING DEVICE
David P. Blaker, P.O. Box 8, Elmore City, Okla., and Kenneth J. Conrad, 7387 Broadway, Lemon Grove, Calif.
Filed Mar. 17, 1964, Ser. No. 352,450
10 Claims. (Cl. 33—174)



1. A handgrip measuring device comprising a dummy bowling ball, a pair of spaced slots formed in said ball having walls parallel to perpendicular planes intersecting at the center of said ball, each of said walls being formed with arcuate grooves, finger stall assemblies adjustably positioned in said slots, each finger stall assembly including a seating element slidably mounted by the arcuate grooves between the walls of the slot, a replaceable insert seated on said seating element, and locking means mounted on said seating element for both locking the insert in position on the seating element and holding the seating element in adjusted position within the slot, said locking means comprising, an insert clamping member having an outer portion engaging the insert in spaced relation to the seating element and a bearing portion engaging the seating element spaced from the insert, and screw means contacting the bottom of the slot and operatively engaged with the clamping member and the seating element for drawing the seating element toward the clamping member.

3,271,871
TESTING INSTRUMENT
Valentino J. Foscarota, 25 Cleveland St., Somerville, Mass.
Filed Feb. 16, 1965, Ser. No. 433,047
7 Claims. (Cl. 33—174)



1. An inclination and flatness gauge comprising a base defining a lowermost plane,

an upwardly extending support mounted on said base,

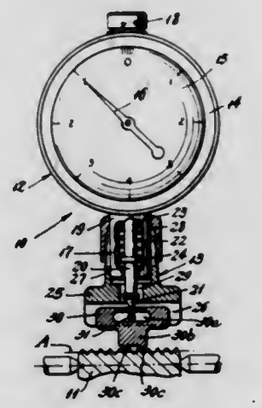
an upwardly extending elongated shaft mounted on said support, said support having axially spaced bearings for rotatably mounting said shaft about its longitudinal axis,

testing means mounted on said shaft for reciprocal movement along said shaft,

means interconnecting said base and said support for enabling perpendicular alignment of said shaft with respect to said plane of said base,

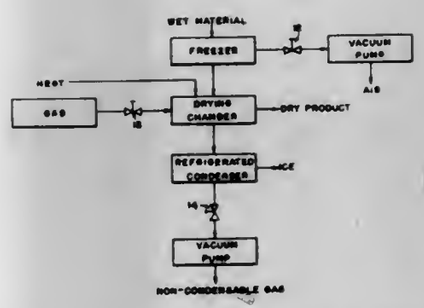
said testing means comprising an end mounted for rotation with said shaft about said axis and extending in one position to the lowermost plane for movement of said end over an arcuate path in said lowermost plane to tram said gauge.

3,271,872
DEVICE FOR CHECKING THREAD PITCH DIAMETER CONCENTRICITY
Lawrence J. Heslin, 28 Sunrise Road, Danbury, Conn.
Filed Sept. 17, 1963, Ser. No. 309,570
9 Claims. (Cl. 33—199)



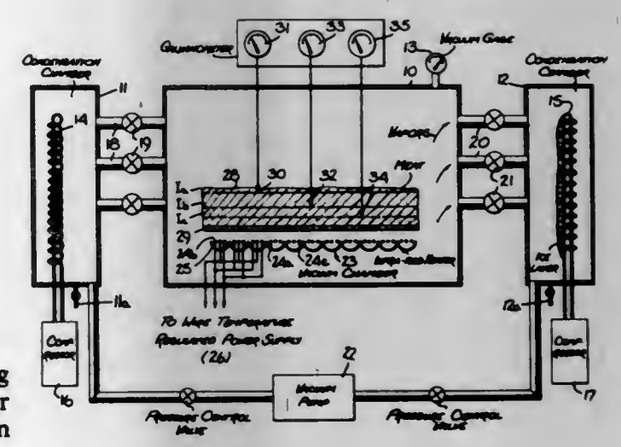
1. An actuating attachment for a dial indicator having movable plunger operating means to adapt the indicator for checking thread pitch diameter concentricity of an independently supported and rotated workpiece; said attachment comprising means for rigidly connecting said attachment to said indicator operably adjacent said plunger operating means and means freely universally floatable relative to said plunger operating means in a plane parallel to the axis of rotation of the workpiece, said floatable means being in operable engagement with said plunger operating means and having means engageable with the thread pitch diameter at one side of the workpiece to be checked and at spaced intervals therealong for moving said plunger operating member in response to deviation in the thread pitch diameter concentricity as the workpiece is rotated.

3,271,873
METHOD AND APPARATUS FOR DRYING MATERIALS
John C. Harper, Rte. 1, Willowbank 11, Davis, Calif.
Filed Sept. 12, 1963, Ser. No. 308,385
9 Claims. (Cl. 34—5)



1. In a method for drying material the steps comprising: placing the material to be dried in a low pressure atmosphere containing a light gas selected from the group consisting of hydrogen and helium, supplying heat thereto, and adding a sufficient amount of said light gas to said atmosphere to overcome effectively the effect of air leakage to an extent necessary to maintain the ratio of light gas to air of not less than about 10% of said light gas in the total volume of said atmosphere.

3,271,874
INFRA-RED SUBLIMATION METHOD AND APPARATUS FOR FREEZE DRYING TECHNIQUES
Franz Oppenheimer, deceased, late of Chicago, Ill., by Suzanne Bohnen Oppenheimer, executrix, 900 N. Michigan Ave., Chicago, Ill. 60611
Filed Jan. 28, 1965, Ser. No. 428,879
3 Claims. (Cl. 34—5)



1. The method of freeze-drying water-laden food within a vacuum chamber provided with an electrically-operated radiating device adapted to direct infra-red energy onto said food, said method comprising the steps of:

(a) reducing pressure in said chamber to effect evaporative cooling of said food to freeze same,

(b) supplying electrical power to the radiating device to produce infra-red energy to sublimate the water

of composition of the frozen food, the surface temperature of said device determining the band in the spectral region in which said energy is primarily radiated,

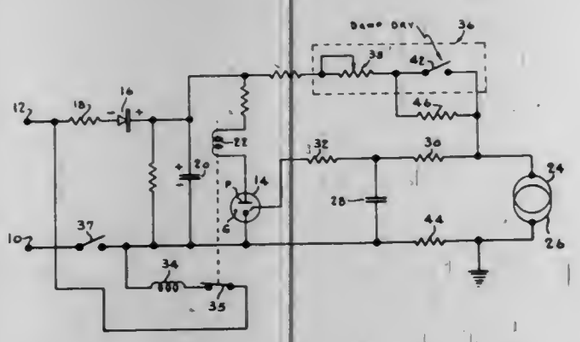
(c) varying the amount of power supplied to said device in the course of sublimation in accordance with the temperature of said food, and

(d) adjusting the radiating device to maintain the surface temperature thereof at a substantially constant level regardless of the amount of power supplied thereto in the course of sublimation, said level being such as to give rise to radiation in a band within said spectral region which provides optimum conditions of heat penetration and absorption to promote rapid sublimation without scorching of the food.

3,271,875
METHOD FOR STABILIZING UNSTABLE SUBSTANCES
Louis Rey, Les Cerisiers, France, assignor to l'Air Liquide
No Drawing. Filed May 5, 1965, Ser. No. 453,484
Claims priority, application France, May 11, 1964, 974,006, Patent 1,405,883
9 Claims. (Cl. 34—5)

1. A method for stabilizing substances alterable in the air, comprising the steps of diluting them in a liquid, cooling the diluted medium until the liquid solidifies, and separating out the solidified liquid by selective sublimation, the diluting liquid being at least a compound of the group consisting essentially of ammonia and carbon dioxide, and the halogenated hydrocarbons and the aliphatic amines of a freezing point substantially under 0° C.

3,271,876
DRYER CONTROL DEVICE
Otto R. Behrens, Skokie, Ill., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Nov. 20, 1962, Ser. No. 239,124
2 Claims. (Cl. 34—45)



1. A dryer control for use in combination with a pair of relatively spaced sensing members the leakage current across which is dependent on the amount of moisture contained in the articles being dried, said control comprising,

a thyratron tube,

rectifying means connected in circuit with and operative to apply a D.C. voltage to one of said members, said rectifying means also connected to the plate circuit of said tube for applying a predetermined D.C. voltage to said tube so that said tube is normally in a nonconducting state,

variable resistance means connected in circuit with said rectifying means and said sensing members for selectively adjusting the amount of resistance in the circuit to vary the voltage applied to said one sensing member, said variable resistance means including a rheostat, a fixed resistance and means for selectively bypassing said fixed resistance and connecting said fixed resistance in circuit with said rheostat,

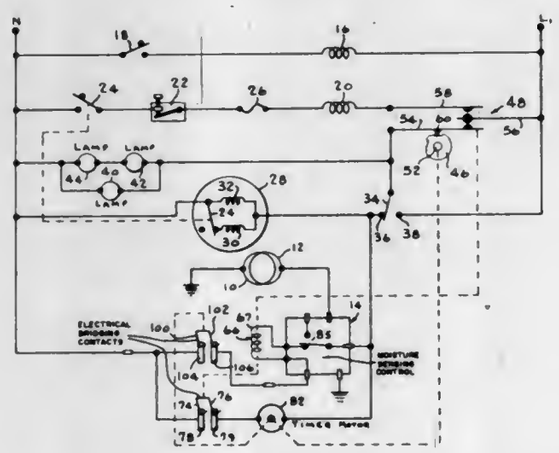
control means in series circuit relationship with and controlled by said thyratron tube,

the grid circuit of said thyratron tube including one of said sensing members and being responsive to the potential across said sensing members,

filtering means in the plate circuit of said tube and in circuit with said one sensing member to filter the D.C. voltage applied to said tube and said one sensing member,

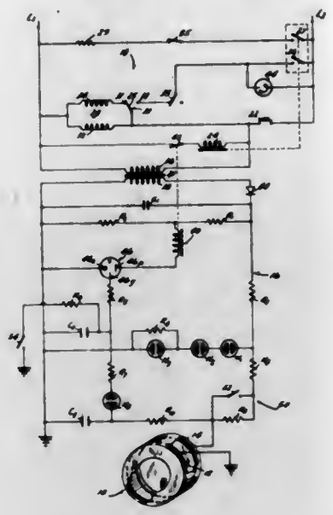
and capacitive means connected in said grid circuit between the grid of said tube and said one sensing member for effecting a time delay in the response of said tube to the potential across said sensing members whereby said tube is rendered conductive and actuates said control means when a potential corresponding to a predetermined moisture content of said articles appears across said sensing members.

3,271,877
DRYER CONTROL DEVICE AND TIMER
Robert F. Guenther, Jr., Elmhurst, and Ronald G. Martin, Chicago, Ill., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 243,001
20 Claims. (Cl. 34—45)



1. In a dryer, heat supply means, means for sensing moisture content and operative to establish a first dryer cycle based on said moisture content; timing means for establishing a second dryer cycle; control switch means in circuit with said heat supply means, said sensing means and said timing means, said control switch means having a first open position, a second position setting up a circuit to said sensing means and said timing means, and a third position setting up a circuit to said heat supply means, said sensing means and said timing means; said timing means including means engageable with said control switch means for selectively actuating said control switch means to and holding said control switch means in one of its three positions; second switch means in circuit with said timing means; and operating means for selectively opening and closing said second switch means; said sensing means connected in circuit with and controlling said operating means and being operative to respectively open and complete the circuit to said operating means simultaneously with initiation and completion of said first dryer cycle so that said timing means is de-energized during and is energized at the end of said first cycle to determine the period for movement of said control switch means from one of its three positions.

3,271,878
MOISTURE SENSING CONTROL
Ronald G. Martin, Chicago, Ill., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,934
20 Claims. (Cl. 34—45)



1. A moisture sensing control for use with apparatus for drying material and operative to control the heat supply means of said apparatus in accordance with the moisture content of said material, said moisture sensing control comprising, in combination,

sensing means including an electrode arranged for engagement with said material,

means for applying a D.C. voltage to said electrode with the voltage thereon varying in accordance with current leakage through said material so that the voltage on said electrode increases as the moisture content of said material decreases,

switch means for controlling energization of said heat supply means and having a switch-over voltage at which its operational state is changed to de-energize said heat supply means,

a neon lamp connected in circuit between said electrode and said switch means and having a switch-over voltage at which it is rendered conductive and below which it is non-conductive, the switch-over voltage of said neon lamp being below that of said switch means and the voltage on said electrode at the initiation of the drying operation being below the switch-over voltage of said neon lamp so that said switch means is electrically isolated from said electrode and is in a first operational state,

capacitive means connected in circuit with said neon lamp and electrode for receiving and storing a charge from said electrode and characterized by having a capacity at least equal to the switch-over voltage of said neon lamp,

and capacitive means connected in circuit between said neon lamp and said switch means and characterized by having a capacity at least equal to the switch-over voltage of said switch means.

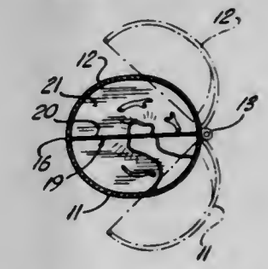
3,271,879
BRAIN AND NERVOUS SYSTEM MODEL
Arthur M. Sackler, 18 Searington Road, Roslyn, Long Island, N.Y.
Filed Mar. 2, 1964, Ser. No. 348,573
16 Claims. (Cl. 35—17)

1. An anatomical display device comprising a base carrying indicia corresponding to anatomical members, a brain model mounted on said base and including a plurality of longitudinally spaced panels carrying representations of corresponding brain sections, and nerve represent-



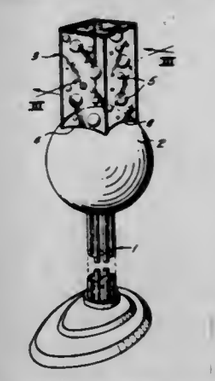
ing line elements extending from said indicia to respectively related points on said brain section representations.

3,271,880
MODEL OF LIFE FORM
Arthur M. Sackler, 18 Searington Road, Roslyn, Long Island, N.Y.
Filed Mar. 2, 1964, Ser. No. 348,575
11 Claims. (Cl. 35—17)



1. An anatomical model comprising a hollow body in the shape of a life form, said body including at least two separable wall portions pivotally connected, at least a portion of one wall of said body being transparent, and an insert member dimensioned to fit within said wall portions in the closed position and visible through said transparent portion, said insert member including a first longitudinal sheet and a second transverse sheet intersecting said first sheet along a line extending transverse said first sheet, said sheets bearing anatomical features of said life form.

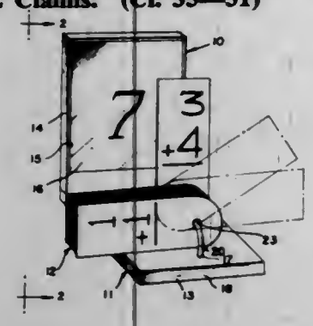
3,271,881
TEACHING AID
David N. Wagnon, 4005 Modlin St., Mesquite, Tex.
Filed Mar. 4, 1964, Ser. No. 349,433
11 Claims. (Cl. 35—19)



1. In combination with a static electricity generator having a sphere thereon, a housing made of transparent material positioned on the upper surface of the sphere

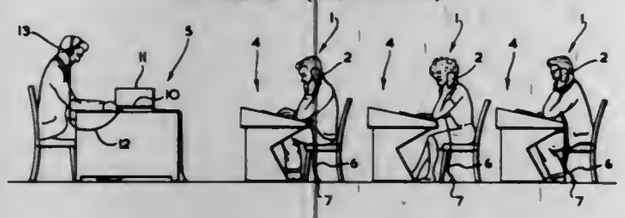
and having an open lower end, with edges conforming to the surface of the sphere; a plurality of free members in the housing having surfaces thereon of conducting material.

3,271,882
FLASH CARD GAME AND STAND
Ruth G. Chuy, 15447 Sorrento, Detroit 27, Mich.
Filed May 21, 1964, Ser. No. 369,140
2 Claims. (Cl. 35—31)



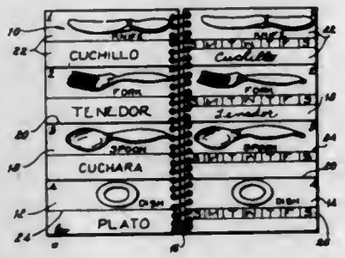
1. A device of the class described comprising: a plurality of flash card type cards; each of said cards being provided with a rounded lower end and a centrally located annular opening through said lower end; a platform having a plate on one end projecting vertically upward for vertically mounting a mirror thereon; an L shaped card supporting rod; said platform being provided with an opening spaced from said plate for mounting one end of a vertical portion of said L shaped rod; the other horizontal portion of said L shaped rod extending toward said mirror and being disposed in parallel relationship to and spaced above said platform for mounting said flash cards thereon by means of said central openings for forming a rotatable axis for said flash cards, whereby each of said flash cards may be rotated selectively from a horizontal inoperative position to a vertical operative position; said flash cards having their rear faces facing said mirror; printed means carried on the front faces of said flash cards for displaying problems; and, printed means carried on the rear faces of said flash cards for showing the answers to problems appearing on the front faces of said flash cards in cooperation with said mirror.

3,271,883
LANGUAGE LABORATORY APPARATUS
Harold A. Freeman, % McMaster University, Hamilton, Ontario, Canada
Filed June 17, 1963, Ser. No. 288,120
1 Claim. (Cl. 35—35)



A language laboratory comprising an unpartitioned room having a teacher station and a plurality of student stations where the voice of a teacher at the teacher station is clearly audible to the unaided ear, a curved speaking tube at each student station and of a size that can be held in one hand, the speaking tube comprising a hollow sound conduit having an open end that can be positioned close to a student's mouth with an opposite end held to one of his ears while leaving his other ear unobstructed to hear the teacher's voice unaided, the conduit apart from said open ends being closed to conduct the student's voice along the hollow conduit from his mouth to his said one ear so that his voice is clearly audible to him but substantially inaudible at the other student stations, the first mentioned open end being sufficiently large substantially to cover the student's mouth with his nose outside the tube, a microphone in each conduit for picking up the student's voice, electrical means for transmitting the student's voice from the microphone to the teacher station, an earphone at the teacher station, and means at the teacher station for selectively connecting the earphone to the electrical means from the different student stations whereby each student's voice can be clearly heard by the teacher but not by other students.

3,271,884
MEANS OF TEACHING A FOREIGN LANGUAGE
Robert E. Roberson, 507 E. Zion Place, Tulsa, Okla.
Filed Nov. 25, 1964, Ser. No. 419,627
4 Claims. (Cl. 35—35)

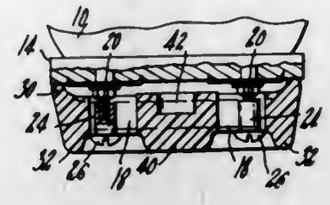


1. A teaching aid device for facilitating the self-instruction of a foreign language and which comprises a plurality of sheets, a circular binding means connecting the plurality of sheets whereby one portion of the sheets may be rotated through three hundred and sixty degrees with respect to the remaining portion of the sheets, each of said sheets being provided with information on each side thereof relating to the foreign language and a basic language corresponding thereto, said information being arranged in facing sheets with one of said facing sheets being provided with a column of basic words and a column of corresponding foreign words with each basic word being arranged in substantial alignment with the corresponding foreign word, the other of said facing sheets being provided with a column of basic words arranged in substantial alignment with a column of blank spaces, the basic words and blanks on the second mentioned facing sheet being in substantial alignment with the basic words and foreign words on the first mentioned facing sheet, said circular binding providing for positioning of each corresponding pair of facing sheets in substantial back to back relationship for facilitating self-testing of the learned words, independent opaque mask means slidably movable with respect to the sheets, said mask means comprising a substantially flat body portion having an outwardly extending tab provided on one edge thereof, said tab being arranged for obscuring the words of one column and permitting visual observation of the aligned word in an adjacent column, a plurality of recording sheets secured to the mask means in a manner permitting a three hundred and sixty degree rotation of the recording sheets whereby the recording sheets may be disposed on either of the opposed flat surfaces of the mask means.

3,271,885
HEEL FOR ATHLETIC SHOE
Timothy L. McAuliffe, 101 Monmouth St., Brookline, Mass.
Filed Apr. 22, 1964, Ser. No. 361,715
10 Claims. (Cl. 36—2.5)

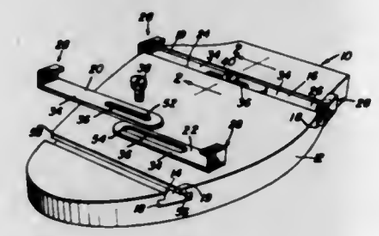
10. A football shoe having an outsole with two threaded studs projecting from the heel portion thereof, and a heel piece secured against said heel portion of

the sole, said heel piece comprising a circular disk of polyurethane having apertures therethrough into which said studs project, a raised circumferential flange on the upper face of said disk bearing against said sole, a circum-



ferential flange extending down from the lower face of said disk, a central boss on the lower face of said disk, and a female screw in threaded engagement with each said stud, each said screw having a head with a knurled shoulder bearing on the under surface of said piece.

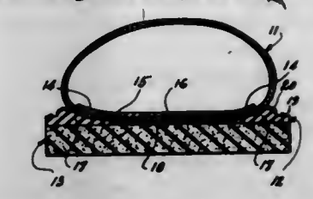
3,271,886
AUXILIARY SHOE SOLE
Glenn R. Hartpence, 8 W. Crest Ave., Winter Garden, Fla.
Filed June 16, 1965, Ser. No. 464,378
4 Claims. (Cl. 36—7.2)



1. An auxiliary shoe sole comprising a bottom member shaped substantially in the shape of a shoe bottom, clamp means slidably mounted within said bottom member, said clamp means provided with adjusting means, releasable securing means operably connected to said adjusting means for releasably securing said adjusting means whereby said clamp means can be adjusted for various size shoe bottoms and fixed when so adjusted, said clamp means comprising a first pair of U-shaped inwardly opening jaws mounted at opposite sides of said bottom member, and a second pair of U-shaped inwardly opening jaws mounted at opposite sides of said bottom member rearwardly of said first pair, said jaws extending upwardly and outwardly from said bottom member, said bottom member including first and second substantially parallel T-shaped slots extending transversely thereof, each of said first pair of U-shaped jaws having an elongate portion slidably mounted in the T-portion of said first slots, each of said second pair of U-shaped jaws having an elongate portion slidably mounted in the T-portion of said second slot, and one of said elongate portions of each pair positioned in overlying relationship with said other elongate portion of said pair, whereby said pairs of jaws are slidably movable in response to sliding of said elongate portions of said slots.

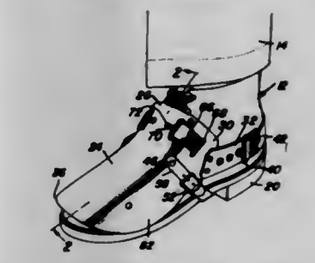
3,271,887
SHOE CONSTRUCTION
David Werman, Merrick, N.Y., assignor to A. Werman & Sons, Inc., New York, N.Y., a corporation of New York
Filed June 8, 1965, Ser. No. 462,180
6 Claims. (Cl. 36—14)

1. A shoe comprising an upper having inwardly directed lasting margins, a one-piece molded midsole including a continuous peripheral portion of substantial thickness having a double-stepped outer margin simulating a storm welt and a surface sloping downwardly at the inside of said storm welt, said lasting margins of the upper being in facially abutting relation, and secured to said slop-



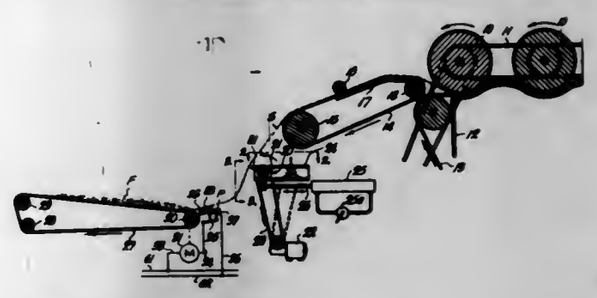
ing surface of the peripheral portion of said midsole, and a molded outer sole secured to the underside of said midsole and constituting the tread surface of the shoe.

3,271,888
PROTECTIVE ATTACHMENT FOR SHOES
Harold R. Graham and Gerald A. Graham, Tyler, Tex., assignors to James W. Fair, Tyler, Tex.
Filed June 18, 1965, Ser. No. 465,005
3 Claims. (Cl. 36—72)



1. A protective attachment for shoes comprising a generally trough-shaped rigid body having an upturned inner end portion and a generally rounded narrow toe portion and including longitudinally curved lower edges adapted to be spaced laterally outwardly beyond the periphery of the sole of a shoe and normally spaced a predetermined distance above a supporting surface, means connected to said body and extending around portions of a shoe for retaining the body in overlying relation to the shoe, and resilient means extending across the interior of the body in spaced relation to the inner surface thereof and adapted to engage the upper surface of a shoe at longitudinally spaced points for spacing the body above the shoe a distance at least equal to the distance between the lower edges of the toe portion and the supporting surface to enable the body to move downwardly so that the lower edge thereof will transmit forces directly to the supporting surface when an impact is received on said body.

3,271,889
FLATWORK IRONER WITH AUTOMATIC FLATWORK SPREADING MECHANISM
Arch O. Long, Sr., 1311 Tangier Way, Sarasota, Fla.
Continuation of application Ser. No. 145,210, Oct. 16, 1961. This application May 13, 1965, Ser. No. 459,513
5 Claims. (Cl. 38—143)



1. The combination of:
a flatwork ironing apparatus having an input end and including gripping means operable to receive and grasp one end of a piece of flatwork fed thereto and

to cause the remainder thereof to be drawn progressively toward and into said input end,
an elongate rotary member disposed near but in advance of said input end and oriented with its long axis transverse to the path of advance of said piece of flatwork so that the said remainder of said flatwork will be trained thereover,
a plurality of radially spaced resilient elements carried by and extending lengthwise of said rotary member and having free edge portions spaced laterally from said rotary member and adapted to engage the underside of said remainder,
ridges located on the free edge portions of said elements, said ridges disposed in oppositely directed echelon patterns proceeding outwardly on the edge from a point intermediate the ends of the element, and
means for rotating said member in a direction whereby said elements, while the ridges are in contact with said remainder of the flatwork, move against the direction of advance of the flatwork.

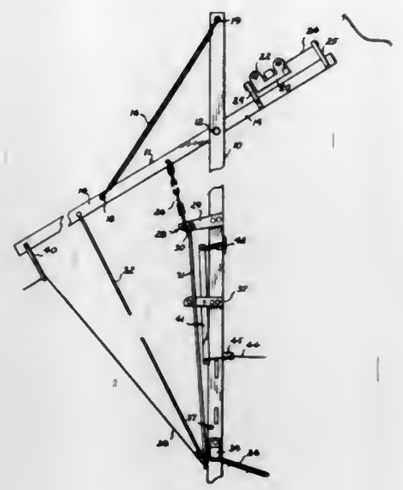
3,271,890
FISH HOOK BAITING DEVICE
Harold G. Davis, 809 E. Ellsworth, Denver 9, Colo.
Filed June 25, 1962, Ser. No. 204,786
1 Claim. (Cl. 43—4)



A device for attaching live bait to a fish hook with a rubber band which comprises: a substantially circular heel section having a plurality of fork members integrally attached to one end of said heel section, said fork members having outer cylindrical surfaces, being separated by a U-shaped space, and having outwardly extending shoulders and internal outwardly sloping surfaces at their ends; a stem portion of smaller diameter than said heel section for receiving and storing rubber bands integrally attached to the other end of said heel section; and a reduced diameter section at the other end of said stem section for picking up rubber bands, the diameter of said heel section increasing from its said other end to its said one end to provide for gradually spreading said bands as they are moved from said stem to said forks.

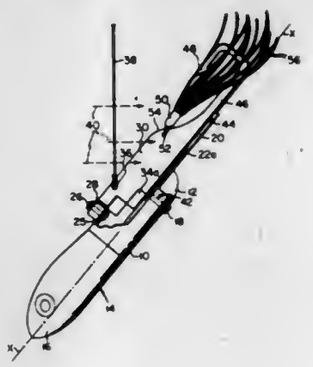
3,271,891
FISHING DEVICE
Henry G. Hancock, 150 Forest Ave., Macon, Ga.
Filed July 21, 1964, Ser. No. 384,162
6 Claims. (Cl. 43—15)

1. An automatic fishing device including stationary support means, means carried by said support means to hold a fishing rod, a cross-arm pivotally carried by said support means, a hook on one end of said cross-arm, spring means to urge said cross-arm to pivot in one direction, said one direction being such as to raise said hook on said one end of said cross-arm, means for preventing rotation of said cross-arm in said one direction, said means including a chain attached to said cross-arm, a ring at one end of said chain, a latch member carried by said support



means to receive said ring, a releasing strap pivotally secured to said latch member in such fashion that when said releasing strap pivots upwardly, said ring will be urged off said latch.

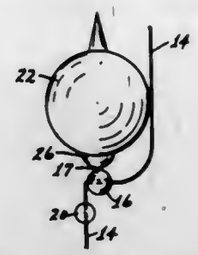
3,271,892
SINKER FOR FISHING LINES
Louis A. Sabrsula, 274 Concord St., San Francisco 12, Calif.
Filed July 13, 1964, Ser. No. 382,249
4 Claims. (Cl. 43—42.03)



1. A sinker arrangement for fishing lines comprising a bar-shaped body of heavy material and having a tapering front end and a rear end, a tail plate rigidly secured to said body at said rear end thereof, a rudder plate disposed at right angles to said tail plate, means for supporting said rudder plate at said rear end for free rotation along a plane parallel and adjacent to said tail plate about an axis extending perpendicular to said tail plate and removed from the center of gravity of said body, and means for attaching a fishing line to said rudder at a point removed from its axis of rotation.

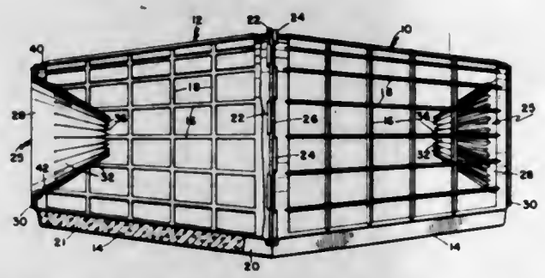
3,271,893
DETACHABLE FISHING FLOAT
Marvin T. Bowers, 3707 North Drive, Greenville, Ohio
Filed May 13, 1964, Ser. No. 367,112
3 Claims. (Cl. 43—43.14)

1. In combination with a fishing line, a hollow float, a semi-spherical bulbous-shaped protuberance formed on the hollow float, there being an aperture formed through the semi-spherical bulbous-shaped protuberance, a snap fastener threaded onto the fishing line, a ball formed on the snap fastener with said ball being adapted to



be snapped into the semi-spherical bulbous-shaped protuberance, and with the ball entering the semi-spherical bulbous-shaped protuberance through the aperture formed therethrough.

3,271,894
HEAD FOR SHELLFISH TRAP
Joseph J. Manno, 7450 Girard Ave., San Diego, Calif., and Nils C. Schultz, 5618 Taft Ave., La Jolla, Calif.
Filed Oct. 9, 1964, Ser. No. 402,702
5 Claims. (Cl. 43—65)



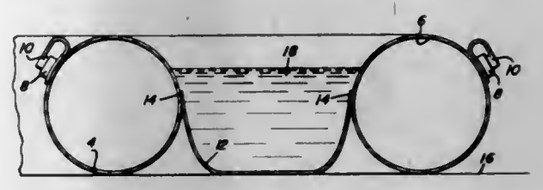
1. A head for a shellfish trap comprising:
a frusto-conical body portion having a mounting flange extending radially from the large diameter end thereof; and
a plurality of closely spaced flexible fingers on the smaller diameter end of said body portion and converging inwardly to define a relatively small diameter throat, said fingers having integral bosses providing reinforcement against flexure throughout a portion of their length adjacent the body portion.

3,271,895
CONSTRUCTION TOY COMPRISING PANELS IN PLATE FORM CONNECTABLE BY ELASTIC BANDS
Jens Ole Sørensen, 3 Marediget, Charlottenlund, Denmark
Filed Jan. 3, 1964, Ser. No. 335,549
Claims priority, application Denmark, Jan. 10, 1963, 118; Mar. 27, 1963, 1,389
14 Claims. (Cl. 46—31)



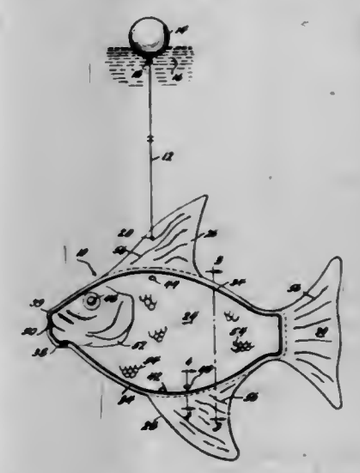
1. In a constructional toy set comprising relatively thin elements having at least two edges, each of said elements being provided with recess means whereby edges of adjacent elements are adapted to be joined by elastic bands passing through said recess means and engaging said elements, the improvement wherein each recess means includes at least two recesses spaced from one another along one of said edges of said element and opening through said one edge, the distance of spacing between said two recesses being the same as the distance between spaced recesses on an edge of every other said element, said recesses being defined by projections extending along said elements, said recess means enabling two of said elements to be joined in edge abutment by placing said two elements edge to edge with said recesses of each element adjacent one another and said recess-defining projections abutting with a said elastic band passing through one pair of adjacent recesses about said abutting projections and along each element and through the other pair of adjacent recesses about said abutting projections, said joining elastic band thereby aligning said two elements in edge abutment and forming a hinge therebetween to allow an arbitrary angle between said two elements.

3,271,896
PORTABLE INFLATED WATERWAY FOR TOY BOATS
Kenneth M. Hines, 3420 N. 12th Ave., Evansville, Ind.
Filed Sept. 4, 1964, Ser. No. 394,415
3 Claims. (Cl. 46—87)



2. A portable, collapsible toy waterway for toy boats including a pair of spaced, endless, inflatable and collapsible inner and outer tubes for mounting on a supporting surface, an endless, flexible and collapsible trough means for the reception of water positioned between said tubes, said trough means having the opposed marginal edge portions thereof affixed to the walls of the tubes at points vertically spaced above the supporting surface, said trough means between the opposed walls of the tubes being positioned below the affixed marginal portions thereof so as to rest on the supporting surface and form a pocket for the reception of water.

3,271,897
AQUATIC DISPLAY DEVICE
Ralph J. Gelinas, 5907 Sepulvida Blvd., Van Nuys, Calif.
Filed Jan. 7, 1964, Ser. No. 336,303
3 Claims. (Cl. 46—92)



1. An aquatic display device for use in water having currents therein comprising a float, a line and a submerged body secured to said line, said body being formed of at least two sections of pliable plastic material forming

a cavity within said body, at least one fill hole along the bottom of said body and at least one vent hole along the top of said body to provide access to said cavity by said water for display of said device, said body having a plurality of vane elements projecting therefrom, the combined surface area of said vane elements being substantial with respect to the area of said body, said body movable through said water by action of said currents upon said vane elements, the specific gravity of said body being slightly greater than that of water.

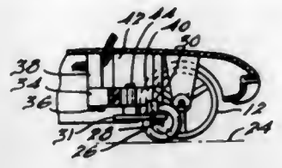
3,271,898
SOUND MAKING DEVICE
Marvin I. Glass and Burton C. Meyer, Chicago, and Jerome L. Pinsler, Evanston, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 1, 1965, Ser. No. 429,340
1 Claim. (Cl. 46—118)



A toy horn comprising an animal figure head defined by an elongated housing having a generally hollow interior, a jaw portion of said head being mounted on the housing for movement relative thereto, sound producing mechanism including a generally frusto-conically shaped diaphragm fixed in transverse relation within said housing rearwardly of said movable jaw portion, said diaphragm having a flat, central section, a striker support means journaled in said housing for rotation relative thereto, a plurality of striker elements carried by said support means in circumferentially spaced relation about the periphery thereof for movement through a path of striking engagement with the flat central section of the diaphragm, each of said striker elements being circular in form and being loosely mounted on the support by means of a pin on the support and an enlarged central opening in the striker, whereby said striker may rotate and also shift radially of said pin, gear drive mechanism in said housing including a main drive gear mounted on a first shaft, a friction drive wheel fixedly mounted on a second shaft, means including an additional gear on said second shaft for placing said drive gear in driving relation with said second shaft and friction drive wheel and also providing for disengaging said main drive gear from said driving relation with said additional gear, means connecting said friction drive wheel with said striker support for effecting rotation of said striker support in response to rotation of said friction wheel, a lever fixed to said main drive gear and projecting from said housing to provide means for manually rotating said main gear, and means connecting said lever with said movable jaw portion to move the latter as said main drive gear is actuated to cause said striker elements to engage said diaphragm.

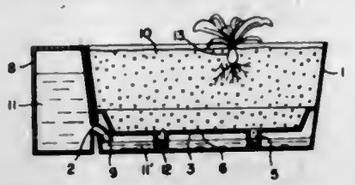
3,271,899
STEERING ARRANGEMENT FOR TOY VEHICLES
Charles H. Vaughan, 2701 Middle Belt, Pontiac, Mich.
Filed June 1, 1964, Ser. No. 371,500
7 Claims. (Cl. 46—210)

1. A toy vehicle having a pair of rear wheels, motor means for driving at least one of said wheels, a ground engaging front steering wheel mounted on said vehicle for limited movement from side to side of the vehicle along an arcuate path the center of curvature of which is vertical and disposed rearwardly of said steering wheel, and a control cord secured to said vehicle independently of said steering wheel by means of which an operator may



exert a laterally directed pull on the vehicle to move the vehicle laterally over said steering wheel to position the latter at the side of the vehicle opposite the side from which the pull on the cord is exerted thereby to effect turning of the vehicle away from the operator.

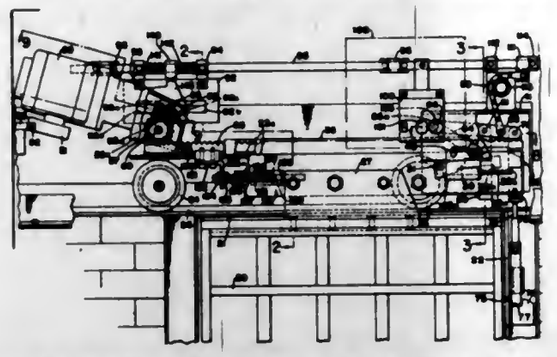
3,271,900
AUTOMATIC PURE CULTIVATOR
Sakae Mori, 604, 5-chome, Setagaya-ku, Tokyo, Japan
Filed Dec. 24, 1963, Ser. No. 333,139
Claims priority, application Japan, Mar. 12, 1963, 38/16,191
1 Claim. (Cl. 47—38.1)



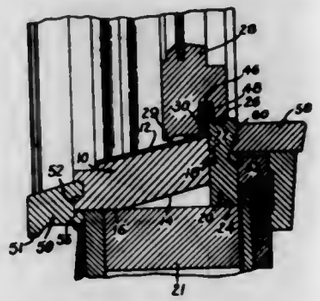
A self-feeding plant holder comprising an open top plant container having a bottom and sides with a side opening, an inner open top box having a bottom with openings, outwardly slanting sides, and hollow legs extending from said box bottom and having side openings, said box being detachably positioned in said container with said legs mounted on said container bottom spacing said box bottom from said container bottom and with said box sides extending to said container sides, a special soil positioned in said box and thereabove in said container towards the open top of said container, a closed solution tank having a laterally extending curved tubular nozzle detachably extending through said container side opening and spaced from said container for allowing air to enter said container beneath said box and said nozzle having an open end positioned on a level beneath said box bottom.

3,271,901
JAIL DOOR OPERATOR
Charles B. Bednar, Cleveland, Ohio, assignor to Van Dorn Company, a corporation of Ohio
Continuation of application Ser. No. 800,277, Mar. 18, 1959. This application Dec. 29, 1965, Ser. No. 518,522
14 Claims. (Cl. 49—17)

1. In combination with a door which is movable between open and closed positions, a doorway frame at which said door is mounted, and a first lock mechanism for locking said door closed, said first lock mechanism including a drop bolt which is movable downward to lock the door closed, a second lock mechanism for locking the door closed which is positioned to be inaccessible from behind said door, common operating means which is actuated when the door is closed to operate both lock mechanisms to lock the door in a closed position, and means coupling said common operating means to said drop bolt for downward movement of said drop bolt when said common operating means is actuated but ineffective to prevent said actuation of said common operating means if said drop bolt is held upwardly out of locking relationship with said door, said coupling means including a link which is movable downwardly in response to actuation of said common operating means, said link having a portion which defines an upwardly facing shoulder and having an opening in said portion, and said drop bolt having means at its upper end which extends slidably up through said opening and which has an enlarged portion resting on the top of said shoulder.



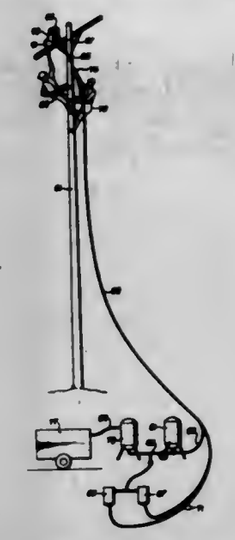
3,271,902
WINDOW SILL AND SASH CONSTRUCTION
Forrest L. Dunsmoor, Oskaloosa, and Herman S. Kuyper, Pella, Iowa, assignors to Roiscreen Company, Pella, Iowa, a corporation of Iowa
Filed Apr. 22, 1964, Ser. No. 361,659
3 Claims. (Cl. 49—483)



1. In a window sill and sash construction, a sloping sill member and a sill support leg along the inside edge thereof, the lower surface of the outside margin of said sill member and the lower edge of said support leg being in the same horizontal plane for direct mounting on the lower member of a window opening, said support leg projecting above the top surface of said sill member, a sash having a rabbeted portion receiving the upper outside corner of the projecting portion of said support leg, a weather stop bar along said projecting portion having an upstanding flange, said sash having a groove receiving said flange, said weather strip bar having an L-shaped portion along the upper outside corner of said projecting portion, the legs of which terminate in flanges directed toward said projecting portion, and said projecting portion having grooves receiving said last flanges.

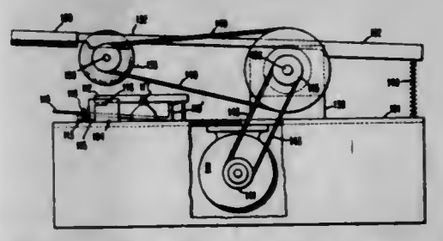
3,271,903
MAINTAINING THE RESISTIVITY OF INSULATING MEMBERS IN ENERGIZED ELECTRIC EQUIPMENT
William C. Gregory, 438 W. Laurel St., Compton, Calif.
Filed Apr. 6, 1965, Ser. No. 446,798
6 Claims. (Cl. 51—8)

1. Apparatus for cleaning and spraying fluids in order to maintain the resistivity of outdoor insulators comprising a source of compressed air, means for removing sufficient water from said compressed air to dehydrate the air so as to make it substantially electrically non-conductive, means for adding metered quantities of powdered abrasive cleaning material to said dehydrated compressed air, means for diverting a portion of said dehydrated compressed air so as to add coating fluid to said mixture of abrasive cleaning material and dehydrated compressed air, means for spraying said mixture of fluid, abrasive



cleaning material and dehydrated compressed air, and spray regulation means separated from the spraying means by electrically non-conductive material, said spray regulation means controlling the amount of mixed fluid, abrasive material and dehydrated compressed air ejected out the spraying means.

3,271,904
PRECISION WIRE SEVERING APPARATUS
Alexander J. Zanni, 19 Bradley St., Binghamton, N.Y.
Filed Feb. 13, 1964, Ser. No. 344,686
6 Claims. (Cl. 51—98)

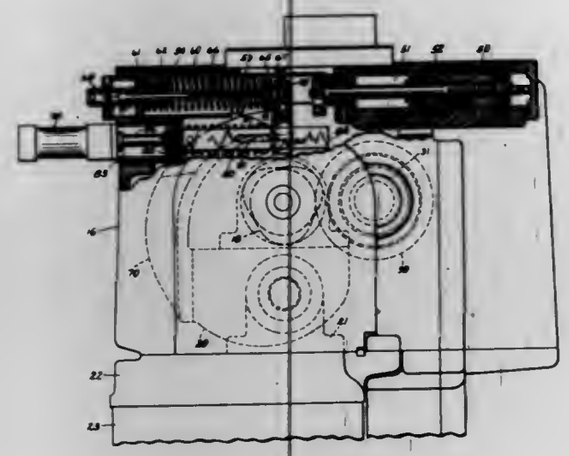


6. Apparatus for severing thin cylindrical work-pieces into desired lengths, comprising, in combination: a base; a work-piece supporting shelf rigidly attached to said base; means mounted on said base for fixedly supporting a first shaft in a position fixed with respect to said base; an arm mounted on said first shaft for pivotal movement about said first shaft; a spindle carried on said arm; a rotatable cutting tool mounted on said spindle; a motor mounted on said base; first flexible belt drive means connected between said motor and said first shaft; and second flexible belt drive means connected between said first shaft and said spindle.

3,271,905
MASTER CAM ACTUATOR
Harold E. Balsiger, Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa.
Filed Dec. 20, 1963, Ser. No. 332,084
9 Claims. (Cl. 51—101)

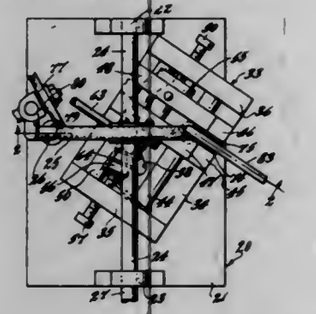
1. In a cam grinding machine,
(a) a work carriage,
(b) a cradle pivotally supported on said carriage for rocking movement toward and from a grinding wheel,
(c) a master cam rotatably supported on said cradle,

(d) a follower for said master cam,
(e) holding means for applying a predetermined force for holding said follower and said master cam in contact,



(f) and means operable automatically to change the force exerted by said holding means during a grinding operation.

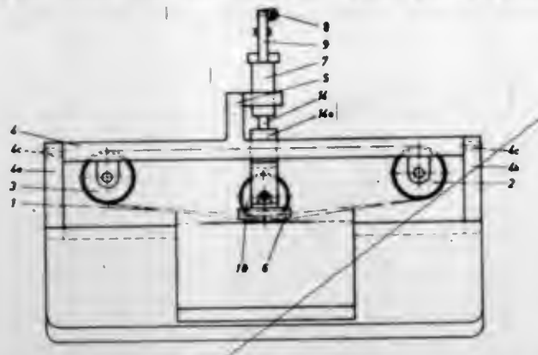
3,271,906
BLADE SHARPENER
Aldo J. Esopi, 604 N. Main St., R.D. 2, Wilkes-Barre, Pa.
Filed Feb. 13, 1964, Ser. No. 344,679
5 Claims. (Cl. 51—102)



4. A blade sharpener comprising a base, a rotary grinding wheel over said base, a carrier on said base, mounting means mounting said carrier on said base for movement toward and away from said grinding wheel, guide members upstanding from said carrier for movement therewith into and out of operating relationship with said wheel, said guide members being relatively movable toward and away from each other on said carrier for accommodating different-size blades, and operating means operatively connected to said guide members for effecting said relative movement, said operating means comprising constraining means operatively associated with said guide members to effect equal and opposite relative movement thereof.

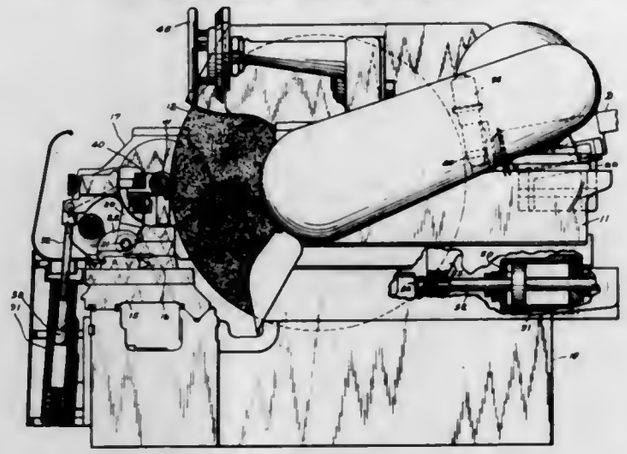
3,271,907
GRINDING MACHINE
Karl Heesemann, 54 Friedenstrasse, Rehme, via Bad Oeynhausen, Germany
Filed Jnne 26, 1964, Ser. No. 378,277
16 Claims. (Cl. 51—141)

1. In a grinding machine for grinding rabbets and other profiles, of the type including a circulating endless abrasive band having an upper and a lower reach, said abrasive band being guided over pulleys one of which is a driving pulley, the combination of a supporting beam having a presser shoe mounted thereon so as to be movable transversely of the direction of movement of said abrasive band and in a direction parallel to the plane of the upper reach of said abrasive band, and a profiled



presser member rotatably mounted in a recess in said presser shoe, said presser shoe engaging under pressure said abrasive band on the side remote from a workpiece thereby to bring said abrasive band into biased contact with a profile to be ground of said workpiece.

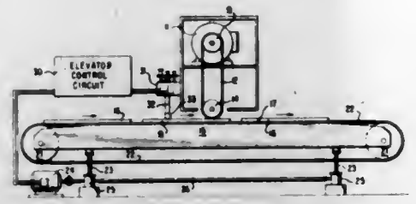
3,271,908
DRESSER CONTROL FOR ABRASIVE WHEELS
Hugh N. Rocks, Waynesboro, Pa., assignor to Landis Tool Company, Waynesboro, Pa.
Continuation of application Ser. No. 839,392, Sept. 11, 1959. This application Nov. 15, 1963, Ser. No. 324,609
10 Claims. (Cl. 51—165)



2. In a grinding machine for grinding cylindrical workpieces, a bed, a grinding wheel support slidably mounted on said bed for movement transversely toward and from a workpiece, a grinding wheel rotatably mounted on said grinding wheel support, feeding means for effecting said transverse movement of said grinding wheel support to perform a grinding operation, a dressing tool, means for traversing said dressing tool across the grinding wheel, a plurality of control means actuated by said feeding means at different points in the transverse movement of said wheel support for actuating said dresser traversing means, and selector means operable in advance for connecting one of said control means with said dresser traversing means.

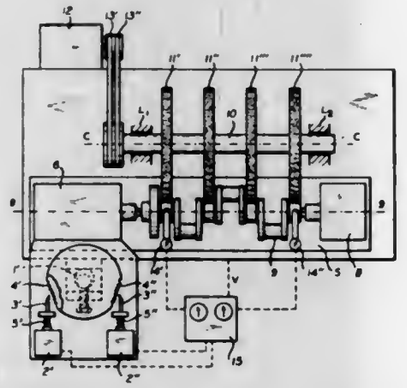
3,271,909
GRINDING APPARATUS
Richard D. Rutt, Wilson, and Adolph C. Carlson, Grand Island, N.Y., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Mar. 13, 1964, Ser. No. 351,692
11 Claims. (Cl. 51—165)

1. A grinding apparatus comprising:
a grinding head having a driven abrasive surface;
a worktable spaced beneath said grinding head to support workpieces for treatment by said abrasive surface;
an elevator mechanism for adjusting the relative vertical positions between the worktable and said abrasive surface;
means for sensing the vertical position of the upper surface of a workpiece placed on said worktable; and



control means operatively connected to said elevator mechanism and responsive to said sensing means for adjusting the relative vertical distance between said worktable and said abrasive surface to effect removal of material by said abrasive surface from the upper surface of the workpiece down to a fixed level below the upper surface thereof.

3,271,910
METHOD OF AND APPARATUS FOR CORRECTING THE SIZE AND ANGULAR RELATION BETWEEN A WORKPIECE TO BE GROUND AND A TOOL
Rudolf Haisch, Dahlienweg 19, Ruit, Kreis, Esslingen (Neckar), Germany
Filed June 10, 1964, Ser. No. 374,126
Claims priority, application Germany, Apr. 12, 1961, H 42,273
7 Claims. (Cl. 51—165)



1. In a machine for grinding a work piece,
means for rotatably supporting a work piece comprising
a base,
a head stock and a foot stock operatively mounted on said base,
means for maintaining final size of all portions of said work piece within close predetermined limits comprising
gages disposed at at least two points axially spaced apart from each other on said work piece,
means for deforming at least one of said means rotatably supporting said work piece, comprising
a reversible adjusting mechanism,
gage actuated control means for actuating said adjusting mechanism during the grinding operation,
said gages being operatively connected to and controlling said gage actuated control means,

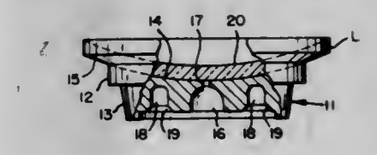
said gage actuated control means being responsive to variations in size of said work piece and to the angular relation between the grinding wheel axis and the work piece axis between said engaging points of said gages on said work piece, respectively, during the grinding operation to actuate said adjusting means in order to correct said size variations to a predetermined size,
whereby any change in the predetermined angular relation between the grinding wheel axis and the work piece axis is corrected during the grinding operation.

3,271,911
ABRASIVE WHEEL
Philip M. McKenna, Greensburg, Pa., assignor to Kennametal Inc., Latrobe, Pa., a corporation of Pennsylvania
Filed Apr. 20, 1964, Ser. No. 361,066
18 Claims. (Cl. 51—206)



1. A grinding wheel comprising; a metal body having an axis of rotation and a surface on the body concentric with said axis, abrasive means secured to said surface, said body consisting of single integral mass of metal having a Young's modulus of elasticity on the order of at least 40 million pounds per square inch, and said abrasive means secured to said surface comprising abrasive particles in a bonding matrix.

3,271,912
LENS BLOCKS
Lloyd A. Buckminster, Geneva, N.Y., assignor, by direct and mesne assignments, of one-half to Textron, Inc., Providence, R.I., a corporation of Rhode Island, and one-half to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Application Aug. 2, 1962, Ser. No. 214,261, which is a division of application Ser. No. 4,950, Jan. 27, 1960, now Patent No. 3,192,676, dated July 6, 1965. Divided and this application Mar. 1, 1965, Ser. No. 435,801
2 Claims. (Cl. 51—216)



1. The combination with a lens blank, of a lens block for holding the blank in a machine during processing of the blank,
(a) said block being a metallic alloy having a lower melting point than said lens blank and having one end face molded on said blank to conform in shape to and directly adhered to one face of said blank,
(b) said block having an integral relatively short shank, the maximum overall axial extent of the block being approximately equal to the maximum overall axial extent of the blank,

(c) said shank having two recesses, which extend partway only into said shank for receiving driving pins of the machine, said recesses extending toward said one end face from the end of said shank opposite to said one end face, and

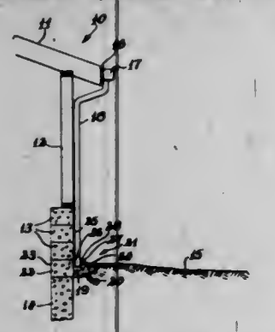
(d) said shank having therethrough a separate hole which extends from said opposite end of said shank centrally of said shank through to said one end face, thereby permitting gauging of the thickness of the lens blank which is held by said block.

3,271,913

MEANS FOR DISPERSING WATER FROM A ROOF OVER ADJACENT LAND SURFACE

William F. Fields, 418 S. Monroe St., Lincoln, Ill.

Filed Jan. 15, 1964, Ser. No. 337,816
3 Claims. (Cl. 52—16)



1. Means for collecting from a roof water due to rain and melting snow and ice comprising:

(a) an eaves gutter underlying a lower edge of the roof,

(b) a foundation gutter extending at ground level underneath the building wall carrying said roof edge,

(c) said foundation gutter having a trough extending along the outer side of said building wall with the bottom of said trough below the land surface,

(d) the upper surface of said foundation gutter along the side of said trough away from said wall being located along the adjacent land surface, and

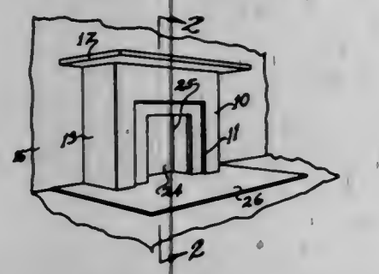
(e) a downspout extending from said eaves gutter along the outer side of said building wall with its lower end constructed and arranged to discharge water into said trough to flow over said upper surface of said foundation gutter onto the adjacent land surface.

3,271,914

COLLAPSIBLE MANTEL

Maxie F. Boyett, 412 Tuscaloosa Ave., Birmingham, Ala.

Filed Jan. 20, 1964, Ser. No. 338,902
1 Claim. (Cl. 52—36)



A collapsible mantel comprising:

(a) a front panel having a fireplace opening therein,

(b) side panels at opposite sides of said front panel,

(c) means hingedly connecting each of said side panels along one edge thereof to an adjacent side edge of said front panel in position for each side panel to move from a collapsed position alongside and inwardly of said front panel to an extended position generally perpendicular to said front panel,

(d) a top panel,

(e) hinge means connecting the inner surface of said top panel to the inner surface of said front panel above said fireplace opening in position for said top panel to extend in a generally horizontal position perpendicular to said front panel and be supported by said side panels while said side panels are in said extended position and upon movement of said side panels to collapsed position said top panel is disposed to move inwardly and downwardly alongside the collapsed side panels,

(f) means limiting forward movement of said top panel relative to said front panel while said top panel is held in a generally horizontal position by said side panels,

(g) there being vertically extending under-cut grooves along the inner sides of the fireplace opening, and

(h) a flexible sheet-like fireplace backing member adapted to fit within said fireplace opening with the edges of said sheet-like backing member engaging said under-cut grooves, whereby said backing member is held in place.

3,271,915

OIL WELL DRILLING APPARATUS WITH SELF-RAISING DRAWWORKS SUPPORT

Homer J. Woolslayer, Cecil Jenkins, and Joseph R. Woolslayer, Tulsa, Okla., assignors to Lee C. Moore Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 2, 1964, Ser. No. 335,039
9 Claims. (Cl. 52—122)



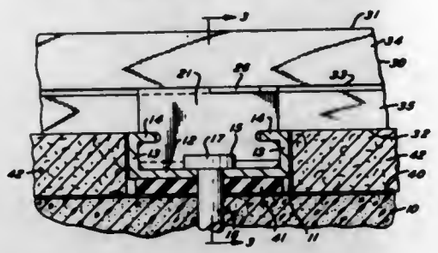
6. In oil well drilling apparatus, a gin pole provided with forwardly and upwardly inclined rear legs forming a track, an upright mast disposed against the front of the gin pole, a crown block supported by the mast, a traveling block in the mast, a line suspending the traveling block from the crown block and also extending down the back of the mast, a support extending rearwardly from the bottom of the gin pole, drawworks rigidly mounted on said support and operatively connected to the lower end of said line, wheels mounted on said support and engaging said legs for rolling up and down them, sheave means supported by the mast above the gin pole, a sling extending around said sheave means and connected to the traveling block and drawworks support for moving the support up said legs when the drawworks is operated to raise the traveling block in the mast, and means for detachably securing the raised support to the upper part of the gin pole with the major portion of the support overhanging the back of the gin pole.

3,271,916

UNIFORMLY RESILIENT FLOORING SYSTEMS

Ray E. Omholt, Berwyn, Pa., assignor to Powerlock Floors, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 27, 1965, Ser. No. 428,471
5 Claims. (Cl. 52—393)



1. In a flooring system having

a plurality of floor boards superposed on and transversely spanning a plurality of spaced parallel supporting members on a foundation,

said floor boards having upper and lower faces, and

fastening members holding said floor boards to said parallel supporting members, and

members for attaching said supporting members to the foundation,

the improvement which comprises, for imparting substantially uniform load bearing and impact response characteristics to the upper faces of the boards,

resilient supporting inserts in and substantially longitudinally filling the spaces between said supporting members and enhancing the span response of said floor boards to load and impact,

said resilient supporting inserts having their upper margins in engagement with the lower faces of said floor boards and their lower margins in engagement with said foundation and thereby directly imparting their load bearing and impact response characteristics substantially uniformly to the floor boards,

said parallel supporting members having resilient supports interposed between said supporting members and said foundation,

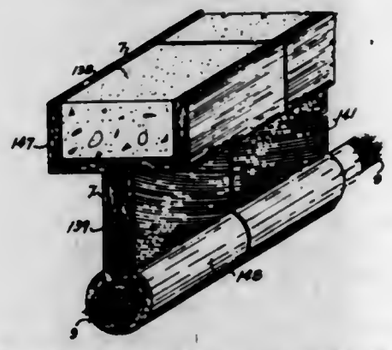
said resilient supports and said resilient supporting inserts having different predetermined resiliency and load bearing characteristics for substantially balancing the load bearing and resilient impact response characteristics of said floor boards in span and over said supporting members.

3,271,917

REINFORCED PLASTIC CONSTRUCTIONS

David Rubenstein, 2750 2nd Ave., San Diego, Calif.

Original application June 12, 1959, Ser. No. 820,067. Divided and this application May 4, 1965, Ser. No. 453,127
14 Claims. (Cl. 52—309)



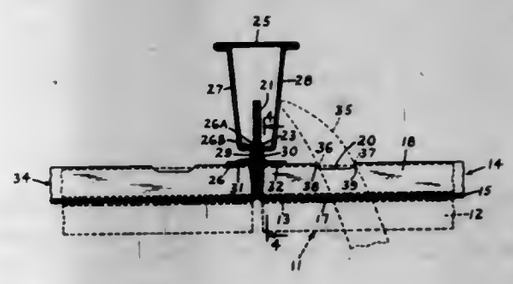
1. An article of manufacture comprising a preformed plastic element having two spaced apart vertical webs and a horizontal bottom web interconnecing the said two vertical webs, said element also having a horizontal upper web spaced vertically from said bottom web, a compression resistant material disposed between the upper portions of said vertical webs and resting on said horizontal upper web, said vertical and horizontal webs comprising a resinous composition covering with a fibrous-metal reinforcement disposed in said vertical and horizontal bottom webs, said bottom and upper horizontal webs and portions of said vertical webs defining an enclosed space and tensile load resisting member disposed in said space.

3,271,918

HANGER ASSEMBLY

George T. Phillips, Bedford Village, N.Y., assignor to James A. Phillips Inc., New York, N.Y., a corporation of New York

Filed June 16, 1964, Ser. No. 375,473
5 Claims. (Cl. 52—493)



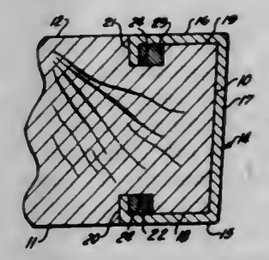
1. Tile support apparatus for a panel of tiles comprising, a channel member having formed therein a lengthwise slit with resiliently separable sides, a tile-support bracket disposed outwards of said slit in transverse relation to the center plane thereof, said bracket having a web towards said slit, flange means extending from said bracket into said slit and releasably grasped within said slit by the resilient sides thereof, and fulcrum means provided by said web for a tool adapted by engagement with said fulcrum means to exert on said bracket a pulling force by which said flange means is removable from said slit.

3,271,919

DOOR EDGE PROTECTOR

Robert N. Olton, 2943 E. Overlook Road, Cleveland, Ohio

Filed Aug. 5, 1964, Ser. No. 387,629
9 Claims. (Cl. 52—624)



1. The combination of a door and door edge protector including means for fitting and fastening said protector on and to an edge of said door,

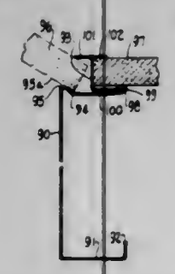
said door comprising front and rear sides and an edge bounding said sides and extending between the marginal portions thereof, said front and rear sides having grooves therein extending longitudinally along said marginal portions associated with said edge to be protected and spaced laterally from said associated edge, said grooves each having laterally spaced apart, longitudinally extending side walls farther from and nearer to said associated edge, and an open side facing outwardly of a side of said door, and

said door edge protector comprising a longitudinally extending channel-shaped strip of durable material having laterally spaced apart legs joined together along their laterally opposite edges by a longitudinally extending web, said legs lying against and engaging said associated marginal portions and substantially covering said open sides of said grooves therein, and said web lying against and engaging said associated edge, flanges on said legs extending into said grooves along and adjacent said groove side walls farther from said associated edge, means for fitting and fastening said channel-shaped strip on said door edge comprising longitudinally extending fitting and fastening strips lying in said grooves inside of and hidden by said legs of said channel-shaped strip substantially covering said grooves, said fitting and fastening strips engaging and acting between said groove side walls nearer to said associated edge and said flanges and urging said flanges toward said groove side walls farther from said associated edge and tending to retain said flanges between and in engagement with said locking strips and said groove side walls farther from said associated edge.

3,271,920
WALL SUPPORTING STRUCTURAL BEAM

Lucien R. Downing, Jr., Avon Lake, Ohio, assignor to Donn Products, Inc., Westlake, Ohio, a corporation of Ohio

Original application Sept. 7, 1962, Ser. No. 221,988, now Patent No. 3,217,460, dated Nov. 16, 1965. Divided and this application Apr. 21, 1965, Ser. No. 458,506
4 Claims. (Cl. 52—735)

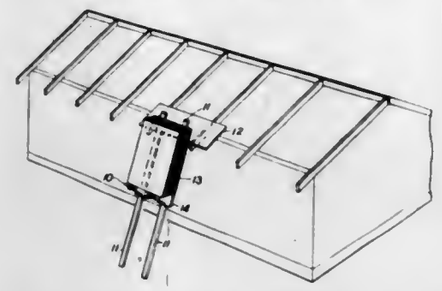


1. A beam for structurally supporting a pair of panel members of disparate thickness in a common plane in edge-to-edge relation to each other and in fixed spaced parallel relation to an opposite panel member to form a double-wall structure, comprising a main web portion disposed in a plane normal to the panel surfaces, laterally extending flange means along one marginal edge of said web portion disposed in parallel continuous relation with a surface of said opposite panel member for receiving a panel-fastening member in interlocking relation therethrough, the other marginal edge of said main web being displaced laterally to form an auxiliary web integrally interconnected with the main web by a transverse portion, said transverse portion comprising a first part extending away from said main web and a second part rebent above said first part toward said main web, said auxiliary web extending parallel to said main web substantially intermediate said first part from the marginal edge of said second part, said first part forming a lateral abutment surface for the marginal surface of one of said pair of panel members, said second rebent part forming an opposing lateral abutment surface for the marginal surface of the other of said pair of panel members, said auxiliary web being disposed between the mating edges of said pair of panel members, and means coacting with said auxiliary web in spaced relation from said lateral abutment surfaces for engaging and retaining said pair of panel members in fixed abutting relation thereagainst.

3,271,921
MATERIAL HOLDING BRACKET PLATFORM AND METHOD FOR UTILIZING THE SAME IN ROOFING CONSTRUCTIONS

Alvin L. Divoky, 1207 Childs Road, Omaha, Nebr.

Filed Apr. 6, 1964, Ser. No. 357,501
4 Claims. (Cl. 52—747)



4. The method of providing a skeletal roof with a skin of rigid sheet material, said method comprising:
(A) Nailing down onto the rafters of a skeletal roof, a horizontal eave less than fourteen feet above the ground, a first sheet of rigid sheet material, said so nailed sheet material being located along and substantially conterminous with said horizontal eave,
(B) Attaching a platform member to an elongate post member, said platform member projecting outwardly from and being substantially perpendicular to said elongate post member at a position at least three feet from an end thereof,
(C) Positioning at least two of said so platformed post members parallel to one another and obliquely against the said first nailed sheet of rigid sheet material,
(D) Manually elevating rigid sheet material onto the upper surface of said platform member and standing said sheet material upon a lower first end thereof whereby the upper end of said standing sheet material extends above said first nailed sheet,
(E) Manually removing said standing sheets one at a time by grasping the upper end thereof, and
(F) Nailing down said manually removed sheets onto the rafters of the skeletal roof.

3,271,922
ARRANGEMENT FOR PROTECTING FLOWERS AND WRAPPING THE SAME

Lawrence B. Wallerstein and William Bachman, both of 87 Daisy Farms Road, New Rochelle, N.Y.

Filed Apr. 24, 1962, Ser. No. 189,888
2 Claims. (Cl. 53—3)

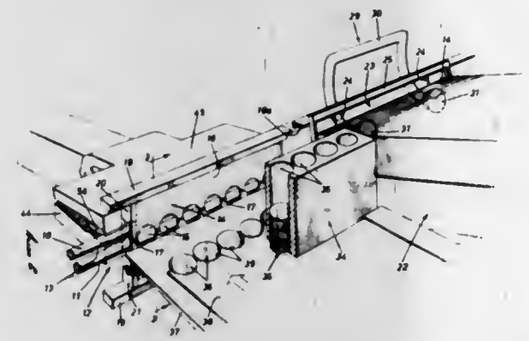


1. A method for protecting and packaging delicate leaved and petaled flowers, said packaging being limited to the height of the petals and extending upwardly only over the height of the petals from where the petals form the stem to the upper ends of the petals without compressing the petals but with the petals being in close immobilizing contact, comprising gathering together the petals upwardly together and inwardly toward the stem from below, providing a light thin flexible paper rectangle having the height only of the petals and formed into a conical sleeve around the stem below the leaves and petals to be protected, said paper rectangle having oppositely facing end coatings of a cohesive material extending the height of the edges thereof which will adhere to itself and not to the flowers, overlapping the end edges of the sleeve with the overlap carrying the light cohesive coatings and permitting adjustment to lightly frictionally encircle the flower petals, and then enclosing the gathered petals by closing the sleeve around the same, said sleeve being held in position by the frictional expansion tendency of the gathered leaves and petals, and said sleeve having conical shape with narrowing diameter downwardly toward the stem.

3,271,923
METHOD AND APPARATUS FOR FILLING AND SEALING HOLDERS FOR TOKENS, COINS OR THE LIKE

Allan G. Fullbrook, Rexdale, Ontario, Canada, assignor to Dominion Paper Box Company Limited, Toronto, Ontario, Canada

Filed Sept. 16, 1963, Ser. No. 309,088
7 Claims. (Cl. 53—33)



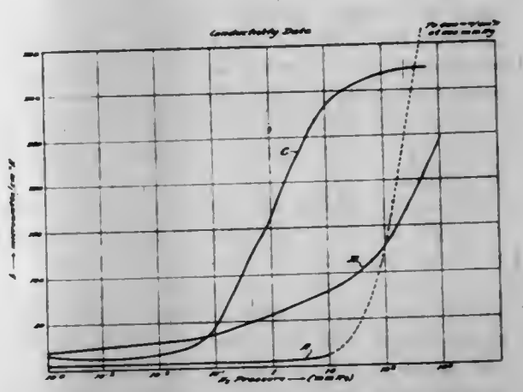
7. A method for filling and sealing holders for tokens, coins or the like which comprises supporting a token holder having a plurality of aligned apertures therein in front of two spaced-apart members having an opening therebetween with the apertures in said token holder positioned opposite to the opening between said members, advancing a plurality of tokens of larger size than the apertures in said token holder into and part way through the apertures in said token holder and from the side of said token holder remote from said members, advancing both said token holder and said tokens through the opening between said members, thereby folding said token holder between said members, and subsequently securing together the folded sides of said token holder.

3,271,924
METHOD OF INSULATING CRYOGENIC SUBSTANCES

Walter Patrick Gramm, Wilmette, and William R. Howell, McHenry, Ill., assignors to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 3, 1963, Ser. No. 305,981
6 Claims. (Cl. 53—29)

3. A method for storing low boiling liquids and retarding their evaporation for sustained periods comprising:
providing a confined inner storage space for the liquid and a confined annular space surrounding said storage space;
filling this annular space with a material comprising an essentially non-activated expanded carbonaceous material having a loose bulk density of between about 10 and about 13 lbs. per foot^3, a volatile content of between about 10 and about 13% and a particle size such that less than about 40% is +150 mesh, about 40 to about 50% is —200 mesh, and about 10 to about 25% is —325 mesh produced from finely divided bituminous coal having a volatile content of between about 15% and about 23% and a particle size such that at least about 95% is —100 mesh and at least about 50% is —325 mesh by
flash calcining the coal at a temperature of between about 700° C. and about 900° C. while entrained in a gaseous atmosphere containing between about 2.0 and about 4.0 standard cubic feet of oxygen per pound of feed,

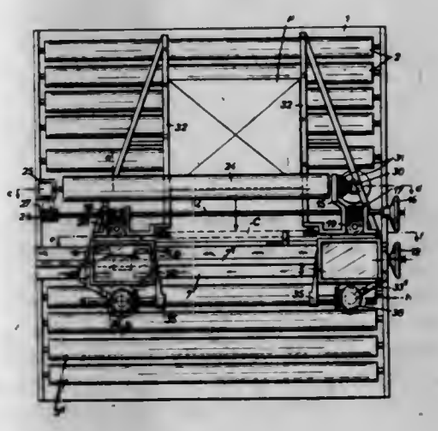


separating the solid partially calcined particles from the gaseous and vaporous products at a temperature at which substantially all of these vaporous products remain in the vaporous state, and
collecting the particles;
removing substantially all of the gas from the annular space; and introducing the low boiling liquid into the inner storage space.

3,271,925
PACKING MACHINES

Francois Aubery, 18 Rue Colbert, Valence, Drome, France

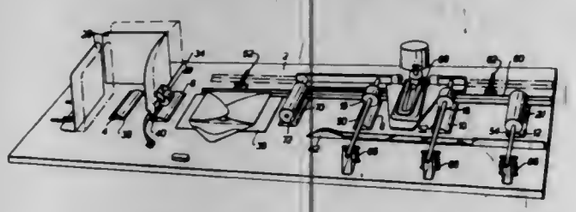
Filed Mar. 12, 1964, Ser. No. 351,453
Claims priority, application France, Mar. 20, 1963, 8,647, Patent 1,351,883; June 26, 1963, 8,720; July 10, 1963, 8,733; Dec. 12, 1963, 8,822
16 Claims. (Cl. 53—128)



1. A packing machine comprising:
(a) a frame,
(b) a first lower casing fixed to said frame and adapted for containing reinforcing elements,
(c) a second lower casing adapted for containing reinforcing elements,
(d) first and second upper casings adapted for containing reinforcing elements, the first and second upper casings being above the first and second lower casings respectively,

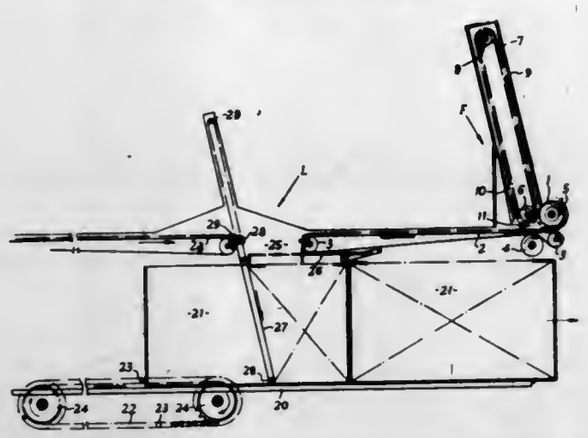
(e) screw means for displacing the second lower casing together with the second upper casing towards and away from the first upper and lower casings,
(f) means for synchronously displacing the upper casings vertically towards and away from the lower casings,
(g) horizontal rollers for supporting a pack of material, the rollers being rotatably mounted on said frame,
(h) a drive roller for contacting and displacing a pack of material across said horizontal rollers and between the first and second casings, the drive roller being rotatably carried by said upper casings and being vertically displaceable therewith,
(i) means for ejecting reinforcing elements from the upper and lower casings towards a pack between the casings,
(j) means for folding each ejected reinforcing element to a right angled form about an edge of the pack,
(k) guide wheels carried by said casings,
(l) an endless chain entrained around said guide wheels and having runs defining a loop the size of which varies with the relative positions of the casings and through which loop a succession of packs are propelled by said drive roller, the chain having runs in addition to the runs defining the loop, said chain being payed out from and taken up by the additional runs to compensate for variations in the length of the perimeter of the loop as a consequence of variations in the size of the loop,
(m) means for driving said chain, and
(n) means carried by the chain for engaging an elongated strapping element and for drawing the strapping element around said pack to form a tie around the pack with said reinforcing elements between the strapping element and the pack.

3,271,926
OFFICE MAILING MACHINES
Hilda May England, 25 Lovers Walk, Dunstable, England
Filed Nov. 27, 1963, Ser. No. 326,540
5 Claims. (Cl. 53—188)



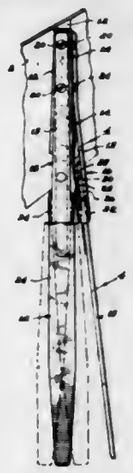
1. An office mailing machine comprising an adjustable hopper adapted to receive a stack of envelopes, a power driven roller, a feed bar for raising the roller into momentary contact with the lowermost envelope of the stack to feed the envelopes one by one from the hopper, a working table, pairs of vertically aligned co-acting feed rollers spaced along the table for moving each envelope as it issues from the hopper, power means for collectively driving the lower rollers of the pairs of rollers, opening in the table through which openings the said lower rollers project, a pad of resilient material at a first operative position on the table for facilitating the manual opening of each envelope for the insertion of enclosures therein, a curved guide at a second operative position on the table for engagement by the flap of each envelope whereby the flap is turned up and then over each envelope, a moistening device at a third operative position on the table for applying moisture to the sealing margins of the flap, and a pair of co-acting, vertically aligned rollers for applying pressure to the flap to effect the sealing of the envelope.

3,271,927
APPARATUS FOR FILLING BOXES, TRAYS OR THE LIKE
Desmond Walter Molins, London, England, assignor to The Molins Organisation, Limited, a British company
Filed Dec. 26, 1963, Ser. No. 333,330
Claims priority, application Great Britain, Jan. 2, 1963, 228/63
6 Claims. (Cl. 53—236)



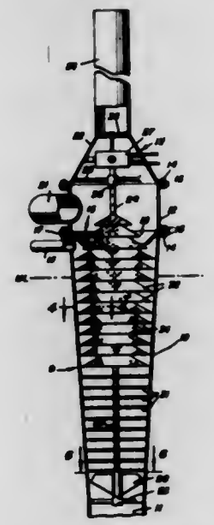
1. Apparatus for filling open-topped containers such as trays with relatively small articles, comprising article feeding means for feeding articles to a position over a container to be filled and permitting said articles to fall therein, a guide member arranged in operation to extend into said container substantially the whole depth thereof, an endless flexible band forming part of said guide, means for producing relative motion between said container and said guide, an article-engaging face of said guide being provided by said band and cooperating with an end wall of said container to provide an article-receiving space whose length increases from a minimum to a maximum during the filling operation by virtue of said relative motion, and means to drive said band during the filling operation.

3,271,928
PACKER GRID
Anton J. Wild, 968 Bonnell Court, Union, N.J.
Filed July 24, 1963, Ser. No. 297,248
8 Claims. (Cl. 53—248)



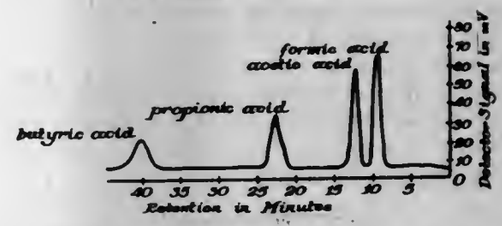
1. A packer grid for guiding articles from an assembly device to a container in a packaging machine, said packer grid comprising a generally rectangular frame, strips of material extending in equally spaced relation parallel to and between opposite sides of said frame, a plurality of elongated finger members formed of resilient material and arranged in positions wherein the inwardly facing surfaces thereof cooperate to define passages for guiding articles moving through the packer grid, supporting blocks secured to said frame and strips and presenting inwardly facing surfaces inclined upwardly and outwardly with respect to said passages, means engaging the upwardly and outwardly inclined surfaces of said supporting blocks and the upper portions of said finger members to hold said finger members in said cooperative positions, said finger members having lower portions thereof extending downwardly and inwardly below said supporting blocks, and resilient means secured to said supporting blocks and bearing against outwardly facing surfaces of the finger members for yieldably urging the lower portions of the finger members inwardly toward said passages.

3,271,929
VORTEX TYPE RECONDITIONER AND RECONDITIONING METHOD FOR USED DRILLING MUD
J. E. Bowden and Cornelius G. Lynch, Hobbs, N. Mex., assignors to Vortex Tool & Manufacturing Co., Odessa, Tex., a corporation of Texas
Filed May 7, 1963, Ser. No. 278,687
9 Claims. (Cl. 55—52)



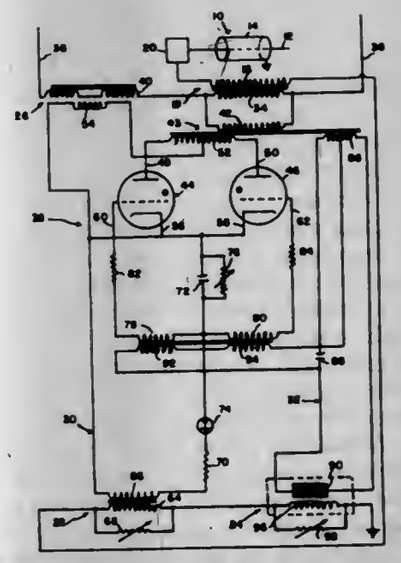
1. The method of reconditioning used drilling mud in a conical shaped vessel in atmospheric communication adjacent its top comprising the steps of introducing the mud in fluid state into said conical shaped vessel through the smaller bottom end thereof while the vessel has at least half of its vertical height immersed in a tank of the used drilling mud and pumping the used fluid drilling mud in said vessel with a rotating, swirling and upward motion, accelerating the rotating swirling motion of the fluid mud by rapidly rotating perforated conical discs positioned with their concave sides facing downwardly to subject the mud to centrifugal action so that the heavier particles are flattened against the outwardly tapered wall of the conical vessel and separated from the mud, said heavier particles moving outwardly and upwardly while held against the conical wall of the vessel by centrifugal force, directing the separated heavier particles against a catch ring projecting across the path of the ascending particles adjacent the upper end of the conical vessel to arrest the upward movement of said particles, expelling these arrested particles from the vessel through outlet means positioned adjacent to and below said catch ring, said rapidly rotating discs creating a vortex with a void at substantially the transverse center of the vessel and causing the liberation of the gas from the mud so that the liberated gas moves into the void and upwardly through the perforations in the discs, discharging the liberated gas from the vessel into the atmosphere adjacent the top of the vessel, and recovering the reconditioned mud for reuse.

3,271,930
PRE-TREATMENT OF CARRIERS FOR USE IN GAS/LIQUID DISTRIBUTING CHROMATOGRAPHY
Gert Ewald, Hermulheim, near Cologne, Horst Zech, Bruhl, near Cologne, and Hermann Esser, Glesel, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne Germany, a corporation of Germany
Filed Oct. 14, 1964, Ser. No. 403,739
Claims priority, application Germany, Oct. 23, 1963, K 51,156
6 Claims. (Cl. 55—67)



1. A gas chromatographical process for analyzing gaseous mixtures comprising the steps of intimately mixing a chromatographic carrier substance selected from the group consisting of kieselguhr, aluminum oxide, silicates and special preparations thereof with about 1–20% by weight of said carrier substance of orthophosphoric acid, heating the resulting mixture for a period of about 0.5 to about 10 days at a temperature of about 100–300° C., contacting said acid treated carrier substance with a separating liquid, and passing over said carrier substance contacted with said separating liquid said gaseous mixtures to be analyzed.

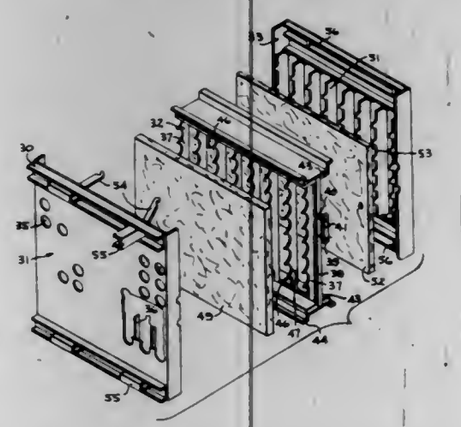
3,271,931
AUTOMATIC CONTROL FOR FLY ASH PRECIPITATORS
Frank L. Taylor, Franklin, Mich., assignor to The Detroit Edison Company, Detroit, Mich., a corporation of New York
Filed Jan. 29, 1965, Ser. No. 438,144
5 Claims. (Cl. 55—105)



1. An automatic control for an electrical precipitator comprising first means operatively associated with said precipitator responsive to power arcs in said precipitator for automatically decreasing the voltage applied thereto to shorten the arc time of each individually occurring power arc, including a precipitator high voltage transformer having a primary and a secondary winding for supplying voltages to said precipitator, a saturable reactor having a field winding connected in series with the primary winding of said transformer, a thyratron rectifier

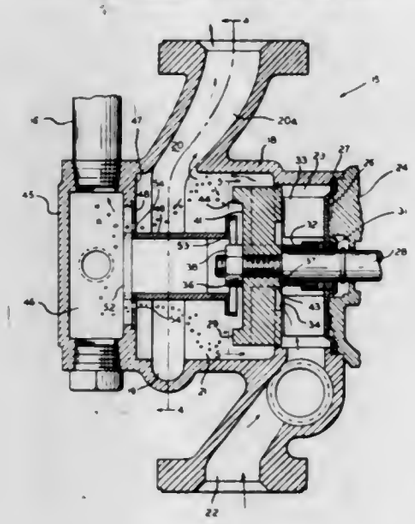
including plate and output circuits, a thyratron plate voltage transformer having a secondary winding in the plate circuit of the thyratron rectifier and a primary winding in parallel with the primary winding of the precipitator high voltage transformer and a control winding for said saturable reactor connected in the output circuit of the thyratron rectifier, second means separate from said first means connected in the precipitator circuit in combination with said first means responsive to the rate of sparking of said precipitator for automatically varying the voltage applied to the precipitator conjointly with said first means in a direction to maintain an optimum precipitator sparking rate, and third means separate from said first and second means also connected in the precipitator circuit in combination with said first and second means responsive to precipitator current for automatically varying the voltage applied to the precipitator conjointly with said first and second means in a direction to maintain a maximum current in the precipitator circuit.

3,271,932
ELECTROSTATIC PRECIPITATOR
Robert W. Newell, Yardley, Pa., assignor to General Electric Company, a corporation of New York
Filed July 21, 1965, Ser. No. 473,632
8 Claims. (Cl. 55—132)



1. An electrostatic precipitator comprising a casing having a gas inlet and outlet, a removable filter unit within the casing comprising an apertured plate at ground potential positioned adjacent the gas inlet, a high voltage charging grid member supported in the casing adjacent the apertured plate and insulated from the other members, and a downstream grid at ground potential arranged between the high voltage charging grid member and the gas outlet, and fastening means for holding the apertured plate, the high voltage charging grid member and the downstream grid together, the innermost surface of the apertured plate including a plurality of parallel vanes spaced between the apertures, the high voltage charging grid member formed by a plurality of parallel electrodes arranged generally in parallel with the vanes of the apertured plate but intermediate thereof, said electrodes having a leading edge with a plurality of spikes having tips that are adapted to be centered within the apertures of the said plate, the downstream grid being formed with a plurality of parallel vanes generally in line with the vanes of the apertured plate, one sheet of porous dielectric filtering media sandwiched between the vanes of the apertured plate and the electrodes of the high voltage charging grid member, and a second sheet of similar filtering media sandwiched between the electrodes of the high voltage charging grid member and the downstream grid, whereby a substantially uniform ionized field is produced by an electrostatic field from each of the tips of the spikes of the said electrodes to the edges of the nearest aperture of the said plate so as to impress an electrostatic charge on any dust particles entrained in the gas that is caused to flow through the precipitator.

3,271,933
GAS SEPARATION PUMP FOR LIQUID CIRCULATING SYSTEMS
John H. Harker, Park Ridge, Erwin L. Oehlerking, Des Plaines, and Jack Keyes, Park Ridge, Ill., assignors, by mesne assignments, to International Telephone & Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Oct. 31, 1963, Ser. No. 320,414
3 Claims. (Cl. 55—203)

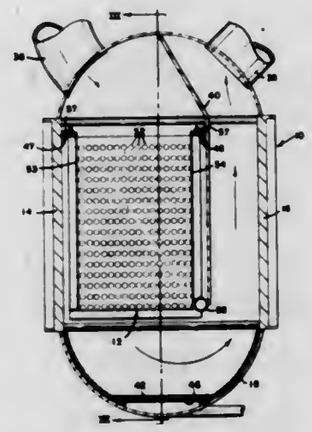


1. A centrifugal pump particularly adapted to separate gases entrained in the liquid pumped thereby, said pump comprising a housing having a dynamic separating chamber and a pump discharge chamber, a pump impeller rotating in said dynamic separating chamber, supply and discharge passages to said housing, means defining a fluid collecting and gas collecting static chamber flanking said pump discharge chamber, a partition between said pump discharge chamber and said fluid collecting and gas collecting static chamber, and means providing a passageway from said dynamic separating chamber to said fluid collecting and gas collecting static chamber for the movement of gases so as to separate said gases from the pumped fluid, said means comprising a hollow tube coaxially arranged with respect to said impeller and extending from said static chamber to a point close to said impeller, means in said partition for the movement of gases into said fluid collecting and gas collecting static chamber, said hollow tube providing a return passageway within said pump housing through which liquid which has been detrained of gas may move.

3,271,934
HEAT TRANSFER APPARATUS HAVING MEANS TO SEPARATE CONDENSED LIQUID FROM THE SYSTEM FLUID
James R. Shields, Pittsburgh, Pa., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed June 11, 1962. Ser. No. 201,394
1 Claim. (Cl. 55—269)

A heat transfer unit including a casing, a partition within said casing and extending from the top of the casing to divide the casing into first and second portions, an inlet conduit connected to said first portion and an outlet conduit connected to said second portion to form a path for the flow of gaseous medium through said unit, said path having said first and second portions extending in opposite directions connected by a curved intermediate

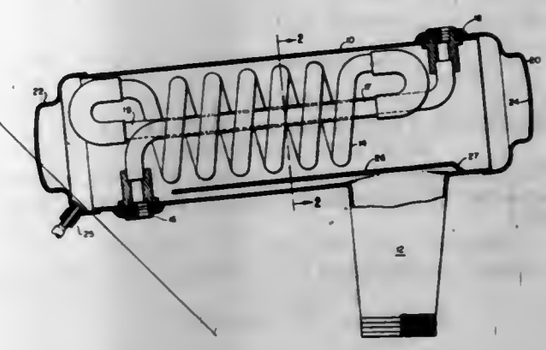
portion extending below the lower end of said partition and formed by a curved bottom element, means interposed in said first portion of said flow path above said intermediate portion and below said inlet and outlet conduits for reducing the temperature of the gas flowing in said first portion below its dewpoint, condensate collection and drainage means supported in the curved bottom element of the path to receive condensate deposited by centrifugal action as the gas stream traverses the curved intermediate portion of the path, said condensate collection and drainage means comprising an elongated perforated element supported on the curved bottom element so as to form a drainage space thereunder, a flexible blanket



formed of material of fine filaments interwoven on a plurality of layers of strips providing a plurality of randomly oriented non-planar surfaces, the surface of the interwoven member presenting an uneven rough exterior, said blanket overlying the surface of the perforated element remote from that defining the drainage space and substantially throughout the surface of the curved bottom element above said elongated element said blanket providing surfaces to which condensate may cling by surface tension and drain to the bottom of said means by gravity thereby resisting re-entrainment in the gas stream leaving the unit, and conduit means for removing the condensate collecting in the space.

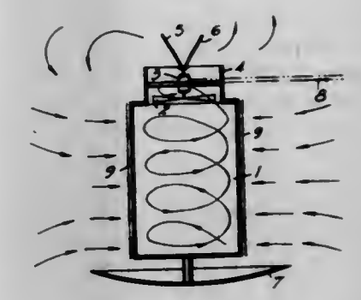
3,271,935
CONDENSER FOR REMOVING VOLATILE MATTER FROM DISTILLATE
Verity C. Smith, Dedham, Mass., assignor to Barnstead Still and Sterilizer Co., Boston, Mass., a corporation of Massachusetts
Filed Apr. 1, 1963, Ser. No. 269,503
1 Claim. (Cl. 55—269)

A water distillation condenser comprising a generally horizontally extending elongate housing closed at both ends, a cooling conduit extending substantially the length of said housing, a generally transverse baffle in said housing positioned beneath the cooling conduit and above the bottom of said housing and sloping downwardly from a first end toward the second end of said housing, a water vapor inlet to the interior of said housing adjacent to the first end of said housing, said baffle overlying said water vapor inlet and forming with said casing a chamber to direct incoming steam from the first end toward the second end and thereafter into contact with said cooling conduit, said chamber being closed except for said vapor inlet and an opening at the lower end of said baffle, a distillate outlet opening from the interior of said housing adjacent to said second end of said housing and positioned below said water vapor inlet, a vent for uncondensed gases in said housing positioned above said water vapor inlet and adjacent to the first end of said housing, a cooling water inlet connecting to the end of said cooling conduit adjacent to said first end of said housing, and a cooling water outlet connecting to the end of said cooling conduit adjacent to said second end of said housing,



said baffle being positioned to collect distillate from said cooling conduit and bring it into counter-current heat exchange relationship with incoming water vapor thereby heating the distillate to remove dissolved uncondensed gases therefrom.

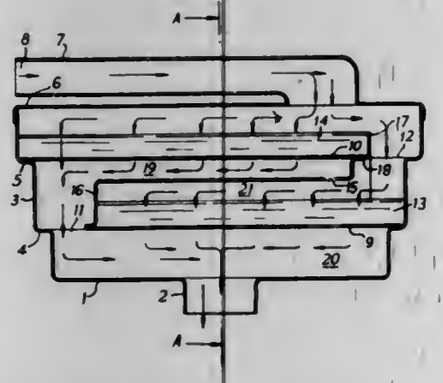
3,271,936
APPARATUS FOR COLLECTING AUTOMATICALLY FIBROUS MATERIALS SUSPENDED IN AIR
Pierre Dauge, St. Martens-Latem, Belgium, assignor to Les Ateliers de Construction Ventola, Societe Anonyme, Ghent, Belgium, a company of Belgium
Filed Mar. 25, 1963, Ser. No. 267,732
Claims priority, application Belgium, Jan. 30, 1963, 627,735
5 Claims. (Cl. 55—302)



1. Apparatus for automatically collecting dust in suspension in air, comprising in combination, at least one hollow body having a bottom, air pervious walls enclosing a first chamber, impervious walls constituting a continuation of said pervious walls and enclosing a second chamber, and a freely movable member for normal closing of said body, a fan mounted within said hollow body and separating said first chamber from said second chamber, a removable vessel mounted under said hollow body for collecting said dust, means for driving said fan in a predetermined direction, and control means for making said driving means operative and nonoperative, said fan and said means for driving said fan being so constructed and arranged, that when said control means make said driving means operative, to flow a stream of air under pressure from outside said hollow body towards said movable member through said pervious walls and said first and second chambers to displace said movable member into a position wherein said hollow body is open and sucks

dust against said pervious side walls, and whereby when said control means make said driving means inoperative, but before the fan becomes stationary, to reduce the pressure of the air stream to replace said movable member into its normal position and to force the remaining air stream flow within the body from said second chamber towards the outside of said hollow body through said first chamber and said pervious walls due to which dust is blown off said hollow body and falls in said vessel.

3,271,937
FLUID FILTERS FOR INTERNAL COMBUSTION ENGINES
Peter William Stripp, Plymouth, Devon, England, assignor to Tecalemit (Engineering) Limited, Plymouth, Devon, England
Filed July 18, 1963, Ser. No. 296,072
Claims priority, application Great Britain, July 19, 1962, 27,916/63
2 Claims. (Cl. 55—307)



1. A fluid filter for internal combustion engines comprising:

a generally rectangular casing defined by vertical side walls and top and bottom walls and having inlet and outlet openings for the fluid to be filtered, said inlet opening being located in said top wall and said outlet opening in the said bottom wall, the side walls of said casing being stepped such that the cross sectional area of said casing increases from the bottom towards the top thereof to provide at least a pair of steps, each such pair defining a shelf along the inner surface of the side walls with the upper shelf being spaced outwardly of the lower shelf;

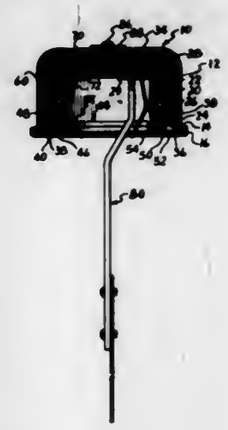
a first generally flat filter support resting on the portion of the upper shelf defined by one side wall and by portions of the adjacent side walls and having a free edge spaced from the side wall opposite said one side wall;

a second generally flat filter support resting on the portion of the lower shelf defined by said opposite side wall and portions of said adjacent side walls and having a free edge spaced from said one of said side walls;

filter pads of intermingled fibers carried by each of said supports and generally coextensive therewith; and

a dividing wall with a portion spaced generally parallel between said supports and effectively extending between said adjacent side walls and having a first vertical portion adjacent one end connected to said free edge of the first one of said supports and having means defining a step upon which said free edge rests and having a second vertical portion adjacent the other end connected to said free edge of said second of said supports.

3,271,938
BREATHER CAP AND DIPSTICK COMBINATION FOR AN OIL FILLER PIPE
Frederick G. Rest, Skokie, and David R. Newsted, La Grange, Ill., assignors, by mesne assignments, to Allen Electric and Equipment Company, Kalamazoo, Mich., a corporation of Michigan
Filed June 5, 1963, Ser. No. 285,756
1 Claim. (Cl. 55—385)



A cap for the oil filler pipe of a motor vehicle, said cap comprising:

a cup-shaped member having a cylindrical, substantially vertical side wall, a closed upper end and an open lower end, said cup member having an outwardly extending annular shoulder adjacent the open lower end thereof and an annular skirt portion extending a short distance axially beyond the outer margin of the shoulder and integral with said shoulder;

a dipstick and a leaf spring disposed in said cup member and fixed to the closed upper end thereof by a rivet and washer, said dipstick and leaf spring extending from said closed end through said open end of said cup member and being adapted for insertion into said oil filler pipe upon placement of said cap thereon;

an open ended, flanged sleeve encompassed by, concentric with and carried by said cup member and having an annular vertical wall defining an opening therein for receiving the oil filler pipe, said vertical side wall of said cup member and said annular vertical wall of said sleeve being spaced apart from one another and defining an annular chamber therebetween, said sleeve having an annular flange attached to and extending from the lower end of said annular vertical wall into contact with said skirt portion of said cup member, the lower end of said annular vertical wall being above the lower end of said vertical side wall of said cup member, said flange having at least three similar air passage openings distributed thereover;

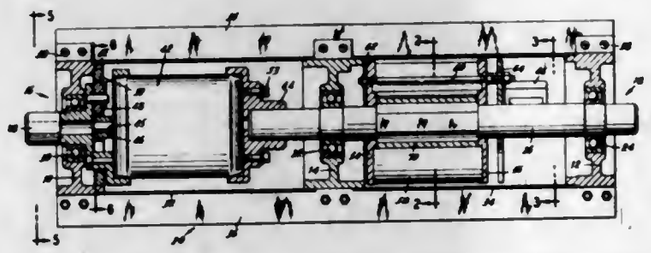
an annular filter for said cup member, said filter substantially filling said annular chamber and being retained in position in said annular chamber by said flange, the upper end of said annular vertical wall being spaced apart from both said vertical side wall and said closed upper end of said cup member and defining a passage therebetween, said annular chamber communicating with the space encompassed by the annular vertical wall of said sleeve through said passage;

a thin, flat and annular sealing ring carrier member underlying said flange and having an air intake opening generally similar in size to said air passage openings, said air passage openings in said flange being evenly spaced from one another to minimize variation in the resistance to air flow characteristics with a variation in the relative angular positions of said annular carrier member and said annular flange, the outer edge of said carrier member engaging said skirt portion, said skirt portion having an annular bent over portion which clamps said carrier member and said flange between said bent over portion and said annular shoulder, the inner diameter of said carrier member being slightly less than the inner diameter of said annular vertical wall;

a resilient, pliant and sealing ring attached to said carrier member and disposed in said oil filler pipe receiving opening, said sealing ring having an opening therein for receiving the oil filler pipe and bounded by a pliant, upwardly converging wall portion, said wall portion being thin measured in a radial direction, said wall portion extending inwardly of said annular, vertical wall, the upper end of said upwardly converging wall portion being spaced apart from said annular vertical wall and said annular flange, the inner margins of said sealing ring wall portion being of lesser diameter than the smallest expected dimension of the oil filler pipe and being readily expandable to form an air tight seal with an irregularly shaped oil filler pipe to prevent air from by-passing the filler pipe, there being a substantial clearance space outside of said sealing ring for the outward expansion of said sealing ring when applied over said oil filler pipe;

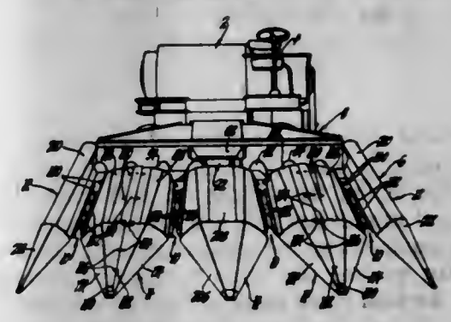
a portion of said sealing ring together with said annular flange and said annular carrier member defining an annular channel in said cup member which communicates with the atmosphere through said air intake opening and with the space occupied by said filler through said air passage openings in said annular wall, said annular channel being formed by a depressed portion in said annular flange spaced away from said annular carrier member, said sealing ring having a continuous annular ridge which seals against said annular flange at points inwardly of the inner margin of said annular channel to prevent air entering the annular channel from by-passing the filter chamber, said carrier member and said annular flange being spaced apart at all points except for those portions of said annular flange and said carrier member which are clamped between said bent over skirt portion and said annular shoulder.

3,271,939
POWERED UNIT FOR A LAWN MOWER OR SIMILAR DEVICE
Fred L. Granger, Jr., Cleveland, Norman M. Potter, Rocky River, and Alan D. Smith, Fairview Park, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 19, 1963, Ser. No. 331,681
6 Claims. (Cl. 56—26)



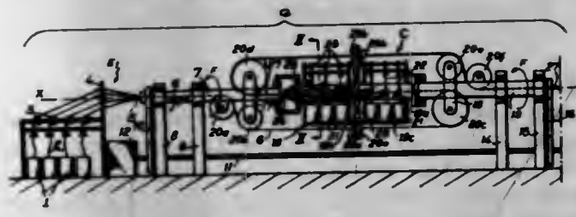
1. A lawn mower comprising a frame having a cutter bar and extending handle bars and having ground engaging wheels for rotatably supporting said lawn mower for movement over the ground, a first and second stationary shaft having a D.C. motor interposed therebetween, one of said shafts having a plurality of secondary batteries disposed thereabout and between a pair of end plates attached thereto, said second shaft having means operatively connecting said motor and a reel blade assembly rotatively mounted about said first and second stationary shafts, said batteries being connected to said motor whereby said reel blade assembly is caused to rotate about said stationary shafts.

3,271,940
CORN HARVESTER
Robert Ashton, Islington, Ontario, Myron Leroy Gullickson, Albion Township, Ontario, and James G. Butler, Islington, Ontario, Canada, assignors to Massey-Ferguson Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Dec. 5, 1963, Ser. No. 328,324
36 Claims. (Cl. 56—105)



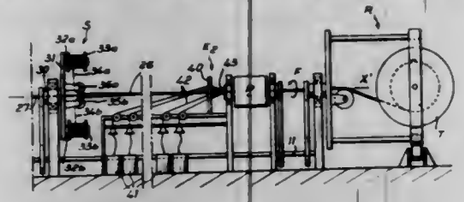
1. A harvesting attachment adapted to be removably mounted on a combine for simultaneously harvesting a plurality of spaced crop rows; said attachment comprising main frame means, a harvesting unit for each crop row, mounting means mounting said units in laterally spaced relation on said main frame means in accordance with the spacing of the crop rows, said mounting means for at least one of said units laterally adjustably mounting the latter relative to an adjacent unit to vary the lateral spacing therebetween, power operated means independent of said mounting means mounted on and laterally adjustable with respective ones of said adjacent units to drive the latter in any adjusted position thereof, means for conducting power to one of said power operated means, and coupling means adjustably drivingly coupling said one of said power operated means to the other thereof to transmit power therebetween while accommodating variation in the lateral spacing between said adjacent units.

3,271,941
MACHINES FOR MANUFACTURING MULTI-CORE CABLES
Otto Haugwitz, La Celle-Saint-Cloud, France, assignor to Societe Anonyme Geoffroy-Delore, Paris, France, a French company
Filed Apr. 7, 1964, Ser. No. 358,038
Claims priority, application France, Apr. 11, 1963, 931,208
5 Claims. (Cl. 57—15)



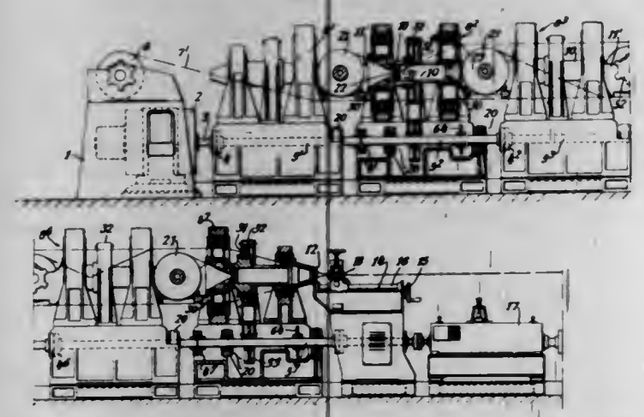
1. A machine for manufacturing in one single pass a multi-layer cable of equal twist in alternate directions, comprising a first cabling assembly comprising a simple twist cabling unit arranged to take up elementary strands from a fixed supply frame, and a rotatable stirrup cabling unit, a plurality of rotatable stirrup cabling units equal

in number to the number of layers desired in the cable located successively beyond said first assembly, and a receiver assembly for the finished multi-layer cable, each of said rotatable stirrup cabling assemblies comprising in combination: two rotating coaxial half-stirrups provided with means for guiding the cable already formed parallel to the axis of rotation along which the cable moves in its direction of travel and further guide means for directing the cable in the opposite direction along the axis of rotation, a support carried by said two half-stirrups and free in rotation with respect thereto, said support being freely traversed by the cable passing in the said opposite



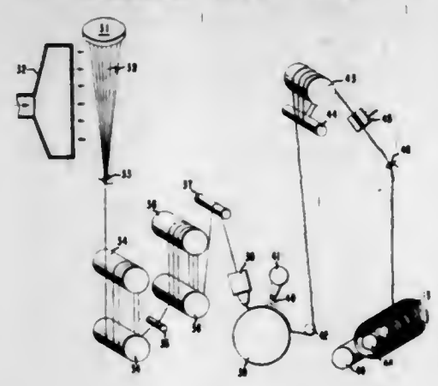
direction and carrying a supply of elementary strands, a distribution grid and an assembly guide plate on said support for laying the strands on said cable, means for guiding said strands towards said distribution grid and said assembly guide plate, and means carried by said two half-stirrups for guiding the cable thus formed from its outlet from the said guide plate to the axis of rotation in the direction of travel of said cable beyond said two half-stirrups, said guiding means carried by said two half-stirrups causing the cables to change directions at tangents compatible with the rigidity of said cable and preventing said cables from rotating about their own axes as they pass on said guide means.

3,271,942
APPARATUS FOR THE MAKING OF STRANDS, ROPES, CABLES AND THE LIKE
Vincent Patrick Griffin, Ashton-under-Lyne, England, assignor to Olympic Stranding Machinery Limited, Manchester, England
Filed Jan. 21, 1964, Ser. No. 339,231
Claims priority, application Great Britain, Jan. 26, 1963, 3,339/63; May 16, 1963, 19,562/63
9 Claims. (Cl. 57—58.32)



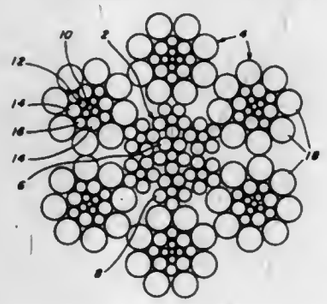
1. A stranding machine incorporating a series of separate, independent and co-axially aligned heads, each head including an upper rotating carrier section and a lower drive shaft section, cradles supporting the wire-supply bobbins between the rotating carrier sections of adjacent heads, each rotating carrier section consisting of a tubular rotor having large-diameter ends, and axially-spaced, large-diameter encircling bearings in the associated head for mounting said large-diameter ends, the diameter of the bearings being such that they permit free passage of the wires from individual bobbins in the cradles between adjacent carriers, and each drive shaft section comprising a drive shaft, an endless drive connecting the drive shaft to the corresponding rotor, coupling means at each drive shaft end for connecting same to adjacent drive shafts so that the drive shafts are rotated synchronously, and a brake on each drive shaft section so that both driving and braking forces can be transmitted to the rotating carrier section of each head from the drive shaft section of each head, first wire guide means on the cradle and second wire guide means on the large-diameter ends of each rotating carrier section to constrain wire fed from the wire supply bobbin of each cradle to follow a straight-line path disposed parallel to the axis of the machine.

3,271,943
PROCESS FOR STABILIZING BULKED YARNS AND PRODUCT THEREOF
Ebenezer David Williams, Jr., Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,435
8 Claims. (Cl. 57—140)



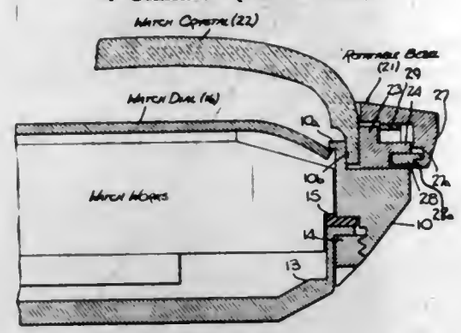
1. Method for reducing the extensibility of a bulky yarn composed of crimped continuous filaments of a polyamide, said method comprising applying liquid water to a running length of the yarn at normal temperatures while the yarn is under a tension of at least 0.02 gram per denier and winding the water-treated yarn under tension into a package, the quantity of water applied to the yarn being at least 50% of the equilibrium content of the filaments at 100% relative humidity as measured at 20° C.

3,271,944
STRANDED WIRE STRUCTURES
Roger W. Stevens, Woodbury, Conn., assignor to United States Steel Corporation, a corporation of New Jersey
Filed May 1, 1964, Ser. No. 364,255
4 Claims. (Cl. 57—145)



1. A stranded wire structure comprising a center wire, four wires of equal diameter stranded around said center wire, eight wires stranded around four wires, four of said eight wires being of equal diameter and the other four of said eight wires being of an equal diameter smaller than the diameter of the first mentioned four wires of said eight wires, the smaller diameter wires being arranged alternately with the larger diameter wires, and eight wires of equal diameter stranded around said first named eight wires.

3,271,945
WATCH CASING WITH ROTATABLE BEZEL
David H. Anderson, Providence, R.I., assignor to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 2, 1964, Ser. No. 415,251
4 Claims. (Cl. 58—43)



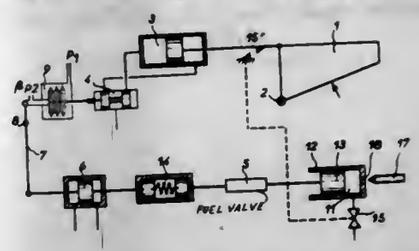
1. A watch casing for a watch works having a special hand making one full revotution per twenty-four hours; said casing comprising a fixed bezel for housing said works, a crystal mounted on said bezel to expose said special hand, and a removable sub-assembly constituted by a holding ring surrounding said crystal to secure same in place, said ring having an outwardly extending flange forming a circular trackway, a time-calibrated movable bezel encircling said crystal and having a downwardly extending sleeve surrounding said trackway and provided on the inner surface with an annular groove, a split friction washer concentric with said holding ring and engaging the underside of said trackway, the periphery of said friction washer being received within said groove to lock said movable bezel to said ring, and an annular tension spring interposed between said trackway and said calibrated bezel, whereby the elements of said sub-assembly lock together to form a unit which is capable of being pressed over said crystal or of being removed therefrom in a single operation.

ERRATUM

For Class 60—35.3 see:
Patent No. 3,272,770

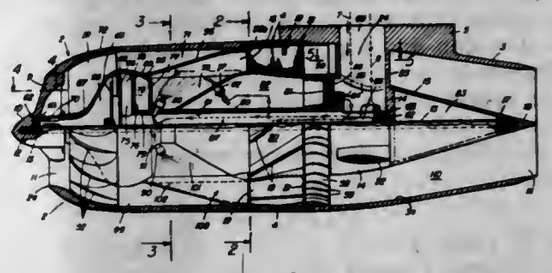
3,271,946
ACCELERATING ARRANGEMENT FOR GAS-TURBINE JET ENGINES
Andre Pierre Desmazes, Saint-Maur, and Roger Henri Tissier, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Apr. 16, 1964, Ser. No. 360,318
Claims priority, application France, Apr. 26, 1963, 932,876
11 Claims. (Cl. 60—35.6)

1. In a gas-turbine jet engine having a propulsion nozzle, nozzle area varying means, first fluid-operated jack means for controlling the nozzle area varying means, a device for the metered supply of fuel, second jack means controlling opening and closing of said fuel supply device, control means actuable to initiate operation of said second jack means to open said fuel supply device and thus to cause acceleration, and a fluid distributor controlling the supply of operating fluid to said first jack means in response to operation of said fuel supply device, an accelerating arrangement comprising a yieldable connecting device between said fuel supply device and said second jack means in the direction to open said fuel supply device, and releasable stop means operable upon actuation of said control means, to prevent opening of said fuel supply device and thus to cause said yieldable connecting device to be compressed during the time when said nozzle area varying means is



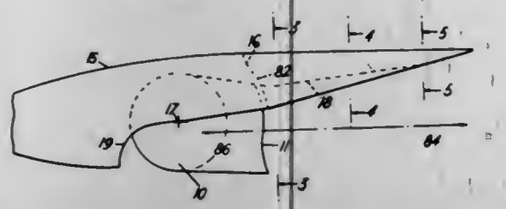
being operated to open said nozzle, said stop means being releasable when said propulsion nozzle has been opened, thereby allowing opening of said fuel supply device under the action of expansion of said yieldable device.

3,271,947
CONTINUOUS PRESSURE JET PROPULSION ENGINE
Miklos Kemenczky, Point Pleasant, N.J., assignor to Kemenczky Establishment, Vaduz, Liechtenstein, a corporation
Filed May 12, 1964, Ser. No. 366,793
6 Claims. (Cl. 60—35.6)



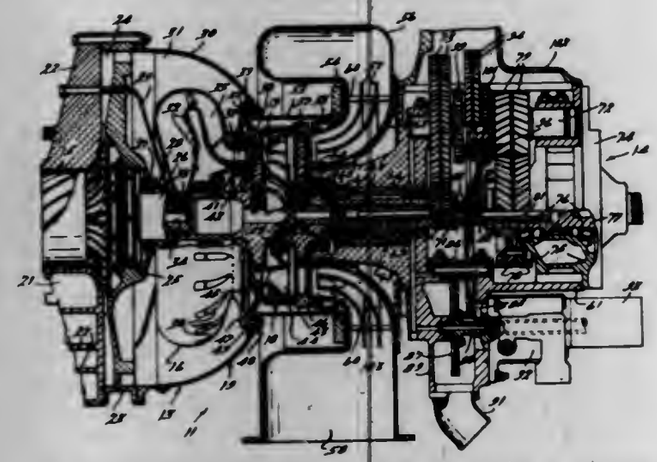
1. A jet propulsion engine comprising a thrust tube having a fluid inlet opening and a fluid discharge opening, a plurality of work chambers arranged about the periphery of the inner surface of a central portion of said thrust tube, said work chambers having inlet openings and outlet openings, a rotating unit comprising a centrifugal pump mounted within said thrust tube at said fluid inlet opening, said centrifugal pump comprising a plurality of blades adapted to pump fluid entering said fluid inlet opening into said thrust tube and to cause said fluid to rotate within said thrust tube in a generally spiral manner, at least one channel rigidly attached to said rotating unit and having an outlet opening at one end, said outlet opening being of substantially the same size as an inlet opening of any one of said work chambers, and a turbine wheel rigidly connected to said rotating unit and located downstream of said work chambers, a fuel injection means and ignition means and air inlet means mounted within said thrust tube, said centrifugal pump being adapted to direct a mixture of fluid from said fluid inlet opening and air from said air inlet means about the periphery of the inner portion of said thrust tube, whereby a hollow cylinder of water is formed therein, which cylinder of water defines an inner combustion chamber containing said fuel nozzle and said ignition means, said combustion chamber being fed by air which is removed from said fluid-air mixture by the centrifugal action exerted on said mixture, said channel being adapted to carry hot combustion gases from said combustion chamber whereby, during rotation of said channel, said work chambers are alternately fed by said fluid and by said hot combustion gases said turbine wheel receiving said fluid and said gases and said discharge opening located downstream of said turbine.

3,271,948
VARIABLE AREA NOZZLES
John R. D. Fuller, Bristol, England, assignor to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed Aug. 17, 1964, Ser. No. 390,094
Claims priority, application Great Britain, Aug. 23, 1963, 33,496/63
9 Claims. (Cl. 60—35.55)



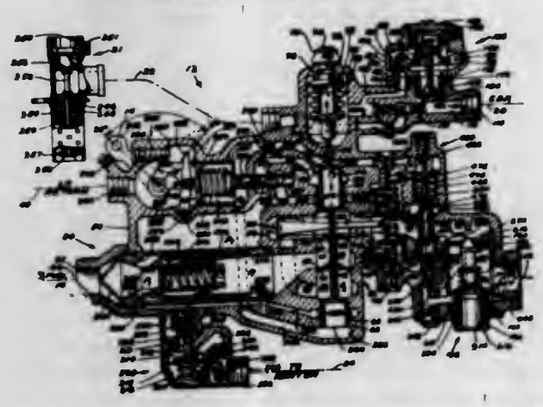
1. A variable area jet nozzle system comprising a nozzle having an outlet defined by a lip, and an external visor for selective partial blanking-off of the outlet, the nozzle and visor being capable of relative rotary movement about an axis which lies transverse to the discharge from the outlet and which lies upstream of the outlet, the lip thereby having an arcuate track of movement relative to the visor, the visor being shaped to have an operative edge which by the relative movement is carried between an inoperative position clear of the track and an operative position extending fully across and close to an end portion of the track, and the visor having a flow control surface extending downstream from its operative edge in a direction and for a sufficient distance to constitute an important factor in determining the direction of thrust of the system when the nozzle outlet is partially blanked-off by the visor.

3,271,949
GAS TURBINE
John F. Jones, Berkley, Jack J. Benson, Detroit, and Sam B. Williams, Walled Lake, Mich., assignors to Williams Research Corporation, Walled Lake, Mich., a corporation of Michigan
Filed Apr. 26, 1963, Ser. No. 275,835
5 Claims. (Cl. 60—39.16)



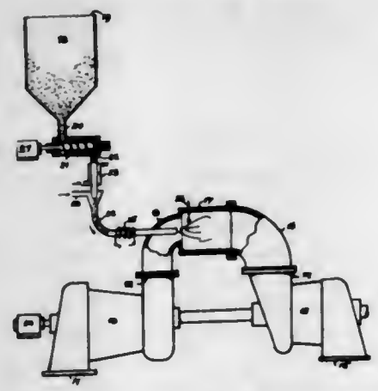
1. In a gas turbine, a power head having a housing, a compressor, burner, first stage nozzle vanes, first stage turbine wheel, and second stage nozzle vanes axially arranged in the order related, duct means connecting said compressor and burner, means conducting gases from said burner to said first stage nozzle vanes, from said first stage nozzle vanes to said first stage turbine wheel, and from said first stage turbine wheel to second stage nozzle vanes, a gear box housing having gearing and a second stage turbine wheel axially alined with and adjacent said second stage nozzle vanes, shaft means connecting said second stage turbine wheels and said gearing, an exhaust duct disposed between said power head and gear box and extending radially outwardly, a plurality of circumferentially spaced tubes extending axially through said exhaust duct and open to atmosphere, and supporting means for said power head comprising a plurality of elongated fasteners extending through and spaced radially from said tubes to provide a cooling space therebetween, one end of each fastener being secured to said gear box housing and the other end to said power head housing.

3,271,950
GAS TURBINE FUEL CONTROL
Ralph P. McCabe, Warren, and Dean F. Wheeler, Detroit, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Dec. 20, 1963, Ser. No. 331,996
13 Claims. (Cl. 60—39.28)



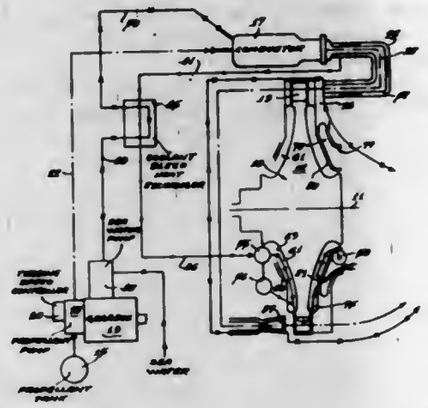
1. A fuel control for a gas turbine engine having a pneumatic pressure source and a fuel system including an engine driven centrifugal pump, said fuel control comprising an acceleration fuel system including a throttling valve controlled by a force balance lever operatively connected thereto, means for moving said lever in response to said pneumatic pressure, feed-back means for moving said lever in response to changes in fuel flow to said engine, and governor means for balancing said lever in response to changes in engine speed as indicated by pump pressure rise.

3,271,951
GAS TURBINES USING SOLID FUELS
Frederick Nettel, 173 Chapel Road, Manhasset, Long Island, N.Y.
Filed Oct. 22, 1963, Ser. No. 318,028
3 Claims. (Cl. 60—39.46)



1. In the method of fueling a gas turbine plant with hydrocarbons substantially completely vaporizable by heating them and having melting points between ambient temperatures and +250° C., said gas turbine plant comprising air compressor means, gas turbine means, conduit means connecting the outlet of said compressor means with the inlet of said gas turbine means, combustion chamber means interposed in said conduit means, the steps of introducing particulate solid fuel into the stream of hot compressed air issuing from said compressor means, for melting and evaporating said fuel by the heat of compression of said air, and subsequently burning the resulting vapors in said air.

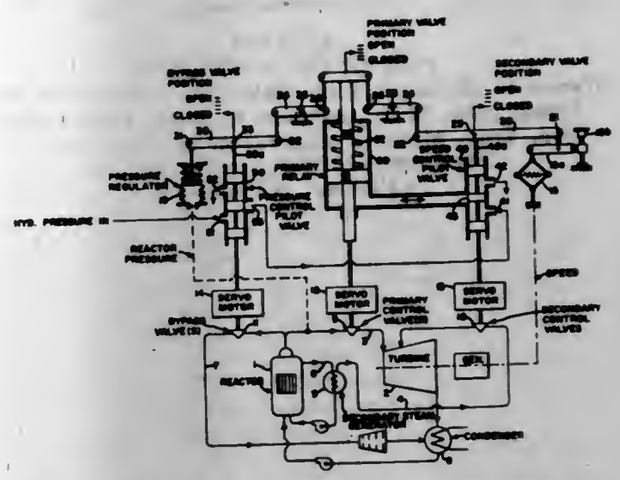
3,271,952
TURBINE COOLING DEVICE
David H. Silvern, North Hollywood, Calif., and Kenneth E. Nichols, Arvade, Colo., assignors to Sundstrand Corporation, a corporation of Illinois
Filed Aug. 14, 1964, Ser. No. 389,622
9 Claims. (Cl. 60—39.66)



5. In a hot gas turbine for delivering power in an environment where a source of cooling air is not readily available, the combination comprising: a self contained self supporting combustion system including a combustor for burning a propellent and producing hot combustion products without employing atmospheric air, a turbine wheel mounted for rotation, a distributor connecting said combustor to said turbine wheel for rotation thereof, shroud means adjacent said turbine wheel having passages therein for directing cooling fluid adjacent said wheel, a heat exchanger, means for delivering only combustion products to said heat exchanger for cooling said combustion gases, means connecting said heat exchanger to said passages to deliver cooled combustion gases directly to said passages, means for exhausting at least a major portion of the cooling gas from the turbine, and a fluid pump for delivering fluid to said heat exchanger to cool said combustion gases, whereby cooled combustion gases provide a cooling fluid in the absence of atmospheric air.

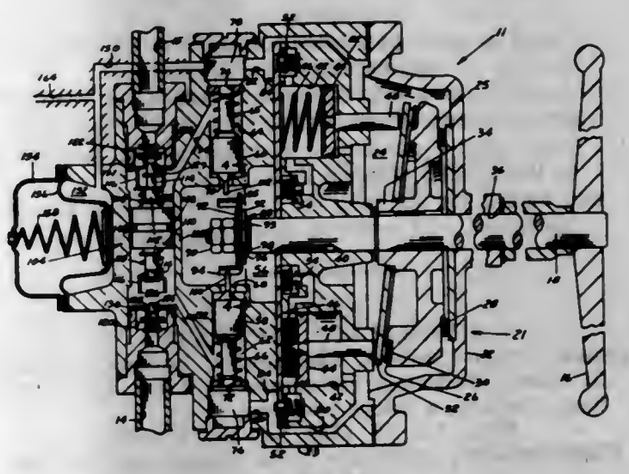
3,271,953
COMPOUND CONTROL SYSTEM FOR A TURBINE
Robert L. Carson, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 24, 1965, Ser. No. 458,334
5 Claims. (Cl. 60—43)

1. A control system for a turbine supplied with motive fluid from a pressure source comprising:
(a) a primary valve connected to control flow of motive fluid from said pressure source to said turbine,
(b) an additional valve connected to control motive fluid from said source so as to adjust any unbalance between motive fluid flow generated by the pressure source at a given pressure and motive fluid flow required by the turbine at a given load,
(c) first means responsive to motive fluid pressure including a first pilot valve controlled thereby,
(d) second means responsive to the speed of said turbine including a second pilot valve controlled thereby,
(e) a primary servomotor controlled jointly by said first and second pilot valves and arranged to move said primary valve toward a more open position upon increase in motive fluid pressure or decrease in turbine speed respectively, said pilot valves being connected so that the pilot valve requesting the lowest primary valve position overrides the other pilot valve to exercise sole control over the primary servomotor while the overridden pilot valve moves in an unrestricted



manner, whereby the motion of the overridden pilot valve indicates the potential unbalance in motive fluid flow between pressure source and turbine, and
(f) an additional servomotor connected to actuate said additional valve to correct said unbalance in response to movements of the overridden pilot valve.

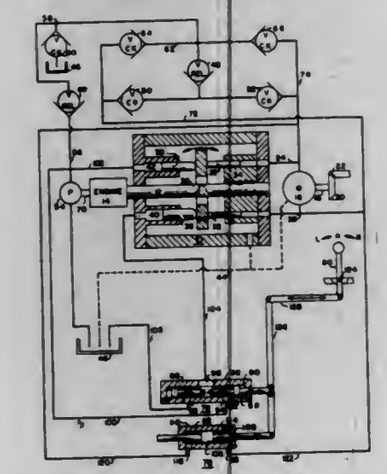
3,271,954
REMOTE CONTROL POSITIONING DEVICE
Frederick J. Marsee, Hazel Park, Raymond A. Seeters, Royal Oak, and Frank C. Karasinski, Jr., Utica, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Mar. 30, 1965, Ser. No. 443,888
8 Claims. (Cl. 60—52)



1. A positioning device, comprising a servo mechanism including a wobble plate type pump having a reservoir, a shaft connected at an intermediate point thereof to said pump and having one end thereof extending from said servo mechanism, a friction clutch mechanism mounted on the inner end of said shaft, a pair of actuating valves independently operated by said clutch mechanism depending upon the direction of rotation of said shaft, a plurality of pistons successively operated by rotation of said wobble plate pump, a conduitry system communicating between said pistons and the ends of said actuating valves, a lockout system, a pair of passageways communicating between said actuating valves and said lockout system, an accumulator and a conduit communicating between said reservoir and said accumulator; an external

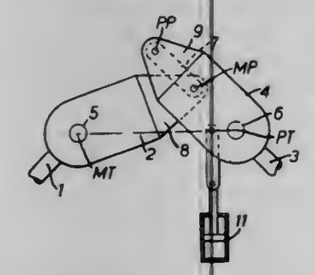
operable member fixedly secured to the extension of said shaft; and a slave mechanism including a housing having a piston slidably mounted therein, a piston rod extending from one end of said piston and out through one end of said housing, and a pair of conduits communicating between opposite ends of said piston and said lockout system.

3,271,955
POWER TRANSMISSION
Werner G. Holzbock, Bloomfield Hills, and Carel J. Mali, Union Lake, Mich., assignors to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,374
8 Claims. (Cl. 60—53)



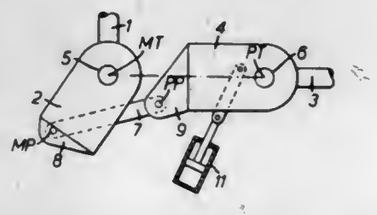
1. In a hydraulic transmission for controlling the acceleration of a fluid motor, the combination of:
a pump connected to said motor and having a power operated displacement varying mechanism;
control means for regulating said power operated displacement varying mechanism, said control means having a neutral position from which it is movable to accomplish regulation;
an input member connected to said control means and capable of varying degrees of movement;
a movable, pressure differential responsive feedback device connected to said control means, said device producing a movement proportional in magnitude to the applied pressure differential;
and means for applying the pressure differential existing across said motor to said feedback device.

3,271,956
HYDRAULIC APPARATUS
Dennis Ernest Lambeth, Cheltenham, England, assignor to Dowty Technical Developments Limited, Cheltenham, England, a British company
Filed Apr. 15, 1965, Ser. No. 448,296
Claims priority, application Great Britain, Apr. 18, 1964, 16,185/64
5 Claims. (Cl. 60—53)



1. A hydraulic power transmission comprising a tilting head pump unit in hydraulic connection with a tilting head motor unit, a support locating the tilt axes and the drive shafts in fixed relative positions in which the tilt axes are parallel to one another, a link of fixed length having a pair of spaced pivots connecting the link respectively to the pump head and to the motor head, the pivots having axes parallel to the tilt axes and being attached to the heads either directly or through extensions whereby the spacing for each head between the tilt axis and the pivot axis forms a lever arm, the whole arrangement being such that during tilt movement of the heads a position is obtainable, referred to as pump dead centre, in which the motor pivot axis lies between and in one plane with the pump tilt axis and the pump pivot axis.

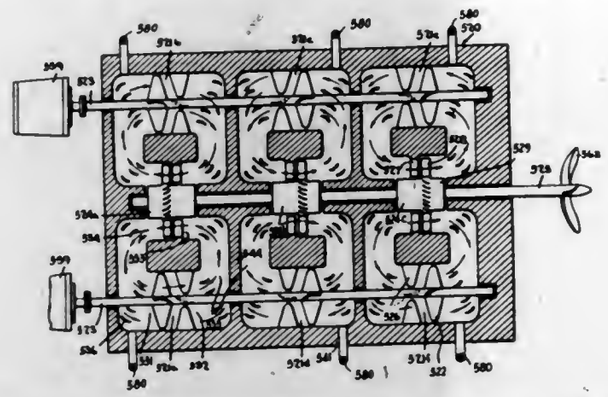
3,271,957
HYDRAULIC APPARATUS
Dennis Ernest Lambeth, Cheltenham, England, assignor to Dowty Technical Developments Limited, Cheltenham, England, a British company
Filed Apr. 15, 1965, Ser. No. 448,297
Claims priority, application Great Britain, Apr. 18, 1964, 16,186/64
4 Claims. (Cl. 60—53)



1. A hydraulic power transmission comprising a tilting head pump unit in hydraulic connection with a tilting head motor unit, a support carrying the two units and locating the tilt axes and the drive shaft in fixed relative positions in which the axes are parallel to one another, a link of fixed length having a pair of spaced pivots connecting the link respectively to the pump head and to the motor head, the pivots being attached either directly to the heads or by extensions whereby the spacing for each head between the tilt axis and the pivot axis forms a lever arm, the pivot axes being parallel to the tilt axes, the arrangement being such that when the pivot axes lie in one plane with the pump tilt axis, i.e. pump dead centre position, the link extends from the pump pivot and the combined length of the pump lever arm and the link is greater than the space between the tilt axes.

3,271,958
HYDRAULIC TORQUE CONVERSION APPARATUS
Leonard Meyerhoff, Brooklyn, N.Y., assignor to Eastern Research Group, a partnership
Original application Feb. 25, 1960, Ser. No. 11,057. Divided and this application Apr. 6, 1964, Ser. No. 357,730
7 Claims. (Cl. 60—54)

1. Hydraulic transmission apparatus employing a high mass flow of fluid for transmitting high power from a plurality of drive shafts each having a high rotational speed to a driven shaft having a comparatively low rotational speed, the drive shaft-to-driven shaft speed reduction ratio of the apparatus being in the range extending upwardly from the ratio of about four-to-one, said apparatus comprising a plurality of impeller shafts, each of said impeller shafts being adapted to engage a different one of said plurality of drive shafts, a plurality of comparatively high volume output type single stage axial flow pumps coupled to each of said impeller shafts, each of the pumps having a transmission fluid outlet opening, a plurality of turbines each being of the axial flow type having a fluid passage therethrough of substantially constant cross-section, each turbine of said plurality of turbines being adapted to engage said driven shaft and having a transmission fluid entrance opening in communication with substantially the complete periphery of said turbine to enable said turbine to be fully wetted by the flow of fluid therethrough, said fluid entrance opening of each of the turbines being comparatively spaced apart from said fluid outlet opening of each of the pumps, duct means extending between said fluid entrance opening of each of the turbines and said fluid outlet opening of a



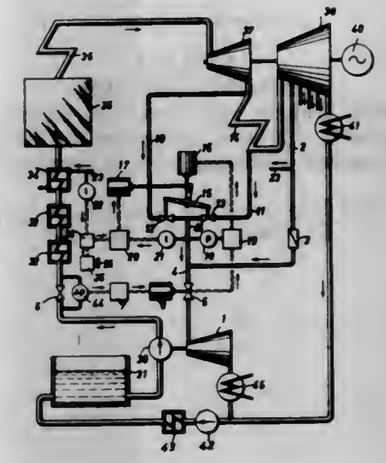
different one of the pumps of each of the impeller shafts to provide a passageway for transmission fluid for interconnecting the pumps and the turbines, and means for supplying said fluid to said pumps, the ratio of the speed of rotation of each of said pumps for providing a predetermined flow of fluid therethrough to the speed of rotation of said turbine interconnected therewith for receiving said predetermined flow therefrom being in the range extending upwardly from about four-to-one, whereby the speed of rotation of said turbines and said driven shaft when said apparatus is transmitting high power is substantially less than that of said drive shaft.

3,271,959
DEVICE FOR UTILIZING THE ENERGY PRESENT IN ROLLING WAVES OF WATER
Adrianus W. van Gils, Seria, Brunei, British Borneo
Filed Jan. 14, 1965, Ser. No. 425,485
4 Claims. (Cl. 60—55)



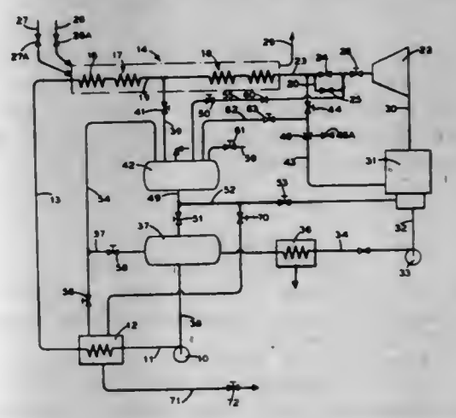
1. A device to be placed in a body of water in the vicinity of rolling waves of the water to utilize the energy of the rolling waves comprising a water turbine or motor, an inlet tube for directing water to the turbine or motor for driving the same and an outlet tube for directing water from the trubine, the inlet tube having a plurality of inlet valves only permitting entry of the water from the body of water into the inlet tube and the outlet tube having a plurality of valves only permitting the exit of the water from the outlet tube into the body of water, both of said tubes being positioned in substantially the same plane, so that when the crest of a wave passes over a valve in the inlet tube the greater hydrostatic presure will permit the water to enter the inlet tube and so that when a trough of a wave passes over a valve in the outlet tube the lower hydrostatic pressure will permit the water to flow out of the outlet tube whereby the turbine or motor is driven by a difference in the hydrostatic pressure between the crests and troughs of the waves.

3,271,960
METHOD AND APPARATUS FOR SUPPLY OF STEAM TO AN AUXILIARY TURBINE IN A STEAM POWER PLANT
Alfred Brunner, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a company of Switzerland
Filed Feb. 28, 1964, Ser. No. 348,140
Claims priority, application Switzerland, Mar. 1, 1963, 2,703/63
10 Claims. (Cl. 60—67)



5. In a steam power plant having a high pressure main turbine, a steam reheating surface, and a low pressure main turbine connected in series for steam flow, apparatus for the supply of steam to an auxiliary turbine comprising means to withdraw steam from a stage of said low pressure turbine, separate means to withdraw steam both upstream and downstream of said surface, and valve means included in at least one of said separate withdrawal means.

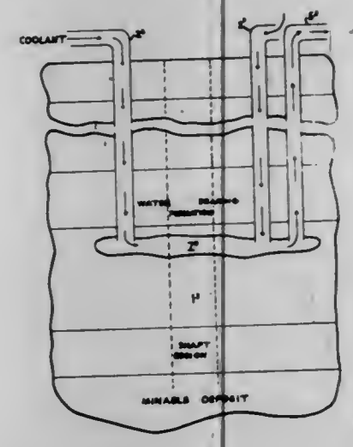
3,271,961
START-UP SYSTEM FOR FORCED FLOW VAPOR GENERATOR
Murray Wiener, Akron, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 22, 1964, Ser. No. 405,685
5 Claims. (Cl. 60—105)



1. The method of starting a power plant system in which, during normal operation, vaporization fluid is successively passed through a heating zone and a superheating zone to a vapor turbine, said method comprising passing a vaporizable fluid under substantial pressure through the heating zone in indirect heat transfer relation

with heating gases, passing a portion of the heating zone fluid outflow to a separating zone while reducing its pressure to cause part of the fluid to flash into vapor, passing the remaining portion of the heating zone fluid outflow to and through the superheating zone in indirect heat transfer relation with the heating gases, effecting separation of the vapor portion of the fluid in the separating zone, passing separated vapor from the separating zone to a position downstream of the superheating zone for mixing with superheating zone vapor outflow, passing the vapors so mixed to the turbine for rolling and loading thereof.

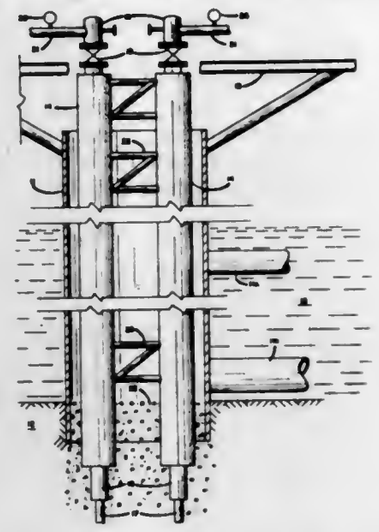
3,271,962
MINING PROCESS
James Bowen Dahms and Byron P. Edmonds, Regina, Saskatchewan, Canada, assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 16, 1964, Ser. No. 383,123
21 Claims. (Cl. 61—36)



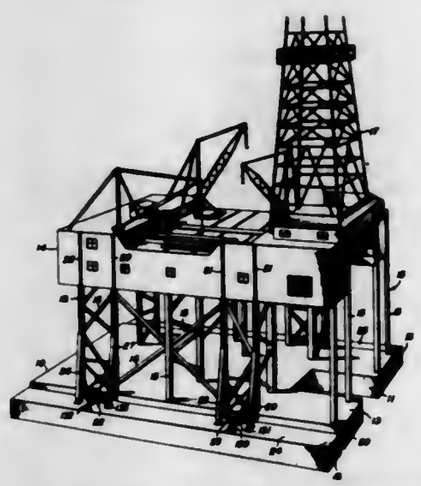
21. A method of freezing a selected zone extending through a subterranean water-bearing stratum which comprises establishing beneath a level where water is disposed a subterranean passage which intersects said zone, establishing a cased hole extending through said stratum and openly communicating with said passage, establishing a further cased hole sufficiently removed from the first-named cased hole to be out of substantial heat transfer relationship therewith, said further cased hole extending through said stratum and openly communicating with said passage, feeding a liquid having a temperature below 0° C. through the first-named hole with flow through said stratum into the passage and withdrawing said liquid from said passage through said further cased hole until said selected zone is frozen.

3,271,963
MARINE STRUCTURE
Kenneth A. Blenkarn, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Feb. 13, 1964, Ser. No. 344,645
2 Claims. (Cl. 61—46)

1. A marine structure comprising a large-diameter tubular member having its lower end affixed to a formation underlying a body of water and extending upwardly from said formation to a point above the surface of the water; a conduit member having its lower end connected to a well in said formation and extending upwardly from said well to the surface of the water; said conduit member being positioned inside said large-diameter member and structurally isolated therefrom continuously above a point adjacent said formation, whereby vibrations induced in said large-diameter member are prevented from being transmitted to said conduit member; and a well head assembly mounted on said conduit member above the surface of the water; and a platform supported by said large diameter tubular member and isolated from said well head assembly.



3,271,964
METHOD OF OPERATING A SUBMERSIBLE BARGE FOR SUBMARINE OPERATIONS
Paul A. Wolff, Morgan City, La., assignor to Kerr-McGee Oil Industries, Inc., a corporation of Delaware
Original application Oct. 21, 1955, Ser. No. 541,998, now Patent No. 3,099,912, dated Aug. 2, 1963. Divided and this application Nov. 30, 1961, Ser. No. 161,761
6 Claims. (Cl. 61—46.5)



1. Method of operating a submersible barge to effect submergence thereof to the underlying land bottom of a body of water,

the barge being of the type having a main section including a floatable hull connected to an upstanding open structure supporting a platform spaced above the hull and a pair of pontoon sections located outboard of the main section on opposite sides thereof with the main section and the pontoon sections being mounted for relative individual movement in upward and downward directions to different positions along predetermined paths including a first position in which the center of displacement of the pontoon sections is at substantially the same level as the center of displacement of the hull, a second position in which the center of displacement of the pontoon sections is displaced a maximum distance above the level of the center of displacement of the hull and successive positions from the center of displacement intermediate the first and second positions,

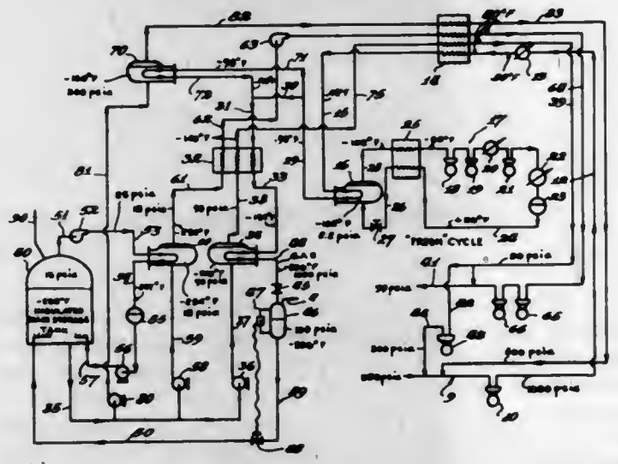
the method comprising the steps of floating the barge on the body of water by the buoyance of the pontoon sections with the hull and the pontoon sections in the first position and each having freeboard,

applying a force of controlled variable magnitude between and onto the main section and the pontoon sections and by said force moving the hull at selected rates further from the center of displacement of the pontoon sections in one direction from the first position and toward the land bottom, and restraining movement of the sections relatively upwardly of the first position in a direction opposite said one direction while said force is applied between the hull and the pontoon sections,

continuing application of said force and moving thereby the hull relative to the center of displacement of the pontoon sections further in said one direction toward the second position and into contact with the land bottom while continuing said restraining movement of the pontoon sections while continually maintaining the pontoon sections with freeboard to stabilize the barge,

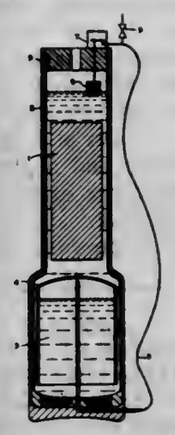
and changing the magnitude of the controlled force in accordance with extraneous forces applied to the sections and changes in buoyancy thereof during such submergence to vary the rate and attitude of submergence of the hull to the underlying land bottom.

3,271,965
METHANE LIQUEFACTION PROCESS
James B. Maher and James Mair, Chicago, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Jan. 8, 1964, Ser. No. 336,560
9 Claims. (Cl. 62—23)



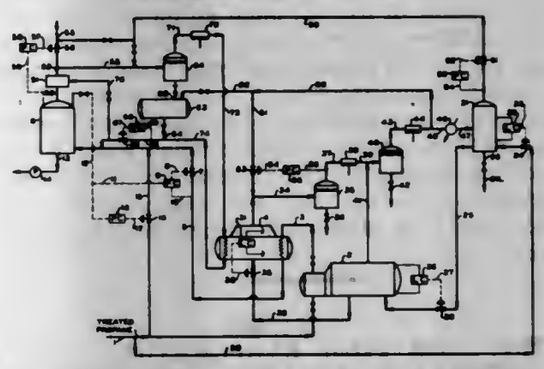
1. The method of liquefying methane which comprises subjecting incoming methane gas to a substantially increased predetermined pressure, substantially lowering the temperature of the incoming methane by means of a closed-loop refrigeration system, further lowering the temperature of the so-cooled incoming methane gas by means of liquid methane removed from an insulated main storage tank for liquid methane to further reduce the temperature of the incoming methane, expanding the gaseous methane to liquefy and then flashing the resulting liquefied methane into the main storage tank to further lower the temperature of the liquid methane for storage at a temperature at which the gas gives a vapor pressure close to but slightly above atmospheric pressure.

3,271,966
CRYOSTATS
Frederick John Webb, Chilton, Berkshire, England, assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 2, 1964, Ser. No. 394,092
Claims priority, application Great Britain, Feb. 24, 1964, 7,655/64
5 Claims. (Cl. 62—45)



3. A cryostat comprising a vessel adapted to contain a liquid refrigerant having a boiling point below the ambient temperature of said vessel and a first upper liquid level in said vessel, means forming a hemispherical roof surface dome in said vessel under which said refrigerant has a second liquid level from which gas evolves to raise the first upper liquid level of said refrigerant in said cryostat, means communicating from said ambient to under said dome for venting said gas from beneath said dome to reduce the first upper liquid level of said refrigerant in said cryostat, and means controlling the venting of said gas in response to the raising of said first upper liquid level for restoring said refrigerant to a predetermined first upper liquid level in said cryostat.

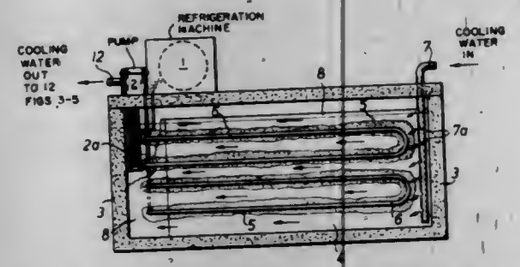
3,271,967
FLUID HANDLING
Joseph T. Karbosky, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 19, 1965, Ser. No. 433,906
9 Claims. (Cl. 62—51)



1. A method for cooling a liquid comprising providing a source of refrigerant under an elevated pressure, passing said refrigerant into a first heat exchange zone in which said refrigerant is maintained at a lower pressure than said refrigerant source to lower the boiling temperature and therefore the temperature of the refrigerant in said zone, passing said liquid in heat exchange relationship with said refrigerant in said first heat exchange zone to cool same, removing liquid refrigerant from said first heat exchange zone and passing same into a second heat exchange zone in which said refrigerant is

maintained at a lower pressure than the pressure on said refrigerant in said first heat exchange zone to further lower the boiling temperature and therefore the temperature of same in said zone, removing said liquid from said first heat exchange zone and passing same in a heat exchange relationship with said refrigerant in said second heat exchange zone to further cool said liquid, removing said liquid from said second heat exchange zone, removing refrigerant vapors from said second heat exchange zone and compressing same substantially to the pressure maintained in said first heat exchange zone, combining said compressed vapors from said second heat exchange zone with refrigerant vapors from said first heat exchange zone, compressing said combined vapors and cooling same to form at least in part a refrigerant liquid at a temperature and a pressure substantially the same as that of said source of refrigerant under elevated pressure, and introducing said compressed and cooled combined refrigerant vapors into said source.

3,271,968
METHODS AND APPARATUS FOR COOLING MILK FOR USE WITH MILKING MACHINES
Günther Karnath, Eschenhahn, Taunus, Germany, assignor of twenty-five percent to Dipl.-Ing. Dr. Kurt Karnath, Wiesbaden, Germany, and fifty percent to Max Henry Hoepli, New York, N.Y.
Filed May 28, 1965, Ser. No. 459,570
Claims priority, application Germany, June 3, 1964, K 53,115; Mar. 23, 1965, K 55,615; Apr. 21, 1965, K 55,865
5 Claims. (Cl. 62—59)



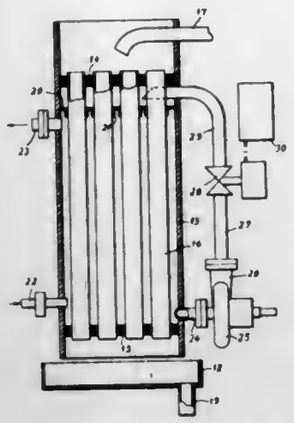
1. A method of economically pre-cooling milk intermittently pumped from a milking machine to a collection point and arriving in spurts comprising, operating a refrigeration unit substantially constantly; exposing the cooling coils of said refrigeration unit to circulating water whereby a layer of ice will build up on the cooling coils to store coldness; intermittently passing milk in spurts through a filter to a collection chamber; withdrawing milk in a smooth stream from said chamber, passing the milk exteriorly of a heat exchanger, and cooling said smoothly flowing milk by passing said circulating water interiorly of said heat exchanger whereby the ice coating on said refrigeration coils will thin and supply coldness from storage evenly to said milk during intermittent milk pumping.

3,271,969
METHOD FOR FILM EVAPORATION AND AN EVAPORATOR FOR USING THE METHOD
Jørgen Lorentzen, Alfred Christensensvej 10, Naerum, Denmark
Filed Apr. 17, 1964, Ser. No. 360,565
Claims priority, application Denmark, Apr. 17, 1963, 1,777
5 Claims. (Cl. 62—98)

1. In a method for liquid film evaporation wherein cooling liquid is directed through automatic pulsating valve means to an evaporator surface, the steps of:

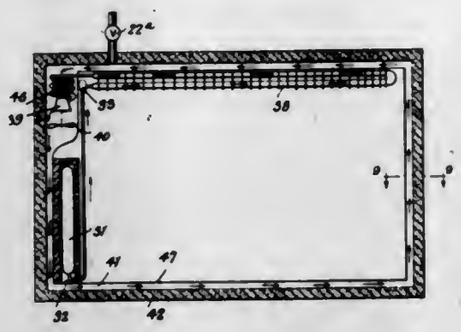
(a) directing a flow of said liquid through said automatic pulsating valve means to said evaporator surface to wet the same;

(b) discontinuing the flow of said liquid through said automatic pulsating valve means to said evaporator surface for a short preselected period of time;



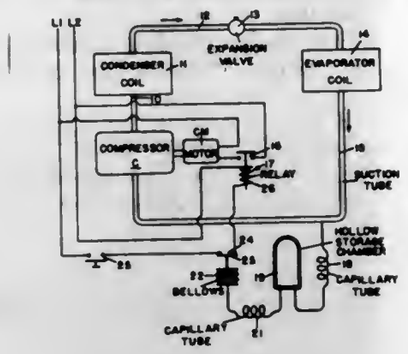
(c) recommencing directing a flow of said liquid through said automatic pulsating valve means to said evaporator surface while at least a portion thereof is still wet whereby the cooling effect of said fluid on said surface is increased relative to the cooling effect of a continuous flow of said fluid.

3,271,970
INSULATED COLD STORAGE ROOMS OR SIMILAR ENCLOSURES
Erling Berner, New Castle, Pa., assignor to Pennsylvania WMB, Inc., New Castle, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1962, Ser. No. 233,841
13 Claims. (Cl. 62—223)



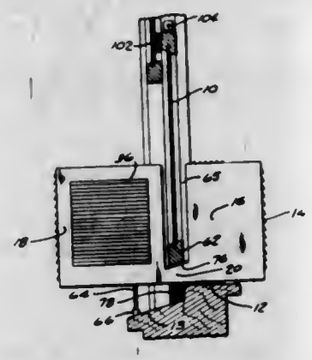
1. In cold storage apparatus of the character described with the interior thereof refrigerated by heat transfer contact with a cold gas and having spaced apart inner and outer walls with heat-insulating material disposed therebetween, said inner walls having higher heat transferability than said insulating material, the combination which comprises a source of said cold gas, gas-circulating grooves in the inner surface of said insulating material forming a network of gas-circulating passages extending throughout substantially the entire wall area of said apparatus between said inner walls and said insulating material, means for introducing and circulating at least a portion of said cold gas through said grooves and around the outside of said inner walls and in heat-transfer contact with both said inner walls and said insulating material effecting both cooling of the interior of said cold storage apparatus and removal of moisture from said insulating material, said cold gas being maintained at superatmospheric pressure in said grooves for minimizing leakage of moisture into said insulating material from outside said apparatus, and means for exhausting said gas from said grooves to the atmosphere.

3,271,971
LOW PRESSURE CUT-OUTS FOR REFRIGERANT COMPRESSORS
Erik H. Jensen and Alan L. Rhodes, Staunton, Va., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 31, 1964, Ser. No. 422,732
7 Claims. (Cl. 62—228)



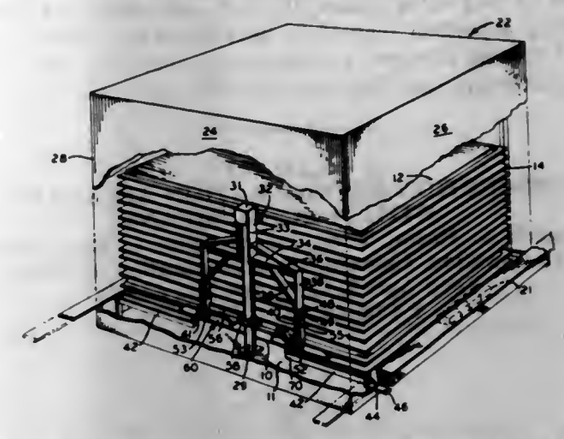
1. A low pressure cut-out for a refrigerant compressor having a suction tube connected to its suction side, comprising a hollow storage chamber, means for connecting the interior of said tube to the interior of said chamber, pressure responsive means, means connecting the interior of said chamber to said pressure responsive means, and an electric switch operated by said pressure responsive means when the pressure within said chamber decreases to a predetermined pressure.

3,271,972
WINDOW AIR CONDITIONING UNIT
Verne C. Knight, Addison, Mich., assignor, by mesne assignments, to Addison Products Company, a corporation of Michigan
Filed Oct. 21, 1964, Ser. No. 405,518
6 Claims. (Cl. 62—262)



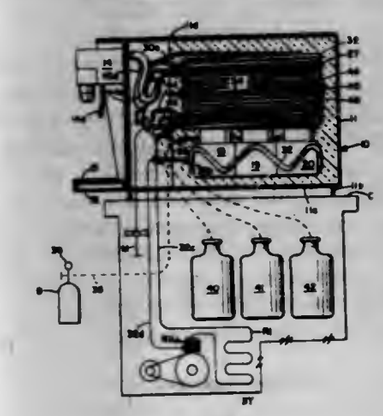
1. In the combination with apparatus for cooling and ventilating living space of the type having a pair of heat-exchanger sections disposable on opposite sides of a wall opening with said sections being separated from each other throughout the major portion of their vertical projections and having a connector section common to said sections of shallow vertical projections, the wall opening having closure means disposable between said heat-exchanger sections and overlying said connector section, of sound and weatherproofing means for the wall opening being disposed in a vertical plane thereof and being located on opposite sides of said connector section and approximating in vertical projections the clearance between the wall opening and the closure means, said sound and weatherproofing means having a ventilating opening therein.

3,271,973
AUTOMATIC CONTACT PLATE FREEZERS
Pasquale Amerio, Erskine Lakes, and Reynold E. Minnich, Martinsville, N.J., assignors to Amerio Refrigerating Equipment Co., Inc., Union City, N.J., a corporation of New Jersey
Filed Sept. 18, 1964, Ser. No. 397,990
5 Claims. (Cl. 62—341)



1. An automatic freezing apparatus comprising, in combination, a stack of superimposed contact freezer plates with minimum spacing means there between to provide freezing cavities, means for supporting the lowermost plate of the stack in fixed relation, means for successively raising each plate above the lowermost plate to increase the depth of the cavity to allow charging of boxes of unfrozen foods into the cavity, said raising of each plate causing the raising of all plates located above said plate, said means comprising catch arms which underlie the upper plate in each pair forming a cavity, frames pivotally supporting said catch arms on two opposed sides of the stack, front and rear conveyors for delivering said boxes to each cavity to permit loading of the cavities at a plurality of levels, and automatic means for moving the frames vertically in stepped increments to position the catch arms at the respective cavities.

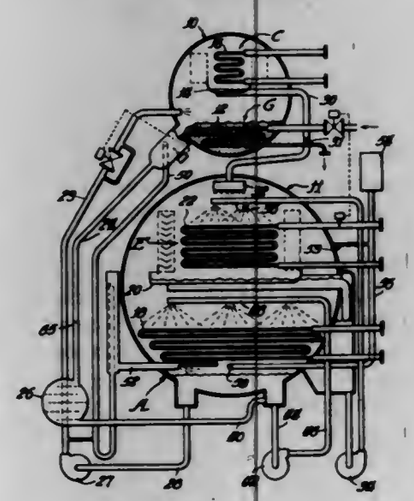
3,271,974
CARBONATING AND DISPENSING APPARATUS
Clarence W. Wheeler, 1767 41st St. S., St. Petersburg, Fla.
Filed Oct. 16, 1964, Ser. No. 404,411
1 Claim. (Cl. 62—395)



In a carbonated beverage dispensing apparatus, a housing, a water carbonating structure in said housing and comprising a vertically extending dome enclosing a water dispersing bed and a water collecting tank beneath said dome and forming a closure therewith, conduit means for discharging CO_2 gas into said bed, conduit means for discharging water into the top of said dispersion bed and including a coil of tubing in said housing and surrounding said dome, a cooling element comprising a coil

of tubing extending in heat exchange relation with the walls of said tank and in heat exchange relation with the first mentioned coil throughout the length thereof for chilling water supplied to said bed structure, a dispensing valve means supported by said housing, a water conducting tube interconnecting said tank of said carbonating structure and said dispenser, tube means for supplying extract to said valve means, the last mentioned tube means having a portion thereof in heat exchange relation with said cooling element, and insulation means in said housing enclosing said coils and carbonating structure.

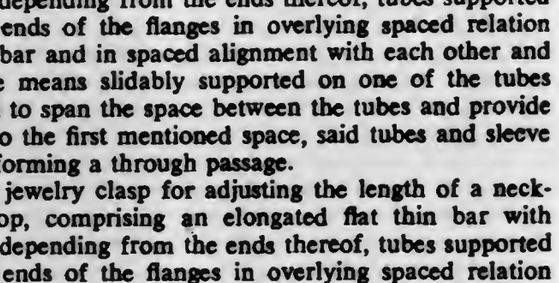
3,271,975
ABSORPTION REFRIGERATION APPARATUS WITH PURGING MEANS
Leonard A. Rezin, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 5, 1965, Ser. No. 445,487
8 Claims. (Cl. 62—475)



1. Absorption refrigeration apparatus comprising a generator, a condenser, an evaporator, and an absorber connected to provide a closed, continuous cycle refrigeration circuit; means for transferring relatively dilute absorber solution from the absorber to the generator; means for transferring relatively concentrated absorber solution from the generator to the absorber, said means including a substantially vertical conduit interconnecting said generator and said absorber, said generator and absorber being arranged such that solution flows by gravity in open-sewer fashion from the generator to the absorber; a purge unit interconnected with said refrigeration circuit for removing non-condensible gases from said circuit; and means associated with said conduit for venting non-condensible gases therein to said generator, said means including an elongated tube disposed internally of said conduit, said tube extending through a substantial portion of said conduit whereby any non-condensible gases whose upward flow through said conduit is impeded by the solution flowing downwardly therethrough can be effectively removed for subsequent elimination by said purge unit.

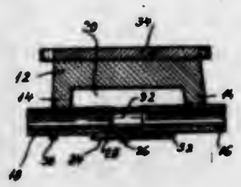
3,271,976
ABSORPTION REFRIGERATION
Everett P. Palmatier, Solvay, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed June 1, 1965, Ser. No. 460,329
6 Claims. (Cl. 62—487)

1. An absorption refrigeration system comprising:
(A) an absorber for absorbing refrigerant vapor;
(B) an evaporator for evaporating refrigerant and providing a cooling effect;
(C) a generator for concentrating weak absorbent solution by vaporizing refrigerant therefrom;
(D) a condenser for condensing refrigerant vaporized in said generator; and
(E) a pump for passing absorbent solution in said system, said pump comprising:
(1) a pump housing containing a piston adapted to reciprocate within a cylinder to pump said weak solution;
(2) a power shaft extending through said housing and mounted thereon for oscillating motion;



(3) driving means for imparting oscillating motion to said power shaft about the axis thereof;
(4) linkage means within said pump housing connecting said piston with said power shaft for imparting reciprocating motion to said piston from the oscillation of said power shaft; and
(5) seal means for securing said power shaft in liquid-tight engagement to said housing while permitting oscillation of said shaft, said seal means comprising an elastomeric seal bushing, said seal bushing being clamped in liquid-tight engagement with said pump housing and said shaft so that oscillation of said shaft is accommodated by a twisting movement of said seal bushing.

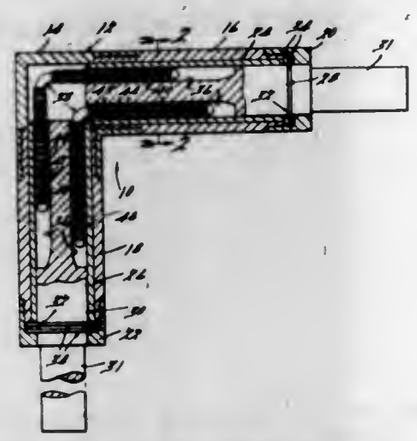
3,271,977
JEWELRY SHORTENER LOCK WITH PIN
Ernst Bohlinger, 31—15 25th Ave., Astoria, Long Island, N.Y., and Samuel Friedman, 556 Ave. Z, Brooklyn, N.Y.
Filed Nov. 12, 1963, Ser. No. 322,914
8 Claims. (Cl. 63—1)



1. A jewelry clasp for adjusting the length of a necklace loop, comprising an elongated flat thin bar with flanges depending from the ends thereof, tubes supported on the ends of the flanges in overlying spaced relation to said bar and in spaced alignment with each other and a sleeve means slidably supported on one of the tubes adapted to span the space between the tubes and provide access to the first mentioned space, said tubes and sleeve means forming a through passage.

7. A jewelry clasp for adjusting the length of a necklace loop, comprising an elongated flat thin bar with flanges depending from the ends thereof, tubes supported on the ends of the flanges in overlying spaced relation to said bar and in spaced alignment with each other and a sleeve means slidably supported on one of the tubes adapted to span the space between the tubes and provide access to the first mentioned space, an ornamental oval-shaped plate fixed on the top edge of the bar disposed perpendicular to the plane of the body of the bar, said plate overlapping both sides of the body of the bar, said plate having its outer surface decorated with radial lines and having its peripheral edge corrugated, and a brooch having an elongated pin detachably extending through the aligned tubes and sleeve means, and means carried by the brooch for latching the brooch onto the protruding end of the pin, said plate adapted to seat on one side of a necklace and said brooch on the other side of the necklace.

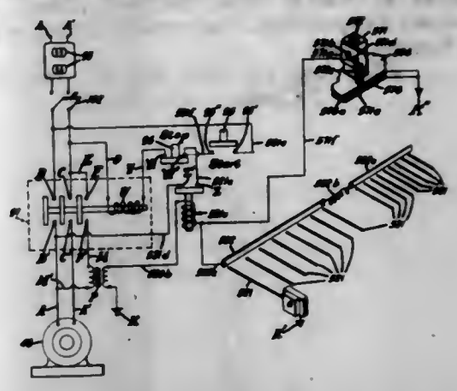
3,271,978
ANGULAR ROTARY DRIVE UNIT
Albert J. Berna, 18690 Lauder, Detroit, Mich.
Filed Oct. 18, 1963, Ser. No. 317,353
10 Claims. (Cl. 64—20)



1. A device for the transmission of rotary power including a housing having a central hollow interior and a pair of angularly disposed cylindrical bearing surfaces defining rotor chambers, a pair of rotors supported one in each of said chambers, each of said rotors having a plurality of circumferentially spaced axially extending peripheral slots, a plurality of connecting rods each having a pair of cylindrical portions disposed in fixed angular relation corresponding to the angular relation of said bearing surfaces, one cylindrical portion of each of said rods being disposed in one of said axially extending slots on one of said rotors and the other cylindrical portion of each of said rods being disposed in one of said axially extending slots on the other of said rotors, bearing means comprising a plurality of axially spaced annular bearing elements extending inwardly from the inner periphery of each of said slots on said rotors and adapted to be interposed between said inner periphery of said slots and said cylindrical portions of said connecting rods, said cylindrical portions being engageable with the adjacent of said bearing surfaces, said bearing elements defining lubricant chambers therebetween adapted to supply lubricant to said slots and to said rotor chambers in providing for frictionless reciprocal movement between said connecting rods and said rotors and for frictionless rotary movement between said rotors and said rotor chambers.

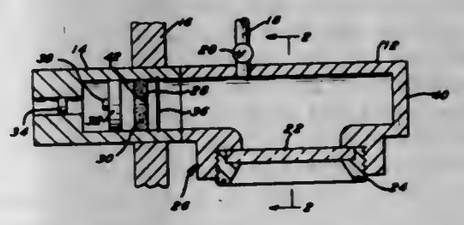
3,271,979
YARN CONTROL FOR KNITTING MACHINES
Benjamin Franklin Colle, Athens, Ga., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Original application Jan. 6, 1953, Ser. No. 329,801, now Patent No. 3,136,145, dated July 9, 1964. Divided and this application Mar. 16, 1964, Ser. No. 352,090
11 Claims. (Cl. 66—140)

2. In a knitting machine having knitting instrumentalities, means for driving said knitting machine; means for feeding yarn to, and withdrawing yarn from, said knitting instrumentalities; means for severing a yarn taken out of action; and means for automatically interrupting



said driving means in the event that the yarn taken out of action is not severed by said yarn severing means.

3,271,980
CHEMICAL ENERGY LASER PUMP
Charles A. Boyd, West Chester, Pa., assignor to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania
Filed Mar. 16, 1964, Ser. No. 352,247
9 Claims. (Cl. 67—33)



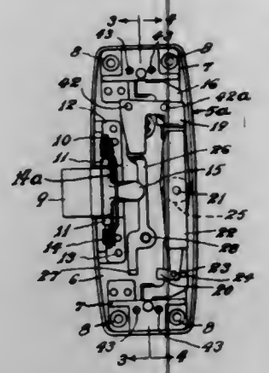
3. Apparatus for producing high intensity light pulse comprising a chamber, means for introducing an oxidizer into said chamber, means for dispersing and mixing the finely divided metal particles with said oxidizer, and means to subsequently generate a shock wave in said chamber after said metal particles have been dispersed and mixed with said oxidizer, whereby said metal particles chemically react with said oxidizer to produce a high intensity pulse of light.

3,271,981
COLLAPSIBLE DRYING FRAME FOR ANIMAL PELTS
Louis T. Hein, 3515 4 Mile Road, Racine, Wis.
Filed Oct. 28, 1964, Ser. No. 407,131
1 Claim. (Cl. 69—19.3)



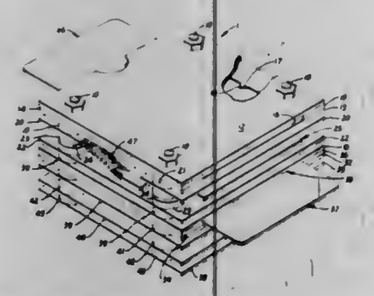
A pelt-drying frame having a pair of longitudinal legs lying in a common plane and spaced part, a nose-piece located between and at the lower extremities of said legs, and extending beyond the ends thereof, means connecting said legs to said nose-piece, said nose-piece having a portion thereof adjacent said connecting means in the plane of said legs and terminating in an end portion the mid-plane of said end portion being obliquely disposed relative to the plane of the first portion of said nose-piece, said legs being formed of sheet material and having cross sections comprising rib portions having web portions diverging arcuately from said rib portions.

3,271,982
DOOR LOCK
Nicholas A. Welch, West Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Aug. 14, 1964, Ser. No. 389,571
7 Claims. (Cl. 70—92)



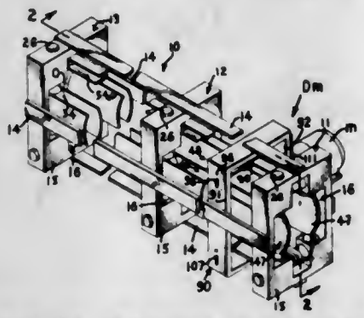
1. An emergency-exit lock including an active case comprising a base section, a latchbolt pivotally mounted on said base section and normally biased towards latching position outwardly of said section, said latchbolt having a tail thereon, a supporting cover on said base section, an operating lever pivotally mounted on a shaft on said cover a panic-bar secured to said operating lever, an operating finger pivotally mounted on said shaft and engageable with said tail on the latchbolt, an abutment between said operating lever and said operating finger for rocking said finger about said shaft to retract the latchbolt upon operation of said panic-bar, the said operating finger having an abutment thereon, a slidable member on said base, a rocker member carried by said slidable member and having a hook portion thereon, said rocker member being adjustable to locate the hook portion thereon in or out of register with the abutment on said operating finger, manually operable means for operating said slidable member to engage the hook portion on the rocker member with the abutment on the operating finger and thereby rock said operating finger to cause retraction of the latchbolt independently of the panic-bar, and separate means for adjusting said rocker member to render said manually operable means inoperable.

3,271,983
MAGNETIC LOCKING DEVICE AND METHOD OF COMBINATING THE SAME
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation
Filed July 14, 1964, Ser. No. 382,548
33 Claims. (Cl. 70—276)



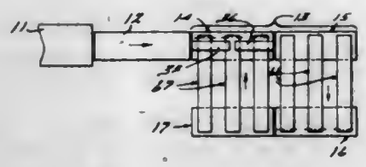
1. A magnetic lock comprising:
a frame,
a movable member of magnetizable material, means supporting said member for movement along an axis fixed relative to said frame between two extreme positions,
a generally planar slide supported for movement along a path of travel in the plane of said slide and at right angles to said axis,
interengaging elements on said member and slide respectively and adapted to coact to lock said slide against movement when said member is in one of said extreme positions, said interengaging elements being out of engagement to unlock said slide when said member is in the other of said extreme positions to permit movement of said slide.

3,271,984
METHOD AND APPARATUS FOR FORMING "F" OBLONG CAN BODIES
George M. Flynn, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 8, 1963, Ser. No. 271,252
35 Claims. (Cl. 72—210)



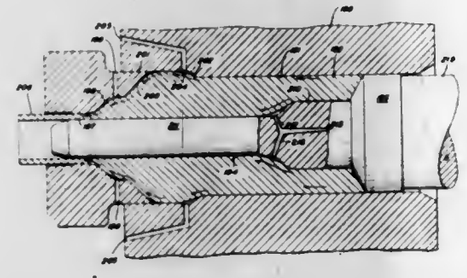
1. Apparatus for deforming substantially hollow cylindrical flexible metallic bodies into "F" style can bodies comprising a generally elongated support, means defining a predetermined path of travel for cylindrical bodies through said support, said path defining means including transport means for transporting cylindrical bodies interiorly of and through said support along said predetermined path, means for shaping the cylindrical bodies to a generally hour-glass transverse cross-sectional configuration without imparting a permanent set to the can bodies whereby the can bodies can rebound to a generally rectangular transverse cross-sectional configuration after departing said predetermined path, said predetermined path being a completely opened elongated area devoid of auxiliary forming mechanisms, and said shaping means comprising the sole means for shaping the cylindrical bodies to the hour-glass cross-sectional configuration thereof.

3,271,985
APPARATUS AND METHOD FOR STRAIGHTENING EXTRUDED BAR STOCK
Alexis N. Sokoloff and Floyd E. Clark, Port Huron, Mich., assignors to Mueller Brass Co., Port Huron, Mich., a corporation of Michigan
Filed Jan. 14, 1964, Ser. No. 337,637
11 Claims. (Cl. 72—256)



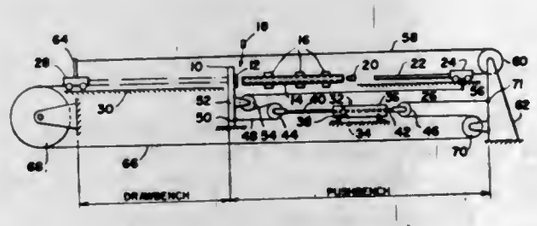
1. In a method for straightening bar stock, the steps of supporting the bar stock along its entire length against pressure directed in two perpendicular directions, exerting pressure simultaneously along the entire length of said stock in one of said directions, exerting pressure along the entire length of said stock in the other direction while the first-mentioned pressure is still being applied, removing the first-mentioned pressure while still applying the second-mentioned pressure, transporting said stock while still maintaining said second-mentioned pressure to a series of stations and then back to said first station, and removing said second-mentioned pressure when said stock reaches said first station.

3,271,986
EXTRUSION APPARATUS AND METHOD
Walter H. Stulen, North Caldwell, N.J., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 9, 1964, Ser. No. 417,187
14 Claims. (Cl. 72—267)



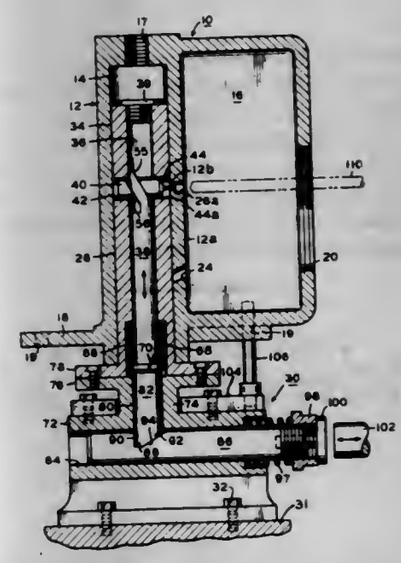
1. The method of extruding hollow metal shapes through a die having an extrusion orifice which comprises providing a metal billet, confining the billet, piercing the billet, subjecting the billet to forces applied in a direction to flow the metal of the billet through said extrusion orifice, rendering the inner periphery of the flowing metal free of laterally restrictive forces in a given zone in communication with said metal, providing a source of a flowable medium at a pressure substantially below and unrelated to the pressure of the flowing metal, and introducing said medium into said zone to form at least a surface layer of the flowing metal with said medium.

3,271,987
PRODUCTION OF LARGE DIAMETER THIN-WALLED TUBING
Delorma M. Douthett, Zelienople, Pa., and George A. Mitchell, Youngstown, Ohio, assignors to Halstead Metal Products, Inc., Zelienople, Pa., a corporation of Pennsylvania
Original application Oct. 1, 1963, Ser. No. 312,987. Divided and this application Nov. 30, 1965, Ser. No. 510,651
6 Claims. (Cl. 72—283)



1. In apparatus for producing tubular shapes by expanding a tubular bloom followed by drawing the bloom, the combination of a drawing die, a draw carriage movable toward and away from the die on one side of the die, means for forcibly moving said drawn carriage away from said die, a push carriage movable toward and away from the die on the other side of the die in alignment with said draw carriage, means for positioning a tubular bloom to be expanded between the push carriage and the die when the push carriage is at a point removed from the die, an expanding plug adapted to be forced through said bloom, means for moving the push carriage toward the die whereby the push carriage will force said expanding plug into said bloom to effect an expanding operation on said bloom, and means for forcibly moving said draw carriage away from the die whereby the draw carriage effects a drawing operation on the bloom after it has been initially expanded.

3,271,988
METHOD OF FORMING A HOLE IN THE WALL OF A HOLLOW WORKPIECE
Karl W. Klinksiek, Richmond Heights, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Apr. 24, 1963, Ser. No. 275,807
14 Claims. (Cl. 72—325)

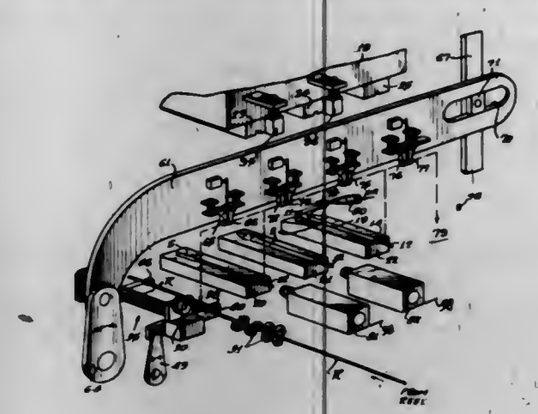


1. A method of forming a port hole through the metal wall of a cylinder having an outer surface, and an inner surface defining a bore comprising the steps of providing a recess in the wall of the cylinder which extends from the outer surface of the cylinder inwardly a predetermined distance toward the inner surface of the cylinder to provide a relatively thin wall section of substantially reduced thickness, and then punching said wall section with a punch from the bore side of the cylinder to provide an opening connecting with the recess.

3,271,989
METHOD OF AND APPARATUS FOR PRODUCING KITCHEN TOOL STALKS
Raymond E. Paddock, Prospect Heights, Ill., assignor to Ekco Products Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 267,481
18 Claims. (Cl. 72—356)

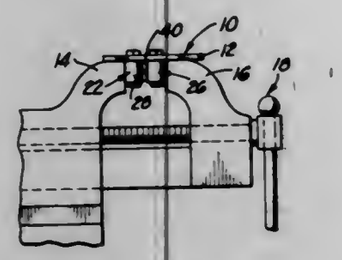
1. In the production of one-piece stalks for kitchen tools and the like from wire rod stock of substantially uniform circular cross-sectional contour, the process which comprises providing a length of wire stock defining a blank of sufficient length to produce a stalk having a toolward end portion, a handleward end portion and a shank portion joining said end portions at a selected distance apart, subjecting said toolward end portion and said

shank portion to pressure in an inner die cavity defined by opposed die members when said die members are in closed position so as to press said portions into a shape conforming to said inner cavity while allowing said handleward portion to occupy a position outside the confines of said die members, and simultaneously with said action upsetting the blank to form an enlargement at the junc-



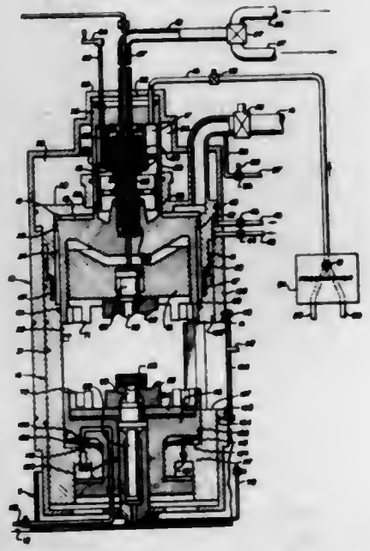
tion between said handleward portion and said shank portion lengthwise of the direction of pressure exerted by said die members by compressing said handleward portion toward said shank portion and forcing said enlargement into a front cavity in said die members joined to said inner cavity and facing the area occupied by said handleward portion of the blank, so as to shape said enlargement in conformity with said front cavity.

3,271,990
STRAP BENDING DEVICE
Duane E. Mitchell, Shandon Rte., Paso Robles, Calif.
Filed Sept. 16, 1963, Ser. No. 309,201
3 Claims. (Cl. 72—389)



1. In a strap bending device for use in a vise, the combination of:
(a) a flat base having a lower surface seatable on the jaws of the vise;
(b) two spaced primary dies depending below said lower surface of said base and adjustably mounted on said base for movement toward and away from each other along a primary die path extending therebetween;
(c) a secondary die depending below said lower surface of said base and movably mounted on said base for movement toward and away from said primary die path along a secondary die path perpendicular to said primary die path and lying between said primary dies;
(d) said primary dies being engageable with one side of a strap at spaced primary points and said secondary die being engageable with the other side of the strap at a secondary point between said primary points; and
(e) said primary dies being engageable by one jaw of the vise and said secondary die being engageable by the other jaw thereof to produce movement of said secondary die toward said primary die path, upon closing movement of said jaws, to bend said strap around said primary and secondary dies.

3,271,991
HIGH ENERGY IMPACT MACHINE
Frederick A. Monahan, Burbank, Calif., assignor to International Electronic Research Corp., Burbank, Calif., a corporation of California
Filed Oct. 11, 1965, Ser. No. 494,781
18 Claims. (Cl. 72—453)

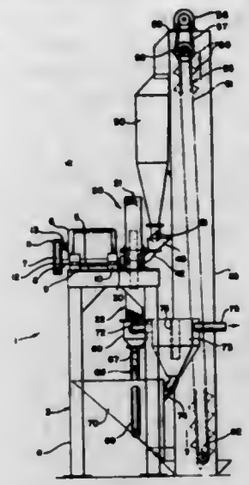


1. In a high velocity impact press for exerting controlled forces on a work piece, the combination of: a frame, a hammer supported upon said frame for axial slidable movement, said hammer including a platen supporting section and an auxiliary section movable relative to each other, said platen supporting section having axially spaced annular surfaces, an annular partition on said auxiliary section located between said surfaces, said partition having annular auxiliary surfaces defining a hydraulic pocket adjacent a platen carrying part of said platen supporting section and a pneumatic pocket on the opposite side of said partition, an annular ring in said pneumatic pocket dividing said pneumatic pocket into a hydraulic side and a pneumatic side, a plurality of circumferentially spaced bores through said partition between said pneumatic side and said hydraulic pocket and pins slidably mounted respectively in said bores having one end of each exposed to said hydraulic pocket and the other end of each in engagement with said annular ring, said pockets being productive of a squeeze force on said platen supporting section subsequent to impact.

3,271,992
METAL SHOT PRODUCING APPARATUS
Orald L. Stewart, Lakewood, Ohio, assignor to The Cleveland Metal Abrasive Co., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 29, 1964, Ser. No. 407,432
5 Claims. (Cl. 72—476)

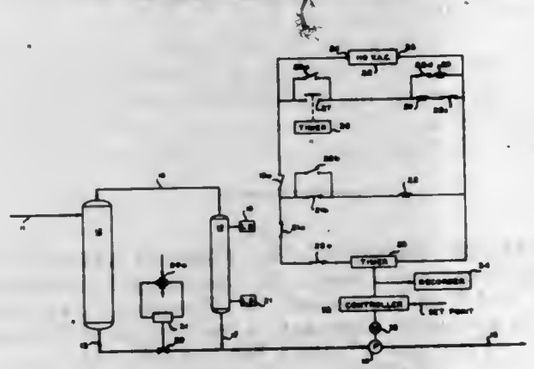
1. A machine for converting and deforming metal grit to shot comprising:
frame means,
horizontal shaft means mounted on said frame means,
driving means connected to said shaft means,

elongated blade means rigidly mounted to extend radially about said shaft means,
enclosure means substantially surrounding said blade means,
elongated target means of nonuniform thickness mounted within said enclosure means substantially to surround said blade means with the thickest portions of said target means located at points on the inside



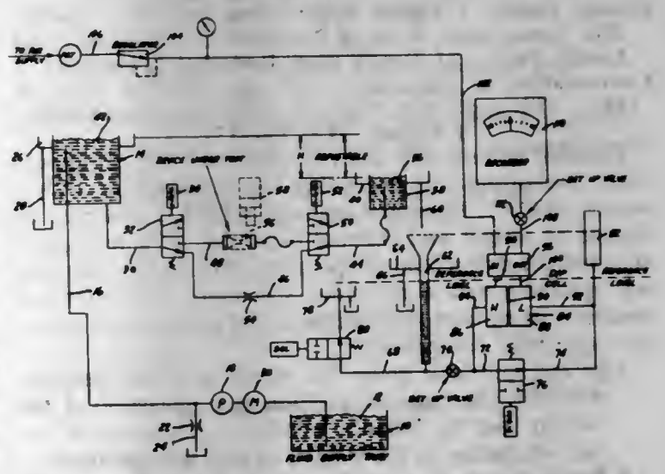
of said enclosure means relatively near to the path of said blade means,
feed means in communication with the innermost ends of said blade means, and
collection means in communication with said enclosure means at a point on the inside of said enclosure means relatively far from the path of said blade means and below said shaft means.

3,271,993
ACCURATE FLOW CONTROL
Bobbie L. Whitson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,911
3 Claims. (Cl. 73—3)



1. Apparatus for calibrating a flow controller comprising in combination a storage tank; a conduit connected to a lower portion of said storage tank for passing liquid from said storage tank; a flow controller operatively positioned in said conduit; a valve operatively positioned in said conduit upstream of said flow controller; a calibration tank, an upper liquid level sensor and a lower liquid level sensor operatively positioned on said calibration tank in a vertically spaced apart relationship; means for connecting the lower portion of said calibration tank to said conduit at a point upstream of said flow controller and downstream of said valve in such a manner that said calibration tank is at least partially filled with liquid to a point above said upper liquid level sensor when said valve is opened and liquid drains from said calibration tank into said conduit when said valve is closed; a voltage source having first and second terminals; first, second and third switches and a timer connected in series between said first and second terminals; a fourth switch and a relay coil connected in series between said second terminal and the junction between said first and second switches; a fifth switch connected in parallel with said fourth switch; a sixth switch, a second relay coil and a seventh switch connected in series between said first and second terminals; an eighth switch connected in parallel with said sixth switch; a ninth switch and a third relay coil connected in series between said second terminal and the junction between said sixth switch and said second relay coil; said first switch being actuated by said upper liquid level sensor to an open position when the liquid level in said calibration tank is above said upper liquid level sensor and to a closed position when the liquid level in said calibration tank is below said upper liquid level sensor; said second switch being actuated by said lower liquid level sensor to a closed position when the liquid level in said calibration tank is above said lower liquid level sensor and to an open position when the liquid level is below said lower liquid level sensor; said fourth switch being actuated by said lower liquid level sensor to an open position when the liquid level in said calibration tank is above said lower liquid level sensor and to a closed position when said liquid level is below said lower liquid level sensor; said third, seventh and ninth switches being normally closed switches which are actuated to open positions upon the passage of current through said first relay coil; said fifth switch being a normally open switch which is actuated to a closed position upon the passage of current through said first relay coil; said eighth switch being a normally open switch which is actuated to a closed position upon the passage of current through said second relay coil; and means for actuating said valve to a closed position responsive to the passage of current through said third relay coil; the output of said timer being representative of the time required for the liquid level in said calibration tank to drop from a first predetermined level as determined by said upper liquid level sensor to a second predetermined level as determined by said lower liquid level sensor during the time said valve is closed.

3,271,994
FLUID FLOW COMPARATOR FOR USE IN CALIBRATING FLUID FLOW ORIFICES
Daniel B. Fournier, Roseville, and Urho A. Strang, Livonia, Mich., assignors to Jered Industries, Inc., Birmingham, Mich., a corporation of Michigan
Filed Apr. 19, 1965, Ser. No. 449,060
9 Claims. (Cl. 73—3)



1. In a fluid flow measuring instrument for calibrating a fluid flow orifice, first and second fluid reservoirs, conduit structure interconnecting said reservoir, each reservoir containing liquid, the level of liquid in one reservoir

being lower than the liquid level of the other reservoir, means for supplying fluid to said other reservoir, said conduit structure being adapted to accommodate a test device in the form of an orifice, means for selectively establishing and interrupting flow of fluid from one reservoir to the other through said test device, means for collecting the liquid displaced by said one reservoir in a collector of variable depth, and means for recording the accumulated pressure head in said collector following a predetermined time interval, the magnitude of the pressure head accumulated during said interval thereby being a measure of the flow through said orifice.

3,271,995
MEASURING THE RADIAL FORCE EXERTED BY SHAFT SEALING RINGS
Hermann Bäumler, Burscheid, near Cologne, Germany, assignor to Goetzewerke Friedrich Goetze Aktiengesellschaft, Burscheid, near Cologne, Germany, a corporation of Germany
Filed Nov. 15, 1963, Ser. No. 324,068
Claims priority, application Germany, Nov. 20, 1962, G 36,444
6 Claims. (Cl. 73—9)



1. A device for measuring the radial force exerted by the sealing lip of an annular shaft sealing ring, comprising a holder for receiving a sealing ring which is to be tested, a measuring cone having a predetermined taper and adapted for insertion small end foremost into said sealing ring, support means supporting said holder with said sealing ring and said measuring cone in substantial axial alignment and operable to permit relative axial motion therebetween so as to allow said cone to be inserted into said sealing ring, and indicating means for indicating the axial force exerted by said sealing lip on and measuring cone when said cone is inserted into said sealing into said sealing ring a predetermined axial distance.

3,271,996
APPARATUS FOR THERMAL ANALYSIS
Ferenc Paulik, 7 Liptak Lajos utca, and Jenö Paulik, 57a Vecsey utca, both of Budapest IV, Hungary, and Laszló Erdey, 11 Fenyo utca, Budapest I, Hungary
Continuation of application Ser. No. 299,764, Aug. 5, 1963. This application Nov. 24, 1965, Ser. No. 513,649
1 Claim. (Cl. 73—15)

Thermal testing and analysis apparatus for simultaneously measuring and recording the temperature (TA), weight (TGA), thermal expansion (TDA), and rate of change of weight and thermal expansion of a test specimen and the differential temperature (DTA) between said test specimen and a reference specimen, said reference specimen being inert through the tested temperature range, said apparatus comprising

a balance movable under the weight of a test specimen whereby the balance position is a measure of the weight, and the balance velocity is a measure of the rate of change of the weight, of said test specimen;

a first supporting means for supporting said test specimen on said balance, said first supporting means comprising

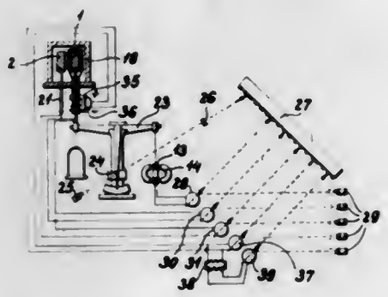
two separate members movable with said balance and adapted to contact spaced portions of said test specimen, said members being slidably movable relative to each other whereby their relative position is a measure of the thermal expansion, and their relative velocity is a measure of the rate of change of thermal expansion, of said test specimen;

a second supporting means for supporting said reference specimen in close proximity with said test specimen, said second supporting means being mechanically independent of said balance;

means for simultaneously and equally heating both the test specimen and the reference specimen;

means for sensing and recording the temperature of said test specimen as a first trace on a record;

means for sensing and recording the differential temperature between said test specimen and said reference specimen as a second trace on said record coextensive with said first trace;



means for sensing and recording the balance position as a measure of the weight of said test specimen as a third trace on said record coextensive with said first and second traces;

means for sensing and recording the balance velocity as a measure of the rate of change of the weight of the test specimen as a fourth trace on said record coextensive with said first, second and third traces;

means for sensing and recording the relative position of said separate members as a measure of the thermal expansion of said test specimen as a fifth trace on said record coextensive with said first, second, third, and fourth traces; and

means for sensing and recording the relative velocity of said separate members as a measure of the rate of change of the thermal expansion of said test specimen as a sixth trace on said record coextensive with said first, second, third, fourth, and fifth traces.

3,271,997
PNEUMATIC DENIER MONITORING APPARATUS
Ronald Horne and Thomas W. McGlaughlin, Pensacola, Fla., and John L. Marshall, Jr., Flomaton, Ala., assignors to Monsanto Company, a corporation of Delaware
Filed Jan. 17, 1963, Ser. No. 252,143
8 Claims. (Cl. 73—37.7)

1. Apparatus for monitoring the denier of an elongated strand comprising in combination:

(a) a source of air at a pressure different from atmospheric,

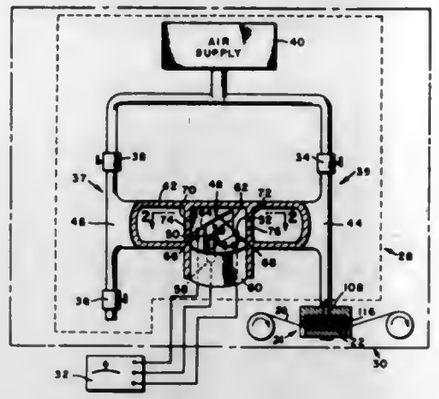
(b) an airflow measuring device having an input side connected to said source and having an output side,

(c) and a monitoring head assembly, said head assembly comprising:

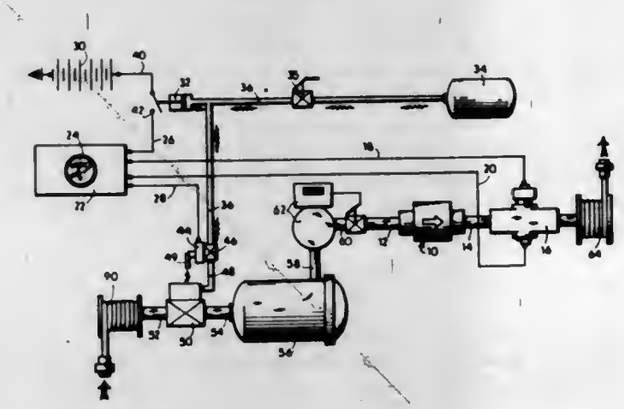
(1) means having a plurality of axially aligned grooves in a surface, said grooves being separated by transverse air passages vented to the atmosphere,

(2) a removable cover plate mating with said surface and spanning said grooves to form therewith a series of aligned restricted passageways for receiving said strand,

(3) and an air passage connecting an intermediate portion of each of said passageways with said output side whereby air flows from said flow monitoring device through said passageways in parallel.



3,271,998
DEVICE FOR IMPROVING DETECTION OF CONTAMINANTS
George J. Topol, Hamilton, Ontario, Canada, assignor to Bowser, Inc., Cookeville, Tenn., a corporation of Indiana
Filed May 6, 1963, Ser. No. 278,351
3 Claims. (Cl. 73—53)



1. A device adapted to effect a substantially uniform dispersion of water in a system for testing for such contaminants, comprising:

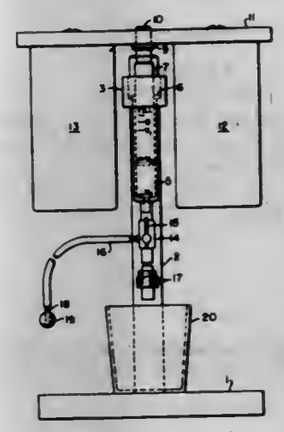
(a) means having a plurality of individually formed openings which are spaced therein for conveying a quantity of fluid;

(b) fluid pressure-responsive piston-valve means having orifice control surfaces adapted to cover and uncover said openings which are constructed to provide a cumulative area defining the effective total orifice opening through which fluid is passed from said conveying means into said chamber;

(c) means for biasing said fluid pressure-responsive means in a direction which tends to reduce the number of uncovered orifices, said pressure-responsive means being movable to increase the number of available orifice openings defining the effective orifice area to maintain a substantially constant pressure differential regardless of the degree of flow;

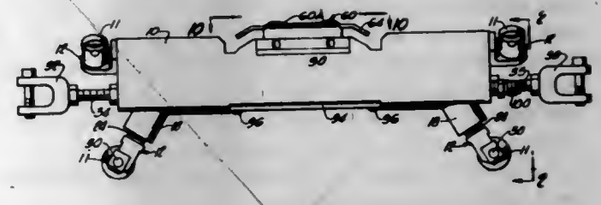
(d) and contaminant measuring means for receiving the flow of fluid after it has passed through said orifices to become substantially completely dispersed in said flow.

3,271,999
APPARATUS FOR DETERMINING THE SILTING PROPERTIES OF LIQUIDS CONTAINING MINUTE SUSPENDED PARTICLES
James L. Dwyer, South Lincoln, Mass., and Robert F. Connelly, Temple City, Calif., assignors to Millipore Filter Corporation, Bedford, Mass., a corporation of Massachusetts
Filed May 1, 1963, Ser. No. 277,234
7 Claims. (Cl. 73—61)



1. Apparatus for evaluating a liquid having particles therein to determine the silting properties, comprising a transparent measuring conduit of uniform cross-section for receiving the liquid having an outlet for the discharge of the liquid, a microporous filter of predetermined pore size mounted in the outlet to filter out particles having a size larger than the pores of the filter, means for applying a constant pressure to the liquid contained in the conduit to force it to flow through the filter, means for indicating the passage of successive volumes of the liquid forced to flow from the conduit and through the filter, consisting of index marks, one of said marks being the starting mark, the first mark being spaced from the starting mark to be substantially equivalent to the flow of clean liquid, the second and third marks being located so that the volume from the starting mark to the second mark is equal to the volume from the second mark to the third mark.

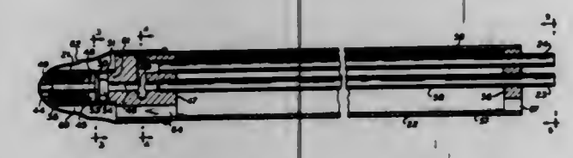
3,272,000
APPARATUS USEFUL IN ULTRASONIC INSPECTION OF PIPES
Larry O. Stebbins, Boulder, Colo., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed May 9, 1963, Ser. No. 279,147
8 Claims. (Cl. 73—71.5)



8. Apparatus of the character described for the inspection of pipe wherein a transducer is mounted to trans-

mit energy pulses into the pipe and to receive echo signals therefrom, the combination of, an elongated body for traveling through said pipe, said body including mounting means to provide a support portion, means mounted on said body for being maintained in moving contact with the interior wall of the pipe when said body is inside said pipe, a transducer disposed in said support portion, a pipe-engaging member, means resiliently mounting said member on said body adjacent said interior wall of said pipe, said member being shaped to provide a window for the transducer, means mounting said transducer on said member for coupling said transducer to said window, and, water conduit means in said body communicating with said window for the flow of water through said window to couple said transducer to said interior wall.

3,272,001
TONOMETER
Herbert H. Adise, Great Neck, N.Y., assignor to Computer Instruments Corporation, Long Island, N.Y., a corporation of New York
Filed Dec. 16, 1963, Ser. No. 330,716
7 Claims. (Cl. 73—80)



5. A device for measuring the intraocular pressure of an eyeball comprising:

a probe having a wall for engaging the surface of said eyeball,

a chamber within said probe,

an axially movable plunger carried within said chamber and having one end extending through an aperture in said wall to the exterior, said plunger being movable between protrudent and retracted positions,

a source of air under pressure at a low supply rate,

a fluid conduit means coupling said source with the interior of said chamber for introducing said air into said chamber for acting against said plunger to urge said plunger into said protrudent position with said one end protruding externally from said wall when the probe is out of contact with said eyeball,

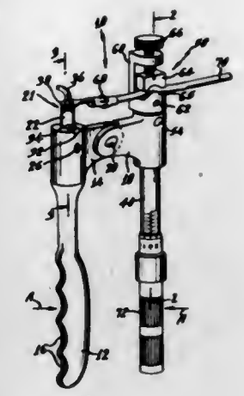
at least one port in a wall of said chamber other than said first mentioned wall for venting said chamber when said plunger is in said protrudent position for maintaining the pressure of said air, at least within said chamber, at a level inadequate to prevent depression of said plunger into said retracted position when the wall of the probe is urged into contact with said eyeball,

valve means carried by said plunger and operable upon said depression of said plunger to a predetermined position for isolating said port from said fluid conduit means whereby the air pressure within said chamber and acting upon said plunger is caused to rise continually until the resistance due to said intraocular pressure is overcome and the plunger is again urged toward said protrudent position, the said one end of said plunger being flush with the exterior surface of said first mentioned wall when said plunger occupies said predetermined position,

means for limiting said depression of said plunger at said predetermined position,

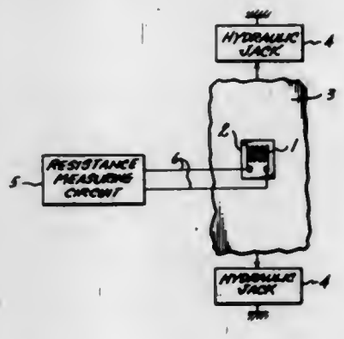
and pressure gauging means coupled to said conduit means adjacent said chamber for indicating the magnitude of said intraocular pressure.

3,272,002
TESTING TOOLS
Walter H. Dickman, 6 Darby Drive, Huntington Station, N.Y.
Filed Dec. 31, 1963, Ser. No. 334,729
9 Claims. (Cl. 73—88)



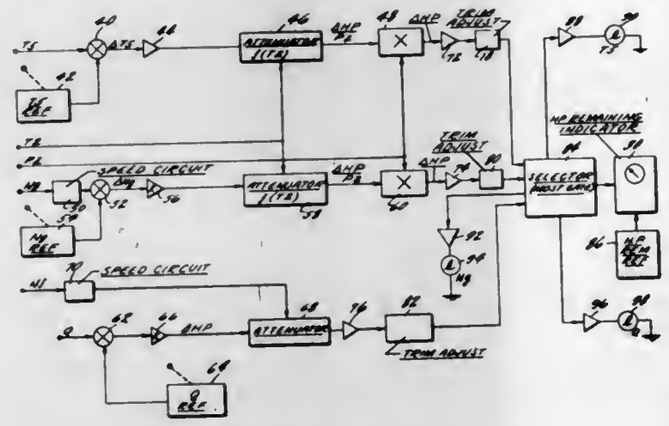
1. A device for testing a workpiece comprising a pair of relatively spaced engaging means movable relative to each other and adapted to engage a workpiece to apply a linear force thereto, means movable to cause said engaging means to move relative to each other, force transmitting means between said movable means and one of said engaging means to transmit the force of movement of said movable means undiminished directly to said one engaging means to cause the same to apply a linear force to the workpiece, said force transmitting means being operable to release the transmission of the force of movement of said movable means when the linear force applied to the workpiece exceeds a predetermined force and to provide an indication perceptible to the audible and tactile senses of the application to the workpiece of a force in excess of the predetermined force, said movable means being a manually actuatable handle mounted for pivoted movement, a frame on which said handle is pivotally mounted, and said other engaging means being mounted on said frame for linear movement relative thereto.

3,272,003
FATIGUE LIFE GAGING METHODS
Darrell R. Harting, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,331
6 Claims. (Cl. 73—91)



1. The method of measuring the cumulative fatigue damage at an area on a structure which is subjected to repeated loading comprising the steps of mounting a grid of conductive material on the structure to be tested so that strains in the test structure are transmitted to the grid, subjecting the structure to repeated loading which causes a permanent and finite change in the electrical resistance of the grid, measuring the change in the resistance of the grid, and determining the fatigue life of the structure by comparing the change in resistance with fatigue life data on the grid material obtained under known conditions.

3,272,004
HORSEPOWER REMAINING COMPUTER
Ronald A. Haverl, Vernon, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 306,174
8 Claims. (Cl. 73—116)



1. In combination with a gas generator having means associated therewith for sensing the values of and producing signals proportional to tailpipe temperature, rotational speed of the gas generator and the pressure adjacent the inlet to the gas generator, a horsepower remaining computer comprising:

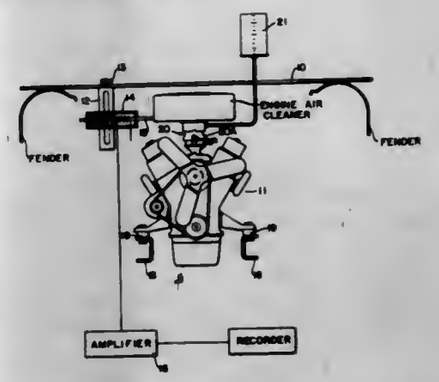
first means for multiplying the difference between the actual tailpipe temperature and the maximum permissible tailpipe temperature by the pressure adjacent the inlet to the gas generator to compute a first signal commensurate with horsepower remaining as a function of tailpipe temperature,

second means for multiplying the difference between the actual gas generator rotational speed and the maximum permissible speed of rotation by the pressure adjacent the inlet to the gas generator to compute a second signal commensurate with horsepower remaining as a function of rotational speed, and

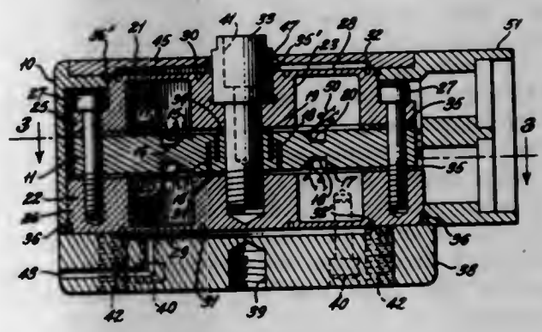
means for comparing said first and second signals commensurate with horsepower remaining and for selecting for application to an indicator the one of said signals indicative of the least amount of actual horsepower remaining available from the gas generator.

3,272,005
ENGINE ROUGHNESS TESTER
Victor F. Massa, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 432,052
2 Claims. (Cl. 73—116)

1. Apparatus for analyzing and diagnosing the mis-operation of an internal combustion engine of the piston-driven crankshaft type wherein said engine is subjected to periodic impulses generally about the crankshaft axis and wherein means are provided for mounting said engine to permit limited oscillatory freedom thereof about said axis to reflect said impulses; comprising in combination, means for sensing rotational oscillations of said engine upon its mounting means, support means for said sensing means, said support means including a generally horizontal bar arranged to be positioned above said engine and having an elongated slot therein, an arm, means for mounting one end of said arm in the slot of said bar and for adjusting the lateral position of said arm with respect to said bar, said sensing means being secured to said arm and including a plunger having one end thereof in contact with a portion of said engine radially displaced from said crankshaft axis, and means responsive to movement of said plunger for providing a permanent recording of the oscillatory movement of said engine about said crankshaft axis whereby a graph is produced for subsequent comparison and analysis in relationship to known predetermined graphic patterns associated with known types of engine mis-operation.



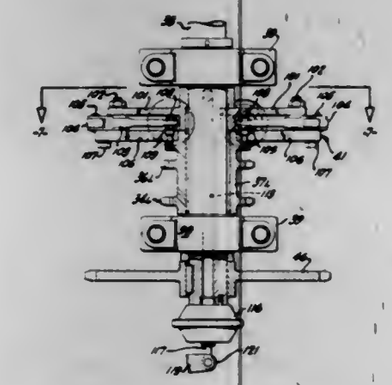
3,272,006
TENSION AND COMPRESSION LOAD-MEASURING DEVICE
Ronald G. Eckard, Cumberland, Md., assignor to Allegany Instrument Company, a division of Textron Electronics, Inc., Cumberland, Md., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,712
3 Claims. (Cl. 73—141)



1. A force measuring device comprising a force sensing element formed in a plate member mounted transversely to the axis of the applied force and including strain sensing transducer means, said plate member being supported between a pair of load receiving members having centrally located load transmitting portions to transmit the applied force to said force sensing element, said load receiving members having rim portions joined to the periphery of said plate member and side walls on said load receiving members spaced from said plate member and extending between said load transmitting portions and said rim portions, a protective housing formed internally to receive said plate and load receiving members with a sliding fit, said plate and load receiving members being secured in said housing by welding, plate means secured to one side of said housing facing one of said load receiving members having means formed therein to secure said measuring device against reaction to the ap-

plied force, said plate means being hollowed out on the side facing said load receiving member to form a chamber therebetween, vent means formed in said plate means to vent said chamber, a second plate means mounted on the opposite side of said housing and being hollowed out to form a second chamber between said second plate means and the other of said load receiving members, said second plate having a centrally located aperture formed therein, and means to apply force to said device protruding freely through said aperture and connected to at least one of said load transmitting portions.

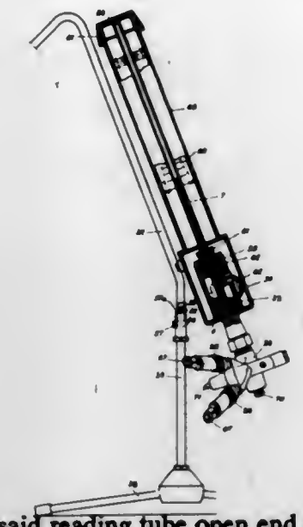
3,272,007
TENSION INDICATOR
Robert W. Goode, Morgan Hill, Calif., assignor, by direct and mesne assignments, of one-half to Gerald A. Petersen, Santa Clara, Calif., and one-half to Anita E. Petersen, Saratoga, Calif.
Original application Mar. 22, 1963, Ser. No. 267,168, now Patent No. 3,241,817. Divided and this application May 11, 1964, Ser. No. 366,374
5 Claims. (Cl. 73—143)



1. A tension indicator comprising a first rotatable means, a second rotatable means co-axial with said first means, brake means applying braking force to said first means, power means rotating said first means, a first arm fixed for rotation with said first means, a second arm fixed for rotation with said second means, a lever pivotally mounted on one said arm about a fulcrum, a fluid pressure cylinder on said last-mentioned arm and having a drive rod, means interconnecting said drive rod and said lever, means interconnecting the other said arm to said lever, motion of said drive rod relative to said cylinder being responsive to pressure in said cylinder resisting relative rotation of said arms, and indicating means indicating said pressure.

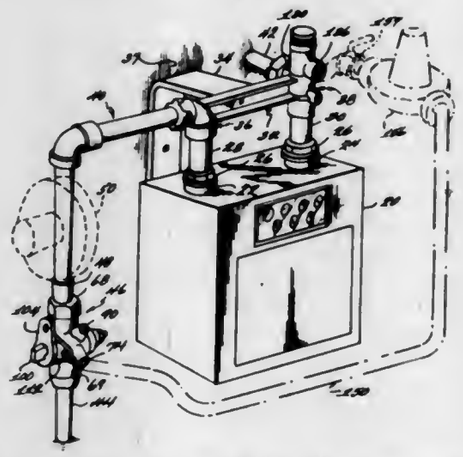
3,272,008
APPARATUS FOR TESTING PRESSURE IN PNEUMATIC TYRES
Pierre Lamperti, 20 Ave. Duval-Le Camus, Saint-Cloud (Seine et Oise), France
Filed Feb. 12, 1964, Ser. No. 344,305
7 Claims. (Cl. 73—146.3)

1. Gas pressure measuring apparatus comprising a frame, a housing pivotally mounted on said frame and operative to be disposed in a substantially horizontal position corresponding to a non-operative condition of said apparatus and to an upright position corresponding to an operative condition of said apparatus, a gas tight chamber partially filled with a liquid disposed in said housing, an inlet tube connected at one end to said chamber and being selectively connectable at the other end to the atmosphere and to a source of gas under pressure, a measuring tube closed at one end and open at the other end disposed in said housing, said measuring tube extending at its open end into said chamber, conduit means operative to selectively interconnect said inlet tube to a source of gas under pressure, said chamber having an amount of liquid therein such that when said housing is in a substantially horizontal non-operative position the level of said



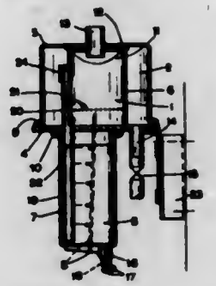
liquid is below said reading tube open end and when said housing is in said operative position said reading tube open end is immersed in said liquid thereby causing said liquid to rise in said reading tube to a height corresponding to the gas pressure in said chamber.

3,272,009
BY-PASS TYPE METER SETTING
Wilbur R. Leopold, Jr., and John J. Smith, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Dec. 17, 1963, Ser. No. 331,213
12 Claims. (Cl. 73—201)



12. A by-pass type meter setting comprising: a fluid line; a fluid meter detachably connected into said line; a first valve connected into said line upstream of said meter and having two positions, an open position wherein flow takes place therethrough to said meter and a closed position wherein flow from the upstream side of said line to said meter is blocked; means spaced upstream from said valve including a by-pass port, a one way check valve in said by-pass port for preventing fluid from flowing from said by-pass port; a second valve connected to said line downstream of said meter and having a body provided with a by-pass port, said second valve having at least two positions, an open position wherein flow takes place therethrough from said meter and flow from said port is blocked and a by-pass position wherein flow takes place from said port to the downstream side of said line and flow from said meter is blocked; a by-pass line detachably connectable to and between said by-pass ports; and means carried by said by-pass line for positively opening said check valve independent of said first valve when the by-pass line is connected to the port carrying said check valve.

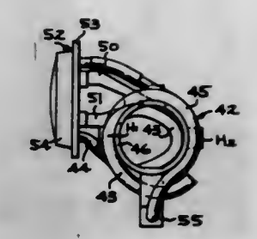
3,272,010
DEVICE FOR METERING MILK AND OTHER LIQUIDS
Noel G. Johnson, Hairini, near Te Awamutu, New Zealand
Filed Dec. 24, 1963, Ser. No. 333,051
Claims priority, application New Zealand, Jan. 17, 1963, 133,965
25 Claims. (Cl. 73—202)



1. A device for metering milk and other liquids comprising a composite container structure, including a primary chamber, a secondary chamber, and a metering chamber; a liquid inlet communicating with the primary chamber and through which liquid from outside the device can enter the primary chamber; a liquid outlet communicating with the secondary chamber and through which liquid within the secondary chamber can pass out of the device; liquid outlet means providing a communication between the primary chamber and the secondary chamber, whereby a major proportion of liquid introduced into the primary chamber may pass into the secondary chamber; and additional liquid outlet means providing a communication between the primary chamber and the metering chamber, whereby a minor proportion of liquid introduced into the primary chamber may pass into the metering chamber, the relative capacities of the said outlet means communicating with the secondary chamber and the said outlet means communicating with the metering chamber being substantially fixed, so that, when the device is in use, the outflow of liquid from the primary chamber to the secondary chamber represents a function of the outflow of liquid from the primary chamber to the metering chamber, said primary chamber and the secondary chamber being contained within an upper portion of the container structure, said metering chamber being contained within a lower portion of the said structure; said primary chamber being separated from the secondary chamber by a vertical cylindrical wall provided with a plurality of horizontally aligned apertures which constitute the said liquid outlet means providing a communication between the primary chamber and the secondary chamber.

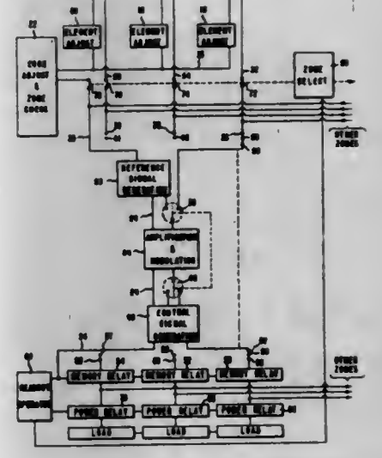
3,272,011
RESERVOIR EMPTY INDICATOR
Norman L. Kendt and John A. Dicken, Jr., Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Apr. 23, 1964, Ser. No. 361,989
7 Claims. (Cl. 73—299)

1. An empty indicator for a liquid reservoir comprising:
(a) a gauge having a first end and a second end,
(b) a first tube extending from the lower portion of the reservoir to said first end of said gauge,
(c) a second tube extending upwardly from said second end of said gauge and being open to the atmosphere,
(d) said first tube having a helical portion and said second tube having a helical portion co-axial with said helical portion of said first tube,



(e) said first tube having a high point and said second tube having a high point with said high points being at approximately the same level, and
(f) indicator fluid normally positioned in said first tube when the reservoir is substantially empty,
(g) said indicator fluid being moved into said gauge by pressure created within said first tube when the reservoir is filled with liquid.

3,272,012
HIGH SPEED SCANNING SYSTEM
John S. Seney, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 9, 1959, Ser. No. 838,985
22 Claims. (Cl. 73—341)



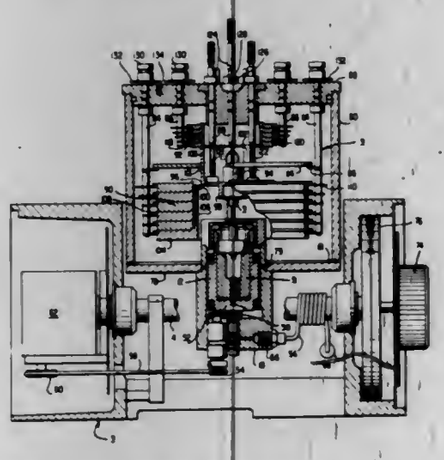
20. A multi-point condition control system comprising: a plurality of electrical condition-controlling devices; a condition responsive, signal-forwarding sensing element associated with each condition; a circuit having components for generating a reference signal, chopping the reference signal with successive sensed signals, amplifying the chopped signals, separating the amplified signals and generating a control signal when a sensed signal differs from the reference signal; and a high speed scanning switch assembly for sequentially and substantially simultaneously coupling said circuit between said elements and their respective condition-controlling devices, said switch assembly being in cyclical synchronism with said chopping and separating components.

3,272,013
COMBINED RADIOMETER AND EMISSOMETER
Robert W. Astheimer, Westport, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Aug. 29, 1963, Ser. No. 305,918
11 Claims. (Cl. 73—355)



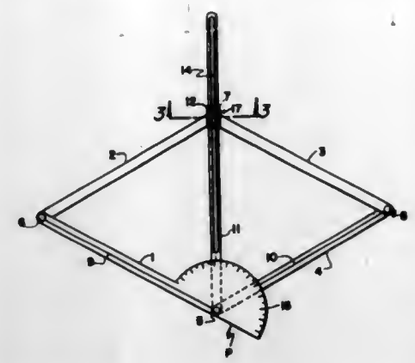
1. A radiometer comprising, in combination,
(a) a thermally insulated radiometer housing,
(b) a radiation detector,
(c) catoptric imaging means and a relatively minute opening in the housing, the maximum dimension of the catoptric means being more than 10 times the diameter of the opening and the imaging means imaging the minute opening onto the radiation detector,
(d) means for chopping the incoming radiation whereby chopped radiation from a very large angular field of view is imaged onto the detector.

3,272,014
DEADWEIGHT GAUGE
Claude E. Miks, Lloyd H. Linton, and Gilbert Wilson, Houston, Tex., assignors to Ruska Instrument Corporation, Houston, Tex., a corporation of Texas
Filed Apr. 30, 1963, Ser. No. 276,733
5 Claims. (Cl. 73—419)



1. A deadweight gauge comprising,
a base,
a piston and cylinder supported on said base, said cylinder closed at one end,
support means on one of said cylinder and piston for supporting a plurality of weights,
means providing for relative rotation of said cylinder and piston,
means admitting pressure fluid to be measured to the closed end of said cylinder,
a container defining a pressure sealed chamber disposed about said piston and cylinder,
a plurality of weights within the container,
and weight support means controlled from the exterior of the container selectively supporting said weights on the container or on said support means.

3,272,015
ROTOR BALANCING DEVICE
Carl M. Behm, 27317 Santa Clara Drive, Westlake, Ohio
Filed Nov. 27, 1963, Ser. No. 326,586
8 Claims. (Cl. 73—470)

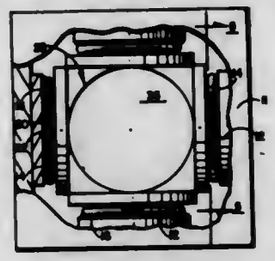


1. In a method of dynamically balancing a piece of rotating equipment in which a reference mark is arbitrarily placed on said equipment, a vibration pick-up analyzer is attached to the bearing housing of such equipment, a pair of equal counterweights W are placed 180° apart on said equipment, and the amplitude and phase of unbalance while in rotation are recorded on a vector diagram as O, the improvement wherein an articulated parallelogram having a scale pointer extending diagonally thereof with one end pivotally connected at one vertex of the parallelogram and the other end longitudinally slidable at the diagonally opposed vertex is used to determine various angles between such counterweights and to locate the midpoint therebetween, such method comprising:
(a) adjusting such counterweights to a position 120° apart, using the scale pointer of the articulated parallelogram to locate the midpoint between the counterweights, and marking said midpoint on said equipment,
(b) rotating said equipment and observing and recording the amplitude and phase of the new unbalance as R,
(c) completing the vector diagram, T, between O and R, and determining the amount of the balancing weight by the equation, $O/T \times \text{percent } W = \text{Balancing weight}$,
(d) using the articulated parallelogram to determine the angle at which the counterweights must be placed to equal the weight found in step (c) above, and
(e) determining the new location of the counterweight setting by measuring the angle and direction of O to T in the vector diagram, finding the point on the equipment in this direction and angle from the point found in step (a) above, and setting the pointer of the articulated parallelogram at the new location point and adjusting the articulated parallelogram to the angle found in step (d) above to determine the new location of the correction weights.

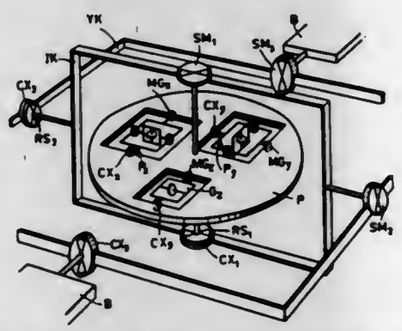
3,272,016
THREE-AXIS ACCELEROMETER
William D. Mullins, Jr., Downey, Calif., assignor to North American Aviation, Inc.
Filed Oct. 3, 1961, Ser. No. 142,641
2 Claims. (Cl. 73—517)

1. In a three-axis accelerometer, a case, a proof mass having a pair of opposite broad surfaces made of material which becomes superconductive at a cryogenic temperature, normal to each of three mutually orthogonal axes, said proof mass also having two pairs of disk-shaped sections, each said section being positioned at an extremity of said proof mass opposite its paired section along one of said axes, two pairs of said broad surfaces being formed

in said disk-shaped sections, said proof mass further having a recessed center structure, the third of said pairs of surfaces being formed in said center structure, three pairs of series connected support coils made of material which becomes superconductive at a cryogenic temperature, three pairs of pickoff plates, each of said support coils and said pickoff plates being attached to a separate wall of said case opposite one of said broad surfaces, each of said pairs of coils and said pairs of pickoff plates being positioned normal to a separate one of said axes, means for maintaining said case and its contents at a cryogenic temperature, means for developing a separate control current connected to each of said pairs of coils for maintaining said proof mass in a balanced position magnetically supported in said case, and A.-C. power source means connected to each of said pairs of pickoff plates, each said current developing means being operatively connected to an associated pair of said pickoff plates.

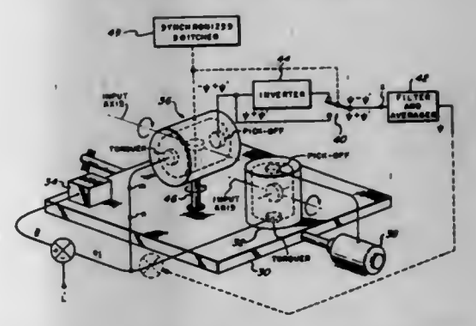


3,272,017
NAVIGATION APPARATUS
Nils Folke Hector, Solna, Sweden, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 160,015
Claims priority, application Sweden, Dec. 21, 1960, 12,378/60
9 Claims. (Cl. 74—5.34)



1. A true vertical indicating device comprising: a platform mounted in gimbals and supporting two pendulum means which are Schuler-tuned by gyroscopic means, the pendulum means having mutually perpendicular, horizontal rotation axes coincident with the sensing axes or input axes of the respective co-operating gyroscopic means, said platform being arranged to occupy a predetermined angular position relative to the pendulum means by means of servo motors and resolving means arranged at the supporting shafts for the platform and by means of angular sensing devices or signal generators arranged at shafts coincident with the pendulum axes, the gyroscopic means being arranged to sense the angular movements of the pendulum means relative to space-fixed reference directions and to co-act with means for producing signals which are proportional to the angular accelerations of the pendulum means, the gyroscopic means being arranged to precess as a result of rotation about respective input axes under suitable restraining of output shafts perpendicular to the input axes, and signal generators arranged at the output shafts for producing signals proportional to the angular velocities of shafts coincident with respective input axes, said signal generators being connected to respective torque generators through differentiating means, said torque generators feeding to the pendulum means counteracting torques proportional to the angular accelerations of the pendulum means with proportionality constants corresponding to Schuler-tuning.

3,272,018
MONITOR APPARATUS
Gordon J. Watt, Huntington Station, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 321,392
20 Claims. (Cl. 74—5.34)

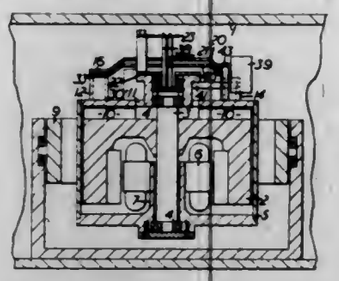


11. In a stable table reference system having a control gyroscope that provides output signals representative of the displacement between its sensitive element and its housing, said gyroscope being adapted to receive input signals which create torques about an output axis of said gyroscope, and a platform positionable in response to said output signals and so supporting said gyroscope housing that as the platform gets oriented precessional counter torques are applied to the gyroscope to cancel said output signals, a monitor gyroscope mounted on said platform and adapted to be rotatable about an axis perpendicular to the plane of said platform, said monitor gyroscope being adapted to receive and produce respective input and output signals like said control gyroscope, the input axis of said monitor gyroscope having a quiescent orientation parallel to the input axis of said control gyroscope, means producing table positioning signals, said positioning signals being applied to both said gyroscopes, whereby the table is positioned in response to the output signals from said control gyroscope, positioning of said table causing precessional counter torques about the output axis of said monitor gyroscope which operate to cancel the torques produced by said applied table positioning signals, means alternately reversing the direction of said monitor gyroscope input axis whereby the output signals from said monitor gyroscope become modulated and contain signal components representative of the drift errors of both said gyroscopes, and means filtering away the drift error signal component of the monitor gyroscope, whereby an error signal is provided for decreasing the table positioning signal adapted to be applied to said control gyroscope.

3,272,019
GYRO-VERTICAL APPARATUS
Jeffery Walton Barnes, Farnborough, England, assignor to Ferranti, Limited, Holliawood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Oct. 12, 1962, Ser. No. 230,040
Claims priority, application Great Britain, Oct. 14, 1961, 36,933/61
12 Claims. (Cl. 74—5.43)

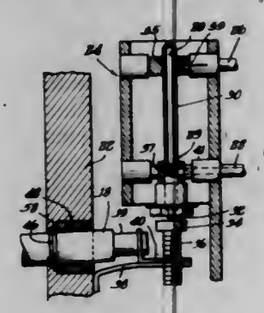
1. Gyro-vertical apparatus having pitch and roll axes including within a hermetically sealed gas filled housing an electrically driven rotor, first and second pairs of jets symmetrically disposed with respect to the spin axis of

said rotor and adapted to discharge in a direction parallel to said spin axis, said first pair of jets being disposed on a line at 45° to the pitch axis and said second pair of jets being disposed on a line at 45° to the roll axis, a centrifugal pump driven by said rotor for supplying gas to said first and second pairs of jets, and first and second sets of gravity controlled shutters responsive to move-



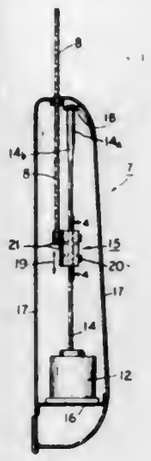
ments about the pitch and roll axes, respectively, each of said first and second sets of shutters being pivoted about an axis parallel to said spin axis and comprising four shutters adapted to so cooperate with said jets that the discharge from each jet is controlled by a shutter from said first set and a shutter from said second set to control erection of the gyroscope about the pitch and roll axes.

3,272,020
FLOAT OPERATED SIGNAL DEVICE
Chester J. Witt, Deerfield, Sigmund P. Skoli, Elmwood Park, and Harry G. Mojonnier, River Forest, Ill., assignors to Mojonnier Bros. Co., Chicago, Ill., a corporation of Illinois
Filed June 12, 1964, Ser. No. 374,684
4 Claims. (Cl. 74—18.1)



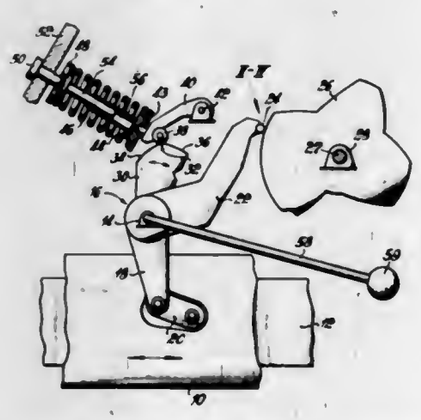
1. In a float-operated signal device, the combination comprising: a rod adapted to transmit the relative vertical position of a float member; an elastomeric element detachably surrounding said rod circumferentially in compressed engagement therewith whereby to act as both a seal for said rod and a pivot therefor; and a mounting structure for receiving said elastomeric element and preserving the compression thereof; said mounting structure including wall means perforated to pass said rod therethrough and having an annular surface confronting said elastomeric element at one side thereof and said mounting structure further including support means having a surface generally confronting said annular surface at the opposite side of said elastomeric element to provide a groove receiving said elastomeric element, said wall means at one side of said elastomeric element and said support means at the opposite side of said elastomeric element being spaced radially outwardly of said rod for clearance, said rod having groove means in mating relationship to the groove provided by said surfaces and in which the adjacent surface of said elastomeric element is disposed, and fastening means connected to said wall means for urging said surfaces toward each other and compressing said elastomeric element therebetween and into the groove means in said rod to seal the rod and support the same for permissive pivotal movement within said clearance while substantially preventing sliding and rotating movement of the rod.

3,272,021
LINEAR ACTUATORS
Milton N. Weber, Dearborn, Mich., assignor to Barry Wright Corporation, Watertown, Mass., a corporation of Massachusetts
Filed Aug. 20, 1964, Ser. No. 390,939
13 Claims. (Cl. 74—25)



1. Apparatus for translating rotational forces into substantially rectilinear forces at different force levels, comprising a threadless shaft, an actuator unit including roller means in frictional engagement with the exterior of said shaft and rotatable in skewed relationship to the longitudinal axis of said shaft, means producing relative rotation between said shaft and said actuator unit and thereby producing forces therebetween in direction of said axis, and means varying the pressure of frictional engagement between said roller means and shaft in accordance with relative orientations of said actuator unit and shaft along said axis.

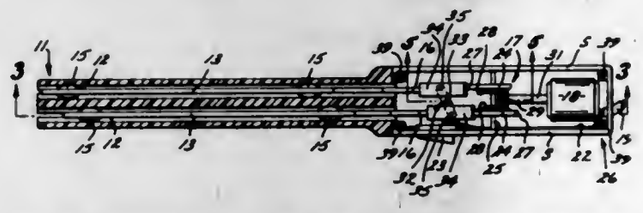
3,272,022
SLIDE ACTUATING MECHANISM FOR A MACHINE TOOL
Adolf Spinner, 38 Dachauer Strasse, Munich, Germany
Filed Dec. 18, 1963, Ser. No. 331,412
12 Claims. (Cl. 74—53)



1. In a cutting tool arrangement, in combination:
(a) a support;
(b) a cam member mounted on said support and having a cam face;
(c) means for actuating movement of said cam member on said support;

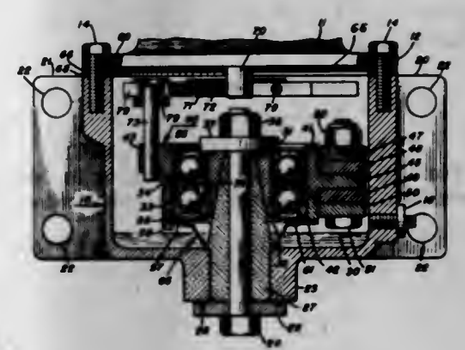
(d) a cam follower engageable with said cam face for movement thereby when said cam member moves;
(e) a slide member movably mounted on said support;
(f) linkage means connecting said cam follower to said slide member for joint movement;
(g) a first abutment member connected to said cam follower for joint movement, said abutment member moving in a predetermined direction when said cam follower is moved by said cam member, said abutment member having an abutment face;
(h) a second abutment member movable on said support toward and away from abutting engagement with an aligned portion of said abutment face in a direction substantially transverse of said predetermined direction; and
(i) yieldably resilient means permanently urging said second abutment member toward said engagement,
(1) said abutment face having two portions consecutive in said predetermined direction and alignable with said second abutment member,
(2) one abutment face portion being substantially perpendicular to said transverse direction when aligned with said second abutment member, and
(3) the other abutment face portion being obliquely inclined relative to said directions in such a manner that said cam follower is urged by said resilient means toward said cam member when said second abutment member engages said second abutment face portion.

3,272,023
POWER-DRIVEN APPARATUS FOR OPPOSITELY RECIPROCATING A PAIR OF SPACED MEMBERS
James Ferguson and Catherine M. Ferguson, both of 14350 Vose St., Van Nuys, Calif.
Filed Nov. 16, 1964, Ser. No. 411,191
6 Claims. (Cl. 74—55)



1. A power-driven apparatus for oppositely reciprocating a pair of spaced applicatory members, comprising: a pair of applicatory members, each having a longitudinal slide member connected thereto and each having a rearwardly directed attachment shank portion; a longitudinal guide means having a pair of laterally spaced, parallel, longitudinally directed guide slots defined therein slidably longitudinally receiving and retaining therein corresponding ones of said longitudinal slide members; reciprocation means positioned in effective driving and reciprocating relationship with respect to one of said attachment shank portions of one of said applicatory members for longitudinally reciprocating same with respect to said longitudinal guide means, and in 180 degree out of phase driving and reciprocating relationship with respect to the other attachment shank portion of the other applicatory member for longitudinally reciprocating same with respect to said longitudinal guide means in exact opposition to the reciprocation of said first-mentioned applicatory member, said reciprocation means being provided with driving controllably energizeable and de-energizeable electric motor means coupled thereto, said reciprocation means comprising a pair of cam members having projecting eccentric cam lobe portions positioned in 180 degree phase-displaced relationship with respect to each other and mounted for simultaneous rotation in effective rotating engagement with respect to the corresponding ones of said attachment shank portions of said applicatory members; and a pair of coupling block members, each effectively receiving and being effectively coupled with respect to a corresponding one of said attachment shank portions of said applicatory members and each having a rear abutment cam follower surface cooperable with the corresponding cam member for forcible forward movement thereby; said cam members having inner surfaces which are effectively bevelled and effectively provided thereon with bevel gear means, said driving motor being provided with a driving bevelled gear simultaneously engaging the bevel gear means of each of said cam members for simultaneously rotating same in opposite directions.

3,272,024
ELECTRO-MECHANICAL GYRATOR
Eugene A. Wahl, 294 Forest Ave., Glen Ridge, N.J.
Filed Aug. 31, 1964, Ser. No. 393,296
8 Claims. (Cl. 74—87)

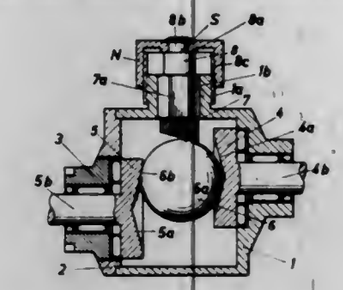


1. A gyrator comprising,
(a) a main housing open at one end,
(b) a central, vertical support secured to and extending into the housing, said support having a conical surface and an axial hole extending therethrough,
(c) a bearing shaft having a matching conical hole extending axially therethrough and carried by the said support, said bearing shaft having an integral outwardly-extending shoulder,
(d) bearing means carried by and encircling said bearing shaft, said bearing means resting upon the said shoulder,
(e) means securing the bearing shaft in fixed position relative to the said support, said means comprising a bolt passing through the said axial hole, a washer, and a nut threaded onto the bolt and pressing the washer into engagement with the said bearing means,
(f) a bearing housing carried by said bearing means and having an outwardly-extending radial flange,
(g) power means having a rotatable drive shaft extending into the housing in spaced, axial alignment with the said bearing shaft, and
(h) means mechanically coupling the said drive shaft to the said bearing housing.

3,272,025
INFINITELY VARIABLE SPEED POWER TRANSMISSION, ESPECIALLY BALL FRICTION TRANSMISSION
Ortwin Stieber, Moosacherstrasse 51, Munich, Germany
Filed May 20, 1964, Ser. No. 368,946
18 Claims. (Cl. 74—198)

1. An infinitely variable ball transmission which includes: housing means, a power input shaft rotatably journalled in said housing means, a power output shaft rotatably journalled in said housing means in axially spaced relationship to said power input shaft, said power

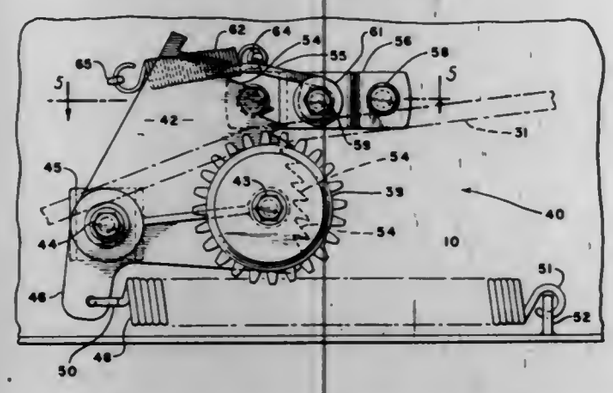
output shaft having its axis of rotation substantially parallel to the axis of rotation of said power input shaft, said shafts respectively having those end faces thereof which face toward each other provided with a conical surface, said conical surfaces flaring toward each other, a transmission ball interposed between and in substantially point contact only with said conical surfaces, and adjustable abutment means adjustable selectively toward and away from said shafts for abutment with said ball, said adjustable means being closer to the axis of rotation of said power input shaft than to the axis of rotation of said power output shaft.



3,272,026
TENSION CONTROL DEVICE

John K. Hale, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Oct. 14, 1964, Ser. No. 403,856
2 Claims. (Cl. 74—242.11)

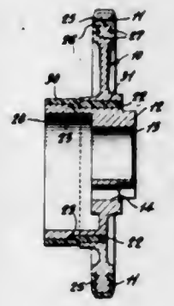


1. Mechanism for controlling slack and tension in an endless drive chain having a reach moving in a predetermined direction in a given plane, said mechanism comprising an idler sprocket disposed in said plane in meshing engagement with said chain reach, a plate-like member disposed adjacent said chain reach and lying in a plane parallel to said given plane, means journalling said plate-like member for pivotal movement about a fixed axis perpendicular to said given plane, means journalling said sprocket on said plate-like member for movement therewith generally transverse to the direction of travel of said chain reach, a spring connected to said plate-like member and urging said member in a given direction about said fixed axis to move said sprocket transversely of said chain reach and take up slack in the chain, a pawl member, means mounting said pawl member adjacent said plate-like member for pivotal movement about an axis parallel to said fixed axis and for limited to-and-fro movement toward and away from said plate-like member, a series of ratchet teeth formed in said plate-like member in position to move consecutively past said pawl member upon movement of said plate-like member in said given direction, the spacing between consecutive teeth in said series of ratchet teeth progressively diminishing from the first tooth to move past said pawl to the last tooth to move past said pawl, and spring means urging said pawl member into engagement with said ratchet teeth to prevent pivotal movement of said plate-like member about said fixed axis in a direction opposite said given direction beyond the limited extent of to-and-fro movement of said pawl member.

3,272,027
INTEGRAL GEAR AND DRIVE ECCENTRIC UNIT

William R. Wayman, Indianapolis, Ind., assignor to Link-Belt Company, a corporation of Illinois

Filed Nov. 18, 1964, Ser. No. 412,603
5 Claims. (Cl. 74—243)

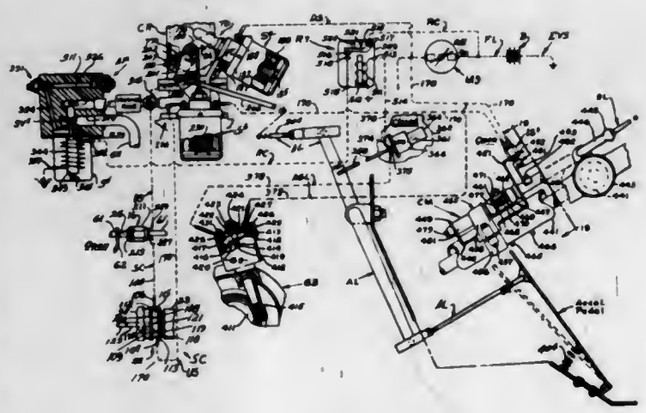


1. An integral gear and drive eccentric unit comprising
a circular gear body having a toothed portion around the perimeter of said body,
a hub integral with and centrally disposed on said body for mounting said unit on a shaft,
a cylindrical drive eccentric integral with said body and extending from one side of said circular gear body eccentric to the axis of said hub,
a plastic casing molded over said toothed portion on said circular gear body and enclosing a peripheral portion of said body radially inwardly of said toothed portion,
and a plastic sleeve bonded to and encasing said cylindrical drive eccentric.

3,272,028
SYNCHRONIZING MECHANISM ADAPTED FOR FRICTION CLUTCH USE

Glenn T. Randol, 3 E. 2nd Ave., Loch Lynn, Mountain Lake Park, Md.

Filed Sept. 21, 1962, Ser. No. 225,426
17 Claims. (Cl. 74—472)

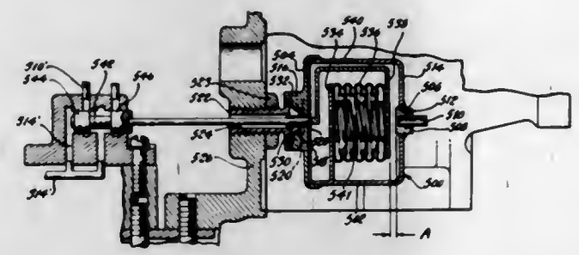


1. In synchronizing mechanism adapted for use in cooperation with two frictionally-engageable relatively rotatable elements, comprising: a pair of normally co-rotatable actuatable members operatively disposed between said friction elements, with one of said members connected for co-rotation with one of said friction elements; a ring-like brake and drive element having continuous frictional engagement with a complemental frictional surface on the other of said two friction elements; a mechanical connection between said ring-like element and the other of said pair of actuatable members to effect co-rotational movement thereof; a lost-motion mechanical connection between said pair of actuatable members to provide relative rotational movement between two predetermined limits; camming means operatively incorporated between said pair of actuatable members and adapted to convert said relative rotational movement therebetween into axial operating movement of the other actuatable member; spring means including a normally compressed spring reacting between said ring-like element and the one friction element for maintaing said ring-like element in frictional engagement with the other of said friction elements whereby relative overspeed of the other friction element with respect to the one friction element rotates the other actuatable member to effect one of its axial operating positions defined by one of said predetermined limits, and relative underspeed of said other friction element with respect to the one friction element rotates the other actuatable member to effect its other axial operating position defined by the other of said predetermined limits; torque-producing means connected to said one friction element to rotate as a unit therewith; control means for regulating the speed defining the torque output of said torque-producing means; and a control device operable to two operating positions of control in response to the two axial operating positions, respectively, of said other actuatable member for selectively controlling the said control means to effect regulation of the speed of said torque-producing means into synchronism with the overspeed or underspeed of said other friction element prior to establishment of co-rotational movement of the two friction elements aforesaid.

3,272,029
AUTOMATIC POWER TRANSMISSION SYSTEM

James J. Duffy, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Apr. 12, 1963, Ser. No. 272,746
8 Claims. (Cl. 74—472)

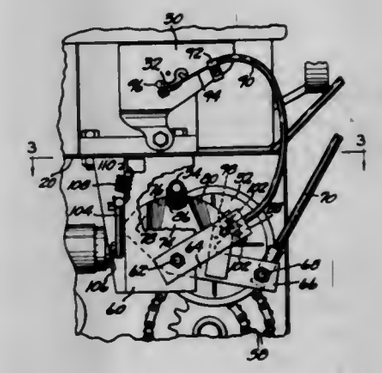


5. In a power transmission mechanism, torque delivery elements defining plural torque delivery paths between a driven member and an engine with an air intake manifold, each path being characterized by a separate torque ratio, fluid pressure operated control means for completing selectively said paths, a fluid pressure source, conduit structure interconnecting said source and said control means, modulator valve means in fluid communication with said source and said control means for establishing a pressure signal that is related functionally in magnitude to engine manifold pressure, governor means for establishing a speed signal that is an indicator of the driven speed for said driven member, means for subjecting said control means to said speed signal and said pressure signal, said modulator valve means comprising a servo mechanism defining a vacuum chamber, an evacuated aneroid bellows in said chamber, said chamber communicating with the engine intake manifold, one end of said bellows being connected to a relatively stationary portion of said servo, and a valve actuator rod connected to a movable portion of said modulator valve means, said rod being connected to the other end of said bellows.

3,272,030
COMBINED ENGINE THROTTLE AND TRANSMISSION CONTROL MEANS

Peter P. Blozis, Michigan City, Ind., assignor, by mesne assignments, to Hahn, Inc., a corporation of Indiana

Filed Mar. 5, 1964, Ser. No. 349,574
6 Claims. (Cl. 74—472)



1. A control device for controlling an engine driven device having a throttle shiftable between idling and accelerating positions and a reversible drive transmission device having a control part shiftable between "forward," "neutral" and "reverse" positions, comprising
a control member shiftable on said engine driven device for positioning said control part,
a manually operable controller shiftable on said engine driven device, for selectively actuating said control member,
means actuated by said controller and connected to said throttle to position said throttle in idling position while said control part is in neutral position and to advance said throttle to an accelerating position when said control part is shifted clear of neutral position,
said control member constituting a cam plate rotatable on an axis substantially parallel to the path of movement of said transmission control part and including segments extending in angularly related planes, and
a cam follower carried by said transmission control part and straddling said cam plate.

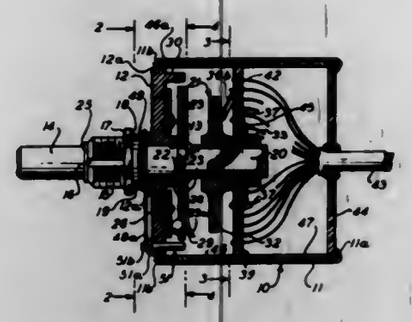
3,272,031
ADJUSTABLE STOP FOR ROTARY SELECTOR SWITCHES

Herbert H. Beck, Whippany, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Apr. 29, 1965, Ser. No. 451,739
9 Claims. (Cl. 74—526)

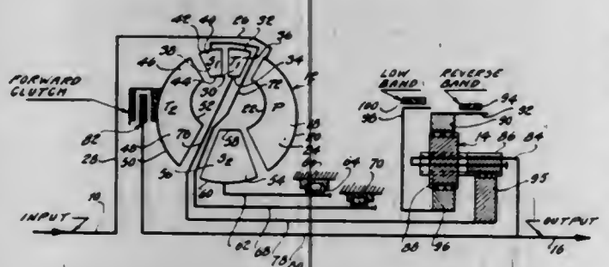
1. A rotary selector switch having an end panel, a rotor and a shaft for said rotor journaled in said end panel, a leaf spring pivoted on said end panel about said shaft as a center, means frictionally gripping the hub portion of said spring, a series of circumferentially spaced holes in said end panel about said shaft as a center, said holes being spaced by the angular distance about said shaft between successive switch positions, a stud end removably mounted in a selected one of said holes and in seating relation with said end panel, said stud pin having an inner end portion projecting beyond said panel when the stud pin is in a seated position, said leaf spring being shiftable to bring an

outer end portion in engagement with said stud pin to hold the stud pin seated in a selected hole, and an arm secured to said shaft having an outer end portion movable



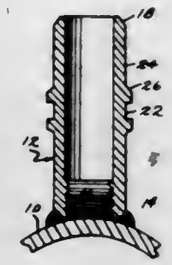
into abutment with the inner end portion of said stud pin as the shaft is turned whereby to provide a selected end stop for said rotor.

3,272,032
HYDROKINETIC POWER TRANSMISSION MECHANISM INCLUDING MULTIPLE ELEMENT TORQUE CONVERTER
Steven Smalinskas, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 5, 1964, Ser. No. 349,679
4 Claims. (Cl. 74—677)



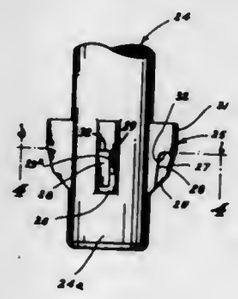
1. A hydrokinetic power transmission comprising a hydrokinetic torque converter and a planetary gear system that cooperate to define the torque delivery paths from a driving member to a driven member, said torque converter comprising an impeller, a primary turbine, a primary stator, a secondary turbine and a secondary stator situated in toroidal fluid flow relationship in a common torus circuit, said gear system comprising a first sun gear, a second sun gear, a ring gear, first planet pinions engageable with said second sun gear, second planet pinions engageable with said first sun gear and also with said ring gear and said first planet pinions, a carrier rotatably supporting said planet pinions, said carrier being connected to said driven member, clutch means for connecting selectively said secondary turbine to said driven member, first overrunning brake means for anchoring said secondary stator against rotation in a forward direction opposite that of said impeller and permitting freewheeling motion thereof in a second direction, second overrunning brake means for inhibiting rotation of said primary stator in a forward direction opposite that of the said impeller but accommodating freewheeling motion thereof in a second direction, a turbine shaft connected to said second sun gear, a first torque transmitting web connecting said turbine shaft to said primary turbine and extending through an inner region of the torus circuit between the exit section of said secondary turbine and the entrance region of said secondary stator, and reaction brake means for anchoring selectively said first sun gear during operation of said mechanism in a low speed ratio range thereby conditioning said gear system to multiply the effective torque developed by said primary turbine.

3,272,033
DRILLING APPARATUS FOR CONNECTING A SERVICE LINE TO A MAIN WITHOUT ESCAPE OF FLUID FROM THE MAIN TO THE ATMOSPHERE
Wilbur R. Leopold, Jr., John J. Smith, and Lawrence F. Luckenbill, all of Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Original application Sept. 21, 1962, Ser. No. 225,194. Divided and this application Jan. 30, 1964, Ser. No. 341,183
2 Claims. (Cl. 77—40)



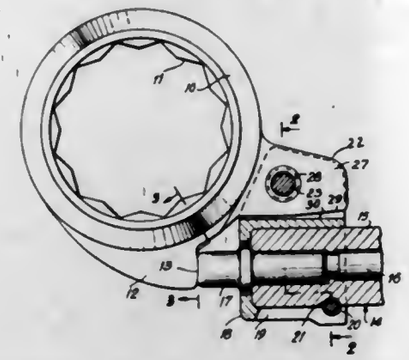
1. In drilling apparatus the combination comprising: a drill having a shank of reduced diameter and a noncircular section at the forward end of said shank; a chip-collector comprising a sleeve snugly enclosing said drill and having exterior threads on its forward end and a reduced interior configuration at its rearward end complementary to said drill noncircular section and engageable therewith to restrain relative rotation between said drill and chip-collector, the forward end of said chip-collector, when so restrained, being located beyond the forward end of said drill; spring means engaged with said drill and chip-collector for yieldably urging the latter forwardly of the former; and interengageable shoulders on said drill and in said chip-collector to limit forward movement of the latter to a position wherein said configuration is engaged with said section.

3,272,034
TOOL FOR LOCKING THREADED INSERTS IN THREADED BORES
José Rosán, San Juan Capistrano, Calif., assignor to Rosan Engineering Corp., Newport Beach, Calif., a corporation of California
Original application Dec. 12, 1960, Ser. No. 75,411. Divided and this application Aug. 10, 1964, Ser. No. 392,069
7 Claims. (Cl. 81—3)



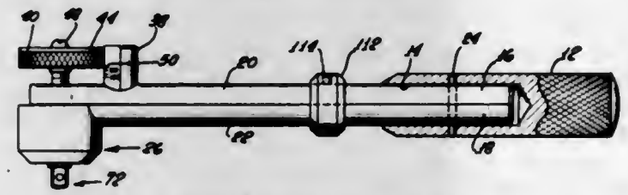
1. A locking tool for locking an insert having an axially slotted head into a workpiece, comprising: a cylindrical body; radial projections longitudinally spaced from one end of said body, a portion of the faces of said projections being radially, inwardly displaced from said faces to form a tapered wedge surface adapted to engage the edges opposite the threading direction of said insert of the segments formed by said axial slots.

3,272,035
HAMMER DRIVEN WRENCH
Gösta Ivar Ekström and Stig Hugo Nordahl, Nacka, Sweden, assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Apr. 20, 1964, Ser. No. 361,106
Claims priority, application Sweden, Apr. 24, 1963, 4,467/63
9 Claims. (Cl. 81—52.3)



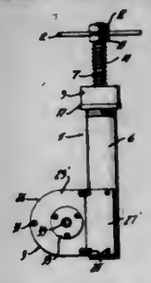
1. A hammer driven wrench operated by impacts and including power operated reciprocating hammer means for delivering a series of rotational blows to a wrench body, said hammer driven wrench comprising a wrench body, a radially directed outer lug centrally on and integral with said wrench body, said lug having a radial shoulder thereon, a pivot on said wrench body spaced from but parallel with the axis of rotation of said wrench body and angularly spaced from said lug, handle means mounted on said wrench body for limited bidirectional rotation thereon on said pivot, said handle means including a head portion carrying said pivot and a shaft portion disposed substantially tangentially to said wrench body and with the longitudinal axis on said shaft portion intersecting said shoulder, said shaft portion consisting of a pressure fluid operated hammer having an impact delivering surface disposed concentrically with respect to the axis of said shaft portion and adjacent said shoulder, and said hammer being operable for imparting rotational blows by said impact delivering surface to said shoulder.

3,272,036
TORQUE LIMITING WRENCH
William E. Van Hoose, 4117 Brompton Ave., Bell, Calif.
Filed Oct. 30, 1964, Ser. No. 407,658
13 Claims. (Cl. 81—52.4)



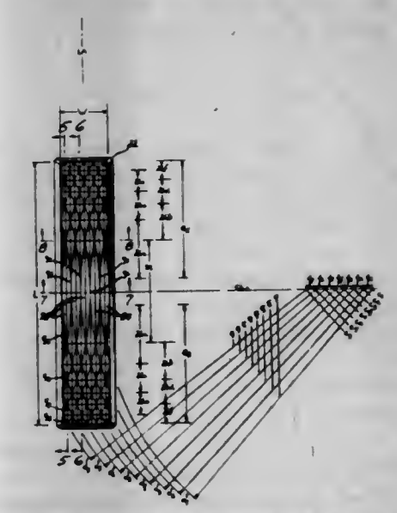
1. A torque limiting wrench comprised of two complementary coaxial rotatable members mounted for rotation relative to one another about their common axis, the first said rotatable member including internal bearings and a handle, and the second said rotatable member mounted within the first rotatable member, said second rotatable member including a torque transfer member and radially mounted cam means, an actuating member resiliently mounted for axial movement within said second rotatable member which presses against and radially urges said cam means, means for adjustable frictional locking of said second rotatable member with said first rotatable member about their common axis through adjustable radial urging of the cam means outwardly against said internal bearings caused by axial pressure applied by said actuating member on said cam lock means and responsive radial locking between the first and second rotatable members up to a predetermined torque limit beyond which the first rotatable member will rotate independently of the second rotatable member, and means for adjusting the radial pressure of the first rotatable member relative to the second rotatable member so as to vary the amount of frictional engagement of the internal bearings of the first rotatable member with the cam means of the second rotatable member.

3,272,037
MECHANICAL TURNING TOOL UNIT
Jerome J. Bruehl, 726 Valley Road, Menasha, Wis.
Filed May 20, 1964, Ser. No. 368,934
7 Claims. (Cl. 81—57)



1. A multiple action turning tool unit comprising,
an elongated support adapted to be manually manipulated,
a gear rotatably mounted in one end of the support and having ratchet means for coupling a turning tool means thereto,
an operating shaft slidably and rotatably mounted to the support for limited reciprocating movement,
a worm secured to the shaft and mating with said gear, said worm projecting from the gear for a length permitting said worm to serve as a rack to turn the gear upon reciprocal movement of the shaft, and
stop means on the shaft and support limiting movement of the operating shaft in both directions to thereby permit limited reciprocation and providing a reacting stop upon turning of the shaft to prevent longitudinal movement of the shaft and thereby transmitting shaft rotation to the gear.

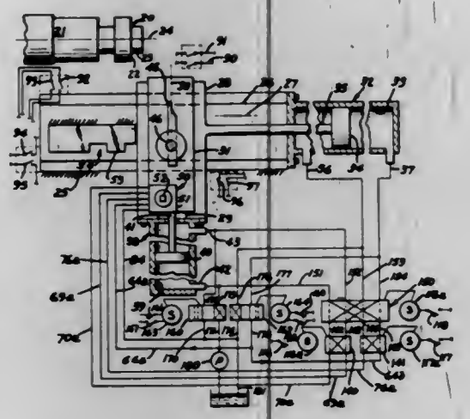
3,272,038
GRIPPING MEANS
William M. Burstall, Huffman, Tex., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,763
14 Claims. (Cl. 81—186)



8. A gripping means comprising an elongated surface including at least two intersecting groups of grooves

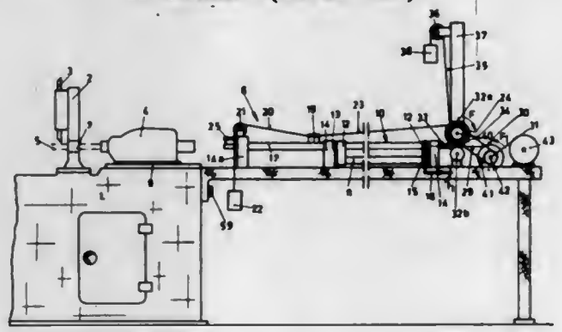
superimposed upon each other, each of said grooves defining an arc of a circle.

3,272,039
MACHINE TOOL CYCLE CONTROL
Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut
Filed May 26, 1965, Ser. No. 458,962
19 Claims. (Cl. 82—14)



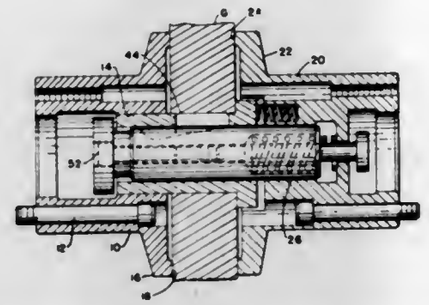
1. A cycling control for a machine tool of the class having a bed, a first slideway mounted on said bed, a first slide mounted on the first slideway, a second slideway mounted on the first slide, a second slide mounted to the second slideway, the slideways having respective axes, the axes being non-parallel and the slides being movable along the respective slideway axis, a cutting tool, a workpiece holder, a template, and a tracer valve including a stylus adapted to trace the contour of the template, the tracer valve and template comprising a first pair and the cutting tool and workpiece constituting a second pair, one member of each pair being mounted to the second slide, and the other member of each pair being mounted to the bed, a first slide motive means, and a second slide motive means, the first slide motive means being adapted to move the first slide relative to the bed along the first axis, and the second slide motive means being adapted to move the second slide relative to the first slide along the second axis, at least one of said motive means being under control of the tracer valve, whereby variations in the template contour are followed by the stylus and duplicated between the cutting tool and workpiece, motive power means selectably applicable directly to the motive means or through the tracer valve to the motive means, the selection of which if any of said motive means is under control of the tracer valve, and the selection of which if any of said motive means is directly powered by the power means exemplifying selectable functions, said cycling control comprising: a power supply including a first and a second terminal; a plurality of limit switches disposed in the path of said slides, each having a conductive and non-conductive condition, said conditions being selectable by contact with a respective slide, whereby movement of a slide to a selected location actuates a respective limit switch to change its conductive condition, each of said limit switches including a first and a second terminal, which terminals are conductively connected in one condition, and disconnected in the other; a plurality of address switches; a plurality of function switches, each of said address and function switches having a conductive and a non-conductive condition, said conditions being selectable, and each of said function and address switches including a power and an output terminal, the first terminals of all limit switches being connected to the first terminal of the power supply, the second terminal of each limit switch being connected to the power terminal of a respective address switch, the power terminals of all the function switches being connected to the first terminal of the power supply; a switch controller comprising a drum with an axis of rotation, the drum having a periphery revoluble around said axis; a plurality of switch actuators on said periphery, said address and function switches being so disposed and arrayed as to be placed in one condition when a switch actuator is adjacent thereto, and in the other condition when one is not, whereby the disposition of switch actuators on the periphery relative to the address and function switches provides means for selecting addresses and functions respective to angular positions of the drum; stepper means for moving the drum in incremental steps, said stepper means including a first and a second terminal, the output terminals of all address switches being connected to one terminal of said stepper means the other terminal of the stepper means being connected to the second terminal of the power supply; a plurality of function controllers each effective to control a function and each having a first and a second terminal, the first terminal of each function controller being connected to the output terminal of a respective function switch, and the second terminal of all function controllers being connected to the second terminal of the power supply, whereby with the drum so disposed and arranged as to actuate a selected address and function switch, the function continues until the respective limit switch is actuated, thereby to step the drum to a new selection.

3,272,040
ARRANGEMENT FOR FEEDING AN AUTOMATIC LATHE WITH BARS TO BE MACHINED
André Léchot, Ateliers de Mecanique, Orvin, Bern, Switzerland
Filed Feb. 10, 1964, Ser. No. 343,557
Claims priority, application Switzerland, Feb. 8, 1963, 1,579/63
13 Claims. (Cl. 82—2.7)



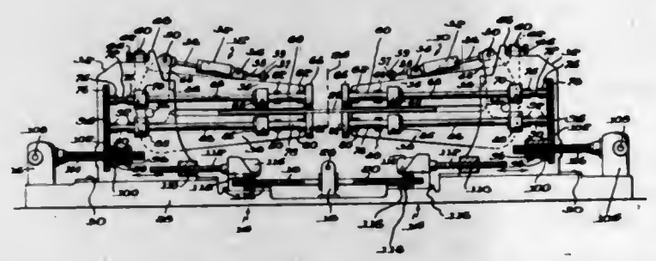
1. In combination with a lathe including a slidable headstock provided with a bore and at least one cutting tool, an arrangement for feeding bars to be machined into the headstock bore, comprising a magazine including a plurality of similar horizontal tubes parallel with the axis of the headstock bore and adapted to carry each a bar to be machined and to be set in succession in alignment with the headstock bore, a main cable, means detachably connecting one end of said cable with the bar carried inside the operative tube aligned with the headstock bore through the end of said bar facing away from said headstock bore, two rollers between which the cable is frictionally held, a weight, an auxiliary cable to which said weight is suspended and adapted to drive the roller in a predetermined direction into rotation upon release of the weight to thereby move the main cable and bar forwardly through last-mentioned tube to ensure machining the bar in the lathe, means guiding the main cable along a rectilinear path between the rollers and said last-mentioned tube and further driving means adapted to be operatively connected with last-mentioned roller to drive same in the direction opposed to said predetermined direction to draw the main cable outwardly away from said last-mentioned tube.

3,272,041
EXPANDING ARBORS
Russel W. Anthony, Detroit, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed June 28, 1965, Ser. No. 467,239
13 Claims. (Cl. 82—44)



1. Expanding arbor support means comprising a first support member including a central circular recess to serve as piloting means, and a flat annular work support surface concentric with said recess, a second support member, an elongated plug carried by said second support member in axial alignment with the recess in said first support member, a sleeve slidable longitudinally on said plug, radially movable keys in said sleeve, key camming surfaces on said plug, spring means between said sleeve and said second support member, and stop means interposed between said sleeve and plug to limit movement of said sleeve on said plug.

3,272,042
SLITTING AND SCORING APPARATUS
James P. Haas, Baltimore, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,622
5 Claims. (Cl. 83—9)



1. A device for slitting and scoring a continuously moving sheet comprising

a frame member having a pivot pin extending horizontally therefrom and stop means extending horizontally therefrom,

an upper pivot arm pivotally secured to said frame member on said pivot pin and having an end portion extending laterally from said frame member,

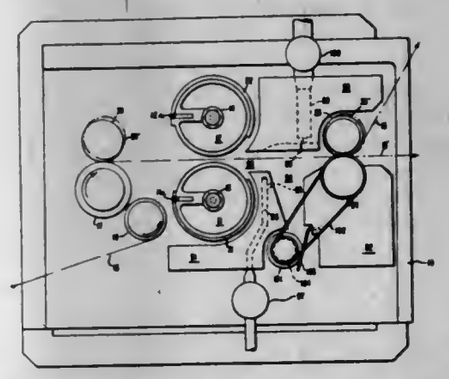
a lower pivot arm pivotally secured to said frame member on said pivot pin and having an end portion extending laterally therefrom positioned below said upper pivot arm member laterally extending portion, said lower pivot arm having an upwardly extending other end portion operable to abut said frame member stop means,

means connected to said upper arm member laterally extending portion and said lower arm member upwardly extending other end portion, said means operable to urge said lower arm member other end portion into abutting relation with said stop means and to pivot said upper arm member about said pivot axis in a direction away from said continuously moving sheet,

sheet engaging members secured to said upper and lower pivot arm laterally extending portions, said sheet engaging members arranged in a plane substantially normal to the longitudinal axis of said arm member laterally extending portions, and

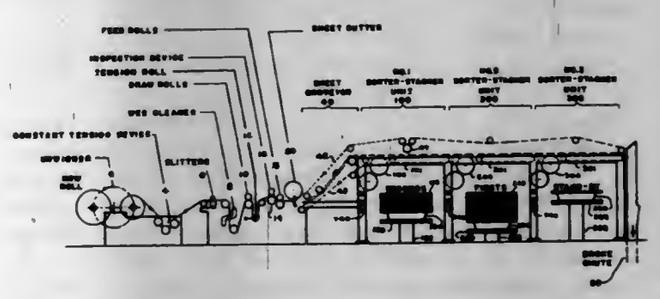
drive means to propel said sheet engaging members.

3,272,043
METHOD AND APPARATUS FOR SEVERING A MOVING WEB
Danahey Ryan, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,419
9 Claims. (Cl. 83—24)



8. A method for severing a web while maintaining positive tension on the web which comprises (1) initiating (a) knife rolls located on each side of the web to begin rotation and (b) the engagement of a free running guide roll and power driven roll, (2) cutting said web while a firm grasp is maintained on said web by said knife rolls, (3) supporting the leading edge of said cut web with an air cushion, (4) receiving the leading edge of said cut web between said engaged guide roll and power driven roll and (5) disengaging said guide roll and power driven roll upon an impulse from a web detector which sensed the web after passage from said rolls.

3,272,044
SINGLE WEB SHEET CUTTING MECHANISM
David Noel Obenshain, Luke, Md., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Original application Oct. 9, 1962, Ser. No. 230,790, now Patent No. 3,203,326, dated Aug. 31, 1965. Divided and this application Mar. 6, 1964, Ser. No. 349,966
10 Claims. (Cl. 83—79)



1. A high speed, single web, sheet cutting and delivering mechanism comprising, in combination, conveying means for advancing sheet material in web form, a rotary cutter, a collecting drum, a common driver for the cutter,

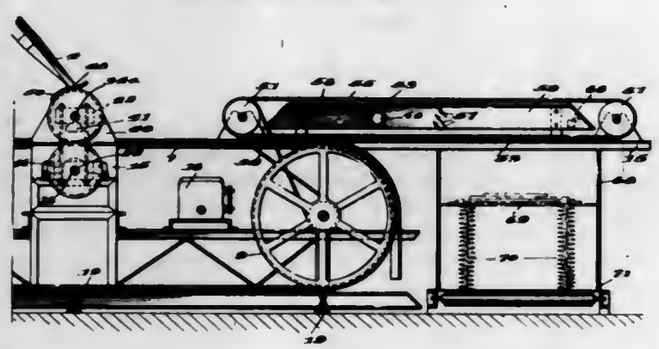
the web conveying means and the collecting drum, power transmitting means connecting the cutter and the collecting drum for operation at identical rotary speeds and in fixed relation to the common driver, a positive change speed transmission unit interposed between the common driver and the web conveying means and settable to control the length of web fed during a cutter cycle, thereby to determine the length of sheet cut, and means for accelerating each cut sheet, regardless of its length, from the speed of the web to the peripheral speed of the collecting drum so that the successive sheets delivered to the collecting drum may be collected thereon in registering packets, a transfer conveying means for receiving the sheet packets from the collecting drum, means automatically effective when the prescribed number of sheets has been accepted for accumulation on the collecting drum to bring about delivery of the resulting sheet packet to the transfer conveying means, receiving mechanism for accepting the packets from the transfer conveying means at greatly reduced speed, means driving the transfer conveying means at the peripheral speed of the collecting drum throughout said delivery, and automatically effective when the delivery of a packet of sheets to the transfer conveying means has been completed, to so modify the transfer conveying means drive that the transfer conveying means is put through a slowdown and restoration cycle during which the transfer conveying means advances the sheet packet at high speed onto the receiving mechanism and then slows down progressively as the packet moves across the receiving mechanism until the packet of sheets is discharged to said receiving mechanism at a relatively low speed, the transfer conveying means drive then progressively restoring the speed of the transfer conveying means to the collecting drum speed by a time no later than that at which the next accumulated packet of sheets on the collecting drum becomes ready for delivery to the transfer conveying means.

3,272,045
FLYING SHEAR
William Cookson, Southampton, England, assignor to Cookson Sheet Metal Developments Limited, Southampton, England, a company of Great Britain and Northern Ireland
Filed Feb. 10, 1964, Ser. No. 343,560
Claims priority, application Great Britain, Feb. 18, 1963, 6,539/63
16 Claims. (Cl. 83—308)



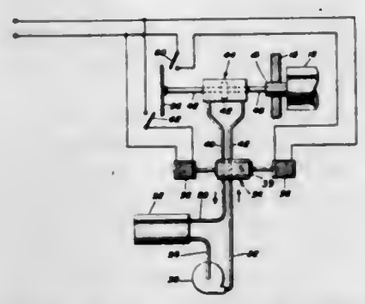
1. A flying shear for cutting into predetermined lengths material of the kind described comprising:
- shear blades between which the material is made to pass; a mounting for the shear blades which is forwardly movable with the material;
- engagement means connected with the shear blades mounting at a desired distance in front of the shear blades in the line of advance of the material so as to be engageable by the material and move forward the shear blades mounting leaving a predetermined length of material in front of the blades;
- cam means for causing the shear blades to close together in a cutting action as the shear blades mounting is moved forward including a cam element connected to one of the shear blades and an interacting cam element connected to a fixed part of the flying shear mechanism.

3,272,046
ROTARY CUTTING APPARATUS
Fred P. Crouch and Wilbur M. Lockrow, Winston-Salem, N.C., assignors, by mesne assignments, to Hanes Corporation, Winston-Salem, N.C., a corporation of North Carolina
Original application May 27, 1963, Ser. No. 283,252, now Patent No. 3,192,809, dated July 6, 1965. Divided and this application Feb. 18, 1965, Ser. No. 449,349
7 Claims. (Cl. 83—310)



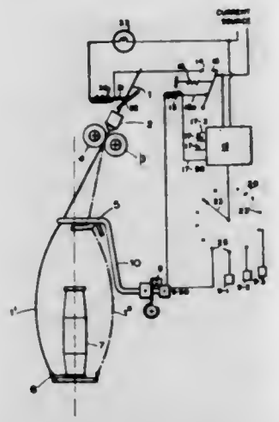
1. Apparatus for continuously cutting a web of knitted or woven cloth into a plurality of repeating garment blank portions comprising: a frame, a hard-surfaced non-resilient pressure roller and bearing supports mounting the pressure roller on the frame for rotation about a fixed horizontal axis, the periphery of the pressure roller defining circular end sections and a recessed intermediate section; a pair of end wheels mounted for rotation on the frame and a non-resilient, hard-surfaced belt passing around the end wheels, the hard-surfaced belt being carried in the recessed section of the pressure roller for positive transverse positioning thereof; means driving the hard-surfaced belt at a predetermined linear speed and further rotating the pressure roller with a peripheral speed equal to the linear speed of the belt; a non-resilient cutter roller mounted for rotation about an axis parallel to the pressure roller axis, the cutter roller having at its periphery, raised hard-surfaced cutting edges shaped to form a plurality of garment blank portions and intermediate waste portions from a web of cloth; collar means rigidly holding the cutter roller against the pressure roller and the portion of the belt carried at the recessed section of the pressure roller; and means for rotating the cutter roller at a peripheral speed equal to the peripheral speed of the pressure roller.

3,272,047
HYDRAULIC ROLL OSCILLATING DEVICE
William F. Ward, 1706 Kurtz Ave., Lutherville, Md.
Filed Nov. 20, 1963, Ser. No. 324,926
3 Claims. (Cl. 83—338)



1. In a rotary die-cut machine for cutting of sheet material, a pair of rotatably mounted rolls, one of said rolls having a resilient covering and the other of said rolls having cutting means impressed against the surface of said resilient covering for severing of said sheet material when passed between said pair of rolls, a double-acting hydraulic cylinder having one end of its piston shaft connected to one end of the shaft of said one roll for longitudinally oscillating it with respect to said other roll, a source of hydraulic pressure, a pair of hydraulic lines for supplying hydraulic fluid to said hydraulic cylinder, a reversing valve for reversing the direction of hydraulic fluid flow through said hydraulic cylinder to obtain the longitudinal oscillation of said one roll, a pair of spaced switch means for defining the limits of said longitudinal oscillation, striker means mounted on the opposite end of said piston shaft for alternately actuating said spaced switch means, and solenoid means energized by said spaced switch means to reverse said reversing valve in response to the alternate actuation of said spaced switch means by said striker means.

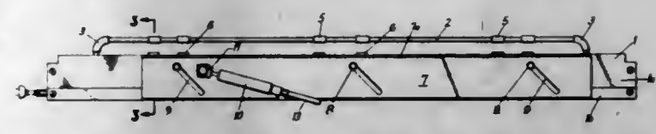
3,272,048
APPARATUS FOR THE DETECTION OF BROKEN YARN AND THE LIKE ON TEXTILE MACHINES
Anthony Hugh Archer, Horley, Surrey, England, assignor, by mesne assignments, to Louis Newmark Limited, Croydon, England, a British company, and to T.M.M. (Research) Limited, Oldham, England, a British company
Filed Aug. 5, 1964, Ser. No. 387,634
Claims priority, application Great Britain, Aug. 10, 1963, 27,353/63
10 Claims. (Cl. 83—370)



1. A yarn spinning apparatus comprising a yarn drafting means, a yarn guide, means for winding yarn about a bobbin and means for holding a bobbin;
- said drafting means feeding yarn toward said yarn guide and said winding means;
- said yarn guide engaging the yarn between said drafting means and said winding means; the operation of said winding means vibrating said yarn guide by vibrating the yarn in engagement therewith;
- a detector device connected to said yarn guide for detecting a break in the yarn;
- said device being responsive to the presence of vibrations in said yarn guide and being differently responsive to the absence of vibrations in said yarn guide due to a break in the yarn.

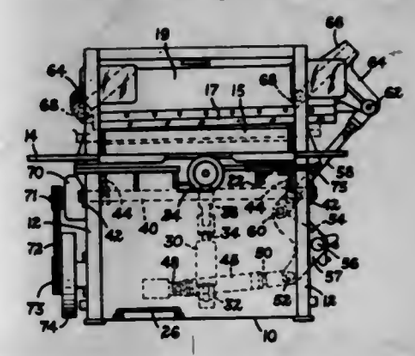
3,272,049
WEB SEVERING DEVICE
Otha Cooksey, 2639 Kings Highway, Louisville, Ky. 40205
Filed Dec. 16, 1963, Ser. No. 331,009
1 Claim. (Cl. 83—371)

A web severing device for the purpose described comprising supporting means adapted to be located adjacent to and transverse a traveling web, said supporting means having a surface portion adapted to be at a substantial angle to the plane of the web, knife means having a serrated edge and being mounted for sliding movement upon said surface of said supporting means, said sliding movement having a direction at a substantial angle to the longitudinal axis of said supporting means, means for moving said knife means on said supporting means against said web comprising a fluid pressure cylinder pivoted at one end to said supporting means and having a piston and rod, said piston rod being pivoted to said knife means, control means for introducing fluid under pressure to said cylinder, said control means comprising a three-way valve, a web break detector comprising said supporting



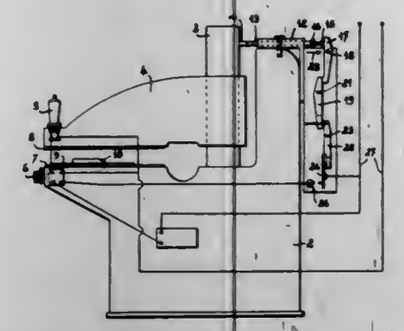
means, said detector comprising an air delivery means on one side of the web, an air actuated switch means on the other side of said web, said air delivery means and said switch means being in parallel spaced relationship to each other, said detector device being so located with respect to the web that both said air delivery means and said switch means are out of contact with said web in its normal path of travel, said switch means actuated by air from said air delivery means when said web deviates from its said normal path of travel, said detector functioning to operate said three-way valve when said switch means is actuated, whereby to actuate said cylinder.

3,272,050
ADJUSTABLE KNIFE AND CLAMP ASSEMBLY
Leo D. Barley, Dayton, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Continuation of application Ser. No. 142,314, Oct. 2, 1961. This application July 26, 1965, Ser. No. 474,925
9 Claims. (Cl. 83—390)



1. A clamp control for use with a cutting machine adapted to cut piles of material, said machine including a knife movable in guillotine-like cutting strokes together with a clamp movable from a raised position to a clamping position against a pile of material and a hydraulic unit providing a power drive for said clamp and knife; said control comprising driving linkage means operatively associated with said hydraulic unit for moving said clamp toward and away from a pile, valve means operative to halt the upward movement of said clamp means and to maintain said clamp in the raised position, means controlling said valve means including a cable of fixed length secured at one end to said driving linkage means and at the other end to said valve means for relating the position of said clamp and for causing said valve to halt the upward movement of said clamp by establishing a condition of hydraulic pressure equilibrium, and adjustable guide means controlling the path along which said cable moves to vary the effective action of said cable on said valve means.

3,272,051
CUTTING AND PERFORATING PRESS
Paul Actis, Ospedaletti, Italy
Filed Aug. 13, 1964, Ser. No. 389,335
Claims priority, application France, Sept. 5, 1963, 43,970, Patent 1,383,805
3 Claims. (Cl. 83—527)



1. In a cutting press comprising a frame including a support for the material to be cut and a presser member adapted to be lowered toward the material to be cut to press a cutting tool through the material, the improvement comprising an upright from which said presser member extends laterally, said upright being adapted to bend yieldingly away from the tool upon pressure of the tool on said material, and means responsive to said bending of the upright to stop the lowering of said presser member.

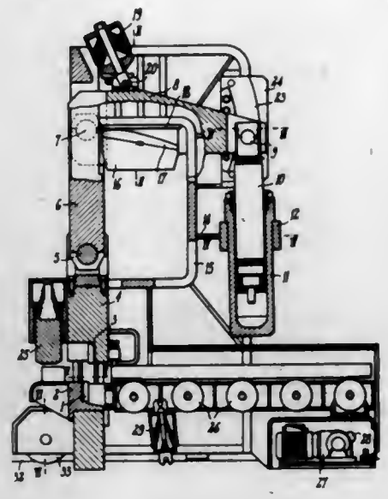
3,272,052
DIE FOR PUNCHING DATA PROCESSING CARDS, TAPES AND THE LIKE
Herbert Mahn, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 17, 1964, Ser. No. 411,772
Claims priority, application Germany, Dec. 7, 1963, P 22,609
3 Claims. (Cl. 83—578)



1. A die for punching data processing cards, tapes and the like comprising, a punch and guide, said punch having a cutting surface at one axial end of said punch, a laterally extending recess in said die, a second cutting surface on said punch defined by the edge of said punch extending between said cutting surface and the adjacent surface of said recess, and a second recess in said guide positioned for communication with said punch recess in the inoperative position of said punch.

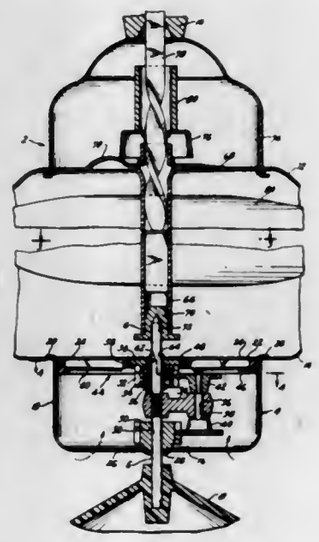
3,272,053
SHEAR-BLADE CONTROL MECHANISM
Georges Pollet, Saint-Chamond, France, assignor to Compagnie des Ateliers et Forges de la Loire, St. Chamond, Firminy, St. Etienne, Jacob-Holtzer
Filed Oct. 2, 1964, Ser. No. 401,125
Claims priority, application France, Oct. 11, 1963, 950,427, Patent 1,379,094
5 Claims. (Cl. 83—617)

1. A mechanism for controlling shears of the type comprising one fixed and one moving blade, the latter being subject to the action of a member which applies to it a force varying with its position, a rocker endowed with swinging motion, during which it rolls without slip on a rolling-contact track rigidly attached to the frame of the machine, thus constituting a lever, the ratio between the



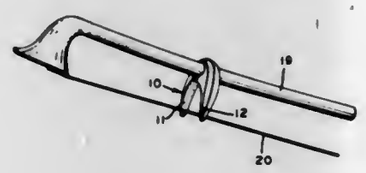
lever arms varying according to its position, the action of this lever controlling the travel of the moving blade according to a law determined by the shapes of the rolling-contact surfaces.

3,272,054
MUSICAL TOP
Robert Sefcik, Cherry Hill, N.J., assignor to J. Chein & Company, Burlington, N.J., a corporation of New York
Filed Mar. 6, 1964, Ser. No. 349,857
8 Claims. (Cl. 84—83)



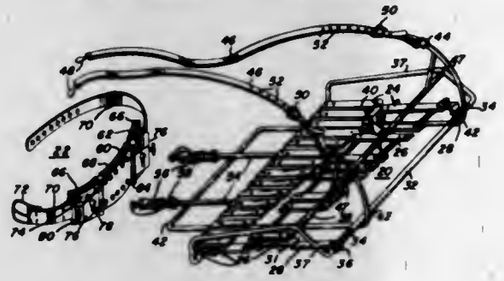
1. A sounding top comprising a support shaft, a casing rotatably mounted on said shaft, said shaft entering said casing, a top body larger than, mounted on and surmounting said casing for rotation therewith, a wall separating said casing from said body, said casing, said body, and said wall having openings formed therein to define a path for air flow serially through said casing, said wall and said body, a first gear fixed to and inside said casing and rotatable relative to said shaft, an arm in said casing fixed to said shaft, second and third rotationally connected gears carried by said arm, said second gear being meshingly operatively connected to said first gear, a reed-carrying member located in close juxtaposition to said wall and rotatable relative to said shaft and said wall so as to bring selected reeds into and out of registration with the opening in said wall, and a fourth gear in said casing, operatively connected to said member and meshingly operatively connected to said third gear, the relationship between the numbers of teeth in said gears being such as to cause said member to rotate relative to said shaft at a speed differing only slightly from the speed of rotation of said casing.

3,272,055
BOW STOP FOR STRINGED INSTRUMENTS
Theodore Henkle, 5415 Reynolds St., Savannah, Ga.
Filed July 19, 1965, Ser. No. 472,943
6 Claims. (Cl. 84—283)



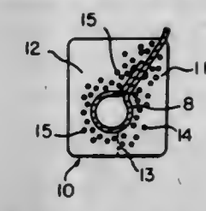
1. A stop for a bow for a violin and the like to limit the length of the stroke of the bow and comprising a generally U-shaped clip having a constricted section at the base of the U to receive the bow stick in substantially non-sliding relation and provided with legs extending downwardly from such constricted section between which the hair of the bow is received, the terminals of the legs acting as a stop when they contact the strings of said violin.

3,272,056
GLOCKENSPIEL AND SUPPORT THEREFOR
Herman R. Dean, Box 816, Port St. Joe, Fla.
Filed Dec. 31, 1964, Ser. No. 422,781
10 Claims. (Cl. 84—403)



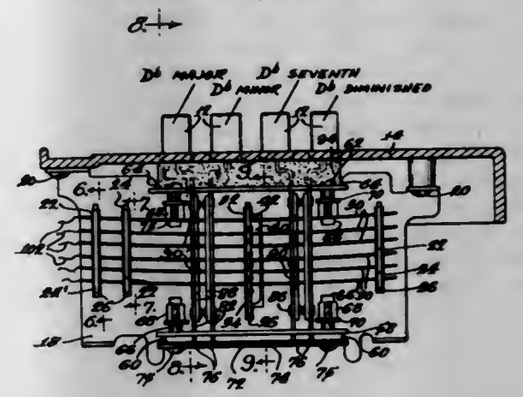
1. A support for tone bar assemblies of a musical instrument of the percussion type comprising two elongated tone bar assembly support frames, said frames each having two longitudinally extending slots extending in the direction of elongation, two elongated frame members, two longitudinally extending end-located slots in said frame members, means for engaging said frame slots for removably securing said support frames to said frame members to form a substantially rectangular configuration, two support members connected to one of said frame members, two hinges connected at ends of said support members for providing rotation in a vertical plane, two insert buttons connected to said hinges, a body encircling belt having three rigid plate sections, slotted plate means secured to said rigid plate sections, said slotted plate means containing two slots for engaging said insert buttons, two shoulder straps, means connected to two of said plate sections for securing ends of said straps, and means connected to said frame members for securing ends of said straps.

3,272,057
DRUM HEAD AND METHOD OF ITS MANUFACTURE
Yukio Saito, 9 Karasuyama-machi, Nasu-gun, Tochigi-ken, Japan
Filed Oct. 19, 1965, Ser. No. 497,868
6 Claims. (Cl. 84—414)



1. A drum head which comprises a vibratile diaphragm sheet and a supporting ring member securing the periphery of the said sheet, characterised in that the edge of the said sheet extends downwardly from the periphery, turns outwardly and upwardly, and its end is secured to the lower part of the periphery of the sheet to thereby form an annular void, a rigid annular member, if desired, being inserted into the said annular void, and that an inside and an outside ring-like member composed of a resin-impregnated continuous glass filaments wound in layer are solidified with the edge of the said sheet disposed between them and made into an integral supporting ring.

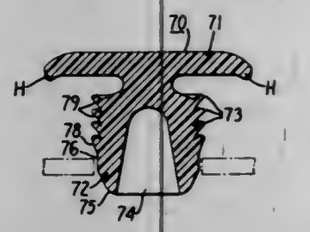
3,272,058
ORGAN CHORD SWITCH
Lyman J. Haviland, Mundelein, Ill., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware
Filed July 20, 1964, Ser. No. 383,725
5 Claims. (Cl. 84—443)



1. For use in an electrical musical instrument including tone signal generators for generating collectively electrical tone signals corresponding to the twelve tones of the even tempered scale, and an output system including electroacoustical translating means, a multiple contact switch comprising a plurality of spaced spring contact members arranged in a stack, said contact members being adapted to be connected respectively to different ones of said tone signal generators, said contact members being supported adjacent their ends on insulating supports, an insulating support plate disposed vertically substantially in the center of said stack and transversely thereof, said support plate having apertures therein for passage of said contact members, a stack of spaced bus bars supported by said support plate, said bus bars corresponding in number to the number of said contact members, said bus bars being adapted to be connected to said electroacoustical translating means, said bus bars being disposed respectively adjacent said contact members and spaced therefrom, at least one manually operable switch actuating member disposed on each side of said stack of bus bars and near the center of said stack of contact members relative to the supports

of the latter for selectively moving different combinations of said contact members into engagement with their respective bus bars, said actuating members on one side of said stack of bus bars being substantially the same distance therefrom as the corresponding actuating members on the opposite side thereof, whereby such different combinations of said contact members may be engaged with their respective bus bars upon movement selectively of said actuating members through substantially equal distances.

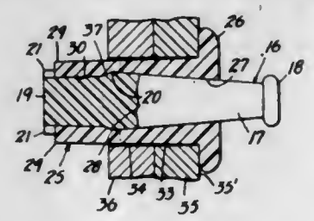
3,272,059
PLASTIC HOLLOW-ENDED FASTENER
Richard W. Lyday, Brookville, and Cletus L. Moorman, Trotwood, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application June 22, 1961, Ser. No. 118,836. Divided and this application May 15, 1964, Ser. No. 367,848
1 Claim. (Cl. 85—5)



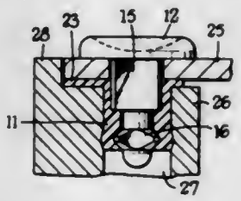
A unitary fastening device for elastomeric sealing strip cavity and mounting panel aperture installation, consisting of a body of plastic material having an elongated and substantially oblong head portion having integral hook-like opposite ends remote from each other at predetermined locations, a stem portion solid immediately adjacent to and integral axially at one end thereof with a central location of said elongated oblong head portion and having the lateral width of said stem portion less than that of said elongated oblong head portion, and a substantially annular enlarged extension of said stem portion including collectively an exterior initial tapered portion adjacent the end thereof remote from said elongated head portion, a secondary tapered portion extending radially outwardly further than said initial tapered portion, an intermediate cylindrical outer portion interconnecting said initial tapered portion and said secondary tapered portion, plural concentric barb-like rings axially spaced along said enlarged extension adjacent said solid stem portion with said secondary tapered portion defining the outer surface of the lowermost of said barb-like rings, and a hollow interior extending axially from said end thereof that is remote from said elongated oblong head portion and that enhances resilience and facilitates flexing of said exterior initial tapered portion which is a guide for entry into a mounting panel aperture as well as said intermediate cylindrical outer portion, each of said concentric barb-like rings being interconnected by an arcuate flared portion collectively all having a diameter greater than the lateral width of said central location of said elongated oblong head portion though the diameter thereof is specifically less than the longitudinal distance between predetermined locations of said hook-like opposite ends of said elongated oblong head portion.

3,272,060
PLASTIC BLIND RIVET
Louis H. Morin, Bronx, N.Y.
(125 Beechwood Ave., New Rochelle, N.Y.)
Filed Apr. 24, 1964, Ser. No. 362,231
2 Claims. (Cl. 85—77)

1. A blind rivet comprising assembled stud and body parts, each part having a head at one common end of said parts, the head of the stud part always projecting beyond the head of the body part, the stud part including a tapered shank of decreasing diameter toward its head, said shank having a coaxially disposed large diameter annular shoulder at its inner end, a slightly tapered leading end portion at the inner end portion of the stud part and radially projecting ribs on said slightly tapered leading end portion for keying the body part against rotation on the stud part, the body part including an internally tapered tubular portion normally snugly engaging said tapered shank, and the body part intermediate said keying means having circumferentially spaced anchor wing portions normally lying within the outside diameter of said tubular portion said ribs comprising circumferentially spaced longitudinal extending elements projecting through said body part between said spaced wing portions, said wings including at their inner end portions internal shoulders normally abutting the annular shoulder of said shank, said ribs extending axially toward the head from the terminus of the inner end of the stud to beyond the annular shoulder of said shank, said ribs being tapered from a portion of greatest circumferential extent adjacent said terminus toward said head, the adjacent abutting surfaces of said wing portions having a corresponding degree of taper conforming to the taper of said ribs and said slightly tapered leading end portion.



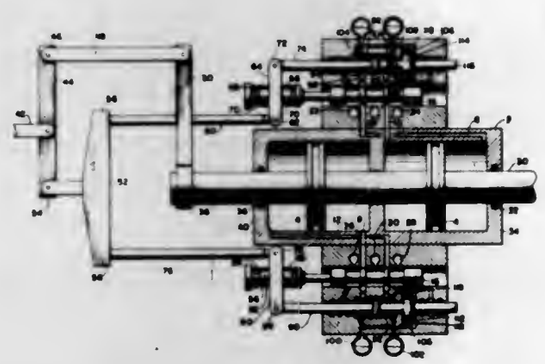
3,272,061
FASTENERS
Clifford Alexander Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,108
Claims priority, application Great Britain, May 7, 1964, 19,067/64
4 Claims. (Cl. 85—82)



1. A fastener for attaching an apertured panel to a recessed support and comprising a stud and a socket, the socket comprising a tubular sleeve adapted for close-fitting insertion in the recessed support and, at one end of the sleeve a circumferential flange adapted to seat on the recessed support, the sleeve comprising an inner portion adjacent the flange, the internal cross-section of which is approximately circular and an outer portion the internal cross-section of which is approximately rectangular and includes two facing substantially flat walls, the stud having a head and a shank for insertion into the sleeve of the socket, the shank having an inner portion adjacent the head and adapted for rotation within the inner portion of the sleeve, two diametrically opposed lugs and a neck portion of reduced cross-section relative to the inner portion joining the lugs to the inner portion, the lugs being adapted to pass easily into the outer portion of the sleeve when the stud is in one angular position relative to the socket and being adapted to bite into the

said walls of the outer portion of the sleeve and expand the said outer portion when the stud is rotated relative to the socket away from the said angular position.

3,272,062
SERVO VALVE SYNCHRONIZER
Robert V. Flippo, Dallas, and Lloyd H. Holmes, Arlington, Tex., assignors, by mesne assignments, to LTV Electrosystems, Inc., Greenville, Tex., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,697
3 Claims. (Cl. 91—384)



2. A hydraulic actuator comprising:
a cylinder,
a piston slideable within said cylinder,
a piston rod carried by said piston and projecting through the ends of said cylinder,
a source of pressurized fluid,
a plurality of servo valves connected in hydraulically parallel circuits to regulate the flow of pressurized fluid between said source and said cylinder to control movement of said piston,
a control arm movable to apply command signals to said actuator,
a first rocker arm pivotally mounted on said control arm,
a second rocker arm pivotally mounted on one end of said first rocker arm,
link means connecting said piston rod to the opposite end of said first rocker arm,
a plurality of synchronizing pistons each connected to be actuated by fluid passed by a respective one of said servo valves,
a plurality of linkage means each connecting a respective one of said synchronizing pistons to a respective end of said second rocker arm, and
means carried by each of said linkage means for controlling the respective one of said servo valves associated therewith in response to movement of said control arm.

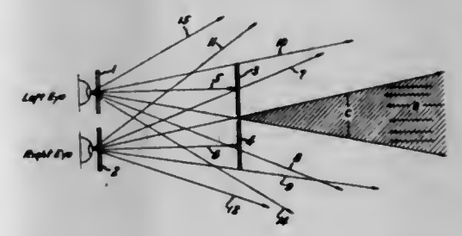
3,272,063
COMPOSITE SUPPORTED FIBER OPTIC STRIP
Joseph Singer, Jr., Arlington Heights, Ill., assignor to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,646
3 Claims. (Cl. 88—1)

1. In a fiber optical device, the combination comprising a plurality of radiation conducting optical fibers arranged to form a plurality of radiation conducting strips each having a width w and thickness t, said optical fibers in each of said strips being arranged tangent one another and with their axes mutually parallel and coplanar and the fibers of each strip fixed with respect to each other, two strip support members for each of said plurality of radiation conducting strips, said two strip support members for each radiation conducting strip being arranged parallel to the axes of said optical fibers thereof and abutting and fixed thereto to form a plurality of supported strips, one from each of said plurality of said radiation conducting strips, said plurality of supported strips being arranged contiguous



one another in side by side relationship and with their conducting fibers aligned and abutting to form a multiple strip assembly whose overall width is the sum of the widths w of said radiation conducting strips and where the thickness of the conducting fibers of said multiple strip assembly is t and the ratio $w:t$ is in excess of 20:1, and two multiple strip support members arranged parallel to each other and abutting and fused to said multiple strip assembly.

3,272,064
LIGHT ATTENUATING OPTICAL DEVICE FOR VEHICLES
Joseph W. Hyndman, Denver, Colo., assignor to C. W. MacMillan, Rock Island, Ill.
Filed Sept. 23, 1965, Ser. No. 495,753
3 Claims. (Cl. 88—1)

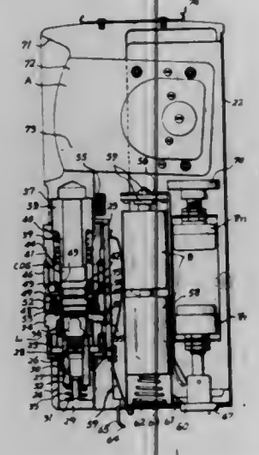


1. An optical device to be used by an operator of a vehicle for visual observation of lighted areas and to reduce glare from bright lights, comprising a first pair of spaced polarizing elements in optical alignment including a first eye piece element and a first filter element, and a second pair of spaced polarizing elements in optical alignment including a second eye piece element and a second filter element, each of said first pair of elements having its axes of polarization perpendicular to that of the other, each of said second pair of elements having its axes of polarization perpendicular to that of the other, and each of said eye piece elements having its axis of polarization perpendicular to that of the other, said first and second eye piece elements being positioned adjacent to the eyes of said operator, and said first and second filter elements being attached to said vehicle in the line of vision of said operator, whereby the vision of said operator when looking directly ahead through said first and second pairs of spaced polarizing elements is obstructed and the peripheral vision of said operator encompassing the region to either side of said filter elements is unobstructed.

3,272,065
OIL TESTER

Jinichi Ito and Shozo Shibuya, Tokyo, Japan, and Toyoo Yamada, 137 Kirisato-cho, Ota-ku, Tokyo, Japan; said Ito and said Shibuya assignors to said Yamada

Filed Jan. 8, 1963, Ser. No. 250,118
Claims priority, application Japan, Feb. 1, 1962, 37/3,625; Feb. 5, 1962, 37/5,184; Feb. 6, 1962, 37/4,582; Apr. 19, 1962, 37/16,207; June 7, 1962, 37/23,556; June 27, 1962, 37/26,861
2 Claims. (Cl. 88—14)



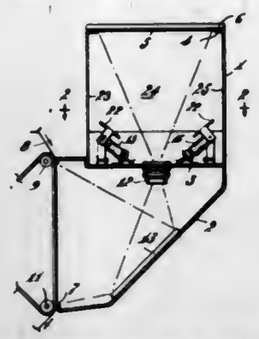
1. A portable oil tester comprising: an adjustable bridge circuit having a first pair of terminals and a second pair of terminals and including a photoconductive cell element as one leg thereof; voltage supply means coupled across said first pair of terminals; a current sensitive device including an indicator coupled across said second pair of terminals; housing means for enclosing the above-recited apparatus including a frame member, an aperture in one wall thereof with said current sensitive device mounted thereat to provide for viewing said indicator; a supporting cylinder secured to one side portion of said frame member; means for mounting said photoconductive cell element therein; an upper shadow cylinder threadably engaged with said supporting cylinder and adapted to be moved in an axial direction by rotation thereof; a lamp holding cylinder secured to said frame member in an axial alignment with said supporting cylinder; a light source located within said lamp holding cylinder; electrical means for energizing said light source; a lower shadow cylinder threadably engaged with said lamp holding cylinder and being axially movable by rotation thereof; a specimen stand being pivotally attached to said frame member and being located between said upper and lower shadow cylinders to pivot into axial alignment with said upper and lower shadow cylinders into a test position and being pivotally movable outwardly in a substantially horizontal position for receiving a test specimen, the specimen when in said test position being in axial alignment with said photoconductive cell element and said light source and intersecting the light transmitted from said light source to said photoconductive cell element so as to make the bridge circuit responsive to the light transmission factor of the test specimen thereby providing a qualitative measurement of said specimen.

3,272,066
COPYING APPARATUS

Richard E. Rice, Arlington, Mass., assignor to Comstock & Wescott, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Mar. 8, 1963, Ser. No. 263,939
5 Claims. (Cl. 88—24)

1. A printer having a record window to receive a record, a print window to receive a sheet of photographic material, a lens between the two windows to focus the record on said sheet, a chamber enclosing the space between the lens and record window, and light-producing means in said chamber, and reflector means disposed ad-

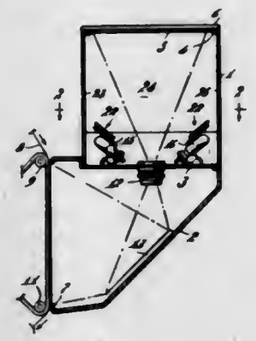


jacent the light-producing means to reflect light away from said lens and shaped to reflect light from said light-producing means to said record window with increasing intensity outwardly from the center of the record window.

3,272,067
COPYING APPARATUS

Kenneth John White, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

Filed Jan. 31, 1964, Ser. No. 341,616
1 Claim. (Cl. 88—24)



For printing a sheet of photographic material from a record sheet, a printer comprising a chamber having a record window to receive a record sheet, a print window to receive a sheet of photographic material, a lens between the two windows to focus the record sheet on the photographic sheet, said chamber and windows having corresponding rectangular shapes, means for illuminating the record sheet including light sources in said chamber opposite the record window, a reflector behind each light source, each reflector being directed toward an opposite side of said chamber adjacent the record window, sides of said chamber being reflective, a baffle in front of each light source to shield an area including said record window, each baffle comprising superposed parts and means to adjust one part relatively to the other part so that it projects more or less beyond an edge of the other part, the adjustable part being polygonal and eccentrically mounted on the other part so that, in different angular positions, different edges project different distances beyond said edge of the other part, and means to adjust the baffles to vary said areas.

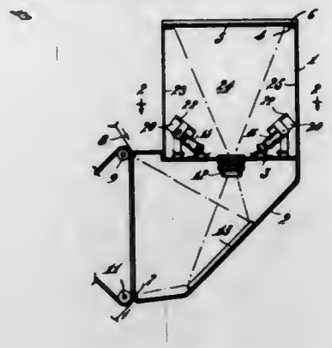
3,272,068
COPYING APPARATUS

Paul H. Couture, Shrewsbury, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada.

Filed Sept. 4, 1964, Ser. No. 394,574
1 Claim. (Cl. 88—24)

For printing a sheet of photographic material from a record sheet, a printer comprising a chamber having a

record window to receive a record sheet, a print window to receive a sheet of photographic material, a lens between the two windows to focus the record sheet on the photographic sheet, said chamber and windows having corresponding rectangular shapes, means for illuminating the record sheet including a light source in each of the four corners of said chamber opposite the record window,

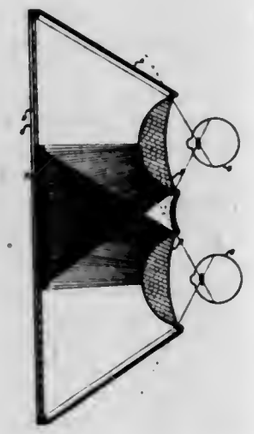


a baffle in front of each light source to prevent light from being reflected directly from the record window to the lens, the sides of said chamber being reflective, and a reflector behind each light source, each reflector being directed toward an opposite side of said chamber adjacent the record window, characterized in that each baffle has a wing on the side next to the adjacent wall of said chamber to screen each lamp from its adjacent wall.

3,272,069
APPARATUS FOR VIEWING WIDE-ANGLE STEREOSCOPIC PICTURES

Harvey L. Ratliff, Jr., Lubbock, Tex., assignor to Jetru Inc., Amarillo, Tex.

Filed Apr. 1, 1965, Ser. No. 447,600
4 Claims. (Cl. 88—29)



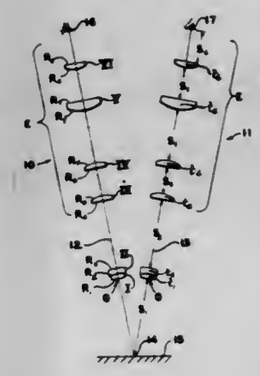
1. A wide angle stereoscopic viewing device comprising: an enclosed hollow casing; two positive wide angle oculars, supported by said casing having relatively short focal lengths and having their axes substantially parallel and spaced by the normal spacing of a viewer's eyes and having diameters greater than approximately 20 millimeters in the dimensions perpendicular to their axes and parallel to a line joining a viewer's eyes; a single composite picture supported at the focal plane of said oculars in a position to be viewed through said oculars, said picture consisting of respective right and left eye views that are overlapped in a central portion of the composite picture, the central overlapped portions of the respective views are made up of a multiplicity of vertical strip images that are interlaced so that adjacent strips are respectively strip images of the right and left eye view; means coacting with said picture to separate the strip images in the central portion of said picture into the respective right and left eye views as seen through said oculars,

whereby the overlapping of the views only in the central portion of the composite picture eliminates the viewing of a dividing line between the left and right eye views.

3,272,070
OPTICAL SYSTEM FOR STEREOMICROSCOPE

James R. Benford, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Jan. 18, 1963, Ser. No. 252,459
2 Claims. (Cl. 88—57)



1. A pair of optical systems focused on an area of a specimen to form stereo images at substantially 15× magnification thereof, each of said systems having the combination of a compound objective lens and an erecting type of eyepiece aligned rearwardly thereof, said eyepiece consisting of four plano-convex singlet lenses optically aligned with said objective lens, the plano surfaces of the foremost two singlets facing forwardly and the plano surfaces of the two rearmost lenses facing rearwardly, the optical parameters of each of said systems being given in the table of mathematical statements herebelow wherein the front and rear elements of the compound objective lens are designated I and II respectively and the successive singlet lenses are numbered III, IV, V and VI, the focal lengths of lens parts I to VI being designated F_I to F_{VI}, and the minus (—) sign used with F_{II} denoting negative power, the radii of the successive lens surfaces being designated R_1 to R_{11} and the minus (—) sign used, therewith denoting those surfaces which have a center of curvature lying on the object side of the vertex of the surface, the axial thicknesses of the successive lenses being designated t_1 to t_6, the successive air spaces from the specimen to the eyepoint of the instrument being designated S_1 to S_6, and the refractive index and Abbe number of the glass in the aforesaid lens elements being represented by n_D and ν respectively, and F is the numerical sum of the focal lengths F_I to F_{IV},

$F_I = .1093F$	$R_{10} = .0814F$
$-F_{II} = .213F$	$R_{11} = \text{Plano}$
$F_{III} = .1625F$	$t_1 = .0224F$
$F_{IV} = .1625F$	$t_2 = .01478F$
$F_V = .1880F$	$t_3 = .01478F$
$F_{VI} = .1625F$	$t_4 = .01478F$
$R_1 = .233F$	$t_5 = .02059F$
$-R_2 = .0723F$	$t_6 = .01478F$
$-R_3 = .1482F$	$S_1 = .502F$
$R_4 = \text{Plano}$	$S_2 = .462F$
$-R_5 = .0856F$	$S_3 = .182F$
$R_6 = \text{Plano}$	$S_4 = .347F$
$-R_7 = .0856F$	$S_5 = .2138F$
$R_8 = .1168F$	$S_6 = .0729F$
$R_9 = \text{Plano}$	

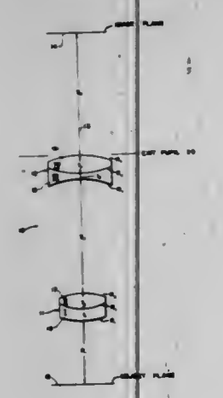
the refractive index and Abbe number being designated n_D and ν respectively for the successive lens elements I to VI, the numerical values thereof being given in the table herebelow,

Lens	n_D	ν
I	1.517	64.5
II	1.720	29.3
III	1.524	59.5
IV	1.524	59.5
V	1.621	36.2
VI	1.524	59.5

3,272,071
MICROSCOPE OBJECTIVE HAVING TWO DOUBLETS

George F. Ziegler, Gates, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed June 14, 1963, Ser. No. 288,035
4 Claims. (Cl. 88—57)



1. An objective for microscopes and the like comprising a front doublet lens and a rear doublet lens axially aligned therewith and spaced therefrom so as to form an image of an object surface and additionally form an exit pupil substantially in the plane of the rear vertex of the rearmost lens,

said front doublet lens consisting of a front negative meniscus lens element I which is in contact with a rear doublet convex lens element II,

said rear doublet lens consisting of a double concave lens element III which is in contact with a rear double convex lens element IV,

the values of focal lengths of the successive lens elements I to IV, the values of the successive lens thicknesses t_1 to t_4, the values of the successive air spaces S_1 to S_3 between the object and image, as well as the refractive indices n_D and Abbe number ν having the numerical values stated in the table herebelow,

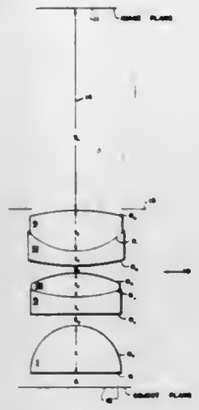
$.675F<-F_I<.745F$	$9.710F<S_3<10.730F$
$.412F<F_{II}<.454F$	$.0772F<t_1<.0852F$
$1.021F<-F_{III}<1.127F$	$.1543F<t_2<.1705F$
$.707F<F_{IV}<.781F$	$.0962F<t_3<.1062F$
$.421F<S_1<.465F$	$.1780F<t_4<.1980F$
$.744F<S_2<.822F$	

$1.619<n_D(I)<1.623$
$1.521<n_D(II)<1.525$
$1.619<n_D(III)<1.623$
$1.521<n_D(IV)<1.525$ absolute
$34.0<\nu(I)<38.0$ values
$56.0<\nu(II)<60.0$
$34.0<\nu(III)<38.0$
$56.0<\nu(IV)<60.0$

3,272,072
THREE MEMBER MICROSCOPE OBJECTIVE

George F. Ziegler, Gates, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed June 17, 1963, Ser. No. 288,366
2 Claims. (Cl. 88—57)



1. An achromatic objective for a microscope and the like having a magnification of substantially 30× and a minimum aperture of substantially 0.65, said objective forming an image of an object surface, the image being well corrected for spherical and chromatic aberrations, coma, and astigmatism, said objective furthermore forming an exit pupil substantially in the plane of the vertex of the rearmost lens surface of said objective, said objective being composed of

a front singlet lens member, and

a second and a third lens member which are compound,

said members all being optically aligned with and spaced from each other,

said front lens member being nominally a plano-convex form designated I,

said second lens member being composed of a front plano-concave lens element II and a double convex lens element III, and

said third lens member being formed of a front negative meniscus lens element IV which lies in contact with a rear double convex lens element V,

the values of the radii R_1 to R_8 of the successive lens surfaces, the values of the axial thicknesses t_1 to t_5 of the successive lens elements I to V, the values for the airspaces S_1 to S_4 between said object surface and said image being given in the table of mathematical statements herebelow wherein the minus (—) signs used with the R values applies to those lens surfaces whose centers of curvature lie on the entrant side of the vertex of said surfaces, and F denotes the equivalent focal length of said objective,

R_1=Plano	t_2=.250F
$-R_2$=.716F	t_3=.375F
R_3= Plano	t_4=.250F
R_4=2.085F	t_5=.639F
$-R_5$=1.580F	S_1=.167F
R_6=3.545F	S_2=.167F
R_7=1.052F	S_3=.0952F
$-R_8$=2.900F	S_4=30.15F
t_1=.757F	

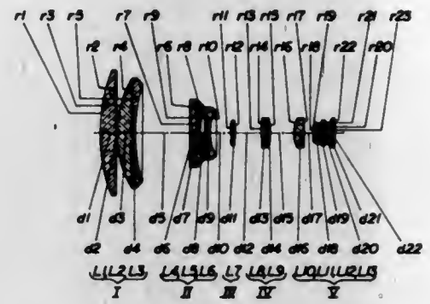
the absolute values for the refractive index n_D and Abbe number ν for the successive lens elements I to V being given in the table of mathematical statements herebelow,

$n_D(I)$=1.573	$\nu(I)$=57.4
$n_D(II)$=1.617	$\nu(II)$=36.6
$n_D(III)$=1.573	$\nu(III)$=57.4
$n_D(IV)$=1.720	$\nu(IV)$=29.3
$n_D(V)$=1.511	$\nu(V)$=63.5

3,272,073
HIGH-SPEED PHOTOGRAPHIC OR CINEMATOGRAPHIC VARIFOCAL OBJECTIVE

Günter Klemt and Karl Macher, both of Bad Kreuznach, Germany, assignors to Jos. Schneider & Co., Optische Werke, Bad Kreuznach, Germany, a corporation of Germany

Filed Dec. 23, 1964, Ser. No. 420,727
Claims priority, application Germany, Feb. 17, 1959, Sch 25,529; Aug. 5, 1960, Sch 28,268
6 Claims. (Cl. 88—57)



1. An optical objective system comprising a principal objective and an afocal attachment in front of said principal objective; said attachment consisting of four components separated from one another by variable air spaces, said components including a fixed front component of positive refractivity, a first intermediate component of negative refractivity, a second intermediate component of negative refractivity and a fixed rear component of positive refractivity, said first and second intermediate components being movable, relatively to each other and to said front and rear components, into a first position in which the system has a relatively small focal length and a second position in which the system has a relatively large focal length; said rear component having a focal length equal to at most 75% of the focal length of said front component; said front component having a focal length less than four times the focal length of said principal objective; said first intermediate component consisting of two closely juxtaposed lens members of negative refractivity separated by an air space of negative configuration, said lens members being of substantially planoconcave shape with concave rear surfaces and including a singlet preceded by a doublet with a forwardly concave collective cemented surface, said singlet and said doublet each having a concave rear surface, the rear surface of said singlet being more strongly curved than that of said doublet; said principal objective consisting of four air-spaced lens members including a positive first member, a negative second member, a positive third member and a positive fourth member, said fourth member being a biconvex lens with front and rear surfaces respectively having a shorter and a longer radius of curvature with an absolute ratio less than 1:3.

3,272,074
MUZZLE FLASH SUPPRESSOR

Neal L. Vinson, 836 Arizona SE., Albuquerque, N. Mex.

Filed Mar. 26, 1965, Ser. No. 443,135
4 Claims. (Cl. 89—14)

1. A device for suppressing the muzzle flash of a firearm, comprising:

means fitting over the end of the firearm muzzle for conducting combustion gases following a fired bullet;

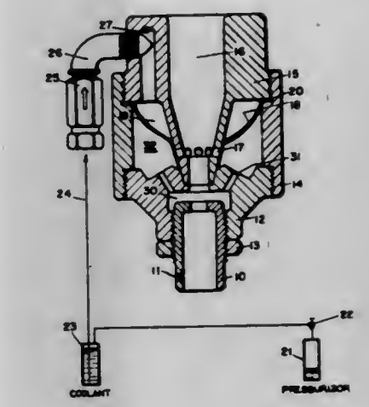
a rearwardly perforated mixing cone supported in line with said conducting means;

a stretchable diaphragm tightly covering the outside of the perforated portion of the mixing cone and extending away from the remainder thereof, forming a first chamber;

a relatively noncompressible pressurized liquid coolant having a boiling point not greater than the temperature of the combustion gases;

unidirectional means for conducting the coolant into the first chamber;

means forming a second chamber around the outside of the diaphragm;

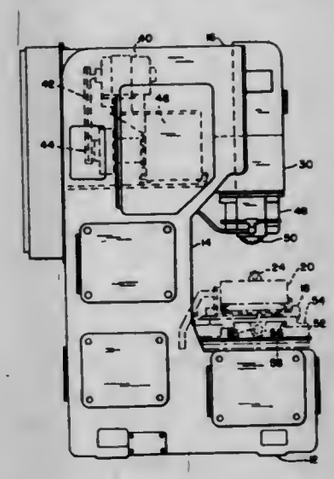


and means for admitting combustion gases from the conducting means into the second chamber whereby the diaphragm is stretched and the coolant is forced through the perforations into the mixing cone where it mixes with combustion gases, cooling them below the temperature of luminosity.

3,272,075
GEAR FINISHING MACHINE

Thomas S. Gates, Grosse Pointe Woods, Kenneth J. Davis, Grosse Pointe, and Arthur B. Bassoff, Oak Park, Mich., assignors to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan

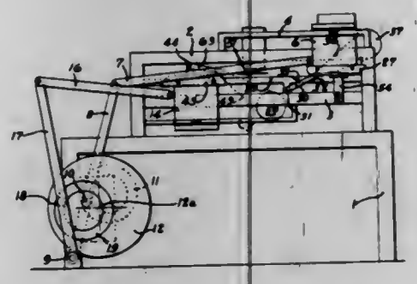
Filed Dec. 14, 1964, Ser. No. 417,946
15 Claims. (Cl. 90—1.6)



1. A gear finishing machine comprising a frame, a first rotary support on said frame for mounting a gear-like member for rotation about its axis, means for angularly adjusting said first support about an axis perpendicular to and intersecting the axis of rotation of said first support, a rocking table on said frame movable bodily thereon in rectilinear reciprocation in any direction in a plane perpendicular to the axis of adjustment of said first rotary support, a second rotary support on said table having its axis of rotation in intermediate position of said table perpendicular and intersecting the axis of adjustment of said first rotary support, the rocking axis of said table being parallel to a plane which is parallel to the axes of

rotation of both of said rotary supports, and perpendicular to the axis of rotation of said second rotary support, a first member rigid with said frame, a second member rigid with said table, cam and cam follower devices connected between said members, said cam device comprising an angularly adjustable body having parallel planar camming surfaces and being mounted on one of said members, said follower device comprising follower means movable longitudinally of the planar surfaces of said cam device, means on said cam device preventing relative separation movement between said means and said body in a direction parallel to the rocking axis of said table, an elongated pin connected to one of said devices, an elongated guide sleeve on one of said members in which said pin is longitudinally slidable, and a self-aligning bearing connecting said pin to said follower means.

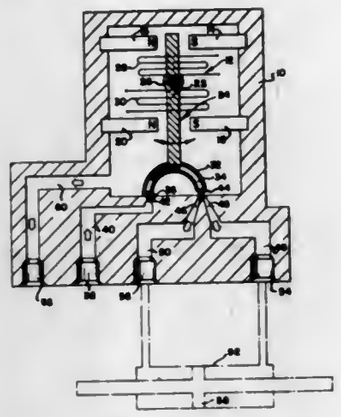
3,272,076
MACHINE FOR CUTTING SPECTACLE-LEGS OR THE LIKE
Michel Carrier, 31 Rue Pasteur, Oyonnax, France
Filed Mar. 2, 1965, Ser. No. 436,568
Claims priority, application France, Mar. 9, 1964, 44,560, Patent 1,396,560
5 Claims. (Cl. 90—13)



1. In a machine for cutting spectacle-legs or the like from a plastics plate, said machine having a stationary frame, the combination of: a first vice slidably mounted on the machine frame and gripping said plate, the protruding portion of which is displaced along a first milling-cutter having its axis moved transversely with respect to said plate by means of a first gauge-and-feeler mechanism in order to cut on said plate protruding portion the first half of the desired profile, a second vice adapted to automatically grip said plate protruding portion automatically removed from said first vice, and to displace it in a longitudinal movement along a second milling-cutter having its axis moved transversely with respect to said plate protruding portion by means of a second gauge-and-feeler mechanism in order to cut on said plate protruding portion the second half of the desired profile; means to reciprocate said first and second vice in synchronous motions; and actuating means to lock and open automatically said first and second vice at predetermined positions.

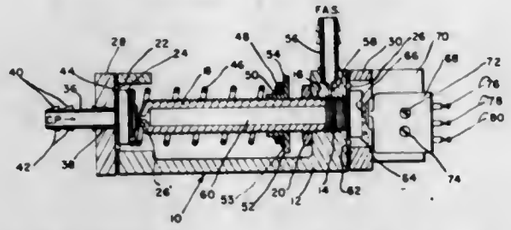
3,272,077
HYDRAULIC SERVO VALVE
John W. Meulendyk and Robert F. Boyle, Kalamazoo, Mich., assignors to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,820
6 Claims. (Cl. 91—3)

1. A fluid servo valve comprising a valve housing, fluid inlet means for supplying fluid to the interior of said housing, a plurality of fluid receiving passages in said housing, said receiving passages being adapted to communicate with an external mechanism operated by said fluid, fluid transfer means movably mounted in said housing with an end thereof adapted to receive fluid from said inlet means and direct such fluid to said receiving passages, control means for positioning said transfer means to proportion the fluid flow into said receiving passages, said end of said transfer means being formed with a curved fluid passage



the respective ends of which are closely spaced from and communicate respectively with said inlet means and said receiving passages.

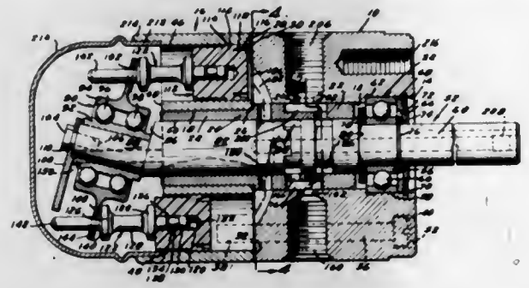
3,272,078
CONTROLLING APPARATUS
Robert S. Wilks, Philadelphia, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 402,999
2 Claims. (Cl. 91—47)



1. A fluid amplifier, comprising a fluid supply conduit, a second conduit, a restricted passageway extending between the conduits, a nozzle forming one end of the second conduit for bleeding a fluid flowing from the fluid supply conduit to atmospheric pressure, a distensible member, a plate mounted on the distensible member for respective movement therewith toward and away from the nozzle and upon the application of an increase and decrease of the magnitude of an input fluid pressure signal to another opposite surface of the distensible member, the non-bleed end of the second conduit being sealed off by means of a second distensible member, the second distensible member being employed to convert changes in the magnitude of the fluid pressure occurring in the second conduit into a mechanical motion, an adjustable means threadedly connected to the external surface of the second conduit for longitudinal movement therealong, and an adjustable biasing means is positioned to extend between the plate and the adjustable means to apply a different preselected spring load force to the plate and the first distensible member associated therewith for each different position of the adjustable means on the external surface of the second conduit.

3,272,079
FLUID PRESSURE OPERATED MOTOR
John H. Bent, Fullerton, Calif., assignor to Standard Pneumatic Motor Company, Whittier, Calif., a corporation of California
Filed Dec. 16, 1963, Ser. No. 330,845
12 Claims. (Cl. 91—175)

1. A pneumatic motor, comprising:
(A) a body having an axial bore therethrough, a pair of diametrically opposed tapped bores in said body communicating with the axial bore thereof, and a plurality of radially arranged slots at the rear of the extending from the axial bore thereof;
(B) a head secured to the rear end of the body, said head having an axial bore therethrough aligned with the axial bore of the body, and a plurality of annularly arranged and spaced cylinders extending longitudinally through the head and spaced equal distances from the axis of the head;
(C) a sealing gasket between the adjacent ends of the body and head, said gaskets having openings therethrough in register with the forward ends of the respective cylinders;
(D) a bushing operably secured in a rear portion of the axial bore in the body and in the axial bore of the head, said bushing having an axial bore therethrough coaxial with the bores of the body and head, a plurality of radial passages connecting the interior of the bushing bore with the respective slots at the end of the body, and a pair of external recesses at diametrically opposite sides thereof, one of said recesses having its rearward end connected with the axial bore of the bushing and the other of said recesses having its forward end connected with the axial bore of said bushing, the tapped bores in the body being connected with the respective recesses;
(E) a motor shaft operably disposed within the axial bore of the bushing and having a part extending forwardly of the forward end of the body, said

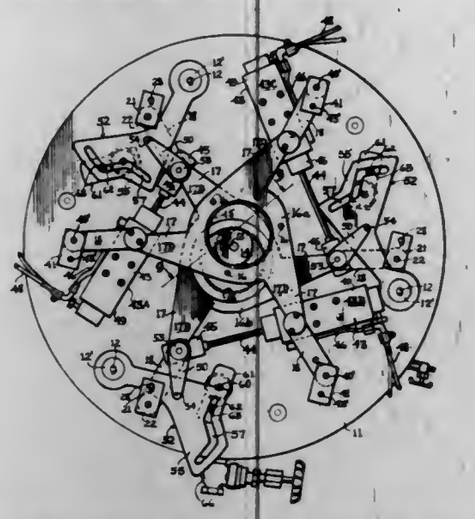


shaft having a longitudinally extending bore therein closed at both ends, a first annular groove communicating with the recess having its forward end connected with the bore of the bushing, said shaft having a second annular groove communicating with the recess having its rear end connected with the bore of said bushing said second annular groove being spaced rearwardly of the first annular groove and separated therefrom by an annular flange forming part of the shaft, said shaft having relieved portions at diametrically opposite sides with a generally wedge-shaped part of the shaft therebetween, said recesses being adapted to be connected with the radial passages of the bushing to successively supply fluid to said cylinders with rotation of the motor shaft, there being pressure fluid supplied to a plurality of cylinders at a time, the other of said recesses being adapted to be connected with cylinders for exhaust fluid, said shaft having a cross-bore connecting the second recess with the longitudinally extending bore of the shaft, whereby exhaust fluid is carried through said longitudinally extending shaft bore, into the recess connected with said longitudinal bore through the first mentioned cross-bore in the shaft, the rear end of said shaft extending rearwardly of the rear end of said bushing and being bevelled at inclination relative to a plane normal to the axis of the shaft, said bevelled end having a part spaced rearwardly of the diametrically opposite part, said shaft having a stub shaft integral with the rear end thereof and having an axis perpendicular to the rear bevelled end of said shaft, the axis of the stub shaft being offset from the axis of said motor shaft;
(F) a wobble plate assembly on said stub shaft, said wobble plate assembly including a ball bearing assembly having an inner race with an axial bore therethrough receiving the stub shaft, an outer race, and two sets of ball bearings operably positioned between the inner and outer races, said sets of ball bearings being in respective planes parallel to each other and spaced apart axially relative to said bearing assembly, and an annular flange integral with and extending about the outer race in a plane midway between the plane of the respective sets of balls, said flange comprising a wobble plate having a plurality of holes therethrough adjacent the periphery thereof, said holes being spaced equal distances from the axis of the stub shaft and being annularly spaced apart equal distances, and other holes between certain of the first mentioned holes in the wobble plate;
(G) means securing the wobble plate assembly on the stub shaft, said means including a counterbalancing weight having one end secured to the free end of said stub shaft and extending parallel to the wobble plate at one side of said stub shaft;
(H) a piston reciprocable in each of said cylinders, each piston being of a resilient plastic material having a cylindrical inner end portion engaging the walls of its cylinder and an annular groove extending from the inner end of the piston toward the outer end to thereby provide a relatively thin skirt which forms part of the cylindrical portion of the piston engaging the cylinder walls, each piston also having an axial bore extending from the rear end forwardly thereof but closed at the forward end;
(I) a piston rod having a portion disposed within the axial bore of the piston, a flange engaging the outer end of the piston, and an annular flange on said piston rod spaced rearwardly of the piston and having a frusto conical rear side, said piston rod having a rear end portion extending rearwardly from the smaller part of the frusto conical side and extending through one of the first mentioned holes in the wobble plate, said holes sufficiently larger than the portion of the piston rod extending therethrough to permit operable movements of said wobble plate;
(J) and a washer on the rearward end portion of the piston rod disposed between the frusto conical side of the flange on the piston rod and the adjacent side of the wobble plate, said washer serving as a bearing.

3,272,080
TORQUE DRIVE MECHANISM
Hazelton H. Avery, Clarks Hill, Ind., assignor of one-half to Rush Metal Products, Inc., Lafayette, Ind., a corporation of Indiana
Filed Sept. 20, 1963, Ser. No. 310,224
13 Claims. (Cl. 91—186)

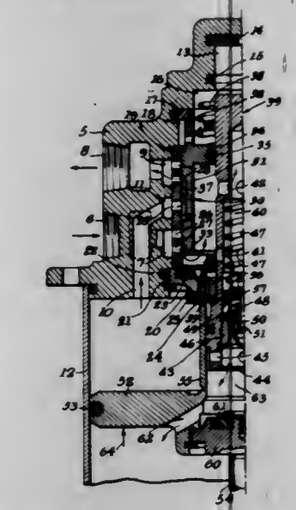
1. A torque drive mechanism including a driven shaft,
(a) a plurality of shaft driving means each having formed therein a center circular opening through which said shaft projects,
(b) said shaft driving means being eccentrically positioned about said shaft with a peripheral sector of the center opening of each engaging opposite corresponding peripheral sectors of said shaft so as to form a drive coupling therebetween,
(c) each of said shaft driving means providing radial arms, with the arms of one of said shaft driving means extending in an opposite and tangential direction with respect to the radial arms of said other driving means,

(d) pivotal means connected to the free ends of said arms for directing said shaft driving means in a continuous circular path about said shaft while maintaining the coupling connection therebetween,
(e) means connected between and operable on said arms for driving said arms through a circular path



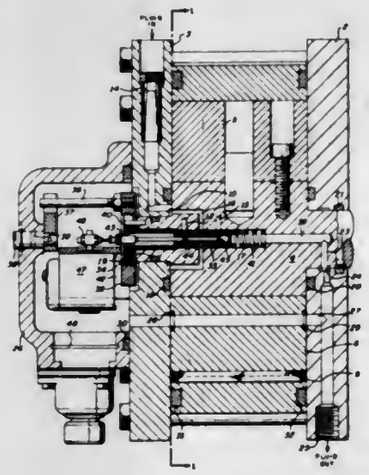
about their pivotal connecting means and said shaft driving means about said shaft,
(f) means for effecting the operation of said driving means, and
(g) means controlled by said last named means for operating said driving means.

3,272,081
AIR MOTOR
Borgert Vedder, Fullerton, Calif., and John Vedder, Torrance, Calif. (both of 14032 S. Avalon Blvd., Los Angeles, Calif. 90061)
Filed Jan. 4, 1965, Ser. No. 422,907
6 Claims. (Cl. 91—228)



1. An air motor comprising:
(a) a body with an air inlet and an air exhaust and having a bore and two sets of ports connecting said bore and the inlet and exhaust, respectively,
(b) an air cylinder extending from said body and open to said bore,
(c) the body having ports intermediate the mentioned two sets of ports and passage means from said intermediate ports to the portion of the cylinder adjacent the body,
(d) an air piston in said cylinder provided with a hollow stem operative in the body bore and having ports opening through the bottom thereof,
(e) a four-way valve sleeve movable in said bore between upper and lower positions with a spring to bias the sleeve to its lower position, said sleeve in one position providing communication between the air inlet and the body bore and between the air exhaust, through the passage means, and the upper portion of the air cylinder, and said sleeve in the other position providing communication between the air inlet and said passage means and upper portion of the air cylinder, and between the air exhaust and the body bore,
(f) a pilot valve having an axial bore and guided in said sleeve provided with a piston at one end, said pilot valve being shiftable by air pressure from the inlet entering the body bore, as controlled by the four-way valve sleeve,
(g) a check valve, carried by the pilot valve, that opens to air pressure in the bore thereof to provide operating pressure, through the ports in the air piston, on the under surface of the latter, and
(h) a second check valve carried by the pilot valve that opens in the opposite direction to pass pressure air from beneath the air piston into the body bore.

3,272,082
HYDRAULIC APPARATUS
Benjamin Quesenbury Bertram, Staines, and Ronald Walters, Wembley, England, assignors to The Sperry Gyroscope Company Limited, Brentford, England, a company of Great Britain
Filed Jan. 13, 1964, Ser. No. 337,327
Claims priority, application Great Britain, Jan. 16, 1963, 1,978/63
6 Claims. (Cl. 91—378)

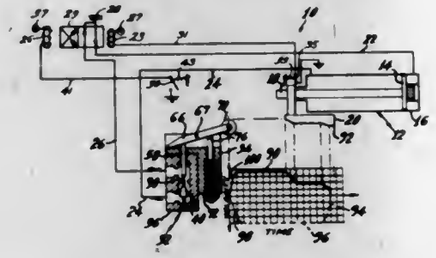


1. Apparatus utilizing an actuating fluid including a housing having differential fluid pressure chambers and a fluid outlet chamber, a shaft mounted in the housing to move about an axis having an axial cavity with an open end arranged in the housing in adjoining relation with the fluid outlet chamber, stop means between the housing and shaft for limiting the angular motion of the shaft about the axis, a piston structure extending from the shaft between the differential fluid pressure chambers in the housing and adapted to oscillate angularly with said shaft; valve means for the differential chambers including a sleeve slidable in the axial cavity in the shaft having respective open ends, respective axially spaced control ports and a fluid inlet port between the control ports, a piece mounted within the sleeve to move along the axis having lands spaced to cooperate with the control ports in the sleeve; a fluid inlet passageway in the shaft to the inlet port, a fluid inlet passageway in the housing to the shaft inlet passageway, a fluid passageway in the shaft between one of the control ports and one of the differential chambers, a fluid passageway in the shaft between the other of the control ports and the other of the differential chambers, a fluid passageway in the housing to the fluid outlet chamber and a passageway in the housing between the outlet passageway and the other end of the sleeve of the valve means; a settable input part, means for connecting the sleeve and the shaft to the settable input part to adjust the neutral point of the valve means, and input means having a part fixed to the housing and a part operatively connected to the land piece.

ERRATUM

For Class 91—384 see:
Patent No. 3,272,062

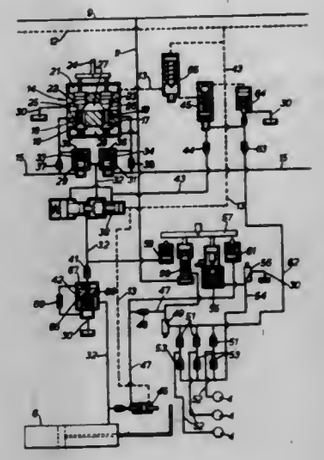
3,272,083
SPEED REGULATING VALVE
Kurt Stoll, 125 Hirschlandstrasse, Esslingen (Neckar), Germany
Filed Nov. 3, 1965, Ser. No. 513,627
Claims priority, application Germany, Mar. 18, 1961, F 33,444
6 Claims. (Cl. 91—405)



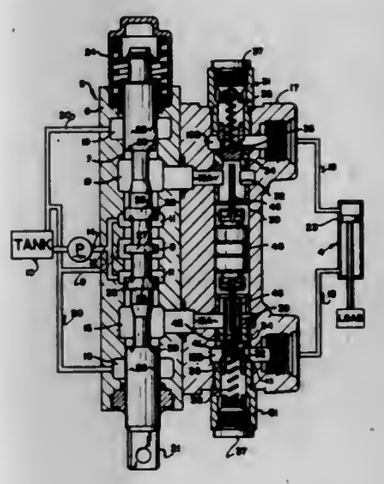
4. In an automatically controlled fluid system, a reversely movable piston, a contoured cam movable with said piston, a movable speed regulating valve mechanism including a movable valve element, a source of fluid, a fluid circuit connecting said fluid source with said piston and including fluid conduit means connecting said valve mechanism with said piston, said valve element being movable in said fluid circuit to open and close and variably regulate the passage of fluid through said circuit in two directions, means on said speed regulating valve mechanism engageable with said cam during the movement thereof and connected with said valve mechanism to cause the valve element to move an amount in accordance with the contour of said cam to vary the amount of the flow of fluid in one direction about said valve element to said piston according to the contour of said engaged cam whereby said piston is caused to move in one direction at speeds corresponding to the varied flow of fluid, said valve element being movable in response to fluid pressure in the reverse of said one direction of flow of fluid to reverse the direction of the flow of fluid to said piston to cause said piston to move in the reverse direction at speeds uncontrolled by the contour of said cam.

3,272,084
ROOF SUPPORT ASSEMBLIES SUITABLE FOR USE IN MINES
Douglas Herbert Hewlett Bolton, Winchcombe, Frank Pawling, Charlton Kings, and Michael Charles Potts, Prestbury, England, assignors to Dowty Mining Equipment Limited
Filed May 13, 1965, Ser. No. 455,541
Claims priority, application Great Britain, May 15, 1964, 20,382/64
7 Claims. (Cl. 91—414)

1. A roof support assembly including a series of advanceable roof supports, each roof support having at least one fluid-pressure-operated prop operable to set the support against a roof and a fluid-pressure-operated jack operable to advance the support, each roof support also having a valve assembly controlling the operation of the prop and the jack, the valve assembly being operated by the receipt of a signal from the preceding roof support in the series to cause its roof support to undergo an advancing operation, and the valve assembly being responsive to the satisfactory completion of the advancing operation of its roof support to send a signal to the next roof support in the series, and by-passing means operable from a position remote from the roof supports to cause the signal to be sent from one roof support to the next roof support in the event of failure of the roof support to satisfactorily complete an advancing operation.



3,272,085
FLUID SYSTEM AND VALVE ASSEMBLY THEREFOR
Louis G. Hajma, Warrensville Heights, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 19, 1963, Ser. No. 324,610
8 Claims. (Cl. 91—420)



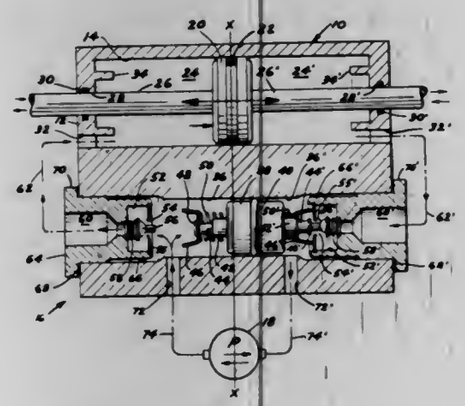
1. A directional control valve comprising a housing having a bore intersected axially therealong by inlet, cylinder, and return passages which are adapted to be connected, respectively, with a fluid pressure source, a fluid motor, and a reservoir; a valve spool reciprocable in said bore to positions selectively opening fluid communication

between said cylinder passage and said inlet and return passages; still another passage in said housing intersecting said bore, said another passage being in fluid communication with said inlet passage when said cylinder passage is communicated with said return passage as aforesaid; a check valve in said cylinder passage opened by fluid pressure when said cylinder passage is communicated with said inlet passage; and a fluid pressure actuated plunger means in said another passage operative to be moved to a position opening said check valve when said cylinder passage is communicated with said return passage and said another passage is communicated with said inlet passage; said check valve comprising pilot and main checks of which the former has a relatively small effective area as compared with the effective area of said plunger means, whereby a lower pressure acting on said plunger means than on said pilot and main checks tending to close the same will still be effective to cause said plunger means to open said check valve as aforesaid, thereby permitting return flow of fluid through said check valve to said return passage; said spool having metering means variably to restrict return flow from said cylinder passage to said return passage and thus to build up pressure in said cylinder passage tending to oppose movement of said plunger means in a direction opening said check valve; said plunger means being operative first to engage said pilot check to open the same and then said main check if the fluid pressure acting on said plunger means exceeds that which builds up in said cylinder passage due to metering by said spool as aforesaid.

3,272,086
REVERSIBLE SELF-LOCKING HYDRAULIC SYSTEM

Raymond A. Soeters, Royal Oak, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Mar. 2, 1965, Ser. No. 436,494
3 Claims. (Cl. 91—420)



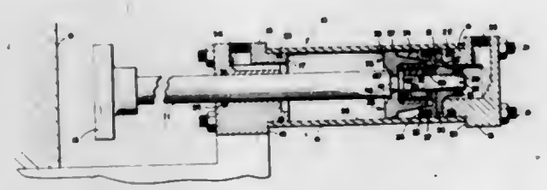
1. A closed hydraulic system, comprising a two-way hydraulic piston, a source of hydraulic pressure, means for applying said hydraulic pressure to one side or the other of said piston, means for relieving the pressure on the opposite side of said piston, and means for locking said piston against movement due to external forces when said source of fluid is inoperative, said first mentioned means including a spring-loaded check valve and said means for relieving and said means for locking including a second spring-loaded check valve and a piston having dual springs and dual slidable retainer members operatively associated therewith for permitting said second check valve to close when said source of hydraulic pressure is inoperative and for providing instantaneous opening of said second check valve when said source of hydraulic pressure is operative.

3,272,087
FORCE MULTIPLYING AND SAFETY POWER CYLINDER

Perrin C. Culver, Compton, Calif., assignor, by mesne assignments, to Compressed Air Service Company, Dayton, Ohio, a corporation of Ohio

Filed Oct. 9, 1964, Ser. No. 402,905
10 Claims. (Cl. 92—24)

1. A power cylinder device comprising
a cylinder,
piston means in said cylinder and movable through a stroke relative thereto,
a rod means in said cylinder and extending outwardly therefrom,
said piston means being movable relative to said rod means,
resilient means interconnecting said piston means and said rod means for transmitting a force from said piston means to said rod means,
and lock means for said rod means, said lock means including a plurality of members interposed between said rod and the inner circumferential wall of said cylinder, each of said members having a forward



outer corner adjacent said wall and an inner rearward corner adjacent the periphery of said rod means,
said lock means being operable by said piston means upon relative movement of said piston means and said rod means in opposition to said resilient means,
for rotating said members so as to bring said forward outer corner and said rearward inner corner of each of said members respectively into wedging engagement with said wall of said cylinder and said periphery of said rod means for precluding movement of said rod means through more than a predetermined limited increment of travel upon said relative movement.

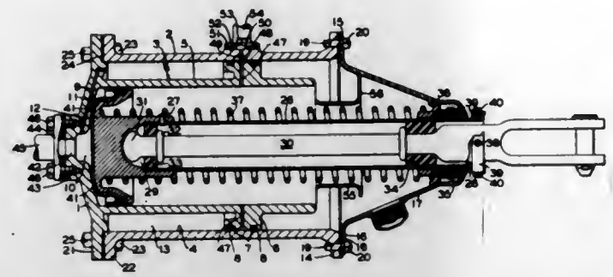
3,272,088
CONVERSION BRAKE CYLINDER

John E. Kistler, Atlanta, Ga., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed June 17, 1964, Ser. No. 375,852
9 Claims. (Cl. 92—59)

1. A brake cylinder device comprising:
(a) a brake cylinder body provided with a bore and a port opening at one end at the wall surface of said bore and at the opposite end to the exterior of the body for connection to an exterior device,
(b) a non-pressure head secured to one end of said brake cylinder body,
(c) a hollow sleeve, the outside diameter of which is less than the diameter of the bore in said brake cylinder body,
(d) a pressure head having one end of said hollow sleeve attached thereto whereby said pressure head can be secured to the other end of said brake cylinder body in substitution for the usual pressure head, to position said hollow sleeve in said brake cylinder body coaxial therewith,
(e) an out-turned flange formed integral with said hollow sleeve and located thereon so as to be in alignment with the end of the port that opens at the wall

surface of said bore in said brake cylinder body, said out-turned flange being provided with a passageway opening at one end at the inside wall surface of said hollow sleeve and communicating at the opposite end with said port, and

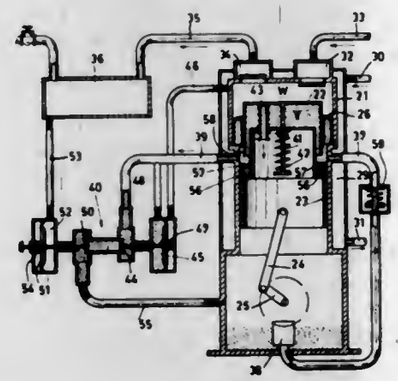


(f) sealing means interposed between the inside wall surface of said bore in said brake cylinder body and the periphery of said out-turned flange and providing a sealed communication between said passageway in said out-turned flange and the port in said brake cylinder body.

3,272,089
DEVICE FOR COMPRESSING OR EXPANDING A MEDIUM

Johan Adriaan Rietdijk, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 12, 1964, Ser. No. 410,664
Claims priority, application Netherlands, Nov. 15, 1963, 300,572
3 Claims. (Cl. 92—83)

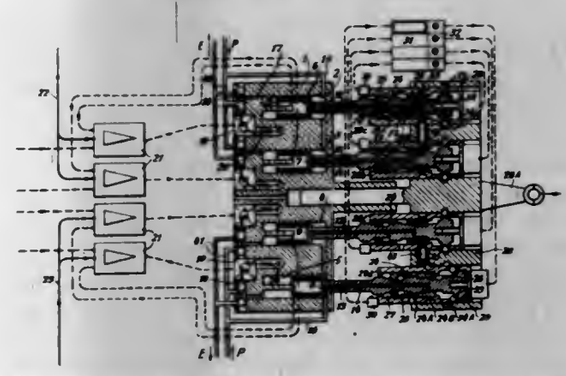


1. A device for compressing and expanding a medium comprising cylinder means, first and second piston-like bodies adapted to reciprocate in said cylinder means, a driving gear connected to said second piston-like body, said cylinder means and said first piston-like body defining a work space, said first piston-like body varying the volume of said work space when the same is reciprocated, a liquid column between said first and second piston-like bodies and engaging the side of said first piston-like body remote from said work space, a rolling membrane seal between said first piston-like body and said cylinder means and being in contact at least on one side thereof with said liquid column, means for maintaining a pressure difference on said rolling membrane that is substantially constant, said first piston-like body being provided with a sheath-like element extending in the direction of said second piston-like body, and a resilient, deformable sealing element at least partially surrounding said second piston-like body and which has an outer diameter that is smaller than the inner diameter of the adjacent wall of said cylinder means, said sheath-like element having such a length that at the minimum permissible distance between said two piston-like bodies said sheath-like element deforms said sealing element whereby a seal is effected between said second piston-like body and the adjacent wall of the cylinder means.

3,272,090
FAIL-SAFE HYDRAULIC ACTUATORS

Stafford Malcolm Ellis, London, England, assignor to Elliott Brothers (London) Limited, Lewisham, London, England, a British company

Filed Sept. 23, 1964, Ser. No. 398,612
Claims priority, application Great Britain, Sept. 25, 1963, 37,795/63
7 Claims. (Cl. 92—140)

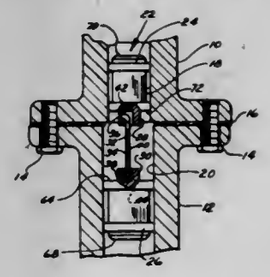


1. A parallel redundant hydraulic actuator system comprising three or more control paths each including an actuator unit which includes means whereby any one of the actuator units may be disengaged as the result of a malfunction or other event, latching means including a plurality of members each unpositively interlocked with an associated one of said actuators, said members being movable to unlock from its associated unit upon disengagement thereof, and means for transmitting movement of one member to the other members and effective upon the disengagement of the last of a predetermined number of actuator units to move said members to positively interlock with at least two remaining engaged units.

3,272,091
PISTON ASSEMBLY

Walter F. Dziedzic, Detroit, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Nov. 27, 1964, Ser. No. 414,945
5 Claims. (Cl. 92—152)

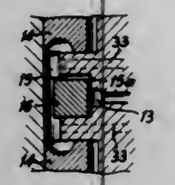


1. A piston assembly for reciprocating movement within adjacent misaligned cylinders, said assembly comprising first and second pistons, the adjacent end of each of said pistons having an extension formed thereon, each of said extensions having intersecting axial and transverse openings formed therein, and an elongated connector having the ends thereof bent to form right angles with the axis of said connector and with each other, said ends being inserted into said transverse openings.

3,272,092
LUBRICATING ARRANGEMENT FOR A RECIPROCATING COMPRESSOR

Oskar Vielmo, Stuttgart-Sonnenberg, and Josef Trui, Bissingen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Jan. 26, 1965, Ser. No. 428,100
Claims priority, application Germany, Feb. 27, 1964, B 75,621
6 Claims. (Cl. 92—157)

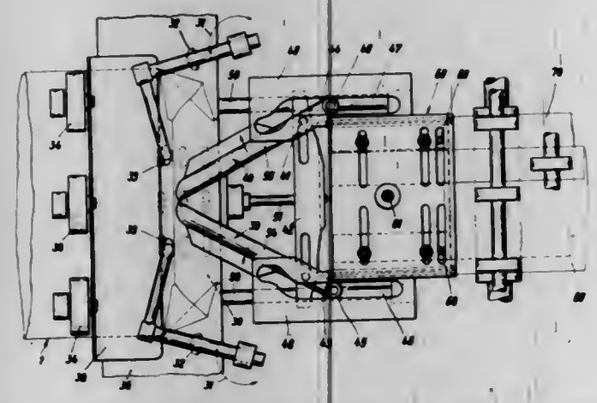


1. In a compressor, in combination, a cylinder member; a piston member mounted in said cylinder member for axially reciprocating movement, said members having respective closely adjacent circumferential walls; a plurality of axially spaced sealing ring means on said wall of the piston member in sliding engagement with said wall of the cylinder member, said piston member being formed with an annular groove axially intermediate two of said sealing ring means; a control ring arranged in said groove, said ring being dimensioned for limited axial and radial movement in said groove during said reciprocating movement of the piston member and defining a circumferentially extending channel in said groove; lubricant feed means for feeding a liquid lubricant to one circumferential portion of said channel; and lubricant return means for withdrawing at least a portion of the fed lubricant from another portion of said channel circumferentially spaced from said one portion.

3,272,093
METHOD AND APPARATUS FOR THE MANUFACTURE OF A SQUARE-BOTTOM-BAG OF A WELDABLE MATERIAL

Friedrich Franz Brockmüller, Lengerich, Westphalia, Germany, assignor to Windmöller & Hölscher, Lengerich, Westphalia, Germany

Filed July 16, 1963, Ser. No. 295,440
Claims priority, application Germany, July 21, 1962, W 32,643
16 Claims. (Cl. 93—8)

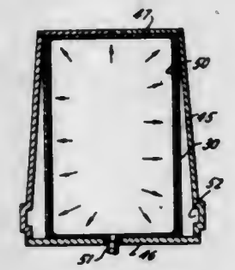


7. A device for manufacturing flat-bottom bags of weldable material from tubular stock, comprising in combination, a suction device adapted to open one end of a flattened tubular section of weldable material, said suction device including a suction plate, air suction means operatively mounted in said suction plate for holding the lower wall of said flattened tubular section, a pair of sucker arms pivotably mounted in said device above said suction plate and adapted to engage the upper wall of said flattened tubular section and open thereby said end of said flattened tubular section, a plate fixedly mounted adjacent said suction plate and adapted to define a center fold in the tubular stock and to support a portion of said upper wall of said tubular section which is folded back during the opening of the end thereof, a pair of spreader arms swingably mounted in said device adjacent to said suction plate and adapted to spread the opened end of said tubular section until said end assumes a substantially flat configuration with a pair of corner folds, base sheet feeding means operatively mounted in said device and adapted to position at least one base sheet on said end of said tubular section spread by said pair of spreader arms so that the edges of said pair of corner folds are covered by said base sheet and welding jaw means operatively mounted in said device and adapted to weld said base sheet to said end while the latter is being spreadingly held by said pair of spreader arms.

3,272,094
TAPERED FIBER DRUM AND METHOD OF MAKING THE SAME

Herbert L. Carpenter, Jr., Babylon, N.Y., assignor to The Greif Bros. Cooperage Corporation, Delaware, Ohio, a corporation of Delaware

Filed Jan. 23, 1964, Ser. No. 339,751
15 Claims. (Cl. 93—39.1)



1. The method of forming a tapered fiber shell for use in a tapered container body suitable for stacking in nested relation with other similar container bodies which comprises: first forming a tubular shell of substantially uniform cross-sectional size and shape from end to end from convolutely wound layers of fibrous material laminated together and then while the paper is in stretchable deformable condition placing one surface of the shell immediately adjacent a tapered form while applying a force between the form and the shell to cause the shell to conform in shape to the form and assume a tapered configuration increasing gradually and substantially uniformly in cross-sectional dimension from one end to the other.

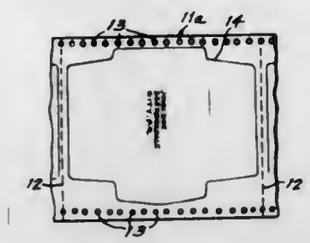
3,272,095
CONTINUOUS PROCESS FOR ADDRESSING AND FORMING ENVELOPES

Jack Heuff, 1284 Osborne Ave., Verdun, Quebec, Canada

Filed Aug. 26, 1963, Ser. No. 304,353
Claims priority, application Canada, July 17, 1963, 880,390, Patent 686,619
9 Claims. (Cl. 93—61)

1. A process for addressing and making a series of envelopes which comprises continuously feeding a single thickness of continuous stock tab paper consisting of a plurality of interconnected tab units to a computing machine suitable for handling such paper and having a printing mechanism actuatable for translating into print onto one side of each of said tab units information corresponding to a series of different names and addresses fed into it, said continuous stock tab paper being provided with

locating means adapted for co-operation with feeding means of said computing machine to control the travel of said paper successively to present a selected area of each of said tab units to said printing mechanism while actuating said printing mechanism whereby each said unit

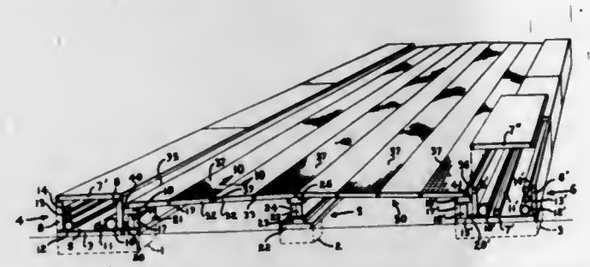


is printed in said selected area with a name and address corresponding to said information, die cutting each of said printed tab units to produce an envelope blank and converting each of said blanks into an envelope using as the front face thereof the printed side of said blank.

3,272,096
ROADWAY STRUCTURE AND METHOD OF MAKING SAME

Quon C. Lum, 1931 N. King St., Honolulu, Hawaii

Filed Apr. 2, 1963, Ser. No. 270,080
10 Claims. (Cl. 94—1)

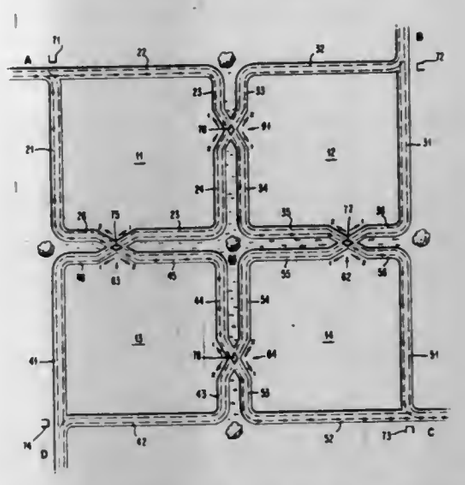


1. A roadway structure comprising spaced foundation means, spaced side support portions supported by said foundation means, said support portions comprising a plurality of individually pre-cast, individually pre-stressed concrete modules adhesively secured to one another, a main roadway portion comprising a plurality of individually pre-cast, individually pre-stressed concrete modules disposed in edge-to-edge relationship with one another, epoxy means adhesively securing said last-mentioned modules together only along the abutting edges thereof to form a main roadway portion having a smooth upper surface for supporting vehicles moving thereover, said main roadway portion being supported at the opposite longitudinally extending edges thereof by said support portions, central support means supporting a central portion of said main roadway portion with the remaining portions of the main roadway portion between said central support means and said side support portions supported solely by the adhesive interconnection with adjacent modules of the main roadway portion, said side support portions including spaced modules defining gutters at opposite sides of said main roadway portion to receive liquid and other material from said main roadway portion, said side support portions also including spaced modules defining storm drains for receiving liquid from said gutters and for draining away liquid to an underlying surface, said side support portions also including spaced modules defining enclosed areas adjacent said storm drains, the top of each of said enclosed area being closed by modules forming a cover portion which also serves as a sidewalk for pedestrians.

3,272,097
TRAFFIC INTERSECTION

Denos C. Gazis, Millwood, N.Y., and Renfrey B. Potts, Erindale, South Australia, Australia, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 9, 1963, Ser. No. 329,070
10 Claims. (Cl. 94—1)



7. In a traffic control and roadway system controlling the flow of continuous streams of traffic through an intersection, the roadways of said intersection surrounding a four block matrix forming four pairs of adjacent interior roadways, and four peripheral roadways between the corners of the matrix and said interior roadways, the system comprising:

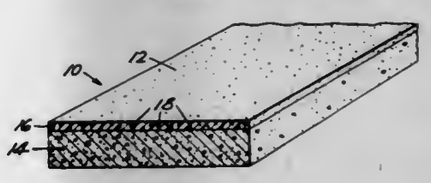
traffic controlling means located at the outer corners of the matrix for directing traffic approaching the corners of the matrix alternately in a clockwise direction about the peripheral roads of the matrix and then in a counter-clockwise direction; and

four additional traffic controlling and guiding means each located along a different pair of interior roadways for directing and switching the traffic from one interior roadway to the other adjacent interior roadway and vice versa.

3,272,098
PAVING MATERIAL AND PAVING SURFACING

Theodore Buchholtz, St. Paul, George M. Rambosek, Maplewood, and Richard G. Drew, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 23, 1962, Ser. No. 211,513
7 Claims. (Cl. 94—7)



1. A tough resilient paving surfacing adhered to a rigid substrate which paving surfacing is capable of quick, simple repair and which maintains good non-slip characteristics when wet, said surfacing being resiliently deformable and having a Shore A_2 scale durometer in the range of about 30 to 80, said surfacing comprising in combination about 90% to 50% by volume of a cross-linked resilient polymeric organic polyol based polyurethane rubber and about 10% to about 50% by volume of resilient aggregate, said aggregate being of an average size in the range of about one-sixteenth of an inch to about three-quarters of an inch, said surfacing being directly bonded to said substrate and being the

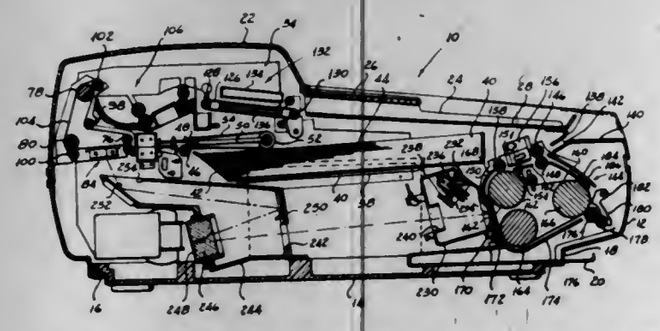
solidified product of a substantially volatile solvent free 100% solids forming liquid material carrying said aggregate therewithin and being capable of solidifying at ambient temperature to a non-flowing slump resistant state in a period of about one hour said liquid material comprising a reaction mixture consisting essentially of organic polyol and organic polyisocyanate in amounts providing an approximately equivalent number of NCO to OH groups, and an ambient temperature curing catalyst therefor.

3,272,099
STRINGLINE ATTACHMENT FOR PAVING MACHINE
Frank M. Drake, Topeka, Kans.
(612 W. 47th St., Kansas City, Mo. 64112)
Filed Jan. 31, 1963, Ser. No. 255,332
9 Claims. (Cl. 94—46)



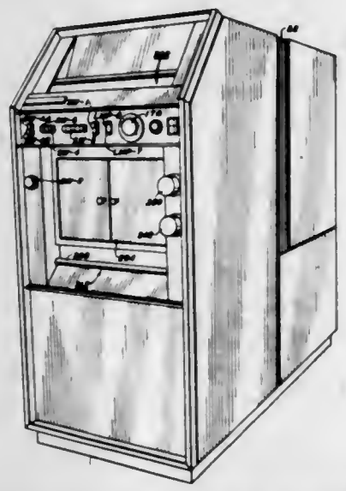
4. In a paving machine of the type having a main body, mobile on a roadway, a screed carried in towed relation on a pair of rocker arms pivoted on said body, means adjustably connecting said screed and said arms to vary the attitude of said screed with respect to said rocker arms, and sensing means operatively associated with said screed, the improvement comprising an elongated walking beam medially pivoted to and extending well in advance of and to the rear of said body, on a shaft extending laterally from one side thereof, a ground-engaging wheel carried at each of the outer ends of said walking beam, anchor means for a stringline carried by said walking beam near each end thereof, and a stringline attached at its ends to said anchor means said sensing means being in contact with a point midway of said stringline.

3,272,100
ELECTROSTATIC COPIER
Marvin W. Teutsch, Phoenix, Ariz., assignor to Nuclear Corporation of America, Phoenix, Ariz., a corporation of Delaware
Filed Oct. 30, 1963, Ser. No. 320,159
8 Claims. (Cl. 95—1.7)



1. A copying machine for producing copies of an original on photoconductive copy sheets including in combination means for applying an electrostatic charge to a sheet, an open exposure window through which a charged sheet is exposed to an image of the original to produce a latent electrostatic image of the original, a plurality of filament strands extending across said window for supporting a sheet, a developing station at which the exposed sheet is subjected to the action of toner to develop said latent image, said developing station having an entrance, respective conveyors having contiguous lengths thereof extending from adjacent said window to the entrance of said developing station, means comprising said contiguous conveyor lengths for carrying charged sheets successively past said charging means and said window and said developing station, an original exposure window, an original transport system for carrying an original past said original exposure window, means for transferring an image of an original passing said exposure window to a photoconductive copy sheet passing by said open exposure window, means responsive to entry of an original into said original transport system for activating said copy carrying means, means adapted to be actuated to recirculate said original through said original transport system, means for counting the number of passages of an original through the original transport system and means responsive to said counting means for deactivating said carrying means.

3,272,101
XEROGRAPHIC APPARATUS
Thomas C. Murray, Rochester, Russell R. Roberts, Ontario, and Norbett H. Kaupp, Newark, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 3, 1964, Ser. No. 348,950
3 Claims. (Cl. 95—1.7)

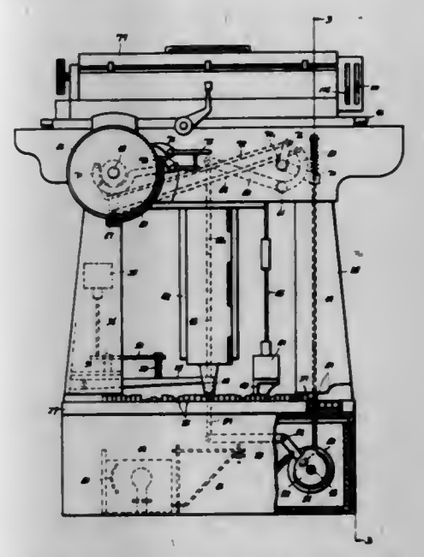


1. A xerographic apparatus for processing multiple xerographic plates including:
a plate transport system for asynchronously moving xerographic plates through a series of processing stations,
the plate transport system comprising:
(a) a series of drive rollers and pinch rollers to drive the xerographic plates between the process stations,
(b) guide rollers to properly align the plates,
(c) a motor to drive the drive rollers, and
(d) stopping means to regulate the movement of the xerographic plates through the process stations,
a corona generating device positioned adjacent to the transport system to place a uniform charge on a xerographic plate as it moves in the transport system,
a series of processing stations including:
a plate loading station adapted to receive a xerographic plate in a position to be carried by the transport system, and located immediately ahead of the corona discharge device,
an exposure station wherein a xerographic plate is exposed to a light image to form a latent electrostatic image on said plates comprising:
(a) a copy board, movably mounted on a frame, upon which is mounted an image to be reproduced,

(b) a lens system, held in a support frame that is movable to points intermediate a xerographic plate in the transport system and the copy board, whereby the lens can be adjusted to focus the image from the copyboard onto the xerographic plate,
(c) a shutter assembly positioned to control the passage of light from the image to the xerographic plate,
(d) a lamp system to provide a light source capable of reflecting the image on the copy board to the xerographic plate,
(e) a light shield positioned to prevent extraneous light from reaching the surface of the xerographic plate, and
(f) a timing device to actuate the shutter and light system for a predetermined period of time,
a developing station to develop a latent image upon an electrostatically charged and exposed xerographic plate comprising:
(a) a housing capable of holding a quantity of developing material and having an opening adapted to receive a xerographic plate,
(b) a means to clamp the xerographic plate in the housing opening,
(c) a pair of pivot arms holding the housing and rotatably mounted so that the housing may be rotated through a series of positions whereby developer in the housing is cascaded over a plate in the housing opening,
(d) means to program and control a predetermined number of movements of the housing through the series of positions, and
(e) means to effect removal of the xerographic plate from the developer housing upon termination of the predetermined number of movements,
and a control means to regulate the asynchronous movement of plates between processing stations so that plates are advanced to successive stations only upon removal of plates from each station, said control means being asynchronous so that more than one process can be carried on at one time, and including means to retain a plate in the exposure station for more than one exposure.

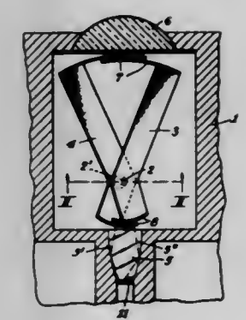
3,272,102
PHOTO-TYPESETTING MACHINES
Nobuo Morisawa, 351 Hitomaru-cho, Akashi, Japan
Filed Aug. 5, 1963, Ser. No. 300,018
2 Claims. (Cl. 95—4.5)

1. A photo-typesetting machine comprising a straight, linear letter board, a plate on which said letter board is mounted, said plate being movably mounted on said machine for linear reciprocating movement, said plate having a rack thereon extending along the length thereof, said plate further having a plurality of adjusting pieces thereon each having a height proportional to the breadth of a corresponding letter on the letter board, pawl means engageable with said rack for holding said rack and said letter board in a fixed position, said pawl means including an electromagnetic actuating means for thus engaging said pawl means with the rack, a photographic lens system fixedly mounted on said machine above said letter board and including a shutter mechanism, electromagnetic shutter actuating means coupled to said shutter, a magazine above said lens system and having means for moving a sheet of photosensitive material past the upper end of said lens system, and means for moving said magazine past the end of said lens system in the same direction as the extension of said letter board and including a ratchet wheel, a cover for said ratchet wheel and a ratchet engageable with said wheel for rotating said wheel when said cover is rotated, and a cover and ratchet moving means including a linkage coupled to said cover and having a feeler engageable with said adjusting pieces on said plate for limiting the movement of said linkage so that it is proportional to the height of said adjusting pieces, and further including a motor, a



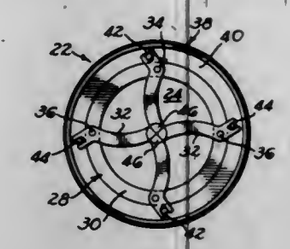
camshaft, an electromagnetic clutch coupling said motor and said camshaft, said clutch being coupled to and actuated by said electromagnetic shutter actuating means, cam means on said camshaft, said linkage engaged with said cam means and moved by said cam means.

3,272,103
PHOTOELECTRIC MEASURING DEVICE
Martin Ploke, Kiel, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Oct. 31, 1963, Ser. No. 320,317
Claims priority, application Germany, Nov. 7, 1962, Z 9,757
8 Claims. (Cl. 95—10)



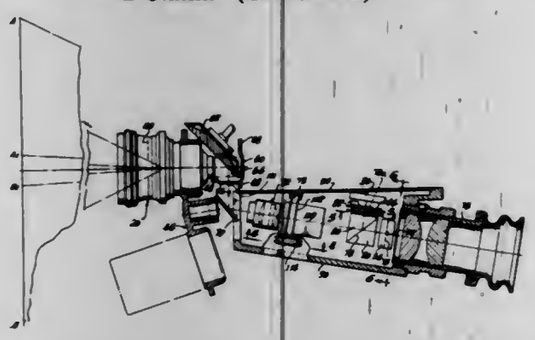
5. A device for photoelectric optometry having an optical axis including an objective arranged in said optical axis in front of a photoelectric measuring surface, an adjustable field of vision diaphragm (8) positioned in the focal plane of said objective, a second adjustable diaphragm (7) arranged in axially spaced relation from said first mentioned field of vision diaphragm, two double-armed pivotally connected levers operatively connecting said two diaphragms with one another so that an adjustment of one of said diaphragms in one direction causes an adjustment of the other one of said diaphragms in the opposite direction, and light collecting optical means arranged in the area of said focal plane in front of said photoelectric measuring surface through which the measuring light rays pass before they reach said measuring surface.

3,272,104
CAMERA WITH LIGHT MEASURING DEVICE
Harold R. Lytton, 11540 Blix, North Hollywood, Calif.
Filed Feb. 9, 1965, Ser. No. 431,259
3 Claims. (Cl. 95—10)



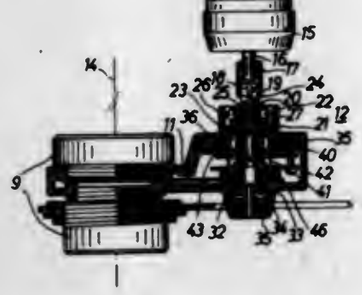
1. In combination with a camera receiving light along a predetermined light path, a light measuring device including:
(a) supporting means located externally of the light path;
(b) a plurality of arms having inner and outer ends;
(c) photosensitive elements respectively carried by the inner ends of said arms;
(d) means mounting said outer ends of said arms on said supporting means for swinging movement of said arms in a plane perpendicular to the light path from inoperative positions wherein said arms and said photosensitive elements are located externally of the light path, through a series of first operative positions wherein said photosensitive elements are uniformly spaced apart within said light path, to second operative positions wherein said photosensitive elements are in juxtaposition at the center of said light path;
(e) actuating means for swing said arms between said inoperative positions and said second operative positions through said first operative positions; and
(f) said photosensitive elements being electrically interconnected to provide a composite measurement of the light incident thereon.

3,272,105
EXPOSURE METER SYSTEM
Emanuel C. Manderfeld, Hollywood, Calif., assignor to Mitchell Camera Corporation, Glendale, Calif., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,102
1 Claim. (Cl. 95—42)



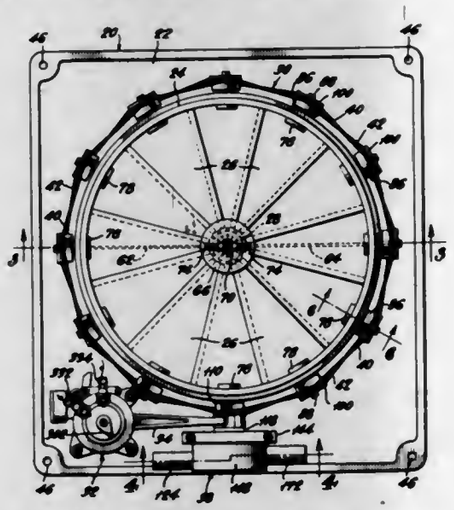
An integrated motion picture camera and exposure guide system comprising in combination
camera mechanism including a film aperature and an objective lens of continuously variable focal length for focusing at the film aperture a film image representing a correspondingly varying angular portion of a scene to be photographed,
light sensor means having a light responsive surface of predetermined area and producing an electrical output corresponding to the brightness of illumination of that area,
optical finder means having a focal plane and ocular lens means for viewing an optical image in the focal plane,
optical means in the path of light from the objective lens for dividing said light to form auxiliary ocular and sensor images respectively at the finder focal plane and in position to illuminate the light responsive surface, said auxiliary images representing angular portions of the scene that correspond to the angular portion represented by the film image,
visual indicating means optically positioned in the focal plane of the finder to be visible simultaneously with the ocular image and comprising fixed scale means and an element movable relative to the scale means in response to the magnitude of said electrical output, said scale means including a point that represents nominally correct film exposure.
and manually operable means for simultaneously varying in equal proportions the brightness of at least the film image and the sensor image for setting the camera exposure in accordance with the visual indicating means,
whereby brightness indications are visible in the finder for a continuously variable plurality of angular scene portions simultaneously with the finder image showing such scene portion, each such brightness indication including an indication of the relation between the existing camera exposure setting and a nominally correct exposure for that scene portion.

3,272,106
OPTICAL COPYING MACHINE
Roland Czekalla, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Dec. 9, 1964, Ser. No. 417,034
Claims priority, application Germany, Dec. 10, 1963, A 44,749
12 Claims. (Cl. 95—58)



1. In an optical copying machine, in combination, objective means having a predetermined optical axis; rotary shaft means located beside said objective means and extending parallel to said optical axis; shutter means carried by said rotary shaft means for turning movement therewith between positions respectively closing and opening said objective means; rotary electromagnetic means operatively connected to said shaft means for turning the latter to displace said shutter means between said positions, said electromagnetic means turning through an angle greater than that through which said shutter means turns during displacement of the latter from one to the other of said positions thereof; and clutch means operatively connected to said shaft means and electromagnetic means for transmitting rotation of the latter to said shaft means, said clutch means yielding to provide for rotary movement of said electromagnetic means when the latter turns after said shutter means has stopped turning, said clutch means including an inner cylinder and an outer cylinder coaxially surrounding said inner cylinder, said cylinders being respectively connected to said shaft means and said electromagnetic means, and said inner cylinder being formed with a bore which receives a spring and part of a ball pressed by said spring outwardly of said bore against an inner surface of said outer cylinder, said inner surface of said outer cylinder being formed with a pair of depressions for receiving said ball and said depressions being angularly displaced from each other by an angle equal to the difference between the angle through which said rotary electromagnetic means turns and through which said shutter means turns.

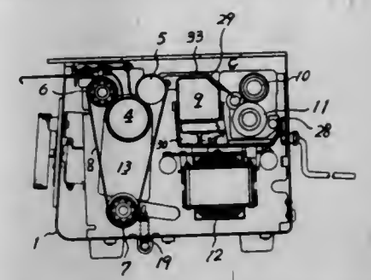
3,272,107
RADIAL VANE SHUTTER
Stanley D. Bloemendaal, Melbourne, Fla., assignor to Geo Space Corporation, a division of Western Equities, Inc., Houston, Tex., a corporation of Nevada
Filed Apr. 23, 1965, Ser. No. 450,389
30 Claims. (Cl. 95—59)



1. A radial vane shutter for use with a ballistic camera comprising a cylindrical housing, a plurality of pie-shaped shutter blades, means for pivotally mounting said shutter blades within said housing for pivotal movement between a closed position wherein the blades are prependicular to the axis of said cylindrical housing and block the passage of light therethrough and an open position wherein said blades are pivoted about 90° from said closed position to freely pass light through said cylindrical housing, linkage means encircling said cylindrical housing and connected to the outer end of each of said blades for pivoting the blades between said open and closed positions when the linkage means is actuated, high speed intermittent clutch means driven by a continuously rotating source for converting said continuous rotary motion to intermittent rotary motion, said clutch means including means for engaging said clutch means with said continuously rotating source for rotation thereby through a predetermined angle and disengaging said clutch means after it rotates through said predetermined angle, and drive means for connecting said clutch means to said linkage means to pivot said blades between said open and closed positions.

3,272,108
POSITIVE PICTURE COPIER
Tosio Isikawa, Minami-ku, Osaka, Japan, assignor to Minolta Camera Kabushiki Kaisha, Osaka, Japan
Filed Jan. 6, 1964, Ser. No. 335,858
Claims priority, application Japan, Mar. 30, 1963, 38/24,102; Apr. 5, 1963, 38/25,413; Apr. 7, 1963, 38/25,792
1 Claim. (Cl. 95—77.5)

A photocopy apparatus of the character described, comprising a housing, a pair of spaced parallel rollers rotatably mounted within the housing, an endless belt looped over said rollers and providing a depending cradle loop therebetween, a light tube rotatably supported by said cradle loop, means driving the rollers and belt to thereby rotate the light tube, a tensioning roller rotatably mounted within the housing and positioned below the light tube, said endless belt being looped around said tensioning roller, whereby the light tube is urged upwardly against said pairs of rollers; said rollers, endless belt and light tube being constructed and arranged to form a space extending transversely of the housing, fan means secured to the housing and communicating with said space whereby relatively cool air is blown through the space to maintain

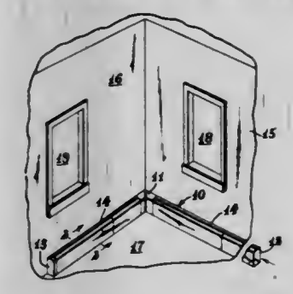


the light tube at a proper temperature while emitting light at the desired intensity, and a developing device mounted within the housing adjacent to said pairs of rollers, said developing device including a dish, a buoyant reservoir for developing fluid freely mounted within said dish, valve means mounted on the bottom wall of said reservoir for controlling the flow of fluid therefrom to said dish and a table pivotally mounted on said housing and positioned above the top wall of the reservoir, said valve means being operatively connected to the bottom of said dish, and the upper wall of said reservoir being adapted to abut the table whereby communication is constantly maintained between the interior of said reservoir and said dish.

ERRATUM

For Class 98—1.5 see:
Patent No. 3,272,608

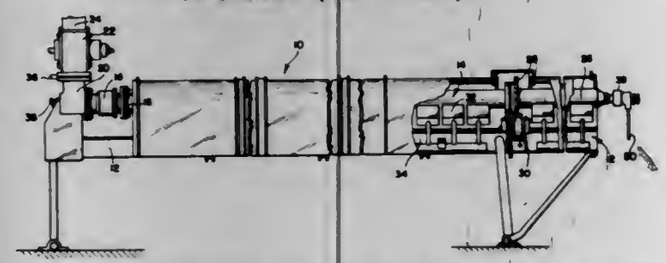
3,272,109
AIR FLOW DISSEMINATING APPARATUS
Ernest E. Brandes, 4900 Camden Road, Madison, Wis.
Filed Oct. 28, 1964, Ser. No. 407,121
6 Claims. (Cl. 98—40)



4. In combination, an elongated air-conducting cabinet having inlet and outlet openings, one of said openings being elongated and extending lengthwise of the cabinet, said openings providing a passage for air through the cabinet, and means for controlling the quantity of air passing through said elongated opening, said means comprising a damper unit extending into the cabinet through said elongated opening and having a fixed part defining a passageway through said elongated opening, a damper element disposed outside said passageway and extending across said passageway, means supporting the damper element in proximity to the inner end of said passageway, and means for adjusting the supporting means to change the location of the damper element relative to the said inner end of the passageway from a

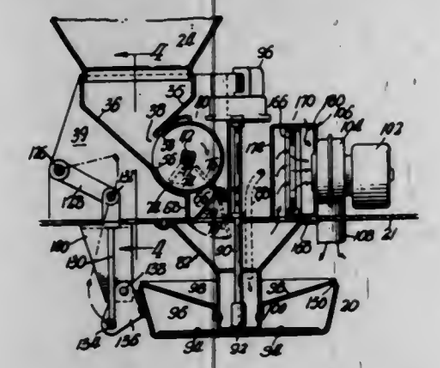
location at which said damper element closes said passageway to a location at which the said damper element interposes a minimum restriction in the flow of air through the passageway, said fixed part comprising spaced sheets having flanges along corresponding longitudinal edges extending away from said passageway, one pair of said flanges constituting means for supporting the damper unit from the cabinet, and another pair of said flanges defining with the damper element opposed orifices leading into said passageway.

3,272,110
DISCHARGE DEVICE
Takuzo Tsuchiya, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed May 10, 1963, Ser. No. 279,561
10 Claims. (Cl. 99—238)



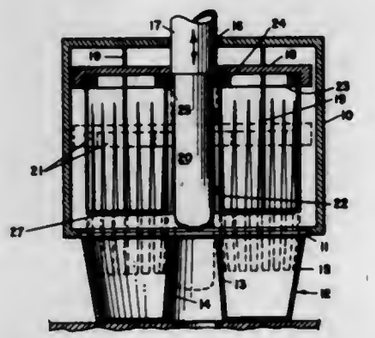
1. In a puffing gun from which pellets are discharged with a fluid along a predetermined path, a discharge device comprising a nozzle and a housing having an expansion section, which nozzle and expansion section collectively define a display passage for said pellets and said fluid, said nozzle being located at the discharge end of said gun and defining a restricted throat portion of said discharge passage through which said fluid and said pellets are emitted from said gun in a downstream direction along said predetermined path at a relatively high velocity, said expansion section defining an expansion portion of said discharge passage located downstream of said throat and having an enlarged cross sectional area with respect to said throat, said discharge device defining a relief passage which opens to said discharge passage at a location removed from said path so as to permit fluid in said discharge passage to be diverted from said path into said relief passage while permitting said pellets to be properly discharged through said outlet passage, thereby reducing noise level and enabling the recovery of a portion of said fluid in reusable form.

3,272,111
CORN POPPER
Charles J. Cretors, 1097 Crofton Ave., Highland Park, Ill.
Filed May 17, 1963, Ser. No. 281,206
4 Claims. (Cl. 99—238.7)



1. In a corn popper, a corn popping chamber, means for withdrawing air from said chamber at a predetermined rate, a passageway interconnecting said chamber and said withdrawing means, a filter element disposed in said passageway for straining foreign matter from said air, means for heating said filter element to a temperature at which said foreign matter will be volatilized when said air is moving at substantially less than said predetermined rate, and by-pass means in said passageway to by-pass the volatilized foreign matter from said passageway.

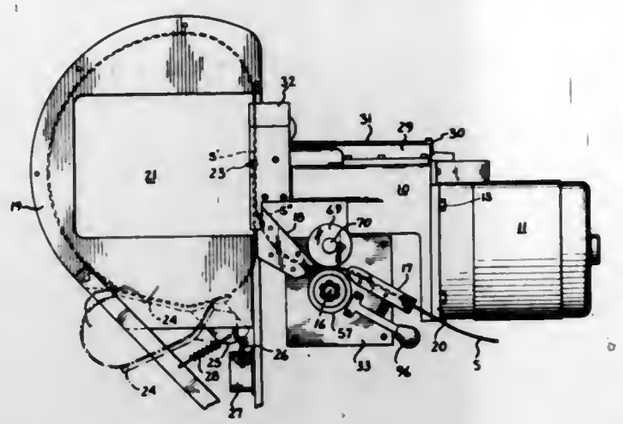
3,272,112
ANGEL FOOD CAKE TIN REMOVER
Theodore T. Law, 2711 Southwest Drive, Los Angeles, Calif.
Filed June 1, 1964, Ser. No. 371,404
12 Claims. (Cl. 99—426)



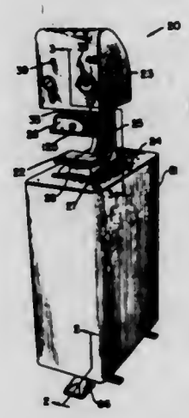
1. An apparatus for loosening angel food cakes from angel food cake tins which have outer sidewalls and an inner cone, said apparatus comprising, in combination: a frame; head means movably mounted within said frame; a pilot member axially extending from and carried by said head means and designed in an operating position to fit within said cone; a first plurality of resilient fingers carried by said head means and circumferentially spaced from and arranged about said pilot member, said first plurality of fingers being designed in an operating position to engage the inner sides of said outer sidewalls to thereby separate the cake therefrom; a second plurality of resilient fingers carried by said head means and circumferentially spaced from and arranged about said pilot member on a different diameter, said second plurality of fingers being designed in an operating position to engage the outer sides of said inner cone to thereby separate the cake therefrom; and, means for moving said head means to bring said pilot member and said first and second plurality of fingers to said, respective, operating positions.

3,272,113
POWER STRAPPING MACHINE AND THE LIKE AND ADJUSTABLE FEEDING AND TENSIONING MEANS THEREFOR
Howard K. Otto, Berkeley, Ill., assignor to Signode Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,039
18 Claims. (Cl. 100—26)

1. In a strapping machine for binding bundles and the like with a band of tensioned strap, the combination of means providing a frame, prime mover means, means for guiding strap through said frame, reversible means for feeding strap through said guiding means and applying tension to and shrinking such strap about a bundle, said reversible means including a back up wheel rotatable on an axis of reaction and a traction wheel and rotatable shaft therefor between and by which strap is fed and tensioned in opposite directions, and a driven eccentric movably connected to said prime mover means and rotatably mounting said shaft to rotate about a floating axis and shift the traction wheel towards and away from said back up wheel in accordance with the loading imposed on the prime moving means in advancing the strap.

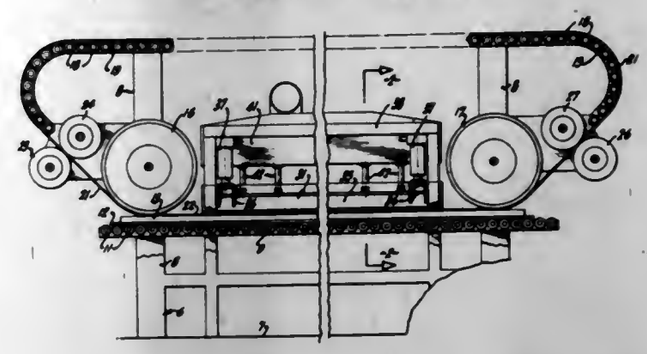


3,272,114
HEAT SEALING APPARATUS
James A. Rakel, Cincinnati, Ohio, assignor to The National Marking Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 15, 1964, Ser. No. 367,783
1 Claim. (Cl. 100—53)



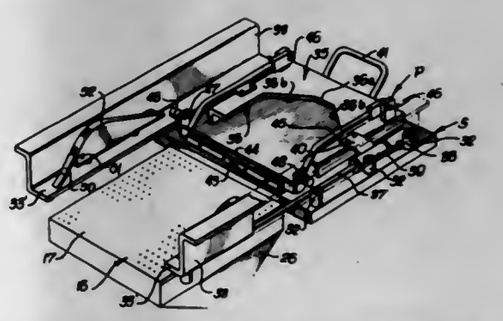
A heat sealing apparatus or the like comprising support means, a fixed head carried by said support means and having a surface means, a piston and cylinder arrangement carried by said support means, a movable head operatively interconnected to said piston and having a surface means cooperable with said surface means of said fixed head to heat seal material therebetween, a solenoid operated valve for directing fluid pressure to said cylinder to move said movable head away from said fixed head when no electrical current is supplied to said solenoid and for directing fluid pressure to said cylinder to move said movable head toward said fixed head when electrical current is supplied to said solenoid, lever means for causing electrical current to flow to said solenoid when said lever means is moved to one position thereof, timer means for terminating the supply of electrical current to said solenoid when a predetermined time has lapsed, and a safety bar means for terminating the supply of electrical current to said solenoid when said safety bar means is moved to one position thereof regardless of the condition of said lever and said timer, and said safety bar means preventing said electrical current from flowing to said solenoid until said safety bar means is moved to another position thereof and said lever has been moved to another position thereof.

3,272,115
CONTINUOUS LAMINATING PRESS
Franklin C. Hurlbut, Berkeley, Calif., assignor to The Regents of the University of California, Berkeley, Calif.
Filed Sept. 11, 1964, Ser. No. 395,735
14 Claims. (Cl. 100—93)



1. A continuous laminating press comprising a frame, means on said frame for supporting a plate, means on said frame for supporting an endless belt with one run of said belt extending adjacent to said plate, an endless belt on said belt supporting means, a pressure box having an opening on one side bounded by edges, means for supporting said pressure box on said frame with said edges adjacent to but spaced from said belt on the side thereof opposite said plate to leave between said edges and said belt a predetermined clearance passageway extending from said box to the atmosphere, and means for supplying air under pressure to said pressure box and to said passageway continuous outflow through said passageway between said edges and said belt, said outflowing air acting as a spacer between said edges and said belt.

3,272,116
JUICE EXTRACTOR FOR TESTING CITRUS FRUIT
David U. White, La Habra, Calif., and Harold M. Rebeck, Clearwater, Fla., assignors to Brown Citrus Machinery Corp., Whittier, Calif., a corporation of California
Filed Nov. 5, 1964, Ser. No. 409,180
11 Claims. (Cl. 100—112)



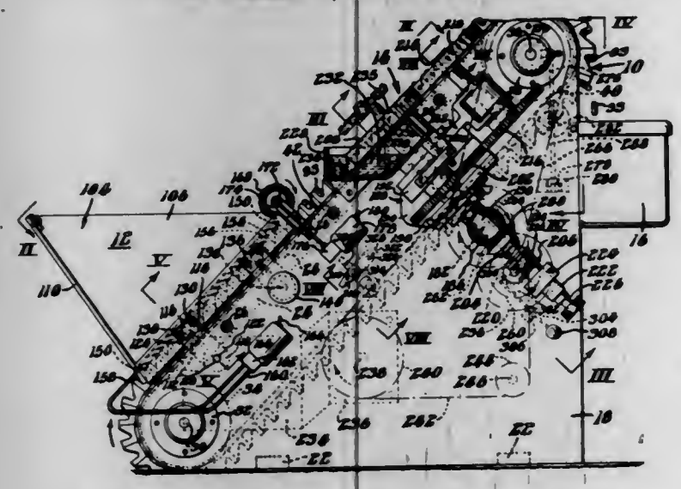
1. A citrus fruit juice extractor comprising, a frame: a platform on said frame for supporting a citrus fruit half with the cut face engaging the platform; a pair of pressure members relatively movable on the frame; positioning means movable between a retracted position above said platform and an extended position over one of said pressure members to move a fruit half from said platform onto said one pressure member; operating means for effecting movement of said one pressure member toward the other pressure member to subject a fruit half to juice extracting pressure; a pair of bars fixed on the frame and extending over and outwardly from said platform with portions thereof on opposite sides of said one pressure member so that said one pressure member is movable between said portions; and guide means operatively connected with said bars for supporting said positioning means for sliding movement between said retracted and extended positions.

3,272,117
BALING MACHINE
William A. Wathen, Detroit, Floyd W. Reuter, Dearborn, and Charles M. Iskenderian, Livonia, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich.
Filed Dec. 11, 1964, Ser. No. 417,591
11 Claims. (Cl. 100—188)



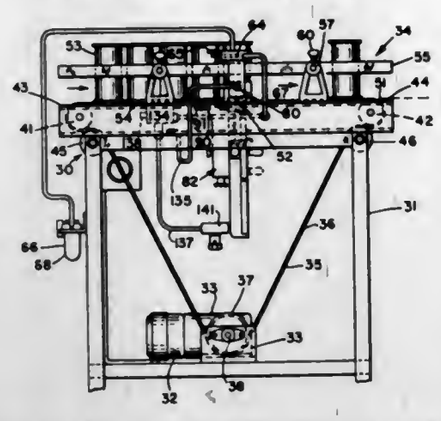
1. A hay baler including a fore-and-aft bale casing, a bale thrower mounted on the rear end of the bale casing for side to side swinging movement, a flywheel for operating the baler, and a drive train connecting said flywheel to said thrower for driving the thrower characterized by said drive train including a flexible drive shaft having one end connected with the thrower for movement therewith relative to the bale casing and its other end supported at a point spaced from the thrower and held against longitudinal and transverse movement relative to the bale casing for transmitting the drive from said flywheel to the thrower in any position of the thrower relative to the bale casing.

3,272,118
ARTICLE MARKING MACHINE
Charles E. Ackley, Oreland, Pa., assignor to R. W. Hartnett Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 4, 1965, Ser. No. 430,283
15 Claims. (Cl. 101—37)



1. In an apparatus for printing a plurality of individual objects which are similar in size and shape, the combination which comprises means forming an endless conveyor having an upper run which is upwardly inclined in the direction of its movement, drive means connected to drive said conveyor upper run upwardly, means forming a hopper for said objects surrounding a lower portion of said upper run, carrier means on said upper run arranged to pass through said hopper to seat and to carry said objects angularly upwardly on said conveyor, offset printing means arranged alongside said conveyor including an angularly arranged transfer roll rotatably disposed in an ink reservoir, the axis of rotation of said transfer roll being substantially perpendicular to the path of said upper run and therefore at an angle to the vertical, a printing roll arranged to rotate in contact with said transfer roll and with said objects, in a position to print upon said objects while seated, and means for discharging the printed objects from said conveyor.

3,272,119
AUTOMATIC STAMPING APPARATUS
James G. Keramas, 57 Kilby St., Woburn, Mass.
Filed Nov. 3, 1964, Ser. No. 408,601
11 Claims. (Cl. 101—44)



1. Apparatus for automatically stamping coded indicia on a plurality of substantially identical containers, said apparatus comprising;

carrier means movable in a predetermined plane, said means supporting and advancing said containers individually and successively, in aligned, abutting relationship along a path which includes a stamping station;

sensing means mounted along said path and including article actuated means in said path, in advance of said station for sensing the arrival of each successive container at said station;

container clamping means mounted at said station, said means including at least one clamping element movable in a predetermined plane and adapted to engage the adjacent portion of a container at said station;

first power actuated plunger means operably connected to said clamping element and responsive to said sensing means for moving each said element into said path to temporarily halt, and hold down, each successive container at said station, and thereby halt, the abutting containers in rear thereof;

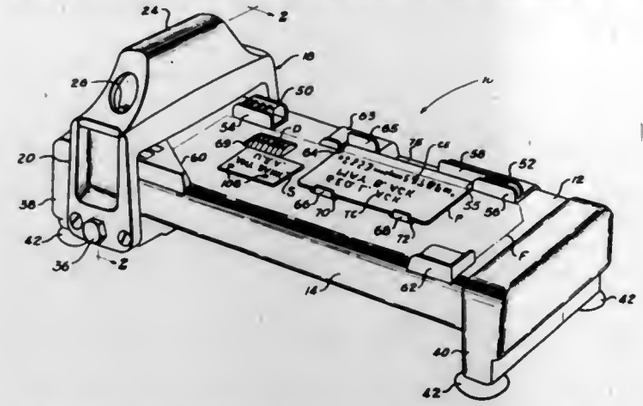
stamping means, mounted below said station, said means including a stamping head bearing said coded indicia, said head being movable in a plane normal to the plane of said carrier means and an ink pad, said indicia and pad being normally in inking engagement outside of said path;

second power actuated plunger means operably connected to said head and responsive to said sensing means for moving said head upwardly into said path to apply said coded indicia to each successive container only after said container has been clamped temporarily halted and held down at said station, and

control circuit means including a source of power, said sensing means, said first plunger means and said second plunger means for energizing each said means in a predetermined sequence.

3,272,120
ADDRESS PRINTING MACHINES WITH ROLLER PLATENS
Dean W. Johnson, Euclid, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Oct. 22, 1964, Ser. No. 405,673
7 Claims. (Cl. 101—56)

1. A printing machine of the character described comprising means for holding a printing device in printing position in a plane; a platen carriage reciprocable adjacent said printing position in a path substantially parallel to the plane of the printing device; two roller platens rotationally supported on said carriage in end-to-end relation with their axes extending transversely of the direction of carriage motion and each movable between an extended position relative to said carriage in which its axis is shifted towards the plane of the printing device and a retracted position relative to said carriage in which its axis is more remote from the plane of the printing device



than said extended position; means for shifting either platen to one or the other of said extended and retracted positions and simultaneuosly shifting the other of said platens to the opposite position; and means adjacent the carriage when the same is at each end of its path for operating said shifting means so that one platen is extended during motion of the carriage in one direction and the other is extended during motion of the carriage in the other direction.

3,272,121
LITHOGRAPHIC PRINTING PLATE PREPARED BY PHOTOELECTROSTATIC REPRODUCTION, A METHOD FOR ITS PRODUCTION AND A METHOD FOR LITHOGRAPHIC PRINTING
Jay J. Uber, South Hadley, Mass., and Shwang Hsia, Newark, Del., assignors to The Plastic Coating Corporation
Filed Feb. 14, 1963, Ser. No. 258,405
12 Claims. (Cl. 101—149.2)

1. A lithographic printing plate comprising:

a base sheet which has dimensions and two opposite edges which adapt the sheet for attachment to the plate cylinder of a lithographic printing press;

a photoelectric film comprising a finely-divided, photoconductive, zinc oxide pigment dispersed in a matrix of a resinous, film-forming material which is inherently hydrophobic in character, covering one surface of the said base sheet;

a hydrophobic, resinous material covering predetermined areas of the said photoelectrostatic film in the form of an image to be reproduced by lithographic printing, leaving exposed areas of the photoelectrostatic film corresponding to the background areas of the image to be reproduced; and

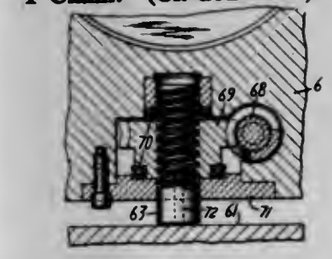
a synergistic combination of a polymeric carboxylic acid selected from the group consisting of polyacrylic acid and polymethacrylic acid, with an inorganic salt selected from the group consisting of alkali metal ferrocyanides and alkali metal ferricyanides bonded to the exposed areas of the photoelectrostatic film, causing the said exposed areas to be hydrophilic in character, while the said resinous material forming the image areas remains hydrophobic in character.

10. A method for lithographic printing which comprises:

attaching to the plate cylinder of an offset printing machine a printing plate described by claim 1, which is adapted by its dimensions and two opposite edges for attachment to that particular cylinder; and

reproducing copies by the use of the said machine while keeping the hydrophilic background areas of the said printing plate wet with an aqueous fountain solution which has dissolved therein a polymeric carboxylic acid selected from the group consisting of polyacrylic acid and polymethacrylic acid and an inorganic salt selected from the group consisting of alkali metal ferrocyanides and alkali metal ferricyanides, and has a pH within the range of about 3.0 to about 7.25.

3,272,122
METHOD OF ADJUSTING A FORESHORTENED IMPRESSION ROLLER
Alfred C. Behringer, Cupsaw Lake, Ringwood, N.J., assignor to Publication Corporation, New York, N.Y., a corporation of New York
Filed Mar. 21, 1961, Ser. No. 97,202
1 Claim. (Cl. 101—426)

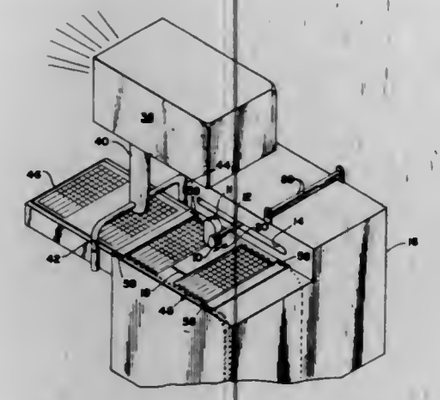


The method of adjusting a roll short at one end relative to a full length cylinder of a printing press so that the roll acts uniformly against a length of the cylinder at one end of the cylinder, said printing press including a pair of end supports for the roll, common drive means for imparting movement to both of said end supports in unison to bring them into engagement with the cylinder, means controlled by said drive means for building up predetermined forces on both said end supports after the roll is brought into engagement with said cylinder, and means for stopping said common drive means when predetermined forces have been built up on both of said end supports to provide uniform pressure engagement between said cylinder and a roll which engages the full length of said cylinder, said method comprising the steps of moving the end supports by said common drive means to bring the short roll into operative engagement with the cylinder until said common drive means is stopped by the application of the predetermined forces on the end supports, and intercepting by interposing a stop in its path of travel the end support at the short end of the roll at the position which the end support would occupy if it carried a full length roll corrected for any difference between the diameter of the said full length and the short roll while permitting the common drive means to operate until the predetermined forces have been built up on both end supports, the full length end of the short roll moving to a position relative to the cylinder determined by the predetermined force transmitted to the respective end support and the short end of the short roll moving to and no further than the position determined by the said stop, thereby obtaining uniform pressure engagement between the short roll and the cylinder.

3,272,123
METHOD OF PRINTING BOWLING GAME SCORES
Ernest C. Webb, Bay Village, Ohio, assignor to Cleveland Trust Company, Cleveland, Ohio, a trustee
Filed Jan. 17, 1964, Ser. No. 338,485
3 Claims. (Cl. 101—426)

1. A method for printing the frame-to-frame scores achieved in a bowling game, which comprises placing a non-absorbing score sheet formed of material which will

permit light to pass therethrough on top of a rigid plate also formed of material which will permit light to pass therethrough and passing light upwardly through the plate and the score sheet such that printed scores may be viewed thereon, printing the frame-to-frame scores on the score sheet as the game progresses with an ink which remains moist after printing and which is not absorbed by the score sheet, at the completion of a bowling game placing absorbent paper which is characterized in that light will pass therethrough in abutment with said non-absorbing



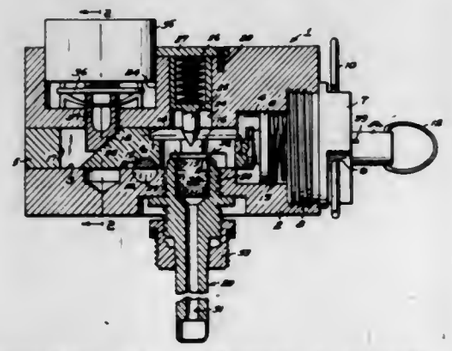
score sheet and pressing the paper against the side of the sheet having printed characters thereon whereby the moist ink will be absorbed by the paper and the printed characters may be viewed in their normal readable configuration by viewing them through the side of the paper opposite that which is pressed against the score sheet, and thereafter wiping the printed characters from the surface of said non-absorbing score sheet after the absorbent paper has been pressed thereagainst whereby the score sheet may be used in a succeeding score printing operation.

3,272,124
SOLID PROPELLANT ACTUATION SYSTEM
John Marsh, Santa Fe Springs, Calif., Girard D. Reid, Battle Creek, Mich., and Donald M. Crose, Sunnyvale, Calif., assignors, by mesne assignments, to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Original application Nov. 28, 1960, Ser. No. 72,140. Divided and this application Sept. 27, 1963, Ser. No. 318,469
1 Claim. (Cl. 102—50)



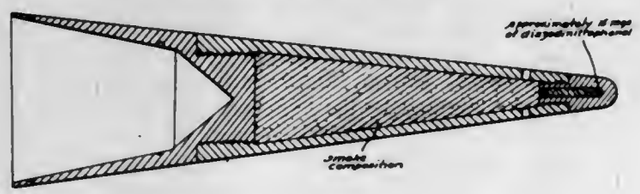
A missile control comprising a generally cylindrical body, a pair of shafts journaled in said body on axes contained in a single plane perpendicular to the axis of said body and which intersect each other perpendicularly, an offset on each shaft at such intersection providing clearance between said shafts, a control surface on each shaft, a pair of double acting piston and cylinder actuators, one of said actuators being associated with one of said shafts and extending parallel to the other of said shafts on the side of said one shaft remote from said other shaft, the other of said actuators being associated with said other shaft and extending parallel to said one shaft on the side of said other shaft remote from said one shaft, four elongated solenoid valves with two connected to each actuator and operable to selectively control the direction of movement of each actuator, said solenoid valves being symmetrically mounted in parallel relationship on said body with two laterally spaced on each side of said one actuator, an arm formed with a spherical end on each offset of each shaft, a lateral centrally located bore in each piston of each actuator closely receiving the spherical end of each arm on the associated shaft whereby axial motion of each piston produces rotation of each shaft about its axis, and a source of fluid under pressure mounted along the axis of said body connected to each solenoid.

3,272,125
THREE-WAY FUZE
Dale Gibson Adams, Sparta, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 17, 1964, Ser. No. 352,694
4 Claims. (Cl. 102—70)



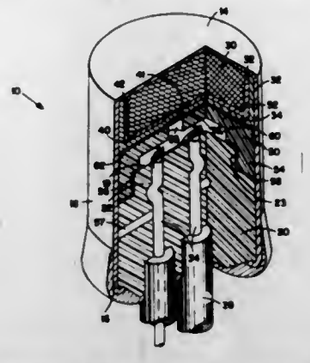
1. A three-way fuze comprising a housing, an extension having a flash passage therethrough and secured to said housing, a detonator in said flash passage, a coupler secured on said extension for attachment of said fuze to a mine, a spring biased firing pin slidable in said housing and disposed in alignment with said detonator, a spring biased piston slidable in said housing between said firing pin and said detonator and disposed normal to said firing pin, said piston extending beyond one side of said housing and being provided with a slotted portion substantially at its medial portion thereof, there being a restriction medially in said slotted portion normally holding said firing pin in a cocked position, and means whereby said fuze may be operated by pressure, pull or release force and associated with said piston whereby said piston is moved in either direction longitudinally to permit said firing pin to snap through on either side of said restriction and fire said detonator.

3,272,126
PYROTECHNIC FUZE SYSTEM
David J. Edelman, Flanders, Seymour M. Kaye, Dover, and Elie L. Barrieres and Garry Weingarten, Morris Plains, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 20, 1964, Ser. No. 353,633
4 Claims. (Cl. 102—70)



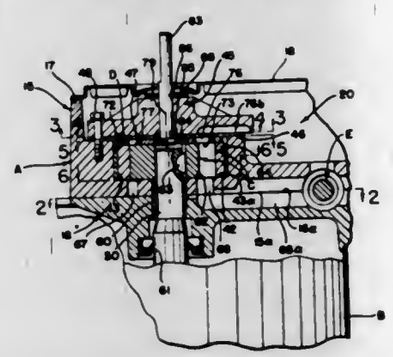
1. A pyrotechnic fuze system for an ordnance shell comprising a metal slug containing a charge of diazodinitrophenol and adapted to form a portion of the external surface of said shell, said slug being heated sufficiently by air friction during the flight of said shell to cause ignition of said charge.

3,272,127
IGNITER SQUIB
Robert E. Betts and Nathan P. Williams, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed Aug. 5, 1963, Ser. No. 300,114
5 Claims. (Cl. 102—70.2)



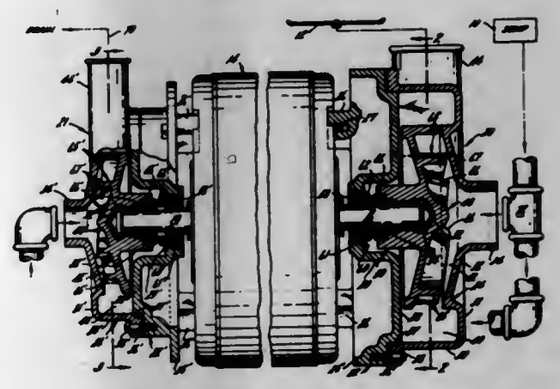
4. An improved igniter squib comprising:
(a) a housing;
(b) a pyrotechnic material disposed in said housing;
(c) a diaphragm mounted in said housing for support of said pyrotechnic material, said diaphragm being cup-shaped and having the wall thereof force fitted with said housing and partially enclosing said pyrotechnic material and provided with a base having a rupturable portion in the form of a dimple disposed therein;
(d) a firing circuit extending into said housing in spaced relation with said diaphragm; and,
(e) a member interposed between said diaphragm and said pyrotechnic material and provided with a bore adjacent said rupturable portion to serve as a die against which said rupturable portion can shear responsive to energization of said firing circuit to concentrate substantially total ignition energy to said pyrotechnic.

3,272,128
VARIABLE VOLUME REVERSIBLE HYDRAULIC DEVICE
Robert W. Brundage, St. Louis, Mo., assignor to The Emerson Electric Company, St. Louis, Mo., a corporation of Missouri
Filed June 15, 1964, Ser. No. 375,193
13 Claims. (Cl. 103—3)



1. In a variable volume hydraulic pump comprised of a plurality of relatively movable members defining a plurality of chambers which revolve about a common center and continuously expand in volume on one side of a neutral axis and continuously contract in volume on the other side of the neutral axis, means defining a plurality of manifold ports separated at the ends by lands, said chambers having openings which move past said lands and consecutively communicate with said manifold ports, the improvement which comprises; said means including a first member fixed relative to said neutral axis and having at least a pair of manifold ports communicating with a portion of said chambers and a second member movable from a maximum volume to a minimum volume position and having at least a manifold port which in the maximum volume position of said second member communicates with another portion of said chambers, said second member manifold port when said second member is moved from said maximum volume position communicating with at least a part of the chambers with which the manifold ports of said first member communicate.

3,272,129
PUMPING SYSTEM AND PUMP THEREFOR
Hugh F. Leopold, Indianapolis, Ind., assignor to Warner Machine Products, Inc., Muncie, Ind., a corporation of Indiana
Filed Dec. 18, 1963, Ser. No. 331,446
6 Claims. (Cl. 103—4)

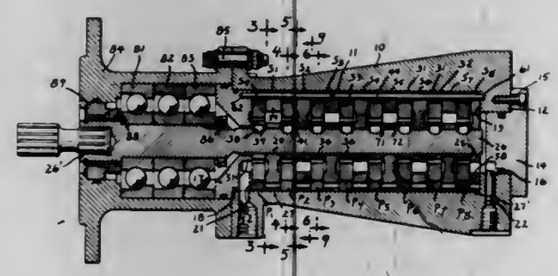


1. In a pumping system for a dishwasher or the like, a reversible motor having a pair of drive shaft ends simultaneously rotatable in the same direction, first and second pumps each having a casing providing a generally circular chamber having an axially oriented inlet and a tangentially oriented outlet, a dam extending inwardly from the circumference of said chamber adjacent said outlet, an impeller connected to one of said drive shaft ends and concentrically disposed within said chamber with its periphery immediately adjacent the inner edge of the dam, said impeller having a plurality of arcuate blades having their inner ends radially spaced from the impeller axis for pumping fluid through said chamber only during rotation of the impeller in a direction to move the outer blade ends past the outlet before said dam, the inlets on said pumps being connected to sump means on said dishwasher or the like and the outlet on said first pump being connected to fluid injection means in said dishwasher or the like and the outlet on said second pump being connected to a drain, said pumps being oppositely oriented with respect to each other whereby upon rotation of the drive shaft ends in one direction said first pump will pump fluid from said sump means to said injection means and said second pump will be inoperative and upon rotation of said drive shaft ends in an opposite direction said second pump will pump fluid from said sump means to said drain and said first pump will remain inoperative.

3,272,130
MULTIPLE STAGE PUMP
Bruce H. Mosbacher, Rockford, Ill., assignor to Roper Industries, Inc., Rockford, Ill., a corporation of Illinois
Filed Mar. 11, 1964, Ser. No. 351,056
12 Claims. (Cl. 103—5)

1. A multiple stage positive displacement pump or motor comprising, a plurality of ring members and a plurality of port plates separate from the ring members assembled in a stack with one port plate interleaved between adjacent ones of said ring members, said port plates having axially extending openings therein defining bearings,

a shaft extending through said openings in said plates and rotatably supported by said bearings, said ring members each having an internal wall, pump means disposed in each ring member, said pump means each including a rotor non-rotatably attached to said shaft for rotation therewith about an axis eccentric to the axis of the inner wall of the respective ring member and defining a plurality of segregated pumping chambers which progressively expand in an inlet sector at one side of a plane of eccentricity through the axis of said rotor and the axis of the inner wall of the respective ring member and progressively contract in an outlet sector at the other side of said plane, the ring members being positioned with the axes of the internal walls of successive ring members offset to relatively opposite sides of the axis of the shaft whereby the discharge sectors of alternate pump stages are disposed on relatively opposite sides of said plane of

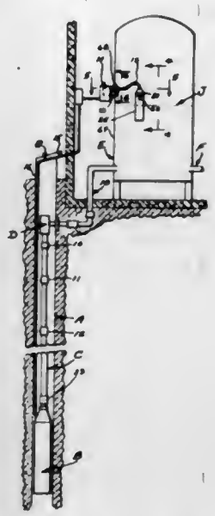


eccentricity to have the radial pressure unbalance on adjacent rotors counteract each other and to position the discharge sector of one stage adjacent the inlet sector of the next succeeding stage, said port plates having port means extending therethrough with the port means in successive port plates being located at opposite sides of said plane of eccentricity and arranged to communicate the outlet sector of one stage with the inlet sector of the next succeeding stage, said port plates having pressure distribution grooves in opposite faces thereof at the side of said plane of eccentricity opposite the port means in the respective port plate, the pressure distribution groove in one face of the port plate being shaped generally complementary to the port means of the preceding stage and the pressure distribution groove in the other face of the port plate being shaped generally complementary to the port means in the next succeeding stage.

3,272,131
WELL SYSTEM
Howard A. Tubbs, 32 Corte Nogel, Danville, Calif.
Filed Apr. 22, 1964, Ser. No. 361,755
7 Claims. (Cl. 103—6)

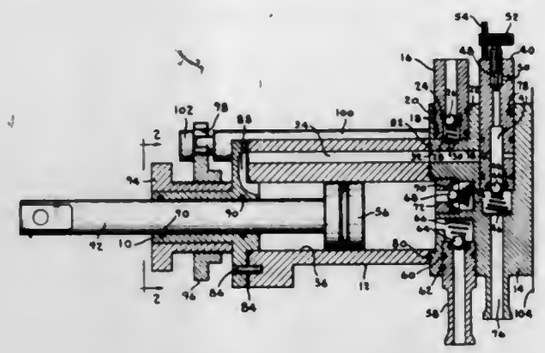
1. A water pumping and storage apparatus comprising: a hollow casing extending down into the ground to the source of water; a water feed pipe within the casing; a water and air storage tank having top, bottom and side walls for receiving the water from the feed pipe, said tank having an inlet in communication with the feed pipe; pumping apparatus for pumping the water from the source through the feed pipe and into the storage tank; means for admitting air into the storage tank during activation of the pumping apparatus and control means for expelling excessive air from the storage tank, said last means including:

a fitting mounted in a side wall of the tank and having an air discharge passage therein; a hollow air discharge conduit having its outer end connected to the fitting and in communication with the air discharge passage; a first valve member disposed within said tank and having a passage in communication with the inner end portion of said conduit; a second valve member disposed within said tank; for coacting with the first valve member; a vertically disposed elongated sleeve disposed within said tank, a float having said second valve member mounted at the upper end thereof and with such float disposed within said



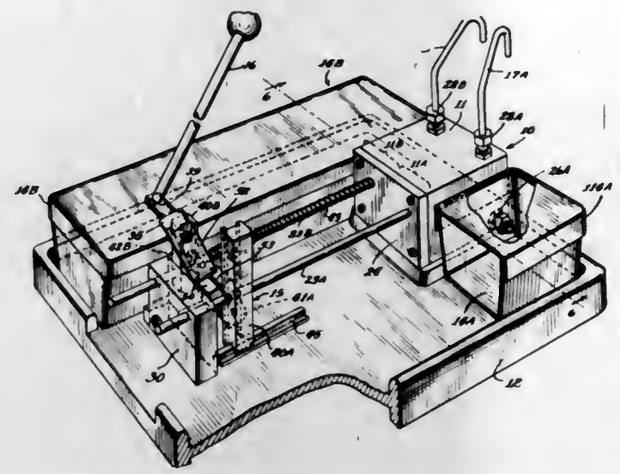
sleeve for vertical movement therein in accordance with the change of water level in the tank, said sleeve being suspended from the inner end of said conduit and limiting the movement of said float and second valve therein.

3,272,132
PUMP
Carl R. Stoelting and Earl M. Stecker, Kiel, Wis., assignors to Stoelting Brothers Company, Kiel, Wis., a corporation of Wisconsin
Filed Aug. 3, 1964, Ser. No. 386,964
4 Claims. (Cl. 103—9)



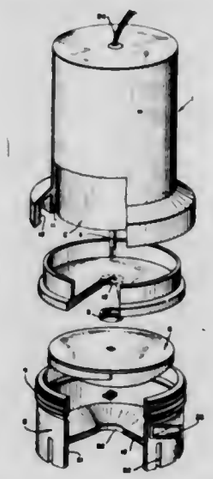
1. A pump for proportioning air and liquid comprising a housing having a cylinder therein, a piston reciprocable in said cylinder, liquid inlet and outlet means communicating with one side of the piston, air inlet and outlet means communicating with the other side of the piston, check valves in said inlet means and said outlet means, and a bleed valve in the air outlet means upstream of the check valve means associated therewith, each inlet means and the air outlet means comprising a fitting retained in a smooth bore cavity in the housing and provided with a seal, the inner end of each fitting being provided with a valve seat, said housing comprising two principal portions, one portion containing the inlet and outlet fittings and the other portion including the cylinder, seal means between the portions and compression means holding the portions together, the check valve means in the liquid outlet means including a seat assembly in said one housing portion communicating directly with the one end of the cylinder and retained in position by said other housing portion.

3,272,133
PROPORTIONING APPARATUS
Marcel F. Vignerot, 1910 Palmgren Drive, Glenview, Ill.
Filed Apr. 22, 1963, Ser. No. 274,416
3 Claims. (Cl. 103—11)



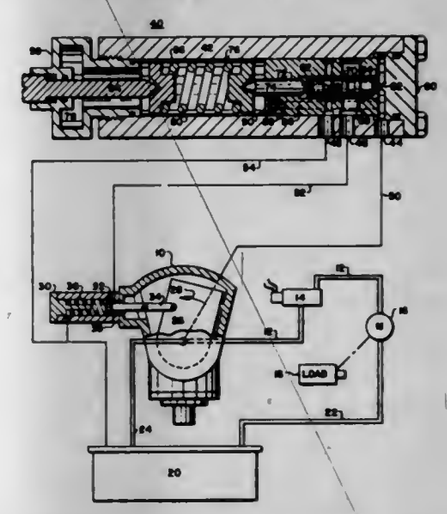
1. In a proportional pumping unit for delivering the components of a resin in predetermined proportions, a pair of piston and cylinder pumps having supply containers associated respectively therewith by check valved inlet connections and having check valved outlet connections, parallel piston rods connected to the respective pumps for operating the same, an operating lever disposed between said piston rods and pivoted on an axis perpendicular to the axes of the piston rods and parallel to and spaced substantially from the plane of said piston rods, cross heads fixed on the respective piston rods and having longitudinal guide grooves therein facing opposite sides of said lever, slide blocks reciprocable in the respective guide grooves of said cross heads, and a pivot pin extending from one side of said lever and connecting one of slide blocks to said lever, an adjusting head disposed on the other side of said lever and having a pivot pin connecting the adjusting head to the other one of said slide blocks, and means for securing said adjusting head in different positions along said lever.

3,272,134
CENTRIFUGAL PUMP
Herbert S. Wilburn, Jr., 707 Glenbrook Road, Fairfax, Va.
Filed Apr. 23, 1964, Ser. No. 362,042
5 Claims. (Cl. 103—25)



1. A centrifugal pump comprising driving means; a housing for said driving means; a semiopen type impeller formed of a disk having spiral tapered vanes attached thereto, said impeller being connected to said driving means, said impeller vanes spiralling continuously outward from the eye of the impeller through an extent of approximately two and one-half quadrants with a short initial portion of each vane being substantially straight adjacent the eye of the impeller, the distance between two adjacent vanes being substantially equal along the length of each vane from that portion of each vane beyond the first octant of said vane to the outer periphery thereof, and said vanes tapering from a maximum depth at the eye of the impeller to a minimum depth at the outer periphery of the impeller; and a casing surrounding said impeller, said casing having a sloping center portion which conforms closely to the taper of the impeller vanes, said sloping portion defining an inlet opening, and said casing forming an outlet orifice which is substantially rectangular in shape.

3,272,135
POWER TRANSMISSION
James V. Bloomquist, Madison Heights, Mich., assignor to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware
Filed Apr. 5, 1963, Ser. No. 270,945
6 Claims. (Cl. 103—38)

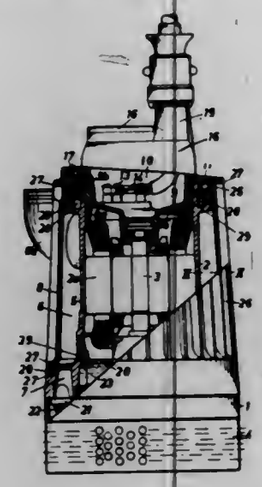


1. In a hydraulic power transmission employing a variable displacement pump having an outlet connected by a pressure conduit to a load, and actuator means for varying the displacement of said pump, control means for said actuator comprising: shiftable valve means for directing fluid to said actuator; resilient means biasing said valve means in one direction; means forming a first area associated with said valve means and exposed to pressure from the outlet of said pump so as to urge said valve in a direction opposite to said one direction; means forming a second area, smaller than said first area, associated with said valve means so as to urge said valve in said one direction in response to pressure thereon; means forming an enclosed chamber, pressure in which is imposed on said second area; continuously open passage means extending between said first area and said chamber and forming the sole means of egress for fluid from said chamber; and a restriction in said passage means.

3,272,136
ROTARY PUMP UNIT
Ingmar Franzen, Hannover-Linden, Germany, assignor to Aktiebolaget Flygts Pumpar, Stockholm, Sweden
Filed Apr. 7, 1964, Ser. No. 357,971
Claims priority, application Germany, Apr. 20, 1963, A 42,926
2 Claims. (Cl. 103—87)

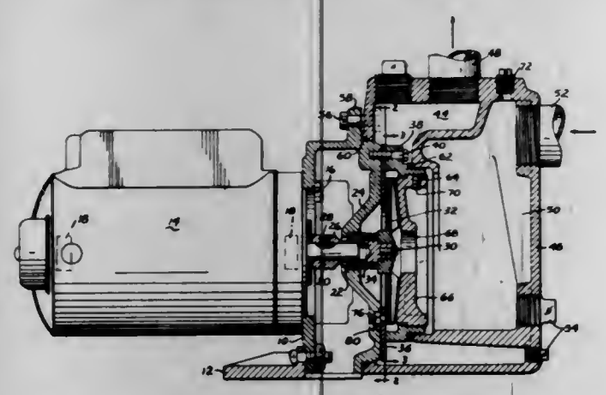
1. In a rotary pump unit having a rotary pump and an electric motor driving said pump, the combination of

an inner housing structure having inner and outer peripheral faces and defining on its interior a motor chamber housing said electric motor, an outer casing structure surrounding said housing and having an inner peripheral face defining with said housing an annular conduit for transmitting the pumped fluid, and sealing means for said structures for protection against explosion comprising top and bottom closures having outer peripheral faces and



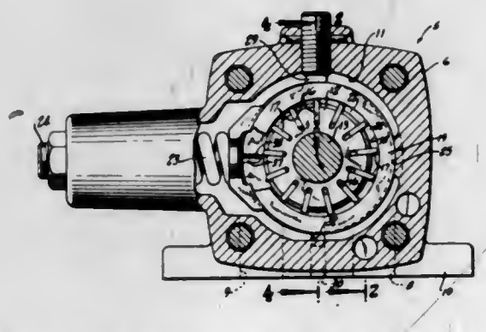
closing said structures and pressure-sealing said chambers, some of the outer faces of said closures engaging inner faces of said housing, and inner faces of said casing engaging outer faces of said housing, said closures having axial surfaces disposed opposite axial surfaces of said structures, elastic rings disposed between each two interengaging adjoining inner and outer peripheral faces, and heat conductive thin gaskets disposed between some of said opposite surfaces.

3,272,137
SELF-PRIMING PUMP
John J. Maitlen and William J. Ekey, Ashland, Ohio, assignors to The F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio
Filed Jan. 20, 1964, Ser. No. 338,952
8 Claims. (Cl. 103—113)



1. In a centrifugal pump; a support bracket, an open faced impeller having its closed side adjacent one face of said bracket, a diffuser secured to said bracket and surrounding the periphery of said impeller and having passages extending outwardly therethrough for pumped liquid, a wear plate on the open side of said impeller adjustably carried by said diffuser for adjustment toward and away from the open side of said impeller and having a central aperture communicating with the central region of said impeller, a pump case secured to said bracket and having an outer region sealed to said bracket and an inner region sealed to said diffuser and having a first larger chamber therein forming a suction chamber and communicating with the aperture in said wear plate and having a second smaller chamber therein forming a discharge chamber and communicating with the region around the periphery of said diffuser, said first chamber extending to a level substantially lower than the said central aperture of said wear plate to form a region for collecting heavy trash in water entering said first chamber.

3,272,138
VARIABLE VOLUME PUMP WITH PROTECTION AGAINST OVERHEATING
Eugene N. Connoy and Richard W. Hoffmann, Minneapolis, James W. Parkin, Burnsville, and Charles H. Whitmore, Savage, Minn., assignors to Continental Machines, Inc., Savage, Minn., a corporation of Minnesota
Filed Feb. 17, 1964, Serial No. 345,238
1 Claim. (Cl. 103—120)



In a variable volume pump of the rotary vane type having

(1) a body with an inlet and outlet, and defining a rotor chamber communicating with the inlet and outlet and having opposite side walls,

(2) bearing means in the body,

(3) a rotor journalled in said bearing means and confined in the chamber between the side walls thereof, the rotor having vanes slideably projecting from its periphery, and

(4) a ring which encircles the rotor and is shiftable towards and from concentricity with the rotor and coacts with the vanes to provide pumping chambers by which fluid is taken from the inlet, pressurized and delivered to the outlet at a substantially constant pressure but in a volume which varies with the position of the ring, the volume being maximum when the ring is farthest from concentricity and zero when the ring is concentric with the rotor,

so that part of the space inside the ring is at all times communicated with the outlet and during operation of the pump constitutes a pressure zone,

wherein some of the fluid which inevitably leaks from said pressure zone flows to the bearing means to lubricate the same, and

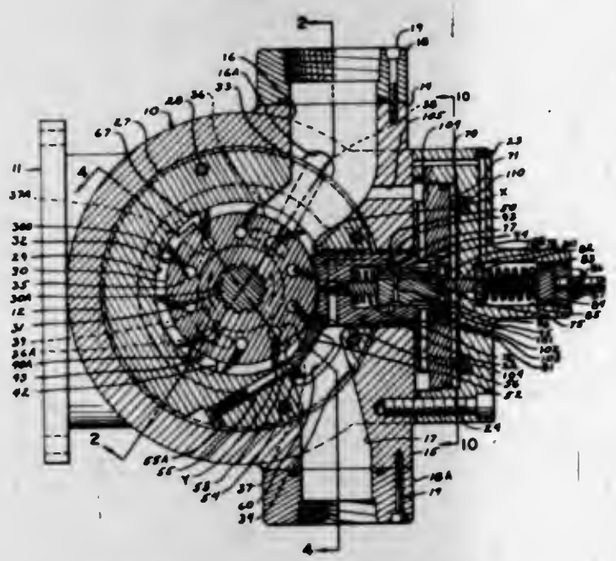
wherein the body also has a drain port at all times in communication with the bearing means and with the outer portion of the rotor chamber that encircles the ring, to receive and carry off fluid which flows through the bearing means and fluid which leaks out of the pressure zone into the outer portion of the rotor chamber,

the improvement which prevents overheating of the pump due to conversion into heat of the energy expended to drive the rotor and maintain the pressure when the volume of fluid delivered by the pump is zero or near zero, and which improvement comprises:

means defining a fluid passage of limited capacity to communicate the pressure zone inside the ring with the outer portion of the rotor chamber and hence with the drain port,

said fluid passage having open communication with the outer portion of the rotor chamber and having its mouth in one of the side walls of the rotor chamber in position to be covered and closed by the adjacent surface of the ring whenever the ring is in any position it occupies when the volume of fluid delivered by the pump through its outlet is sufficient to prevent overheating of the pump and to be uncovered and open when the ring is in the position it occupies when the volume of fluid delivered by the pump is at or near zero.

3,272,139
PUMPS
Oscar E. Rossen, Grosse Pointe, Mich. (1776 E. Nine Mile Road, Hazel Park, Mich.)
Filed Dec. 29, 1964, Ser. No. 439,492
11 Claims. (Cl. 103—120)



1. A variable delivery pump comprising

(a) a casing having a pumping chamber,

(b) a rotor in said chamber and having angularly spaced slidable vanes carried by said rotor,

(c) cam means contacting and guiding said vanes for sliding operation as said rotor turns, said cam means having a fixed portion and a movable portion, and

(d) means displacing said movable portion toward and away from said rotor,

(e) said movable cam portion having a laterally extending semi-cylindrical socket at one end,

(f) said cam means includes a ramp section hinged on an axis extending parallel to said rotor axis,

(g) said ramp section having a laterally extending semi-cylindrical end shaped complementary to and engaged in said socket for hinging movement therein, and

(h) means resiliently urging said ramp semi-cylindrical end into said semi-cylindrical socket at all times.

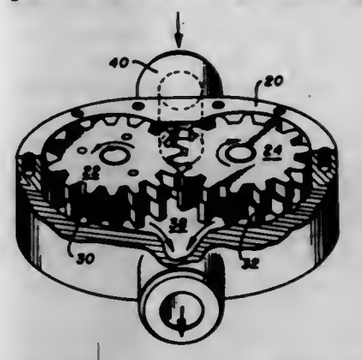
3,272,140
METERING PUMP
Philip E. Curry and Panayotis P. Demopoulos, Pensacola, Fla., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 2, 1964, Ser. No. 356,785
4 Claims. (Cl. 103—126)

1. Pumping apparatus for producing a substantially constant flow, comprising, in combination:

(a) a gear pump housing having an inlet port;

(b) first and second pairs of meshed gears within said housing;

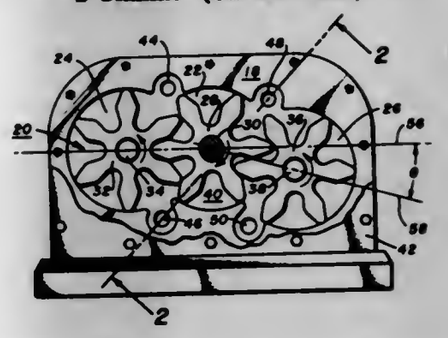
(c) said second pair of gears being so aligned with respect to said first pair of gears that the teeth of the second pair of gears are angularly displaced one-



fourth pitch with respect to the corresponding teeth on said first pair of gears;

(d) and means defining a common discharge port for the output streams of said first and said second pairs of gears.

3,272,141
METERING PUMP
Philip E. Curry and Panayotis P. Demopoulos, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed May 13, 1964, Ser. No. 367,071
2 Claims. (Cl. 103—126)



1. Pumping apparatus for producing a substantially constant flow comprising in combination:

(a) a pump housing, and

(b) meshed gears within said housing, said meshed gears consisting of a central spur gear and first and second further spur gears, each of said further gears meshing with said central gear to form respectively first and second meshed regions,

(c) a three-gear positive displacement pump wherein the offset angle defined by the gears equals

$$(90/n)(4K+1)$$

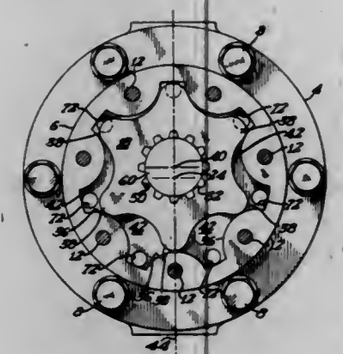
degrees, when n equals the number of teeth on the central gear and K equals an integer, each of said gears being a spur gear,

(d) and said housing forming with said gears a positive displacement pump with a single output stream.

3,272,142
PORTING AND PASSAGE ARRANGEMENT FOR FLUID PRESSURE DEVICE
Wayne B. Easton, South Bend, Ind., assignor to Char-Lynn Company, Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 13, 1965, Ser. No. 479,424
12 Claims. (Cl. 103—130)

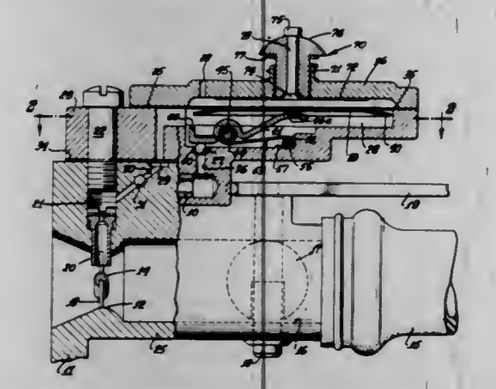
1. In a fluid pressure device, a casing, an internally toothed ring member defining the outer wall of a chamber, a cooperating externally toothed star member having fewer teeth than said ring member disposed eccentrically in said chamber, one of said members having orbital

movement about the axis of the other of said members and one of said members having rotational movement about its own axis, the teeth of said members intermeshing in sealing engagement to form expanding cells on one side of the line of eccentricity between said members and contracting cells on the other side of said line during relative movement between said members, a valve rotatably disposed in said casing, drive means operatively connecting said valve to one of said members for rotation of said valve in synchronism with one of said movements of one of said members, said casing and said valve having mutually engaging plane surfaces, fluid inlet and outlet



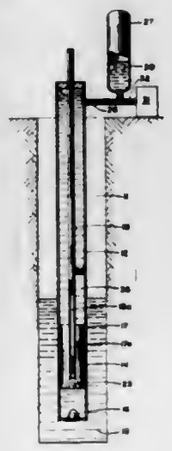
passages extending from the exterior of said casing to said plane surface of said casing, passage means in said casing which form circumferentially spaced openings in said plane surface of said casing and extend therefrom to said ring member chamber for communication with said cells, fluid feeding and exhausting recess means in said plane surface of said valve having constant communication respectively with said fluid inlet and outlet passages, said valve recess means upon relative movement between said valve and casing being sequentially communicable with each of said casing passages to effect communication between said inlet ports and the expanding cells on one side of said line of eccentricity and between said outlet port and said contracting cells on the other side of said line of eccentricity.

3,272,143
DEMAND FUEL REGULATOR AND PRIMING PUMP
Henry T. M. Rice, San Gabriel, Calif., assignor to Ohlsson & Rice, Inc., Los Angeles, Calif., a corporation of California
Filed May 20, 1963, Ser. No. 281,438
11 Claims. (Cl. 103—150)



1. In a fuel regulator and priming pump: housing means having a chamber therein provided with an inlet passage and a single outlet passage; an inlet valve controlling flow of fuel from said inlet passage into said chamber; a discharge valve controlling flow of fluid from said chamber into said outlet passage; valve actuating means engaging said inlet valve and urging said inlet valve to closed position; diaphragm means secured to said housing means across said chamber and engageable with said valve actuating means to shift said valve actuating means in response to the pressure in said chamber to control opening of said inlet valve; said diaphragm means being constructed and arranged to shift in said housing in a direction to draw fuel from said inlet passage past said inlet valve into said chamber; and means engageable with said diaphragm means for reciprocating said diaphragm means in said chamber to alternately enable said discharge valve to close and draw fuel from said inlet passage past said inlet valve into said chamber and enable said inlet valve to close and discharge fuel from said chamber past said discharge valve into said outlet passage.

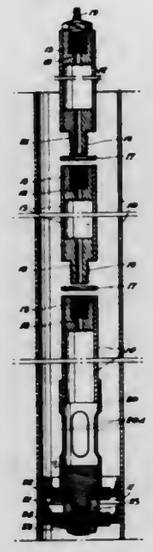
3,272,144
WELL PUMP
Renic P. Vincent, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,659
4 Claims. (Cl. 103—204)



1. A reciprocating pump for pumping fluid from a well which comprises:
(a) a vertical first conduit suspended within said well;
(b) a pump cylinder connected to the lower end of said first conduit;
(c) a string of hollow sucker rods suspended within said first conduit;
(d) a plunger connected to said string of hollow sucker rods and reciprocally mounted within said cylinder in sealing engagement with the interior surface of said pump cylinder,
said plunger having a second conduit therethrough and a check valve means in said second conduit permitting flow only from beneath said plunger upwardly through said second conduit, said second conduit being in fluid communication with the interior of said string of hollow sucker rods,
said plunger forming a barrier between said second conduit and a protective fluid reservoir formed above the plunger within said first conduit and exterior of said string of hollow sucker rods so as to prevent fluid communication between the reservoir and the second conduit;
(e) an inlet means in said cylinder below said plunger communicating said cylinder with said well for admitting well fluid into said cylinder, said inlet means including a check valve means for unidirectional flow of fluid from the well into said cylinder;
(f) a column of protective fluid contained in the protective fluid reservoir formed in said first conduit exterior of said string of sucker rods and above said plunger, and

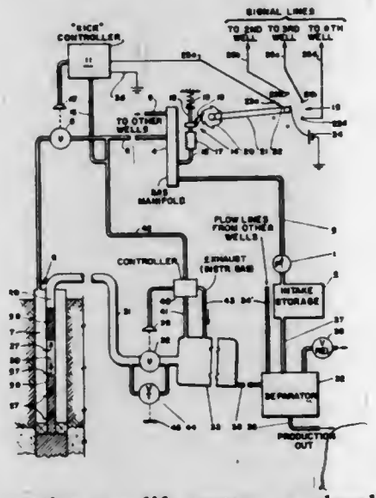
(g) means for maintaining the lower end of said column of protective fluid above said plunger at a pressure greater than the maximum fluid pressure in said cylinder below said plunger.

3,272,145
BORE PUMPS
Gresley Lukin Towner, Tooloon, Charleville, Queensland, Australia
Filed Oct. 22, 1964, Ser. No. 405,768
2 Claims. (Cl. 103—224)



1. A reciprocating bore pump having a casing, a pump plunger within said casing, a hollow pump rod for reciprocating said plunger, the interior of said rod forming an air chamber open to the water pressure immediately above said plunger and extending continuously to the surface of said bore, a non-return air valve closing the upper end of said chamber and means for attaching a source of compressed air to said valve to recharge said chamber.

3,272,146
ROTATIVE GAS LIFT SYSTEM
John D. Bennett, Richardson, and John W. Peret, Dallas, Tex., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Feb. 13, 1964, Ser. No. 344,704
21 Claims. (Cl. 103—232)



1. In a rotative gas lift system, a plurality of wells each having therein gas lift devices to which compressed gas may be supplied to lift well fluids to the surface; a single source of compressed gas, a separate coupling between the gas lift devices of each respective well and said source, a separate control valve in each respective coupling, and means responsive to variations in pressure of said source for causing the opening of said control valves one at a time and in a predetermined sequence, the arrangement being such that each respective control valve is closed prior to the opening of the valve immediately following in the sequence..

3,272,147
CART SYSTEM FOR FOUNDRIES OR THE LIKE
Henry J. Cakora, Pekin, Ill., assignor to Tazewell Machine Works, Inc., Pekin, Ill., a corporation of Illinois
Filed May 11, 1964, Ser. No. 366,528
14 Claims. (Cl. 104—1)

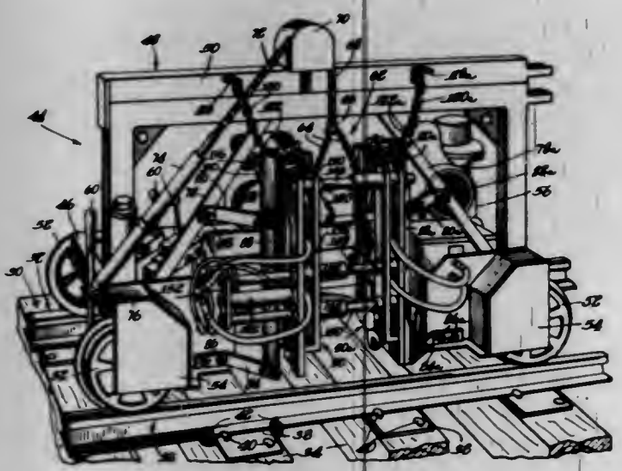


1. In a cart system for foundries or the like,
the combination comprising a pair of parallel wide gauge rails,
a pair of parallel narrow gauge rails disposed centrally between said wide gauge rails,
said wide and narrow gauge rails being at substantially the same elevation,
a plurality of carts,
each cart having a pair of wheel-supporting arms mounted thereon for swinging movement between retracted and extended positions,
a plurality of wide gauge wheels mounted on said arms and engageable with said wide gauge rails,
said arms projecting downwardly and outwardly from said cart when said arms are in said extended position to locate said wide gauge wheels opposite said wide gauge rails,
a plurality of narrow gauge wheels mounted on each cart and engageable with said narrow gauge rails,
said wide gauge wheels being at a substantially lower elevation than said narrow gauge wheels when said arms are extended,
a tiltable member at one end of said wide gauge rails and including a pair of narrow gauge rail sections at a higher elevation than said wide and narrow gauge rails,
said tiltable member being swingable in one direction to move said narrow gauge rail sections upwardly under said narrow gauge wheels so as to raise said cart off said wide gauge rails,
spring means on each cart for moving said arms to said retracted position when the weight of the cart is removed from said wide gauge wheels,
said wide gauge wheels being swung upwardly and inwardly under the cart when said arms are retracted so that said narrow gauge wheels will project below said wide gauge wheels,
said tiltable member being swingable in the opposite direction to move said narrow gauge rail sections downwardly opposite said narrow gauge rails for directing the cart onto said narrow gauge rails,
the cart on said wide gauge rails being raised above said narrow gauge rails by said arms and thereby affording room under said cart for the passage of another cart on said narrow gauge rails,
inbound carts on said narrow gauge rails thereby being able to pass under outbound carts on said wide gauge rails,
means forming a pair of eyes on said arms for use in lifting said carts,

and a lifting device at the opposite end of said rails and including hooks for engaging said eyes and lifting the cart,

the weight of the cart thereupon being effective to swing said arms outwardly to their extended positions to locate said wide gauge wheels for reengagement with said wide gauge rails.

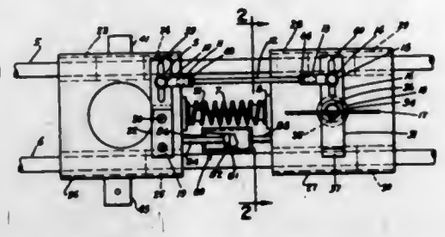
3,272,148
RAIL ANCHOR APPLYING MACHINE
William P. McIlrath, Racine, Wis., assignor to Racine Hydraulics & Machinery, Inc., Racine, Wis., a corporation of Wisconsin
Filed July 30, 1963, Ser. No. 298,617
9 Claims. (Cl. 104—2)



1. In a machine for applying rail anchors, the combination comprising a frame, a plurality of wheels rotatably mounted on said frame for transporting said machine on a railroad track, rail anchor applicator means, means on said frame for moving said applicator means between lowered anchor applying position and raised traveling position, and guide means on said frame comprising a pair of substantially vertical guide members spaced longitudinally of a rail for guiding said applicator means between raised and lowered position, said applicator means having guide means cooperable with and movable away from the guide members of the guide means on said frame, said applicator means comprising a pair of like rail anchor positioning members spaced longitudinally of a rail to embrace a tie with said applicator means in lowered position, power means acting between said anchor positioning members to move said members toward one another and respectively away from said guide means and thereby to press prepositioned rail anchors against the opposite sides of a tie, said applicator means further having presser means engageable with prepositioned rail anchors and movable transversely of a rail to force said anchors into installed position.

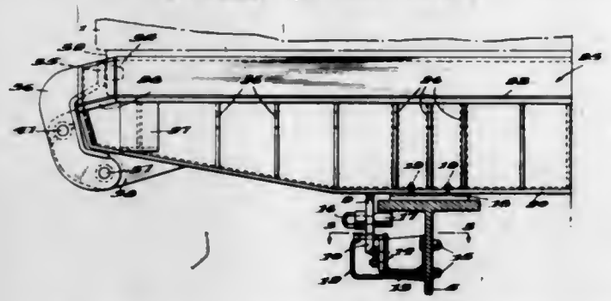
3,272,149
INERTIA COMPENSATING CONVEYOR
Robert L. Crane, Hopkins, Minn., assignor, by mesne assignments, to Eastman Kodak Company
Filed May 14, 1964, Ser. No. 367,344
13 Claims. (Cl. 104—173)

1. A product conveyor on which products are transported from one point to another comprising, at least a first and second movable member adapted to travel in similar paths, means for driving said first and second movable members so that they accelerate and decelerate differently from each other whereby the distance between them varies in proportion to their relative rates of acceleration or deceleration, a product platform means movably mounted on one of said first and second movable members, and linkage means operatively attached between said product platform means and the other of said first and second movable members for moving said product platform means as the distance between said first and



second movable members varies whereby a reaction force is applied to any products resting on said product platform means which opposes any force tending to move the products relative to said product platform means.

3,272,150
FREIGHT TRANSPORTATION SYSTEM
James W. Dempster and Steven C. Voorhees, Knoxville, Tenn., assignors to Dempster Brothers, Inc., Knoxville, Tenn., a corporation of Tennessee
Continuation of application Ser. No. 285,037, June 3, 1963. This application Aug. 18, 1965, Ser. No. 483,015
6 Claims. (Cl. 105—366)

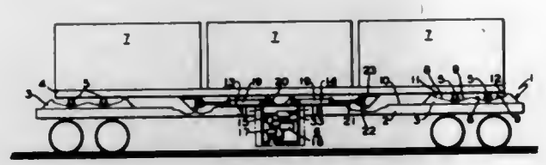


1. A bolster for a freight transporting system, comprising an elongated member having a seat extending lengthwise substantially throughout the length thereof and open at the ends of the bolster adapted to receive a container in supported position on the seat, abutment means connected with the elongated member for maintaining the container on the seat, and a hold-down device for the container and mounted on the end of said bolster, said device comprising a plate extending edgewise of the bolster underneath said end portion and projecting outwardly at the end of the bolster, a member extending from a position beneath the bolster upwardly around the end of the bolster to a position above said end, said member having portions straddling the plate, a hinge pin extending through said portions of the member and through the plate at a point beneath the end of the bolster, a lock pin extending through the plate and said portions of the member, and means on the upper end of the member fixed rigidly thereto and movable into interengagement with the container upon raising movement of the member to hold the container on the seat.

3,272,151
RAILWAY CAR BODY MOUNTING ARRANGEMENT
George K. Newell, Penn Township, Westmoreland County, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed July 17, 1964, Ser. No. 383,366
6 Claims. (Cl. 105—392.5)

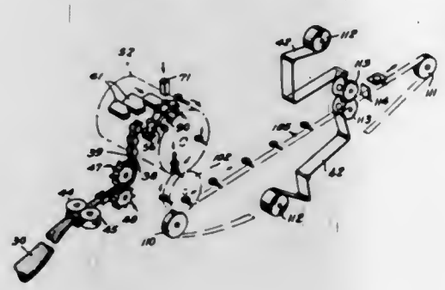
1. A vehicle body mounting arrangement for absorbing impact energy to protect lading therein, comprising:
(a) a vehicle body,
(b) means for carrying cargo,

(c) guide means on said body extending longitudinally of the forward and reverse directions of travel of said body, and having at least portions thereof inclined with respect to the direction of travel, the inclined portions being linear and intersecting at their lower points comprising stop means,
(d) means on said first named means engageable with said guide means and normally positioned by the weight of the first named means at said low point of said inclined portions and movable along the inclined portions for providing a component of gravity



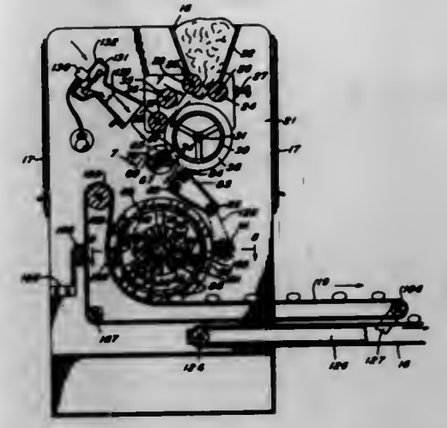
as a retarding force for relative movement between said body and said first named means when said body is accelerated, and
(e) means operable to provide a predetermined force for opposing the weight of the cargo carrying means for retarding movement of said cargo carrying means down said inclined portions to limit the force of impact of said means engageable with said guide means with said stop means to a value less than a cargo damaging impact force when relative movement between said vehicle and said cargo carrying means has ceased after an acceleration of said vehicle body.

3,272,152
APPARATUS FOR MAKING AND WRAPPING SOFT-CENTER CANDY SUCKERS
Shafter L. Williams, 1511 Myrtle Ave., Chesapeake, Va.
Filed Aug. 30, 1963, Ser. No. 305,682
10 Claims. (Cl. 107—4)



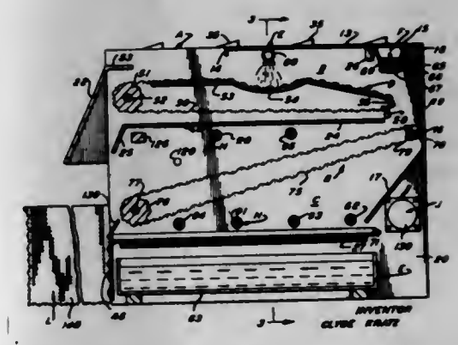
1. Apparatus for making soft-center candy suckers, comprising
(a) means for engaging an advancing candy rope and progressively pinching it transversely at successive intervals to form pillow-shaped sections connected in series by attenuated fins, said engaging means comprising a pair of cooperating wheels having blunted teeth meshing face to face but not touching, and means for rotating said wheels in opposite directions, said candy rope being fed into the nip of said wheels,
(b) means for engaging successive fins and pinching the ends toward each other to a degree which ultimately severs each fin,
(c) means adapted to engage successive separated sections and mold them to desired contour,
(d) means for inserting a stick into each section, and
(e) mechanism for driving the foregoing means (a)–(d) in predetermined timed relation.

3,272,153
DOUGH DIVIDER
Anthony P. Morabito, % Topos Mondial Corp., 755 Kohn St., Norristown, Pa.
Filed Dec. 20, 1963, Ser. No. 332,096
10 Claims. (Cl. 107—4)



1. A dough divider comprising a housing, a dough hopper in said housing, a rotatably mounted dough feed drum having a plurality of circumferential flanges for separating dough from said hopper into a plurality of strips, a rotatable cutter member having a plurality of spaced blades thereon movable toward said drum into cutting engagement with the dough in said strips, a horizontally disposed rotatably mounted dough receiving drum having a plurality of dough receiving cells in the periphery thereof, an agitating drum in said dough receiving drum and movable with respect thereto for moving the dough in said cells, members for guiding the dough into said cells, and a belt having a portion in peripheral engagement with a portion of said dough receiving drum for closing said cells during a portion of their travel and for discharge of dough pieces from said cells.

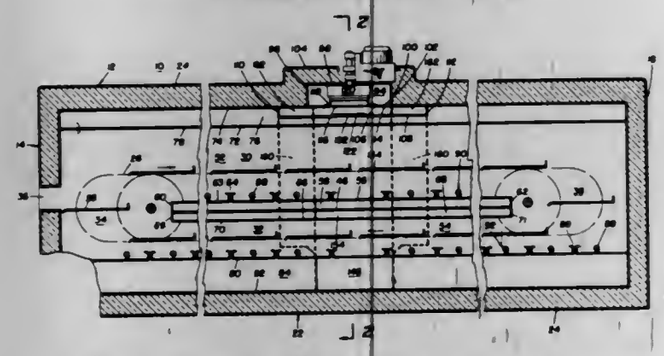
3,272,154
COMPACT SELF-UNLOADING BAKING OVEN
Clyde Kratz, Norristown, Pa., assignor to K & N Soft Pretzel Company, Inc., Norristown, Pa., a corporation of Pennsylvania
Filed Sept. 9, 1964, Ser. No. 395,155
10 Claims. (Cl. 107—4)



1. A self-unloading food baking oven comprising a longitudinally extending housing; a transverse plate dividing the interior of the housing into a proving zone and a baking zone; a first longitudinal conveyor in the proving zone adapted to carry products placed thereupon through said proving zone; means in said proving zone for spraying products on said first conveyor with caustic; means in said proving zone for depositing salt on products as they leave the proving zone; a second longitudinal conveyor in the baking zone adapted to carry products placed thereupon through said baking zone and aligned

with said first conveyor so as to effect transfer of products from one to another; said first conveyor being loaded proximate the front of said housing and said second conveyor automatically discharging proximate the front of said housing; and heating means within said baking zone to supply heat thereto as well as to said proving zone.

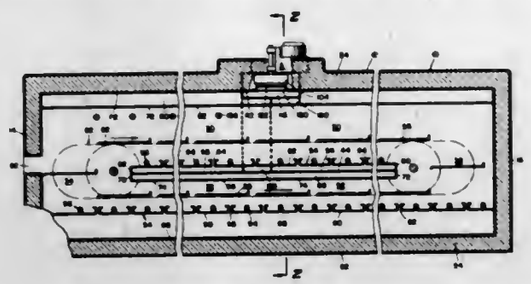
3,272,155
OVEN HEATING SYSTEM
Wayne H. Royer, York, Pa., assignor to Read Corporation, York, Pa., a corporation of Delaware
Filed Sept. 18, 1963, Ser. No. 309,814
15 Claims. (Cl. 107—55)



1. In an air circulating system for an oven provided with an endless traveling tray conveyor for transporting products to be baked therethrough in an upper and a lower longitudinally extending run,
an imperforate horizontal partition between said upper and lower tray conveyor runs extending from one side of the other of the oven to provide therein an upper and a lower baking chamber,
perforate horizontal partitions above and below said upper tray conveyor run providing in said upper baking chamber an upper and a lower plenum chamber,
perforate horizontal partitions above and below said lower tray conveyor run providing in said lower baking chamber an upper and a lower plenum chamber,
a blower,
first blowing duct means communicating with the discharge side of said blower and the lower plenum chamber of said upper baking chamber,
means providing communication between the intake side of said blower and the upper plenum chamber of said upper baking chamber,
second blowing duct means communicating with the discharge side of said blower,
intake duct means communicating with the intake side of said blower,
and damper controlled connecting duct means selectively providing communication between either of said second blowing or intake duct means with one or the other of said upper or lower plenum chambers of said lower baking chamber.

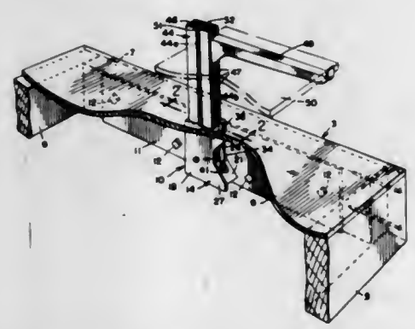
3,272,156
OVEN HEATING SYSTEM
William H. Gilgore, Hellam, and Wayne H. Royer, York, Pa., assignors to Read Corporation, a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 341,555
9 Claims. (Cl. 107—57)

1. In an air circulating system for an oven provided with an endless conveyor having a horizontal product carrying run, walls forming rectangular shallow upper and lower plenum chambers in spaced relation above and below said product carrying run,
the walls of said chambers facing said product carrying run having a multiplicity of air openings directed toward said product carrying run,
fan means,
discharge duct means communicating with the discharge of said fan means,
collecting duct means communicating with the intake of said fan means,
a pair of duct means communicating respectively with said upper and lower plenum chambers, and
valve means associated with said pair of duct means operative between first and second positions for se-



lectively providing communication between one of said pair of duct means and said discharge duct means and between the other of said pair of duct means and said collecting duct means in said first position of said valve means, and between the said one of said pair of duct means and said collecting duct means and between the said other of said pair of duct means and said discharge duct means in said second position of said valve means.

3,272,157
CLAMP STRUCTURES AND DISPLAY UNITS EMBODYING SAME
Henry S. Peacock and Charles P. Durham, Lincoln, Ill., assignors to Swain & Myers, Inc., Decatur, Ill., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,526
6 Claims. (Cl. 108—28)

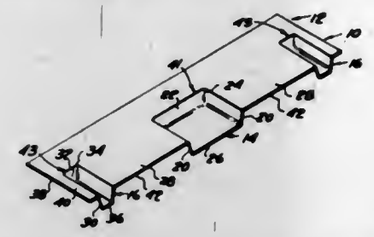


1. A clamp comprising side walls defining a socket open at a longitudinal end thereof and adapted to receive a rod-like member through said end, one of said side walls embodying a pair of longitudinally spaced, converging, oppositely facing, clamping jaw guides, a clamping jaw slidably mounted on each of said guides, and means for drawing said jaws toward each other to cause said jaws to slide on their respective, converging guides and thereby move said jaws into said socket against a rod-like member to be clamped in said socket.

3,272,158
MOLDED PALLET
Leslie F. Barnum, 19345 Keating St., Detroit, Mich.
Filed June 16, 1964, Ser. No. 375,448
4 Claims. (Cl. 108—51)

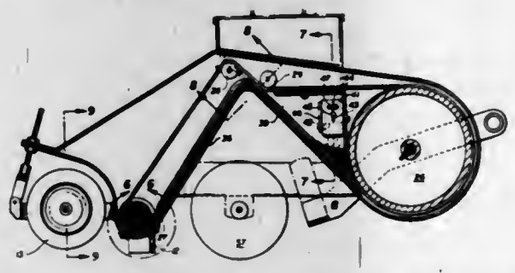
1. A molded pallet, comprising
a plate-shaped base having therein a plurality of sets of substantially rectangular openings disposed in laterally-spaced parallel relationship to one another,

each set containing a plurality of such openings spaced longitudinally apart from one another and a plurality of sets of open-topped box-shaped feet of substantially equal height secured at their tops 2 and depending from said base directly beneath said openings, said tops of said feet being of sizes and shapes substantially corresponding to the sizes and shapes of said openings,
said sets being disposed in laterally-spaced parallel relationship,
each set including a plurality of said feet disposed substantially in alignment with one another in longitudinally-spaced relationship,



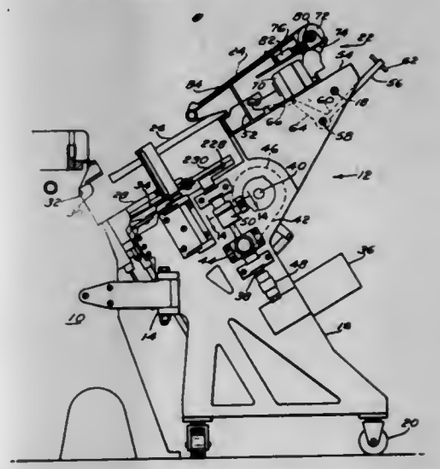
each foot including opposite side walls and end walls and a bottom wall connected to one another along their adjacent edges,
said base including lateral bridge portions disposed in the space between the feet of each set,
said lateral bridge portions extending between the upper edges of the side walls of adjacent feet,
said base also having longitudinal bridge portions extending between the end walls of the feet in each set thereof, said base along opposite edges of said openings having flaps extending downwardly therefrom into secured engagement with walls of their respective adjacent feet, said feet along opposite upper edges having horizontally-extending edge tabs secured to said base.

3,272,159
FARM IMPLEMENT FOR SEEDING
Martin I. Sanderson, 132 Grove St., Salinas, Calif.
Filed Feb. 19, 1965, Ser. No. 433,970
16 Claims. (Cl. 111—71)



1. A farming implement for planting seeds individually in a field-row comprising a frame adapted to move along said row, a flexible seed carrier belt formed with spaced seed-receiving holes distributed along the length thereof, the holes extending from one face of the belt to the other, means on the frame supporting said belt in a cyclic path lying in an upstanding plane, said path including a seed-carrying run and a return run, the seed carrying run being disposed to maintain the axis of each hole in a generally upwardly direction to retain seed therein, said seed carrying run including a seed-receiving reach, said seed-carrying run further including a seed-delivery reach terminating at a delivery disposition closely adjacent ground level, means for guiding said belt to carry those ends of the holes which constitute the bottom ends thereof during said seed-carrying run to pass nearest to the ground at said delivery disposition to deliver seed from the bottom of each hole to the ground beneath, seed retaining means underlying the seeds in said belt during said seed-receiving and seed-delivering reaches to retain seeds in said holes of the belt, a charging hopper adapted to contain seed overlying said receiving reach, said receiving reach passing in cooperative relation to said hopper to acquire seed in the holes of said belt, said seed retaining means serving to open each hole sufficiently at said delivery disposition to release the seed to fall from the belt.

3,272,160
AUTOMATIC FEED APPARATUS FOR BOOKSEWING MACHINE
John H. Atkins, Lexington, and George A. Wood, Jr., Lincoln, Mass., assignors, by direct and mesne assignments, to Oversewing Machine Company of America, Medford, Mass., a corporation of Massachusetts
Filed Jan. 31, 1964, Ser. No. 341,501
8 Claims. (Cl. 112—21)

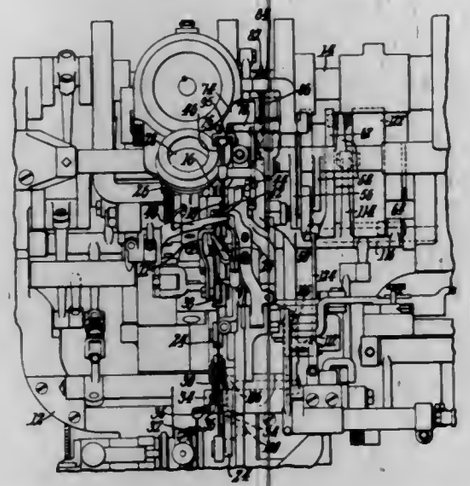


1. An apparatus for feeding signatures into a book sewing machine and for unloading sewn books therefrom, comprising
(a) a frame adapted to be connected to said sewing machine,
(b) a conveyor mounted on said frame for holding signatures placed thereon,
(c) a signature shelf mounted below said conveyor and adapted to receive individual signatures delivered by said conveyor,
(d) a retractable stop mounted at the outer end of said signature shelf,
(e) a pusher movably mounted to said signature shelf and adapted to advance signatures individually into said sewing machine,
(f) a movable bookshelf adapted to accumulate signatures fed thereon and clamp them in position for sewing,
(g) said bookshelf being adapted to lower itself to receive each new signature and to rise again into a clamping position,
(h) book and signature centering means including guide arms adapted to move up and down the said bookshelf,
(i) a hinged book table spaced below said bookshelf and adapted normally to move up and down therewith,
(j) one portion of said bookshelf having a sharp inner edge being adapted to swing out and away from said sewing machine to permit a fully sewn book to drop onto said table, to then rise and swing back to a closed position to cut the book threads,
(k) a finger mounted on said signature shelf adapted to extend down against said book and to pull said book from the other portion of said bookshelf, and
(l) means for first lifting said table when said bookshelf closes, then swinging said table down to unload said book and then return said table to a starting position.

3,272,161
PRESSER FOOT ACTUATING MECHANISMS FOR SEWING MACHINES

Otto R. Haas, Wenham, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Sept. 16, 1963, Ser. No. 309,018
11 Claims. (Cl. 112—38)

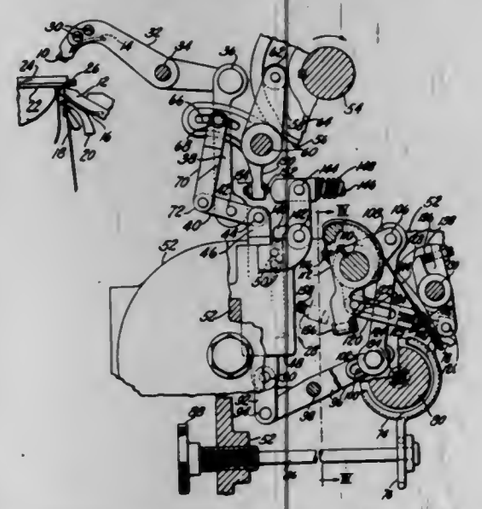


1. A sewing machine having a frame, stitch forming devices in the frame, a main sewing shaft for actuating the stitch forming devices, a work support, a presser foot and mechanism for actuating the presser foot to clamp and release the work supported on the work support, including a presser foot lever, a presser foot cam on the sewing shaft, a follower engaging the presser foot cam, and a train of adjustable connections between the follower and the presser foot lever, in combination with a feeler arranged to engage the work between the work support and the presser foot for changing the adjustment of the connections between the follower and the presser foot levers as the thickness of the work varies between successive stitches.

3,272,162
PRESSER FOOT MECHANISMS

Joseph R. Ioannilli, Beverly, and Roger E. Lemay, West Peabody, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Apr. 23, 1964, Ser. No. 361,961
5 Claims. (Cl. 112—61)

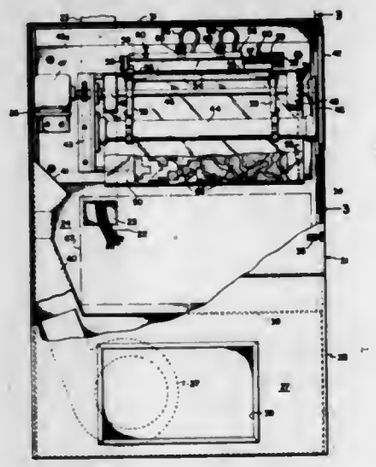


1. A sewing machine comprising a curved hook needle, a work support upon which a work piece having a thickness within a predetermined range of work thicknesses is supported while being penetrated by the needle, a presser foot for gripping the work piece against the work support, a torsion spring producing a torque output proportional to work thickness, a lock releasable during a portion of each sewing cycle for permitting the presser foot to be urged toward the work support under a force from the spring and interconnecting means for translating the torque output of the spring into a relatively constant force applied to the presser foot throughout the range of work piece thickness.

3,272,163
PATTERN CONTROL FOR TUFTING MACHINE ATTACHMENTS

Joseph Otis Erwin, Jr., Hixson, and Wallace Wesley Hammel, Jr., Chattanooga, Tenn., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed May 6, 1964, Ser. No. 365,334
9 Claims. (Cl. 112—79)



1. In a tufting machine having a pattern controlled yarn feeding mechanism for feeding yarn at different rates to the individual needles of the tufting machine and comprising an electrically-actuated control means for controlling the rate of yarn feed and a pattern mechanism for actuating said control means, said pattern mechanism comprising a console remote from the machine, a shaft journaled in said console, means electrically connected to the machine for driving said shaft in synchronism with the operation of the tufting machine, a pattern element comprising an endless belt of flexible transparent material means for mounting said belt in said console for advancing said belt endlessly and for flexing said belt longitudinally as it is advanced, means coupling said belt to said shaft for advancing said belt in timed relation with said shaft upon rotation of said shaft, said belt having opaque areas defining a desired pattern, photoelectric means disposed in operative relation with respect to said belt to respond to light transmitted through the transparent areas of said belt, and means electrically connecting said photoelectric means to said control means for actuation of said control means by said photoelectric means as the transparent and opaque areas of said belt are moved into operative relation with said photoelectric means.

3,272,164
LUBRICATING SYSTEMS FOR SEWING MACHINES

George F. Keller, Mountain Lakes, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 12, 1965, Ser. No. 432,223
3 Claims. (Cl. 112—256)

1. A lubricating system for a sewing machine having a frame, an oil reservoir in said frame, a rotating shaft having an axial bore mounted in said frame, a loop taker connected to the rotating shaft, said loop taker including a stationary member having a bearing surface and a rotary member having a bearing surface mating with the bearing surface of the stationary member and a conduit communicating with the axial bore in the rotating shaft and extending to the bearing surface of the rotary member for transmitting oil to said bearing surface, said lubricating system comprising a stationary capillary tube for oil mounted in the bore in the rotating shaft and communicating with the conduit in the rotary member of the

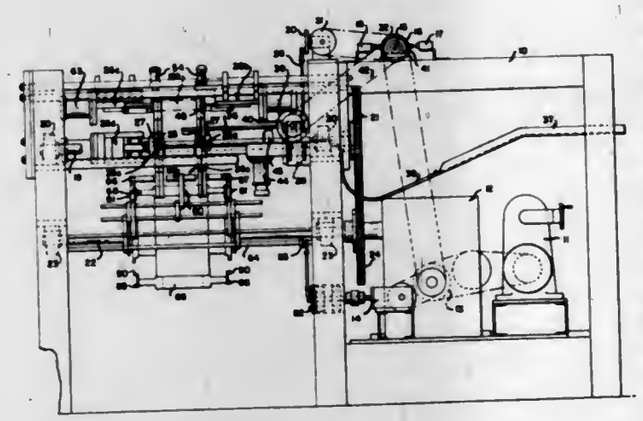


loop taker, means connected to the capillary tube to retain the capillary tube against rotation, means for supplying oil to the capillary tube from the reservoir in the sewing machine frame and ultimately to the bearing surface of the rotary member at substantially the same temperature as the oil in the reservoir, and a valve in the lubricating system which is formed by said means for supplying oil to the capillary tube, said capillary tube and said conduit in the rotary member of the loop taker.

3,272,165
MACHINES FOR MANUFACTURING HEAT TRANSFER UNITS

Richard E. Carlson, Jamestown, and John E. Paulin, Elma, N.Y., assignors to Blackstone Corporation, a corporation of New York

Filed Dec. 16, 1963, Ser. No. 331,002
12 Claims. (Cl. 113—1)

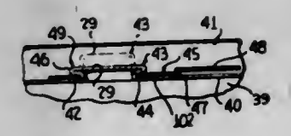


1. In a machine for making water-line separator members, a formed separator feed, a waterline strip feed, a rotating forming wheel having a plurality of spaced work stations, means delivering a measured portion of waterline strip to the forming wheel in its first work station, means at a second work station bending the measured portion of waterline strip adjacent its midpoint back upon itself to form side-by-side portions, a pre-crimp folding means adjacent a third work station folding the free ends of the bent waterline strip together, a final crimping means adjacent a fourth work station forcing the folded free ends into tightly crimped engagement, a rotating stuffer wheel rotatable on an axis parallel to and spaced from the axis of the forming wheel, said stuffer wheel having a receiving position receiving a formed separator member from the separator feed, a stuffer position in which the separator is held adjacent to the rotating forming wheel, stuffing means adjacent a fifth work station in which the stuffer wheel holds the separator member in the stuffer position adjacent the formed waterline, said stuffer means transferring the waterline element around the separator member to form a complete waterline unit, and a discharge position for said stuffer wheel in which the completed waterline unit is discharged from the machine.

3,272,166
METHOD OF ASSEMBLING A PULL ELEMENT AND A CAN END

John Henchert, Oak Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Continuation of application Ser. No. 88,473, Feb. 10, 1961, now Patent No. 3,151,766, dated Oct. 6, 1964. This application May 7, 1964, Ser. No. 365,689
1 Claim. (Cl. 113—121)



A method of joining a metallic sheet-like pull element to a metallic sheet-like can end panel joined by a seam to a container body comprising the steps of forming a score line in the end panel to define a tear starting end portion of a tear strip with the depth of the score line at the tear starting end portion being greater than the depth of the score line adjacent the starting end portion, forming an aperture in an end portion of the pull element, deforming a central portion of the end portion of the tear strip adjacent the deeper score line thereof to form a hollow offset member integral therewith having a transverse wall, a peripheral wall, a length greater than the thickness of the pull element and a diameter generally equal to the diameter of the aperture, relatively telescoping the offset member of the tear strip and the aperture with the end portions in contact and the end portion of the pull element overlying and projecting radially beyond the deeper scored portion of the score line adjacent the aperture with the pull element wholly confined within the area defined by said seam, forcibly moving the transverse wall toward the first element to outwardly displace sufficient material of the offset member to form an outwardly directed circumscribing bead having a wall thickness substantially greater than the thickness of the transverse wall and overlying engaging the defining edge portion of the aperture of said first element to effect the jointure between the latter and the second element.

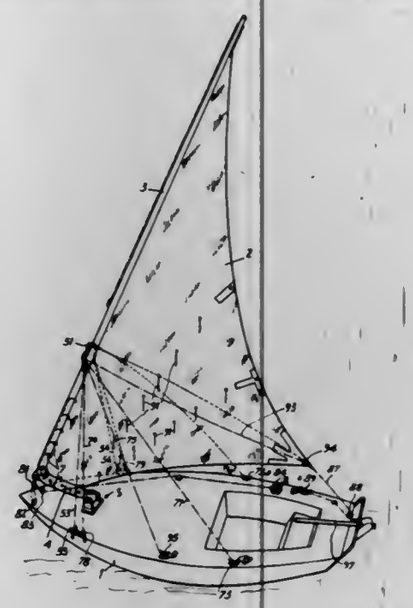
3,272,167
SAILING-BOAT

Daniel de Monfreid, 55 Rue Cardinet, Paris, France

Filed Mar. 17, 1965, Ser. No. 440,415
Claims priority, application France, Mar. 27, 1964, 969,031
8 Claims. (Cl. 114—39)

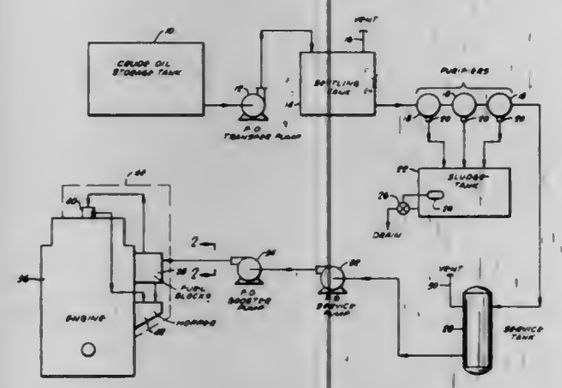
1. A sailing-boat having a hull with a deck; a slanting sail-yard the lower end of which is formed with a rearwardly elbowed extension which is pivoted at its extremity to the middle of the fore portion of said deck by means of a universal joint; means adapted to maintain an intermediate point of said sail-yard in the fore-and-aft vertical mid-plane of said hull; means for limiting the shifting of said intermediate point of said sail-yard forwardly substantially to the vertical extending through said universal

joint; means of adjustable length connecting the lower end of said sail-yard to the fore portion of both sides of said hull, respectively; a four-sided sail having one side secured to said sail-yard, another side secured to said



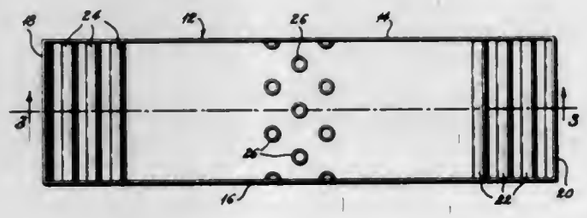
elbowed extension, while the other two sides thereof are free and form an aft gore of said sail; and a clew line of adjustable length connecting said aft gore of said sail to the rear portion of said hull.

3,272,168
MARINE DRIVE SYSTEM
William J. Donohue, Brooklyn, N.Y., and Harold E. Vander Linde, New Canaan, Conn., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed June 19, 1964, Ser. No. 376,516
5 Claims. (Cl. 114—74)



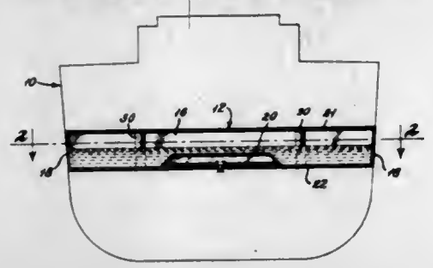
1. In combination with a crude oil tanker having a plurality of compartments therein sealed from one another and having a storage tank therein containing crude petroleum oil;
a compression-ignition internal combustion engine having fuel pumping means and fuel overflow means thereon and being located in one of said compartments;
a hood for collecting gases evolving adjacent the engine and preventing the escape of said gases into the compartment containing the engine;
a transfer pumping means connected to the storage tank and the fuel pumping means on the engine for transferring said crude to the engine, said transfer pumping means being located in a second of said compartments;
a centrifuge interposed in the connection of the transfer pumping means to the engine fuel pumping means for removing foreign matter from said crude, said centrifuge being located in a second of said compartments;
a sludge tank communicating with said centrifuge; and
means for maintaining said second of said compartments above atmospheric pressure.

3,272,169
PASSIVE SHIP STABILIZER USING TERMINAL DAMPING MEANS
Lawrence W. Ward, Glen Cove, N.Y., assignor to John J. McMullen Associates, Incorporated, New York, N.Y., a corporation of New York
Filed July 30, 1964, Ser. No. 386,198
11 Claims. (Cl. 114—125)



1. A ship stabilizer comprising an elongated tank mounted in a ship with its long axis transverse to the roll axis of the ship, a liquid body partially filling said tank, a plurality of elongated members mounted in said tank at each of the longitudinal end regions thereof, each of said plurality of members being arranged in a substantially horizontal plane, a portion of the outer surface of each of said members being continuous around the axis thereof and being spaced from the sides and ends of said tank and from the others of said plurality of members, whereby a portion of said liquid body transfers in said tank and passes upwardly through the spaces between said members in response to the roll of said ship.

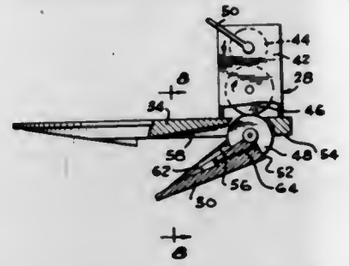
3,272,170
SHIP STABILIZER USING ELONGATED WEIR MEANS
Edward D. Dreyfus, Hyattsville, Md., assignor to John J. McMullen Associates, Inc., New York, N.Y., a corporation of New York
Filed Oct. 27, 1964, Ser. No. 406,748
9 Claims. (Cl. 114—125)



1. A stabilization system for ships and the like comprising an elongated enclosed tank mounted in the ship with its longitudinal axis extending transverse to the longitudinal axis of the ship, said tank having a pair of wing portions at opposite ends thereof, and an interconnecting portion extending from one wing portion to the other, an elongated weir mounted on the bottom of said interconnecting portion and having a top spaced below the top of said tank, said weir top being mounted generally in a horizontal position and extending throughout a major part of the length of said interconnecting portion, said weir also extending from one side of said tank to the other and having a downwardly sloping end plate

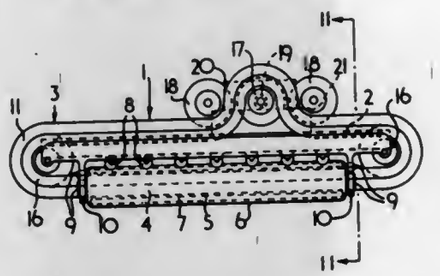
extending from each end of said weir top to the tank bottom, a body of liquid partially filling said tank to a predetermined static level, the top of said tank at said interconnecting portion being above said static liquid level to define an air space above said liquid body and below said tank top.

3,272,171
LANDING CONTROL AND EMERGENCY STEERING DEVICE FOR WATER CRAFT
Miroslav Korcak, 4010 Fairway Drive, Studio City, Calif.
Filed Mar. 31, 1965, Ser. No. 444,175
10 Claims. (Cl. 114—145)



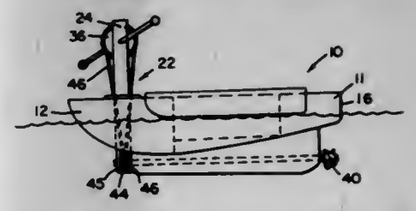
1. A steering control for a water craft comprising:
a wedge-shaped base, having mutually inclined upper and lower surfaces, adapted to be attached to the underside of the hull of said craft with its narrower end forwardmost on said hull and with said upper surface adjacent said hull and in water-tight relationship therewith;
a vane;
hinge means mounted transverse to said base near the rearwardmost end thereof and attached transversely along the rearwardmost end of said vane thereby permitting said vane to rotate between a fully retracted position adjacent the lower surface of said base and a fully extended position substantially perpendicular to said lower surface;
a water-tight housing integrally formed on the upper surface of said base and projecting upwardly through the hull of said craft;
driving means within said housing operatively connected to said vane for rotating said vane between said retracted position and said extended position; and
control means within the craft for selectively controlling said driving means.

3,272,172
LOAD OR VEHICLE SUPPORTING DEVICES
Richard Noel Thomson, Coleshill, England, assignor to Dunlop Rubber Company Limited, London, England, a British company
Filed Aug. 31, 1964, Ser. No. 393,235
Claims priority, application Great Britain, Sept. 6, 1963, 35,234/63
16 Claims. (Cl. 115—1)



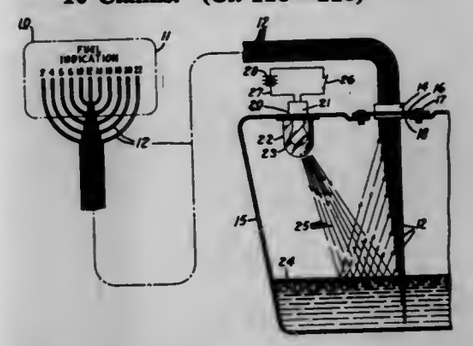
1. A load supporting device comprising an annular inflatable support having a longitudinal axis, two annular walls which lie radially one within the other with respect to said axis and define between them an annular inflatable chamber, and a reinforcement of substantially inextensible material, the walls being relatively axially movable to cause axial rolling movement of the support by eversion of said walls, the device also comprising a driving member which has a longitudinal axis and is provided with projections, the driving member extending axially through the support the radially inner wall of which lies against and is wrapped around the projections in the inflated state of the support to effect movement of the radially inner wall of the support relative to the radially outer wall by axial movement of the driving member, to cause axial rolling movement of the support.

3,272,173
TOY BOAT
Sebastian Avellino, Roslindale, Mass. (8 Anderson Road, Stroughton, Mass.)
Filed Apr. 2, 1965, Ser. No. 444,977
4 Claims. (Cl. 115—22.3)



1. A single passenger, lightweight boat comprising a hydrodynamically shaped body having a longitudinally extending axis, said body being made of low density plastic foam material and being capable of supporting the weight of a passenger balanced about said longitudinal axis,
a seat suspended on a lower part of the body on which said passenger may sit with his legs and part of his torso submerged,
a screw propeller suspended by the body,
hand operated drive means mounted on the body in front of the seat and connected to the screw propeller for rotating the screw propeller to propel the boat,
steering means for turning said boat, said means consisting essentially of at least one non-movable projection fixed with respect to said body and extending outwardly on either side of said axis of said body whereby shifting of the passenger's weight from one side of said body to the other causes turning of the boat in the water leaving the hands of the passenger free to operate said drive means.

3,272,174
REMOTE LEVEL INDICATION
John F. Pribonic, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,282
10 Claims. (Cl. 116—118)



1. In combination for use with a storage container located remote from panelling having predetermined graduated scale marking as to level content, a fiber optic level system including an energizable illuminating source

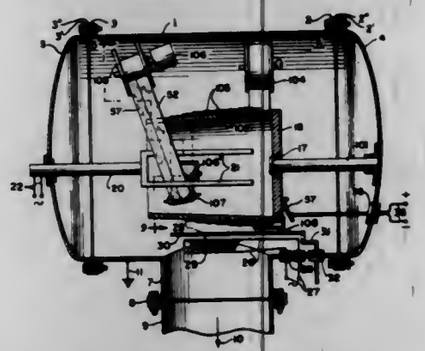
directly in the container, and a single fiber optic bundle of light transmitting elements collectively of differing lengths in a graduated scale of even integers of steps of each light transmitting element per se within the storage container and having ends thereof remote from the container terminating at the panelling, each said element per se having the end thereof subject to content immersion whereby light transmittal individually is darkened from said illuminating source directly in the container.

3,272,175

VAPOR DEPOSITION MEANS FOR STRIP-COATING CONTINUOUSLY MOVING, HELICALLY WOUND RIBBON

Albert Lorenz, Hanau am Main, Paul Müller, Hanau-Kesselstadt, Walter Reichelt and Bernhard Rosenstock, Hanau am Main, and Richard Seiz, Bruchkobel, Germany, assignors to W. C. Heraeus Gesellschaft mit beschrankter Haftung, Hanau am Main, Germany, a corporation of Germany

Filed May 12, 1965, Ser. No. 457,249
4 Claims. (Cl. 118—49)



1. An apparatus for partially coating a flat elongated metallic ribbon comprising, in combination:

(a) a sealable chamber;
(b) means for evacuating said chamber;
(c) evaporator means in said chamber;
(d) a drum in said chamber spaced from said evaporator means, said drum having an axis and a conically tapering face about said axis;
(e) two reel means rotatably mounted in said chamber;
(f) a motor means for rotating one of said reel means; and
(g) securing means for securing an elongated ribbon on said face in a plurality of axially consecutive turns in such a manner that each portion of said ribbon is parallel to said axis, and an edge portion of one turn overlaps an edge portion of an axially adjacent turn while the other edge portion of said one turn is overlapped by an edge portion of another axially adjacent turn, said securing means including a guide pulley for guiding a ribbon from the other one of said reel means over said face in said turns while respective portions of said ribbon are wound on said one reel means and said ribbon is moved longitudinally under the force of said motor means.

3,272,176

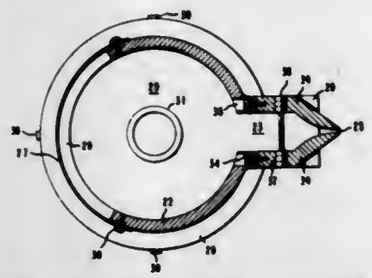
AIR KNIFE

Bernard Karl Saydlowski, Rochester, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 13, 1964, Ser. No. 359,158
8 Claims. (Cl. 118—63)

1. An air knife which comprises

(a) an elongated body having closed ends and forming a plenum chamber;
(b) a lengthwise slot in the wall of said chamber forming a fluid exit slot, the outer surface of the body adjacent said slot having planar surfaces extending laterally from said slot;
(c) a pair of lip members disposed adjacent said slot the ends of the lip members having planar surfaces that interfit with the respective planar surfaces of the body when the lip members are attached thereto, at least one lip member being fastened to the body for slideable adjustment, thereof the outer portions of the lip members forming an orifice near their outer extremities;
(d) bored slots in the inner wall of said chamber adjacent the planar surfaces and coative openings in the walls of the chamber communicating with the slots and engageable openings in the planar ends of the lip members;



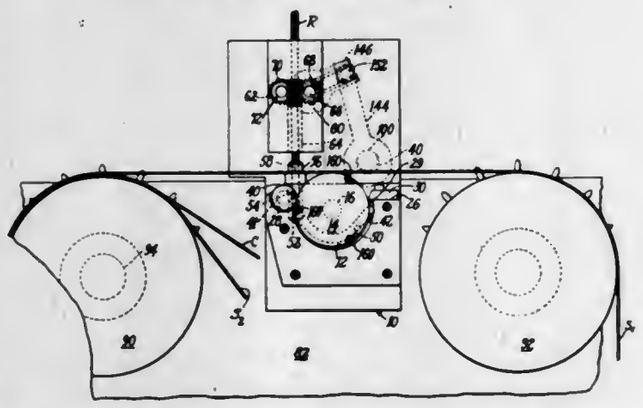
(e) fastening means of smaller dimensions than and extending through said slots and coactive openings and engaging the openings in the lip members, the fastening means for at least one lip member being adjustable whereby the lip member can be adjusted laterally and aligned adjacent the fluid exit;
(f) a row of adjusting bolts extending between said lip members and perpendicular to the axis of said orifice, the bolts being threaded on each end and provided with means for engaging a tool for turning the bolts;
(g) a fluid supply inlet communicating with said chamber;
(h) large spaced openings in the wall of said chamber opposite said slot; and
(i) a plate covering said openings.

3,272,177

ADHESIVE APPLYING APPARATUS

John S. Kelley, Wenham, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey

Filed Nov. 12, 1963, Ser. No. 322,829
4 Claims. (Cl. 118—202)



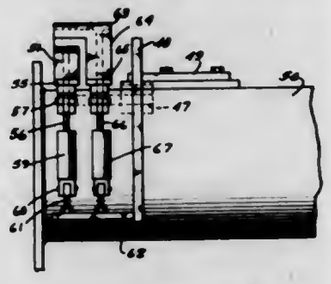
1. Apparatus for applying adhesive to work pieces comprising an intaglio applicator wheel having a cylindrical operating surface and provided with circumferentially disposed recesses, a heated casing formed to provide a chamber having a circular shaped wall and oppositely facing side walls, means mounting the applicator wheel for rotation in the casing between said side walls and with its peripheral surface adjacent to said circular shaped wall of the chamber, a metering bar having an operating edge mounted on the casing between said circular shaped wall and said cylindrical operating surface with said operating edge substantially in contact with the peripheral surface of the applicator wheel at the leaving end of said chamber, means for driving the wheel in a direction such that its operating surface moves along the circular shaped wall of the chamber toward said metering bar, and means for supplying molten adhesive to said chamber in a location closely adjacent to said metering bar under pressure and at a minimum rate just slightly in excess of the rate in which molten adhesive would be transferred to a work piece from the applicator wheel with the recesses therein filled substantially level with the peripheral surface of the wheel, and means for increasing the rate at which molten adhesive is supplied to the chamber above said minimum rate to cause molten adhesive to accumulate in the chamber reversely from the metering bar against rotation of the wheel and pressure of the molten adhesive adjacent to the metering bar to increase, whereby the recesses in said wheel are overfilled with adhesive, under the increased pressure, and the rate of transfer of adhesive to a work piece is correspondingly increased.

3,272,178

EDGE CONTROLS FOR FLOODED NIP COATERS

Wayne P. Sorenson, Robert H. Shugarts, and James H. Rilhl, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Aug. 15, 1963, Ser. No. 302,309
3 Claims. (Cl. 118—249)



1. In a device for coating a traveling paper web, in combination,

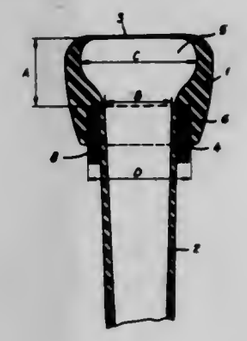
a backing roll wrapped by the traveling web and rotatably driven in one direction,
an applicator roll beneath said backing roll and with said backing roll defining a nip through which the paper web travels,
a pan containing coating material and having said applicator roll partially immersed in the coating material contained therein,
a doctor blade at the outgoing side of the nip between said rolls and engaging the coated paper web traveling about said applicator roll for smoothing the coating material on the web,
and means on the incoming side of the nip between said rolls for controlling the application of coating to the edge portions of the web and preventing said doctor blade from spreading the coating material onto said backing roll comprising:
a pair of first and second end wipes extending inwardly from each of the opposite ends of the applicator roll on the incoming side of the nip between said rolls,
one of each pair of first and second end wipes extending axially inwardly along the applicator roll a greater distance than the other and engaging the peripheral surface of said applicator roll in overlapping and circumferentially spaced relation with respect to the other,
and individual actuators operatively connected with each of said end wipes and selectively operable to move a selected end wipe against the circumferential surface of said applicator roll in accordance with the width of the sheet being coated.

3,272,179

SELF-FITTING TEAT CUP LINER

Bengt Erik Mikael Troberg, Hamra Gard, Tumba, Sweden, assignor to Alfa-Laval AB, Stockholm, Sweden, a corporation of Sweden

Filed Sept. 15, 1964, Ser. No. 396,567
Claims priority, application Sweden, Sept. 26, 1963, 10,541/63
2 Claims. (Cl. 119—14.49)



1. A teat cup liner comprising a top and a tubular body affixed to the top, the top having at its upper end an opening for insertion of a teat and having at its lower part an annular groove for receiving the upper end of a teat cup shell, said top having a substantially cylindrical vertical side wall surrounding a large hollow space located above the level of said groove and having an axial dimension which is at least equal to the largest inner diameter of the tubular body, said tubular body being adapted to be stretched between the ends of said shell, said upper end of the top forming an essentially flat wall defining said opening and which is resilient and substantially thinner than said side wall and the wall of the tubular body, the diameter of said hollow space being so large that the upper edge of the side wall lies against the udder at such a distance from the teat that it does not exert any pressure on the wall of the udder in the region nearest the teat root, the vertical side wall surrounding said hollow space being substantially thicker than the wall of said tubular body so as to prevent any appreciable compression of the hollow space either axially or radially, to a smaller volume under normal operating conditions.

3,272,180

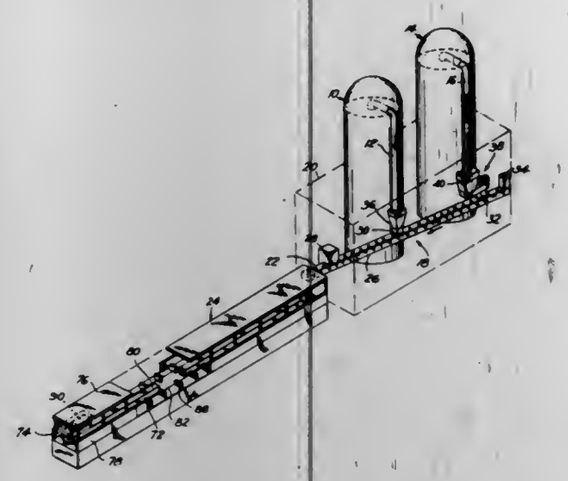
ANIMAL FEED PROPORTIONING AND MIXING APPARATUS

Jule P. Schommer, West De Pere, Wis., assignor to H. D. Hudson Manufacturing Company, Chicago, Ill., a corporation of Minnesota

Filed Apr. 29, 1964, Ser. No. 363,475
6 Claims. (Cl. 119—52)

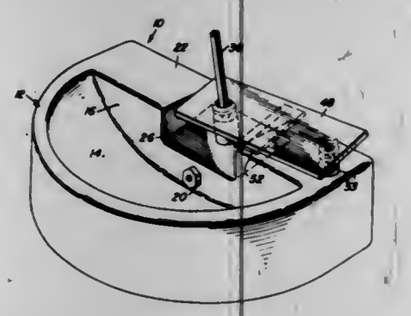
1. Animal feeding apparatus comprising in combination, a first source of a first substance to be fed, a second source of a second substance to be fed, said sources constituting silos and the lower part of said silos being disposed in an enclosure; a proportioning unit also in said enclosure coupled with said sources for regulating the mixture of said substances according to a pre-set proportion and transferring the mixture to a point of discharge, and including a primary conveyor having a first inlet for receiving a first substance and having a second inlet,

drive means for driving the primary conveyor at a preset rate of travel, an auxiliary conveyor disposed to receive a second substance and transfer it to the second inlet of the primary conveyor, a second drive means for driving the auxiliary conveyor at a preset rate of travel, said



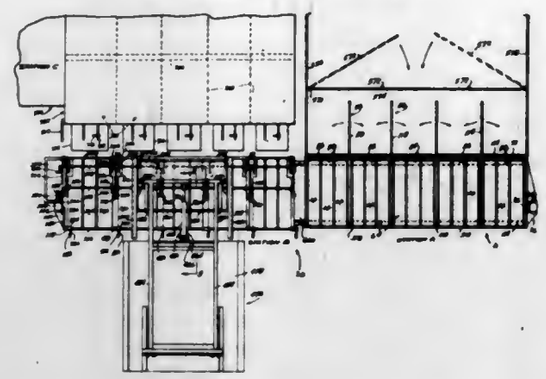
auxiliary conveyor including an auger, and control means for regulating the rate of travel of the auger relative to the primary conveyor in accordance with the amount of the second substance to be fed; a feeding bunk for receiving the discharged mixture of said substances, and means for distributing the discharge mixture in the bunk.

3,272,181
ANIMAL ACTUATED DRINKING FOUNTAIN
Paul E. Ramsey, Midland, Tex., assignor of five percent to H. M. Walters, Midland, Tex.
Filed Apr. 22, 1965, Ser. No. 450,005
6 Claims. (Cl. 119—76)



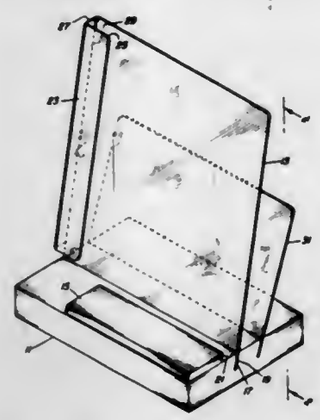
6. An animal actuated watering device comprising a trough having a bowl portion therein, a tubular valve seat on said trough outward of said bowl portion, a housing on said trough defining a fluid chamber about said valve seat, an aperture in said housing, an elongate hollow water passageway-type valve stem extending through said aperture and in water receiving and sealing engagement with said housing, said stem having a sealing means on the bottom thereof adapted to sealingly seat on said valve seat, said elongate stem extending substantially beyond said housing, an abutment means secured to said stem beyond said housing, an elongated operating plate having a first end thereof over said abutment means, said plate extending outward from said stem, means pivotally mounting said plate, and means engaged with the plate and biasing the first end thereof against the abutment means which in turn effects a seating of the stem, whereby said plate may be actuated to allow fluid pressure to lift said stem from its seat.

3,272,182
TURKEY-LOADING APPARATUS
Clifford C. Lund, Box 384, Moroni, Utah
Filed Oct. 22, 1965, Ser. No. 501,729
10 Claims. (Cl. 119—82)



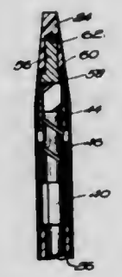
1. A poultry-loading system comprising a loading station, a transfer station, and a transport station including mobile means, said loading and transfer stations both including normally horizontal track means disposed in abutting relation at a pair of adjacent ends thereof, a carriage mounted for reciprocation on said track means, means on said loading and transfer stations to effect reciprocation of said carriage, a plurality of poultry crates mounted on said carriage and normally positioned at said loading station to receive poultry to be transported, said reciprocable means being operable to move said carriage and the loaded poultry crates from said loading station to said transfer station, means supported on said track means operable to lock said crates on said carriage in said transfer station, means operable to elevate said transfer station track means, said carriage and said loaded crates into juxtaposition relative to said transport station, and means on said transfer station track means cooperating with means on each of said loaded crates to move said loaded crates from said transfer station to said mobile means at said transport station.

3,272,183
SHEET HOLDER FOR STENOGRAPHER'S PAPERS
Merle E. Craighead and Tannie C. Craighead, both of 921 Missouri St., San Diego, Calif. 92109
Filed July 6, 1965, Ser. No. 469,663
1 Claim. (Cl. 120—28)



A device for maintaining flexible sheets of paper in an upright position, said device comprising in combination:
(A) A base having a flat top, said base having:
(1) a pair of parallelly disposed grooves, one groove being disposed forwardly of the other, each of said grooves extending from the top downwardly and forwardly throughout substantially the entire width of the base to form forward and rearward walls extending throughout substantially the entire width of the base;
(B) an upright and rearwardly extending back, said back extending into the forward groove and the walls of the forward groove forming the sole means for supporting the back, whereby the space immediately rearwardly of the back is unobstructed, said paper when resting against the back also resting on the base immediately forwardly of the back;
(C) means for preventing slippage forwardly of the paper when resting against the back, including:
(1) means on the flat top of the base and spaced forwardly of that portion of the top immediately above the base and adapted to engage the lower edge of the paper;
(2) and means formed integrally with the back and extending inwardly and forwardly along one upright side edge of the back;
(D) and a second back extending into the rear groove, the walls of the rear groove forming the sole means for supporting the second mentioned back.

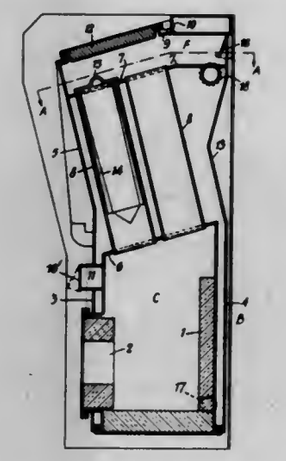
3,272,184
WRITING INSTRUMENT OF THE RETRACTABLE TYPE
William G. Crowley, Riverside, R.I., assignor, by mesne assignments, to Barrows Industries, Inc., Providence, R.I., a corporation of Rhode Island
Filed Dec. 2, 1963, Ser. No. 327,396
8 Claims. (Cl. 120—42.03)



8. In a writing instrument having a retractable writing end, an elongated tubular member, a tubular barrel enveloping said tubular member, an adaptor, the forward portion of which slidably and non-rotatably engages the rear portion of said tubular member, the rear portion of said adaptor having a helical thread formed thereon, a writing cartridge extending through said tubular member and being connected to said adaptor, wherein said cartridge is longitudinally movable with said adaptor and with respect to said tubular member, a point joined to the forward end of said tubular member, a fitting threadably engaging the threaded portion of said adaptor, and an operating cap secured to said fitting and being rotatable to produce a corresponding rotary movement of said fitting, said adaptor and said cartridge connected thereto being movable in a longitudinal direction in response to the rotary movement of said fitting, wherein the writing end of said cartridge is expelled from or retracted into said point as required.

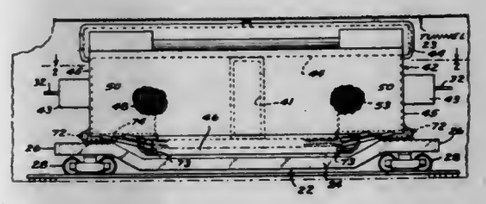
3,272,185
OIL FIRED BOILERS
Laurence Richard Luchford and Thomas Arthur Babbage, East Molesey, England, assignors to Trianco Limited, East Molesey, Surrey, England
Filed Sept. 14, 1964, Ser. No. 396,014
Claims priority, application Great Britain, Sept. 18, 1963, 36,754/63
8 Claims. (Cl. 122—115)

1. A boiler comprising a bottom wall, upwardly disposed front, rear and side walls having their lower portions inwardly spaced plates defining a water jacket surrounding a combustion space, said front wall and cooperating plate having an aperture therethrough for mounting a burner to extend forwardly beyond the front wall, said front wall having an upper portion above said combustion space which is inclined upwardly and forwardly to project beyond the lower portion, said rear wall having an upper portion which inclines forwardly and upwardly for part of its height and inclines rearwardly and upwardly for the remainder of its height, a water space



above said combustion space defined at the bottom by a lower header plate, at the top by an upper header plate, and by said inclined upper portion of the front wall and the upper portions of said rear and side walls, said water space communicating with the interior of said water jacket surrounding the combustion space, a flue space between said upper header plate and a top wall spaced thereabove, and a plurality of flue tubes inclined forwardly and upwardly across said water space to communicate said combustion space with said flue space.

3,272,186
PACKAGED STEAM GENERATOR
Robert A. Lorenzini, Westport, Conn., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Nov. 25, 1964, Ser. No. 413,910
4 Claims. (Cl. 122—336)



3. A steam generator comprising:
a major enclosure of steam generating tubes including a floor,
a minor enclosure of steam generating tubes, said minor enclosure extending from said major enclosure and being in a higher plane than said floor of said major enclosure,
a steam drum extending across the top of both said major enclosure and said minor enclosure, said steam generating tubes of both of said enclosures being directly connected to said steam drum,
a water drum extending across the bottom of only said major enclosure, only said steam generating tubes of said major enclosure being directly connected to said water drum,

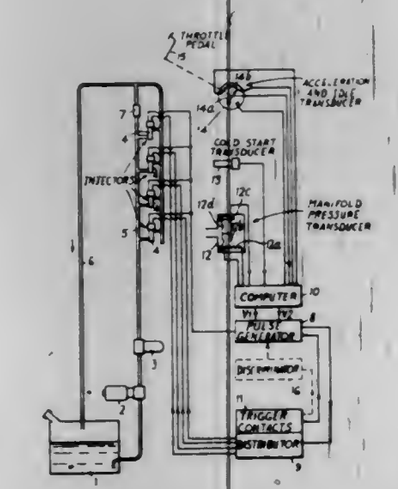
a lower side header lying directly beneath said minor enclosure and in a plane above said water drum, the steam generating tubes of said minor enclosure being directly connected to said lower side header,

a lower burner-wall header being directly connected to and extending horizontally and perpendicularly from said water drum, the remaining portion of the steam generating tubes of said minor enclosure being directly connected to said lower burner-wall header,

means for connecting said lower side header to said lower burner-wall header, and,

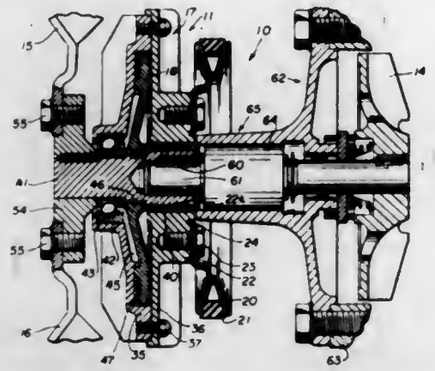
means for connecting said lower side header to said water drum.

3,272,187
FUEL INJECTION SYSTEMS FOR INTERNAL COMBUSTION ENGINES
Michael Hereward Westbrook and Richard Tett Skipworth, both of Leamington Spa, England, assignors to Associated Engineering Limited, Leamington Spa, England, a British company
Filed Sept. 8, 1964, Ser. No. 394,824
Claims priority, application Great Britain, Sept. 9, 1963, 35,495/63
7 Claims. (Cl. 123—32)



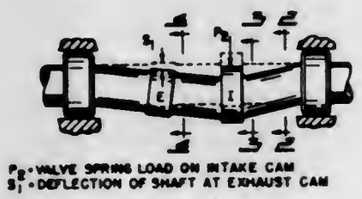
1. A fuel injection system for internal combustion engines comprising at least one electromagnetically operated fuel injection valve, a control circuit producing electrical pulses for energizing said at least one injection valve, so that said valve is opened for a period depending on the duration of each of the pulses to pass fuel to the engine, said control circuit comprising a monostable multivibrator having a timing circuit consisting only of components having values which are invariable during the operation of the system and including a timing capacitor which is charged through a constant current device, means for feeding said timing circuit with first and second variable voltages which vary as a function of parameters of engine operation to control the duration of the output pulses fed to energize said at least one injection valve and wherein said variable voltages fed to the timing circuit are derived from a computer device, independent of the control circuit and comprising a plurality of variable resistance devices connected across a voltage supply, and means for respectively varying said resistance devices in response to different parameters of engine operation, and wherein the duration of the output pulses varies linearly with respect to the first control voltage produced in dependence upon manifold pressure and is proportional to the second control voltage produced in response to other parameters of engine operation.

3,272,188
COMBINATION FAN AND WATER PUMP DRIVE
Arthur G. Sabet, Warren, Mich., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 2, 1964, Ser. No. 348,542
5 Claims. (Cl. 123—41.11)



3. A drive for an internal combustion engine radiator cooling fan device having fan blades for effecting air flow through the radiator and a pump having an impeller for effecting fluid flow through the radiator comprising fluid coupling means having an input coupling member to be driven from the engine and an output coupling member, said input and output coupling members having opposed spaced surfaces defining a fluid shear space therebetween cooperable with a fluid shear medium for transmitting torque therebetween to continuously effect driving of the output coupling member upon rotation of the input coupling member with the speed of rotation of said output coupling member increasing at a given rate as engine speed increases through a low speed range and at a lesser rate as engine speed increases above the low speed range, means for driving said fan blades and pump impeller from said output coupling member including shaft means fixedly connected to said output coupling member for rotation therewith, said shaft means fixedly supporting the fan blades and the pump impeller and driving the pump impeller and fan blades upon rotation of said output coupling member at an angular speed corresponding to the angular speed of said output coupling member so that the fan blades and pump impeller are increased in speed at a given rate through a low engine speed range and at a lesser rate as engine speed increases above the low speed range.

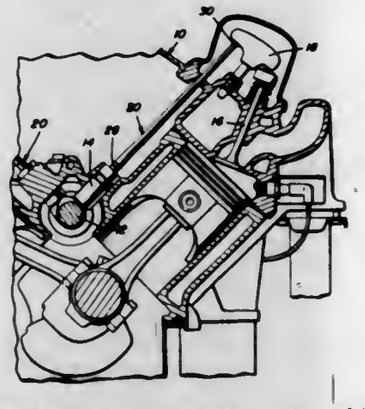
3,272,189
CAMSHAFT FOR INTERNAL COMBUSTION ENGINE VALVE GEAR
Michael C. Turkish, Lyndhurst, Ohio, assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed May 3, 1965, Ser. No. 452,669
19 Claims. (Cl. 123—90)



8. In a valve gear for an internal combustion engine, including a camshaft having a plurality of cams between a bearing span, said cams having different lobe positions so that valves controlled by said cams open and close in sequence, and the camshaft is of a nature that valve spring loads sequentially imposed on adjacent cams are effective to produce deflections of the camshaft and cams and thus produce mechanical interaction between tthe valves controlled by said cams,

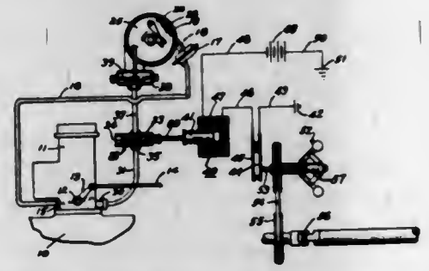
the improvement of a profiled heel on each of the cams, each said heel including a depressed portion to compensate for valve force resulting from camshaft deflection removal during the interval when the undercut profile portion is operable and maintains the valve associated with that cam in a closed position.

3,272,190
TAPERED PUSH ROD
Vincent J. Di Matteo, Sr., Los Angeles, Calif., and Vincent J. Di Matteo, Jr., and Bartolo Di Matteo, both of 7415 8th Ave., Los Angeles, Calif.; said Vincent J. Di Matteo, Sr., assignor to said Vincent J. Di Matteo, Jr., and said Bartolo Di Matteo
Filed July 21, 1965, Ser. No. 473,782
9 Claims. (Cl. 123—90)



1. An enlongated tapered push rod, said push rod including a long tubular main body portion substantially evenly tapered throughout substantially its entire length, the opposite ends of said push rod including short terminal end sections at least substantially closing the opposite ends of said main body portion and adapted to have longitudinal thrusts applied thereto, and wherein the wall thickness of said main body portion substantially evenly tapers in thickness from one end portion to the other end portion thereof.

3,272,191
ENGINE SPARK CONTROL FOR REDUCING SMOG
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif.
Filed Mar. 4, 1965, Ser. No. 445,815
14 Claims. (Cl. 123—117)

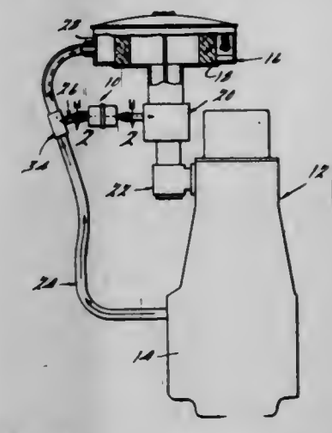


13. An internal combustion engine for a motor vehicle having an ignition system including a vacuum controlled spark advance means, a vacuum controlled spark retard means, a drive shaft driven by said engine, means for sensing the speed of rotation of said drive shaft, a valve controlled by said speed sensing means for applying high engine developed suction to said retard device at predetermined low drive shaft speeds to retard said spark advance means, said valve applying high suction to said retard device at various engine speeds while said vehicle is stationary.

ERRATUM

For Class 123—119 see:
Patent No. 3,273,161

3,272,192
FILTER
Richard V. Jensen and Robert J. Offer, Racine, Wis., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,575
9 Claims. (Cl. 123—119)



1. In a filter device

a filter housing comprising a pair of cup-shaped shell sections,

said shell sections being joined together in an air-tight joint,

the outer ends of said shell sections being necked down and forming reduced diameter inlet and outlet sections,

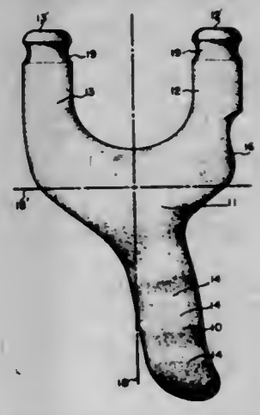
a cylindrical filter element in one of said shell sections,

said filter element being formed with a generally concave end adjacent said outlet section, and

an annular perforate support plate supporting said filter element in said housing in a position confronting said outlet section,

said support plate being dome-shaped and being nested within said concave end of said filter element.

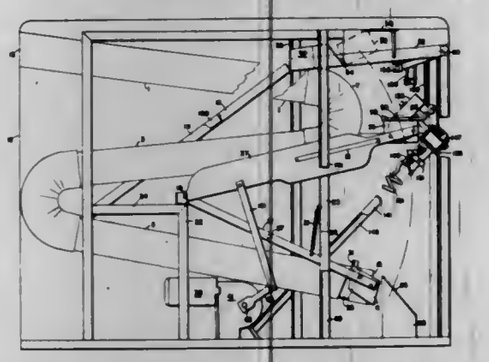
3,272,193
CROTCH TYPE CATAPULT FRAME
Ray Olecko, 654 Kent Road, Winnipeg, Manitoba, Canada
Filed July 23, 1964, Ser. No. 384,673
12 Claims. (Cl. 124—20)



1. A catapult frame comprising in combination a pair of spaced and parallel, elastic carrying arms, said arms merging together at the lower ends thereof to form a

yoke, and a hand holding stem extending downwardly from said yoke and in the same plane as said yoke, the vertical axis of said stem inclining away from the vertical axis of said yoke.

3,272,194
BALL PROJECTING DEVICE
John P. Egbert, Los Angeles, Calif., assignor, by mesne assignments, to Criterion Metal Fabricators, Inc., Inglewood, Calif., a corporation of California
Filed July 13, 1962, Ser. No. 209,554
11 Claims. (Cl. 124—26)



5. In a ball projecting device, the combination comprising: a ball striking arm pivoted at one end about a pivot; a ball striking surface on said striking arm, said ball striking surface moving through an arc between first and second limits as said arm is rotated about said pivot; a ball feed and firing track comprising first and second members spaced apart by a distance less than the diameter of a ball and disposed on opposite sides of said arc for at least a portion of the distance between said limits whereby said striking surface may move between said first and second members; a ball firing station including means for holding a ball on said track at a position which lies on said arc; cyclically operable drive means for rotating said ball striking arm about said pivot to move said ball striking surface to said first limit; said drive means including means releasing said striking arm when said surface reaches said first limit; spring means associated with said striking arm for storing energy as said ball striking surface is moved to said first limit, said spring means acting against said striking arm to release said energy stored by said spring and move said ball striking surface toward said second limit when said striking arm is released; and feed means operatively responsive to said drive means for feeding a ball into said firing station during the interval said ball striking surface is moving between said ball firing station and said first limit; and means for stopping said striking arm when said ball striking surface reaches said second limit.

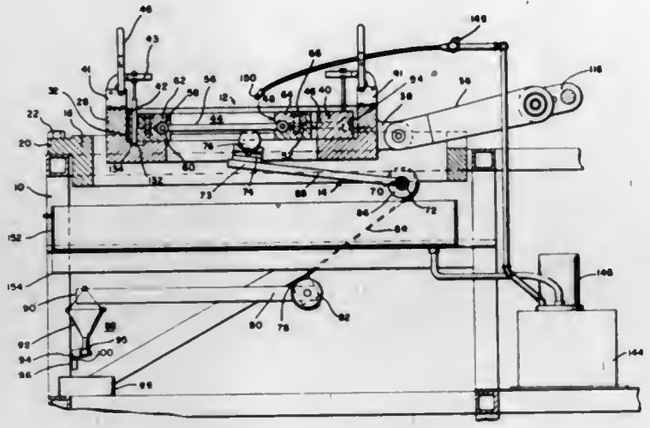
3,272,195
DEVICE FOR SLICING CRYSTALLINE MATERIAL
Jon H. Myer, Newport Beach, and Michael T. Gromek, Campbell, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Continuation of application Ser. No. 248,968, Jan. 2, 1963. This application Mar. 23, 1964, Ser. No. 355,994
14 Claims. (Cl. 125—16)

1. A device for cutting into slices a crystal body comprising:

a cutting assembly including at least two relatively thin metal ribbon blades adapted to provide a pair of parallel cutting edges spaced by a distance proportional to the thickness of the slices to be cut from said body;

a work piece holding assembly for positioning said body in engagement with the edge of said blades, said holding assembly including a force biasing means to bias said body into engagement with said blades under a resilient pressure and retracting means responsive to the position of said body to separate one of said bodies from said blades when it has been sliced;

a drive means coupled to said cutting assembly for reciprocating said assembly;



abrasive supply means to apply an abrasive to said blades; and

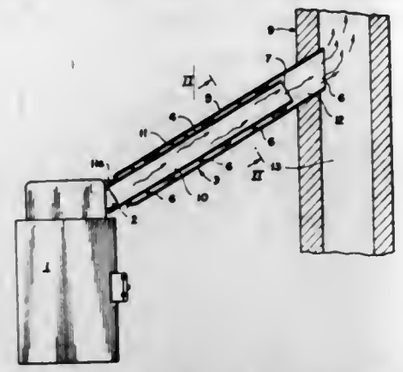
a disabling means responsive to actuation of said retracting means and coacting with said work piece holding assembly to deactivate said drive means when said body has been sliced.

3,272,196
PORTABLE FOLDING STOVE
John J. Kueser, St. Louis, Mo., assignor to Knapp-Monarch Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 19, 1964, Ser. No. 404,799
5 Claims. (Cl. 126—38)

1. In combination with a folding stove of the type having a stove body and a cabinet, with a bottom, for storing said stove body, a locking mechanism comprising an opening in said stove body, and a latch member pivotally carried by the bottom of said cabinet for engaging said opening only when said stove is stored within said cabinet and only when the cabinet bottom is away from a supporting surface.

3,272,197
INCINERATOR FLUE
Edward L. Gordon, 2001 Center Ave., Pittsburgh, Pa.
Filed Jan. 4, 1965, Ser. No. 423,258
2 Claims. (Cl. 126—307)

1. In combination with an incinerator and a chimney, a conduit assembly connecting the exhaust of said incinerator to a chimney, said conduit assembly comprising two concentric conduits, one contained within the other in spaced relationship, a plurality of radially extending spacer elements connected between said inner and outer conduits, the outer conduit being spaced from the inner conduit at the end to which the incinerator exhaust is connected so as to draw outside air into the space between

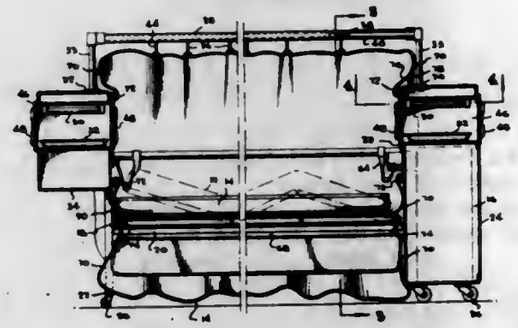


said conduits as the result of chimney effect, the discharge end of only said outer conduit extending through the chimney wall, the discharge end of said inner conduit being spaced from said chimney wall.

3,272,198
METHOD FOR INDUCING STATE OF REDUCED AWARENESS
Burton E. Balkin, Philadelphia, Pa.
(304 Old Lancaster Road, Merion, Pa.)
Filed July 29, 1963, Ser. No. 298,206
7 Claims. (Cl. 128—1)

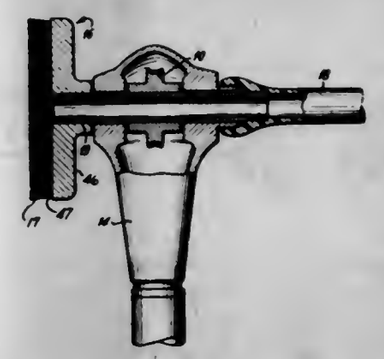
1. A method for inducing in a human subject a state of reduced awareness and loss of pain sensibility which comprises exposing the subject to a continuous pulsative sound within the frequency range of 500 to 3000 cycles per second, such sound having between 1 and 10 pulses per second, a peak power of between 60 to 100 decibels during each of said pulses, with each of said pulses having a rise or fall time of no more than 3 milliseconds, and with the acoustic level between pulses being at least 20 decibels below the peak.

3,272,199
PROCESS AND ASSEMBLY FOR ENCLOSING A VOLUME
Frank E. Matthews, Falls Church, Va., assignor to Matthews Research, Inc., Alexandria, Va., a corporation of Virginia
Filed Jan. 28, 1965, Ser. No. 428,794
7 Claims. (Cl. 128—1)



1. An enclosed working area assembly comprising: a working area surface having a predetermined longitudinal and lateral extent, first supporting means extending beneath said surface while engaging and maintaining said surface in a raised position to provide an unobstructed area beneath said surface, a flexible film enclosure of approximately cylindrical shape, said enclosure hanging freely alongside and extending continuously around and out of contact with said working area surface, said enclosure having a central axis and being at least twice the longitudinal length of said surface, inlet means to inflate said enclosure, second supporting means positioned on said assembly and connected to said enclosure for telescopic movement of said enclosure around said surface along the central axis, said enclosure being provided with end panels intersecting said central axis, means maintaining each end panel having an interior portion at a predetermined constant separation, a rollable underlap means integral with said interior portion and forming a portion of said end panel, said underlap means comprising a flexible sheet connected to said film enclosure and surrounding said interior portion, said underlap means and said film enclosure each having an inner and an outer surface, whereby when the enclosure is inflated a gas filled fold is formed between opposed and facing inner surfaces of said underlap means and said film enclosure to permit said film enclosure to be rolled along said central axis.

3,272,200
ROTARY BRUSH FOR SKIN AND BODY TREATMENT
Walter Friedmann, Baden-Oos, Germany, assignor to Pharma-Cosma A.G., Zug, Switzerland, a corporation of Switzerland
Filed Aug. 15, 1963, Ser. No. 302,243
Claims priority, application Germany, Oct. 6, 1962, F 37,982
1 Claim. (Cl. 128—56)

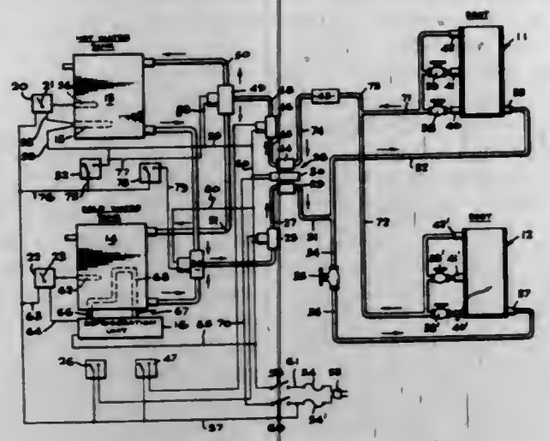


Apparatus for skin and body treatment comprising a stationary motor; a handle portion separate from said motor; treatment brush means having a rigid disc shape body with bristles extending therefrom; a hollow tube received in and secured to said body rotatably mounted in said handle portion, said tube extending through said body and having one end terminating flush with the face thereof on the side adjoining the bristles and located centrally of the axes of rotation thereof; means including a flexible shaft interconnecting the hollow tube and said motor to transmit rotation to said tube and thus to said body; a fluid reservoir; and means interconnecting said fluid reservoir and the other end of said hollow tube to deliver fluid thereto.

3,272,201
HYDROTHERAPY DEVICE FOR ANIMALS
Harry J. Burns, Anaheim, Calif., assignor of one-half to Martin Fallon, Jr., Louisville, Ky.
Filed Jan. 31, 1964, Ser. No. 341,574
19 Claims. (Cl. 128—66)

4. In hydrotherapy equipment for the limbs of animals: a pair of boots to accommodate two of an animal's limbs at the same time, each of said boots having a water inlet and at least one water outlet; a hot water tank; a cold water tank; a pump; conduits and valves interposed between said tanks and said inlets for selectively connecting

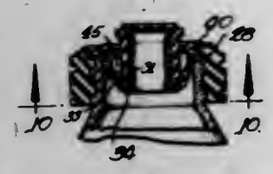
said tanks to said pump; tubes for conducting the water from said pump to the inlets of said boots; and piping



and water directing means interposed between said outlets and said tanks for selectively directing the water from said outlets to either of said tanks.

3,272,202
TWO-POSITION NURSING NIPPLE WITH INTERLOCKING SANITARY COVER
Ricardo Hurtado Soto, Bogota-Suba, Colombia, assignor to Lacto-Seal, Inc., Indianapolis, Ind., a corporation of Delaware
Filed Sept. 5, 1963, Ser. No. 306,762
10 Claims. (Cl. 128—252)





4. In combination, a two-position hollow, integral nursing nipple formed of flexible resilient material and providing an extended nursing position and a retracted storage position, and an integral sanitary cover for protecting said nipple, said cover also being formed of a flexible resilient material and being applicable to and removable from said nipple in said extended position while being releasably secured to said nipple in said retracted position,

said nipple in its extended position further comprising:

(a) an upwardly extending generally cylindrical tip part having an apertured outer end,

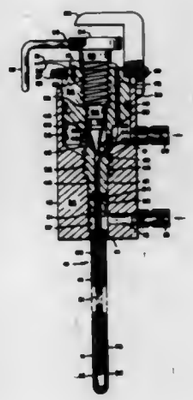
(b) a breast part including a generally conical section extending downwardly and outwardly from the lower end of said tip part and a generally cylindrical section extending downwardly from the lower end of said conical section, and

(c) a mount part extending outwardly from the lower end of said breast part cylindrical section;

said nipple in its retracted position having the said cylindrical section and the lower portion of said tip part arranged in confronting relation with an annular space being provided therebetween, and said conical section extending around the bottom portion of said annular space;

said cover including a cylindrical section with a closed outer end and an open lower end, the tip part of said nipple being received in said cover cylindrical section with the lower end of said cylindrical section adjacent said nipple conical section, the lower end portion of said cover section being contactible with said conical section and said conical and cylindrical breast sections rolling around said cover lower end portion as said nipple is moved from extended to retracted position by depressing said cover, said cover lower end portion providing a wall thickness greater than a corresponding dimension of said annular space for gripping said lower end portion and releasably securing it within said annular space.

3,272,203
SURGICAL PROBE
John C. Chato, Arlington, Mass.
(714 W. Vermont Ave., Urbana, Ill. 61801)
Filed Apr. 29, 1963, Ser. No. 276,235
11 Claims. (Cl. 128—303.1)



1. A surgical probe comprising a housing having an internal passage along its longitudinal axis and a pair of openings normal to said axis and connecting with said passage, a first tube having one end secured in said passage and its other end capped by a tip, said tip forming an internal annular abutment at its junction with said first tube, a member mounted in said passage of said housing for motion in translation along its said axis, said member also having an internal passage concentric with said passage of said housing and connecting with one of said pair of openings, a second tube with one end secured in said passage of said member and having its free end extending into and in concentrically spaced relation from said first tube, a sleeve secured at its said free end of said second tube, said sleeve and said abutment forming an annular orifice, a temperature sensing means extending into said tip, and a temperature control means mounted in said passage of said member.

3,272,204
ABSORBABLE COLLAGEN PROSTHETIC IMPLANT WITH NON-ABSORBABLE REINFORCING STRANDS
Charles Artandi, Highland Park, N.J., and Lavon Dee Bechtol, Indianapolis, Ind., assignors to Ethicon, Inc., a corporation of New Jersey
Continuation of application Ser. No. 92,620, Mar. 1, 1961. This application Sept. 22, 1965, Ser. No. 495,010
15 Claims. (Cl. 128—334)

1. A method of manufacturing surgical prostheses which comprises the steps of:

impregnating a non-absorbable fabric with an aqueous acid dispersion of swollen collagen fibrils;

freezing the aqueous acid dispersion of swollen collagen fibrils;

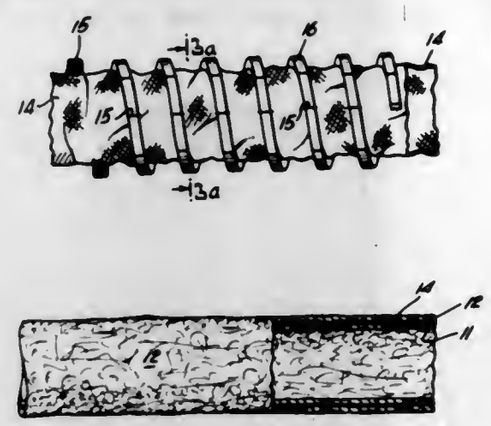
immersing the frozen mass in a water-miscible organic solvent containing sufficient base to neutralize the acid present in said dispersion;

removing the resulting structure from the organic solvent; and,

drying the resulting structure.

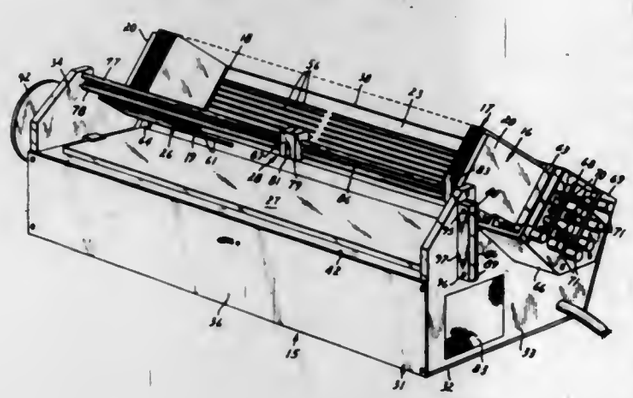
7. A surgical prosthesis comprising:

a woven open mesh non-absorbable cylindrical tube, manufactured of material selected from the group consisting of polyethylene terephthalate and tetra-



fluoroethylene polymer, and coated on both sides with a body absorbable substance consisting of collagen fibrils, whereby the prosthesis is rendered bloodtight.

3,272,205
CARD SELECTOR
Raymond W. Shrewsbury, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed July 2, 1964, Ser. No. 379,890
10 Claims. (Cl. 129—16.1)



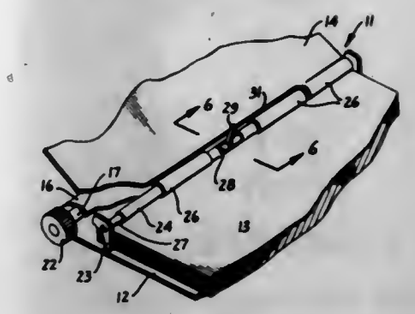
1. An apparatus for retrieving information from information bearing cards by directing light through said cards wherein each card has at least one optical discontinuity area in the body of the card arranged in some predetermined coded order whereby light is deflected by said optical discontinuity area, said apparatus comprising:

means for producing a beam of generally parallel light and directing the same along a predetermined path,

means for supporting at least one of said cards in the path of said light with a predetermined portion of a predetermined edge of a said card substantially normal to and in a said beam of light whereby said beam of light will enter said predetermined edge of said card at a predetermined location to pass therethrough, and

means arranged along a second edge of a said card for determining the location along said second edge at which said deflected light emerges.

3,272,206
CLIPBOARD
Maurine E. Ricke, 153 Smith Road, Alamo Oaks, Danville, Calif.
Continuation of application Ser. No. 222,593, Sept. 10, 1962. This application May 19, 1965, Ser. No. 457,096
5 Claims. (Cl. 129—37)

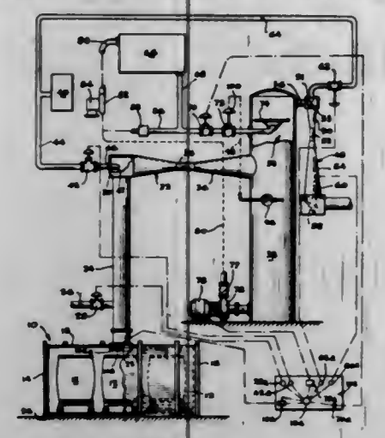


3. A clipboard including a generally rectangular planar base member, a substantially rigid clamp member having one edge portion thereof positioned adjacent an end of said base member and a downturned second edge portion overlying said base member along a line adjacent and parallel to said end, said clamp member extending to substantially immediately adjacent the opposed edges of said base member, means pivotally connecting said one edge portion of said clamp member to said end of the base member whereby said second edge portion may be selectively moved from and towards said base member, resilient means normally urging said second edge portion toward said base member so as to clamp papers positioned on said base member, a substantially rigid cover member having opposed edges generally conterminous with the edges of said base member and an upper end positioned adjacent said second edge portion of said clamp member, means pivotally connecting said upper end of the cover to said second edge of the clamp whereby the cover may be moved from a first closed position overlying said base member in generally parallel relation thereto to an open position, cam means positioned at each end of clamp member for selectively retaining the latter in open position, and means operatively connecting said cam means with said cover whereby closing of the latter with the clamp in an open position will effect a release of said cam means and a return of said clamp to its closed and clamping position, said cam means extending upwardly from said base member to provide a lateral guide for papers inserted under said clamp when the latter is in open position.

3,272,207
TOBACCO MOISTENING
Frank B. Doyle, P.O. Box 237, Raymond, Ill.
Filed Feb. 6, 1964, Ser. No. 343,090
7 Claims. (Cl. 131—133)

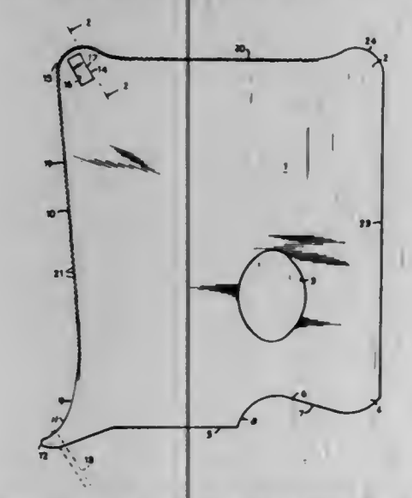
1. An improved apparatus for conditioning tobacco and having a cooling water supply, said apparatus comprising: a hermetically sealable conditioning chamber having means for insertion and removal of said tobacco; a first steam ejector having a low pressure side and a discharge side, the low pressure side of said ejector being in communication with the conditioning chamber; a condenser connected to the discharge side of said first steam ejector, said condenser being connected through flow control means to the cooling water supply; a second steam ejector having a low pressure side and a discharge side, the low pressure side being in communication with said condenser; transducer means responsive to the pressure condition in the condenser and operatively connected to control means to control the flow of cooling water to said condenser and

thereby to control the pressure condition within the condenser to a predetermined level above the dead end level



of the second steam ejector; and means for introducing steam to the conditioning chamber.

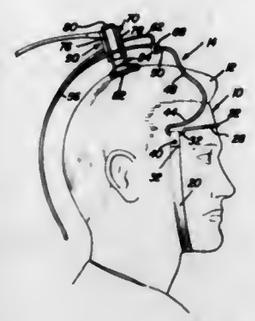
3,272,208
HAIR SPRAY SHIELD WITH COMB AND HAIRPIN REMOVER
Harold E. Hasselbusch, Jr., 144—23 68th Drive, Flushing, N.Y.
Filed Oct. 7, 1963, Ser. No. 314,298
3 Claims. (Cl. 132—9)



1. In a hair spray shield for shielding areas of the person adjacent the hair from liquid spray as the hair is being finally set after it had been initially set with hairpins that are to be removed during the spraying operation, comprising a firm flat surfaced panel of rectangular configuration having means adjacent a side thereof enabling the panel to be manually held in one hand in a particular position when in use and having a corner of hook contour engageable by the operator with a hairpin in the hair of the person so as to lift the hairpin from the hair upon the panel being manipulated in a direction away from the hair; a comb formation extending along a further side of the panel enabling the combing back into place of strands of hair displaced by the operator while employing the hook formation to remove a hairpin.

3,272,209
HAIR CUTTER AND GUIDE ASSEMBLY HAVING COACTING CUTTER POSITIONING MEANS
Robert J. Kraus, 155 Minor St., Dorchester, Mass.
Filed Apr. 1, 1964, Ser. No. 356,582
6 Claims. (Cl. 132—45)

1. A hair cutter and head mounted guide combination comprising support frame means adapted to be stationarily supported from the head of a person whose hair is to be cut by said combination and including a first portion adapted to be positioned above the top of said head when said frame means is supported therefrom, an arcuate guide member pivotally secured at one end portion to said first portion for rotation about an upstanding axis with the other end portion of said guide member curving outwardly and downwardly from said axis and adapted to embrace the adjacent portions of said head in spaced re-



lation thereto, hair cutter supporting carriage means slidably mounted on said guide member for guided movement therealong, a hair cutter, means slidably mounting said hair cutter on said carriage means for movement generally radially of said arcuate guide member, said hair cutter and said guide member including coacting guide means for shifting said hair cutter relative to said carriage means in response to movement of the latter along said guide member.

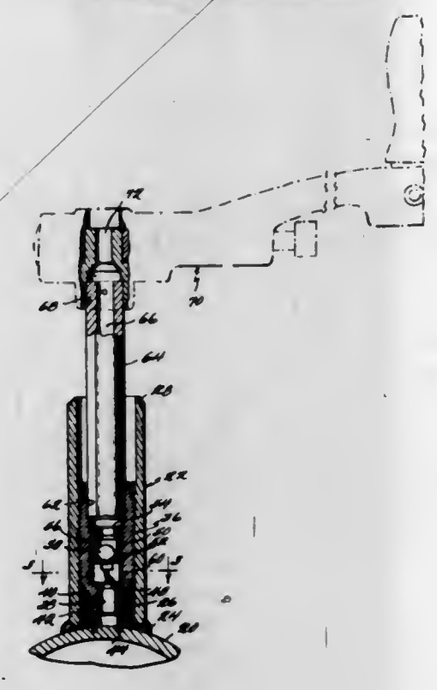
3,272,210
TELESCOPIC FOLDING CRUTCH
Otto Boruvka, 433 E. 75th St., New York, N.Y.
Filed Sept. 24, 1964, Ser. No. 398,868
9 Claims. (Cl. 135—50)



1. In a crutch construction, an elongated staff round in cross section, an arm rest adjustably supported at one end of the staff, and apparatus slidably and removably mounted at the other end of the staff for attaching the staff to a heel of the shoe of the user for transmitting when walking the movement of the shoe to the staff including a horseshoe band adapted to encircle the heel, the free ends of said band having opposed holes therein, and a threaded bolt in said holes spanning the space between the ends, one end of the bolt extending beyond

one of the ends and a wing nut on the extending end of the bolt for adjustably securing the band to the heel.

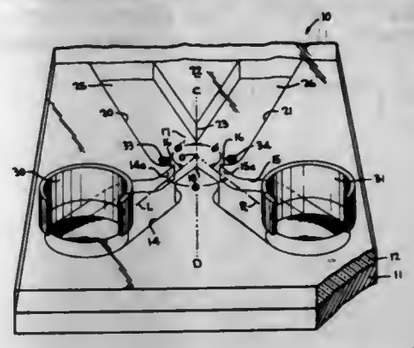
3,272,211
MAIN AND SERVICE LINE CONNECTION EMBODYING A SELF-TAPPING NIPPLE AND AN EXCESSIVE-FLOW SAFETY VALVE—METHOD AND APPARATUS
Wilbur R. Leopold, Jr., John J. Smith, and Lawrence F. Luckenbill, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Sept. 10, 1962, Ser. No. 222,495
9 Claims. (Cl. 137—15)



1. The method of connecting a service line to a main without escape of fluid from the main to the atmosphere, the steps comprising: securing fluid-tight to the wall of the main one end of a nipple; inserting into the other end of the nipple a plug having means on the inner end thereof for perforating the wall of the main by advancement of the plug thereagainst, having a longitudinal through passageway, and having an excessive-flow-safety-valve means controlling the passageway and resettable by reduction of the pressure differential thereacross when closed; advancing the plug into engagement with and perforating the wall of the main to allow fluid under pressure to escape therefrom into the through passageway and close the valve means, while substantially preventing passage of said fluid between the plug and the nipple; retaining the plug within the nipple; connecting a service line fluid-tight to the other end of the T; and reducing the pressure differential across the valve means to open the latter and permit fluid to flow from the main to the line and establish service.

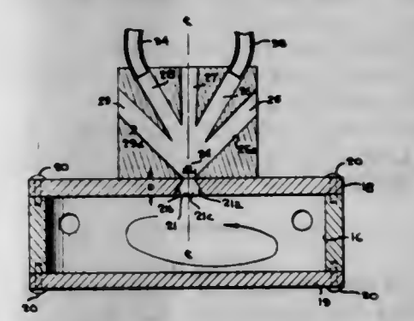
3,272,212
PURE FLUID COMPARATOR
Ronald E. Bowles, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed May 31, 1963, Ser. No. 284,756
6 Claims. (Cl. 137—81.5)

1. A pure fluid comparator comprising an interaction region, only two outlet passages positioned adjacent one end of said interaction region, a divider positioned between said outlet passages, a pair of nozzles for issuing fluid streams into said interaction region, said nozzles lying at the other end of said interaction region on opposite sides of the centerline of said divider, the center-



lines of both said nozzles lying at elss than 90° relative to the centerline of said divider.

3,272,213
READOUT FOR VORTEX AMPLIFIER
Donnie Roland Jones, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Aug. 13, 1963, Ser. No. 301,868
10 Claims. (Cl. 137—81.5)

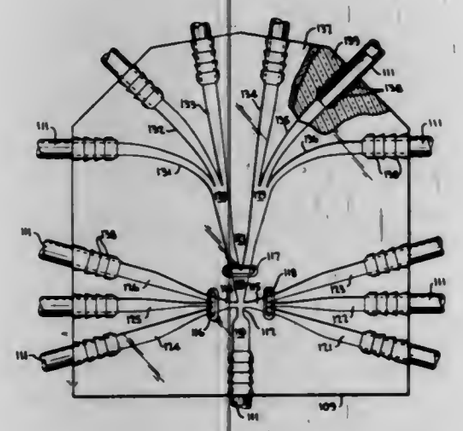


1. In combination, a vortex amplifier having a cylindrical chamber defined by at least one end wall, said end wall having at least one orifice located adjacent to and offset from the center of said wall along a radius thereof, the radial length of said orifice being substantially less than the radius of said end wall, said orifice arranged to issue a stream of fluid into a plane generally perpendicular to said end wall and said radius and deflectable in said plane as a function of the direction and rate of rotation of the fluid in said vortex amplifier, and a pair of passages located in said plane and downstream of said orifice for receiving the stream of fluid issued by said orifice, said passages located on opposite sides of the axis of said orifice and diverging downstream and outwardly therefrom at acute angles relative thereto.

3,272,214
SELF-MATCHING FLUID ELEMENTS
Raymond W. Warren, McLean, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 2, 1963, Ser. No. 313,402
4 Claims. (Cl. 137—81.5)

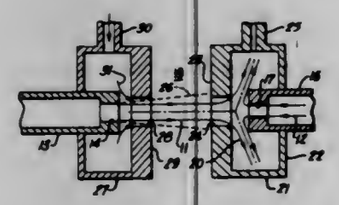
1. In a fluid bistable amplifier:
(a) fluid power source for producing a fluid stream,
(b) a power nozzle connected to said power source,
(c) a plurality of input channels,
(d) an equal plurality of sources of fluid signals connected one to each of said input channels,
(e) some of said plurality of input channels converging to a first control nozzle,
(f) the remainder of said input channels converging to a second control nozzle,
(g) an interaction chamber,

(h) said control nozzles being axially aligned and oppositely directed into said interaction chamber,
(i) said power nozzle being perpendicular to said control nozzles and directed into said interaction chamber,
(j) a pair of receiver means,



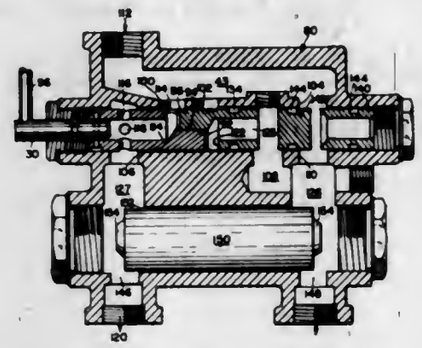
(k) each of said receiver means diverging into a plurality of output means,
(l) individual ones of said plurality of output means being dimensioned to receive a predetermined proportion of said power stream,
(m) and bleeder means perpendicular to the fluid flow at the confluence of the input channels and of the receiver means.

3,272,215
FLUID CONTROL APPARATUS
Bjorn G. Bjornsen, Milwaukee, and Thomas J. Lechner, Jr., Menomonee Falls, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 1, 1963, Ser. No. 320,680
20 Claims. (Cl. 137—81.5)



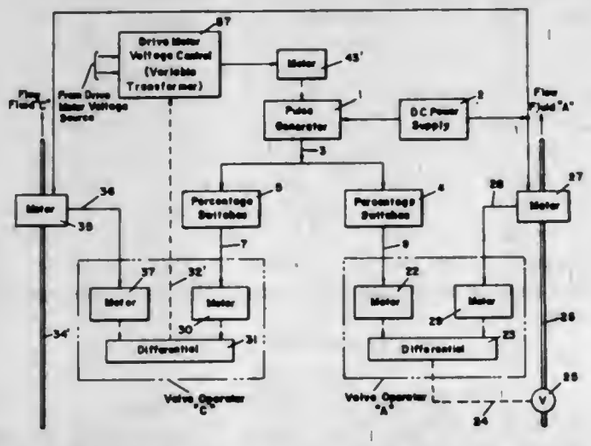
1. In a fluid control unit,
(a) means for establishing a pair of impacting fluid jet streams having predetermined operating paths and having opposed stream velocity components and having an impacting position, said means including separate means for establishing each of said jet streams,
(b) control means to modulate the effective strength of at least one of said jet streams to thereby vary the impacting position, and
(c) means including an orifice aligned with said impacting position and located to interact therewith, said orifice defining an output chamber to one side of the orifice having an output connection for deriving a signal and a reference chamber to the opposite side, with the impacting position of the streams with respect to the orifice defining the output signal within the output chamber and being related to the control means.

3,272,216
FLOW PROPORTIONING VALVE
Harry E. Lake, Mountain View, Calif., assignor to Todd Shipyards Corporation, New York, N.Y., a corporation of New York
Filed Apr. 22, 1963, Ser. No. 274,449
13 Claims. (Cl. 137—99)



1. A metering valve for fluids comprising a valve chamber having a cylindrical bore therein, an inlet for fluids connected into said bore, outlet means connected into said bore at a spaced location from said inlet and a two-part valve rotor for rotation in said bore comprising a part mounted for rotation in said bore but held against longitudinal movement therein, means for rotating said part, and a mating valve part mounted for rotation in said bore, said two valve parts having mating sections provided with surfaces extending longitudinally to the axis of the valve, the surface on the first valve part causing rotation of the second valve part when the first valve part is rotated, said valve parts having facing transverse surfaces defining between them a discharge orifice for the valve communicating with said outlet means for moving the second valve part toward and away from the first valve part so as to adjust the width of the discharge orifice, the discharge orifice always having the shape approximating a parallelogram of variable width axially of the valve.

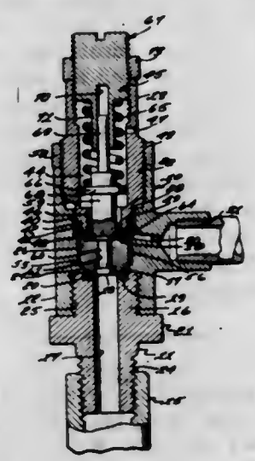
3,272,217
SYSTEMS FOR PROPORTIONING FLUIDS
Einar T. Young, Newton Square, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Mar. 16, 1962, Ser. No. 180,211
17 Claims. (Cl. 137—101.19)



1. An apparatus for proportioning a plurality of materials, comprising a plurality of stations one for each different material; means at each station for sensing the flow of the respective material through the station and providing an output proportional to such flow; a master pulse generator for all of said stations operating to generate a fixed total number of pulses during a time interval whose length is controllable; a controller for each and every one of said stations, each of said controllers being coupled to receive pulses from said pulse generator and each being manually adjustable to pass to its output, during said time interval, only a selected fraction of said total number of pulses; means at each station save a first responsive to the outputs of the respective sensing means and of the respective controller for controlling the flow of material through the corresponding station; and means responsive to the outputs of the sensing means for said first station and of the corresponding controller for controlling the length of said time interval.

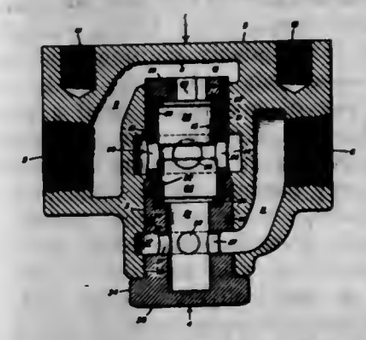
15. In combination, means for sensing the rate of flow of a stream of material and for providing an output proportional to such rate of flow, a pulse generator operating to generate a plurality of pulses during a time interval whose length is controllable, a controller coupled to receive pulses from said pulse generator, said controller being manually adjustable to pass to its output, during said time interval, only a selected fraction of said plurality of pulses; means for detecting any departure from a predetermined relationship between the outputs of the sensing means and of the controller for producing an output indicative of the direction of departure from said relationship, and means for utilizing said last-mentioned output to change the length of said time interval in a direction to tend to restore the predetermined relationship.

3,272,218
PRESSURE ACTUATED VALVE
Arthur L. Johnson, El Monte, Calif., assignor to F. C. Kingston Co., Los Angeles, Calif.
Filed Feb. 12, 1963, Ser. No. 257,956
5 Claims. (Cl. 137—102)



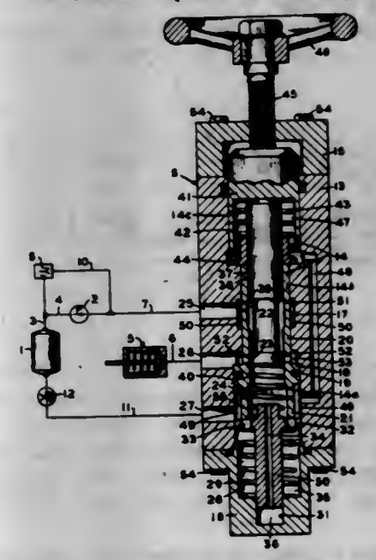
5. A fluid pressure actuated valve which maintains a preselected moderate differential pressure when connected to a wide range of fluid pressures, said valve comprising:
a valve housing having a hollow generally cylindrical interior;
a first port and associated valve seat at one end of said cavity;
a second port and associated valve seat at the other end of said cavity;
a third port in communication with said cavity;
means for selectively varying the distance between said first and second valve seats so that the differential operating pressure of said valve may be varied;
a valve member mounted for axial movement within said cylindrical cavity between a first position in which said valve member sealingly engages said first valve seat and a second position in which said valve member sealingly engages said second valve seat; and,
means for urging said valve member to said first position.

3,272,219
CHECK VALVE HAVING HEAD AND SEAT IN REMOVABLE CARTRIDGE
Virgil L. Frantz, Salem, Va., assignor to Graham-White Sales Corporation, Salem, Va., a corporation of Virginia
Filed Oct. 6, 1965, Ser. No. 493,502
7 Claims. (Cl. 137—112)



1. A check valve comprising a metal body having a bore, inlet and outlet ports in said body and communicating at spaced positions with said bore, and a cartridge unit removably inserted in said bore, said unit including a metal cartridge, a cylindrical chamber in said cartridge, said chamber having openings in opposite ends thereof and intermediate said ends and communicating through at least one end opening with an inlet port and through an intermediate opening with an outlet port, a lightweight non-solid-metal cylindrical shuttle reciprocable in said chamber between ends thereof and freely in at least one direction, and O-rings seated in opposite ends of said chamber about said end openings therein for alternately seating said shuttle, said O-rings spacing said shuttle from said chamber ends and cushioning the reciprocable movement thereof.

3,272,220
HYDRAULIC PRESSURE REGULATING VALVE
Josef Frania and Fritz Scheele, Hannover, Germany, assignors to Westinghouse Bremsen-Gesellschaft m.b.H., Hannover, Germany
Filed Jan. 30, 1963, Ser. No. 255,029
Claims priority, application Germany, Feb. 7, 1962, W 31,634
2 Claims. (Cl. 137—116.5)



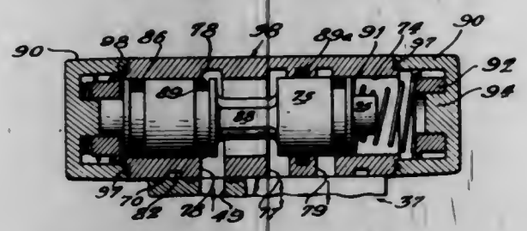
1. A pressure regulating valve device for regulating the fluid pressure in a fluid circulatory systems having elements including a non-pressurized source of fluid, pressurizing pump means, an operating device and conduit means interconnecting said elements, said valve device comprising:
(a) a valve body having a bore therein with a supply passage, a delivery passage and a relief passage ex-

tending from said bore in longitudinally spaced relation therealong for connection, respectively, to the pressurizing pump means for supply of fluid under pressure therefrom, to the operating device for delivery of fluid under pressure thereto, and to the non-pressurized source of fluid for release of fluid under pressure thereto from the operating device,

(b) a hollow control piston having a tubular body and a piston head slidably positioned within said bore of said valve body and having in the tubular body on one side of said piston head a supply port in constant communication with said supply passage and a delivery port in constant communication with said delivery passage, and a relief port in constant communication with said relief passage on the opposite side of said piston head, said piston head being subject on said one side to the fluid under pressure in said delivery passage and on the said opposite side to biasing forces of spring means, and

(c) a control slide valve slidably positionable within the tubular body of said hollow control piston in a selected one of a plurality of positions to establish a first communication between said supply port and said delivery port and operable cooperatively with said hollow control piston upon movement of said hollow control piston responsively to fluid pressure in said delivery passage acting on the said piston head in opposition to said spring means to cut off said first communication, and operable cooperatively with said hollow control piston responsively to a further increase of fluid under pressure in said delivery passage acting on said piston head in opposition to said spring means to establish a second communication between said delivery port and said relief port, to thereby regulate to a certain pressure the pressure of the fluid delivered from said supply passage to said delivery passage of said valve body according to the selected one of said positions of the control slide valve.

3,272,221
CONVERTIBLE VALVE DEVICE
Francis S. Flick, Oak Park, and Richard M. Morgan, River Forest, Ill., assignors to Flick-Reedy Corporation, a corporation of Illinois
Filed Nov. 8, 1963, Ser. No. 322,355
6 Claims. (Cl. 137—270)



1. A self-contained valve package for normally open, normally closed, spring-centered and momentary impulse operation in selective alternative, comprising:

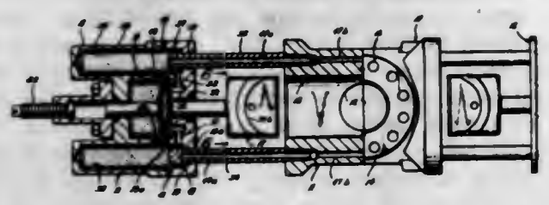
an elongate valve body having a longitudinal bore and longitudinally spaced ports and passages communicating the bore with the exterior of the valve body,

a valve spool slidable in the bore for selective connection and closing of the passages,

a removable closure for each end of the valve body,

a valve spring and a valve spring cage means mounted in tandem between the valve spool and said closure, said spring having one end of a size to enter the valve body bore and an opposite end of a size to extend about the cage means, said cage means and spring being serially arrangeable for engagement with and between the valve spool and closure and for engagement with and between the valve body and closure alternatively to provide said valve operations selectively.

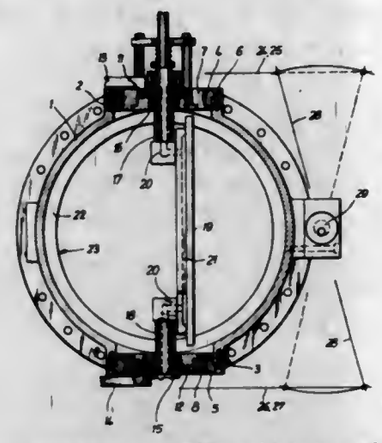
3,272,222
BLOWOUT PREVENTER
Herbert Allen, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex.
Filed Oct. 28, 1963, Ser. No. 319,284
7 Claims. (Cl. 137—315)



1. A blowout preventer, comprising a body having a bore therethrough and guideways therein extending laterally from opposite sides of the bore, a bonnet detachably connected across the outer end of each guideway of the body for closing same, a cylinder in each bonnet and a piston reciprocable in each cylinder, a ram connected to each piston on the inner side of the bonnet for reciprocation of the ram toward and away from the bonnet so as to open and close the bore when the bonnet is connected to the body in normal preventer operation, cylinder means in each bonnet in side-by-side relation to the first-mentioned cylinder and piston means reciprocable within said cylinder means, means supporting each bonnet from the body and connected to the piston means within the cylinder means in said bonnet for reciprocation of the bonnet, upon detachment thereof from said body, between its position across the outer end of the guideway and a position spaced therefrom so as to withdraw the ram on said bonnet from its guideway, and means including fluid pasageways in each bonnet for introducing pressure fluid into the cylinder and cylinder means therein so as to move the bonnet between said positions and to move the ram between bore opening and closing positions during normal preventer operation and toward the bonnet prior to movement of the bonnet to guideway closing position.

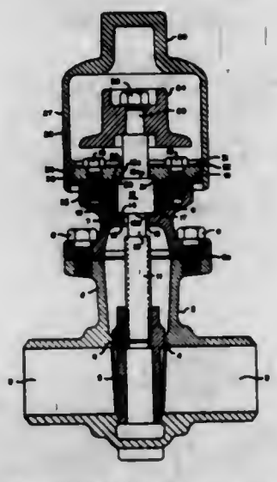
3,272,223
ROTATABLE SHUTTER VALVE
Hans G. Sass, Krefeld, Rhineland, Germany, assignor to Firma Industrie-Companie Kleinewefers Konstructions- und Handelsgesellschaft m.b.H., Krefeld, Rhineland, Germany, a corporation of Germany
Filed June 3, 1964, Ser. No. 372,312
Claims priority, application Germany, June 12, 1963, J 23,866
16 Claims. (Cl. 137—340)

1. In a shutter valve having a body through which extends a passageway for flow of a fluid therethrough, said passageway having an inlet and an outlet, a body seat interposed between said inlet and outlet, the invention comprising a disk disposed in said passageway and movable into and out of engagement with said seat for regulation of flow of said fluid through said valve, a shaft joined to said disk and having a mounting upon said body which permits rotation of said disk about an axis disposed substantially transversely of the central axis of an opening formed by said body seat, rotation of said disk about said axis of rotation including placing same in a plane substantially parallel to the plane of said body seat, said mounting including first and second rotatable eccentrics, said first eccentric being concentrically disposed within said second eccentric, each eccentric having a major portion and a minor portion, said eccentrics being rotatable about their axes of rotation independently of said disk and being rotatable in opposite directions to each other, rotation of said two eccentrics in opposite directions to each other moving said disk along a path substantially normal to the plane of said seat between a first position whereat said disk is in engagement with said seat and a second position whereat said



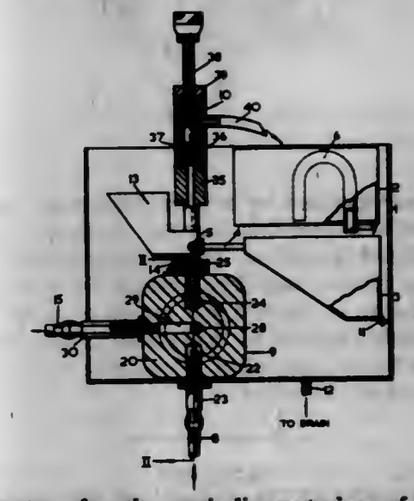
disk is out of engagement with said seat, said eccentrics being so disposed relative to each other that when said disk is in said first position, said minor portion of each eccentric is closer to the plane of said seat than said major portion of each eccentric, and that when said disk is in said second position, said minor portion of each eccentric is farther from the plane of said body seat than when said disk is in said first position.

3,272,224
HOODED GAS DISTRIBUTION VALVE FOR UNDERGROUND USE
Edward N. Wrenshall, Ross Township, Allegheny County, Pa., assignor to Miller Printing Machinery Co., Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 250,354, Jan. 9, 1963. This application Feb. 25, 1965, Ser. No. 435,295
2 Claims. (Cl. 137—382)



1. A valve for underground use comprising a casing having a passage therethrough, a valve element movable between an operative position closing said passage and an inoperative position in which said passage is open, a stem turnably mounted in the casing with an end of the stem projecting out of the casing, connections between the stem and the valve element for moving the valve element between said positions upon turning of the stem, means for turning the stem through application of turning force to the end of the stem projecting out of the casing, the casing having fastened thereto in fixed position relatively thereto a separate member through which the end of the stem projecting out of the casing extends, means removably fastening said member to the casing, said member being sealed to the casing, said means being protected against ingress of moisture from the outside between said member and the casing by the means sealing said member to the casing, said member being provided with means for attachment of a hood thereto, and a hood having means whereby when the hood is in operative position it is attached to said member through said means, the hood also having means whereby when it is in operative position it is sealed to said member whereby the hood is mounted on the casing and protectively covers the end of the stem projecting out of the casing, the hood being removable from said position to permit access to the end of the stem projecting out of the casing for operation of the valve.

3,272,225
APPARATUS FOR WATERING PLANTS
Ronald C. Frampton, Ringwood, England, assignor to MacPennys Mist Propagation Limited, Ringwood, England
Filed Feb. 26, 1964, Ser. No. 347,477
Claims priority, application Great Britain, Mar. 2, 1963, 8,452/63
5 Claims. (Cl. 137—408)

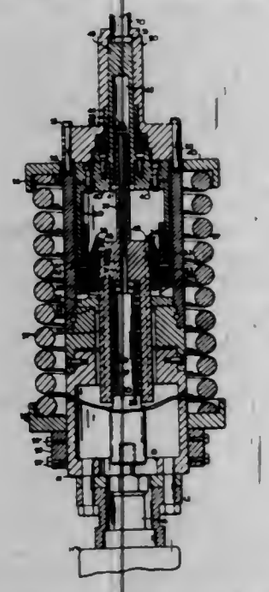


1. Apparatus, for the periodic watering of plants or for periodic irrigation, comprising a syphon tank; a feed device, arranged to be connected to a water supply and to discharge into said syphon tank, for controlling the rate of flow of water from said supply to said syphon tank; a syphon tube positioned within the syphon tank and so arranged therein as to empty water from said syphon tank, when a predetermined depth of water has collected therein; a balance tank arranged beneath the discharge end of said syphon tube to receive the water discharged therefrom, said balance tank having an outlet permitting restricted flow therefrom; a balance arm on which said balance tank is mounted and a valve for controlling the flow of water from a water supply to at least one watering means, said valve being held closed by said balance arm, when said balance tank contains less than a datum quantity of water, and being permitted to open by pivotal movement of said balance arm, by the additional weight of water in said balance tank, when the latter has received a discharge of water from said syphon tube.

3,272,226
ANTI-SIMMER DEVICE FOR RELIEF VALVES
Donald P. Dunlop, Weston, Ontario, and Raymond W. Cousins, King City, Ontario, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Canada
Filed July 10, 1964, Ser. No. 381,676
6 Claims. (Cl. 137—478)

1. In a pressurized system having a relief valve including a stem and a first resilient means biasing it toward a normally closed position, said valve being adapted

to open when pressure in said system reaches a selected value and close when pressure falls below the selected value; an anti-simmer device mounted rigidly with respect to said relief valve and having a first member selectively movable normally locking said valve in a selected position, said device including a second resilient means interposed between said first member and said valve normally urging said valve to a closed position,



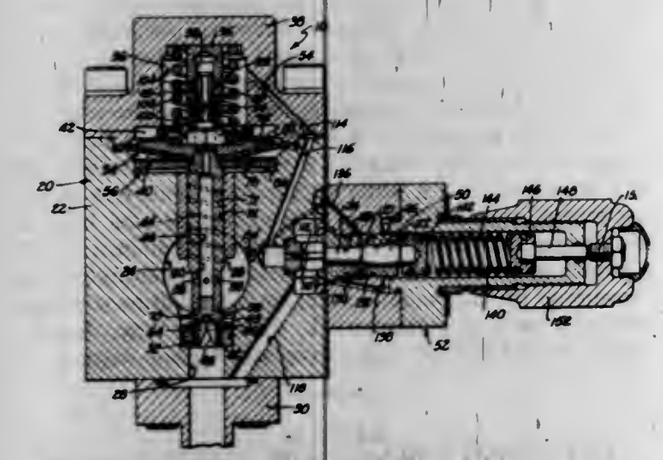
latch means operated by a second member into locking engagement with said first member to maintain said valve in said closed condition, means responsive to system pressure to release said latch means when said selected system pressure is reached and means to cause said pressure responsive means to cause said latch means to reengage aid valve stem when pressure in said system falls below the selected value.

3,272,227

PILOT OPERATED PRESSURE REGULATOR

Carter P. Williams, La Crescenta, Calif., assignor to Kobe, Inc., Huntington Park, Calif., a corporation of California

Filed Feb. 17, 1964, Ser. No. 345,247
6 Claims. (Cl. 137—491)



1. In a pressure regulator for maintaining a substantially constant fluid pressure in a high pressure system relative to the fluid pressure in a low pressure system, the combination of:

(a) a housing having high pressure and low pressure passages respectively connectible to the high pressure and low pressure systems;

(b) main valve means in said housing and interconnecting said high pressure and low pressure passages and including a main valve movable from a closed position to an open position to bypass fluid from said high pressure passage to said low pressure passage;

(c) main actuating means located in said housing, and connected to said main valve, and operable by a main fluid pressure differential acting between opposite sides thereof, for moving said main valve from its closed position toward its open position;

(d) said main fluid pressure differential being equal to a difference between a fluid pressure acting on one of said sides of said main actuating means and biasing said main valve toward its open position and a fluid pressure acting on the other of said sides of said main actuating means and biasing said main valve toward its closed position;

sure passage to said one side of said main actuating means and the other connecting said high pressure passage to said other side of said main actuating means;

(f) differential-area pilot valve means including metering means in said housing, and connecting said other side of said main actuating means to said low pressure passage, and openable by a pilot fluid pressure differential equal to a predetermined difference between the fluid pressures in said high pressure and low pressure passages, and exposed solely to the fluid pressures in said high pressure and low pressure passages, for reducing the fluid pressure on said other side of said main actuating means to a value below that on said one side thereof so as to produce said main fluid pressure differential, and thus cause said main actuating means to move said main valve from its closed position toward its open position; and

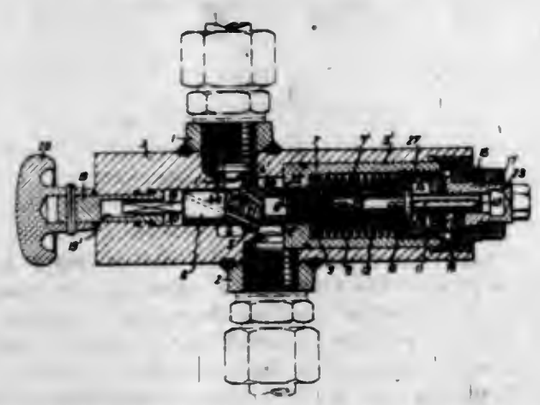
(g) metering valve means in and controlling flow through said other passage means, and including a metering valve connected to said main actuating means, for decreasing the resistance to flow from said high pressure passage through said other passage means to said other side of said main actuating means as said main valve is moved from its closed position toward its open position.

3,272,228

CROSS-CONNECTION VALVE

Bernard Jorgji, Hamburg-Lokstedt, and Karl Hinsch, Hamburg, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Feb. 13, 1964, Ser. No. 344,648
10 Claims. (Cl. 137—493)



1. In a piston valve device providing a safety cross-connection between a feed conduit and a return conduit in hydraulic machines disposed in a system having a closed hydraulic flow path, the improvement comprising:

spaced first and second conduit connections;

means defining a valve piston cylinder which is in communication with said conduit connections;

a valve seat disposed in said valve piston cylinder and via which said conduit connections may be in communication with each other;

a valve piston having a neutral position in said seat and blocking communication between said conduit connections and movable toward two positions one on each side of said seat to permit communication between said conduit connections;

means defining a spring cylinder having a stop surface at each end;

a valve piston rod extending from both sides of said piston and supported on both sides thereof;

two spaced-apart stop members disposed in said spring cylinder for movement with said piston;

resilient means including a single spring element disposed in said spring cylinder between said stop members and restrained from axial expansion by said stop surfaces when said piston is in its said neutral position, each of said stop members being arranged to act on a respective end of said spring to compress said spring when said piston moves toward a respective one of said two positions on each side of said seat to resist movement of said piston rod and thus of said piston out of its neutral position; and

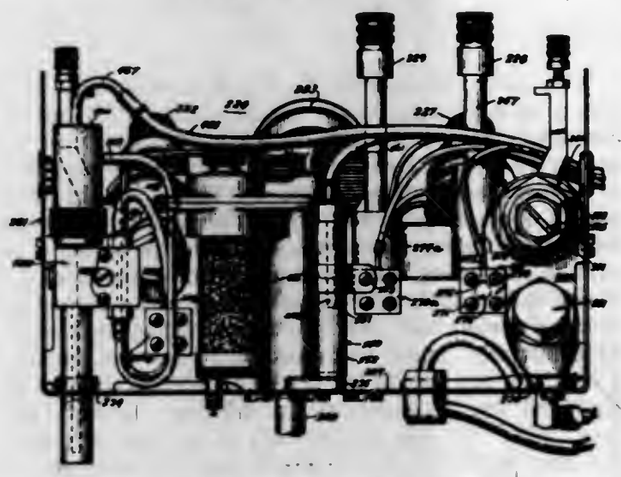
pressure differential means acting on the piston for exerting pressure on one side of the spring element depending upon the differential pressure.

3,272,229

CONTROL UNIT FOR AIR DRIVEN DENTAL HANDPIECES

Martin Staunt, Des Plaines, Ill., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois

Original application Mar. 12, 1959, Ser. No. 798,866. Divided and this application June 10, 1965, Ser. No. 469,028
5 Claims. (Cl. 137—544)



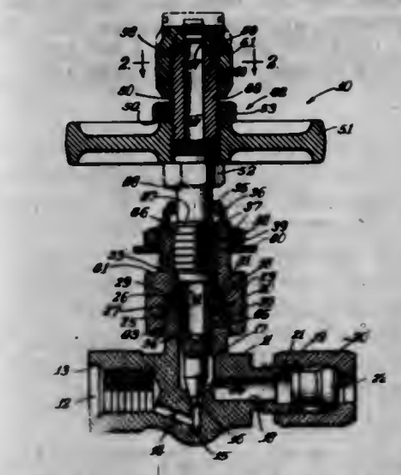
1. A supply system for air driven dental handpieces, comprising a base casting having a first conduit with a threaded inlet bore to be connected to a supply of air provided by an air compressor, said first conduit extending to an enlarged bore communicating with a smaller counterbore, an air filter assembly having a cylindrical plug provided with an O ring engaging in said counterbore to seal one open end thereof, said plug having a bore communicating with a second inlet forming an outlet for the filter, a tube in said bore, a cap on the end of said tube, a filter element on said tube receiving air from said enlarged bore and passing air inwardly to apertures in said tube, and a transparent cylinder mounted between said casting and said cap and establishing a closed container about said filter element, said casting having a second enlarged threaded bore communicating with the outlet of the filter assembly, and a pressure regulator valve in said second enlarged bore communicating with a third conduit for discharging filtered air at reduced pressure to a pair of enlarged bores each containing a solenoid valve controlling air.

3,272,230

GAGE VALVE

Carl Bolling, Chicago, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois

Filed Jan. 24, 1964, Ser. No. 339,956
8 Claims. (Cl. 137—557)



1. In a gage valve including a body having a first fluid passage defining a valve seat, a valve structure extending into said body for selectively opening and closing said first fluid passage across said valve seat, and means defining a second fluid passage communicating with said first fluid passage downstream of the valve seat and defining an outlet, structure comprising:

a closure;

means for removably securing said closure to said valve structure for selectively closing said outlet; and

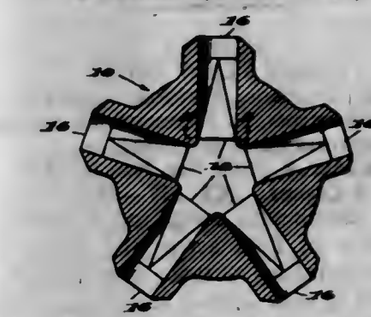
means responsive to a movement of said closure from the arrangement wherein said closure closes said outlet for jetting fluid from said second passage into the atmosphere at a velocity substantially greater than the velocity thereof through said second passage thereby to provide a pronounced signal of said movement only in the event that said movement is effected with the valve structure spaced from said valve seat to open said first fluid passage, said fluid jetting means comprising a passage having a transverse cross section smaller than the transverse cross section of said second passage.

3,272,231

APPARATUS FOR DIVIDING FLOW

Richard Donnan Livingston, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

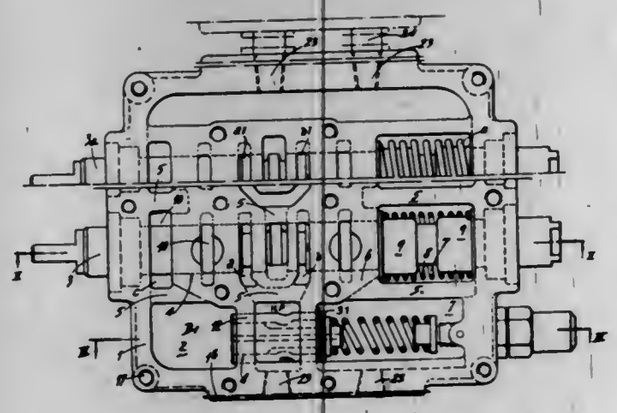
Filed Mar. 5, 1964, Ser. No. 349,635
8 Claims. (Cl. 137—561)



1. An improved flow splitter apparatus for the distribution of a viscous liquid from a single inlet to a plurality of outlets which comprises a body member having a single

inlet port therein, a plurality of equi-spaced, coplanar discharge ports substantially perpendicular to the axis of said single port and each having a circular exit portion and tapering to a rectangular cross-section in contact with said single inlet port.

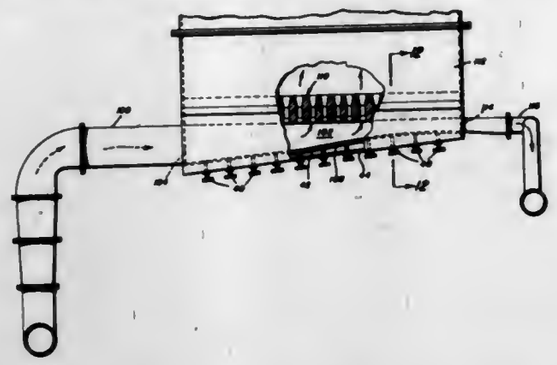
3,272,232
DISTRIBUTION BLOCK FOR HYDRAULIC VALVE
Roger Laumont, Nogent-sur-Marne, France, assignor to Hydro-Meca, Paris, France, a company of France
Filed Nov. 12, 1963, Ser. No. 323,006
Claims priority, application France, Nov. 16, 1962, 915,665, Patent No. 1,347,205
9 Claims. (Cl. 137—596.12)



1. A distribution block for a hydraulic control valve, of the type enclosing high precision sliding elements movable in chambers and defining interconnecting channels, passages, ducts and the like, which require liquid tight sealing between all moving and all fixed parts, comprising a casing formed of walls of cast metal in box-like shape and open at one side, at least two parallel, spaced partitions crossing said casing between a pair of opposite sides for housing between them a movable element, a flange on said partitions having perforations and partially closing said open side, said two partitions being connected by cross-bars which are also connected to the closed side of the casing and to said flange, said casing partitions, flange and cross bars being integrally formed in one piece, said partitions and cross bars having slots therethrough so as to form with said casing a honeycombed structure for receiving said movable elements and pressure fluid channels defining hydraulic circuits emerging in the open side of the casing through said perforations of the flange, and a support cover closing said casing and perforations of said flange, said cover being less mechanical resistant to bending and twisting than the casing and having openings for connecting pressure fluid ducts for the channels of the casing.

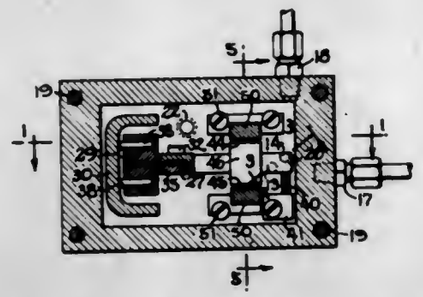
3,272,233
TAPER FLOW INLET
Alton D. Trufitt, Ivanhoe, Victoria, Australia, assignor, by mesne assignments, to Diamond International Corporation, a corporation of Delaware
Filed Mar. 8, 1963, Ser. No. 263,803
8 Claims. (Cl. 137—599)

1. In a fluid distributing device for delivering an even and uniform flow of fluid across the width of a fluid piping system comprising a taper flow header, an inlet adjacent one end of said tapered header, an overflow outlet at the other end, and a distributor along its length having a multiplicity of relatively uniformly spaced openings therein to receive a major portion of fluid flow angularly from said inlet, the improvement comprising a relatively flat adjustable wall comprising the tapered wall of said taper flow header and seal means along said tapered



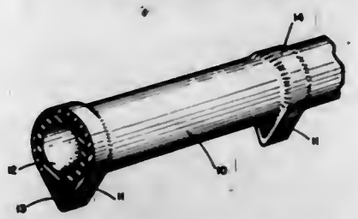
wall at each of the sides thereof running the length of said wall.

3,272,234
MAGNETICALLY CONTROLLED VALVE
George E. Parker, Rockford, Ill., assignor to Woodward Governor Company, Rockford, Ill., a corporation of Illinois
Filed May 13, 1964, Ser. No. 367,110
7 Claims. (Cl. 137—625.65)



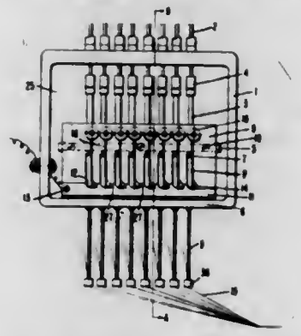
1. A valve construction having, in combination, a leaf spring of substantial width fixedly anchored at one end cantilever fashion, a valve member projecting from and supported by the free end of said spring for movement in a plane accurately defined by flexing of the spring and in opposite directions away from and toward a predetermined centered position, said member having a side surface paralleling said plane and terminating in an edge facing in one direction along the plane and a second surface paralleling said plane and terminating in a second edge laterally spaced from said first edge and facing in a direction opposite to the first edge, sources of relatively high and low pressures, means defining a passage communicating with said low pressure source and terminating in a first stationary port disposed opposite and closely adjacent said first surface but out of rubbing contact therewith, said port being covered by said first surface when said member is disposed in said centered position or to one side thereof, but opened progressively in the movement of the member in one direction away from such position, means defining a passage communicating with said high pressure source and terminating in a second port laterally spaced from said first port and disposed opposite and closely adjacent but out of rubbing contact with said second surface so as to be covered when said member is in said centered position and opened progressively in the movement of the member in the opposite direction away from such position, a fluid filled pressure chamber enclosing said member and said ports, and means for moving said member in said plane by flexing of said leaf spring and thereby admitting pressure fluid to said chamber through said second port or releasing fluid from the chamber through said first port.

3,272,235
HOSE AND SUPPORT THEREFOR
Benjamin Haytock III, Fairview, and Charles Stowell, Erie, Pa., assignors to Continental Rubber Works, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1963, Ser. No. 318,345
4 Claims. (Cl. 138—107)



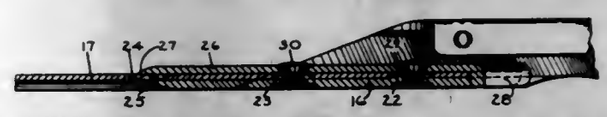
1. A hose and suspension devices attached thereto comprising
a hose having the outside surface thereof made of vulcanizable material,
and suspension devices comprising loops slightly larger in diameter than said hose disposed around said hose and at spaced intervals thereon,
said loops being made of vulcanizable material compatible with said hose and vulcanized thereto whereby said suspension devices are integral with said hose.

3,272,236
MECHANISM FOR THE CONTROL OF WEFT THREADS IN SHUTTLELESS LOOMS
Victor Marie Joseph Ancet, Villa Santa-Lucia, Golfe-Juan, Alpes Maritime, France, and Marius Fayolle, also known as Marcel Fayolle, 5 Rue de l'Humilelte, Lyon, Rhone, France
Filed Sept. 23, 1964, Ser. No. 398,553
Claims priority, application Spain, Sept. 25, 1963, 291,978
3 Claims. (Cl. 139—122)



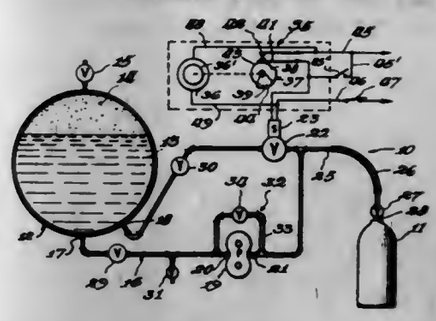
1. Improved mechanism, for use with a selective weft thread control, a contact activated by intermittences in synchronism with the mechanism and connected to a loom and a weft carrier clamp for pulling selected threads through a shuttleless loom, to stop the loom in the absence of any one weft thread comprising: a plurality of mounted rod dies individually operatively connected at one end to the selective weft thread control; said dies being vertically displaceable under operation of the control, each die having an elbow adjacent the lower end thereof; a thread guide attached to the lower end of each die; each guide having a weft thread passing therethrough; a finger attached to each rod die and extending radially therefrom, each thread guide and finger attached to their respective selected die radially rotating under tension from the clamp pulling on the thread passing through the guide; means limiting the vertical and radial movements of each finger; mounted spring means biasing each finger against raidal rotation, and counter-rotating each finger in the absence of any thread tension; a mounted electrical contactor connected to the contact, upstanding portions formed integrally of the contactor, one each for each finger; and fingers biased to counter-rotate in the absence of their respective thread touching their associated upstanding portion, so that when a selected weft thread is absent for any reason the loom stops.

3,272,237
FILLING CARRIERS FOR SHUTTLELESS LOOMS
Paul C. Consoletti, Milford, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Feb. 8, 1965, Ser. No. 430,929
6 Claims. (Cl. 139—122)



1. For a shuttleless loom having reciprocable filling placing members by which picks of filling are introduced from a stationary outside source into sheds formed of warp threads, the free end of each one of said placing members having apertures longitudinally spaced therethrough, a filling carrier including an upwardly deflecting trailing end, at least one positioning boss formed with said carrier and adapted to be encompassed by said aperture, and fastening means whereby said carrier may be detachably secured to said filling placing member.

3,272,238
METHOD AND APPARATUS FOR FILLING VESSELS
Alvin F. Groppe, Oak Lawn, Ill., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 318,617
7 Claims. (Cl. 141—5)

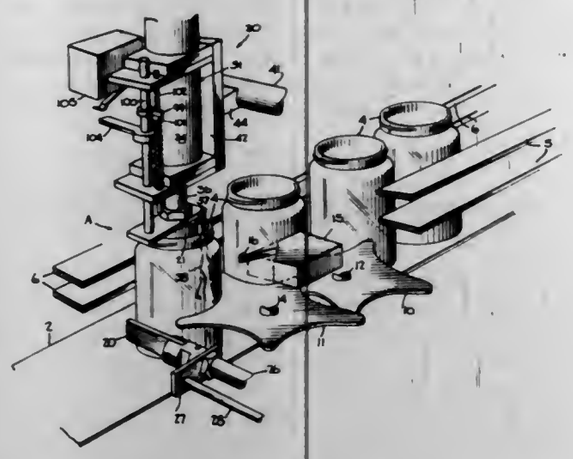


6. Method for filling a vessel with vaporizable liquid and for filling another vessel with vapor, comprising the steps of: pumping vaporizable liquid from a storage tank through a conduit, alternately diverting the pumped liquid into a vessel and diverting vapor formed in the vessel to a bottling station to fill vapor into another vessel, vaporizing additional liquid from the storage tank when the vapor available to the bottling station is insufficient, and conducting the additional vapor to the bottling station.

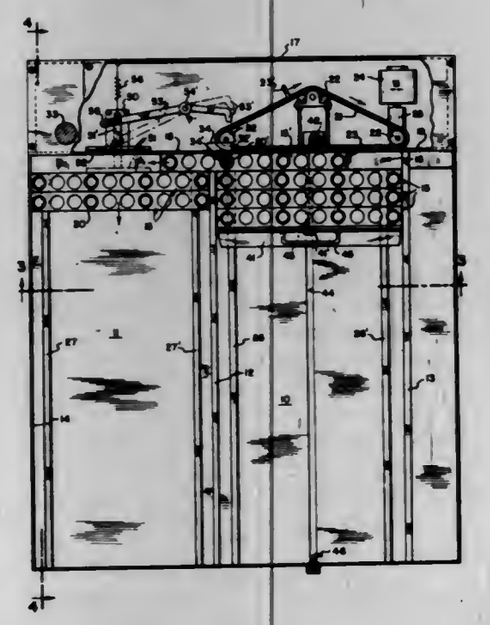
3,272,239
HEADSPACER FOR CONTAINERS
Frederick V. Hildebrandt, Charles S. Ochs, and George J. Foss, all of Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Jan. 22, 1964, Ser. No. 339,847
14 Claims. (Cl. 141—168)

1. A machine for providing headspaces in overfilled containers comprising the combination of a conveyor for moving randomly spaced containers to a head-spacing station, a sensor positioned adjacent to the path of said moving containers, means for guiding said containers past the said sensor whereby each container operates the sensor, a container stop, first drive means responsive to said sensor for moving said container stop for stopping a container at said headspacing station, a headspacing

member, second drive means responsive to the actuation of said sensor for inserting said headspacing member into a container for providing an adequate headspace therein, means activated by said headspacing member for actuating said second drive means for withdrawing the headspacing member from the container and to initiate the removal of said stop from engagement with the container by said first drive means.

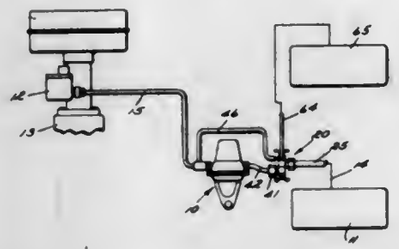


3,272,240
CONTAINER FILLING TRANSFER MECHANISM
Wilfred Roth, 58 Brainard Road, West Hartford, Conn.
Filed Nov. 15, 1963, Ser. No. 323,947
8 Claims. (Cl. 141—176)



1. A transfer mechanism for containers to be filled by filling means at a filling point which comprises
(a) a plurality of container racks for supporting respective rows of containers,
(b) a rack tray having side-by-side input and output channels for movably supporting said container racks in side-by-side relationship therein,
(c) a transfer section at one end of said rack tray extending across said input and output channels,
(d) drive means at said transfer section for successively transferring therealong racks received from the input channel,
(e) indexing means for controlling said drive means to interrupt the movement of a rack along said transfer section as each container therein arrives at a predetermined filling point therealong,
(f) means for moving racks in said input channel toward said transfer section after each leading rack is transferred away from the front of the input channel,
(g) and means for successively moving transferred racks away from said transfer section into said output channel.

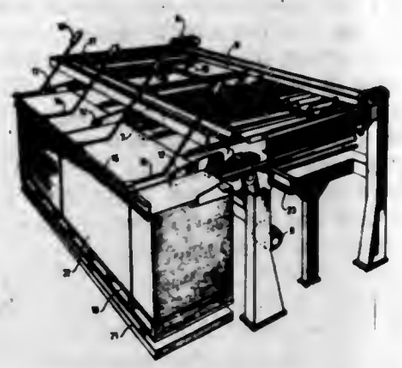
3,272,241
FUEL EXCHANGER DEVICE
Samuel Wagner, 2405 Hillsdale Drive E., Brookfield, Wis.
Filed Apr. 13, 1964, Ser. No. 359,309
5 Claims. (Cl. 141—388)



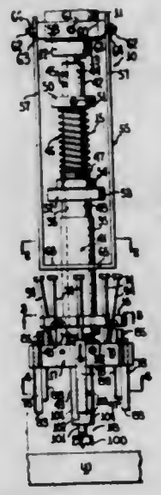
1. In a system for transferring liquid fuel from a receptacle to the tank of an automotive vehicle having a fuel tank, an internal combustion engine, a fuel pump and lines connecting said tank, engine and pump for pumping fuel from said tank to said engine, when the latter is running, a fuel exchanger device comprising
a multi-passaged valve body in the line between said tank and said pump,
a first connection from the discharge side of said pump to said valve,
a second connection from said valve to said receptable and valve means associated with said valve body for opening passages through said valve body establishing flow communication from said receptacle to said pump and from said pump to said tank while closing communication between said tank and the intake side of said pump,
whereby said pump can be operated to transfer fuel from said receptacle to said tank while said engine is running.

3,272,242
DEVICE FOR SAWING AND STACKING SHEET MATERIAL
Johannes Hans Bäuml, Sundsvall, Sweden, assignor to Aktiebolaget Mohogs Mekaniska Verkstad, Sundsvall, Sweden, a company of Sweden
Filed Apr. 30, 1964, Ser. No. 365,235
Claims priority, application Sweden, May 3, 1963, 4,908/63; June 20, 1963, 6,904/63
2 Claims. (Cl. 143—48)

1. A device for the sawing and subsequent stacking of wood fibre board and similar slabs, comprising a transport table, a plurality of saw blades mounted on saw carriages that are movable laterally at one side of said table to allow sawing various sizes, a feeder for feeding the slabs during the sawing, said feeder having a plurality of feeding arms arranged to engage with the rear edges of the slabs, seen in the direction of feeding, a stacking device for the sawn slabs arranged after the sawing device, seen in the direction of feeding, said stacking device comprising at least two vertical shafts, the feeding arms being movable laterally, depending on the position of the saw blades, so as to move in paths between the saw blades, and being arranged to move forward as far so to push the sawn slabs into the desired position in the shafts, vertical plates supported by said saw carriages in alignment with the saw blades, said vertical plates constituting thin partitions between said shafts.

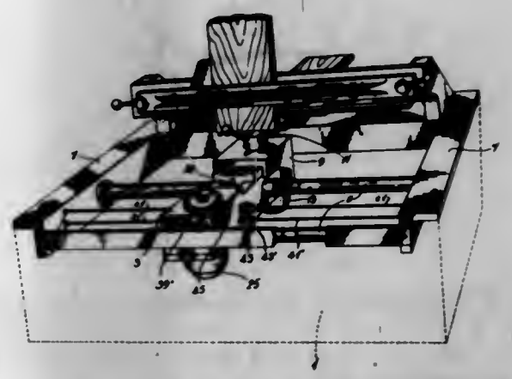


3,272,243
PLUG CUTTER
Frank W. Hayes, Sr., 4017 Carol Drive, Jackson, Miss.
Filed Oct. 11, 1963, Ser. No. 315,633
8 Claims. (Cl. 144—20)



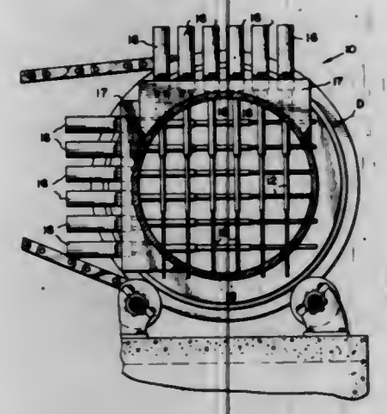
1. A cutter mechanism comprising a rotatable cutter unit adapted for cutting a disc-like article having upper and lower surfaces and an exterior frusto-conical portion terminating at a point spaced from said lower surface at an exterior cylindrical shoulder, said cutter unit comprising first and second cutter means, said first and second cutter means having cutting portions normally disposed in coaxial relationship, said first cutter means being normally disposed radially inwardly of said second cutter means, said first cutter means being operative for cutting an exterior frusto-conical portion of a disc-like article, said second cutter means being operative for cutting an exterior cylindrical shoulder of the article which intersects the exterior frusto-conical portion at a point spaced from the lower surface thereof, said cutting portions of the first and second cutter means normally defining generally coaxial hollow annular cylindrical volumes in a first relative position thereof upon the rotation of said cutter unit, means for progressively shifting the cutting portion of said first cutter means radially outwardly toward said second cutter means, and means for controlling the shifting means for causing the hollow, annular cylindrical volume of the first cutter means to be transformed into a generally hollow annular frusto-conical volume which intersects the hollow annular cylindrical volume of the second cutter means at a point spaced from the lower surface of the article and at a major radius portion of the hollow annular frusto-conical volume whereby the article is provided with an exterior frusto-conical portion merging with an exterior cylindrical shoulder at a point spaced from the lower surface of the article.

3,272,244
DOVETAILING MACHINE
Joseph Nemec, Cite St-Laurent, Quebec, Canada, assignor of fifty percent to Nicholas Monastyrsky, Montreal, Quebec, Canada
Filed Oct. 2, 1963, Ser. No. 313,207
8 Claims. (Cl. 144—87)



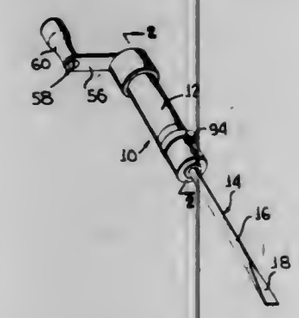
1. A machine for imparting to a cutting tool the harmonic motion necessary to produce dovetail cuts, comprising:
(a) a machine base;
(b) a carrier mounted on said machine base for longitudinal displacement thereon;
(c) a work holding device mounted on said machine base and transversally offset from said carrier;
(d) a cutting tool assembly mounted on said carrier for transversal displacement thereon;
(e) a first device for translating circular motion into rectilinear transverse motion and for communicating the latter to the cutting tool assembly and thereby setting same into reciprocal motion;
(f) a second device for translating circular motion into rectilinear longitudinal motion and communicating the latter to the said carrier;
(g) a means for absorbing one of the directional components of rectilinear longitudinal motion and thereby prevent communication thereof to the said carrier;
(h) first power means to produce said circular motion;
(i) second power means for rotating said cutting tool;
(j) said first device comprising:
a first rectangular frame on said carrier and transversely slidable thereon;
a first block longitudinally slidable on said first rectangular frame;
a rigidly secured connection linking said first rectangular frame and said cutting tool assembly;
a first circular rotatable eccentric connected to a rotating shaft for action on said first block;
(k) said second device comprising:
a second rectangular frame on said carrier and longitudinally slidable thereon;
a second block transversely slidable on said second rectangular frame;
a unidirectional clutch device secured to the machine base for action on said second rectangular frame to prevent motion of said second rectangular frame in one longitudinal direction;
a second circular rotatable eccentric connected to a rotating shaft for action on said second block.

3,272,245
BARKING DRUM
George M. Dick, Sherbrooke, Quebec, Canada, and Gladstone H. Kapralos, Flushing, N.Y., assignors to Canadian Ingersoll-Rand Co., Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed Apr. 29, 1964, Ser. No. 363,515
15 Claims. (Cl. 144—208)



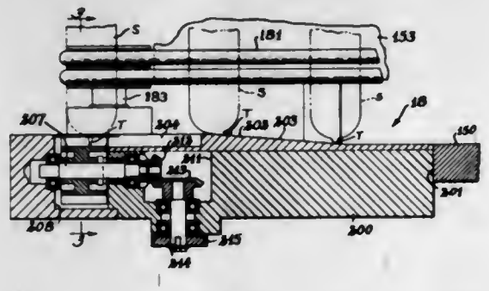
1. A barking drum for debarking logs, comprising;
(a) a cylindrical shell for receiving said logs;
(b) said cylindrical shell being provided with at least two sections; and
(c) means for positively controlling the length of time that said logs stay in each of said sections.

3,272,246
HAND TOOL WITH AXIALLY MOVABLE CLUTCH MEANS
Emil Bohnet, 204 Ontario St., Buffalo, N.Y.
Filed Aug. 10, 1964, Ser. No. 388,658
6 Claims. (Cl. 145—76)



1. A hand tool of the character described, comprising an elongate handle having an axial bore therethrough and having a rear end and a forward end, a cap on and rotatably engaged with said rear end, an elongate driver element having a tang and a means at one end adapted for connection with a rotatable element, a pair of clutch members each having a passage therethrough, the passages of said members being aligned and having said tang extending therethrough and through said bore of the handle, means attaching the tang at its other end to said cap, one of said clutch members being carried by the forward end of the handle, means releasably securing the other clutch member to the tang, said clutch members having opposing faces adapted to be placed in substantially abutting relation, at least two pin members projecting from one of said clutch faces, the other clutch face having sockets for snugly receiving said pins in the clutch engaged position of the members, a skirt encircling and secured to one of said members and projecting therefrom to an extent to enclose a portion of the other member when the clutch members are engaged, and spring means within the handle bore and retained under tension between the cap and the handle carried clutch member and constantly urging the handle in a direction to engage the clutch pins in said sockets, and the handle being retractable against the tension of the spring means for disengaging the pins from their sockets and also being rotatable on the tang when said pins are disengaged from said sockets, a cylindrical shell enclosing the clutch secured to the tang and having an open end directed toward the hand carried clutch member and being slidable on the enclosed clutch member, means for securing the shell against movement on the enclosed clutch member when in non-working position thereon whereby said handle is freely reciprocable on the tang for engaging and disengaging the clutch members, and said shell securing means being adapted to secure the shell in a second position with respect to the enclosed clutch member wherein the shell has an operative connection with the handle and holds the handle against reciprocable movement and holds the clutch members in disengaged relationship.

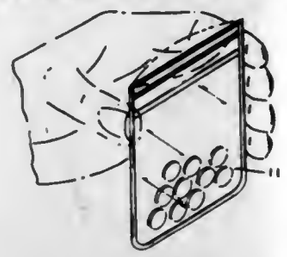
3,272,247
SAUSAGE END TRIMMING MACHINE
Andrew H. Vedvik, Madison, Wis., assignor to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Original application Jan. 29, 1963, Ser. No. 254,745, now Patent No. 3,217,766, dated Nov. 16, 1965. Divided and this application July 20, 1965, Ser. No. 473,448
5 Claims. (Cl. 146—81)



1. Apparatus for handling small sausages which have small tip forming portions projecting from the ends thereof, said apparatus comprising a traveling conveyor disposed generally horizontal and having upper and lower conveyor members with confronting runs between which the sausages are confined for advance in transversely extending, side-by-side arrangement, cutter mechanism at opposite sides of the conveyor, each said cutter mechanism comprising a vertically disposed plate with a longitudinally extending guide slot positioned in the path of an end of the sausages for accommodating the projecting tips, said slot terminating at its leading end in an aperture providing an opening into a cutter housing, a cutter wheel mounted in the cutter housing for rotation on an axis extending in the direction of travel of the conveyor and carrying one or more knives for cutting off the sausage tips which extend through said aperture, and means for rotating said cutter wheel.

3,272,248
CLOSURE FOR FLEXIBLE RECEPTACLES
Frank J. O'Farrell, 10711 Whitburn, Culver City, Calif.
Filed May 4, 1965, Ser. No. 452,992
2 Claims. (Cl. 150—10)

1. In a bag that is completely closed excepting for an elongated knob formed by superimposing adjacent edge portions of the material of the bag a pair of stays so positioned and attached to said material that it is superimposed over the stay along the edge of the mouth, each



of said stays so formed of resilient material that it is inherently spring-loaded to lie flat, the surfaces of the stays that face each other having relatively small pit-like indentations therein.

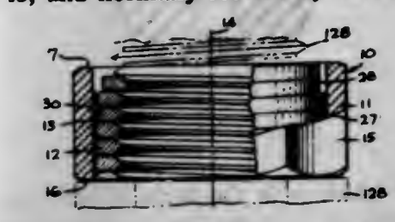
3,272,249
LOCKING DEVICE FOR USE ON SUSPENSION CLAMPS AND THE LIKE
Herbert J. Houston, Oakville, Ontario, Canada, assignor to Slater Steel Industries Limited, Hamilton, Ontario, Canada
Filed July 30, 1964, Ser. No. 386,129
Claims priority, application Canada, Sept. 9, 1963, 884,111
2 Claims. (Cl. 151—6)



1. A locking assembly for preventing the complete detachment of one member from another, said assembly comprising an externally threaded male member and a female member having an internally threaded wall and adapted to receive the male member in screw threaded engagement, a resiliently actuated locking element housed within said male member adjacent the threaded inner end thereof and held in normally closed position by said threaded wall, a recess formed in the exterior face of said female member, said recess being flared and generally segmental in shape, and terminating in a retaining wall for said element generally radially outwardly extending from the threaded wall and interrupting the thread of said female member, the distance measured from the threaded inner end of said male member to said locking element being greater than the depth of said recess by at least one thread turn, said recess adaptable to receive said element in locking engagement whereby upon retrograde movement of the male member to a predetermined extremity said element is urged outwardly of the axis of the male member and into locking engagement with said recess, thereby preventing further unscrewing of the assembly.

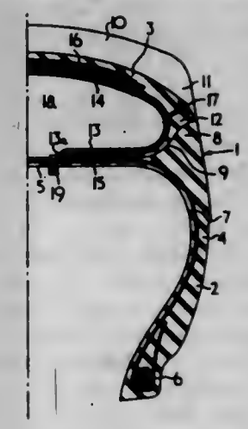
3,272,250
SELF-LOCKING NUT
Mark Hattan, Pasadena, Calif., assignor of sixteen percent to William P. Green, Pasadena, Calif.
Filed June 15, 1965, Ser. No. 464,160
9 Claims. (Cl. 151—21)

1. A lock nut comprising a case, an elongated thread element of resilient spring material located at least partially within said case, said element being coiled generally helically and having a radially inner portion forming an internal thread for engagement with a mating screw, means forming an essentially helical ramp carried by said case axially inwardly of said thread element for taking axially inward forces therefrom and having a shoulder preventing relative rotation of said element, a plurality of primary turns of said thread element being permanently bonded essentially rigidly to said case, and to one another and to said ramp, said thread element having a locking portion axially outwardly beyond said primary turns in a direction away from said ramp which is deformed to, and normally returns by its own resilience



to, a condition in which it deviates from a true helical continuation of any of said primary turns, said locking portion being free of direct rigid attachment to said case and being free for deformation against its resilience by a mating screw from said normal condition and toward closer coincidence with a true helical continuation of said primary turns.

3,272,251
PNEUMATIC TIRE
Alfred Harry Grossett, Lichfield, England, assignor to Dunlop Rubber Company Limited, London, England, a British company
Filed Nov. 24, 1964, Ser. No. 413,578
Claims priority, application Great Britain, Dec. 14, 1963, 49,482/63
4 Claims. (Cl. 152—188)

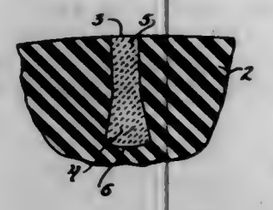


1. A pneumatic tire incorporating two side walls and a tread portion and comprising a radially inner inflatable component and a detachable inflatable radially outer component, the radially inner component having side walls forming at least a part of each side wall of the tire and an annular bridging portion extending between and joining said side walls of the inner component, the side walls of the inner component extending radially outwardly beyond the bridging portion to form an annular circumferential channel, said outer component comprising the tread portion of the tire and a base portion fitting in the annular channel of the inner component and being substantially inextensible in a circumferential direction.

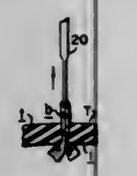
3,272,252
SNOW TIRE AND INSERT THEREFOR
Clarence E. Nordquist, Lakewood, Colo., assignor to Coors Porcelain Company, Golden, Colo., a corporation of Colorado
Filed Feb. 23, 1965, Ser. No. 434,379
3 Claims. (Cl. 152—211)

1. A tire for automative vehicles having a rubber tread with spaced inserts therein and exposed at the surface thereof, said inserts being shaped sintered ceramic bodies

having a density of at least about 3.9 g./cc. and containing at least about 99% by weight aluminum oxide substantially all of which is in the form of randomly oriented crystals having an average size not exceeding about 10 microns.



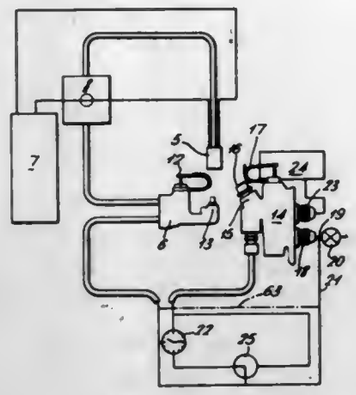
3,272,253
TIRE REPAIR INSERT
Horace B. Brose, 5013 N. Westshore Blvd., Tampa 3, Fla.
Filed Feb. 10, 1965, Ser. No. 431,623
4 Claims. (Cl. 152—370)



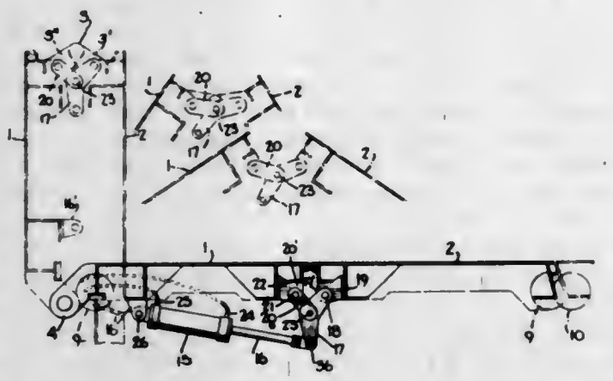
1. For repairing an injury opening in a tubeless tire, an elastic insert in the form of an elongated thin multiply wafer adapted to be forced in a folded, stretched and attenuated state into and, in part, through the tire injury opening to occupy fully the space therewithin and provide an effective seal therefor, comprising a base lamination of a cured rubber composition having a high tensile strength and a facing lamination of non-vulcanizable uncured soft and pliable rubber composition applied to each of the opposite faces of the base lamination, a spread of adhesive material devoid of any vulcanizing agent therein interposed between each facing lamination and the base lamination whereby intimate contact therebetween may continue indefinitely without inducing any vulcanizing of the facings, the adhesive material acting to mechanically join the several laminations into a unitary structure having an ample volume for an effective seal against leakage of air through the injury opening when the insert is forcibly fitted therewithin for adherence to the surrounding walls thereof.

3,272,254
IGNITION OF GAS BURNERS
Francis Hughes, Leamington Spa, and Stanley Ralph Williams, Oxfordshire, England, assignors to Sidney Flavel & Company Limited, Leamington Spa, England, a British company
Filed May 20, 1964, Ser. No. 368,930
Claims priority, application Great Britain, Oct. 3, 1963 38,910/63
4 Claims. (Cl. 158—125)

1. A gas-fired appliance incorporating means for controlling the lighting of a main burner comprising a single pilot burner, means for supplying gas to said pilot burner directly from a main supply, an igniter burner incorporating an electrically heated igniter filament, means for supplying gas to said igniter burner including a valve controlled by thermally responsive means influenced by the flame of the pilot burner, and means for controlling the electrical circuit of said igniter filament comprising a pressure-sensitive switch in a pipe line between said valve and said igniter burner, said switch breaking the circuit to said filament when the gas supply to the igniter burner is cut off by the closing of said valve by the thermally responsive means heated by the flame of the pilot burner.



3,272,255
POWER OPERATING MEANS FOR OPENING AND CLOSING HATCH COVERS
Gustave Stransky, New York, N.Y., assignor, by mesne assignments, to MacGregor & Company (Naval Architects) Ltd., Whitley Bay, Monkseaton (Northumberland), England
Filed Apr. 12, 1954, Ser. No. 422,470
17 Claims. (Cl. 160—188)



1. In a folding hatch cover arrangement for vessels, a coaming means surrounding a hatch opening, a pair of adjacent cover sections, hinge means mounting one end of one section relative to an edge of the opening, hinge means connecting the opposite end of said one section to the adjacent end of the other section, roller means carried at the remote end of said other section, guide means constraining the roller means and thus the remote end of said other section for movement toward and away from said edge of the opening, link means pivotally connected to the said opposite end of said one section, additional link means pivotally connected to the said adjacent end of of the said other section, pivot means interconnecting the link means with the additional link means, and reciprocable force applying means pivotally connected to said one section and to said interconnected link means for selective movement in opposite directions toward and away from said edge of the opening whereby responsive to movement of said force applying means and said link means, said sections move between a hatch opening and a hatch closing position.

3,272,256
ROLLER SHUTTER AND IMPROVED METHOD OF MANUFACTURE THEREOF
Friedrich Griesser, Aadorf, Thurgau, Switzerland, assignor to Griesser A.G., Aadorf, Thurgau, Switzerland
Filed Mar. 2, 1964, Ser. No. 348,468
1 Claim. (Cl. 160—220)



In a roller shutter, the combination of a plurality of hollow slats of sheet material, flexible carrier tapes on which said slats are suspended, said slats each having a top portion which in cross-section has an upwardly convex wedge shaped cross-section with two oppositely inclined wall portions, and an upwardly concave bottom portion having in cross-section a substantially horizontal middle surface portion and sharply downwardly inclined end portions connecting the bottom portion to the side walls of the hollow slat, the top portion of the next lower slat projecting toward the space within the concave bottom portion of each next upper slat, the slats each being formed by a strip of sheet material bent to a tube, the longitudinal edges of said strip being united at said bottom portion of the slat, the apex of said top portion and the horizontal middle surface of the bottom portion having slots formed therein, and the flexible carrier tapes passing through said slots, said carrier tapes including laterally extending shoulder means for retaining said slats in a substantially horizontal position on said carrier tapes and outwardly and downwardly projecting tongue-like projections of material punched out of said carrier tapes at positions spaced longitudinally along the carrier tapes and adjacent at least one of the wall portions of each of the slats connecting the side walls of the slats, said tongue-like projections being resiliently movable toward the carrier tapes to enable the slats to be moved down along the tapes into position thereon and for preventing said carrier tapes from slipping through said slats, said carrier tapes being formed of individual fastening members with each fastening member having at least one of said tongue-like projections and said laterally extending shoulder means, said tongue-like projections each being capable of bearing against said middle surface portion of said concave bottom portion of an associated slat and said laterally extending shoulder means being capable of bearing against said top portion of said associated slat, and each individual fastening member incorporating opposed recesses and a coupling portion, the coupling portion of one individual fastening member being slidably receivable within said opposed recesses of an adjacent individual fastening member.

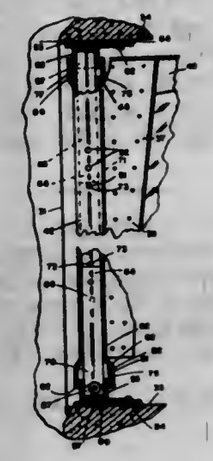
3,272,257
FLEXIBLE DOOR HINGE SYSTEM
Angelo Dirubbo, North Chelmsford, Mass., assignor to A & D Fabricating Co., Inc., Lowell, Mass., a corporation of Massachusetts
Filed Jan. 16, 1964, Ser. No. 338,247
10 Claims. (Cl. 160—354)

1. In a swinging door of the type formed by a sheet of heavy, flexible, transparent material having its upper edge, and one side edge, supported in an inverted, L shaped rigid frame the combination of;

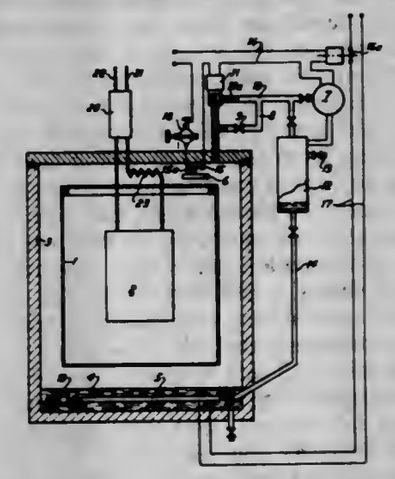
a hollow vertical tube of quadrangular cross section, integrally fixed to the side portion of said L shaped frame, said tube being of predetermined height and having opposite, open ends;

a pair of hinge bases, each having a socket of quadrangular cross section, and adapted to be affixed at the upper, and lower, extremity of a door jamb in coaxial alignment with the other, and

a pair of solid torsion bars of flexible resilient material, each bar having one end seated in one of said sockets and the other end seated in the adjacent open end of said tube.



3,272,258
MEANS FOR KEEPING A HIGH DEGREE OF TEMPERATURE STABILITY WITHIN A CHAMBER OF SUBSTANTIAL DIMENSIONS
Fernand Eugene Gabriel Bourquard, 13 Rue Cantin, Courbevoie, Seine, France
Filed Sept. 5, 1963, Ser. No. 306,944
Claims priority, application France, Sept. 5, 1962, 908,692, Patent 1,340,298; Aug. 3, 1963, 943,678, Patent 86,255
1 Claim. (Cl. 165—26)



A device which comprises, in combination,

a first closed gastight chamber to be maintained at a predetermined temperature higher than that of the surrounding medium,

a heat insulated closed gastight chamber surrounding said first chamber,

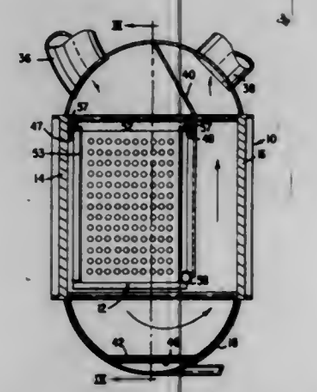
in said heat insulated chamber and outside of said first chamber a substance present both in the state of vapor and in the liquid state,

said first chamber being located in said heat insulated chamber so as to be surrounded exclusively by the vapor phase of said substance,

means for heating said substance in the liquid state capable of bringing both of said chambers to a temperature higher than said predetermined temperature, and

means responsive to the pressure of said vapor phase for evacuating a portion of said vapor to keep the temperature inside the second mentioned chamber at a fixed value, said last mentioned means including a condenser having its top portion in communication with the top portion of said second mentioned chamber and its bottom portion in communication with the bottom of said second mentioned chamber for the return by gravity of the liquid condensed in said condenser.

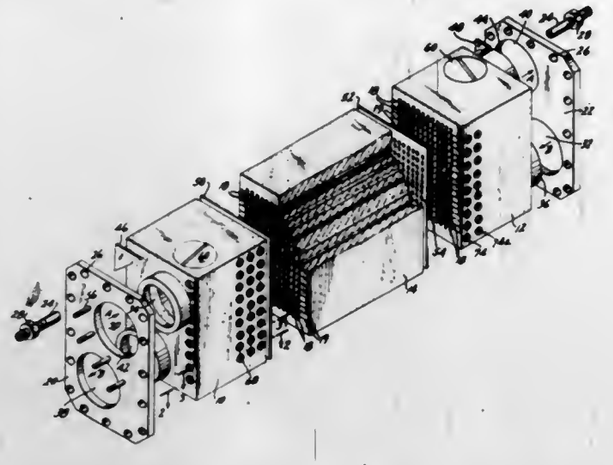
3,272,259
HEAT TRANSFER APPARATUS
James R. Shields, Pittsburgh, Pa., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Original application June 11, 1962, Ser. No. 201,394. Divided and this application Oct. 17, 1963, Ser. No. 316,956
3 Claims. (Cl. 165—158)



1. Heat transfer apparatus comprising a shell assembly defining an enclosure having an end opening and including opposed side members formed of relatively thick material, a base member of semi-circular configuration in cross-section depending from and connecting the lower ends of the opposed side members, means connecting one pair of ends of said side member with the adjacent edge of said base member to form an end closure, a top cover having an inlet and an outlet for said enclosure, a partition depending from the top cover but terminating short of the base to form a gas flow path from the inlet downwardly between the partition and one side to the bottom of the apparatus and upwardly between the partition and other side to the outlet; and a tube assembly comprising spaced tube sheets, a plurality of tubular members connecting said tube sheets, side members coextensive with said tubes connecting the tube assembly to the partition and one of said shell side members, reversing flow means in communication with said tubular members secured to one of said tube sheets, said tube assembly being constructed so that the end supporting said reversing flow means may be inserted into the enclosure and the tube assembly supported therein.

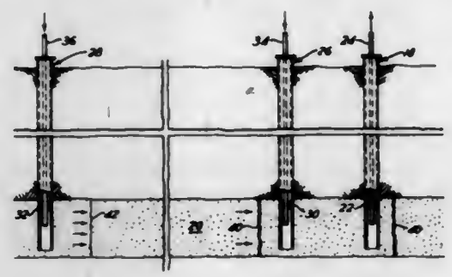
3,272,260
CORROSION RESISTANT HEAT EXCHANGER
Samuel H. S. Raub, Bay Village, and Starling F. Joachim, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Aug. 11, 1961, Ser. No. 130,817
11 Claims. (Cl. 165—164)

1. A heat exchanger for two fluids which comprises in combination two headers fabricated from monolithic blocks of impervious graphite, said headers being provided with a plurality of rows of horizontal drilled passageways all of whose axes are parallel to one another,



said headers being so adapted that each of said fluids pass through separate horizontal rows of parallel passageways.

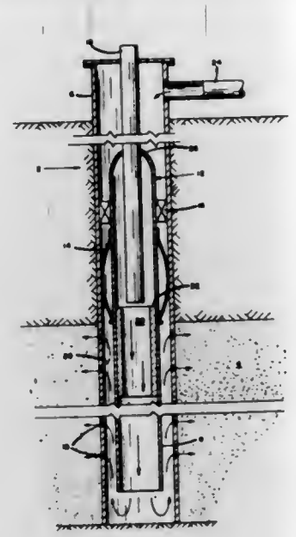
3,272,261
PROCESS FOR RECOVERY OF OIL
Richard A. Morse, Oakmont, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,497
11 Claims. (Cl. 166—11)



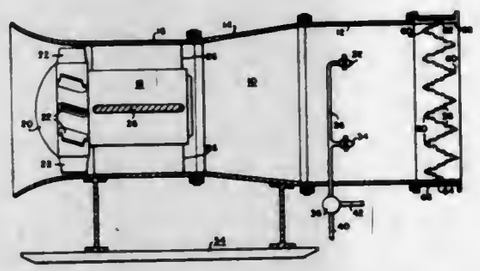
3. In a process for increasing the production of oil from an oil-bearing formation penetrated by a production well and a heater well spaced from the production well, the improvement comprising drilling the heater well within the drainage area of the production well at a distance of from about 50 to about 100 feet, injecting heat into the formation at the heater well at a rate sufficient to raise the bottom hole temperature in the production well to at least 200° F. within two weeks after commencing injection of heat at the heater well to form a zone having a temperature greater than 200° F. around the production well, thereafter reducing the rate of injecting heat into the formation at the heater well, producing oil from the production well, and continuing the injection of heat into the formation at the heater well while producing oil at the production well to maintain the temperature in the production well in the range of 200° to 600° F.

3,272,262
IGNITION OF THICK PAY FORMATIONS
Karol L. Hujsak, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Jan. 23, 1964, Ser. No. 339,728
6 Claims. (Cl. 166—38)

6. In a method for igniting a thick, carbonaceous deposit penetrated by a cased well having perforations opposite and throughout the thickness of said deposit, the improvement which comprises isolating a first zone opposite said deposit in said well extending substantially the entire height of said deposit, conducting separate streams of fuel and air in combustible proportions into a second zone within said first zone to form a combustible mixture, igniting said mixture in said second zone and continuing the injection of said fuel and air in combustible proportions into said second zone to produce hot combustion products, conducting said products from said second zone in a downwardly direction through a confined path and out of direct contact with said deposit and said first zone to a position in said well substantially adjacent and above the lower boundary of said first zone, withdrawing said products from said confined path at said position into said first zone, and forcing said products into said deposit opposite said first zone.

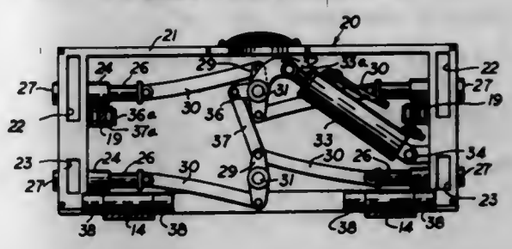


3,272,263
METHOD OF FIGHTING MINE FIRES
Will B. Jamison, Wyckoff, N.J., assignor, by mesne assignments, to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Original application Mar. 7, 1960, Ser. No. 13,103. Divided and this application Sept. 7, 1965, Ser. No. 485,382
2 Claims. (Cl. 169—15)



2. In the method for fighting fires in a mine having a forced-air ventilation system and a plurality of parallel mine roadways leading to a fire zone and through which ventilation currents may flow, the steps of generating air currents in at least one of said parallel roadways, utilizing said generated air currents to produce a fire-fighting foam plug which will travel down said one roadway to the fire zone while permitting the ventilation currents to travel through the other parallel roadways to the fire zone, and controlling said ventilation currents and the currents generated in said one roadway independently of each other.

3,272,264
EARTH-MOVING EQUIPMENT
Henry S. Antolini, 203 Scott Drive, Santa Maria, Calif.
Filed Mar. 31, 1964, Ser. No. 356,241
3 Claims. (Cl. 172—273)



1. A latching mechanism for removably securing to a tractor or other prime mover various tools having apertured tongues projecting therefrom comprising:

(a) A framework adapted to be secured to the tractor and having a plurality of openings to receive the tongues of the tools;

(b) bolt receivers secured to the framework adjacent to a plurality of said openings;

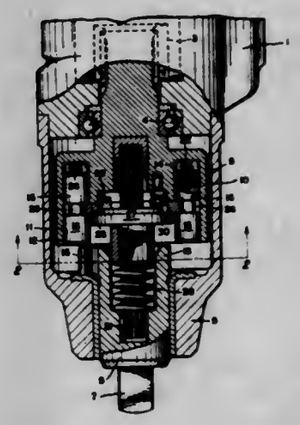
(c) bolts slidably disposed in each receiver;

(d) power means;

(e) mechanical connections between the bolts and the power means for sliding said bolts into and out of said apertures to respectively engage the apertures of tongues and to release the tongues, and

(f) mechanical means for holding the bolts in engagement in the apertures to lock a tool to the framework.

3,272,265
ROTARY IMPACT TOOL
Charles L. Schrader and Lee W. Ramstrom, Sayre, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 26, 1964, Ser. No. 354,851
10 Claims. (Cl. 173—93)



3. A rotary impact mechanism comprising:

(a) a frame;

(b) an anvil rotatably mounted on said frame;

(c) a hammer rotatably mounted on said frame including means movable relative to said anvil between an impact position wherein it delivers a rotary impact to said anvil and a non-impact position wherein it can rotate free of the anvil;

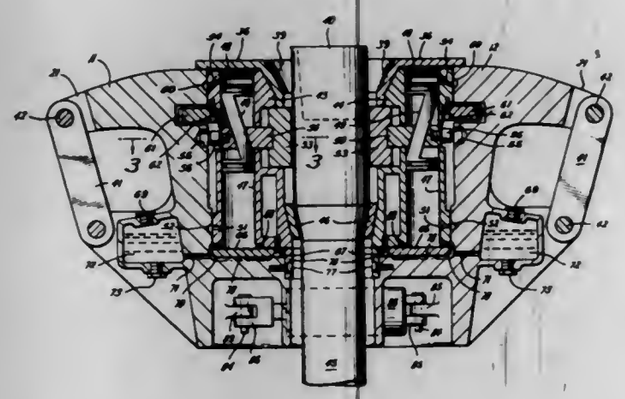
(d) means biasing said movable means to said impact position;

(e) a pair of cam elements interconnected between said anvil and hammer, one of said cam elements being mounted on said anvil and the other being mounted on said hammer, said cam elements being operative in their normal positions on their respective mounting members to engage and hold said

movable means in said non-impact position wherein said movable means does not impact said anvil; and

(f) said cam members being arranged to release said movable means as it rotatively approaches said anvil so that said biasing means moves said movable means to said impact position.

3,272,266
APPLICATION FOR ROTATABLE POWER ELEVATOR
Thomas A. Kennard, 1506 Conrad Sauer, Houston, Tex.
Filed May 6, 1964, Ser. No. 365,455
15 Claims. (Cl. 173—164)



1. A rotatable power elevator for raising and lowering a section of pipe and rotating said section during make-up and break-out operations, comprising:

an outer housing having at least two portions which are connected together for opening and closing and which in the closed position define a recess therebetween for receiving said section of pipe,

a rotatable inner body having at least two segments, each of which is supported by one of said portions of said outer housing when said housing is in the open position, and which segments define a recess therebetween for supporting therein said section of pipe when said housing is in the closed position,

pipe engaging means mounted in said inner body for gripping said section of pipe,

means for raising and lowering said outer housing while said section of pipe is being supported by said inner body,

means for rotating said inner body while said section of pipe is being supported by said inner body.

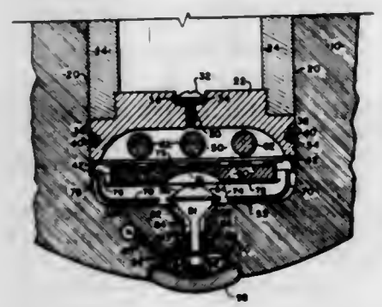
3,272,267
WALKING STICK FOR FASTENING TOOL
Arthur Langas, Chicago, Ill., assignor to Signode Corporation, a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 317,701
2 Claims. (Cl. 173—170)

1. A walking stick for a fastening tool whereby the valve controlling the operation of the tool can be operated from a remote position, said walking stick including a first tube secured to the tool, a second tube slidably mounted within said first tube, bushings spacing said second tube from the wall thereof to define an annular chamber, said second tube defining a pair of aligned elongated slots, first pin means extending through aligned openings defined by said first tube and said elongated slots for limiting the longitudinal movement of the second tube relative to said first tube, second pin means longitudinally spaced from said first pin means and extending through aligned openings in said second tube, spring means disposed in the annular chamber and in engagement with said second pin means to bias said second tube out of engagement with said valve, bumper means adjustably mounted in the end of said second tube and adapted to engage said valve, and a transversely



extending handle secured to the upper portion of said second tube whereby the walking stick can be gripped and operated by an operator standing in an upright position.

3,272,268
SIDEWALL SAMPLING APPARATUS
Alfred J. Tricon and Forrest V. Porter, Houston, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed May 25, 1965, Ser. No. 461,598
12 Claims. (Cl. 175—4)



10. Apparatus for obtaining a sample of earth substances from a subsurface earth formation of predetermined consolidation which is traversed by a borehole, said apparatus comprising

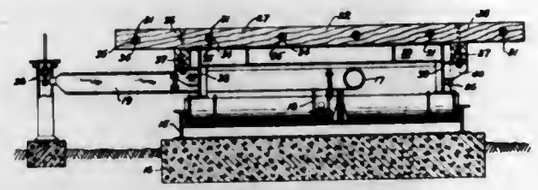
an elongated body having at least one lateral aperture extending partially into said body in a manner to form a gun bore and primary firing chamber,

a hollow projectile having an open cutting end and a closed end with an inwardly hollowed outer surface, said projectile being slidably disposed in said bore with said closed end confronting said primary firing chamber in a manner such that said closed end of said projectile forms a secondary firing chamber in said gun,

linking means coupling said projectile to said gun, and

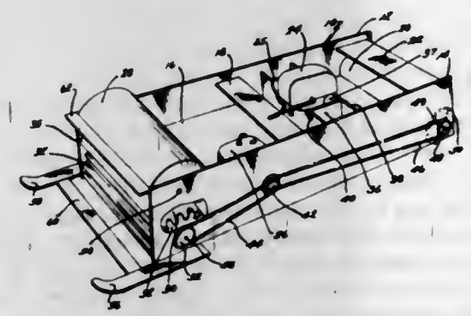
a propelling charge of selectively variable volume disposed in said primary and secondary firing chambers for discharging said projectile from said bore and into said earth formation a distance at least great enough to substantially fill said projectile with earth substances from said formation but not great enough to sever said linking means.

3,272,269
VEHICLE-WEIGHING SCALE WITH DECK UNIT WHICH MAY BE DISMANTLED FOR TRANSPORTATION
Leslie R. Murphy, Sacramento, Calif., assignor to L. R. Murphy Scale Company, Sacramento, Calif., a corporation of California
Filed Oct. 20, 1965, Ser. No. 505,583
8 Claims. (Cl. 177—126)



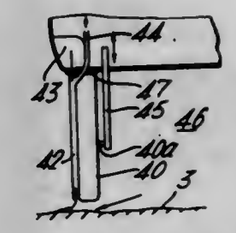
1. In a highway-transportable scale having a base frame supported weighbridge of permissible width for road transportation and much longer than said width, and a separable deck for said weighbridge the length of said weighbridge and of a required width greater than the permissible width for highway travel so that it overhangs the deck on each side thereof, the improvement wherein said deck comprises a plurality of like side-by-side lengthwise-connected units each of said required width and each having its length shorter than said permissible width, each said deck unit being further divided into individual deck slabs extending across said unit with the length of each said slab being the width of said deck and being much narrower than said unit, said units being stackable one upon the other and secured in end-to-end relation on said weighbridge for road transportation with the scale then being of said permissible width.

3,272,270
AIR CUSHION VEHICLE
Geoffrey F. Hughes, 1109 Lakeside SE., Grand Rapids, Mich.
Filed Feb. 28, 1964, Ser. No. 348,092
3 Claims. (Cl. 180—7)



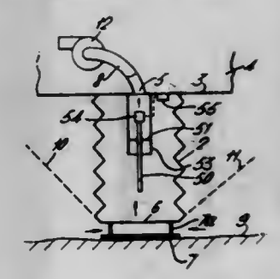
1. An air cushion vehicle for travel over a surface, comprising: a vehicle body having a front end and a rear end; power motor means supported by said body; said body being configurated to form an air cushion chamber beneath said body over a major portion thereof from front to rear; a pair of upper and lower intermeshed elongated gear wheels in said front end communicating with said chamber, and enclosing the front end of said chamber; the periphery of said lower elongated gear wheel being exposed and positioned to form contacting and sealing means for the surface over which the vehicle travels; shroud means over the upper peripheral portion of said upper elongated gear wheel; drive connection means between said motor means and said gear wheels to operate said wheels in opposite directions to thereby create an air cushion in said chamber due to the pumping action of said wheels, and to cause said lower wheel to form propulsion means as well as sealing means on the surface over which the vehicle travels; and means generally enclosing the rear of said chamber to retain a positive pressure air cushion as a buoyant force in said chamber.

3,272,271
AIR CUSHION VEHICLES HAVING MOVABLE CUSHION-CONTAINING WALLS
Christopher Sydney Cockerell, Bassett, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed June 16, 1964, Ser. No. 375,536
Claims priority, application Great Britain, June 21, 1963, 24,820/63
19 Claims. (Cl. 180—7)



1. A vehicle for travelling over a surface and which, in operation, is supported, at least in part, above the surface by a cushion of pressurised gas formed beneath the vehicle, the cushion being contained for at least part of its periphery by a wall movably attached to the vehicle body and wherein, in providing support for the vehicle, gas streams between the wall and said surface, comprising means for sensing variations in the flow characteristics of the gas stream resulting from a variation in the clearance between the lower edge of said wall and said surface, and means operatively controlled by said sensing means for moving the wall vertically in response to such variation in flow characteristics.

3,272,272
AIR CUSHION VEHICLES HAVING VERTICAL COLLAPSIBLE WALLS
Kenneth Hall, Hythe, Denys Stanley Bliss, Ashurst, and Michael Charity, Langley, England, assignors to Hovercraft Development Limited, London, England, a British company
Filed June 16, 1964, Ser. No. 375,493
Claims priority, application Great Britain, June 21, 1963, 24,821/63
16 Claims. (Cl. 180—7)



1. A vehicle which, in operation, is supported above a surface, at least in part, by a cushion of pressurised gas formed and contained beneath the vehicle, comprising a hollow wall for downward projection beneath the vehicle body so as to contain, at least in part, the cushion, the wall being collapsible in an upward direction, means for applying a suction to the interior of the wall to reduce the pressure therein below that of the space surrounding said wall and thereby promote collapse of said wall, inlet means for supplying fluid to the interior of the wall to relieve said suction and thereby avert said collapse, and inlet control means responsive to variations in the distance between the bottom of the wall and the surface below the

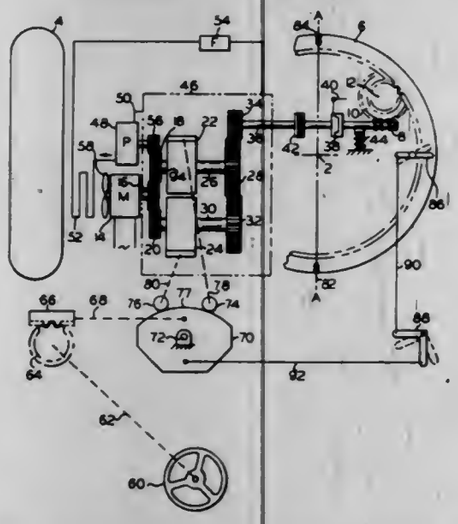
vehicle for reducing the supply of fluid by said inlet means and thereby diminishing relief of the suction as said distance decreases.

3,272,273
GROUND EFFECT VEHICLE AIR FLOW DESIGN
Richard William Lowrie, Wayne, Pa.
(1730 Robin Hood Lane, Clearwater, Fla.)
Filed Oct. 4, 1961, Ser. No. 142,939
1 Claim. (Cl. 180—7)



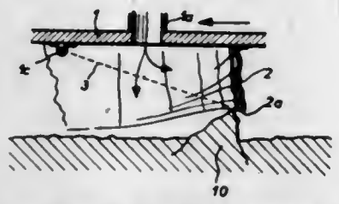
In a ground effect vehicle of the annular jet type, means for entraining and enclosing air under pressure beneath said vehicle, comprising a peripheral annular air supply port and an annular air exhaust opening in the base of said vehicle inboard of and adjacent said supply port, said opening having a curved entrance on the inboard side, and said opening forming one end of a duct leading the exhaust air through the vehicle structure for recirculation through said supply port, which supply port and opening dimensions together with the supply air pressure and volume cause the air to flow inboard from said supply port, to or near the ground or water surface, thence curving upwards into said vehicle with little or no loss of air from said vehicle along the surface of the ground or water, and where said vehicle includes an annular flexible semipermeable bag, open at the top, attached to said vehicle with means for extending and positioning said bag beneath both said supply port and said return air opening so as to enclose and deflect the air stream inside the bag while maintaining base pressure, and with means for retracting said bag and stowing same to permit normal motion of said vehicle.

3,272,274
VEHICLE
Wayne H. McGlade, Peoria, Ill., assignor to LeTourneau-Westinghouse Company, Peoria, Ill., a corporation of Illinois
Filed Aug. 27, 1964, Ser. No. 392,446
11 Claims. (Cl. 180—79.4)



1. Steering mechanism for a vehicle having dirigibly mounted ground engaging means, comprising:
driven means having a connection to change the orientation of the ground engaging means relative to a fixed axis of the vehicle;
a motor;
first and secondary planetary power trains each having a sun element, a planet element, and a ring element, one of the elements of each train having a power input connection, another having a power output connection, and the remaining element connected with a brake actuable to impede rotation of its connected element;
means drivingly connecting the motor and the input connections of the two power trains;
means connecting the driven means with the output connections of the two power trains;
an operator-operable steering control device; and
means connecting said device for selective actuation of either of the brakes to effect steering.

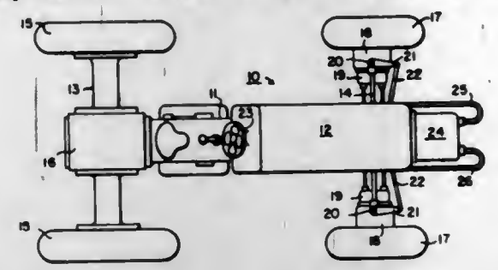
3,272,275
MOVABLE PLATFORM RESTING ON AN AIR CUSHION ENCLOSED INSIDE AT LEAST ONE YIELDING PREFERABLY CIRCULAR SKIRT
Marc Faure, Saint-Maur-des-Fosses, France, assignor to Societe Bertin & Cie, Paris, France, a company of France
Filed Apr. 27, 1964, Ser. No. 362,608
Claims priority, application France, Apr. 29, 1963, 933,105
9 Claims. (Cl. 180—7)



1. In a plenum chamber type ground-effect machine designed to move along rough ground having protruding obstacles, comprising a support frame, a skirt made of supple fluidtight material tensionable by internal overpressure and having a wide-open free end, said skirt depending from said support frame with said free end remote therefrom, so that said skirt defines the lateral boundary of the plenum chamber of the ground effect machine, means on said support frame for delivering pressurized fluid inside said skirt thereby tensioning the same, the improvement having means for detecting an obstacle projecting through said free end into said plenum chamber comprising a sheet-like structure extending inside said skirt across a portion of said plenum chamber and having a widely exposed undersurface to be engaged by such obstacle and upwardly deflected thereby, said sheet-like structure being fluid permeable to an extent as to interpose no substantial resistance to the passage of a fluid therethrough and thereby enabling no modified functioning of the aerodynamic operation of said skirt despite said sheet-like structure being positioned in the plenum chamber and interposed in the flow path, said sheet-like structure being mechanically connected with at least a portion of the free end of said skirt so that said skirt is raised when said sheet-like structure engages an obstacle protruding into said skirt through said free end.

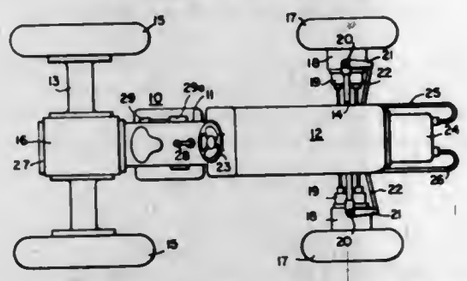
3,272,276
FLUID POWER SYNCHRONIZED DRIVES FOR VEHICLES
Tadeusz Budzich, 3344 Colwyn Road, Cleveland, Ohio
Filed Apr. 17, 1964, Ser. No. 360,534
10 Claims. (Cl. 180—44)

1. In a self-propelled vehicle having a frame, an engine and driving wheels mounted on said frame, driving means interposed between said engine and said driving wheels, at least one steering wheel pivotally mounted on said frame; the combination therewith of a fluid power transmission and control system disposed to drive each of said steering wheels comprising, fluid motor means mounted on said steering wheels and drivingly engaged therewith, fluid responsive clutch means interposed between said fluid motor means and said steering wheels, a variable flow pump having high and low pressure ports connected to said motor means and arranged to drive said fluid motor means, pressure responsive control means to vary the flow of said pump to maintain a relatively



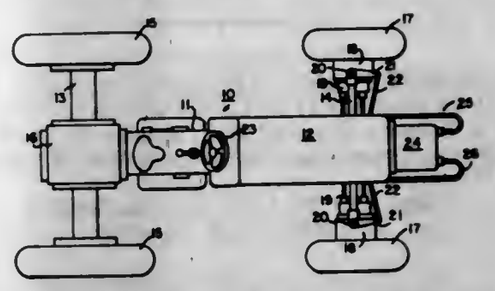
constant system pressure, unloading means to selectively unload said pressure responsive control means and bring said pump into condition of minimum flow and pressure, a source of control pressure disposed to operate said unloading means and said clutch means, and fluid pressure transmitting means functionally interconnecting said source of control pressure and said unloading means, whereby activation of said unloading means will bring said variable flow pump into unloaded minimum power loss condition.

3,272,277
SYNCHRONIZATION OF FLUID POWER DRIVES
Tadeusz Budzich, 3344 Colwyn Road, Cleveland, Ohio
Filed Apr. 20, 1964, Ser. No. 360,905
12 Claims. (Cl. 180—44)



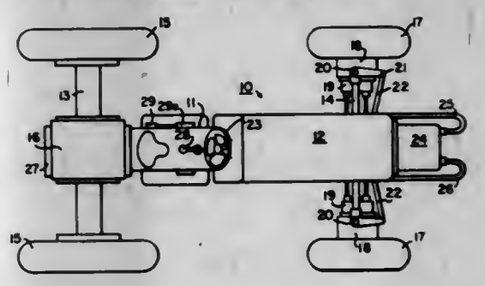
1. In a self-propelled vehicle having a frame, an engine and driving wheels mounted on said frame, transmission means interposed between said driving wheels and said engine, shift means arranged to change the driving ratio of said transmission means, mechanical clutch means interposed between said transmission means and said engine, said mechanical clutch means having mechanical activating means to selectively disconnect said engine from said transmission means, at least one steering wheel pivotally mounted on said frame, the combination therewith of a fluid power transmission and control system disposed to drive said steering wheels comprising, fluid motor means mounted on said steering wheels and drivingly engaged therewith, a variable flow pump disposed to drive said fluid motor means, pressure responsive control means to vary the flow of said pump to maintain a relatively constant system pressure, unloading means disposed to selectively unload said pressure responsive control means and bring said pump into condition of minimum flow and pressure, means to actuate said unloading means, control means interposed between and functionally interconnecting said means to actuate said unloading means and said mechanical clutch actuating means and responsive to selective positions of said mechanical clutch actuating means, whereby selective positions of said mechanical clutch actuating means will unload said fluid power transmission and control system.

3,272,278
RESPONSE CONTROLS FOR FLUID DRIVES
Tadeusz Budzich, 3344 Colwyn Road, Cleveland, Ohio
Filed June 8, 1964, Ser. No. 373,188
8 Claims. (Cl. 180—44)



1. In a self-propelled vehicle having a frame with driving wheels connected thereto, an engine, a mechanical transmission interposed between said engine and said driving wheels and at least one steering wheel pivotally mounted in respect to said frame; the combination therewith of a fluid power transmission and control comprising, a fluid motor drivingly connected to each of said steering wheels, a variable flow pump for driving each of said fluid motors, said variable flow pump having a flow changing mechanism, means urging said flow changing mechanism toward a position of maximum pump flow, signal responsive actuating means opposing said last named means and urging said flow changing mechanism toward a position of minimum pump flow, a source of control pressure, a low pressure zone, means for selectively connecting said signal responsive actuating means with said source of control pressure and said low pressure zone to maintain a relatively constant pressure fluid supply from said variable flow pump to said fluid motor, and unidirectional fluid flow-restricting means interposed between said signal responsive actuating means and said low pressure zone for restricting fluid flow from said signal responsive actuating means to said low pressure zone, whereby said flow changing mechanism will be slow acting in the direction of increased pump flow.

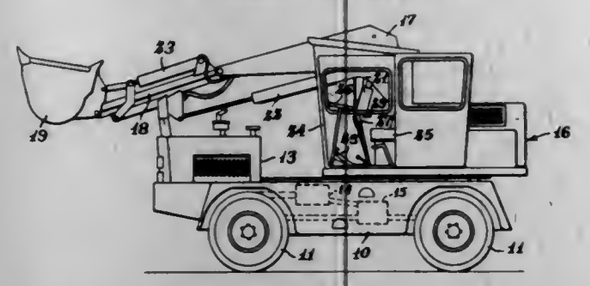
3,272,279
FLUID PRESSURE OPERATED DRIVE AND CLUTCH SYSTEMS
Tadeusz Budzich, 3344 Colwyn Road, Cleveland, Ohio
Filed June 8, 1964, Ser. No. 373,426
12 Claims. (Cl. 180—44)



1. In a self-propelled vehicle having a frame, engine, and driving wheels mounted on said frame, driving means interposed between said engine and said driving wheels, at least one steering wheel pivotally mounted on said frame, the combination therewith of a fluid power transmission and control system drivingly connected to each of said steering wheels comprising, a fluid motor mounted on each of said steering wheels and drivingly engaged therewith, a variable flow pump connected to supply pressure fluid to each of said motors, pressure responsive control means to vary the flow of said pressure fluid from said pump to maintain relatively constant system pressure, system-pressure sensitive clutch means interposed between each of said fluid motors and said steering

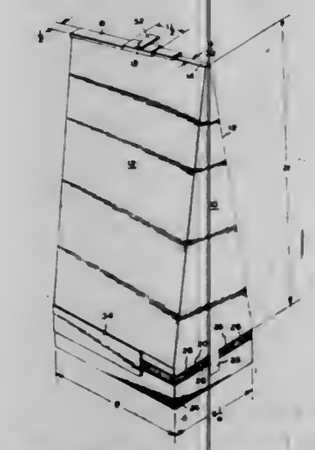
wheels, said clutch means having force generating means disposed to supply an actuating force proportional to the system pressure to the clutch means, and duct means to supply fluid pressure from said variable flow pump to said system pressure sensitive clutch means.

3,272,280
TRANSMISSION AND STEERING CONTROL MECHANISM FOR MATERIAL HANDLING VEHICLE
John R. Schuetz, Wausau, Wis., assignor to Drott Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed May 25, 1964, Ser. No. 369,855
3 Claims. (Cl. 180—77)



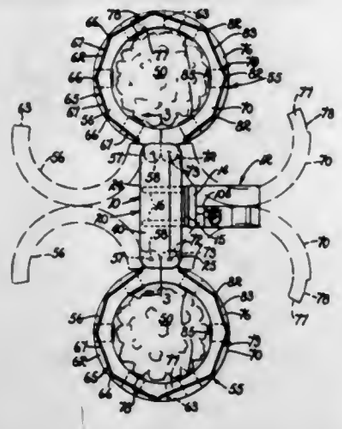
1. In combination with a vehicle having a lower frame, a reversible transmission on the lower frame, steerable wheels on the lower frame and an upper frame mounted on the lower frame for pivoting about a vertical axis, a control system comprising first power means on the lower frame connected to the transmission to reverse it, a manually operable control for the power means mounted on the upper frame, means including a first reversing device connecting the control to the power means, second power means mounted on the lower frame and connected to the steerable wheels to turn them, a second manually operable control for the second power means mounted on the upper frame, means including a second reversing device connecting the second control to the second power means, and means operatively connecting the first and second reversing devices for simultaneous operation.

3,272,281
TRANSDUCER
Harvey M. Rutter, 32 Grubb Road, Malvern, Pa.
Filed Dec. 4, 1964, Ser. No. 415,889
19 Claims. (Cl. 181—31)



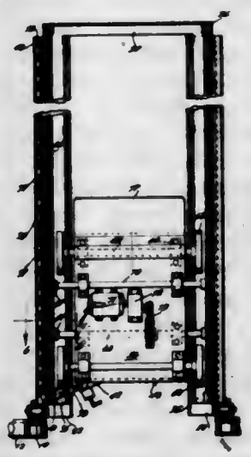
1. A device for converting energy impulses into audible sound comprising: a sound radiating element of substantially uniform length and width of varying thickness having one end substantially restrained and the opposite end substantially free and means for exciting the free end of said element in response to said energy impulses.

3,272,282
SCAFFOLD
Shelby W. Sanders, Reedley, Calif., assignor of five percent to Wesley A. Lee, Caruthers, Calif., five percent to Lillian S. Bonner, Selma, Calif., five percent to Bernice B. Bonner, Reedley, Calif., and five percent to Preston J. Sanders, Sunnyvale, Calif.
Filed Aug. 3, 1964, Ser. No. 387,157
6 Claims. (Cl. 182—63)



2. In combination with a self-propelled vehicle having an elevationally adjustable load support mechanism, a scaffold comprising a substantially rigid mounting adapted to be mounted on said load support mechanism of the vehicle for earth traversing movement and elevational positioning of the scaffold relative to work objects, at least one pair of worker support platforms having substantially straight inner end portions pivotally connected to said mounting in side-by-side elevationally spaced substantially parallel relation and arcuate outer portions movable between retracted positions with the inner ends substantially aligned and work positions with the outer portions overlapped to form a continuous circular platform about the work object, and link means pivotally interconnecting said inner ends of the platforms for simultaneous movement between said retracted and work positions.

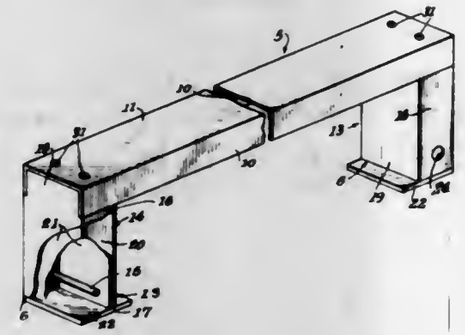
3,272,283
SAFETY CLIMBER
Denzol E. Bullard, 1406 Childs St., and Hugh W. King, P.O. Box 787, both of Corinth, Miss.
Filed Dec. 15, 1964, Ser. No. 418,422
5 Claims. (Cl. 182—141)



1. A ladder device comprising an outer frame, an inner frame slidably engaged with said outer frame for movement parallel thereto, means to support said outer frame in an upstanding position, said inner frame being provided with parallel track members, a carriage member engaged

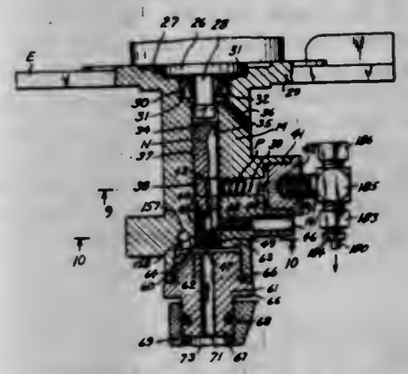
with said track members for movement therealong, means on said carriage member to support an operator, a pair of spaced wheel members rotatably mounted on said carriage member, an elongated flexible member connected at one end to the top portion of said inner frame and at the other end to the lower portion of the inner frame and engaging under and around one wheel member and over and around the other wheel member, drive means on the carriage member operatively connected to one of the wheel members for raising and lowering the carriage member, and means connecting the carriage member to the outer frame and supportingly-engaged with the inner frame for moving said inner frame upwardly relative to said outer frame responsive to and simultaneously with the upward movement of said carriage member in said inner frame.

3,272,284
RUNWAY JACK
Angela E. Lincoln, P.O. Box 5400, Metro Station, Los Angeles, Calif.
Filed Oct. 5, 1964, Ser. No. 401,545
2 Claims. (Cl. 182—224)



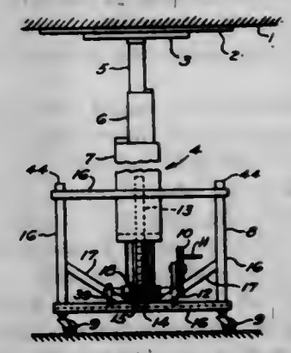
1. A runway jack comprising:
(a) an elongated metal channel member having two side flanges connected along their upper longitudinal edges by a web substantially wider than the height of said flanges,
(b) said web, spaced inwardly from each end, being provided with two transversely spaced holes that are equally spaced from said upper longitudinal edges of the web,
(c) two tubular metal leg members, of rectangular cross-sectional form, fitted and permanently affixed to said channel member, one at each end of said member, the opposite wider walls of said leg member having upper extensions that fit between the channel flanges and are in bearing engagement with the under face of the channel web, and the opposed narrower walls of the rectangular leg members having their upper edges in bearing engagement with the lower edges of the channel flanges, said narrower walls being wider than the spacing of the mentioned holes from the ends of the channel member, said holes thereby opening into the interiors of said leg members,
(d) a rectangular metal leg member adjustably telescopically fitted into said interior of each affixed leg member, the rectangular size of the latter leg members providing a loose sliding fit of the respective pairs of leg members, the affixed and adjustable leg members being approximately the same length,
(e) a metal plate affixed to the lower end of each telescopic leg member to close said end, and
(f) means to separably fasten the adjusted position of the pairs of leg members to space runway boards from a support surface for the jack,
(g) the mentioned holes in the web of the channel being adapted to receive downwardly projecting bolts that are provided adjacent the ends of said runway boards when the board ends rest upon the channel web, and are disposed on transverse spacing that is in register with the longitudinal spacing of the pairs of transversely spaced holes.

3,272,285
PUMP UNIT FOR A CENTRAL LUBRICATING INSTALLATION
Thomas R. Thomas, New York, N.Y., assignor to Auto Research Corporation, Boonton, N.J., a corporation of Delaware
Filed June 11, 1963, Ser. No. 287,027
15 Claims. (Cl. 184—27)



1. In a centralized lubricating installation for distributing lubricant to spaced bearings in and about a mechanism, a reservoir, a central pump detachably mounted on said reservoir comprising a detachable cover having mounting means, a drive arrangement carried on the top side of the cover, a pressure and volume adjustment and an outlet connection mounted on the cover, a pump body on the other side of the cover, a central shaft extending across the top of the cover and through the body and driven by said arrangement, said shaft having an eccentric recessed portion forming a pump chamber, a spring pressed follower vane riding in said recess located transversely to the shaft, inlet and outlet bore systems in the pump body having opposite inlet and outlet ports at the eccentric portion and tubing connections to said chamber and to said recess on the side of the vane away from said shaft, means to regulate the pressure and volume discharge of said pump connected to said systems and also from said outlet system to the outlet connection.

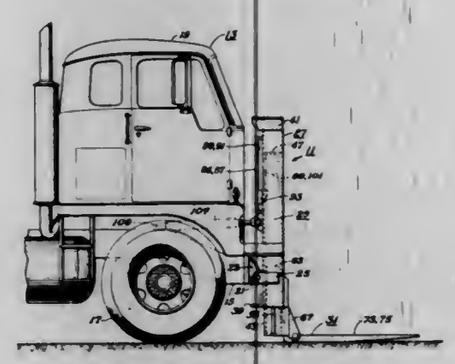
3,272,286
PORTABLE ELEVATING MECHANISM
Philip A. Leduc, Carlisle Ave., Turners Falls, Mass.
Filed Aug. 24, 1964, Ser. No. 391,377
6 Claims. (Cl. 187—2)



1. An elevating device having a portable frame, an elevating mechanism within said frame, said elevating mechanism consisting of a plurality of telescopic mem-

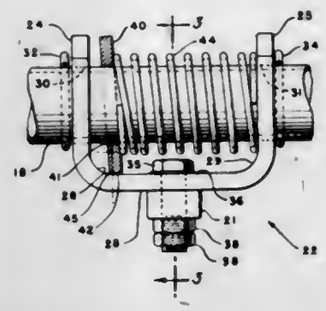
bers of various size cross-sections, one nested within the other, the largest being at the bottom, and the smallest being at the top, a threaded shaft means connected to the bottom telescopic member, a transmission system for turning said threaded shaft means, and a safety device for maintaining and securing said elevating mechanism at pre-determined fixed heights, a separate pulley system for operating each of said other telescopic members and operating synchronously with the lowering or raising of the bottom member, said pulley system for operating the next largest member having a sheave mounted in a floor plate affixed to the frame, a sheave mounted in the lowest portion of the next largest member, a sheave mounted at the top of and inside of the largest member in alignment with the other mentioned sheaves, a cable attached to the bottom of the largest member, said cable circumscribing the sheave in the base plate, said cable rising to the sheave at the top of the largest member, said cable circumscribing the last-mentioned sheave, said cable dropping to the sheave attached to the bottom of the next largest member, said cable circumscribing said sheave and rising to the top of the largest member where it is secured, whereby when said threaded shaft means rotates, said sheave attached to the bottom of said next largest telescopic member rises to proximate contact with the sheave mounted at the top of the largest telscopic member.

3,272,287
MATERIALS HANDLING APPARATUS
Joe A. Easton, Fort Worth, Tex., assignor to Jimmy D. Worthey, James B. Huff, Harry N. Ward, and Harry N. Ward, Jr.
Filed Aug. 18, 1964, Ser. No. 390,357
4 Claims. (Cl. 187—9)



1. In combination with a highway travel type vehicle, a materials handling elevator apparatus comprising:
(a) a frame structure including spaced apart parallel upright members coupled to the front end of said vehicle, said upright members being disposed with their upper extremities below the lower edge of the frontward field of vision of the truck operator and with their lower extremities having at least road travel clearance above the ground supporting said vehicle;
(b) a mast structure of length not exceeding that of said frame structure and telescoping said frame structure and movable longitudinally thereof, said mast structure including spaced apart parallel rails disposed adjacent the respective upright members of said frame structure and a cross-head member connecting the upper ends of said rails;
(c) a hydraulic lift device including a plurality of relatively extensible and retractile elements;
(d) means mounting the lowermost said element adjacent and fixed relative to said frame structure;
(e) means fixing the uppermost one of said elements to said crosshead member;
(f) a load receiving structure coupled to said mast structure and movable longitudinally thereof;
(g) an elongate bar member disposed adjacent said frame structure and movable from a first position to a second position;
(h) flexible linkage means anchored to said load receiving structure and to said elongate bar member;
(i) rotatable sheave means carried by said crosshead over which sheave means said flexible linkage means extends;
(j) means extending a first element of said lift device and extending simultaneously said mast structure and said load receiving structure equally a first predetermined distance along said frame structure while said elongate bar members moves from said first to said second position;
(k) means engaging said elongate bar and maintaining the same at said second position; and
(l) means extending at least one other element of said lift device and extending further said mast structure a second predetermined distance along said frame structure while said sheave means urges said flexible linkage means to move said load receiving structure relative to said mast structure.

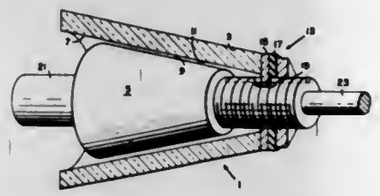
3,272,288
FRICTION BRAKE
Robert G. Young, Bird in Hand, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Sept. 18, 1964, Ser. No. 397,498
2 Claims. (Cl. 188—67)



1. In combination with a shaft rotatable about its own axis for disposition in various angular positions, means to support said shaft and frictionally hold said shaft in any angular position to which it is rotated, said supporting and holding means comprising a fixedly mounted generally U-shaped support bracket having first and second generally parallel planar leg portions interconnected by a generally planar bight portion, said planar bight portion extending perpendicular to said planar parallel leg portions, said leg portions having coaxial apertures therethrough through which said shaft extends in rotatably supported relation with the axis of said shaft parallel to said planar bight portion of said support bracket, a disc member disposed between said first and second bracket leg portions and having an aperture therethrough of larger diameter than said shaft, said shaft extending through said disc member aperture, a coil spring encircling said shaft and having ends respectively abutting said disc member and one of said bracket leg portions thereby urging said disc member along the axis of said shaft toward the other of said bracket leg portions, said disc member having a planar edge bearing on said planar bight portion of said support bracket in a plane perpendicular to said shaft axis thereby locking said disc member against rotation relative to said bracket about the axis of said shaft, means on said support bracket engaging said disc member on the axial side thereof toward said other of said bracket leg portions and

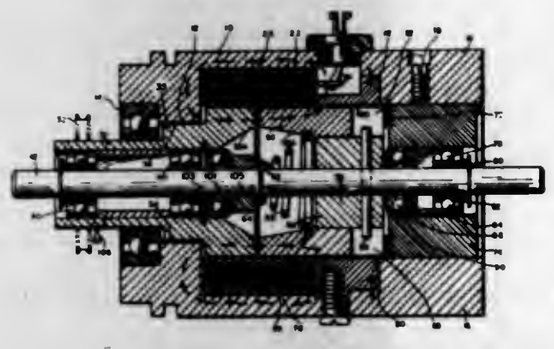
on only one transaxial side of said shaft whereby said disc member is canted relative to said shaft by the combined action of said spring and said last named means to frictionally engage said shaft and resist rotation of the shaft about its own axis, and stop means carried by said shaft and engaging said leg portions of said bracket to positively prevent relative movement between said shaft and said bracket in the axial direction of said shaft.

3,272,289
ROTARY DAMPING DEVICE USING LAPPED FRUSTO-CONICAL SURFACES
Paul V. Vermont, Santa Monica, and Paul J. Cueni, Los Angeles, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 5, 1964, Ser. No. 409,337
1 Claim. (Cl. 188—90)



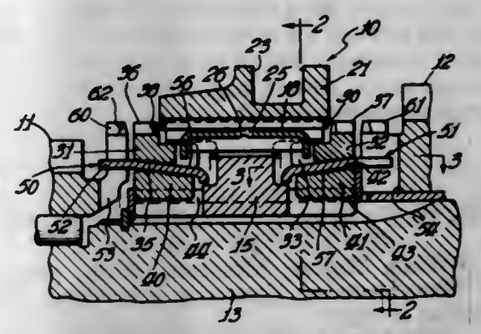
A rotary damping device including: inner and outer elongated members made of glass and having lapped frusto-conical mating surfaces; said frusto-conical surfaces defining therebetween an effective gap of approximately .0006 inch; viscous lubricating means filling said gap; and inner member having a half-cone aperture angle of approximately 3.58°; and means securing said inner and outer members together for rotary movement relative to each other.

3,272,290
ELECTROMAGNETIC DEVICE
Louis H. Goddard, Dayton, Ohio, assignor to Globe Industries, Inc., Dayton, Ohio, a corporation of Ohio
Filed Oct. 31, 1957, Ser. No. 693,742
24 Claims. (Cl. 192—18)



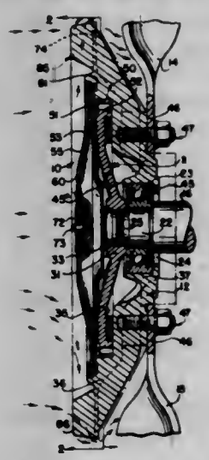
1. An electromagnetic clutch assembly including magnetic circuit means comprising a coil adapted to carry current therethrough, a driving clutch member and a driven clutch member magnetically linked with said coil so that the clutching faces of said members are in the flux path of the coil, a driven shaft fixed against axial movement, a bushing mounted on said shaft, said driving and driven clutch members having at least a portion of each thereof of magnetic material, said driven clutch member being in the form of a sleeve mounted on said bushing and having a low moment of inertia consistent with obtaining a high relative flux path, and thereby a high torque, and being coupled to said driven shaft for rotational movement therewith but being free for translational movement with respect thereto.

3,272,291
SYNCHRONIZER
George E. Flinn, Muncie, Ind., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Aug. 3, 1964, Ser. No. 387,065
6 Claims. (Cl. 192—53)



1. In a transmission synchronizer, a torque transmitting member, a rotatable part adjacent said torque transmitting member, a first synchronizer element drivingly connected to said torque transmitting member and shiftable axially for establishing a frictional driving connection between said member and said rotatable part to be synchronized therewith, a second synchronizer element drivingly connected to said member, clutch means encircling said member and drivingly connected thereto, said clutch means being shiftable axially to establish a positive driving connection between said member and said part, means drivingly connected to said part and extending between said first and second synchronizer elements and said sychronizer elements being engageable with said means to establish said frictional driving connection.

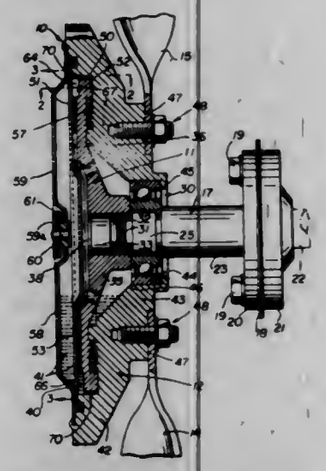
3,272,292
VISCOUS FLUID CLUTCH HAVING HEAT DISSIPATION MEANS
Alex Sutaruk, Hazel Park, Mich., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Oct. 11, 1963, Ser. No. 315,581
3 Claims. (Cl. 192—58)



1. A drive coupling comprising first and second relatively rotatable coupling members, said first coupling member defining a fluid chamber in which said second coupling member is rotatable, said first and second coupling members having opposed spaced parallel surfaces defining a fluid shear space therebetween and cooperable with a fluid shear medium in said shear space to provide a shear-type fluid drive therebetween, means for varying the volume of fluid shear medium in said shear space to vary the torque transmitted between said first and second coupling members including a temperature responsive device located on a forward face of said first coupling member

and responsive to the temperature of the atmosphere adjacent said forward face to effect a change in the volume of the fluid shear medium in said shear space, a plurality of blower blade means disposed circumferentially about and in surrounding relation to said temperature responsive device and connected to said first coupling member, said blower blade means being inclined with respect to a radial line extending through the axis of rotation of said coupling members for creating a flow of air across said temperature responsive device to prevent stagnation of air around said temperature responsive device.

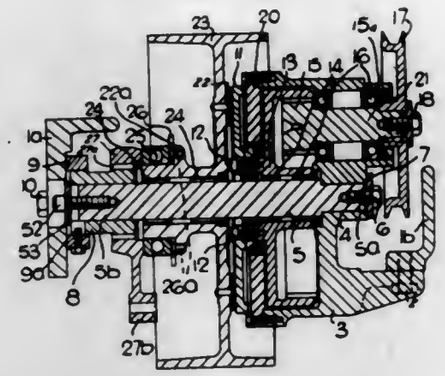
3,272,293
VISCOUS FLUID CLUTCH WITH FLOW CIRCULATION MEANS
Richard William Hester, Marshall, Mich., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 2, 1964, Ser. No. 348,572
8 Claims. (Cl. 192—58)



1. A fluid coupling of the shear type comprising relatively rotatable coupling members, one of said coupling members defining a fluid working chamber and the other of said coupling members being rotatable in said fluid working chamber, said coupling members having opposed spaced surfaces providing a fluid shear space therebetween and co-operable with a fluid shear medium in said shear space to transmit torque between the coupling members, a reservoir chamber communicating with said working chamber, means for effecting fluid flow into said shear space from the reservoir chamber to vary the torque transmitted between said input and output coupling members, and notch means provided on the outer periphery of the other coupling member and operable to retard the rate of fluid flow from the reservoir chamber into said shear space.

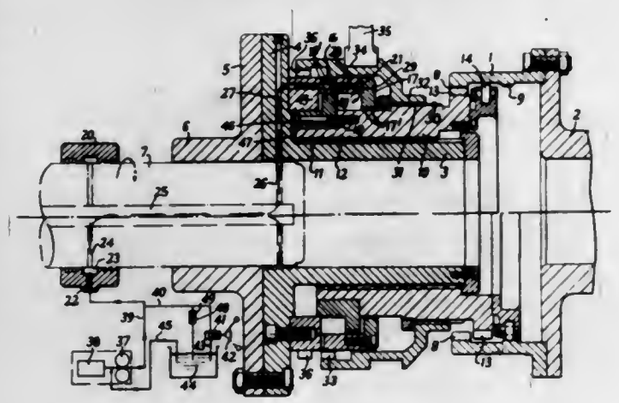
3,272,294
DRIVING MECHANISM OF KNITTING MACHINES
Carlyle Herbert Wainwright, Leicester, England, assignor to The Bentley Engineering Company Limited, Leicester, England
Filed Sept. 2, 1964, Ser. No. 393,975
Claims priority, application Great Britain, Sept. 4, 1963, 34,915/63; July 23, 1964, 29,218/64
8 Claims. (Cl. 192—66)

1. A knitting machine driving mechanism comprising a rotatable input member, a rotatable output member, a friction clutch comprising co-operating driving and driven rotatable friction members coupled respectfully to said input and output members, means mounting said output and input members and said driving and driven friction members for rotation and for movement of one of the friction members axially into and out of engagement with the other, a screw threaded abutment co-operating with the axially movable friction member, a screwed mounting on which said abutment member is carried in screw-threaded engagement so that when the abutment member is turned appropriately the axially movable friction member is urged towards the other friction member to engage the clutch, a rotatable member coupled to one of said



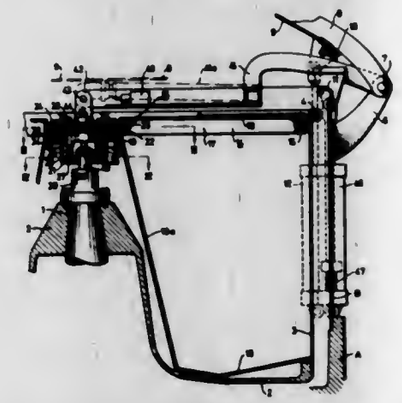
input and output members to rotate therewith in a direction appropriate for turning the abutment member to release the clutch, and a catch lever carried by said abutment member and movable into and out of engagement with said rotatable member, wherein said rotatable member is a toothed wheel and the catch lever is provided with an end portion engageable with the teeth of the toothed wheel.

3,272,295
ROTARY CLUTCHES
Herbert Arthur Clements, Weybridge, Surrey, England, assignor to S.S.S. Patents Limited, London, England
Filed Sept. 28, 1964, Ser. No. 399,593
Claims priority, application Great Britain, Sept. 30, 1963, 38,474/63
5 Claims. (Cl. 192—67)



1. A rotary toothed clutch comprising a first rotary clutch member and a secondary clutch member, an intermediate member, means constraining said intermediate member for helical movement relative to said second clutch member in one helical direction to engage the clutch teeth at least partially and in the other helical direction to disengage said clutch teeth, the application of driving torque to the clutch in one angular direction, with said clutch teeth engaged, tending to disengage said clutch teeth by relative helical movement of said intermediate member in said other helical direction, clutch locking means adjustable, with the clutch engaged, to an operative setting in which said locking means oppose said relative helical movement of said intermediate member in said other helical direction, whereby disengagement of the clutch under the action of driving torque is opposed by a loaded condition of said locking means that oppose adjustment of said locking means out of said operative setting, and the clutch including load relief means energizable from a controllable power source to urge said intermediate member in said one helical direction when the clutch is engaged, whereby to relieve said locking means from said loaded condition and thereby enable said clutch locking means to be adjusted out of said operative setting, so that the clutch is disengageable under the action of driving torque when said load relief means cease to be energized.

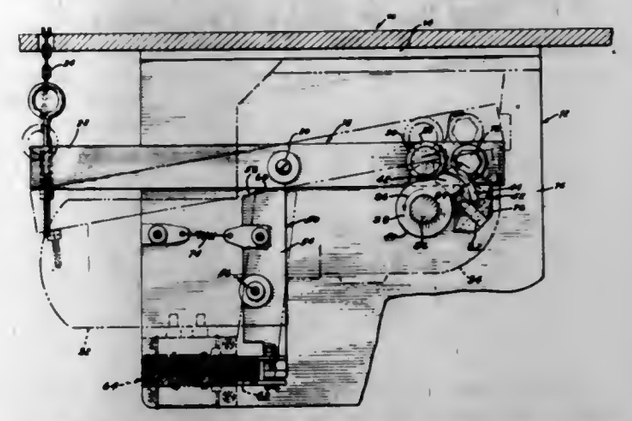
3,272,296
COVER LOCKING DEVICE FOR WASHING CENTRIFUGES
Gunnar Ivar Fredholm, Stockholm, Sweden (Forfattarvagen 44, Bromma, Sweden)
Filed Mar. 12, 1964, Ser. No. 351,484
Claims priority, application Sweden, Mar. 14, 1963, 2,785/63
7 Claims. (Cl. 192—136)



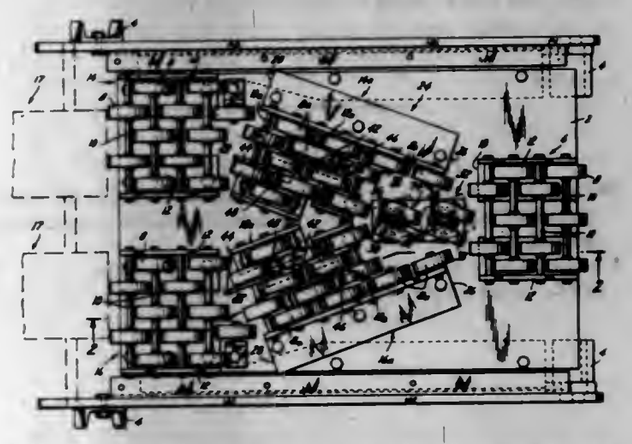
1. For a centrifuge having a main drive shaft and a basket driven by said shaft: a cover adapted for being placed on the basket and coupled to the drive shaft, actuator means engageable with said cover for placing the same on the basket and for removing the same there from, first and second locking means respectively on said shaft and said actuator means, and means secured to said cover for locking the same selectively with said first and second locking means, the locking of the latter means with one of the aforementioned said locking means releasing the other of said locking means.

3,272,297
STOP FOR CONTROL OF BUTTON SEWING MACHINE
Charles D. Leslie, Pittsford, N.Y., assignor to Speed Feed Machine Co., Rochester, N.Y.
Filed Sept. 9, 1964, Ser. No. 395,248
2 Claims. (Cl. 192—139)

1. In a remotely controlled actuator device, in combination,
- a support frame and having a cam engaging member thereon,
- an actuating lever pivotally mounted on said frame,
- a drive assembly mounted on said frame and including a drive shaft,
- cam means on said drive shaft and engaging said cam engaging member for rocking said lever about its pivot in response to rotation of said drive shaft,
- means for indexing said drive shaft to a position in which said cam means is at the initiation of lever rocking action, such means including a locking bar normally engaging said lever for blocking rotation of said drive shaft beyond the indexed position thereof, and locking dog mechanism carried by said lever and spaced from said cam engaging member to normally hold said cam means captive therebetween for blocking rebound motion of said cam means,
- and mechanism for moving said locking bar out of blocking engagement with said actuating lever.

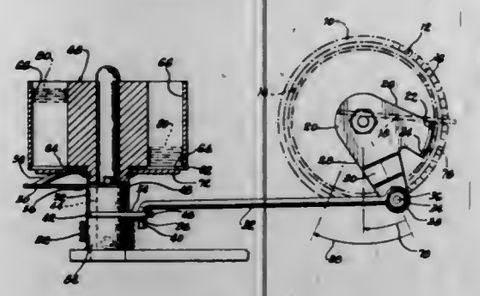


3,272,298
MULTI-PATH FEED IN A CONVEYOR ASSEMBLY
Carl P. Cato, Lynchburg, Va., assignor to Ducam Corporation, Lynchburg, Va., a corporation of Virginia
Filed Feb. 5, 1964, Ser. No. 342,616
6 Claims. (Cl. 193—36)



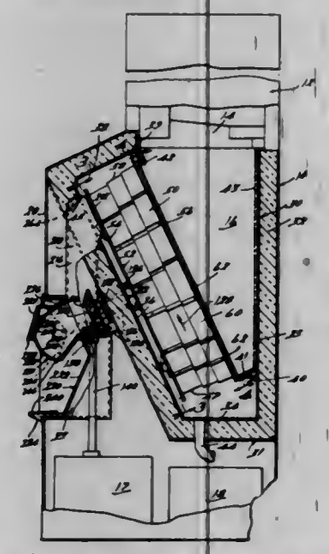
1. A conveyor comprising an input track portion along which a succession of articles are adapted to pass, first and second output track portions communicating with said input track portion and extending along different paths from a diverging station on said input track portion, said articles being adapted to pass from said input track portion to one or the other of said output track portions, first and second article guiding means at said diverging station and spaced from one another in a direction generally toward said output track portions, said second guiding means being closer to said output track portions than is said first guiding means, each of said guiding means being adapted to be engaged by and to guide said articles as they pass from said input track portion to one of said output track portions and each being movable between first and second operative positions oriented toward said first and second output track portions respectively, thereby to guide said articles into the output track portion toward which they are oriented, and control means for said guiding means, said control means being effective first to shift said first guiding means from first operative position to second operative position or vice versa, and thereafter to correspondingly shift said second guiding means.

3,272,299
TOKEN DISPENSING APPARATUS FOR PARKING METERS
Lester D. Sollenberger, Oak Park, Ill., assignor to Duncan Parking Meter Corporation, Chicago, Ill., a corporation of New York
Filed Oct. 19, 1964, Ser. No. 404,816
7 Claims. (Cl. 194—2)



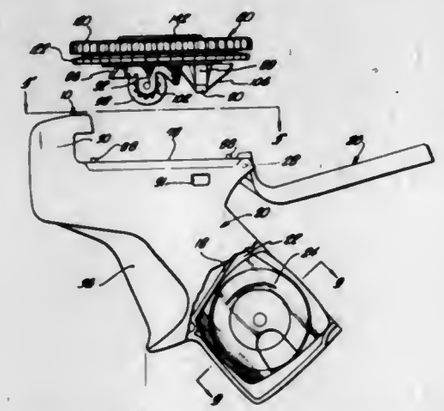
1. In a token dispensing parking meter device wherein tokens are dispensed by the meter after the insertion of a coin for setting of time on the meter, and wherein setting of the time is effected through engagement of pawl means with a rotary ratchet wheel, the improvement in means for carrying out dispensing of the tokens comprising a lever mounted for oscillating movement, said lever being mounted coaxially with said ratchet wheel and being connected to said wheel for movement therewith, a dispenser operating extension operatively connected to said lever at a point on the lever remote from the axis thereof whereby oscillation of said lever effects movement of said extension and operation of said dispenser, and including ratchet teeth formed in said lever, said pawl engaging said ratchet teeth for movement of said lever simultaneously with the rotation of said ratchet wheel for dispensing of tokens when a coin is inserted.

3,272,300
ICE VENDING MACHINE
Walter H. Hoenisch, Albert Lea, Minn., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Continuation of application Ser. No. 214,666, Aug. 3, 1962. This application June 29, 1965, Ser. No. 470,331
26 Claims. (Cl. 194—2)



1. An ice cube vending machine comprising ice cube manufacturing means for the manufacture of ice cubes, storage bin means providing an ice cube storage area for ice cubes manufactured in said ice cube manufacturing means, ice cube delivery means connecting said ice cube manufacturing means and said storage bin means for delivering ice cubes to said storage bin means, movable ice cube agitating and dispensing means provided in said storage bin means and forming a part of the ice cube storage area enclosure and including the lowermost portions of said storage bin means, whereby all of the ice cubes in said storage bin means are at least partially supported by said ice cube agitating and dispensing means and are subject to agitation during movement thereof, ice cube vending means communicating with said storage bin means at a point spaced above the lowermost portions of said storage bin means and adapted to receive predetermined quantities of ice cubes from said storage bin means, and power means to actuate said ice cube agitating and dispensing means and move ice cubes from said storage bin means into said ice cube vending means by movement of ice cubes from the lowermost portions of said storage bin means upwardly to said point spaced thereabove.

3,272,301
EMBOSSING TOOL HAVING REMOVABLE DIE UNITS TO ACCOMMODATE VARIOUS WIDTH TAPES
Burnie M. Craig, Pasadena, Calif., assignor to Avery Products Corporation, Pasadena, Calif., a corporation of California
Filed Aug. 10, 1964, Ser. No. 388,596
15 Claims. (Cl. 197—6.7)

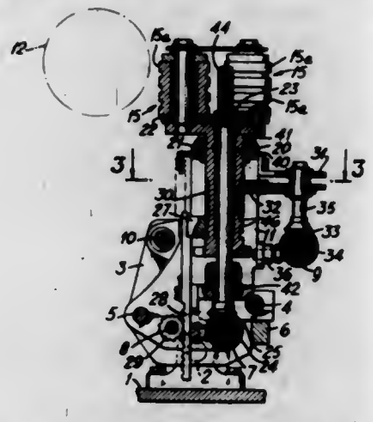


1. A tool for embossing a continuous strip of material comprising a unitary die assembly including two apposed die discs rotatively tied together for selection of any one of a set of pairs of corresponding dies including embossing dies of preselected size carried on the discs and for positioning the selected pair of dies on opposite sides of the strip of material at a forming station, feed means for engaging the strip of material to advance it upon actuation of the feed means a distance corresponding to the preselected die size, locking means for removably securing the die assembly to a tool base, and strip guide means in the assembly to guide the strip to the forming station; and a separable tool base including means to actuate the feed means to advance the strip of material and means for actuating the selected pair of dies positioned at the forming station when the die assembly is secured to the tool base.

3,272,302
PRINTING MECHANISM FOR TYPEWRITERS HAVING PLURAL TYPEWHEELS
Kaoru Segawa and Hideo Ozaki, both of Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 12, 1964, Ser. No. 403,285
Claims priority, application Japan, Oct. 17, 1963, 38/55,535
5 Claims. (Cl. 197—50)

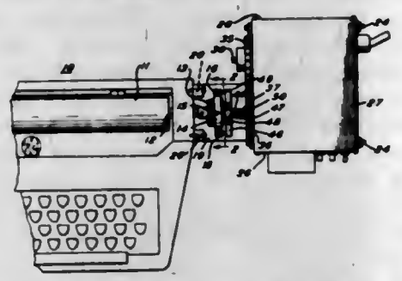
1. A printing mechanism for a typwriter comprising a carriage and a typehead mounted on said carriage and movable thereon,

a plurality of typewheels mounted in said typehead, said typewheels each having a plurality of groups of type characters at spaced positions thereon,
a vertically disposed cylindrical sleeve pivotally mounted on said carriage to permit both rotary and vertical motion thereof, said typewheels being supported on said cylindrical sleeve,
a central shaft disposed within said cylindrical sleeve and mounted so as to permit rotary motion thereof,
a gear mechanism between said central shaft and each of said typewheels for transmitting rotation of said central shaft to all of the typewheels simultaneously at any vertical position of said cylindrical sleeve,
a rotary driving force transmission means for said cylindrical sleeve,



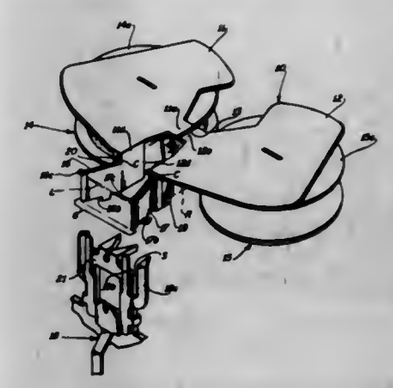
a vertical driving force transmission means for said cylindrical sleeve including circumferential flanges on said sleeve and means engaging said flanges to impart vertical motion to said sleeve while allowing rotation of the same,
and a rotary driving force transmission means for said central shaft regardless of the rotary and vertical motion of said cylindrical sleeve, whereby selection of one of the typewheels, selection of a group of a selected typewheel, and selection of an individual type character in the selected layer of the selected typewheel can be performed simultaneously by rotation of said cylindrical sleeve, vertical motion of said cylindrical sleeve, and rotation of said central shaft.

3,272,303
TYPEWRITER CONTROL APPARATUS
Carl Pohl, 308 19th St. S., Brigantine, N.J. 08203
Filed Feb. 10, 1965, Ser. No. 431,570
10 Claims. (Cl. 197—114)



1. Apparatus for line of writing control of a typewriter having a rotatable platen with a member for rotating the platen comprising a frame, a rotary electric motor mounted on said frame, a linearly movable member for driving engagement with said platen rotating member, and means for controlling the actuation of said movable member by said motor, said movable member having a resilient element in engagement therewith for urging it in one direction, said means including a solenoid controlled device for moving said movable member in the opposite direction against the force of said resilient element, and a releasable locking member for retaining said movable member at a predetermind position.

3,272,304
TYPEWRITER RIBBON PACKAGE
Joseph L. Morelli, Hartford, Conn., assignor to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,404
1 Claim. (Cl. 197—151)

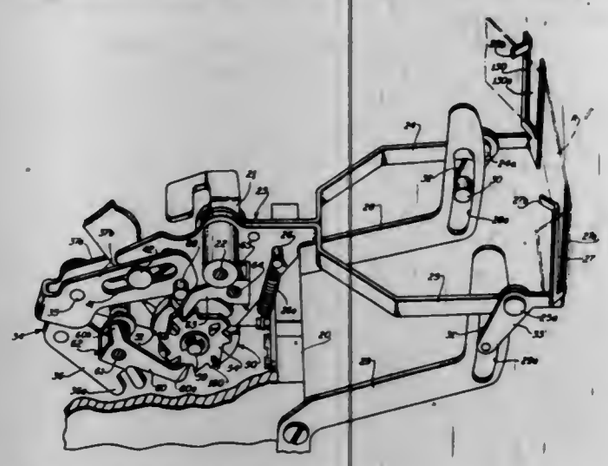


A typewriter ribbon spool package comprising in combination a pair of ribbon spools having spool drive spindle receiving cores and coaxial flanges, a ribbon wound on one of said spools and extending to and attached to the other of said spools, and a throw-away element releasably secured to said cores and maintaining said spools in closely spaced relationship with their axes parallel during storage and handling,
said element comprising a pair of flat plates separably joined in substantially edge to edge relationship,
posts integral with and depending orthagonally from each plate, said posts having radial projections adapted to releasably lock said posts within said cores when inserted therein, thereby to hold said spools closely spaced and to prevent relative axial movement of said posts and cores during handling prior to mounting said spools on a machine,
said plates being formed so that portions of said spool flanges remain uncovered when said posts are locked to said cores,
ribbon guides depending downwardly from said plates and extending outwardly of the periphery of said spools, said guides forming a gap adapted to be bridged by the ribbon extending between said spools thus to form a loop of ribbon which facilitates insertion of the ribbon within a ribbon vibrator, the uncovered areas of said spool flanges, after the insertion of said ribbon in the ribbon vibrator, the separation of said plates, and the mounting of said spool cores on relatively widely spaced spool drive spindles, being adapted to be pressed downwardly by an operator to carry said posts into contact with said spindles thereby to forcibly eject said posts and plates from engagement with said spools.

3,272,305
RIBBON LIFT MECHANISM
Paul F. Page, Newington, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware
Original application Sept. 12, 1962, Ser. No. 223,159. Divided and this application Oct. 22, 1965, Ser. No. 501,080
2 Claims. (Cl. 197—159)

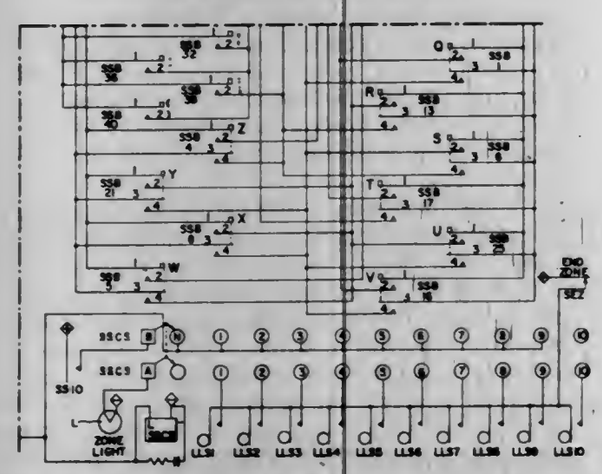
1. In a mechanism for moving a typewriter ribbon vertically with respect to a point of contact between a print element and a hammer or platen, the combination of,
a frame,

a pair of outwardly extending vibrator arms pivotally mounted on said frame the ends of said arms describing an arcuate path during pivotal movement thereof,
drive means for rocking said arms in synchronism with each typing stroke,
ribbon support means pivotally mounted on said arms for maintaining the ribbon in a vertical plane,



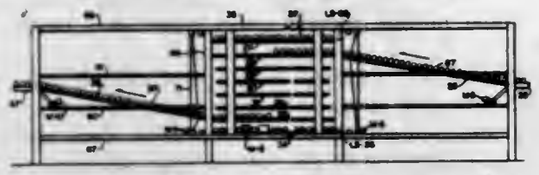
cam means secured to said frame,
and cam follower means secured to said ribbon support means and adapted to engage said cam means thereby to pivot said ribbon support means on said arms such that said ribbon support means are maintained in a vertical plane when said arms are rocked.

3,272,306
JUSTIFICATION ZONE-INDICATING COUNTER
Frank A. De Witt and Wilbur C. Ahrns, Rochester, N.Y., assignors, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed Mar. 19, 1963, Ser. No. 266,430
9 Claims. (Cl. 197—187)



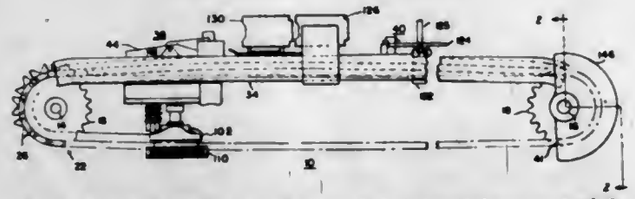
1. A justification-zone indicating counter comprising first word-space-selection means for preselecting an individual one of any of plural available minimum-word-space unit values, accumulator means movable in discrete unit-valued steps to accumulate the total length of a line of alpha-numeric characters and symbols each having an individual preselected unit-value width and including word spaces having said preselected individual word-space unit value, means for counting the number of word spaces in each said line, electrical-contact actuating means movable with said accumulator means for preselecting any of plural maximum-justification-expansion word-space unit values, and means including stationary electrical contacts controlled by said actuating means and responsive to the prevailing count of said counting means for providing an indication of the zone within which each said line length is justifiable.

3,272,307
CONVEYOR SYSTEM
Fred L. Waite, 1435 Bedford St., Stamford, Conn.
Filed May 17, 1965, Ser. No. 456,356
13 Claims. (Cl. 198—1)



1. In a conveyor system having an adjustable holdup capacity, infeed conveyor means, outfeed conveyor means, a plurality of discrete conveyor means sequentially in parallel between said infeed conveyor means and said outfeed conveyor means, switching means connected to said infeed conveyor means, said switching means switching successively in a predetermined sequence to each of said discrete conveyor means, a second switching means connected to said outfeed conveyor means, said second switching means switching successively to each of said discrete conveyor means, said second switching means following at a predetermined time interval the successive switching of said first switching means.

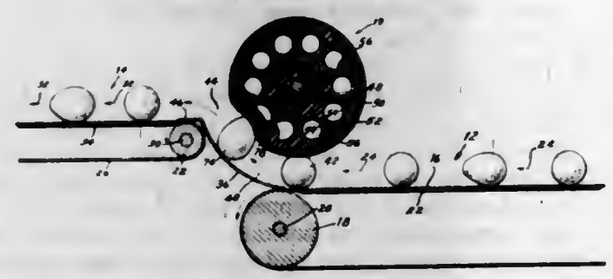
3,272,308
MECHANICAL LOADER AND CONVEYOR MECHANISM FOR HANDLING RELATIVELY SMALL AND BREAKABLE ARTICLES
Ralph E. Mottin, Grosse Pointe Park, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Continuation of application Ser. No. 271,535, Feb. 12, 1963, which is a division of application Ser. No. 857,150, Dec. 3, 1959. This application Apr. 19, 1965, Ser. No. 449,205
4 Claims. (Cl. 198—19)



1. In a machine for performing an operation on articles such as ampoules or the like the combination of a conveyor mechanism for transporting the articles in the machine comprising a pair of rotatably mounted sprockets having their axes disposed generally horizontally and spaced apart in generally parallel relation, an endless chain passed around said sprockets, means for intermittently driving the chain around said sprockets such that said chain has an indexing motion whereby the chain is alternately accelerated and decelerated as it is started and stopped by said chain driving means, said chain having means thereon for supporting articles to be transported, at least a portion of the upper run of the chain serving as an article transport portion along which articles are adapted to be carried by the chain, a continuously curved support underlying and contacting the chain throughout the extent of said article transport portion thereof, said support being curved upwardly in an outwardly convex direction relative to an imaginary straight line connecting the axes of the two sprockets so as to maintain said portion of the chain in a taut condition, said continuously curved support having a high point intermediate its ends such that said portion of the chain is elevated in traveling to and from said high point whereby said chain exerts force perpendicularly against the curved support throughout the extent thereof in a downward direction and longitudinally of the path of travel of the chain to thereby minimize the tendency for the chain to ripple or otherwise move out of

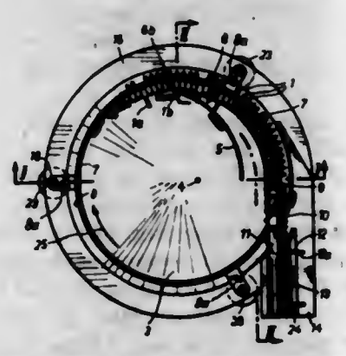
contact with the curved support upon acceleration and deceleration thereof, and work station means positioned adjacent said high point of said support including movable means in registry with a stopped position of said article support means at said high point and operable in timed relation with the indexing motion thereof to engage an article thereon during the stopped condition of the chain for temporarily supporting the article while an operation is performed thereon by said work station means.

3,272,309
EGG HANDLING APPARATUS
Walter J. Reading, Ottumwa, Iowa, assignor, by mesne assignments, to Barker Poultry Equipment Company, Ottumwa, Iowa, a corporation of Iowa
Filed Sept. 1, 1964, Ser. No. 393,648
14 Claims. (Cl. 198—25)



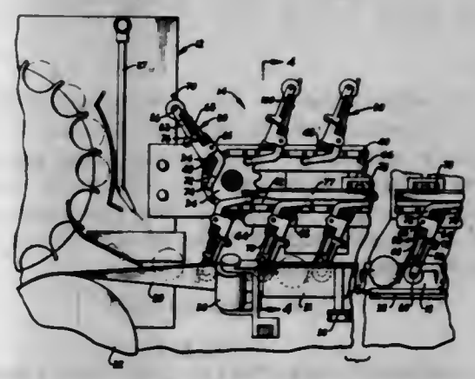
1. A device for transferring eggs from one level to another comprising, in combination,
means at one level for delivering eggs to an input area,
means for receiving and transporting eggs from a discharge area located at a level different from said one level,
an arcuate ramp bridging between said input and discharge areas,
a cylindrical transport member having a peripheral surface portion disposed in spaced relation to said ramp to define an egg-transport channel having said input and discharge areas at the opposite ends thereof, said transport member being formed of resilient material and having a series of circumferentially spaced openings extending axially therethrough in radially inwardly spaced relation to the peripheral surface of said transport member,
and means for rotating said transport member.

3,272,310
APPARATUS FOR ORIENTING ARTICLES PARTICULARLY AMPOULES
Eduard Blickisdorf and Willi Landenmann, Zurich, Switzerland, assignors to Memmel & Co. Aktiengesellschaft, Basel, Switzerland
Filed Nov. 24, 1964, Ser. No. 413,441
Claims priority, application Switzerland, June 2, 1964, 7,181/64
9 Claims. (Cl. 198—33)



1. Apparatus for uniformly orienting and arranging articles in consecutive order, comprising a rotatable turntable mounted for rotation about a vertical axis and having an article receiving upper face conically sloping from the center thereof towards the periphery, an article supply hopper above said surface to deliver articles to be oriented upon said turntable, a circularly curved outer guide wall extending over and in proximity of the periphery of said turntable and having a lower edge in spaced relationship with said upper face thereof, a circularly curved inner guide wall extending parallel to said outer guide wall over a portion of the length thereof in radially spaced relationship, said two guide walls forming a pathway between themselves for the articles to be oriented and moved along said pathway by the rotating turntable, and baffle members arranged in the space between said two guide walls and acting to expulse incorrectly oriented articles from said pathway and returning them on said turntable.

3,272,311
FRUIT ORIENTOR
Roland F. Blakewell, Oakland, Lawrence H. Smith, Walnut Creek, and Malcolm W. Loveland, Orinda, Calif., assignors to Atlas-Pacific Engineering Co., a corporation of California
Filed May 3, 1965, Ser. No. 452,479
7 Claims. (Cl. 198—33)

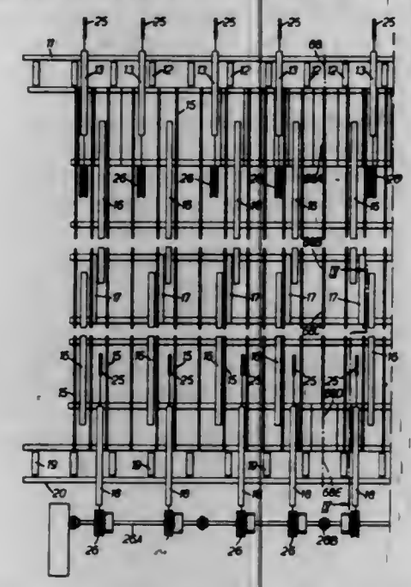


1. A fruit orientor or the like comprising in combination:
(a) a pair of flat belts having a substantially horizontal run, said belts having their outer edges deflected upward and toward each other, whereby a V-shaped trough is formed therebetween;
(b) a plurality of orienting arms, said arms extending downwardly into the V-shaped space between the belts, said spaced arms defining pockets therebetween;
(c) means for driving said belts on said horizontal run;
(d) means for driving said orienting arms on substantially the same horizontal path, said belts being driven at a substantially higher rate of speed than said orienting arms, whereby said orienting arms are brought into contact with fruit being carried by said belts.

3,272,312
COOLING BEDS
Patrick Alwyne Clark and James Francis Alsop, Sheffield, and Joseph Eric Ogle, Chapeltown, Sheffield, England, assignors to Davy and United Engineering Company Limited, Yorkshire, England
Filed Feb. 13, 1964, Ser. No. 344,694
Claims priority, application Great Britain, Feb. 14, 1963, 6,004/63
12 Claims. (Cl. 198—34)

1. Apparatus for effecting controlled cooling of hot objects, said apparatus comprising two adjacent cooling tables forming first and second sections of a cooling bed, first transfer means for positioning successive objects to be cooled on the first section table, second transfer means for transferring said objects from said first section table to the second section table and first and second conveying

means associated respectively with said first and second tables and arranged to move said objects across said tables, said first transfer means being adjustable in operation to position successive objects at different positions on said first table so that said objects are conveyed by said first conveying means across said first table with a selectively variable and substantially equal first spacing,



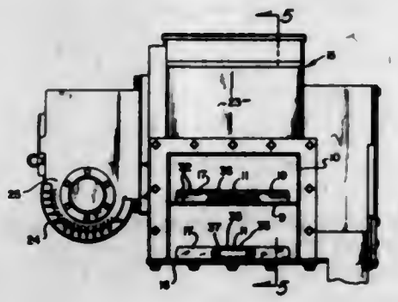
and said second transfer means being adjustable in operation to transfer said objects to said second table with a selectively variable and substantially equal second desired spacing differing from said first selectively variable and substantially equal spacing so that said objects are conveyed across said second table by said second conveying means with said second spacing.

3,272,313
UPWARD MAGNETIC CAN CONVEYOR
Steve Sarovich, Chicago, Ill., assignor to The Sardee Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 15, 1964, Ser. No. 396,682
3 Claims. (Cl. 198—41)



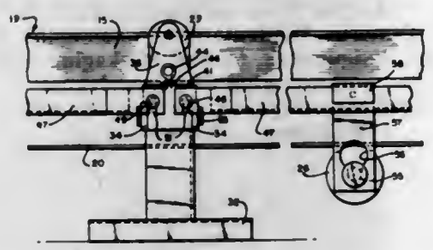
1. An upward magnetic conveyor for conveying magnetic sensitive containers comprising:
an elongated frame having an upper and lower end;
a rotating means interposed between the upper and lower ends of said frame;
an endless conveyor belt located around said rotating means and rotating therearound, said belt including a rising section having an upper portion near the upper end of said frame and a lower portion near the lower end of said frame, and the thickness of said rising section affording a front side and a back side;
a driver means operatively connected to said rotating means for producing the rotation of said belt;
a magnetic means associated with said frame, said magnetic means facing the back side of said belt and extending substantially from adjacent said lower portion to adjacent said upper portion of said belt, for magnetically attracting and maintaining the containers into contact with said front side as said belt travels upwardly;
an input means associated with the lower end of said frame and the lower portion of said belt, said input means presenting containers to said belt for being attracted thereto in response to the magnetic field of said magnetic means;
an upper plate disposed at the upper end of said frame, said upper plate being situated above said upper portion of said belt to direct said containers away from said upper portion of said belt whereby said containers are prevented from following the movement of said belt; and
an output means having an upper elbow and an upper arm integrally extending from said upper elbow, said upper arm and said upper elbow defining a path through the output means, said upper elbow being attached to the upper end of the frame and facing said upper plate, said upper arm being adjacent to said upper plate and positioned to the side of said belt, said upper elbow and said upper plate contacting said containers after said containers are ejected upwardly from said belt, said upper plate providing a sliding surface for said containers to guide said containers into said path.

3,272,314
UNDER-BUNKER CONVEYOR
Arthur J. Stock, Lakewood, Ohio, assignor to Stock Equipment Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 6, 1964, Ser. No. 335,773
5 Claims. (Cl. 198—159)



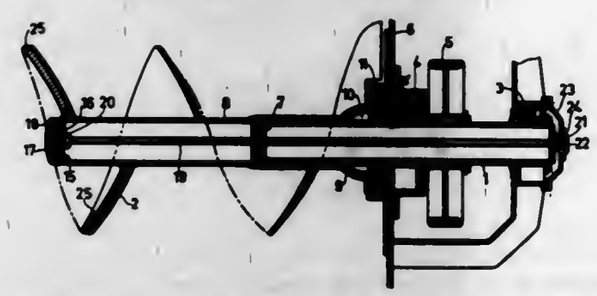
1. An under-bunker conveyor of the type having an endless chain trained over horizontally spaced apart sprockets and provided with transverse drag bars which upon driving of one of said sprockets move successively in opposite directions with the upper course of said chain in contact with an upper support of a conveyor housing and with the lower course of said chain in contact with a lower support of said housing, bulk material on said upper support being dragged by said drag bars for discharge therefrom onto said lower support and thence being dragged by said drag bars in the opposite direction along said lower support toward said one sprocket and for discharge through an opening in said lower support, said conveyor being characterized in that an extension of said upper support is disposed beneath said chain adjacent the upper portion of said one sprocket, and in that said drag bars have concave leading faces which function as scoops for conveying residual material not discharged through such opening around said one sprocket for deposit on said extension for recirculation through said conveyor housing.

3,272,315
EXTENSIBLE BELT CONVEYOR
Robert M. Promin, Clifton, and William F. Bankauf, East Paterson, N.J., assignors to Litton Industries, Inc., a corporation of Delaware
Filed Dec. 20, 1963, Ser. No. 332,033
4 Claims. (Cl. 198—204)



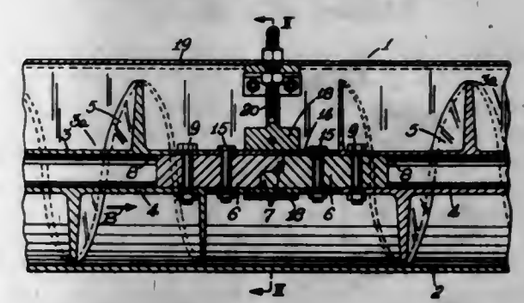
1. A conveyor belt mechanism, comprising upright standards, a belt, an idler roller troughing assembly extending transversely under one run of said belt, arm means carried by the upright standards supporting the roller assembly, brackets, means for connecting each of said brackets to one of said standards for movement relative thereto in directions lengthwise of the belt, means for releasably securing the brackets to the respective upright standards against movement, side rail sections, means for detachably connecting said side rail sections and said brackets, a return idler roller extending transversely under another run of said belt, hanger brackets carried by said side rail sections supporting said return idler roller, said hanger brackets being movable along the respective side rail sections, and means maintaining the hanger brackets in fixed positions relative to said side rail sections.

3,272,316
REFUSE COLLECTING CONTAINER WITH A FEED SCREW
Hilding Linde, Kalmar, Sweden, assignor to Norba Aktiebolag, Blomstermala, Sweden
Filed Dec. 26, 1963, Ser. No. 333,506
The portion of the term of the patent subsequent to March 31, 1981, has been disclaimed
1 Claim. (Cl. 198—213)



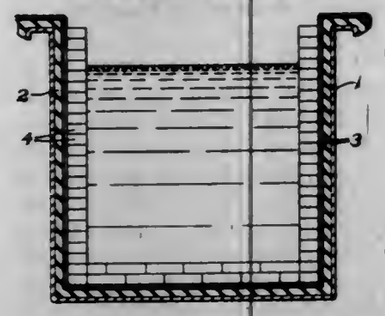
A rotary conveyor screw for forcing refuse into a collecting container, comprising a wall constituting part of said container; a driving means; a hollow driving shaft drivingly coupled to said driving means and extending through said wall partly into said refuse collecting container; a tubular spindle arranged coaxially with respect to said driving shaft in said refuse collecting container, the outer end of said tubular spindle encasing the inner end of said driving shaft; a screw blade, spirally encircling the outer circumferential surface of said tubular spindle and rigidly secured thereto; a cap which has a smooth, convex inner end surface and sealingly and non-rotatably abuts against the inner end of said tubular spindle and is provided with a threaded hole extending less than completely through said cap and opening outwards, said sealing cap consisting of a material substantially more wear-resistant than that of said tubular spindle; a clamping bolt passing through said hollow driving shaft and said tubular spindle; threads upon the inner end of said clamping bolt in engagement with the threads of said sealing cap; fastening means associated with the outer ends of said hollow driving shaft and said clamping bolt for pressing said tubular spindle onto said driving shaft and for detachably interconnecting them; and a protecting cover of a material more wear-resistant than that of said tubular spindle covering at least the inner portion of said screw blade.

3,272,317
CONVEYORS
Frederick Christopher Kelly, Kensington, Johannesburg, Transvaal, Republic of South Africa, assignor to Fred Kelly & Sons (Proprietary) Limited
Filed June 25, 1964, Ser. No. 378,019
Claims priority, application Republic of South Africa, July 10, 1963, 63/3,097
5 Claims. (Cl. 198—213)



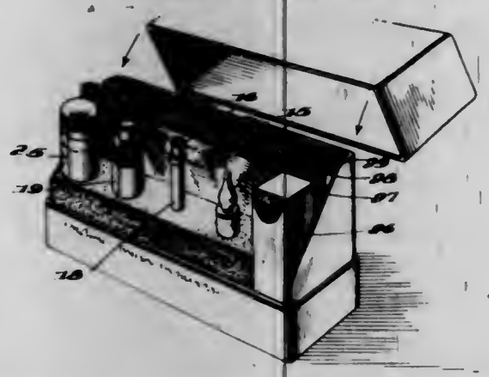
1. A coupling for connecting conveyor screw members having tubular shaft ends, for the formation of a screw conveyor, including a first connecting element adapted to be anchored to a screw member in a tubular end thereof with part of the element projecting from the tubular end; a second connecting element adapted to be anchored to an adjacent screw member in similar fashion; torque transmitting formations associated with the ends of the projecting parts of the elements for effecting a driving connection directly between the elements, the torque transmitting formation of one of said elements having a surface closely engaging in torque transmitting overlapping relationship a mating surface of the torque transmitting formation of the other of said elements, each said surface being at an angle to a plane perpendicular to the axis of said first and second elements, said formations being laterally separable to permit lateral removal of a screw member from the conveyor without axial movement of an adjacent screw member; and a retaining sleeve located in a gap between the screw members and embracing the formations and holding them against lateral separation, the sleeve providing a bearing surface for engagement with a support bearing and comprising at least two parts, each part being releasably anchored to each of the connecting elements at positions located between said formations and the other ends of said projecting parts for rotation therewith, and means for anchoring said sleeve parts to said connecting elements, the sleeve parts being releasable to permit removal of the sleeve and subsequent lateral separation of the formations, said support bearing engaging the sleeve between said means.

3,272,318
LINING FOR ACID TANKS AND METHOD OF USE
Theodore E. Saxman, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed May 5, 1965, Ser. No. 453,446
7 Claims. (Cl. 206—2)



3. An acid tank comprising a metal shell, a lining of hard rubber bonded to the shell, polyvinyl chloride film material adhered to the hard rubber lining by a neoprene adhesive, and an internal sheathing of carbon brick.

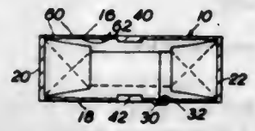
3,272,319
IMMUNOLOGICAL TEST KIT
John H. Brewer, Towson, Md., assignor to Hynson, Westcott & Dunning, Incorporated, a corporation of Maryland
Filed Oct. 5, 1962, Ser. No. 228,640
3 Claims. (Cl. 206—12)



1. A kit for the performance of immunological tests comprising a container and within said container a non-absorbent test card provided with at least one marked area adapted to receive the test reagent, an antigen dispensing bottle provided with a nozzle for the delivery of antigen suspension to said area, means for delivering a measured amount of the serum or plasma of the blood of a person to be tested to said area, at least one stirring rod for mixing said antigen suspension and serum or plasma in said area and a control card having at least one marked area on the surface thereof containing a deposit of a known reactive serum or plasma and at least one marked area containing a deposit of a known non-reactive serum or plasma.

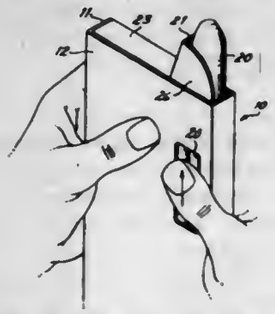
3,272,320
CIGARETTE PACKAGE
Arthur V. Brungardt, 3252 Farnam St., Omaha, Nebr.
Filed Mar. 16, 1964, Ser. No. 352,079
4 Claims. (Cl. 206—41)

1. In a collapsible cigarette package: a box-like collapsible enclosure comprising spaced normally parallel front and rear panels, two spaced side panels, and means connecting adjacent ones of said front, rear and side panels to form an annular enclosure wall, the said enclosure wall having spaced vertical rectangular stiffening portions of greater stiffness than portions of said enclosure wall disposed between said stiffening portions whereby said stiffening portions tend to confine bending of said enclosure wall to areas disposed between said stiffening



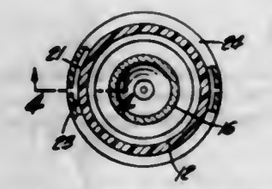
portions for neat and orderly folding, means for at least approximately closing the top and bottom areas between said panels.

3,272,321
PACKAGING OF CIGARS OR THE LIKE
Bernard J. Tamaria, Whitemarsh, Pa., assignor, by direct and mesne assignments, to Pull Packaging, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 26, 1964, Ser. No. 355,117
16 Claims. (Cl. 206—41.2)



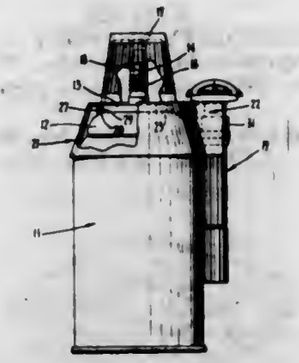
1. In a portable package of cylindrical articles arranged side by side in a row, a single row only of cylindrical articles so arranged, a container of rectangular plan enclosing the articles as a group, the articles being covered thereby at each end, one end surface of the container being covered in minor part only by a cover flap joined to a wide side wall, an end closure swingably openable along a hinge line crossing the flap substantially perpendicular to its junction to the side wall and nearer to one of the narrow side walls than the other, the distance of the hinge line from the nearer narrow side wall being at least one but less than two diameters of the cylindrical articles, the openable end closure having a portion thereof oriented perpendicular to the end of the container and to the rest of the openable end closure and effective to rigidify and guide it during opening and closing thereof.

3,272,322
SYRINGE PACKAGE
Robert W. Ogle, Phoenix, Ariz., assignor to Syn-Pak Corporation, a corporation of Delaware
Filed Aug. 25, 1964, Ser. No. 392,056
1 Claim. (Cl. 206—43)



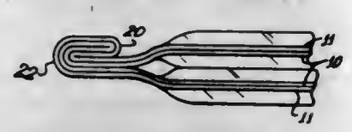
A syringe package comprising a syringe with a needle attached to its end; a needle sheath covering and sealing the needle; said needle sheath having a collar; an annular groove in the inner wall of said collar; a cylindrical member positioned over the syringe, said cylindrical member having a closed end and an open end; an outstanding flange on said cylindrical member immediately adjacent its open end, said flange being received in said annular groove securing said cylindrical member to said needle sheath; said needle sheath being spotwelded to said cylindrical member at a plurality of points.

3,272,323
DEVICE FOR THE SECURANCE OF AN ARTICLE SUCH AS A SAFETY RAZOR TO AN AEROSOL CONTAINER
Edwin Ewry, Mill Valley, Calif., assignor to Avoset Company, Oakland, Calif., a corporation of Delaware
Filed Nov. 3, 1964, Ser. No. 408,534
2 Claims. (Cl. 206—47)



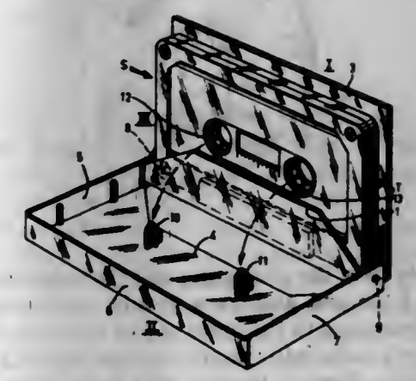
2. A composite package comprising a substantially cylindrical aerosol container having a generally bell-shaped dome at its upper end, said container having an annular bead coaxially of the end surface of said dome and flexible dispensing spout projecting centrally therefrom, said spout having an externally threaded portion, a tapered cylindrical collar of hard plastic, said collar having an open lower end receiving said dome and an upper end with a central circular opening traversed by said spout, said collar having an annular rib depending from its upper end, said rib having an inner peripheral groove complementary to said bead and engaging same in snap fitting relation, said collar having a substantially U-shaped yoke projecting radially from the periphery thereof and defining an outwardly facing notch with a substantially semi-circular cross-section, a safety razor having a shank with an upper portion releasably engaged in said notch, and a cap having a depending internally threaded bushing engaging said externally threaded portion of said spout and securing said cap thereto with the cap engaging said collar.

3,272,324
MULTIPLE COMPARTMENT PACKAGE
William S. Schneider, Glendale, and Arthur P. Corella, North Hollywood, Calif., assignors of ten percent to V. Wayne Rodgers, South Pasadena, Calif.
Continuation of application Ser. No. 305,367, Aug. 29, 1963. This application Apr. 13, 1965, Ser. No. 449,685
20 Claims. (Cl. 206—47)



1. A multiple compartment package of thin, flexible, sheet material, comprising:
a pair of overlying outer walls joined together to define between them a product-holding space;
means dividing the product-holding space into two compartments each outside the other;
said means including a self-sustaining fold in both walls extending transversely of the package across the product space holding the outer walls in mutual contact at their inner faces in the region of the fold to prevent product transfer between the compartments;
and a product in each of the compartments;
said fold being capable of being straightened by tension forces applied to the fold by pulling away from each other opposite ends of the package whereby internal communication between the compartments is established.

3,272,325
STORAGE CASE FOR A TAPE CARTRIDGE
Johannes Joseph Martinus Schoenmakers, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 13, 1965, Ser. No. 447,770
Claims priority, application Netherlands, Apr. 15, 1964, 6,404,046
2 Claims. (Cl. 206—52)

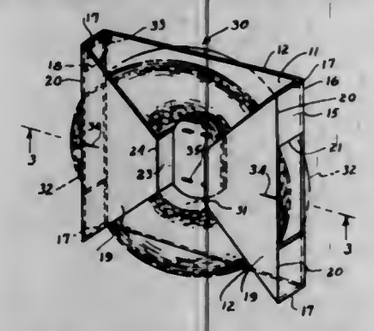


1. The combination of a magnetic tape cartridge and storage container therefor comprising a first open receptacle container portion having a pair of side walls of equal length, an end wall connected with each said side wall at one end thereof, a bottom wall connected with said end wall and said side walls at one edge thereof, said bottom wall extending for only a portion of the length of said side walls defining a cut-away in said first receptacle portion whereby said side walls extend freely beyond said bottom wall; a second container portion comprising a lid wall substantially overlying said side walls over the entire length thereof in the closed position of said first and second container portions, a configured wall in spaced substantially parallel relation with said lid wall, said configured wall having the same shape as said cut-away and being dimensioned for closely fitting within said cut-away in the said closed position, additional lid wall means connected with both said lid wall and configured wall at the aligned edges thereof defining a pouch; a tape cartridge containing at leas one tape reel, said cartridge positioned in said pouch, a major portion of said cartridge projecting beyond said configured wall, means hingedly connecting said first and second container portions for pivotal movement about an axis intersecting said side walls of said receptacle portion at the free ends thereof and passing through said pouch; and fixed means in said first open receptacle container portion locking said reel against rotation within said cartridge in the said closed position of the container portions.

3,272,326
PACKAGE FOR A CORE-LESS COIL
Arthur Katlow, Forest Hills, N.Y.
(38 Manchester Way, Pine Brook, N.J.)
Filed Aug. 24, 1965, Ser. No. 482,067
1 Claim. (Cl. 206—52)

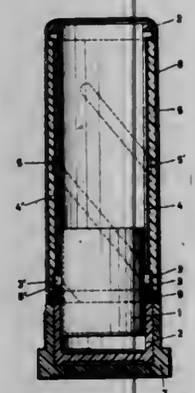
A coil package comprising a generally rectangular back panel, said back panel having central thru holes for removable mounting on a coil-winding machine, a centrally open coil having one side in facing engagement with the front of said back panel and projecting diametrically beyond opposite ends of said back panel, a pair of end

panels hingedly connected to opposite ends of said back panel and each having a medial thru opening, said end panels extending forwardly from said back panel beyond said coil and receiving respective projecting coil portions in said medial openings, one of said end panels having a slot, the free end of said coil passing outwardly through the medial opening of said one end panel and inwardly through said slot, a pair of front panels hingedly connected to the forward edges of respective end panels and extending inwardly toward and terminating short of each other at opposite sides of the central coil opening, said front panels each having a cut opening through its outer edge to the adjacent medial opening for passage of said



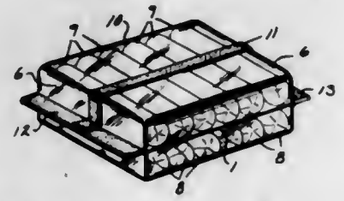
front panels over the projecting coil portions upon inward swinging of the end and front panels, an extension panel hingedly connected to the inner end of each front panel extending rearwardly into the central opening of said coil at opposite sides thereof toward said back panel, said extensions each extending chordally across said central coil opening, a flap on the rear end of each extension lying in facing engagement with each other and said back panel extending across and closing said holes, said flaps having circular edge contours concentric with said coil to rotatably support the latter, and fastener means securing said flaps to said back panel in said concentric relation and closing said holes.

3,272,327
ARTICLE DISPENSER WITH PLASTIC TWISTING MECHANISM
John Busch, 12 Schubertstrasse, Celle, Germany
Filed Dec. 2, 1964, Ser. No. 415,274
Claims priority, application Germany, Dec. 5, 1963, N 15,669
5 Claims. (Cl. 206—56)



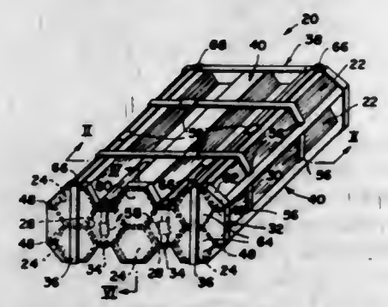
1. In a lipstick casing having a twisting mechanism made of plastic material of the type including a cosmetic holder guided in a slotted tube connected with a base and having guide projections extending through the longitudinal slots in the slotted tube and engaged in the threaded track of a threaded sleeve rotatable with respect to the slotted tube, and said threaded sleeve being covered by an outer metal tube affixed thereto, the improvements comprising an elastic intermediate support seated outwardly of and engaging the slotted tube and disposed between said slotted tube and the inner surface of said outer metal tube, the said intermediate support extending only a fraction of the lengths of said slotted tube and threaded sleeve, said threaded sleeve resting on said intermediate support to provide frictional resistance to accidental relative rotational movements between the slotted tube and the threaded sleeve.

3,272,328
COMMODITY SUPPORT CARD
Robert A. Krzyzanowski, Milwaukee, Wis., assignor to Milprint, Inc., Milwaukee, Wis., a corporation of Delaware
Filed July 22, 1964, Ser. No. 384,306
3 Claims. (Cl. 206—65)



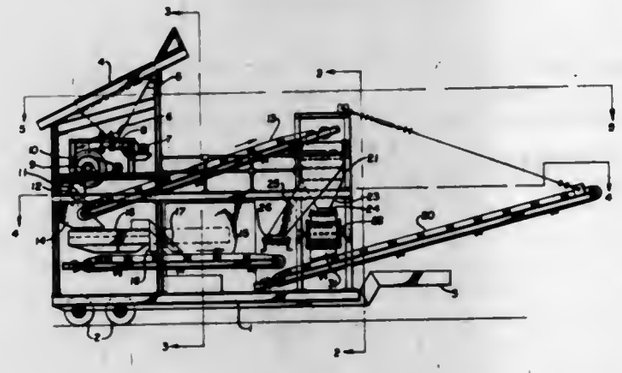
2. A package comprising:
(1) a support member comprising a flat card including side and end edges, a central portion and at least two spaced panels in an upright position out of the plane of the central portion of the card, each panel having an upper portion above the plane of the card and a lower portion below the plane of the card, one of said panel portions being defined by a bent cut formed in the card and having spaced legs opening away from the central portion of the card, and one part of the other of said panel portions being defined by fold lines extending from each spaced leg to the nearest side edge of the card and another part of said other panel portion being defined by end edges of the card;
(2) commodity arranged in two layers on the central portion of the card, one layer extending between the upper portions of the panels and the other layer extending between the lower portions of the panels, with the portion of each panel defined by a bent cut contacting opposed sides of the commodity to hold the panels upright and to retain the commodity on the card; and
(3) an outer wrapper enclosing the card and commodity and snugly conforming to the outline thereof.

3,272,329
CORE BOX ASSEMBLY
John Mehalov, 745 Greenway Drive, Pittsburgh, Pa. 15204
Filed Jan. 26, 1966, Ser. No. 523,127
9 Claims. (Cl. 206—65)



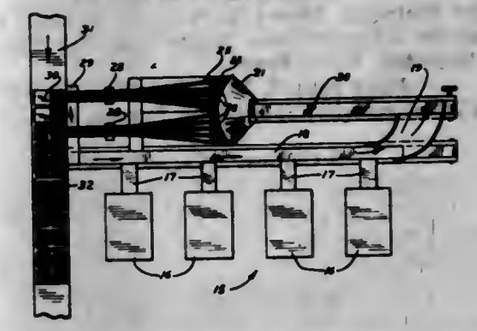
1. A storage box comprising substantially identical cellular metal members each providing a plurality of uniformly spaced, connected polygonal chambers extending longitudinally thereof and open at both ends; said cellular metal members being superposed and providing additional uniformly spaced, formed polygonal chambers disposed between adjacent superposed ones of said cellular metal members and extending longitudinally thereof; said formed polygonal chambers being defined in part by peripheral walls of adjacent ones of said connected polygonal chambers and in part by portions of said cellular metal members intermediate of the adjacent ones of said connected polygonal chambers; all of said polygonal chambers having substantially identical cross sections and configurations and being adapted to receive and store elongated articles; cap members fitted over the ends of said superposed cellular metal members and closing the open ends of said connected and formed polygonal chambers; means for connecting said superposed cellular metal members as a unit; and means for securing said cap members to the ends of said superposed cellular metal members.

3,272,330
APPARATUS FOR RECLAIMING METAL VALUES FROM SLAG
Hugh J. Nelson, University Heights, Ohio, assignor to The Kaiser-Nelson Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 21, 1963, Ser. No. 289,578
2 Claims. (Cl. 209—38)



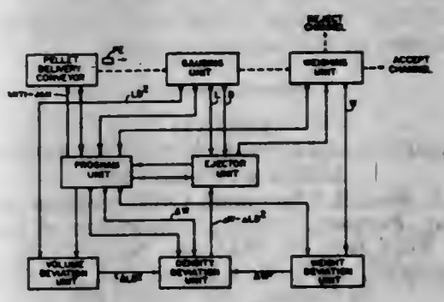
1. In apparatus of the character described, a frame, a grizzly supported by the upper portion of said frame and adapted to screen therethrough materials having metallic values, a shaker feeder disposed directly below said grizzly and adapted to receive the screened material, a magnetic separator disposed directly below said feeder and adapted to separate the screened material into two components, the first of which contains metal values in appreciable quantity and the second of which is substantially free of metal values, a first conveyor having a receiving portion disposed below said magnetic separator and adapted to receive and carry said first component to a higher level than that of said separator, a screen having upper and lower decks on which said first component falls from said first conveyor, means for vibrating said screen, a separate chute and conveyor associated therewith for disposing of each of coarse and less coarse fractions of said first component which are rejected by the upper and lower decks respectively of said screen, a reverse polarity magnetic drum separator with variable field intensity directly below said screen, a hopper directing the fine material comprising the remaining fraction of said first component which passes through both decks of said screen onto said last named separator where it is separated into higher and lower magnetic components, a separate chute and conveyor associated therewith for disposing of each of said magnetic components; another conveyor disposed at a level below said first conveyor for receiving and transporting at least a portion of said second component, and means for directing said second component from said magnetic separator to said another conveyor.

3,272,331
WIENER ORIENTER
Edward G. Thiele and Ralph D. Burgess, Minneapolis, Minn., assignor, by mesne assignments, to Champion Papers, Inc., Hamilton, Ohio, a corporation of Ohio
Filed Sept. 24, 1963, Ser. No. 310,995
20 Claims. (Cl. 209—74)



1. A machine for segregating a plurality of wieners into transversely aligned groups for processing, said machine including a supply of wieners, means to move said wieners into a hopper, the bottom of said hopper comprising a plurality of tracks arranged side by side and each of size to receive and support wieners extending in longitudinal direction along said tracks, means to cause said wieners to move in longitudinal direction along said tracks, means on said tracks to position said wieners so that the ends of the wieners on one track are transversely aligned with the ends of wieners on the other tracks, an indexing conveyor having a plurality of paddles each adapted to engage the ends of transversely aligned wieners on said tracks and move the wieners into separate groups, said conveyor being intermittently operated to deposit said wieners onto a processing station at the end thereof.

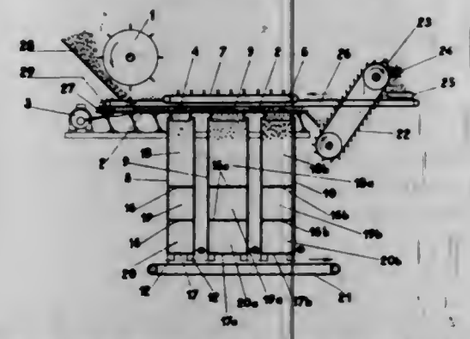
3,272,332
CLASSIFICATION METHOD AND APPARATUS
Wallace Jones, Saltsburg, Pa., assignor to Nuclear Materials and Equipment Corporation, Apollo, Pa., a corporation of Pennsylvania
Original application Mar. 14, 1961, Ser. No. 108,220, now Patent No. 3,221,152, dated Nov. 30, 1965. Divided and this application Dec. 2, 1964, Ser. No. 423,883
3 Claims. (Cl. 209—75)



1. Classifying apparatus for classifying an object in dependence upon the comparison of a physical dimension of said object with the corresponding dimension of a standard, the said apparatus comprising means to be connected to said object for deriving a measure of said dimension, variable impedance means connected to said deriving means to be set in accordance with said measure as an electrical analogue of said dimension, said impedance means being variable over its whole range only between limits extending from the electrical analogue of a relatively small percentage smaller than the corresponding dimension of said standard and the electrical analogue of a relatively small percentage greater than said corresponding dimension, memory switch means connected to said deriving means and actuable responsive to said deriv-

ing means when said dimension of said object falls outside of said limits, and means responsive to actuation of said switch means for classifying said object.

3,272,333
FEED DISTRIBUTOR FOR CIGARETTE-MAKING MACHINES
André Pietrucci, Fleury-les-Aubrais, France, assignor to Service d'Exploitation Industrielle des Tabacs et des Allumettes, Paris, France
Filed Mar. 5, 1963, Ser. No. 262,871
Claims priority, application France, Mar. 7, 1962, 890,239
3 Claims. (Cl. 209—85)



1. A feed distributor for a cigarette-making machine comprising a feeder means for effecting a substantial separation of the bunches of tangled tobacco shreds, separating means for separating a portion of the shreds coming from said feeder means into at least two groups of shreds of different increasing lengths and temporarily storing a reserve thereof, a first conveyor means to carry said at least two groups of shreds to the cigarette-making machine, means for distributing each of said groups of said separated shreds onto said first conveyor means at a predetermined rate, means for adjusting the rate of distribution of each of said distributing means whereby said stream carried by said first conveyor means comprises predetermined proportions of said different groups of separated shreds, means for conveying another portion of the shreds rejected as oversize from said separating means to a location downstream of said separating means, means located at said location downstream of said separating means for carding and crumbling the shreds rejected as oversize by said separating means, and second conveyor means to bring back said oversize shreds after carding and crumbling upstream of said separating means.

3,272,334
ADJUSTABLE TRACK MEANS FOR A SIZER APPARATUS
Kenneth F. Russell, Claremont, Calif., assignor to Brogdex Company, Pomona, Calif., a corporation of California
Filed June 20, 1963, Ser. No. 289,330
Claims priority, application Israel, Oct. 4, 1962, 18,020
15 Claims. (Cl. 209—106)



1. A compact, composite conveyor means for sizing articles of different types with respect to maximum, minimum, average or mean diameters along minor and major axes of such articles, as lemons, oranges and grapefruit, comprising:

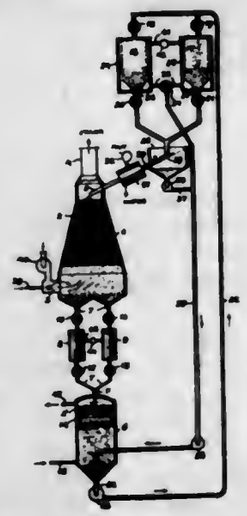
a frame means including spaced side frame members;

conveyor roll means extending between said side frame members in a sizing zone and including a plurality of parallel conveyor rolls and roller chain means having alternate rollers interconnected with adjacent conveyor rolls;

track means on each side frame member, including a normally non-changeable track member supporting the aforesaid alternate rollers and an adjustable track member in spaced relation thereto cooperable with the other of said rollers of the chain means for varying space between the conveyor rolls in the sizing zone;

said adjustable track member including a plurality of pivotally interconnected track segments, one end track segment being pivotally connected at one end to the adjacent segment and longitudinally, adjustably secured to the frame means at its other end, track segments in the sizing zone being adjustable to vary angular relationship between adjacent segments and spacing of such segments with respect to the non-changeable track, whereby said adjustable track member is selectively configured to a composite curve preselected for sizing several types of articles.

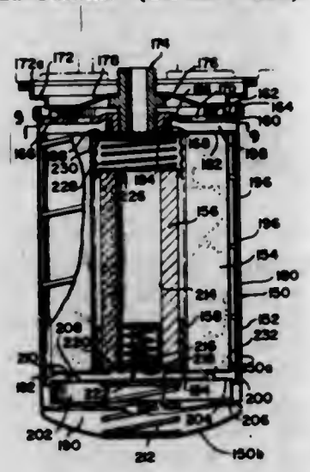
3,272,335
PROCESS AND APPARATUS FOR MOVING SOLID PELLETS IN A CLOSED CIRCUIT
Frederick Nettel, 173 Chapel Road, Manhasset, Long Island, N.Y.
Filed July 8, 1963, Ser. No. 293,544
3 Claims. (Cl. 210—68)



1. In the method of moving pellets, used as heat transfer agent, continuously in a closed circuit, said circuit comprising an upward flow (riser) part in which the pellets are lifted to a highest level, and a downward flow (downcomer) part, in which the pellets descend under the effect of gravity, the upward flow part containing pellets suspended in the form of a slurry in a rising stream of a liquid at substantially superatmospheric pressure, while the first portion of the downward flow part contains pellets falling through a gas of substantially atmospheric pressure,

the steps of passing the slurry stream through two sequentially operated sluice chambers arranged in parallel and disposed at said highest level, said sluice chambers being at all times completely filled with liquid, separating the pellets from the bulk of the liquid by screening the slurry within said chambers and while still under substantially superatmospheric pressure, thereafter decompressing the resulting slurry concentrate within said chambers, removing the remaining liquid from the pellets at substantially atmospheric pressure, and feeding the dried pellets at substantially atmospheric pressure back into the downward flow part.

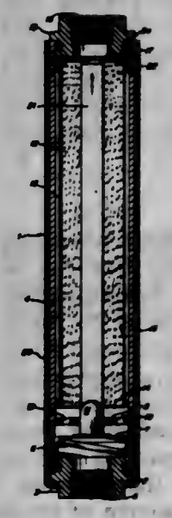
3,272,336
LIQUID PURIFIER AND CLEANER
Kingsley E. Humbert, Jr., Gastonia, N.C., assignor to Wix Corporation, Gastonia, N.C., a corporation of North Carolina
Filed Apr. 5, 1965, Ser. No. 446,789
12 Claims. (Cl. 210—132)



3. A spin-on throw-away liquid purifier comprising a cylindrical casing, a closure member for one end thereof having a threaded central boss for connection to an internal combustion engine and forming an outlet, liquid inlet means in said closure member and disposed around said boss, a liquid separator sealed in said casing and comprising a cylindrical body having a closed top and an open bottom, said cylindrical body forming a shroud depending from said top and extending downwardly in and concentric with the casing, there being a space between the casing wall and the shroud forming a downwardly extending flow passage, the lower end of the shroud being spaced from the lower end of said casing and forming a sump therebelow, an elongate cylindrical annular filter unit within and spaced from said cylindrical shroud, the top having a central opening leading to said outlet and having annular means around said opening in fluid tight sealing connection with and around said boss, said filter unit having an axial passage communicating with said outlet through said central opening of said top, the bottom of said filter unit having a central opening leading into the lower end of said axial passage, means for closing off said opening in the bottom of said filter unit, said shroud extending at its lower end a substantial distance below the bottom of said filter unit, said top being spaced from said closure member and forming a chamber receiving liquid from said inlet means, a baffle unit having a disc head below and spaced from said bottom of the filter unit and of smaller diameter than and positioned within the lower end of said shroud, said baffle unit head carrying a depending skirt portion extending below the bottom of and spaced from said shroud, means carried by said cylindrical body for imparting a spiral centrifugal movement to fluid flowing downwardly through said flow passage from said chamber to the lower end of the shroud, means whereby the liquid is impelled to reverse its direction of flow below the shroud to effect discharge of contaminants therefrom into the sump and to then flow in part upwardly between the filter and the shroud to pass radially inwardly through the filter to said axial passage and to flow in part to the central opening in said bottom of the filter unit and into the lower end of said axial passage for exit through said outlet.

4. The invention according to claim 3 wherein said means for closing off said opening in the bottom of said filter unit comprises a valve means in the lower end of said axial passage adapted to open under fluid pressure in the direction of said outlet, and a pressure relief valve means for admitting fluid directly from said liquid inlet means into said outlet, the second mentioned valve means operating to open under a higher pressure than the said valve means in the lower end of said axial passage.

3,272,337
FUEL DISPENSING SYSTEM FOR ASSURING DELIVERY OF UNCONTAMINATED FUEL
Howard A. Elwell, Glen Ellyn, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Apr. 3, 1963, Ser. No. 270,459
1 Claim. (Cl. 210—136)

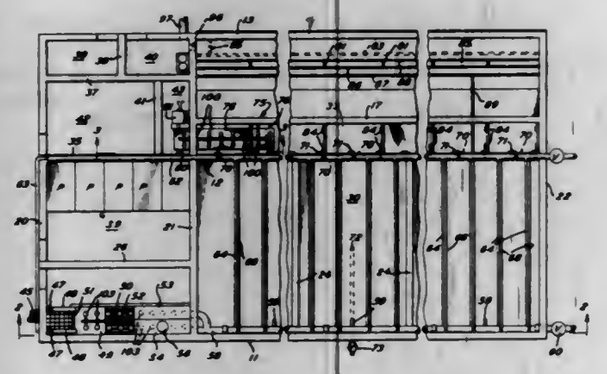


For a fuel-dispensing apparatus having a pump, discharge conduit connected to said pump, and a flow-controlling valve at the outlet of said discharge conduit, the improvement assuring delivery of uncontaminated fuel comprising:

an elongated cylindrical non-sparking filter housing made of light-weight metal and covered with a resilient protective layer inserted in said discharge conduit at said valve, said housing having fuel inlet and outlet ends fitted with end caps, at least one of said end caps being easily removable from said housing for replacement of a filter element therein; a replaceable cylindrical filter element positioned in said filter housing and adapted for removing solid particles from fuel flowing therethrough, said filter element having an outer filter medium with its inner surface forming a centrally located hollow passage, a filter element outlet end cap provided with a centrally located fuel outlet port, said filter element outlet end cap being in a sealing relationship with said housing fuel outlet end cap, and an unperforated filter element end cap having a centrally located dimple-like element, said unperforated cap and said sealing relationship preventing by-passing of fuel around said filter element; a normally closed check valve positioned between the fuel inlet end of said housing and the adajcent end of said filter element and in sealing relationship with said fuel inlet end of said housing, said check valve being provided with a spring-loaded nipple adapted to fit in said dimple to force said check valve to its open position and to position the inlet end of said filter element when said filter element is in position in said housing so that fuel may pass into said housing through said check valve,

inwardly through said filter medium and out through said outlet end caps; and a bi-directional fluid-conducting swivel joint connected in flow communication between the outlet of said filter housing and said flow-controlling valve.

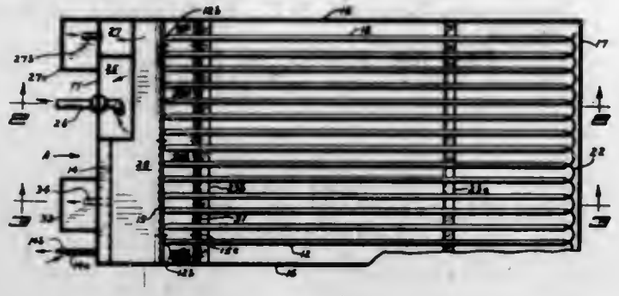
3,272,338
SEWAGE DISPOSAL SYSTEM
William R. Gallagher, 1041 Township Line Road, Jenkintown, Pa.
Filed Mar. 9, 1964, Ser. No. 350,289
14 Claims. (Cl. 210—177)



1. In a sewage disposal system, an aeration tank, a sewage supply pipe for delivering sewage into said aeration tank, a settling tank extending along said aeration tank and separated therefrom by a common wall, said common wall having delivery openings therethrough communicating said tanks, a downwardly extending separating wall in said settling tank in spaced relation to said common wall and terminating above the bottom of said settling tank, said separating wall and said common wall providing a chamber therebetween for the collection of floatable material, a source of air under pressure, a plurality of pipes connected to said source and provided at spaced locations along said aeration tank, each pipe having a downwardly extending portion with a plurality of discharge openings intermediate the top and bottom of the liquid in said aeration tank, air lift means connected to said source and extending from said collection chamber for the return of material from said settling tank to said aeration tank, fluid discharge means for delivery of fluid from said settling tank at a predetermined level, air delivery members for impelling floatable material along said collection chamber, and a conveyor member for receiving and removing the floatable material.

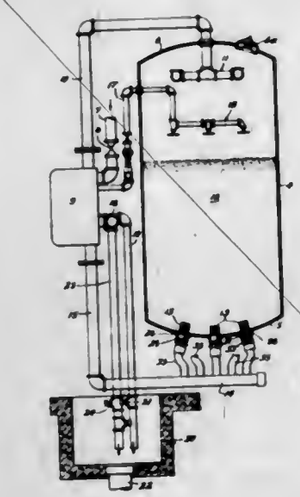
3,272,339
BEESWAX CAPPING MELTER
Melford E. Olson, 4749 Florida Ave. N., Minneapolis, Minn.
Filed May 3, 1963, Ser. No. 277,771
4 Claims. (Cl. 210—182)

1. A capping melter for recovering honey, beeswax and other capping products comprising:
(a) a separating tank;
(b) a plurality of elongated substantially parallel heating elements mounted horizontally in the upper portion of the tank and provided with heat supplying connection means on one end thereof, the other end of said elements being independent of one another and being substantially free along the entire length thereof to permit unobstructed flow and scraping therealong throughout substantially the entire length thereof to remove products collected thereon;
(c) means for discharging honey and beeswax to be separated on the top surface of said heating elements adjacent said one end;
(d) means supplying heat to said elements to melt honey-containing beeswax cappings supplied thereto;
(e) a partition means extending across said tank, the upper edge of said partition means terminating below said heating elements to provide a melted honey collection compartment and a first melted honey withdrawal compartment therein;



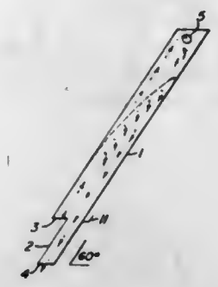
(f) communication means between said first honey withdrawal compartment and the lower portion of said melted honey collection compartment; and
(g) a second collection compartment provided by said partition means adjacent said other end of said element to receive hot honey and beeswax flowing above said heating elements with means for separately withdrawing the honey and wax from said second compartment.

3,272,340
QUICKLY DETACHABLE STRAINER SYSTEM FOR WATER TREATMENT TANKS
Churchill Hungerford, Jr., Wenonah, N.J., assignor to Hungerford & Terry, Inc., Clayton, N.J., a corporation of Delaware
Filed May 22, 1963, Ser. No. 282,258
4 Claims. (Cl. 210—232)



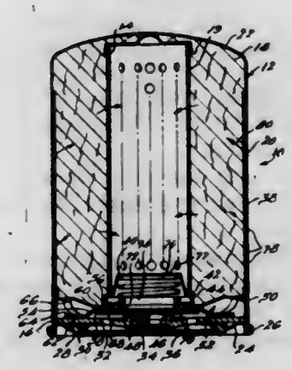
1. In water treating equipment employing a filter-type bed of small-particled treating material, the combination of a tank having a bottom head, a plurality of openings in said head, strainer members adapted for ready insertion and removal through the openings from outside the head, a collector manifold below the head, quickly detachable means securing each strainer member in its opening, and fluid connection means between each strainer member and the manifold, all so arranged that said strainer members may be removed without disturbing said manifold.

3,272,341
WET SEDIMENTATION APPARATUS
Risto Tapani Hukki, Otakallio, Otaniemi, Finland, assignor to Insinooritoimisto-Engineering Bureau R. T. Hukki, Otakallio, Otaniemi, Finland
Filed Sept. 21, 1961, Ser. No. 139,807
7 Claims. (Cl. 210—322)



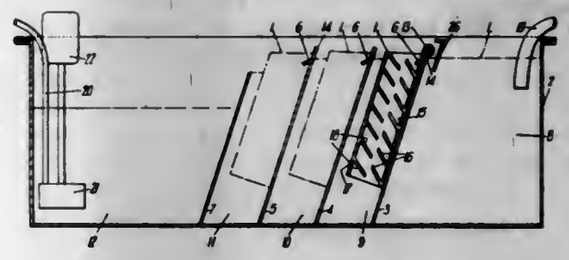
2. A self-contained sedimentation unit adapted for substantially face-to-face placement with other like units in a wet sedimentation tank, comprising an elongate, longitudinally rectilinear box having imperforate walls, closed top, and open bottom, said bottom being of stepped formation defining separate bottom inflow and outflow openings exteriorly of the unit, said openings facing in the same direction but being offset relative to and separated from each other along the length of the box by an intermediate but exterior wall, so as to produce substantially laminar inflow of liquid to be clarified and substantially laminar outflow of settled solids; discharge conduit means for clarified liquid leading from the upper part of the box, said conduit means having means to form a siphon when the unit is installed in said sedimentation tank; and means for mounting said unit in inclined position within the sedimentation tank, with the bottom inflow opening above the bottom outflow opening.

3,272,342
FILTER WITH FLOW DISTRIBUTOR
James C. McLaren and Louis F. Niebergall, Racine, Wis., assignors to Walker Manufacturing Company, a corporation of Delaware
Continuation of application Ser. No. 144,079, Oct. 10, 1961. This application Feb. 19, 1965, Ser. No. 435,783
6 Claims. (Cl. 210—440)



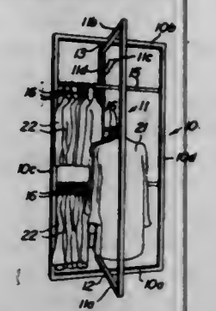
2. In a disposable or throwaway oil filter, a disposable housing having an imperforate side wall and an imperforate closed end, a plate permanently secured to and closing the other end of the housing, said plate having an oil inlet and an oil outlet formed therein, a perforated center tube in said housing extending substantially the full length thereof and being closed at its end adjacent the imperforate end of the housing, the other end of the center tube being open and connected to said oil outlet, an imperforate transverse wall extending transversely from the open end of said center tube to a point adjacent but spaced inwardly from the inside of said side wall, the space inside said housing between said plate and said wall comprising an oil inlet chamber communicating with said oil inlet and with the transverse space between the transverse wall and the inside of the side wall, an oil flow pervious screen in said housing in contact with the inside of the side wall and filling said transverse space between the transverse wall and the inside of the side wall, said screen extending lengthwise of the housing in contact with said side wall to a point adjacent the imperforate closed end of the housing, the space between said transverse wall and the imperforate end of the housing comprising a filter chamber, said screen providing a network of oil flow passages interconnecting the oil inlet chamber and the filter chamber and extending lengthwise of the filter chamber for substantially the full length thereof, and a mass of depth type filter material packed into and completely filling the filter chamber and pressing against the transverse wall, the imperforate end, the center tube, and pressing against and holding the screen against the inside of the side wall, said screen serving to slightly space the depth type filter material from the side wall, oil being filtered flowing transversely from said screen through the filter material to said center tube.

3,272,343
APPARATUS FOR SEPARATING LIQUIDS OR SOLIDS FROM LIQUIDS
Thomas Caldwell, Mugdock, near Milngavie, England, assignor to Smith Fullerton Limited, Glasgow, Great Britain, a British company
Filed July 3, 1963, Ser. No. 294,462
Claims priority, application Great Britain, July 7, 1962, 26,128/62
5 Claims. (Cl. 210—521)



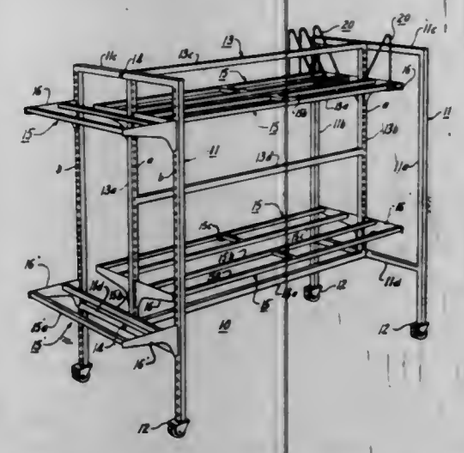
1. Separating apparatus for separating solids from a mixture with liquids or for separating a mixture of liquids of different specific gravities, and especially for separating metal particles from coolants for machine tools being ground, said apparatus comprising a tank for the mixture, a plurality of upstanding baffles dividing the tank into a plurality of compartments and forming weirs over which the mixture may flow successively from one compartment to the next, a plurality of upright conduits, each between two of said baffles, and having inlets at their upper ends open to the mouths of the respective weirs and having outlets at their lower ends open to the respective compartments, and an upright passage between the outlet of each conduit and the next weir in the direction of flow of the mixture, and in each conduit, first and second upright and opposed series of fins extending transversely of the conduit and projecting into the flow path, the fins of the first series being upwardly inclined and forming with the conduit a succession of pockets having their mouths facing upwardly against the direction of flow, and the fins in the second series being downwardly inclined and arranged to deflect the mixture into said pockets.

3,272,344
MERCHANDISING DISPLAY RACK
John W. Sugden, 1810 Orchard Drive, Salt Lake City, Utah
Filed July 6, 1964, Ser. No. 380,536
4 Claims. (Cl. 211—1)



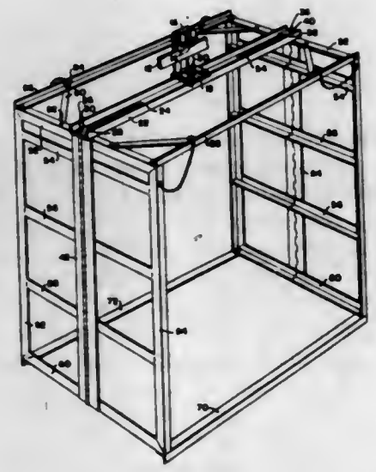
1. A merchandising display rack, comprising intersecting and crossed, vertical frames of rectangular formation and substantially equal height fabricated from rigid metal tubing, polygonal in cross section and connected in mutually flush relationship at points of intersection of said frames; hanger bars adapted for removable insertion within and transversely of said frames; and anchoring means for holding said hanger bars securely within the frames, said anchoring means including vertical series of transverse slots formed in strips secured to and along the inner faces of respective vertical members of said frames, and holding means for opposite ends of the respective hanger bars, said holding means being saddle-shaped fittings adapted to be secured in selected slots of said strips and to securely seat respective ends of the hanger bars.

3,272,345
CLOTH BOLT HOLDER AND RACK
John W. Wallace, Bradfordwoods, Pa., assignor to The Brad-Mar Corporation, Wexford, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1965, Ser. No. 424,776
15 Claims. (Cl. 211—44)



4. A display and utility rack suitable for cloth bolts wrapped on a mandrel which comprises, an upright support frame, at least one shelf detachably-carried by said support frame to project outwardly therefrom, at least one holder slidably-positioned for movement along said shelf to removably-receive the cloth bolt endwise along its mandrel and support it in an upright position on said shelf, said shelf having a pair of spaced-apart longitudinally-extending front and back bars, said holder having a pair of upwardly-projecting leg portions connected at their upper ends and flexibly stressed with respect to each other, each of said leg portions having a concave foot portion, one of said foot portions being slidably-positioned on one of said bars and the other of said foot portions being slidably-positioned on the other of said bars, and each said foot portion having an open side with respect to its associated bar, so that said leg portions when manually-flexed can be employed to insert and remove said foot portions from said bars.

3,272,346
SMOKEHOUSE RACK
Albert J. Michaud, 314 Canal St., Salem, Mass.
Filed Jan. 31, 1964, Ser. No. 341,592
7 Claims. (Cl. 211—118)

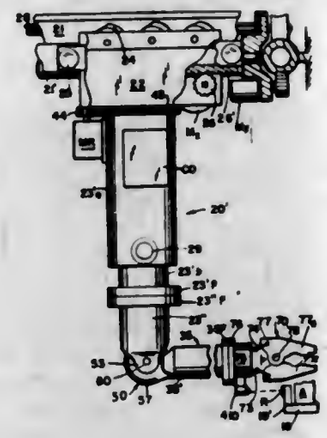


3. In meat-smoking apparatus wherein a trolley rides upon a track, passing through a smokehouse, a rack comprising an upward facing channel pivotally attached to said trolley, a pair of piano hinges having ends slidably disposed in and suspended from said channel, side frames disposed parallel to and on either side of said channel and said piano hinges, cross-members welded between said piano hinges and said side frames, and means pivotally connecting horizontal and upright members of said side frames whereby movement of the ends of said piano hinges in said channel toward one another effects collapsing of said rack.

3,272,347
ARTICLE MANIPULATION APPARATUS
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J.
Filed Jan. 14, 1963, Ser. No. 251,410
9 Claims. (Cl. 214—1)

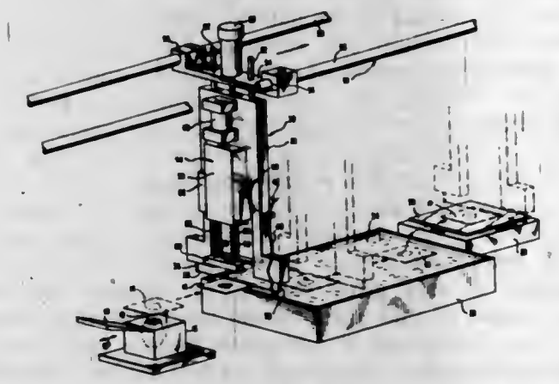
1. An article manipulator for handling work-in-process comprising in combination:
(a) a manipulator arm assembly including mechanical means disposed at one end thereof for seizing and retaining an article,
(b) a base member operatively connected to said manipulator arm assembly for supporting said assembly,
(c) manipulation means between said base member and said arm assembly for moving and guiding said arm assembly,
(d) first servo means for driving said manipulator arm assembly in predetermined path relative said base member,
(e) said seizing means comprising means for engaging and retaining an article on said manipulator arm assembly and including at least one member movable for grasping and releasing said article,
(f) second servo means connected for operating said article seizing means,
(g) controls for said servos,

(h) a variable programming means operatively connected to said servo controls including means for generating a plurality of control signals of predetermined characteristics and in a predetermined sequence,
(i) said programming means being operative to control said servos and to predetermine the movement of said manipulator arm assembly and said article seizing means along a predetermined path to automatically effect manipulation of an article retained



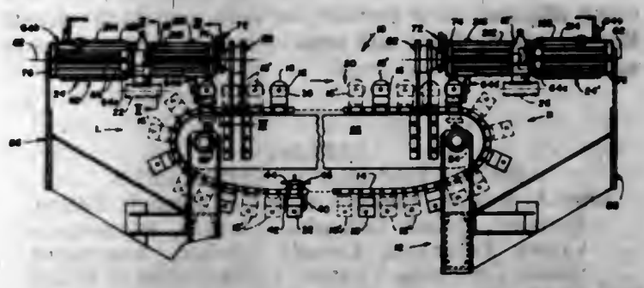
by said manipulator, the movement of said article through a predetermined spatial path and the release of said article at a predetermined position along the path of movement of said arm assembly,
(j) sensing means mounted on said manipulator and movable therewith for sensing the presence of an article prepositioned relative to said manipulator, said sensing means including means for generating a signal upon sensing an article adjacent said manipulator, and initiating predeterminedly responsive operation of said programming means.

3,272,348
MICROTOME SECTION PICKUP AND MANIPULATOR
Howard D. Metz, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare
Filed July 7, 1964, Ser. No. 380,967
7 Claims. (Cl. 214—1)



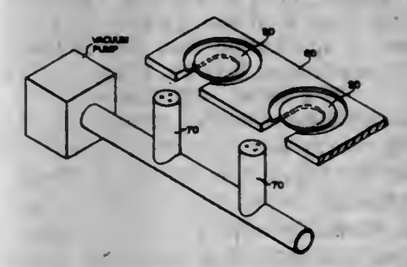
1. A process for handling microtome sections of organic material and of material which will soften under heat which comprises engaging a surface of the section with a fine wire-like element, heating said wire-like element, allowing said heated wire-like element to soften a portion of said microtome section, and cooling said heated wire-like element to adhere the melted portion of said section thereto.

3,272,349
ARTICLE TRANSFERRING APPARATUS
Rome R. Rudolph, Gibsonia, and Carl Strutz, Jr., and Frank C. Strutz, Mars, Pa., assignors to Carl Strutz & Co., Inc., Valencia, Pa., a corporation of Pennsylvania
Filed July 13, 1964, Ser. No. 382,005
13 Claims. (Cl. 214—1)



1. Apparatus for transferring articles individually from a first location to a second location while simultaneously changing the orientation of said articles from a first orientation when at said first location to a second orientation when at said second location, said apparatus comprising in combination: an elongated carrier supported for rotation about its central longitudinal axis; a plurality of spaced clamping assemblies individually mounted on said carrier for reciprocal movement along straight-line paths of travel, each of said clamping assemblies having a pair of cooperating arms biased in a clamping direction and adapted to receive one of the articles to be transferred, a first of said cooperating arms being movable radially of said axis and having a cam follower rotatably mounted thereon; cam tracks mounted on said carrier, one each disposed along the path of travel of each of said clamping assemblies; the cam follower of each of said clamping assemblies being engaged with the respective cam track; said cam follower and said track cooperating to sequentially (a) open said cooperating arms during movement thereof away from both said first and second locations, (b) close said cooperating arms when at said first location to effect pickup of the article to be transferred, and (c) open said cooperating arms when at said second location to release the article transferred; and second drive means for rotating said carrier whereby the article transferred is rotated from said first orientation to said second orientation during transfer from said first location to said second location.

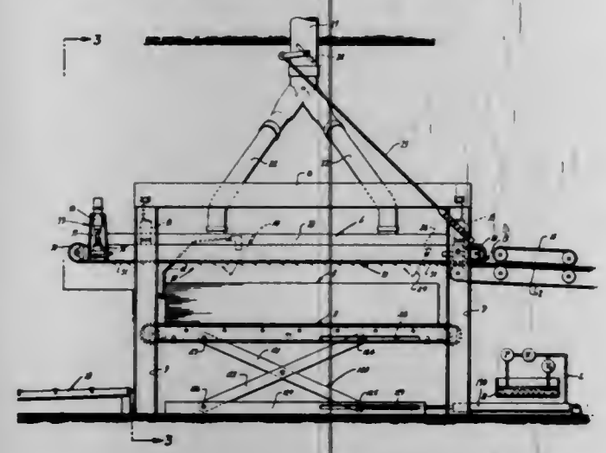
3,272,350
METHOD AND APPARATUS FOR SEMICONDUCTOR WAFER HANDLING
Peter E. Pflanmer, Catonsville, Baltimore, and Theodore Patrick, Ellicott City, Md., and John W. Phillbrick, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 25, 1964, Ser. No. 399,200
7 Claims. (Cl. 214—1)



1. A wafer carrier for rapidly handling a plurality of semiconductor wafers or the like without breakage or contamination and comprising: a generally flat rigid member having opposed major surfaces and an edge surface;

a plurality of recesses in one of said major surfaces for receiving and retaining a like plurality of semiconductor wafers; a plurality of slots through said member each extending from said edge to at least one of said recesses, said slots being mutually parallel for positioning said member about a plurality of vacuum chucks so semiconductor wafers can be transferred between the vacuum chucks and the recesses in said member; said recesses being disposed in a plurality of rows and each of said slots extending from said edge to one of said recesses in each of said rows.

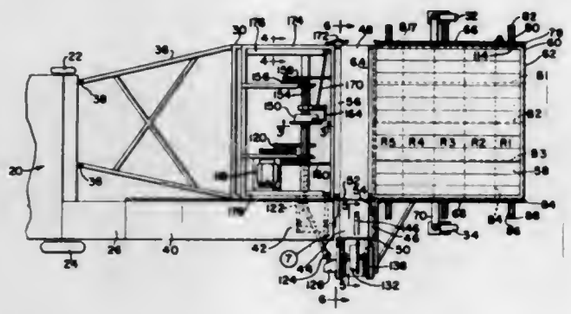
3,272,351
SHEET HANDLING APPARATUS
John A. Burton, Vancouver, and William E. Follett, Burnaby, British Columbia, Canada, assignors to Crown Zellerbach Canada Limited, Vancouver, British Columbia, Canada, a corporation of British Columbia
Filed Jan. 25, 1963, Ser. No. 253,938
8 Claims. (Cl. 214—6)



8. A vacuum conveyor having a vacuum chamber with at least one downwardly facing valved opening, subjacent which sheet material is conveyed along a path of travel, the valve for said opening being rotatably mounted therein with the axis of rotation perpendicular to the path of sheet travel, said valve having a closed position and a rotated open position and means biasing it about said axis in a direction opposed to the direction of sheet travel to said closed position, and means for sealing said opening against adjacent sheet material including a flap connected to said valve and extending in the path of sheet travel when the valve is in the closed position and operable by the sheet material to move out of said path and rotate said valve to and hold it at said open position and to seal the leading edge of the sheet while the sheet moves adjacent said valve.

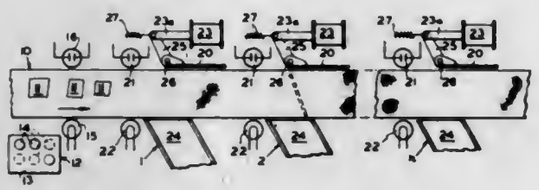
3,272,352
AGRICULTURAL BALE-HANDLING MACHINE
Wayne W. Adams, 1110 S. Main St., Roswell, N. Mex., and Theo Garrison, Dexter, N. Mex.
Continuation of application Ser. No. 351,062, Mar. 11, 1964. This application July 29, 1965, Ser. No. 475,836
22 Claims. (Cl. 214—7)

2. A bale-handling machine, comprising: a supporting frame having means for connection to and travel with a pick-up baler having a bale outlet; platform means on the frame adjacent to and for receiving a bale from the outlet in an on-end position; platform extension means on the frame and extending from the platform means crosswise of the line of advance for a distance several times the width of an on-end bale; a body on the frame rearwardly of and coextensive in width with the crosswise extent of the extension means and offset laterally from the platform means, said body including a floor having a front end adjacent and in bale-receiving relation to the extension means and further having a rear delivery end; first shift means on the frame cyclically operative to shift bales successively from the platform means onto the extension means in increments of one bale width per bale to ultimately form a transverse row of on-end bales



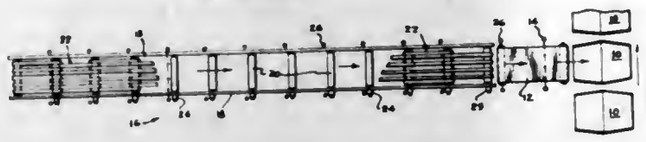
on and coextensive with said extension means; second shift means on the frame and cyclically operative on successive rows of bales to shift such rows one-bale width rearwardly onto the floor to accumulate on said floor a plurality of transverse rows of on-end bales in fore-and-aft abutting relationship; and means operative incident to a predetermined accumulation of rows for discharging said rows from the floor at the rear end of said body.

3,272,353
ARTICLE SORTING SYSTEM
Karl T. Wilder, Randolph Township, N.J., assignor to ECD Industries, Mountainside, N.J., a partnership
Filed Jan. 2, 1964, Ser. No. 335,172
24 Claims. (Cl. 214—11)



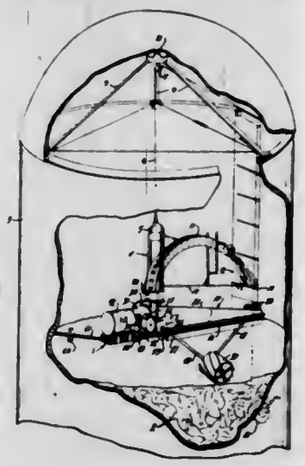
1. In an article sorting system having a plurality of successive article discharge stations; means for conveying articles successively to said stations; and selectively operable discharging means at each station: one selection means for selecting any one of a number of said discharge stations; control means for effecting operation of a station's discharging means when an article is at the station selected for that article's discharge; said control means including means, responsive to repeated selection of the same given discharge station for different given articles before the first of said given articles has been discharged at said given station, for causing the discharge means of said given station to operate only when said given articles are at said given station; said control means comprising a plurality of control devices for each discharge station, each of said control devices being adjustable to a number of different conditions including a discharge-effecting condition; said control means further including means, operable in response to operation of said selection means to select a station for an article's discharge, for causing adjustment of at least one of the control devices for that station before said last-mentioned article has arrived at the first of said plurality of stations.

3,272,354
MEMORY APPARATUS
Walter G. Harrison, Westchester, Leo A. Gary, Chicago, and Allan C. Audet, Arlington Heights, Ill., assignors to The Spra-Con Company, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 210,699, July 18, 1962. This application June 3, 1965, Ser. No. 467,170
18 Claims. (Cl. 214—11)



1. In an apparatus for receiving a plurality of codes and for generating a plurality of individual electrical signals corresponding to said codes, said apparatus comprising a plurality of relatively movable code receiving means with each of said receiving means carrying a plurality of members adapted to selectively retain said codes, a first station and actuating means located at said station for transferring said codes to said members, means for moving coded receiving means to a second station, means at said second station for holding said receiving means and for reading said codes, said reading means comprising a plurality of individual elements adapted to initiate operation of electrical circuits for generating said signals, said elements being located in a position corresponding to the positions of said members carried by said receiving means whereby said elements generate said signals depending upon which of said receiving means has been actuated to carry a code, and means for releasing said receiving means at said second station to effect reading of said codes, said holding means being adapted to hold a plurality of said receiving means and operating to release said receiving means one at a time for reading of said codes.

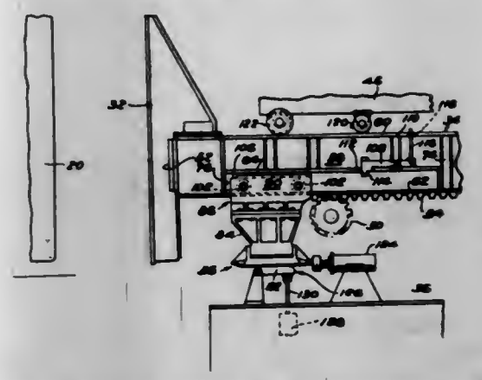
3,272,355
METHOD AND APPARATUS FOR UNLOADING SILAGE
Leo J. Loesch and Claude E. Loesch, both of Rte. 1, Kimball, Minn.
Filed Dec. 2, 1964, Ser. No. 418,370
15 Claims. (Cl. 214—17)



1. A silo unloader, comprising a frame; and silage collecting and discharging means journalled in said frame for rotation about the center of the silo, said means including a rotatable member extending radially outwardly from a location adjacent the center of the silo to a location adjacent the silo wall, angularly disposed blade means on said member, a hood substantially enclosing the upper portion of said rotatable member and having an outlet at its inner end, a motor, drive means interconnecting the motor and said rotatable member, said drive means having a drive ratio between the motor and the rotatable member in the range of 1:2 to 2:1 whereby said blade means rotates about the axis of the rotatable member with a peripheral speed in excess of 2000 feet per minute to dislodge the silage and convey the same to the center of the silo for discharge therefrom, and a discharge mechanism disposed at the inner end of the member and having an inlet connected to the outlet of said hood for receiving the dislodged silage and discharging it to the exterior of the silo.

8. A method of unloading silage from a silo, comprising the step of positioning an auger on the upper surface of the silage in a silo with the inner end of the auger located adjacent the center of the silo and the outer end of the auger located adjacent the wall of the silo, confining the upper portion of the auger with a hood, rotating the auger about the center of the silo, rotating the auger about its axis at a speed sufficient to provide the auger with a peripheral speed greater than 2000 feet per minute to dislodge the silage and propel the dislodged silage along the undersurface of the hood and convey the same to the center of the silo, and discharging the silage conveyed to the center of the silo to the exterior of said silo.

3,272,356
PUSHER MACHINE WITH MOVABLE RAM GIRDER SUPPORT SHOE
Frederick Lovetro, Glenshaw, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,453
11 Claims. (Cl. 214—23)



1. A pusher ram for pushing coke horizontally out of a coke oven chamber comprising:
- a support structure mounted on rails and arranged to be propelled along the pusher side of a coke oven battery having a plurality of laterally extending coke oven chambers,
- a ram girder mounted on said support structure for reciprocating movement relative thereto into and out of a coke oven chamber,
- a vertically extending ram head secured to the front end of said ram girder, said ram head arranged to contact said coke charge within said coke oven chamber and push said coke charge out of said coke oven chamber,
- drive means on said supporting structure for reciprocating said ram girder between a retracted position in which said ram head is located outside the coke oven chamber on the pusher side of the coke oven battery and an extended position in which the ram head extends beyond the coke oven chamber on the coke side and said ram girder is positioned within said coke oven chamber,
- a support shoe carried by said ram girder adjacent to said ram head, said support shoe arranged to slide on said coke oven chamber floor and support said ram

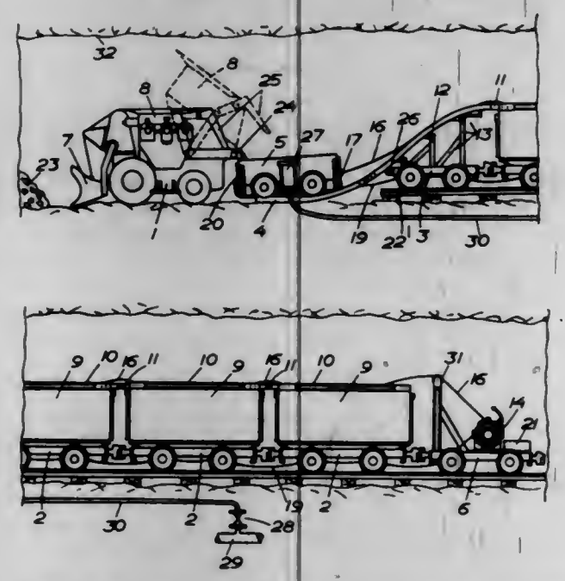
girder front end portion and said ram head within said coke oven chamber,

means slidably connecting said support shoe to said ram girder so that said support shoe is movable longitudinally relative to said ram girder a preselected distance,

lock means fixed to said support structure adjacent said drive means operable to fixedly secure said support shoe to said support structure adjacent said drive means and permit movement of said ram girder relative thereto, and

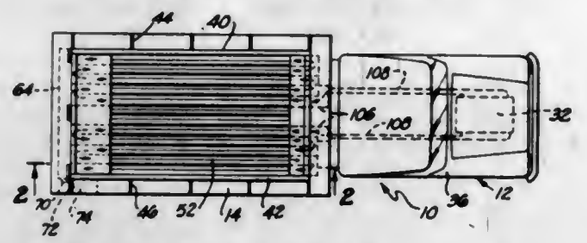
means on said ram girder operable to engage said support shoe to said ram girder at a preselected position on said ram girder for movement of said support shoe with said ram girder.

3,272,357
LOADING AND TRANSPORTATION EQUIPMENT
Letterio Freni, Montevecchio, Cagliari, Italy, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed July 8, 1964, Ser. No. 381,005
4 Claims. (Cl. 214—41)



1. A loading and transportation equipment comprising, a plurality of cars adapted to be filled with material, couplings connecting the cars to form a train, side walls on the cars, rail elements associated with said side walls to form a track portion for each car, connecting means for joining the track portions of adjacent cars to form a continuous track on the train, said connecting means comprising two first rail pieces guided for longitudinal movement a limited distance relative to the respective car side, two second rail pieces each constituting an extension of the first rail pieces and hingedly connected to said first rail pieces on horizontal hinge axes, and said second rail pieces of adjacent cars forming together a hinge with a vertical axis, a track ramp composed of a low horizontal track portion and an inclined track portion connecting the low track portion with the track portion on one of the cars to thereby form a continuous track from said low track portion to all of the connected track portions of the cars, a skip having wheels for movement along the connected tracks from a material-receiving position on the low track portion to a material-discharge position of any of the cars of the train, power means for moving the loaded skip along the connected track portions from said low material-receiving position to a discharge position of any of the cars of the train, and power-operated bottom-opening means on the skip adapted to enable material in the skip to be discharged into one of said cars of the train upon opening by said opening means.

3,272,358
TRUCK UNLOADING STRUCTURE
Fred Thompson, Anaheim, Calif., assignor of one-half to Donald J. Vlerstra
Filed Mar. 30, 1964, Ser. No. 355,612
3 Claims. (Cl. 214—83.2)



2. A vehicle, said vehicle comprising:

a frame, means connected to said frame to support said frame, means connected to said frame to propel and guide said frame and a body mounted on said frame;

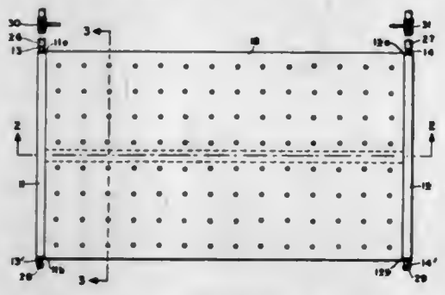
said body comprising side walls, a front wall, a rear wall and a floor to define a load space adapted for the carrying of granular materials;

said floor comprising a plurality of ridges and valleys in side by side relationship and extending from said front wall to said rear wall substantially parallel to said side walls and extending in side by side relationship from one side to the other side;

material flow control means positioned adjacent said floor to control the flow of granular materials into said valleys, said material flow control means comprising a plurality of ridges bridging one of said valleys and an angular member positioned on said ridges so as to restrict flow of material into said valley; and

a front roll and a rear roll mounted with respect to said floor adjacent the front and the rear, respectively, of said valleys, flexible units extending around said front roll and said rear roll and through said valleys so that upon rotation of said rolls said flexible units move through said valleys, and motor means to rotate at least one of said rolls.

3,272,359
METHOD FOR MATERIALS HANDLING
James H. Thomas, Green Township, and Robert V. Burt, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 28, 1964, Ser. No. 363,078
1 Claim. (Cl. 214—152)



The method of materials handling which comprises:

(A) positioning a thin, substantially imperforate web loosely on the upper surface of a pallet having air outlets on the upper and lower surfaces thereof, said outlets being separately controlled, and placing cargo to be shipped on said imperforate web, said cargo comprising a plurality of containers,

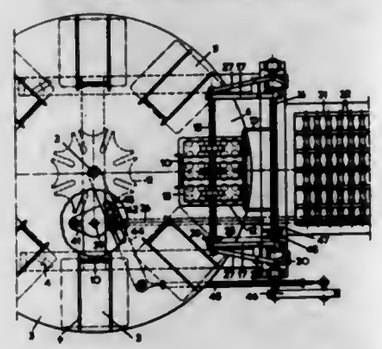
(B) connecting the lower air outlets to a source of pressurized air to thereby create an air cushion between the lower surface of the pallet and the floor,

(C) moving the loaded pallet to the required location at which the cargo is to be placed,

(D) connecting the upper air outlets to a source of pressurized air to thereby create an air cushion between the imperforate web underlying the cargo and the upper surface of the pallet while maintaining the air cushion between the lower surface of the pallet and the floor, and

(E) stripping the pallet from underneath the cargo while simultaneously maintaining said cargo in a substantially stationary position whereby said cargo is deposited at said location.

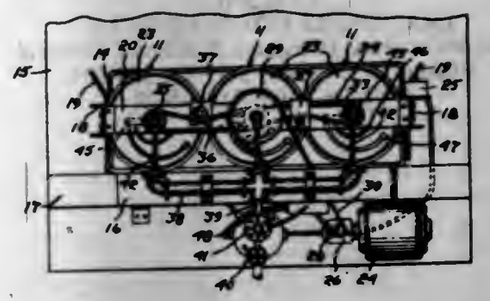
3,272,360
APPARATUS FOR FEEDING AN EGG-PROCESSING MACHINE
Jelle van der Schoot, Aalten, Netherlands, assignor to Van Katwijk's Industrieen N.V., Aalten, Netherlands
Filed Oct. 5, 1964, Ser. No. 401,304
8 Claims. (Cl. 214—309)



1. An apparatus for automatically feeding an egg-processing machine to which the eggs are supplied on plates each having a plurality of rows of egg seats comprising a plurality of conveyor belts corresponding with the number of rows of egg seats moved in mutually parallel relationship and each having a row of egg seats spaced along its length to convey the eggs to a processing station, the spacing between said conveyor belts exceeding that of the rows of egg seats on said plates, a turntable having a plurality of accommodating stations on each of which an egg plate may be placed, means restraining said plate from lateral displacement and from being lifted off said table, means for rotating said turntable intermittently so that each accommodating station will successively be halted at an emptying station for emptying a loaded egg plate, carrier means having vacuum-power operated suction cups mounted thereon in rows corresponding to the seats of said egg plates, means for moving said suction cups to a position over the egg plate at said emptying station to engage by vacuum-power the eggs carried by said plate and then moving said cups with eggs attached to a position over said conveyor belts to transfer the eggs to the seats on said belts, and means operable during this movement to spread the rows of suction cups with eggs attached to correspond with the spacing of said conveyor belts.

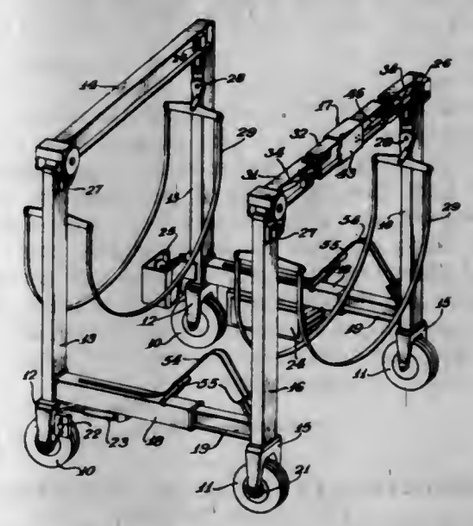
3,272,361
APPARATUS FOR USE IN FREEING BAKERY PRODUCTS FROM THEIR PANS
Leo G. Vogel, Falmouth Foreside, Maine, and Ralph J. Hursty, South Hamilton, Mass., assignors to V.H.K. Corporation, South Portland, Maine, a corporation of Maine
Filed Mar. 5, 1965, Ser. No. 437,399
17 Claims. (Cl. 214—310)

1. In apparatus for releasing a bakery product from the pan in which it was baked, a first support, air jet establishing means carried by said support, a source of air under pressure in communication with said jet establishing means, a second support, said second support being for the pan and positioning the pan with the seam defined by the junction of the side of the product and the side of the pan in the path of air delivered through said jet establishing means, and means connected to one of said supports and operable to turn it to effect relative movement between said jet establishing means and said pan for substantially the full length of said seam, the product



being sufficiently close to the jet establishing means and the pressure of the air delivered therethrough being such that the seam is opened on such relative movement and the product freed from the bottom of said pan at least when the full length of said seam has been exposed to the jet establishing means.

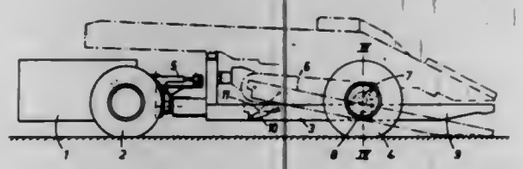
3,272,362
BOAT HOIST APPARATUS
Gerald P. Lamer and Elliott S. Burdick, Wausau, Wis., assignors to Drott Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 2, 1964, Ser. No. 408,195
5 Claims. (Cl. 214—396)



1. A boat hoist apparatus comprising a pair of spaced parallel frame side members, wheels supporting the side members for movement over the ground, a fixed gantry carried by the side members adjacent to one end thereof and including a pair of upright columns connected by a top beam, hoist devices carried by the gantry adjacent to the juncture of the columns and top beam, a pair of upright columns connected to the side members respectively adjacent to the other ends thereof, hoist devices carried by the last named columns at their upper ends, a pair of gate members hingedly connected to the upper ends of the last named columns respectively for swinging from an aligned closed position spanning the space between the columns to an open position, power means controllable from a remote point connected to the gate members to swing them, a sleeve slidably mounted on one of the gate members and slidable over the end of the other gate member to hold the gate members in aligned position, power means controllable from a remote point to

slide the sleeve, cooperating latch parts on the sleeve and said other gate member to latch the sleeve against movement, and power means controllable from a remote point to disengage the latch parts so that the sleeve can be slid.

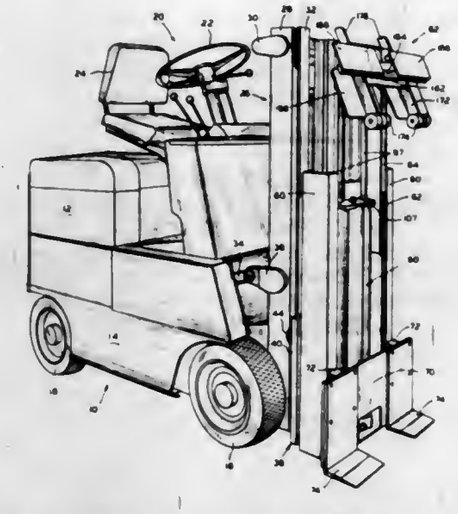
3,272,363
TRANSPORTATION VEHICLE
Åke Malmgren, Tvargatan 5, Kiruna, Sweden
Filed Oct. 29, 1963, Ser. No. 319,870
1 Claim. (Cl. 214—505)



In a vehicle especially for the transportation of wheeled loads in narrow passages comprising in combination, a power vehicle having a single pair of wheels, a trailer having likewise a single pair of wheels, and a controllable link connection for steerably coupling the trailer to the power vehicle, said trailer being provided with a U-shaped rigid frame member having its open end facing rearwardly and a movable frame member swingable about a transverse axis between a normal position on a level with the rigid frame member in which position it is surrounded on three of its sides by said rigid frame member so as to form a bottom therein and a rearwardly inclined position, said bottom member having a pair of rearwardly extending arms to act as a ramp for the wheeled load in the rearwardly swung position of the bottom member. bearings for the transverse shaft of the movable frame member as well as bearings for the wheel axles of the rigid frame member being provided at the free ends of the side portions of the rigid frame member, said transverse shaft of the movable frame member being positioned on a lower level than the axles of the wheels of the rigid frame member, said axles of the wheels of the rigid frame member being clamped in sleeves rigidly connected to the rigid frame member and carrying ball bearings for the wheels, and the shaft of the movable frame member being clamped by its ends into borings in the side portions of the rigid frame member, the movable frame member being pivotally mounted on said shaft.

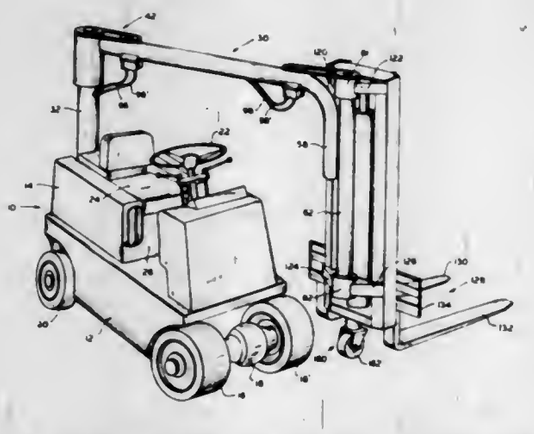
3,272,364
COMBINATION CLAMP-GRAB ATTACHMENT FOR LIFT TRUCK
Kenneth H. Mindrum, Battle Creek, and James H. Newhouse, East Leroy, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 13, 1963, Ser. No. 330,437
5 Claims. (Cl. 214—654)

2. An attachment for lift trucks having a first extensible mast assembly located adjacent one end thereof, comprising a second extensible mast assembly mounted for elevating movement in the first said assembly, first load engaging means mounted at the lower end of the second mast assembly, second load engaging means mounted near the upper end of said second mast assembly for movement vertically relative to the first load engaging means, and motor means mounted in said second mast assembly for raising and lowering the second load engaging means relative to the first load engaging means, means locating said second load engaging means normally in an inoperative position extending forwardly and diagonally relative to the first load engaging means, said second load engaging means being actuatable pivotally from said inoperative position to a first operative position in which said first and second load engaging means cooperate to clamp a load therebetween, and said second load engaging means being actuatable pivotally from said



inoperative position to a second operative position in which said second load engaging means is operable alone to lift a load.

3,272,365
INDUSTRIAL LIFT TRUCK
Daryl W. Stevens, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 3, 1963, Ser. No. 327,588
9 Claims. (Cl. 214—671)

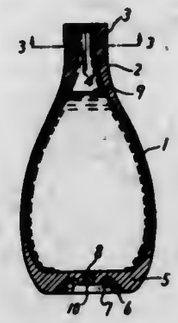


9. A front and side loading truck, comprising a vehicle, a column secured at its lower end to said vehicle and projecting upwardly to a point above said vehicle, a horizontally positioned boom connected to the upper end of said column for slewing from side to side above said vehicle, an upright mounted on said boom, a means for pivotally connecting said upright on a vertical axis to the forward end of said boom, and a supporting means below said upright and turnable on a vertical axis for alignment with the direction of movement of said upright.

3,272,366
CONTAINER
Hideho Ikeda, Osaka-fu, Japan, assignor to Juzo Neya, Nada-ku, Japan
Filed May 13, 1965, Ser. No. 455,409
9 Claims. (Cl. 215—2)

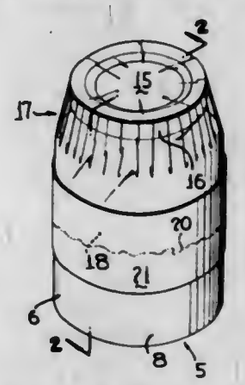
1. A hermetically sealed container comprising a main body and an elongated annular neck extending from said body, said neck having a relatively thick wall terminating in a sealed end portion and a peripheral groove

spaced from said sealed end portion to form a relatively thin wall portion, the last said wall portion being formed



with at least two relatively sharp outwardly directed corner portions.

3,272,367
SEALED PACKAGE
Florren E. Long, La Grange, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed July 1, 1964, Ser. No. 379,675
5 Claims. (Cl. 215—38)



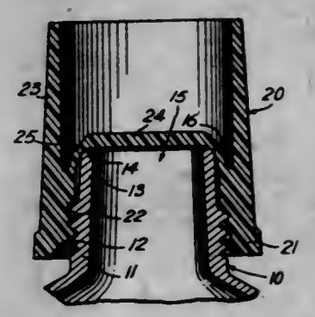
1. A tamper-proof sealed package comprising a container having a body terminating at one end portion in a bottom wall, a second end portion of said body having a neck defining an opening of said container, a closure, means removably securing said closure to said neck to close said opening, a sheet material seal drawn over said closure, said sheet material seal having a lower edge portion terminating in a selvage edge upwardly from said bottom wall and below said neck, a label wholly covering said selvage edge and a portion of said body adjacent said selvage edge, said label having a lower edge terminating above said bottom wall, and means located between said body and said label for positively securing said label to at least said adjacent body portion.

3,272,368
PLASTIC STOPPER WITH GUARANTEE STRIP
Paul S. Van Baarn, 8 Rue Bellevue, Monte Carlo, Monaco
Filed Oct. 20, 1964, Ser. No. 405,297
3 Claims. (Cl. 215—41)



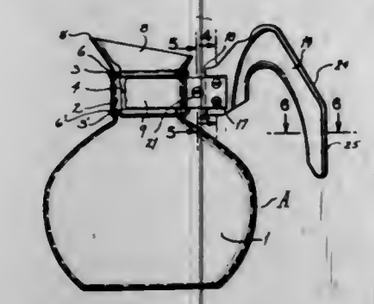
1. A plastic stopper device for releasably sealing the orifice in the neck of a container comprising a lower belt portion for securing said stopper device to said neck of the container, a captive lid portion having an outer skirt including bead means for sealing said orifice, at least one hinge strap integrally formed with said belt portion and said lid portion interconnecting same for movement of said lid portion about a hingle point between a sealing position parallel to said belt portion and an open position generally perpendicular thereto, a tear-off guarantee strip between said lower belt portion and said lid portion for precluding movement of said lid portion to said open position until said guarantee strip is torn off, and means on said belt portion and said lid portion for releasably holding said lid in its open position, said holding means comprising a pair of outer lugs extending outwardly from one of said portions on opposite sides of said hinge point, said lugs having projections extending from each lug toward the other forming a decreased spacing therebetween, said holding means further including an intermediate outer arm extending outwardly from the other of said portions at said hinge point, the outer end of said arm having a pair of ears extending sidewardly therefrom a distance greater than said decreased spacing, said arm being positioned to be engaged between said lugs when said lid is in its open position, said ears on said outer lugs and said projections on said intermediate outer arm resiliently engaging each other for opposing movement of said lid into its sealing position, said intermediate arm and said outer lugs being formed integrally with said belt portion, lid portion and guarantee tear strip of a resilient plastic material.

3,272,369
CONTAINER CLOSURE
Arvid Kjellsen Grimsley, Rockaway, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 7, 1964, Ser. No. 402,127
3 Claims. (Cl. 215—43)



1. A plastic screw cap for attachment to the cylindrical threaded neck of a container which is formed with a smooth cylindrical exterior side wall at its upper end which merges into a smooth transverse sealing lip wall to form a relatively sharp sealing corner extending 360° around the neck, said cap being made of a relatively soft, resilient plastic material and comprising a cylindrical wall having threads formed in its internal surfaces for engagement with the threads of the container neck, a transversely extending end wall disposed above said threads, and an upwardly and inwardly inclined resilient sealing wall thinner than and connecting said cylindrical wall and said transversely extending end wall, said sealing wall at its bottom end having an internal diameter greater than the external diameter of the upper end of the container neck and at its top end having an internal diameter smaller than the external diameter of the upper end of the container neck, said sealing wall being adapted to be engaged intermediate its top and bottom ends by the sealing corner of said container neck in a driving fit and to be indented under tension around the sealing corner of the neck and into sealing engagement with the cylindrical side wall of the container neck when the cap is seated on the container neck.

3,272,370
COMBINATION POURING LIP AND COLLAR CONSTRUCTION FOR LIQUID VESSELS
Walter A. Plagenberg, Berkeley, Mo., assignor to Star Coffee Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 20, 1964, Ser. No. 360,828
10 Claims. (Cl. 215—100)



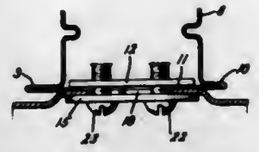
1. A liquid vessel construction comprising a vessel having a bowl and a neck, a collar detachably disposed about said neck, a pouring lip integral with said collar and projecting beyond the upper end of said neck, cooperating means provided on said collar and said neck for interengagement, said means comprising at least one laterally outwardly projecting bead provided on said neck and a complementary rib provided on said collar for embracingly receiving said bead, and a clamping member for retaining said collar securely upon said neck.

3,272,371
TUBE TRAY
Benjamin F. Weiner, North Bellmore, N.Y., assignor to Chase Instruments Corporation, Long Island City, N.Y., a corporation of New York
Filed Mar. 12, 1965, Ser. No. 439,249
6 Claims. (Cl. 217—26.5)



1. A tube tray consisting of a thin-walled body of substantially uniform thickness having an upper peripheral edge of rectangular configuration provided with a pair of elongated opposed substantially parallel sides and a pair of elongated opposed substantially parallel ends extending between said sides and being shorter than said sides, said body having a pair of opposed side walls extending down from said sides of said peripheral edge and having a bottom wall situated distant from said peripheral edge and extending between and connected to said side walls, said bottom wall having in a plane substantially parallel to and situated between said side walls a scalloped configuration providing said bottom wall with a row of upwardly directed elongated channels each extending between said side walls for receiving a tube therein, said channels having upwardly directed concave surfaces and downwardly directed convex surfaces, and said row of channels terminating at one end in an end channel connected directly to one of said ends of said peripheral edge of said body, said channels having, in a direction parallel to said sides of said peripheral edge, a substantially uniform width and said row of channels terminating distant from said one end of said peripheral edge in an end channel spaced from the other end of said peripheral edge by a distance approximately equal to one-half the width of each of said channels, and said bottom wall having between said other end of said peripheral edge of said body and the end channel adjacent thereto a bottom wall portion situated at an elevation higher than the lowermost portions of said channels.

3,272,372
BUSWAY PLUG ENCLOSURE WITH MOUNTING MEANS
Eric A. Ericson, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Filed May 18, 1964, Ser. No. 368,122
5 Claims. (Cl. 220—3.9)

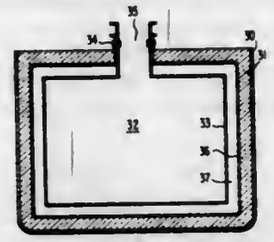


4. In combination:
(a) a busway having a housing provided with longitudinally extending flanges spaced apart to provide an opening extending longitudinally of said housing,
(b) an enclosure having a first wall adjacent to and facing the plane of said flanges and provided with a generally circular opening having opposing abutments extending radially toward each other to restrict said opening along a diameter thereof,
(c) said enclosure also having end walls provided with anti-turn tabs extending through the opening between said flanges,
(d) an oblong latch plate disposed outside said enclosure in parallel planar relationship with respect to said first wall and having a pair of spaced apart threaded holes extending therethrough perpendicular to the general plane thereof, the length of said latch plate being greater than the distance between said flanges and the width of said latch plate being less than the distance between said flanges,
(e) a washer disposed within said enclosure adjacent to said first wall and in parallel planar relationship therewith and having a pair of unthreaded holes in register with said threaded holes and having an aperture in the region between said unthreaded holes,
(f) a pair of screws passing through corresponding holes in said washer and through said opening in said first wall on opposite sides of said diameter through said abutments and each of said screws being threaded into a corresponding one of said threaded holes in said latch plate,
(g) said aperture in said washer providing for the insertion of a tool therethrough into endwise engagement and the endwise movement of said tool to move said latch plate through said opening between said flanges and to effect rotation of said washer and said latch plate between unlocked and locked limits defined by said abutments.

3,272,373
FLEXIBLE AND ELASTIC TANKS FOR TRANSPORTING LIQUIDS IN BULK
Jean Henri Alleaume, 121 Ave. du Marechal Foch, Saint-Cloud, Seine, France, and Denis Marcel Henri Hamel, 4 Ave. Victor Hugo, Saint-Maude, Seine, France
Filed Oct. 10, 1963, Ser. No. 315,329
Claims priority, application France, Oct. 10, 1962, 911,881
12 Claims. (Cl. 220—9)

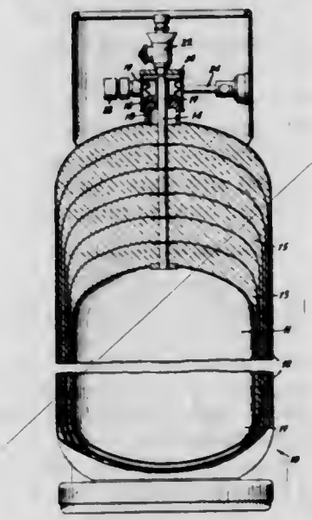
1. A device for the transport of liquids in bulk comprising an outer wall, a thermally insulating layer disposed adjacent the inner surface of said outer wall and a double-walled container disposed within said thermally insulating

layer, said double-walled container consisting of spaced main and second tanks, each of said tanks being made of



a homogeneous and intrinsically flexible and elastic material.

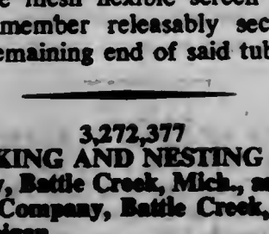
3,272,374
DOUBLE-WALLED INSULATED CONTAINER
Paul E. Loveday, Tonawanda, and John A. Paivanas, Williamsville, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Jan. 3, 1964, Ser. No. 335,646
8 Claims. (Cl. 220—14)



2. A low-boiling liquefied gas container comprising an inner vessel for holding the liquefied gas; an outer shell surrounding said inner vessel and spaced therefrom so as to form an intervening vacuum space; a compressible composite multi-layered insulation comprised of a low conductive component and a radiant heat barrier component disposed within such space; a fluid conduit between said inner vessel and said outer shell for transporting such liquefied gas from the container; said fluid conduit comprising the sole vertical support for said inner vessel; a pivotal swivel joint surrounding said fluid conduit adjacent the point where said conduit passes through the top of said outer shell; a flexible gas-tight enclosure surrounding said pivotal swivel joint for sealing the insulation space from the inner vessel; and a protective pressure housing surrounding said flexible gas-tight enclosure for sealing the inner vessel from the pressure of the ambient atmosphere.

3,272,375
APPARATUS FOR CRYOGENIC LIQUID STORAGE CONTAINERS
Alexander H. Holcombe, Clarence, and Stanley R. Koch, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 120,584, June 29, 1961. This application Mar. 3, 1965, Ser. No. 445,297
9 Claims. (Cl. 220—15)

1. In combination with a double-walled cryogenic liquid storage container having a horizontally disposed longitudinal axis, an inner liquid product holding vessel, an outer shell surrounding the inner vessel and spaced to form an insulation space therebetween, and means for filling, discharging, and venting said inner vessel, the improvement which comprises inner vessel support means for the sole support of said inner vessel from said outer shell consisting of a plurality of inner vessel re-entrant tubes positioned in transverse planes substantially perpendicular to the longitudinal axis of the container, each extending radially through the longitudinal axis of said inner vessel and having a first end and a second end each



gas tightly sealed from the interior of said inner vessel and joined to the walls of said inner vessel, said first end being joined to the lower portion of the wall of said inner vessel and said second end being joined to the upper portion of the wall of said inner vessel such that the interior of each re-entrant tube is in gas communication with the insulation space; and a plurality of transversely positioned load rods, each extending into one of the re-entrant tubes through the said first end of such tube and having one end connected to said outer shell and the other end connected to an inner wall of such corresponding re-entrant tube.

3,272,376
INSECT CONTAINER
John L. Tierney and Andrea L. Tierney, both of 1021 El Camino Ave., Stockton 7, Calif.
Filed Nov. 15, 1963, Ser. No. 324,094
2 Claims. (Cl. 220—19)



1. A device of the character described comprising, a cup-shaped imperforate bottom member, a solid weighted portion rigidly secured in said cup-shaped member, a tubular member having its lower portion permanently embedded in said weighted portion with said cup-shaped member disposed in closing relation to the lower end of said tubular member, said tubular member being formed of a fine mesh flexible screen material, and a cup-shaped lid member releasably secured in closing relation to the remaining end of said tubular member.

3,272,377
STACKING AND NESTING CASE
Walter H. Schray, Battle Creek, Mich., assignor to United Steel & Wire Company, Battle Creek, Mich., a corporation of Michigan
Filed Feb. 6, 1964, Ser. No. 342,886
5 Claims. (Cl. 220—19)

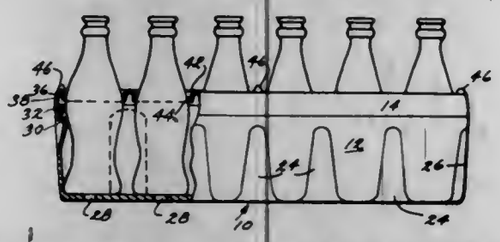
1. In a wire container of the character described, a lower bottom ring, an upper bottom ring, each of said rings being substantially square in conformation, pins connecting together two opposite sides of said rings,

upper rings, supporting struts connecting the upper bottom ring to the upper rings on one pair of opposite sides of the case, supporting struts connecting the lower bottom ring to the upper rings on the other pair of opposite sides of the case, a pair of slidable support members, said members being hinged together at their innermost



extremities located within the case, the outermost extremities of said members being positioned beyond said pins and projecting beyond said bottom rings when in flat position, said members being adapted to assume a position at an angle to one another less than 180 degrees whereupon the outer extremities of the support members are drawn inwardly between the lower rings.

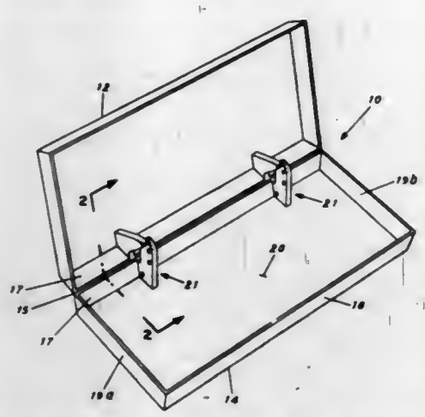
3,272,378
THERMOFORMED BOTTLE CASE
Walter O. Weber, Newark, Del., assignor, by mesne assignments, to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Sept. 18, 1964, Ser. No. 397,478
11 Claims. (Cl. 220—21)



1. A bottle case comprising a one-piece bottom portion including a bottom wall peripherally surrounded by relatively high upstanding side walls joined thereto, means for positioning bottles in the case, said positioning means comprising projections integrally extending from said bottom wall and said side walls and a one-piece top portion including a top wall and a relatively short depending skirt peripherally joined thereto, means defining a plurality of openings through said top wall arranged to peripherally engage bottles received in the case, means on said skirt adjacent the lower extent thereof and means on said side walls adjacent the upper extent thereof for joining said bottom and top portions to one another, said bottom and top portions are each essentially composed of foamed thermoplastic sheet material having a smooth, substantially moisture impervious exterior skin of the same material integral therewith.

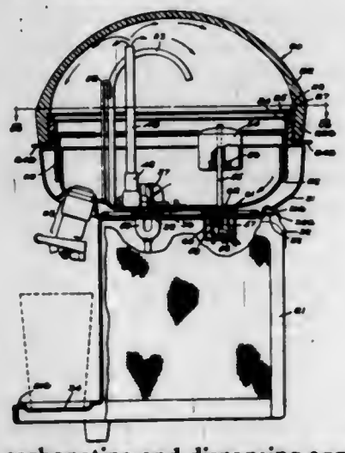
3,272,379
MULTIPOSITION MOLDED PLASTIC CONTAINER
Charles E. Driza, Belleville, N.J., and Warren L. Price, Woodhaven, N.Y., assignors to Chevron Research Company, a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,298
3 Claims. (Cl. 220—31)

1. An integrally molded plastic container comprising a body section, a cover section adapted to overlay the body section, said body and said cover sections each having front, rear, side and broad walls, means for hingedly attaching said sections to each other with their rear walls in substantial edge-to-edge abutting relationship, and a pair of fastening elements adjacent to said hinge means for locking said body and cover sections relative to each other, each of said fastening elements including first and second elements formed integrally with the container, said first element having a protrusion at an end remote from its forming plane with one of said sections in sliding



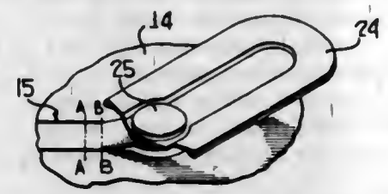
contact with said second element, said second element having at least two shallow openings formed therein for engagement with said protrusion, each opening being located a distance from said hinge means equal to the distance from the protrusion to the hinge means to serially engage said protrusion and place the body and cover sections in a predetermined locking relationship.

3,272,380
BEVERAGE CARBONATING AND DISPENSING APPARATUS
William H. Jacobs, Brookline, Edwin H. Nahikian, Wayland, and Alfred Armstrong, Norwood, Mass., assignors to Product R & D, Incorporated, Waltham, Mass., a corporation of Massachusetts
Original application Oct. 5, 1961, Ser. No. 146,063. Divided and this application Oct. 21, 1964, Ser. No. 416,666
4 Claims. (Cl. 220—39)



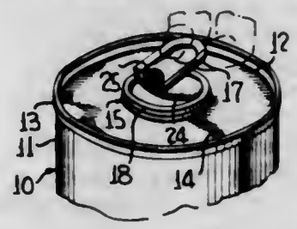
1. Beverage carbonating and dispensing apparatus comprising
a bowl having a circular side wall,
an externally threaded ring surrounding and rotatable with respect to said side wall,
a projection interconnecting the ring and the bowl limiting the upward movement of the ring on said bowl,
a cover overlying said bowl and having an internally threaded rib adapted to be screwed onto the external threads on said ring, said cover being completely removable from said ring and bowl,
and a gasket forming a seal between the cover and bowl when the cover is screwed tightly onto the ring with the ring in its uppermost position on the bowl.

3,272,381
CAN END FOR EASY OPENING BEVERAGE CANS
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 25, 1964, Ser. No. 354,663
10 Claims. (Cl. 220—54)



1. A can end of the easy opening type particularly adapted for the dispensing of a product which may be under gaseous pressure, said can end including an end panel having a portion defined by a weakening line and being removable to define a dispensing opening, said removable portion having a starting end defined by a starting weakening line portion along which said end panel is initially ruptured in the removal of said removable portion, said weakening line including other portions extending from said starting weakening line portion and including parts of maximum resistance whereby when said end panel is initially ruptured and uncontrolled continued rupture of said end panel along said weakening line due to gaseous pressure on said removable portion occurs said parts of maximum resistance will resist and stop the uncontrolled rupture.

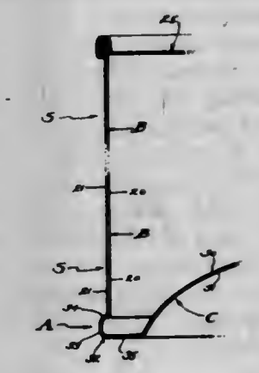
3,272,382
EASY OPENING CONTAINER
Frederick J. Stec, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 14, 1964, Ser. No. 403,860
7 Claims. (Cl. 220—54)



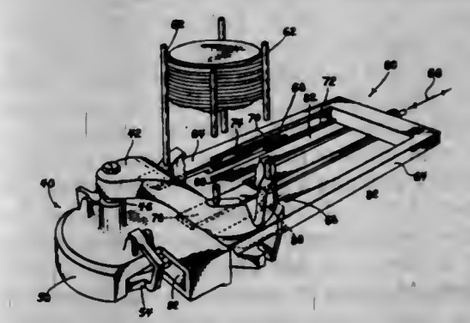
1. An easy opening device for containers comprising an insert receivable in a container opening for facilitating the dispensing of the contents thereof, said insert being formed of a resilient material and including a first plug adapted to be snapped into an opening for closing the opening, said first plug having a transverse wall including a removable tear strip, a second plug projecting from said tear strip, and a pull tab secured to said tear strip by said second plug for facilitating the removal of said tear strip.

3,272,383
ONE-PIECE EXTRUDED CONTAINER FOR CANNING
Leo M. Harvey, Los Angeles, Calif., assignor to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California
Continuation of application Ser. No. 296,630, July 22, 1963. This application July 8, 1965, Ser. No. 473,896
1 Claim. (Cl. 220—66)

An article of manufacture comprising a seamless, cylindrical container of circular cross section having integral side and bottom walls of uniform thickness; and being formed by the bottom wall and a top end, the bottom wall being formed with a central concave shape as viewed externally from the bottom end thereof to provide added strength for withstanding internal pressures, the central concave shape being surrounded by a flat annular bottom surface perpendicular to the longitudinal centerline of the container and extending outward at least to approximately the plane of the side wall; a top secured to the side wall and closing off the top end of the container, the top and the side wall forming a bead adjacent the top end of the container and extending completely around the top end, the bead projecting radially outwardly from the side wall for a predetermined distance relative thereto and terminating in an annular flat surface parallel to the longitudinal axis of the container; a chine formed at the juncture of the side and bottom walls, extending around the bottom end, and projecting radially outwardly from the side wall the predetermined distance whereby the bead and chine have equal outer diameters, the chine also terminating in an annular flat surface parallel to the longitudinal axis of the container so that the container may be rolled in a straight line across a flat surface and may be held by the chine in automatic handling apparatus during manufacturing and filling thereof.



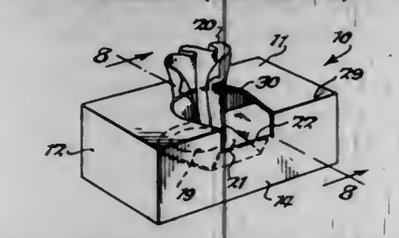
3,272,384
METHOD AND APPARATUS FOR SEPARATING STACKED TELESCOPED LIDS
Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Illinois, a corporation of Delaware
Filed Oct. 13, 1964, Ser. No. 403,583
6 Claims. (Cl. 221—1)



1. Apparatus for separating the bottommost lid from the penultimate lid in a vertical stack of telescoped flexible lids each having a top surface, and a downwardly extending side wall provided with stepped portions for stacking interference with juxtaposed lids and terminating in a lip portion, the lip portions of adjacent lids being spaced from one another by the stack height of said lids, comprising magazine means for supporting the stack of telescoped flexible lids and having an open end through which said lids are dispensed, and a reciprocating shuttle means mounted for movement relative to the open end of said magazine means to separate individual lids from said

stack of lids, said reciprocating shuttle means being movable from a retracted to a dispensing position and including means for supporting said stack of lids during part of the movement from its retracted to its dispensing position, means for imposing a progressively increasing separating force between the bottommost and penultimate lids during the movement of said shuttle means to its dispensing position and while said stack of lids is held by said supporting means to initially separate at least portions of the bottommost and penultimate lids from each other, means for engaging and moving generally diametrically opposed portions of the bottommost lid toward each other during the application of the progressively increasing separating force until the generally diametrically opposed portions of the bottommost lid are spaced from the penultimate lid, and means for entering the spaces established between the bottommost and penultimate lids as said shuttle means approaches the dispensing position to engage the penultimate lid beneath its lip portion for supporting said stack of lids and to enable movement of the bottommost lid away from said stack of lids, the supporting means of said shuttle means terminating short of said last mentioned means to enable the bottommost lid to be positively stripped from the stack of lids as the shuttle means reaches its dispensing position.

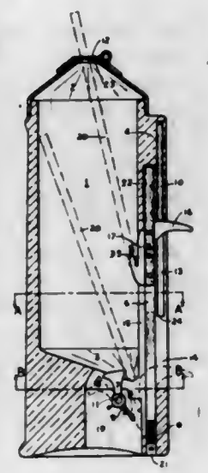
3,272,385
DISPENSER BOX
Cecil H. Watkins, Toronto, Ontario, Canada, assignor to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada
Filed Apr. 12, 1965, Ser. No. 447,364
4 Claims. (Cl. 221—48)



1. A dispenser box for stacked interfolded sheets of paper and the like, comprising a rectangular box having top, bottom, end, front and rear walls, an endless line of severance in said top wall defining a manually removable flap, the opening left in said top wall upon removal of said flap being a constricting passage for removal of successive sheets one by one and pop-up of succeeding sheets, a score line in said front wall spaced from the line of juncture between said front and top walls, and a second line of severance extending upwardly from opposite ends of said score line in said front wall and through a path in said top wall encompassing and spaced from said endless line of severance, said second line of severance defining a manually freeable valve flap hingedly connected to said front wall by said score line and being adapted, when freed, to overlie the uppermost sheet of the stack of sheets in said box whereby said opening follows the level of sheets in said box as said sheets are dispensed.

3,272,386
SANITARY SIPPING-STRAW DISPENSER HAVING A RECIPROCATING EJECTOR
Leonard Atlee Wills, Arlington County, Va. (P.O. Box 7354, Benjamin Franklin Station, Washington, D.C. 20044)
Filed July 6, 1964, Ser. No. 380,530
2 Claims. (Cl. 221—254)

1. A straw dispenser comprising a straw receptacle and a straw ejector, said straw receptacle having a top wall, a bottom wall and sidewall, said top wall having a dispensing aperture therein, said bottom wall having an upper article funneling surface and an opening in the funneling surface, said funneling surface adapted to permit the bottom ends of straws to flow to said opening by gravity, said receptacle sidewall having a thickened vertical portion wherein is integrally formed a straight vertical cavity, a straight slender slot is integrally formed in said thickened sidewall portion and extends laterally from said vertical cavity to the interior surface of said receptacle, said slot connects with said receptacle bottom wall funneling surface opening, an exterior opening integrally formed in said receptacle thickened sidewall portion and extends from the said vertical cavity to the exterior receptacle surface, a portion of said straw ejector



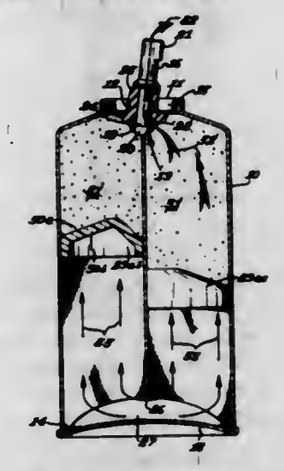
is positioned in the said exterior opening and is slidable therein and adapted for use as an operating handle, said straw ejector is movably mounted in said straight vertical cavity for vertical reciprocation from a lower position to an upper position, a portion of said ejector being slidably engaged in the said straight vertical cavity, and said ejector having a portion thereof which passes through said funneling surface opening and is movable in the said slender sidewall slot during movement of the ejector from the lower position, said ejector is adapted to engage the bottom end of a streaw whereas the raising of said ejector through the funneling surface opening may engage and elevate a straw into said dispensing aperture.

3,272,387
SELECTIVE DISPENSER
Morris H. Katz and Rubin Weiner, St. Louis Park, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 401,908
7 Claims. (Cl. 222—48)

1. A dispenser capable of selectively dispensing one of a plurality of segregated, flowable substances contained therein through a single dispensing nozzle which comprises:

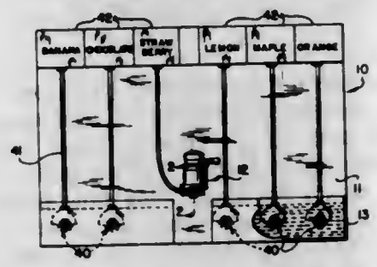
(1) a container body
  a. defining a fixed enclosed volume
  b. having a longitudinal axis, and
  c. an aperture positioned about said longitudinal axis
(2) a tubular-walled valve stem
  a. axially mounted in said aperture
  b. by means of a resilient sealing member, said sealing member
    (i) allowing tilting of said stem about at least one axis of rotation perpendicular to said longitudinal axis, and
    (ii) being in sealing contact with said aperture and said valve stem,

  c. said valve stem having a base portion including
    (i) a terminal surface defined by the locus of points equidistant from said axis of rotation, and
    (ii) two openings penetrating said tubular-walled valve stem near said base portion,
(3) an axially positioned divider in said container body
  a. dividing said enclosed volume into at least two compartments, said compartments positioned on opposite sides of said axis of rotation,
  b. said divider being in sealing contact with
    (i) said terminal surface,



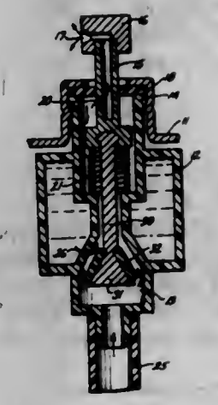
    (ii) said resilient sealing member, and
    (iii) said container body,
(4) said openings being positioned on opposite sides of said divider,
(5) a flowable substance in said compartments and means for maintaining said substance under pressure greater than atmospheric and in contact with said terminal surface
  a. including compressed gas and pistons having a leading and trailing surface, said leading surface being in contact with said substance, and said trailing surface being in contact with said compressed gas.

3,272,388
DISPENSING METHOD AND APPARATUS
Max Earl Whitmore, Chagrin Falls, Ohio (1373, Suite A, Bluff Ave., Columbus, Ohio 43212)
Filed Nov. 5, 1964, Ser. No. 409,232
9 Claims. (Cl. 222—129.1)



1. An apparatus for flavoring and dispensing an edible, congealed, fluid material comprising reservoir means for maintaining a supply of the congealed material under pressure; a dispensing nozzle means adjacent the reservoir means and having a discharge portion; means defining a passageway for providing fluid communication between the reservoir means and the discharge portion of the nozzle means; a valve disposed in the passageway operable to control the flow of the congealed material therethrough; supply means for maintaining a supply of separated flavoring fluids; a plurality of grid structures connected to the supply means by flexible fluid conduits, each of the grid structures being selectively positionable in the passageway and operable to inject a preselected flavoring fluid into the congealed material as the latter flows through the grid structure.

3,272,389
AEROSOL DISPENSER FOR PLURAL FLUIDS
John Frangos, Brooklyn, N.Y., assignor to Revlon, Inc., New York, N.Y.
Filed Dec. 24, 1963, Ser. No. 333,122
8 Claims. (Cl. 222—136)

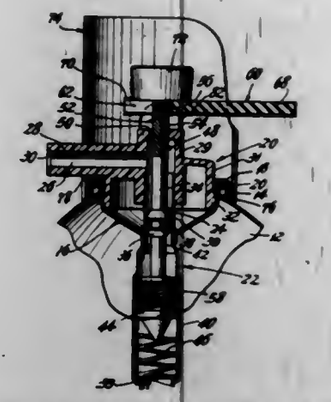


3. In a pressure container and dispenser of the character described for containing a plurality of different fluid materials separately and unmixed within said container and for simultaneously dispensing and mixing said materials under the action of a propellant in said container, the combination which comprises dispensing valve means at the top of said container for emission of material therefrom under the action of said propellant when said valve means is opened, a separate compartment within said container and adjacent said valve means for containing one of said materials and maintaining it separate from the other of said materials in said container, a mixing chamber in flow communication with said dispensing valve means, an outlet from said separate compartment into said mixing chamber, an eduction tube in said container having one end in flow communication with said mixing chamber and the opposite end disposed adjacent the bottom of said container for conducting fluid therefrom into said mixing chamber for admixture therein with material flowing through said outlet from said separate compartment, additional valve means for opening and closing said outlet from said separate compartment into said mixing chamber, and operating means for simultaneously opening and closing both said dispensing valve means and said additional valve means.

3,272,390
DISPENSING APPARATUS FOR FIRE EXTINGUISHERS
Laurence G. Horwitt, New Haven, Conn., assignor to Casco Products Corporation, Bridgeport, Conn., a corporation of Connecticut
Filed Nov. 13, 1964, Ser. No. 411,045
18 Claims. (Cl. 222—153)

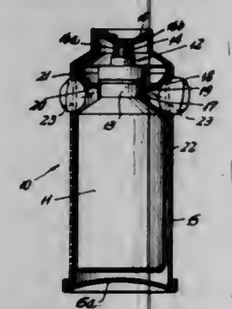
1. In a pressure fluid dispenser comprising a container having a fluid under pressure therein, a dispensing device mounted on the container and including a stationary discharge head defining a discharge passageway, a manually operable member movable in the passageway between a sealing position therein and an open fluid-discharge position, said member including a finger engaging actuating portion projecting outwardly of the discharge head, and stationary guard means surrounding said discharge head and extending beyond said outwardly projecting portion

of said movable member to guard the latter against damage thereto and operation thereof when brought into engagement with a foreign object; the improvement comprising movable stop means positioned to be engageable with the outwardly projecting portion of said manually



operable member to prevent manual operation thereof to said discharge position, said stop means being movable from said engageable position and having means extending to the exterior of said guard means for manual engagement to move said stop means from said engageable position.

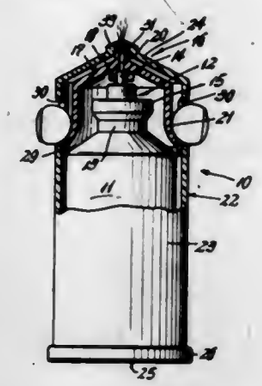
3,272,391
ACTUATOR FOR DISPENSING PACKAGE
Philip Meshberg, 15 Stoneleigh Road, Fairfield, Conn.
Filed Feb. 18, 1965, Ser. No. 433,644
17 Claims. (Cl. 222—162)



1. A dispensing package for materials under pressure comprising a container having a material under pressure therein; valve means mounted on said container for dispensing said material on the operation thereof, said valve means including a projecting stem portion longitudinally movable relative to said container for operating said valve means and having a passage therein for passing said material; and actuating means for said stem portion disposed substantially within the outline of said package and operable in a direction transverse to the path of relative movement of said stem portion and container for relatively moving the same, said actuating means being operated by the application of pressure thereagainst in the direction of said container and transverse to the path of movement of said stem portion.

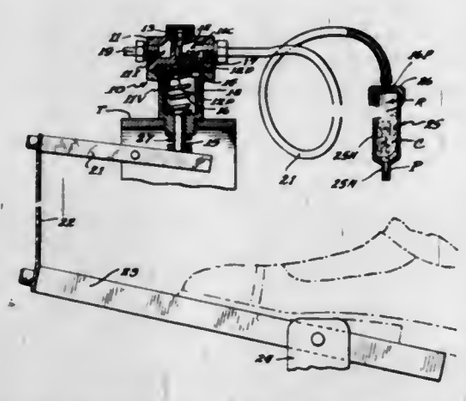
3,272,392
ACTUATOR AND CLOSURE FOR DISPENSING PACKAGE
Philip Meshberg, 15 Stoneleigh Road, Fairfield, Conn.
Filed May 3, 1965, Ser. No. 452,771
17 Claims. (Cl. 222—162)

1. A dispensing package for materials under pressure comprising a container having a material under pressure therein; valve means mounted on the container for dispensing said material on the operation thereof, said valve means including a projecting stem portion movable relative to said container for operating said valve means and having a passage therein for passing said material; and actuating means operable to move said stem portion relative to said container for operating said valve means, said actuating means comprising a part connected to said stem portion, said part having means therein cooperating with said passage in said stem portion for communicating



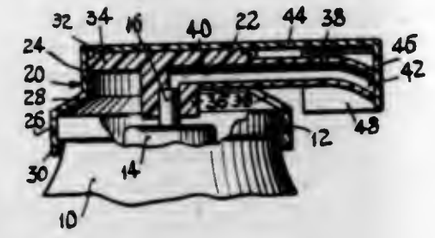
the latter outwardly of said dispensing package and being movable relative to said container on the application thereagainst of pressure applied from a position predeterminately located relative to said container in a direction substantially transverse to the axis of said stem portion for operating said valve means.

3,272,393
APPARATUS AND METHOD FOR PRECISION METERING AND DEPOSIT OF VISCOUS MATERIALS
John O. Roeser, 8611 Lincoln Ave., Morton Grove, Ill.
Filed Dec. 13, 1963, Ser. No. 330,484
9 Claims. (Cl. 222—179)



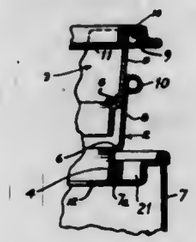
1. In an injector for one-handed precision metering and deposit of variable quantities of viscous material, the combination with an air pressure valve unit having an air inlet connected to a source of air under pressure, an outlet, and means for controlling flow of air under pressure from said air inlet to said air outlet; of a cartridge of a size and shape suitable for engagement and maneuver by hand and including a housing portion providing a reservoir for receiving a charge of viscous material and a valveless nozzle portion rigidly carried on said housing portion and providing an orifice discharge passage for said reservoir, means including an elongated flexible air supply tube having one end connected to said air outlet and having the other end connected in sealed relation to said housing portion for supplying air under pressure into a region of said reservoir remote from said nozzle portion to effect application of pressure on said charge, and treadle actuated mechanism connected to said controlling means for controlling the supply of air under pressure to said tube.

3,272,394
ACTUATOR CAP FOR SMALL FLUID DISPENSERS
Philip H. Sagarin, Bridgeport, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Oct. 7, 1964, Ser. No. 402,225
8 Claims. (Cl. 222—182)



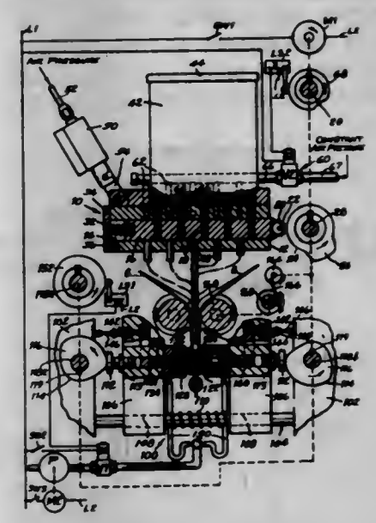
1. An actuator cap for a dispenser, comprising in combination:
(a) a depress button having a finger-engageable top surface, said button having a discharge spout projecting from one side, and said button being adapted for connection to the valve of the dispenser to actuate the same and effect a discharge of the dispenser contents,
(b) a stationary tubular cap body surrounding the depress button and arranged to provide access to the finger-engageable surface of the button, and
(c) manually removable means adapted to be discarded, comprising a cover piece fixedly carried by the cap body and overlying the button and the discharge spout of the latter to prevent free flow therefrom, said means including a laterally projecting finger tab having substantially the same configuration as the discharge spout and overlying the spout but being unattached thereto, said tab being free for movement upward and away from the spout for the purpose of removing the cover piece, said means further including frangible webs which join the cover piece and cap body together and which may be readily broken to release the cover piece upon applying a sufficiently strong upward removing force to the finger tab.

3,272,395
MIXING AND POURING ADAPTER FOR CANS
Noah Lawyer, 45 Lehigh Ave., Rochester, N.Y.
Filed July 23, 1965, Ser. No. 474,444
10 Claims. (Cl. 222—189)



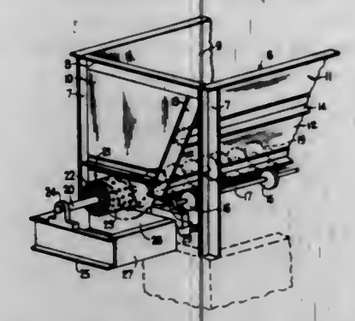
1. A mixing and pouring adapter for cans, comprising a tubular member formed of a single piece of sheet metal of substantially uniform thickness open at opposite ends and formed with an imperforate frusto-conical can engaging portion at one end, an imperforate frusto-conical outer end portion at the opposite end, and an intermediate substanially radial flange portion joining the inner end of said can engaging portion to the larger sized inner end of the outer end portion, said can engaging portion having the inner end of larger transverse dimension than the outer end and having a tapered wall portion extending between the inner and outer ends for engaging in a can opening of predetermined size with the outer smaller end of said can engaging portion extending through the opening in said can, said tapered wall engaging said can around the inner edge of the opening therein and the inner end of said can engaging portion having a slightly larger transverse dimension than the can opening so the can engaging portion may be wedged in the can through the opening therein with the outer end projecting outwardly from the can, said can engaging end portion being formed with an inwardly extending radial flange and a folded filter member having the marginal portions at opposite ends embracing opposite sides of said flange and extending transversely over a segment of the opening in said can engaging end portion.

3,272,396
METERING AND DISCHARGING APPARATUS
Albert H. Neville, Jr., Worcester, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Dec. 23, 1964, Ser. No. 420,551
4 Claims. (Cl. 222—194)



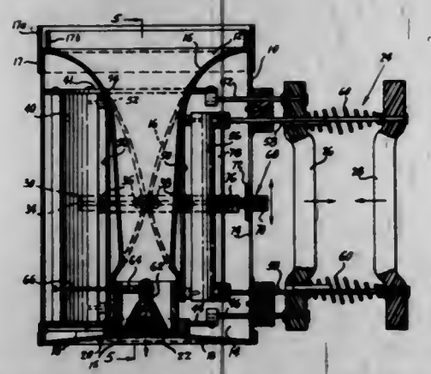
1. Apparatus for metering and discharging successive precisely controlled unit quantities of dry particulate material comprising a supporting means including a fixed lower portion and a relatively movable upper portion adjustably mounted in fixed relation to the fixed lower portion of said supporting means, a container for dry particulate material mounted for displacement with the relatively movable upper portion of said supporting means, at least one outlet for dry particulate material through the fixed lower portion of said supporting means, a metering member movably mounted between the fixed lower portion and the relatively movable upper portion of said supporting means adjustable in response to displacement of the relatively movable upper portion of said supporting means to vary the volume of at least one metering chamber within said metering member, said metering member being movable between a first position in which each metering chamber receives a predetermined quantity of dry particulate material from said container and a second position in which the same predetermined quantity of dry particulate material is discharged through each said outlet, the predetermined quantity of dry particulate material received in and discharged from each metering chamber being determined by the vertical adjustment of said container and said relatively movable upper portion of said supporting means relative to the fixed lower portion of said supporting means.

3,272,397
FEEDER OF NON-FLOWING MATERIAL
Sherman G. Bean, 151 E. Main St., Leipsic, Ohio
Filed June 20, 1963, Ser. No. 289,308
5 Claims. (Cl. 222—200)



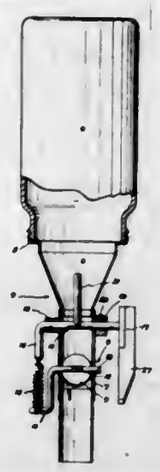
1. Dispensing apparatus for a material having a tendency to bridge comprising a hopper including a movable side panel, hinge means at an upper portion of said side panel and supported by said hopper for pivotally supporting said side panel, said hopper defining a long bottom opening, a screw conveyor extending longitudinally of said opening, a trough below and encompassing said screw conveyor, a rotatable cam supported outside said side panel by said hopper and contacting said side panel below said hinge to pivot said panel, and drive means for simultaneously driving said screw conveyor and said cam.

3,272,398
COFFEE DISPENSER
Richard W. Drosman, 234 N. 11th, Corvallis, Oreg.
Filed Oct. 15, 1964, Ser. No. 403,994
5 Claims. (Cl. 222—210)



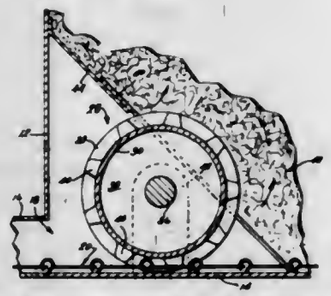
1. A dispenser for coffee or the like comprising, an upright cylindrical body having an open top and a bottom with an opening therein, an upright resilient funnel-shape liner having its upper end merging with the upper end of said body and having the lower end thereof within and spaced upwardly from said body bottom, a vertically disposed dispensing tube within said body adjacent the lower end thereof, said tube having the upper end connecting in communication with the lower end of said liner, a vertically movable plug normally closing the lower end of said tube, a handle projecting outwardly from said body, said handle including a grip member movable toward and away from said body, horizontally disposed roller means disposed within said body and spaced between said body and said liner and mounted in said body for movement into and out of squeezing engagement with the adjacent portion of the liner, and means connecting said roller means and said plug to said handle grip member actuable upon movement of said grip member toward said body to shift said roller into squeezing engagement with said liner and simultaneously move said plug to tube opening position.

3,272,399
DISPENSER FOR FLUENT MATERIALS
Walter Edward Dight, St. Ives, Sydney, New South Wales, Australia, assignor to Machine Made Sales Pty. Limited, North Sydney, New South Wales, Australia, a corporation
Filed Oct. 27, 1964, Ser. No. 406,793
Claims priority, application Australia, Nov. 12, 1963, 37,558/63
10 Claims. (Cl. 222—232)



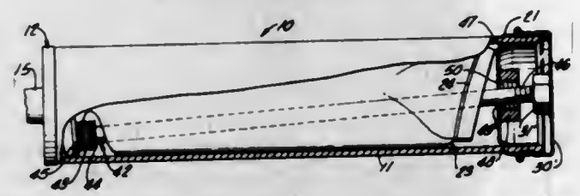
1. A dispenser for fluent materials comprising a container, a material outlet neck extending downwardly from said container, a butterfly valve in said neck comprising a valve vane mounted so as to rotate about an axis piercing said neck, the neck being such that the boundary of the neck cross-section taken on the transverse cross-sectional plane in which said axis lies does not include appreciable portions perpendicular to the axis, such that the width of said cross-section, when measured in directions parallel to said axis, progressively decreases as the distance from the axis increases, and such that the cross-section of the neck is constant throughout the portion of the neck surrounding the valve, and the valve vane having the shape of an oblique section through said neck portion taken on an oblique sectional plane in which said axis lies, and valve operating means adapted to shift said butterfly valve rapidly from one closed position through an intermediate open position to another closed position, said operating means being snap-acting and including an operating spring which may be stretched and at the same time shifted until its line of action crosses a dead center position whereon the spring contracts to move the valve.

3,272,400
FEED SAVER FOR AUTOMATIC FEED APPARATUS
Robert L. Van Huis, Zeeland, Mich., assignor to Big Dutchman, Inc., Zeeland, Mich., a corporation of Michigan
Filed Jan. 18, 1965, Ser. No. 426,154
8 Claims. (Cl. 222—318)



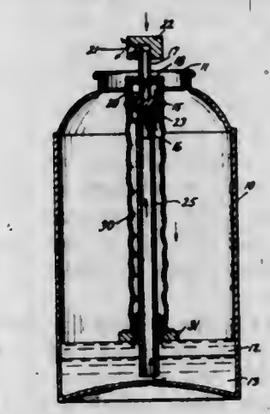
1. Apparatus for returning feed back into the inlet of a bulk feed hopper from a trough in which a conveyor member travels to transfer feed from the hopper throughout the length of the trough, said apparatus comprising: a cylindrical compacting element; means for mounting said element within said hopper at its said inlet; said means mounting said element for rotation about its longitudinal axis at a predetermined height above said conveyor member; means extending outwardly beyond the surface of said compacting element for engaging said traveling conveyor member and driving said element in a rotary manner; said element rolling against and compacting feed above said predetermined height which is being returned to said hopper in said trough; said extending means moving the compacted feed upward into said hopper as it rotates; and means effectively shielding the upper and rear portions of said compacting element and extending means to prevent feed in the hopper from returning to the said trough upstream of said hopper inlet.

3,272,401
VISCOUS FLUID EXTRUSION APPARATUS
Robert H. Fendler, 1805 Lucretia Ave., and Alec Mitchel, 1447 Allenford, both of Los Angeles, Calif.
Filed Dec. 23, 1964, Ser. No. 420,658
6 Claims. (Cl. 222—326)



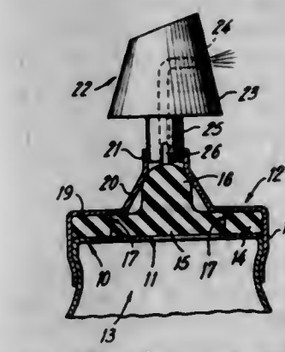
1. A fluid dispenser comprising: an elongated, hollow, rigid body; a disc fixed to and enclosing a forward end of said body, said disc having an opening therethrough; a plunger in the rearward end of said body; a plunger rod; and a cap for the rearward end of said body, one end of said plunger rod being adapted for connection with said plunger, said cap being adapted for connection with the other end of said plunger rod and with the said rearward end of said body, said plunger having an opening therethrough, said plunger rod being located at one side of said bag, inside said body and through said plunger hole.

3,272,402
AEROSOL DISPENSING APPARATUS
John Frangos, Brooklyn, N.Y., assignor to Revlon, Inc., New York, N.Y.
Filed Dec. 24, 1963, Ser. No. 333,147
7 Claims. (Cl. 222—394)



1. In a pressure container and dispenser of the character described adapted to contain a plurality of immiscible liquids forming separate liquid layers and to dispense a mixture of materials from all said layers simultaneously under the action of a propellant in said container, the combination which comprises dispensing valve means in said container for emitting materials contained therein under the action of said propellant upon opening of said valve means, an eduction tube disposed in said container and having one end in flow communication with said valve means and the opposite end disposed adjacent the bottom of said container for conducting material in the lowest of said plurality of layers from adjacent the bottom of said container to said valve means, at least one supplementary eduction tube having one end in flow communication with said valve means and the opposite end disposed within one of said immiscible layers other than said lowest layer of material in said container, and float means on said supplementary eduction tube at the end thereof opposite to said valve means and adapted for floating on the one of said immiscible layers to be dispensed through said supplementary eduction tube.

3,272,403
VALVE FOR PRESSURE CONTAINER
Claude Livingston Alexander, New Hope, Pa., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 19, 1964, Ser. No. 404,639
6 Claims. (Cl. 222—394)

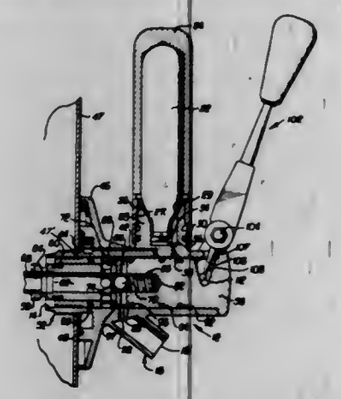


1. A dispensing valve for a pressure container comprising an annular transverse wall means surrounding an opening leading to the interior of said container, an elastomeric valve element bridging said opening with its peripheral margin resting upon said wall means, said valve element having a solid central portion and a plurality of slitted perforations disposed between said peripheral margin and central portion, said perforations being normally closed because of the inherent resiliency of said valve element when in its normal relaxed position but adapted to be flexed open when said central portion is depressed, and a retaining-seating member extending upwardly and inwardly from said wall means to sealingly anchor said valve element in said bridging position, said retaining-seating member including a central annular portion disposed over and sealingly engaging said central portion of said valve element to provide a valve seat therefor, and an actuator including a hollow depending stem slidably disposed in said annular portion for depressing said valve element.

3,272,404
FLUID DISPENSER
Spencer E. Graves, Tustin, Calif., and Fred A. Robirds, Jr., 14361 Clarissa Lane, Tustin, Calif.; said Graves assignor to said Robirds
Filed Nov. 10, 1964, Ser. No. 410,199
12 Claims. (Cl. 222—396)

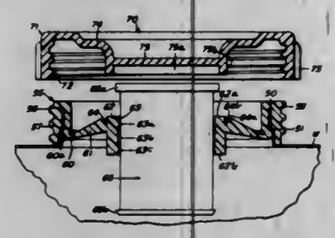
1. A fluid dispenser comprising a container, a valve head having a longitudinal bore and a gas inlet, a gas outlet, a fluid inlet, a fluid outlet, and means for removably attaching said valve head to said container so as to provide an air-tight seal between the container and

the gas outlet and between the container and the fluid inlet, a slidable valve which fits in and is movable within the valve head bore to an open position whereby substantially simultaneously passageways are defined between the gas valve and the valve head through which the gas inlet can communicate with the gas outlet and the fluid inlet can communicate with the fluid outlet and whereby said slidable valve is movable to a closed position where said passageways permitting communication between the



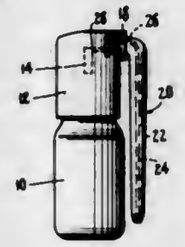
gas inlet and the gas outlet and between the fluid inlet and the fluid outlet are closed substantially simultaneously, handle means connected to said valve head and extending into said bore so as to be able to slidably move the valve between said closed and open positions, and a safety valve biased in position within said valve which allows communication between the fluid inlet and fluid outlet under a predetermined amount of excess pressure through the fluid inlet.

3,272,405
CLOSURE FOR CONTAINER
George W. Todd, Bronxville, N.Y., and Edgar B. Edwards, Warren, Pa., assignors to Techs Incorporated, Warren, Pa., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,862
21 Claims. (Cl. 222—525)



1. A container partly defined by a wall having an opening therein; a resilient sealing element for said opening having an annular outer wall portion received by and attached to said wall at the opening, a relatively thin and flexible annular portion joining with the annular wall portion and initially inwardly thereof and an initially upwardly extending central portion increasing in relative thickness inwardly from the relatively thin and flexible annular portion and having an annular V-shaped groove portion extending inwardly from the top of the central portion and a portion within the outline of the annular V-shaped groove portion adapted for forming an aperture therethrough, said annular wall portion having threads thereon for receiving a closing and operating member for the sealing element; and a closing and operating member for the sealing element having a threaded portion for reception by the threaded portion of the sealing element and a central portion for abutment against the top of the upwardly extending central portion of the sealing element so as to push it downwardly as the closing and operating member is threaded to the sealing element whereby the relatively thin and flexible annular portion and the central portion is flexed into a generally horizontal position with the relatively thin and flexible portion flexed into sealing engagement with the adjacent portion of the upstanding flange and whereupon the annular V-shaped groove portion closes to form a solid rigid portion with the central portion of the sealing element as that portion flexes into the generally horizontal extending position.

3,272,406
DIRECTIONAL APPLICATOR FOR HAND-HELD DISPENSERS
Herbert G. Lehmann, Easton, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,968
4 Claims. (Cl. 222—531)



1. A dispensing device constituting a directional actuator for use with small hand-held dispensers of the type having a container provided with an upstanding hollow depressible valve stem through which the substance to be dispensed passes, said actuator comprising in combination:

(a) a cap having means engageable with said valve stem to mount the cap thereon whereby depressing movement of the cap depresses the stem,

(b) said cap having a hollow portion providing a discharge passage and having on said portion a cylindrical bearing surface disposed so that its axis extends at a right angle to the axis of the valve stem, said bearing surface encircling the discharge passage,

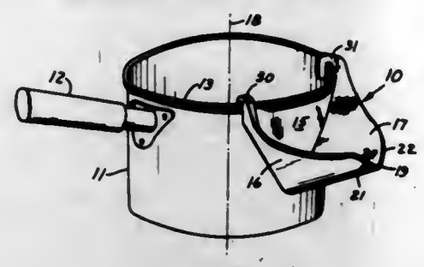
(c) an L-shaped spout having short and long hollow leg portions and discharge passages therein, communicating with each other,

(d) said short leg portion of the spout telescopically fitting the hollow portion of the cap and having a cylindrical bearing surface sealingly engaging the cylindrical bearing surface of the cap whereby the spout is mounted on the cap for pivotal movement of the long leg portion in a circular path which is spaced from and parallel to the axis of the valve stem, thereby to enable the long leg portion to be disposed either alongside the container or else in positions extending away from the container, and

(e) cooperable valve means on the cap and short leg portion of the spout, shutting off communication between said discharge passages of the cap and the spout when the long leg portion is substantially alongside the said container and connecting said passages for substantially all other positions of the long leg portion,

(f) said valve means comprising flat abutting surfaces of the hollow cap portion and end of the short leg, extending around the discharge passages thereof and disposed in a plane which is transverse to the axes of said discharge passages of the cap and short leg portion, and parallel to the said circular path of travel of the long leg portion, and further so that they are spaced from and parallel to the axis of the valve stem when the cap is carried by the latter.

3,272,407
FLEXIBLE SNAP-ON SPOUT FOR CURVED RIM CONTAINERS
Jack B. Ottestad, 1442 Muirlands Drive, La Jolla, Calif.
Filed Aug. 6, 1964, Ser. No. 387,903
3 Claims. (Cl. 222—569)



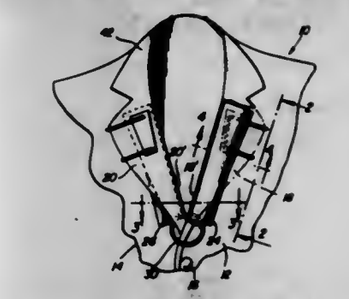
1. A spout for a container adapted to be attached to and detached from a curved rim thereof, said spout comprising: a generally trihedral structure including a stiffly flexible backing wall member having an upper edge and a lower extreme; a pair of trough members, said trough members intersecting the backing wall member, and intersecting each other along an axial plane which lies normal to the backing wall member, the three members forming an open-topped structure, the trough members intersecting to form a trough bottom which extends away from the backing member along an incline which rises from its intersection with the backing wall member and terminates at an elevation beneath the upper edge; a pair of hook members on the opposite side of the backing wall member from the trough members, each of said hook members including a binding surface and an elevation-defining surface, the binding surface being spaced from and facing toward the backing wall member beneath the elevation-defining surface, the elevation-defining surfaces being no lower than the upper edge of the backing wall member, the hook members being integral with the structure and forming therewith a continuous body, the hook members having an inner surface continuous with the inside surface of its respective trough member, which inner surfaces and inside surfaces rise to elevations substantially above the elevation-defining surfaces in order to create a channel extending beyond both sides of, and above, the backing wall member to prevent fluids from leaking or spilling along the rim when the spout is attached to a rim and the rim is tilted.

3,272,408
GARMENT BUCK APPARATUS
Virgil R. Carpenter, Roseville, and James E. Jennings, Minneapolis, Minn., assignors to The Unipress Company, Incorporated, Minneapolis, Minn., a corporation of Minnesota
Filed May 12, 1965, Ser. No. 455,181
22 Claims. (Cl. 223—73)



1. A buck assembly for a tubular portion of a garment to be pressed comprising an axially elongated support member having a one end portion and an opposite end portion, a first elongated wing assembly extending along one transverse side of the support member, a second elongated wing assembly extending along the opposite transverse side of the support member, each wing assembly having a one end and an opposite end, means for movably attaching the one end of the second wing assembly to the one end portion of the support member, means for movably attaching the opposite end of the first wing assembly to the opposite end portion of the support member, and means connected to the one end of the first wing assembly and the opposite end of the second wing assembly for transversely moving said first wing assembly one end and second wing assembly opposite end transversely away from the support member and alternately toward the support member, the last mentioned means including a piston cylinder combination having a cylinder and a piston rod, first linking means movably connected to the cylinder for, upon operation of said combination, moving the first wing assembly as set forth above, and second linkage means movably connected to the piston rod for, upon operation of said combination, moving the second wing assembly as set forth above.

3,272,409
LAPEL HOLDER
Carlos Miller, Nogales, Ariz., assignor of ten percent to Stanley Capin, Nogales, Ariz.
Filed Oct. 19, 1965, Ser. No. 497,747
8 Claims. (Cl. 223—84)

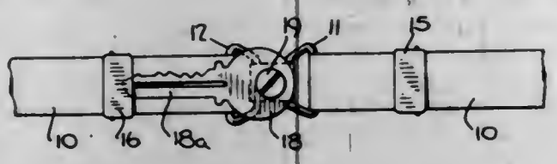


1. A lapel holder comprising a pair of elongated lapel backing and anchoring members adapted to underlie the lapel portions of a suit jacket or the like, said members being disposed in generally side-by-side relation with one pair of corresponding end portions thereof closely adjacent each other and the other pair of corresponding end portions spaced further apart so that said members are divergent toward said other end portions thereof and form a generally V-shaped assemblage adapted to correspond to the V-shaped opening defined between the lower ends of the adjacent edges of said lapel portions and have said lapel portions lapped thereover, means interconnecting said one pair of end portions of said members, said other pair of end portions of said members including individual elongated panel-like members supported from said anchoring members and extending longitudinally thereof, overlying the upper surfaces of said anchoring members, and biased toward frictional engagement with said upper surfaces so as to be adapted to clampingly secure said lapel portions between said upper surfaces and said panel-like members.

3,272,410
KEY-BELT
Emeric Reisman, 1606 47th St., Brooklyn, N.Y.
Filed Aug. 28, 1964, Ser. No. 392,701
2 Claims. (Cl. 224—5)

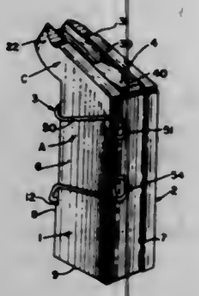
1. A belt, comprising an elongated strip and a main buckle construction at the opposite end regions of said strip, said main buckle construction comprising a mounting plate secured at one end to one of said end regions of said strip and having fastening means at its other end

for releasable engagement with the other end region of said strip, a key secured to said mounting plate in such position that the bit thereof extends over said other end region of said strip upon engagement of said fastening means with the latter, and retaining means adjustably



connected with said other end region of said strip in spaced relation to the point of engagement between said fastening means and said other end region of said strip, said retaining means being engageable with said bit of said key to constrain the same to lie flush against said one end region of said strip.

3,272,411
PORTABLE STORAGE AND DISPENSING DEVICES
Roy R. Hanson, Maryland Heights, Mo., assignor of one-fourth to William H. Anderson, Glencoe, Mo., and one-fourth each to Joseph H. Schlerman and George Blase, both of St. Louis, Mo.
Filed Aug. 20, 1964, Ser. No. 390,965
10 Claims. (Cl. 224—15)



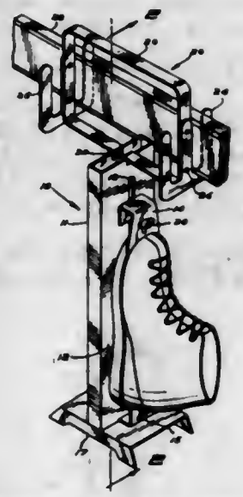
8. An ammunition dispensing carrier comprising an open-sided box-like housing having a side wall and being adapted to contain a supply of cartridges a removable side wall fitted over the open side of said housing, means resiliently mounting said removable side wall on said housing, a dispensing chute at one end of the housing and removable side wall, said chute being provided with a discharge mouth, spring-biased means carried by the housing for urging the cartridges toward and into the chute in transversely extending position, and inwardly presented opposed camming shoulders mounted on said side wall of the housing and removable side wall adjacent said chute, said camming shoulders being adapted to engage the ends of the endmost cartridge and normally prevent escape of the cartridges, said chute having a finger slot located adjacent said camming shoulders whereby digital access to the engaged endmost cartridge is provided, said camming shoulders each having an inwardly opening laterally presented recess in which only the pointed end of the cartridge will catch whereby upon exertion of digital pressure on the endmost cartridge the butt end thereof will be released from engagement with a camming shoulder and the pointed end will catch in the recess of the opposite camming shoulder so that the cartridge will swing out into longitudinal orientation with the chute and the butt end will be presented outwardly through the discharge mouth.

3,272,412
PACKET FOR CARRYING GOLF TEES AND DISCS
Anthony J. Antonious, Baltimore, Md., assignor, by direct and mesne assignments, to The Ajac Corporation, Baltimore, Md., a corporation of Maryland
Filed May 19, 1965, Ser. No. 457,128
5 Claims. (Cl. 224—26)



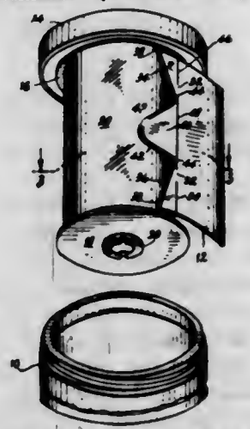
1. A foldable packet for releasably holding and carrying a plurality of golf tees, the packet comprises;
(a) a foldable packet body including a tee carrying portion, a back portion, a top portion, and a cover flap, all integrally joined to one another,
(b) a projecting lug carried by the cover flap and extending from the side thereof adjacent the tee carrying portion to cooperate with a slotted hole in the tee carrying portion for releasably holding the cover flap to the tee carrying portion,
(c) means integral with the tee carrying portion and on the side thereof adjacent the back portion where the packet is folded for releasably holding a plurality of golf tees in parallel, side by side relationship with the head of each tee extending above the top of the tee carrying portion for easy removal.

3,272,413
CARRIER DEVICE FOR SKIERS
Ronald E. Pfeifer 1811 Independence Ave. S., Minneapolis, Minn.
Filed Aug. 10, 1964, Ser. No. 388,413
5 Claims. (Cl. 224—45)



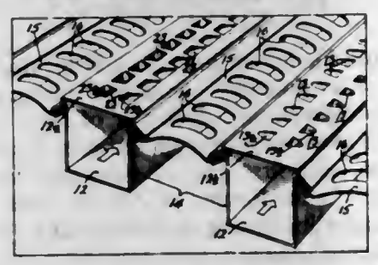
5. The carrier device for skiers comprising substantially rigid supporting plate having a pair of elongated opposed flat boot engaging surfaces, said plate having a central vertical axis extending along the axial length thereof, clamping means disposed along said plate for retaining a pair of boots in clamped position thereon with the central axis of each boot being disposed substantially along said central axis, means secured to said supporting plate for carrying a pair of skis, said ski carrying means including hook means forming at least one ski-receiving channel, the center axis of the aggregate of the ski-receiving channels being substantially co-planar with the central axis of said supporting plate, and handle means for carrying said supporting plate connected to the upper end thereof to intersect said vertical axis, said hook means secured to each side of the handle to carry skis in a position extending transversely of the supporting plate.

3,272,414
DISPENSER FOR STRIP MATERIAL
Eli I. Schefer, Plainview, and Amanollah E. Rokhsar, Forest Hills, N.Y., assignors to Revlon, Inc., New York, N.Y.
Filed Dec. 28, 1964, Ser. No. 421,323
7 Claims. (Cl. 225—45)



3. In combination, a container which includes a removable cover, a carrier for rolled strip material comprising spaced end plates and means for securing said plates together comprising a connecting member extending between said plates and having a strip severing means thereon, and means for removably positioning the carrier to the underside of said cover.

3,272,415
APPARATUS FOR STABILIZED TRANSPORT OF WEB- OR SHEET-LIKE MATERIALS
Sven Wallin, Taby, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Mar. 16, 1964, Ser. No. 352,721
Claims priority, application Sweden, Mar. 17, 1963, 3,004/63
8 Claims. (Cl. 226—97)



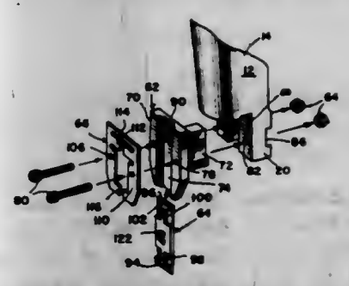
1. Apparatus for the stabilized transport of web or sheet like material supported by a gaseous medium, said apparatus comprising: at least one distribution duct for supplying said medium, said duct having a surface confronting said material and forming a guide plane therefor, gaseous medium supply ports arranged in pairs in said plane and each port of a pair directed oppositely to the other port of the pair, said supply ports including means whereby said medium is caused to flow therefrom in streams substantially parallel to said transport plane, exhaust ports in said guide plane spaced from the acting in conjunction with said supply ports to extract the medium from the space between said material and said plane, said supply and exhaust ports being positioned in relation to each other so that the medium supplied from said supply ports forms a continuous film of medium prior to being exhausted through said exhaust ports, and means to divide said continuous film into a plurality of separate streams upon being exhausted.

3,272,416
YARN HANDLING MECHANISM
Michael Burgin Emery, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 16, 1964, Ser. No. 396,856
11 Claims. (Cl. 226—97)



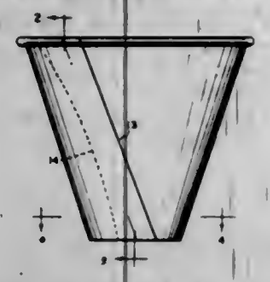
1. A device for imparting tension to yarn comprising: a portable closed housing having a through passage for the yarn; a fluid jet installation located within said passage and adapted to advance said yarn therethrough under tension; and independently driven roll means also located in said passage, in advance of said jet installation, said roll means being adapted to engage said yarn and to impart additional tension thereto as it advances through said passage.

3,272,417
MAGAZINE CLOSURE AND GUIDE ASSEMBLY FOR STAPLING IMPLEMENTS
Frank Howard, Wheeling, and Arthur Langas, Chicago, Ill., assignors to Signode Corporation, a corporation of Delaware
Filed Feb. 17, 1965, Ser. No. 433,337
9 Claims. (Cl. 227—123)



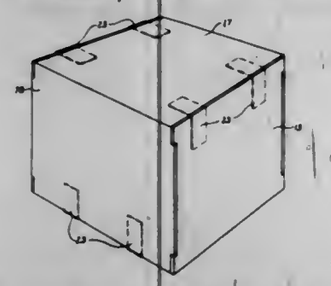
1. In a fastener-applying implement, in combination, a magazine defining a chamber for holding a supply of fasteners, a vertical guide plate disposed forwardly of the magazine and having a passage therethrough in communication with the magazine chamber and through which fasteners are successively fed forwardly from the chamber, a driver for said fasteners, the forward side of said guide plate being formed with a vertical forwardly opening channel which intersects said passage, the side walls of the channel being recessed to provide a pair of guideways on opposite sides of the channel, a rigid closure plate slidable vertically in said guideways and normally closing the open side of the channel so as to establish, in combination therewith, a combined throat for receiving the fasteners from said slot and a raceway for the driver, and springs means in sliding engagement with the closure plate and yieldingly urging the latter rearwardly to maintain the same in position within the guideways, said closure plate being slidable endwise and vertically in said guideways for removal therefrom and being capable of limited displacement bodily in a forward direction so as to lift the same out of said guideways against the action of said spring means under the influence of internal pressure within the throat occasioned by staple deformation, and detent means releasably maintaining said closure plate in its channel-closing position against vertical sliding movement.

3,272,418
PAPER CONTAINER CONSTRUCTION
Raymond L. Morse and Paul H. Carter, Baltimore, Md., assignors to Maryland Cup Corporation, Owings Mills, Md., a corporation of Maryland
Filed Feb. 5, 1964, Ser. No. 342,645
4 Claims. (Cl. 229—1.5)



1. A paper blank for forming a cup comprising an arcuate strip of paper coated with a thermoplastic material, said strip having a relatively large outer arc edge and a relatively small inner arc edge, said strip having spaced radial slits extending inwardly from the inner arc edge forming tongues, the length of said tongues being at least one-half the diameter of the bottom of the cup to be formed.

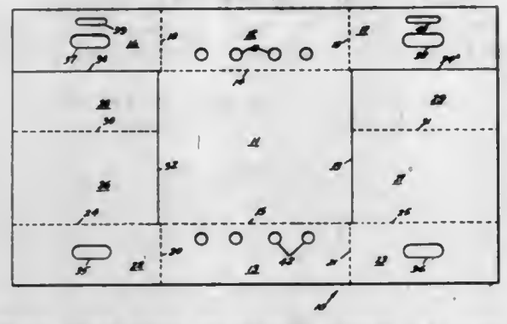
3,272,419
PACKAGING CONTAINER
Joseph H. Vineberg, 235 Somerset St. W., Ottawa, Ontario, Canada
Filed Sept. 28, 1964, Ser. No. 399,627
1 Claim. (Cl. 229—23)



A packaging container comprising a pair of unitary blanks of sheet material, each of said blanks consisting of an intermediate panel and a pair of end panels foldably connected to said intermediate panel, each said end panel having a pair of opposed edge portions and an intermediate edge portion joining said opposed edge portions, each of said opposed edge portions of one of said blanks having a notch therein, each of said opposed edge portions of the other of said blanks having a tongue thereon for reception in one of said notches, each of said intermediate edge portions of one of said blank being engageble with one of said intermediate edge portions of the other said blank, each said tongue having a length constituting the major portion of the length of said end portion, each said notch having a length approximately equal to that of said tongue.

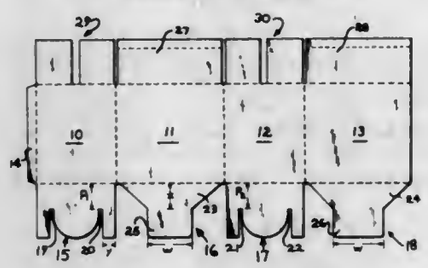
3,272,420
ONE-PIECE PARTITIONED PACKING BOX
Gerald A. Hock, Cincinnati, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Sept. 3, 1964, Ser. No. 394,237
4 Claims. (Cl. 229—27)

1. A one-piece box having a central transverse partition formed from a single blank comprising an outside bottom section, first and second side sections foldably connected to opposite sides of said outside bottom section along fold lines between said side sections and said outside bottom section, inside end sections foldably connected to opposite ends of said first side section along fold lines between the inside end sections and the first side section, inside bottom sections foldably connected to the sides of said inside end sections along fold lines between said inside bottom and said inside end sections adjacent the fold line connecting the first side section with the outside bottom section and lying adjacent the ends of the outside bottom section, partition sections foldably connected to the sides of said inside bottom sections opposite the inside end sections along fold lines between the partition sections and the inside bottom sections,



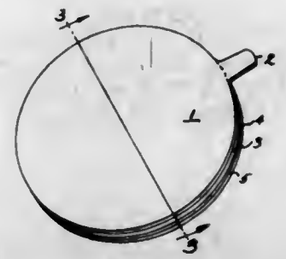
severance lines being provided between the inner edges of the partition sections and inside bottom sections adjacent the edges of the outside bottom section, said partition sections extending parallel to said end walls in abutting relation centrally of the box, outside end sections extending from the ends of the second side section and fold lines between the outside end sections and the second side section, and there being severance lines between the adjacent outside end sections and the partition sections.

3,272,421
SELF-LOCKING CARTON
Gerald E. Perry, Waterville, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed May 11, 1964, Ser. No. 366,500
5 Claims. (Cl. 229—39)



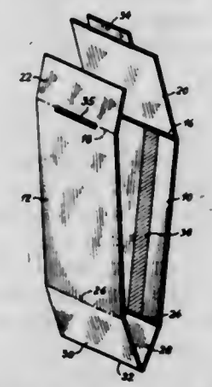
1. A carton having an integral, self-locking end closure comprising, four foldably connected side panels forming a tubular configuration, a first pair of flaps foldably connected to the lower edge of opposed panels of said tubular configuration, said first pair of flaps each having a pair of spaced-apart slots formed in the free edge thereof, said slots continually increasing in width as they proceed from the ends thereof toward said free edge, said first pair of flaps adapted to be folded into coplanar relationship with the slots in one flap being in alignment with the slots in the other flap, a second pair of flaps foldably connected to the lower edge of the other opposed panels of said tubular configuration, said second pair of flaps having an outer portion thereof of approximately the same width as the length of the slot formed by the closing of the first pair of flaps, said second flaps being folded into overlying relationship with said first pair of flaps and continued folding of said flaps forces the inward movement of said first flaps until the ends of said second flaps enter the corresponding slots in said first flaps and release of folding pressure on said second flaps permits the squaring of the flaps in interlocking relationship, and said outer portion of said second flaps extending through the slots formed by said first flaps.

3,272,422
RECLOSABLE PACKAGE
Harmon B. Miller, Atlanta, Ga., assignor to Paramount Paper Products Company, Omaha, Nebr., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,271
9 Claims. (Cl. 229—43)



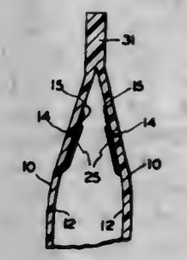
1. A package comprising a receptacle having an opening for receiving and removing a product and a closure member adapted to at least partially close said opening, said closure member having a coating of pressure sensitive adhesive mass on at least a portion of the area thereof which is adjacent said package, and a peelable film, overlying said pressure sensitive adhesive, which is permanently sealable to said package and from which said closure member can be removed without substantial transfer of pressure sensitive adhesive mass to said film, whereby upon permanently sealing said film to said package said closure member may be removed and then resealed to the package.

3,272,423
CONTAINER STRUCTURES
Knud Maro Henrik Bjarno, Stenlose, Denmark
Filed Aug. 9, 1965, Ser. No. 478,196
Claims priority, application Denmark, Dec. 5, 1961, 4,840/61; Great Britain, Aug. 10, 1964, 32,492/64
13 Claims. (Cl. 229—55)



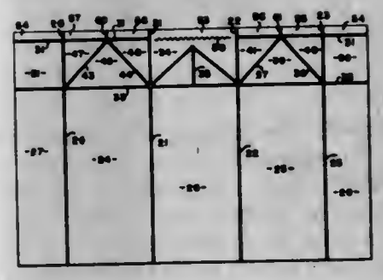
1. As an article of manufacture for use with a collapsible bag having only a first pair of opposite, substantially plane side walls, a second pair of opposite foldable side walls and a closed bottom of a predetermined transverse extension between said side walls in the opened condition of said bag, an elongated web of substantially self-sustaining material having transverse folding lines effectively subdividing said web into a substantially flat middle portion substantially corresponding to the width of said bottom of said bag and a transverse folding line substantially in the middle of said middle portion, adjoining side portions operable to extend along a substantial part of said first side walls of said bag, and end flaps operable to overlie each other to construct from said web a tubular protective structure of substantially rectangular configuration operable to provide itself as an exterior protection outside said bag in the open condition thereof when said bag is filled with a predetermined amount.

3,272,424
FLEXIBLE CONTAINER
Edward G. Rodkey, Fresno, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 11, 1965, Ser. No. 424,573
5 Claims. (Cl. 229—66)



1. A generally flat rectangular container formed from two superimposed flexible sheets wherein each sheet contains at least one heat-sealable thermoplastic resin surface, said resin surface forming the inner wall of said container, said container having at least two opposing fin-type edge seals, a perforated tear line in at least one of said sheets extending to opposite fin-type edge seals, said edge seals being notched at the points of contact of said tear line with said edge seal, at least two partially superimposed heat-sealable thermoplastic resin tapes parallel to and covering said tear line, each of said tapes being alternately sealed to the inner wall in a line parallel to but set off from said tear line at opposing sides of said tear line, said resin tapes also being sealed to the said fin-type edge seals at least one of said resin tapes containing partial transverse slits adjacent to said edge seals.

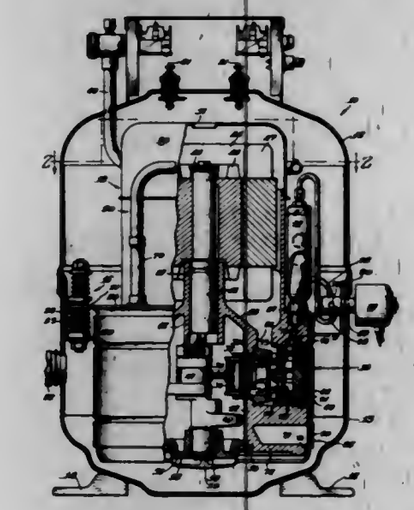
3,272,425
GABLE TOP CONTAINER
David Bendersky, Overland Park, and Daniel J. Klos, Mission, Kans., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 16, 1965, Ser. No. 440,192
3 Claims. (Cl. 229—17)



1. A gable top container formed of paperboard or the like, comprising a tubular body rectangular in cross section and having four side wall panels, said body having a bottom closure affixed thereto, front and rear roof closure panels extending upwardly from opposite side wall panels and being inclined toward each other, a pair of opposed end closure panels extending upwardly from the remaining opposite side wall panels and being inclined toward each other between said roof closure panels, a pair of triangular fold-back panels integral with each end closure panel and being folded against the under sides of said roof closure panels, a ridge panel surmounting each of said roof panels, and said fold-back panels, all of said ridge panels being disposed vertically

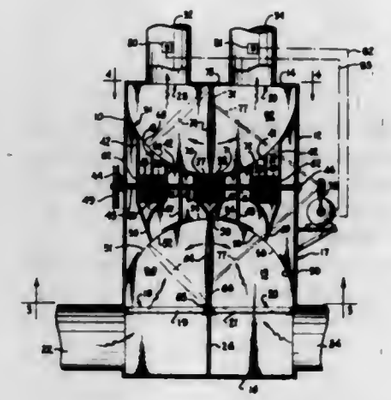
in contacting relation to form a laminated ridge, the contacting surfaces of the ridge panels surmounting said roof panels and fold-back panels being sealed together by a permanent adhesive bond, the outer major portions of the confronting contacting surfaces of each pair of ridge panels surmounting said fold-back panels and extending inwardly from the ends of said laminated ridge being unsecured, said front roof panel being formed with a weakened line of severance extending transversely of said roof panel in proximity to the joinder of the ridge panel thereto, a tape overlying the area about said weakened line of severance and being permanently bonded to said front roof panel, the ridge panel surmounting the same and extending upwardly over the top edge of said laminated ridge and downwardly and being bonded to the ridge panel surmounting said rear roof panel, a tear cord underlying the area of said tape extending along the top edge of said ridge, the ends of said tape extending laterally beyond the ends of said ridge, said tape serving to maintain the unsecured portions of said pairs of ridge panels in liquid tight relation.

3,272,426
REFRIGERANT COMPRESSOR CONTROL
Sidney A. Parker, Fort Worth, Tex., assignor to Lennox Industries Inc., a corporation of Iowa
Filed Oct. 19, 1964, Ser. No. 404,847
6 Claims. (Cl. 230—31)



1. In a hermetic compressor, the combination of a sealed casing, a compressor block resiliently supported within said sealed casing, a plurality of cylinders in said compressor block, a piston reciprocatingly movable in each cylinder, a drive shaft journaled in said compressor block and operatively driven by an electric motor disposed in said sealed casing, the end of each cylinder being closed by a cylinder head, annular wall means surrounding said compressor block, said compressor block being spaced from said sealed casing so as to define a compartment for receiving suction gas, said annular wall means and said compressor block defining therebetween a discharge gas muffling chamber, each cylinder communicating with said discharge muffling chamber via passage means in said compressor block, said capacity control mechanism for selectively unloading one cylinder comprising valve means within said sealed casing having an inlet and first and second outlets, said inlet communicating with the passage means from said one cylinder for receiving high pressure discharge gas therefrom, said first outlet communicating with said suction gas compartment, said second outlet communicating with said discharge gas muffling chamber, valve elements in said valve means for selectively communicating said inlet either to said first outlet to unload said one cylinder or to said second outlet to load said one cylinder, and control means for actuating said valve elements in response to predetermined conditions.

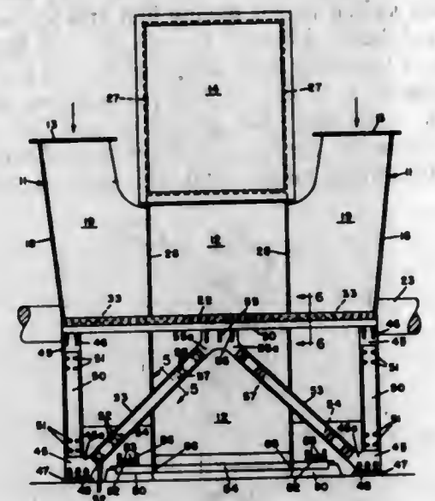
3,272,427
AIR HANDLING APPARATUS
William M. Valentine, 520 Lloyd Bldg., Seattle, Wash.
Filed May 17, 1965, Ser. No. 456,217
3 Claims. (Cl. 230—47)



1. Air handling apparatus, comprising:
means forming a plenum chamber having oppositely located dual adit and dual exit apertures;
collateral inlet and collateral exhaust conduits associated respectively with said dual adit and dual exit apertures external of said chamber;
a pair of the deflector blades pivotally mounted within said plenum chamber in opposition to each other, the pivotal mount of one said deflector blade being located between the dual adit apertures and the other said deflector blade having its pivotal mount located between said dual exit apertures;
means for synchronously moving said deflector blades in like directions;
a pair of concave walls within said plenum chamber to define deflector chambers, each wall symmetrically facing one of said deflector blades and located closely adjacent the path of that portion of such deflector blade remote from its pivotal mount, said concave walls being spaced apart at their back sides to define a fan chamber; and
wall means in the fan chamber forming open-ended air passages between the deflector chambers and including a fan in each passage to induce air movement through said passages between said deflector chambers and the opposed dual adit and dual exit apertures.

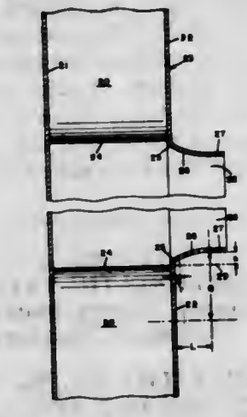
3,272,428
SUPPORTS FOR CENTRIFUGAL FANS
Albert H. Loehr, Jr., Westwood, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 10, 1964, Ser. No. 417,421
20 Claims. (Cl. 230—128)

1. A centrifugal fan comprising a scroll-shaped inner casing, generally rectangular inlet boxes at opposite ends of said casing, said boxes having outer end sheets, said casing having end sheets forming the inner ends of said boxes, a first support member extending horizontally at one side of said fan, said sheets having portions extending outwardly to and attached to said member, a second support member in alignment with said first member at the opposite side of said fan, said sheets having portions extending outwardly to and attached to said second member, a third support member extending under and attached to said first member, a fourth support member extending under and attached to said second member,



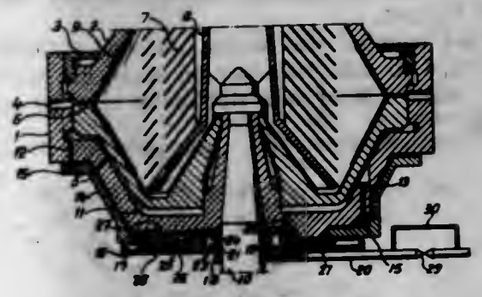
base support members under the ends of said third and fourth members, and flexible plates extending between said base members and said ends of said third and fourth members and attached to said base members and to said ends of said third and fourth members.

3,272,429
ROTORS OF CENTRIFUGAL FANS
Carl O. Wood, Needham Heights, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 16, 1964, Ser. No. 404,339
3 Claims. (Cl. 230—134)



1. A centrifugal fan rotor comprising a straight, radially extending back plate, a side plate having a straight, radially extending outer portion spaced outwardly from said back plate, and a plurality of fan blades having straight inner sides in contact with said back plate and having straight outer sides in contact along their entire lengths with said straight portion of said side plate, said blades having noses equally spaced from the axis of said rotor, said rotor having a diverging, axial inlet passage, said side plate having a curved portion extending around said passage and merging with said straight side plate portion at the same distance from said axis as said noses are from said axis, the inner portion of said curved portion having in side section, a relatively small arc and a relatively small radius, and the outer portion of said curved portion having in said side section, a relatively large arc and a relatively large radius, a line extending through the outer end of said curved portion normal to said axis being not less than 0.03D and not more than 0.055D along a line parallel to said axis from said straight portion of said side plate, said outer end of said curved portion being at a distance along said line of not less than 0.015D and not more than 0.03D from a line extending through the center of curature of said inner portion of said curved portion parallel to said axis, where D is the effective diameter of said rotor.

3,272,430
SLUDGE CENTRIFUGE
Henric Wilhelm Thylefors, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden
Filed Oct. 17, 1963, Ser. No. 316,806
Claims priority, application Sweden, Nov. 6, 1962, 11,893/62
5 Claims. (Cl. 233—20)



1. In a sludge centrifuge adapted for intermittent discharge of centrifugally separated sludge and comprising a hollow rotor mounted for rotation on an axis and having a separating chamber for receiving a mixture of sludge and liquid to be separated from the sludge, the rotor having a peripheral outlet for discharging sludge from said chamber, the combination with said rotor of a first valve reciprocable in the rotor along the rotor axis between positions for opening and closing said sludge outlet, said valve defining with the rotor a first hydraulic chamber having a plurality of hydraulic liquid outlets located at different radii from the rotor axis, at least one of said hydraulic outlets being located at a greater radius from said axis than is the outer periphery of the separating chamber, a second valve reciprocable along said axis for opening and closing said hydraulic outlets, the second valve being biased toward a position for closing said hydraulic outlets and partly defining a second hydraulic chamber, said second valve being axially spaced from the rotor and defining therewith a discharge passage for said hydraulic outlets, said second valve having a plurality of sealing pads for engagement with the corresponding hydraulic outlets when the second valve is closed, hydraulic liquid delivery means communicating with said first hydraulic chamber for delivering liquid thereto to hold the first valve in its said closing position and thereby accumulate sludge in the separating chamber, said delivery means also communicating with said second hydraulic chamber for delivering hydraulic liquid to the second hydraulic chamber to actuate said second valve away from its said closing position and thereby open said hydraulic outlets, whereby hydraulic liquid is drained from said first hydraulic chamber at a relatively high rate through all of said hydraulic outlets and then at a lower rate through said one hydraulic outlet, and whereby said one hydraulic outlet allows total discharge from the separating chamber.

3,272,431
FRACTION-DECIMAL CALCULATOR
Cesar M. Dablo, 309 N. Boylston St., Los Angeles, Calif.
Filed July 15, 1965, Ser. No. 472,145
1 Claim. (Cl. 235—69)

A digital adder-subtractor which is particularly adapted for adding or subtracting fractions and indicating the sum-

mation thereof in decimal form, comprising, in combination:

an elongated substantally flat base member;

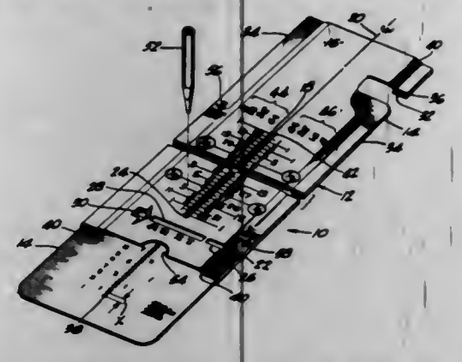
an elongated substantially flat slide member;

said members being mutually disposed in longitudinally slidable relationship, said base member being made of sheet metal and having inturned longitudinal edges forming guides within which the longitudinal edges of said slide member are received;

said base member having an elongated slot extending longitudinally through a substantial portion of the length thereof, and said slide member having a row of equally spaced actuating holes formed therein and transversely aligned with said slot so as to be adapted to receive a pointer inserted through said slot;

said base member having a first fraction scale written along one side of said slot, commencing at one end thereof and progressing linearly toward the other end thereof;

said base member also having a second fraction scale, identical to said first fraction scale, but written on the other side of said slot in an inverted relationship;



said base member having a pair of windows formed therein for displaying summation figures carried by the surface of said slide member;

said slide member having a pair of summation scales written thereon, the successive markings of which are adapted to be successively displayed in said windows, one of said summation scales representing fractional values and the other thereof representing the corresponding decimal values; said base member having two longitudinally extending reverse bends formed therein so that the transverse portion of said base member lying above said scale markings on said slide member is physically spaced from the surface of said slide member; whereby the insertion of a pointer through said slot into one of said actuating holes, and movement of the pointer to an end of said slot, causes an addition or subtraction to the summation figures displayed in said windows according to the distance traversed on the corresponding one of said fraction scales.

3,272,432

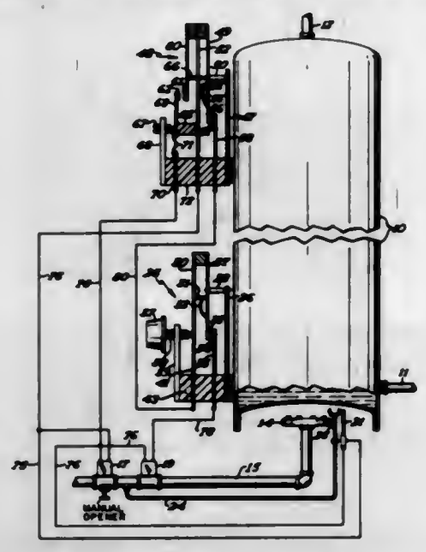
CONTROL SYSTEM FOR WATER HEATERS

Thomas J. Davidson, Santa Ana, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Mar. 8, 1965, Ser. No. 437,644

3 Claims. (Cl. 236—21)

1. A water heater system comprising, a tank having cold water inlet and hot water outlet connections, gas burner means for heating said tank including a main burner and a pilot burner, an electrical generator energized by said pilot burner, a gas supply line for said burner means, a safety valve in said line having manually operable means for moving the valve to open position and electrically operable means capable only of maintaining the valve in open position, a control valve in said line opened when electrically energized, first thermostatic switch means located to sense water temperature at a relatively low position on said tank and adjusted to actuate its contacts at a relatively low temperature, second thermostatic switch means located to sense water temperature at a relatively higher position on said tank, said second thermostatic switch means having first and second sets of contacts and being adjusted to actuate said first set of contacts at a relatively high temperature and said second set of contacts at a still higher temperature, electrical conductors connecting said generator, said first thermostatic switch means, the first set of contacts of said second thermostatic switch means, and said control valve nor-



mally to control the water temperature in said tank at the set value of said first thermostatic switch means and at the set value of the first set of contacts of said second thermostatic switch means if the contacts of said first thermostatic switch means are closed when the first set of contacts of said second thermostatic switch means are open, and electrical conductors connecting said generator, the second set of contacts of said second thermostatic switch means, and said safety valve to control said safety valve on actuation of the second set of contacts of said second thermostatic switch means at the higher temperature.

3,272,433

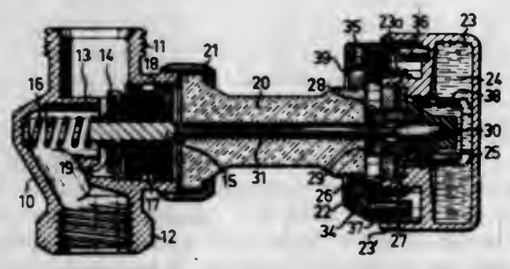
THERMOSTATIC VALVES

Sven David Ferdinand Nilsson, Markaryd, Sweden, assignor to AB Markaryds Metallarmatur, Markaryd, Sweden

Filed July 6, 1964, Ser. No. 380,225

Claims priority, application Sweden, July 9, 1963, 7,615/63; Dec. 10, 1963, 13,687/63; Dec. 18, 1963, 14,099/63

14 Claims. (Cl. 236—99)



13. Thermostatic valve including a valve body forming an internal valve seat, a valve member slidably guided by said valve body for cooperation with said valve seat, a thermostat comprising as a sensing means a container which is to a substantial extent freely exposed to the surrounding air and the interior of which is filled with a liquid, means supporting said thermostat on said valve

body, actuating means operatively connecting said thermostat to said valve member in order to actuate said valve member responsive to the temperature prevailing in the thermostat surroundings, a diaphragm forming part of the boundary wall of said container and permitting by its yielding the liquid in said container to expand and contract in the container, a sleeve piston engaging said diaphragm, said actuating means extending through said piston and operatively engaging said diaphragm to convey to said valve member the expansion and contraction movements of said liquid, and means mounting said container for axial movement in relation to said piston by manual rotational movement of said container, said diaphragm thereby being engageable with said piston to vary the volume of the interior of said container by regulated inward pressing of said diaphragm by said piston.

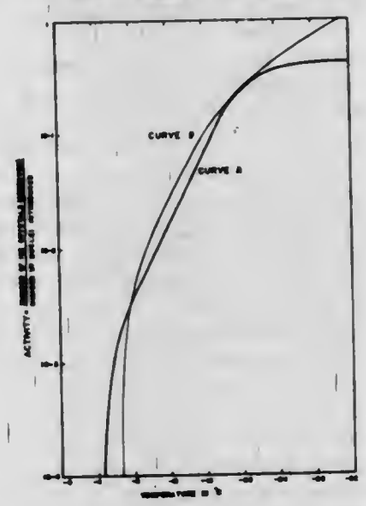
3,272,434

NUCLEATING PROCESS

Albert C. Zettlemoyer, Diery's Bridge Road, R.D. 2, Bethlehem, Pa., John J. Chessick, Stafore Drive, R.D. 2, Bethlehem, Pa., and Noubar Tcheurekdjian, 1222 11th St., Racine, Wis.

Filed June 3, 1963, Ser. No. 285,134

20 Claims. (Cl. 239—2)



1. A method of nucleating crystallization of a hydrogen bonding crystal from a gaseous medium, which comprises seeding the medium with particles in a size range between 0.01 and 10 microns consisting of an inorganic substrate and a partial layer on the surface thereof of a different material, forming predominately hydrophobic sites, and hydrophilic sites on the surface which occupy from 5–40% of the surface area, until crystals form.

3,272,435

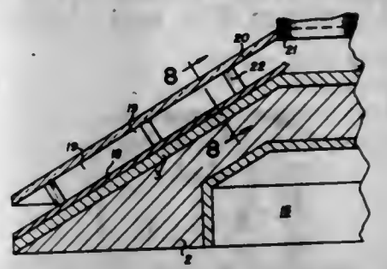
SMOG ACCUMULATION PREVENTING APPARATUS

Carl A. Brownell, Jr., 3123 S. U.S. 23, Greenbush, Mich.

Filed Oct. 10, 1963, Ser. No. 315,331

16 Claims. (Cl. 239—14)

14. An exothermic smog accumulation preventing device which utilizes sun rays to create ascending thermal currents of heated air, said device comprising a mound structure, heat insulating material forming an upper surface of said mound structure, a heat storing and radiating material above said heat insulating material, upwardly inclined air duct portions open at the lower and upper ends thereof and overlying said heat storing and radiating material and communicating near their upper ends, and a layer of relatively non-reflective, heat absorbent material overlying said air duct portions operative to absorb heat from the sun and effect the heating of air in said duct portions to a temperature higher than the temperature of the ambient air and to cause the heated air to pass upwardly through said duct portions, said heat absorbent material having an opening therein at the top of said mound in communication with said duct portions through which said heated air may pass upwardly.



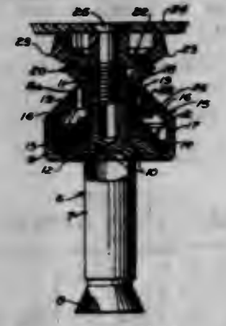
3,272,436

SPRINKLER HEAD

Edwin J. Hunter, Riverside, Calif., assignor to Moist O'Matic, Inc., Riverside, Calif., a corporation of Minnesota

Filed May 18, 1964, Ser. No. 368,190

7 Claims. (Cl. 239—204)



4. A sprinkler head, comprising:

(a) a cylindrical housing open at its upper end and having a restricted inlet at its lower end;

(b) a base member including a tubular stem slidable in said inlet between a retracted and an extended position, and sealingly engaging said inlet when in its extended position to form a continuation of said inlet, an enlarged cup-shaped upper end guided in said housing, and a central upwardly directed post;

(c) a cover member surrounding said post and closing said base member to form a hollow chamber, said cover member having externally, radially inner and radially outer conical surfaces converging upwardly and intersecting to form an annular rim, and a set of at least four upwardly directed equally spaced discharge ports intersecting said annular rim;

(d) a deflector fitted on said post and having a conical face conforming to the radially inner conical surface of said cover member and continuing upwardly and outwardly beyond said rim to deflect in complementary arcs water issuing from said ports;

(e) and a cap mounted on said post retaining said deflector thereon, and clearing the spray from said ports, said cap dimensioned to close said housing when said base member is retracted.

3,272,437

ROTARY POP-UP SPRINKLER EMPLOYING A FIXED CAM

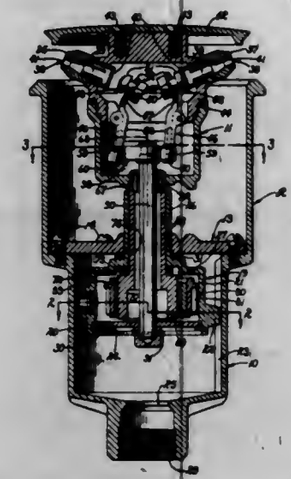
James R. Coson, Fresno, Calif., assignor to General Sprinkler Company, a corporation of Nevada

Filed July 27, 1964, Ser. No. 385,304

5 Claims. (Cl. 239—206)

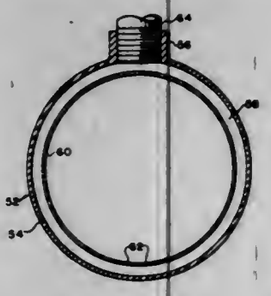
1. In a sprinkler having a housing adapted to receive fluid under pressure, and a sprinkler head mounted for rotation in the housing; the combination of a nozzle

mounted on the head having an inwardly disposed intake port adapted to receive fluid from the housing, a valve engageable with the intake port to close the same urged into closed position by fluid pressure and by centrifugal force incident to rotation of the head, a cam mounted in



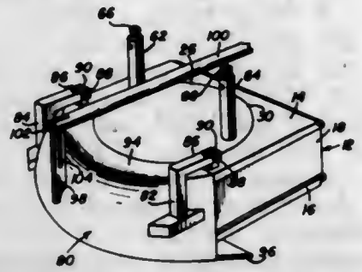
fixed position in the housing, a cam-follower mounted for rotation with the head in cam engagement, and a linkage interconnecting the follower and the valve periodically opening the valve during rotation of the head in accordance with the profile of the cam.

3,272,438
IRRIGATION SYSTEM
Rufus J. Purtell, Brownfield, Tex., assignor, by mesne assignments, to The J. B. Knight Co., Inc., Brownfield, Tex., a corporation of Texas
Filed Mar. 12, 1964, Ser. No. 351,338
7 Claims. (Cl. 239—212)



1. A fluid system designed to prevent an accumulation of grains of dense material in the system comprising in combination:
(a) a horizontal pipe adapted to carry fluid under pressure,
(b) a plurality of passageways opening into the bottom of the pipe,
(c) the lumen of the pipe straight and unobstructed at the area where each of the passageways opens into the pipe,
(d) each of said passageways extending outside the lumen to a discharge opening away from the pipe,
(e) each of said passageways being in the form of at least a portion of an annulus around the pipe from the opening into the bottom of the pipe to the discharge opening above the pipe,
(f) each of said discharge openings discharging fluid outside the fluid system, and
(g) the cross sectional area of each of the passageways being small enough that sufficient fluid velocity in the passageway is maintained to move the grains along with the fluid stream.

3,272,439
STEERING AND REVERSING ASSEMBLY FOR WATER JET BOATS
Fred W. Rosentrater, 3816 W. 115th Place, Chicago, Ill.
Filed Nov. 19, 1963, Ser. No. 324,728
6 Claims. (Cl. 239—265.25)

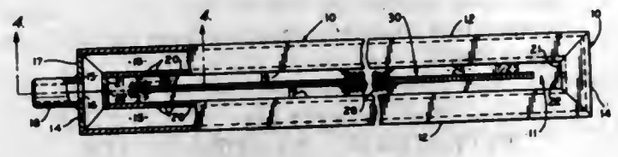


1. A steering and reversing assembly for water jet boats of the type including a water jet outlet, said assembly comprising an elongated housing having a longitudinal first passage formed therethrough and including means adapted to sealingly communicate the front end of said housing with said outlet, the rear end of said passage defining an upstanding generally cylindrical cavity in said passage, a steering body snugly and rotatably disposed in said cavity blocking the rear end of said passage and having a generally diametric second passage formed therethrough forming an oscillatable continuation of said first passage and including a forward end communicated with the forward end of said first passage, said steering body projecting outwardly of the rear end of said housing, said housing including opposite side walls whose upper marginal portions are interconnected by means of a top wall, said top wall having a partial circular opening formed therein communicating with the rear edge portion of said top wall, said steering body including a top wall having a generally circular portion journaled in said opening, an arcuate water jet deflection and reversing body, means pivotally securing said reversing body to said housing for rotation about an axis extending transversely of and disposed slightly above the rear end of said first passage and along a line disposed in a plane substantially normal to the longitudinal centerline of said first passage, said reversing body being generally semi-circular in radial cross-section and being swingable from a raised inoperative position disposed rearwardly of and above the rear marginal portions of said steering body and a lowered position with said reversing body positioned behind and in horizontal alignment with said steering body, said reversing body, when in said lower position, including an extended lower lip disposed slightly below the lower portion of the rear end of said steering body and also a centrally disposed arcuate upper lip rotatably receiving and disposed in sealing engagement with the rear marginal portion of the circular portion of said top wall of said steering body projecting outwardly of the rear of said housing.

3,272,440
GAS BURNER
Lovell E. Pearch, Westlake, and Peter P. Surckis, Burton, Ohio, assignors to Rex-Radiant, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 16, 1964, Ser. No. 411,357
21 Claims. (Cl. 239—426)

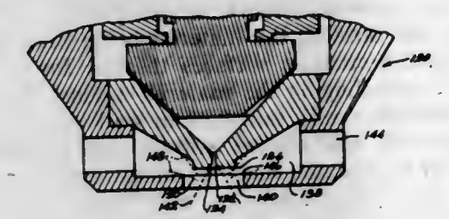
11. A gaseous fuel burner comprising:
a walled and partially confined combustion zone, said combustion zone being substantially much longer than wide and having a longitudinally extending open face,
gaseous fuel inlet means extending longitudinally along the length of said combustion zone and in that side thereof opposite said open face for introducing and distributing gaseous fuel in uniform quantities throughout the length of said combustion zone, and

air inlet means extending longitudinally along the length of said combustion zone and on both sides of said gaseous fuel inlet means and between said gaseous fuel inlet means and said open face of said



combustion zone for introducing and distributing air in uniform quantities throughout the length of said combustion zone and for thoroughly mixing air and gaseous fuel.

3,272,441
ASPIRATING SPRAY NOZZLE
Orvis A. Davis, Sr., Gibsonia, and Bruce R. Walsh, Wilkinsburg, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Nov. 3, 1965, Ser. No. 507,992
20 Claims. (Cl. 239—403)



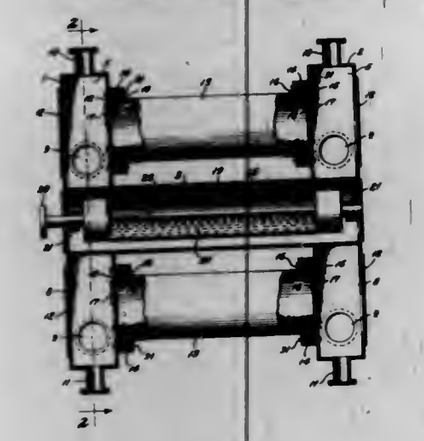
1. A burner nozzle comprising axial swirl chamber means, second chamber means of substantially cylindrical configuration disposed forwardly with respect to said swirl chamber means, said swirl chamber means having at its forward end axial discharge orifice means with the surface of said discharge orifice means being curved and tapered outwardly in the direction of said second chamber means and being in unobstructed communication with said second chamber means for discharging a swirling distinctly conical oil spray from said swirl chamber means through said second chamber means without interference or obstruction and without substantial contact with said nozzle so that said conical oil spray aspirates a stream of air through said second chamber means from the rearward end to the forward end thereof, air passageway means open at one end to the exterior of said nozzle and open at the other end in the direction of said second chamber means for channeling air into said second chamber means, substantially flat surface means contiguous with said curved and tapered surface of said discharge orifice means lying on a plane substantially normal to the longitudinal axis of said nozzle extending laterally outwardly from said discharge orifice means and terminating with first flow deflecting means having first relatively sharp edge means facing said air passageway means in the region thereof near said second chamber means for inducing a vena contracta in said aspirated air stream downstream from said first sharp edge means and in the region of said oil spray, and second flow deflecting means having second relatively sharp edge means which is exposed to said air passageway means in the region thereof near said second chamber means and opposite from said discharge orifice means for inducing a vena contracta in said aspirated air stream downstream from said second sharp edge means and in the region of said oil spray, said cylindrical second chamber means having a diameter which is substantially greater than the length thereof and which is sufficiently large for the conical spray from the swirl chamber means to pass through without substantial contact with the walls of said second chamber means and for each air stream vena contracta to develop around said conical spray.

3,272,442
AEROSOL VALVE
Charles Robert Allenbach, Williamsville, Thomas A. Bradfield, Buffalo, Paul E. Gunning, Kenmore, and Donald R. Rink, Cheektowaga, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Jan. 16, 1964, Ser. No. 338,132
16 Claims. (Cl. 239—579)



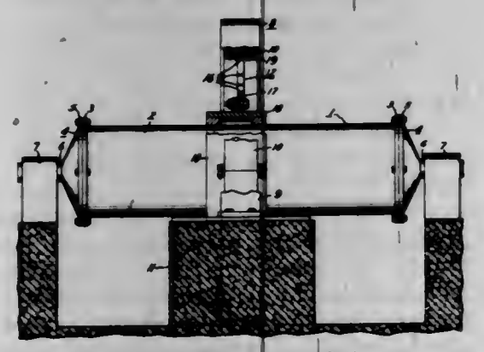
1. An aerosol valve particularly well suited for use with aerosol containers dispensing finely-divided solid materials which comprises, in combination, a tubular valve housing provided with a transverse apertured wall extending thereacross at the lower end of the housing; means for mounting the housing on an aerosol container; a resilient valve diaphragm having a central bore mounted so as to seal the upper end of the housing; a support means for the diaphragm mounted adjacent to and underlying the diaphragm; a valve stem mounted in the housing, having a top portion provided with a longitudinal conduit and a lateral stem opening, extending through and slidable in the bore of the valve diaphragm, and projecting beyond the container, an enlarged middle portion cooperating with the valve diaphragm to seal the container, and a bottom portion extending into the apertured wall of the housing to guide the stem against tilting; bias means within the housing urging the enlarged middle portion of the valve stem in a sealing relationship with the valve diaphragm; an eductor tube extending into the container, mounted on the apertured wall, and communicating with the valve housing; and an actuator button having a longitudinal passage provided with a discharge orifice and communicating with the longitudinal conduit of the valve stem; the lateral stem opening being normally located adjacent to the valve diaphragm so that a longitudinal movement of the valve stem against the bias means and from a normal sealing position to a discharge position causes the longitudinal conduit of the top portion to be moved into communication with the interior of the valve housing, and the effective inside diameters of the eductor tube, the stem opening, and the discharge orifice being of progressively increasing magnitude.

3,272,443
VIBRATORY MILL
Ewald Reiners, Hinsbeckerberg 44, Essen, Germany, and Erich Otters, Aachen, Germany (Friedenstr. 87, Duisburg, Germany)
Continuation of application Ser. No. 260,153, Feb. 21, 1963. This application Apr. 9, 1965, Ser. No. 448,574
Claims priority, application Germany, Feb. 22, 1962, S 78,163
16 Claims. (Cl. 241—153)



1. A vibrating mill including a plurality of generally parallel milling boxes arranged concentrically about a central axis, two end frames, the ends of the said milling boxes being positioned in and carried by the two said end frames, each end frame having a plurality of compartments therein, each compartment being in communication with a single one of the said plurality of milling boxes, and selectively in communication with each other, whereby the material milled can be selectively conducted to a neighboring milling box, such that the residence time of the material in the milling boxes can be chosen on the basis of the ultimate fineness desired, at least one inlet orifice on at least one end frame communicating with one of the said compartments, at least one outlet orifice on at least one end frame communicating with another of said compartments.

3,272,444
GEARLESS ROTARY MILL
Edward A. E. Rich and John J. Brockman, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Aug. 28, 1963, Ser. No. 305,076
6 Claims. (Cl. 241—176)

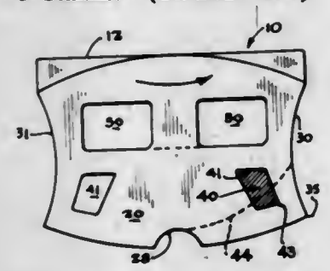


1. A relatively low speed gearless rotary mill adapted to minimize mechanical stresses which are induced within the rotor of a driving motor due to unequal thermal expansions and contractions within the rotor and mill members, comprising

a rotary mill comprising a rotatable receptacle for treating material in said receptacle while said receptacle is being rotated, and

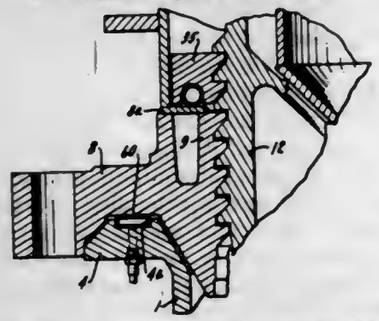
an electric motor having a rotor and stator, said stator being stationarily mounted, said rotor being spaced from said receptacle and resiliently supported therefrom whereby said receptacle is rotated by said motor through a resilient gearless driving arrangement which minimizes mechanical stresses that tend to be developed within the motor rotor due to unequal temperature conditions resulting from mill and motor operation.

3,272,445
REPLACEABLE HAMMER TIP FOR HAMMER MILLS
Ward W. Weller, 25 Benvenue St., Wellesley, Mass.
Filed Aug. 15, 1963, Ser. No. 302,411
5 Claims. (Cl. 241—197)



1. A replaceable hammer tip adapted to be secured in a hammer mill where coarse material is comminuted to a fine size by being struck by the hammer tip and by being thrown against the walls of the hammer mill, comprising a main body member having a top wall, a bottom wall, side walls and end walls; said end walls being the surfaces for striking the material being broken, said end walls having concave surfaces thereon for scooping the material and flinging the material against the side walls of the hammer mill, said bottom wall being of a convex configuration, said convex bottom wall extending across said body to said side walls to uninterrupted lower leading edges with the respective end walls, corners being formed by the intersection of said convex bottom wall and said concave surfaces of said end walls, said corners being less than 90°, said concave surfaces flaring upwardly and toward each other from said uninterrupted leading lower edges and then flaring upwardly and then outwardly from each other to form upper leading edges disposed substantially in the same planes as their respective lower leading edges.

3,272,446
YIELDING BOWL LOCKING RING FOR CRUSHERS
Adolf Hesse, Milwaukee, Wis., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 1, 1965, Ser. No. 447,601
15 Claims. (Cl. 241—215)



1. In combination with a cone crusher having a circumferential frame, a bowl on said frame and a head and means for gyrating the head within the bowl, means for exerting pressure on crusher parts between the frame and the bowl including at least one tubular member of

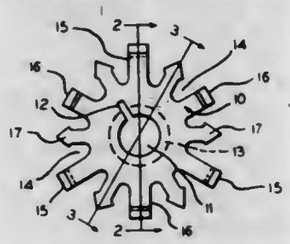
rubber or a suitable rubber substitute interposed between parts of the crusher, and means for supplying fluid pressure to the interior of such member and for thereby exerting pressure against crusher parts located between the frame and the bowl.

3,272,447
CHUCK FOR TUBULAR CORES
Alvin Lenwood Ewing and John Osborne Haw, Chester, and Roy Lee Terrell, Richmond, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 23, 1964, Ser. No. 377,291
4 Claims. (Cl. 242—46.5)



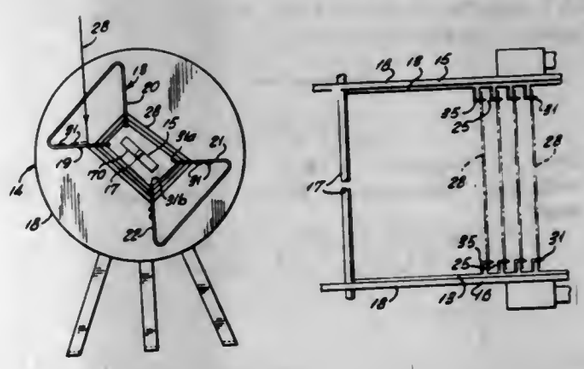
1. An apparatus comprising a chuck adapted to receive a tubular core, said chuck comprising a spindle, a tubular housing rotatably mounted on said spindle, retainer means for holding the rotatable housing on the spindle, and certain types of annular rings mounted on said tubular housing including: (1) a first type being made of a relatively rigid but slightly depressible material and having an outside diameter substantially the same as the inside diameter of said tubular core; (2) a second type being made of a relatively compressible material having a relatively high coefficient of friction and having an outside diameter slightly greater than the inside diameter of said tubular core; and (3) a third type being made of a material capable of radial expansion due to centrifugal forces and having an outside diameter slightly less than the inside diameter of said tubular core.

3,272,448
ROLL SUPPORT MOUNTINGS
Frank S. Caravella, 4321 N. 13th St., Milwaukee, Wis.
Filed Aug. 9, 1965, Ser. No. 478,060
4 Claims. (Cl. 242—55.2)



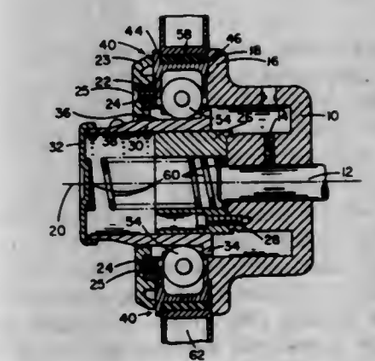
1. A sheet metal nut for associating the recess of a toilet paper holder with an attaching unit for a spirally wound spring that supports toilet paper, said attaching unit including a threaded portion for association with said spring member and a flange portion having a threaded portion, said flange portion being sized to engage the recess of said toilet paper holder and being sized to be held in operable position with respect to said toilet paper holder when the sheet metal nut is threadedly associated therewith, said recess having a bottom and ends defining the opening of said recess, said sheet metal nut comprising: a central aperture for operable association of said nut with said threaded portion of said flange portion, a plurality of outwardly extending engaging members including first engaging members, second engaging members and third engaging members, said first members extending outward and in one direction and being interposed between said attaching member and said recess to cause a friction fit therebetween when said nut is operably associated with said flange, said second engaging members extending outward and in an opposite direction to said first engaging members to frictionally abut against said recess when said nut is operatively associated with said flange, and said third attaching members extending outward and conforming to the contour of said flange when said nut is operatively associated with said flange, whereby said attaching member engages said recess for rigid association when said metal nut is operatively associated with said recess.

3,272,449
DEVICE FOR PACKING FABRIC
Sol Schwartz, 67—40 173rd St., Flushing, N.Y.
Continuation of abandoned application Ser. No. 248,694, Dec. 31, 1962. This application Apr. 9, 1965, Ser. No. 449,369
6 Claims. (Cl. 242—62)



5. A reel for winding pile fabrics comprising a radiating arm having a plurality of integral pliable spaced fabric hooks thereon on one side thereof, each of said hooks having a first non-interfering fabric position and a second fabric interfering position on said one side, said first position being arcuately spaced from said second position.

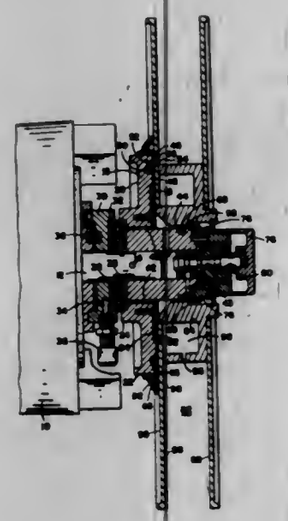
3,272,450
REEL SUPPORT
Robert A. Pendleton, Dedham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,362
8 Claims. (Cl. 242—68.3)



1. A reel mount comprising a hub including a hollow hub portion centered about a hub axis, a sleeve coaxially positioned within said hub portion and having a tapered outer surface, said sleeve terminating in a cap at its forward end and in a flange at its rearward end, guide means

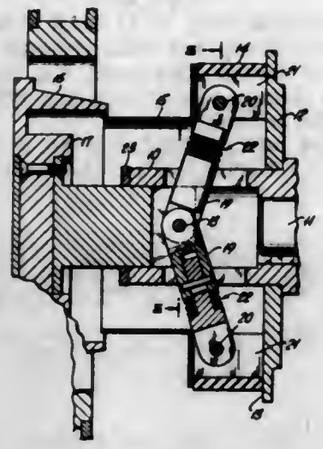
permitting a sliding movement of said sleeve in an axial direction relative to said hub, a plurality of mutually spaced collet pieces surrounding said hub portion including discrete curved surfaces jointly defining a substantially circular coaxial periphery, each of said collet pieces having an extension slidingly protruding inward through a corresponding opening in the wall of said hub portion to permit movement of said collet piece in a radial direction, a roller rotatably disposed in each of said collet piece extensions and contacting said tapered sleeve surface, means for resiliently biasing said collect pieces radially inward, resilient means in contact with said sleeve cap for normally urging said sleeve in a forward axial direction until said sleeve flange abuts said collet piece extensions, said last recited resilient means being adapted to force a rising portion of said tapered sleeve surface beneath each of said rollers, said last recited action causing said collet pieces to move radially outward in opposition to said biasing means to expand the periphery defined by said curved surfaces, whereby the selective application of force to said sleeve cap in a rearward direction is adapted to contract said periphery below the inside diameter of a tape reel to be mounted.

3,272,451
REEL SUPPORT
Robert A. Pendleton, Dedham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,363
7 Claims. (Cl. 242—68.3)



4. A vacuum mount for transmitting power between a rotary source adapted to be fastened thereto and a removable reel, comprising a face plate coaxial with the axis of rotation and having forward and rear surfaces, means for applying vacuum pressure to said rear surface, at least one passage communicating between said surfaces to transmit said vacuum pressure, means on said forward surface adapted to engage said reel, a coaxial annular surface portion on said face plate positioned forward of said forward surface and including at least one annular groove, a compressible sealing ring disposed in said groove and normally rising above said annular surface portion, and a flexible annular rubber boot on said face plate concentrically surrounding said sealing ring, said boot including a lip terminating in an annular surface radially spaced from said annular surface portion and positioned forward of said sealing ring, said ring and said boot being adapted to engage a facing surface of said reel in fluid-sealing relationship upon the application of vacuum pressure.

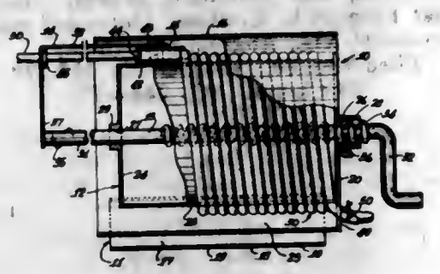
3,272,452
CONTRACTILE REEL HUB
Gerald D. Cohen, Massapequa, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Nov. 12, 1963, Ser. No. 322,605
10 Claims. (Cl. 242—72)



1. A reel hub for a tape transport having a drive shaft for rotatably driving a tape reel having a cylindrical smooth walled central bore, said reel hub comprising support means adapted to be drivingly mounted on the outer end of said drive shaft for rotation therewith, expansible clutch means movably mounted on said support means for movement between contracted and expanded positions, said clutch means having an exposed surface of friction material which defines a cylinder in said expanded position having a diameter equal to the diameter of the central bore of the tape reel, hand-actuated over center lever means operatively connected to said clutch means for expanding and contracting said clutch means, the hand-actuated portion of said hand-actuated over center lever means being exposed on the outer end of said reel hub and being disposed entirely within the cylinder defined by said friction surface when said clutch means is in its contracted position to enable said tape reel to be slipped over the outer end of said reel hub onto said cylinder without interference, means for stopping said hand-actuated over center lever means after it snaps over center in said expanded position, and resilient means for resiliently biasing said friction clutch means radially outward to facilitate the over center snap action and to urge said friction surface against the wall of said central bore and said hand-actuated over center lever means against said stop means to maintain said clutch means in its expanded position until said hand-actuated portion is manually gripped and actuated in the opposite direction to contract the clutch means.

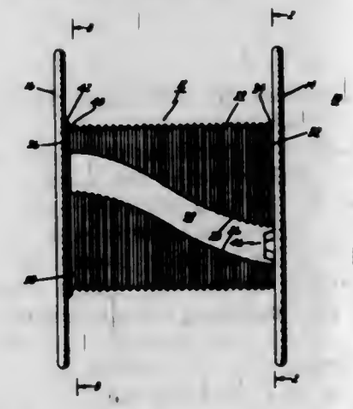
3,272,453
LINE STORAGE REEL
Goldwin M. T. Hallock, Box 276, Fenelon Falls, Ontario, Canada
Filed Feb. 24, 1965, Ser. No. 434,846
Claims priority, application Canada, Jan. 21, 1965, 921,310
11 Claims. (Cl. 242—86)

1. A line storage device comprising a stationary drum member having a line receiving outer surface, a shaft mounted for rotation coaxially within said drum member, said shaft having a portion extending outwardly beyond one end of the drum member, means for axially shifting said shaft upon rotation of said shaft, a line carrier arm fixed to said end portion of said shaft and having a portion extending over said outer surface of said drum member, and a line guide means carried by said portion of said arm juxtaposed said surface and having a curved line engaging surface for directing the line to a substantially tangential line with respect to said surface of the drum,



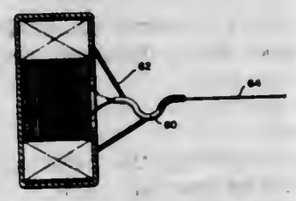
whereby the line is fed spirally onto said surface of the drum on rotation of said shaft.

3,272,454
WIRE SPOOL
Harrison R. Lane, Fort Wayne, and George G. Tucker, Auburn, Ind., assignors to Universal American Corporation
Filed July 22, 1963, Ser. No. 296,582
18 Claims. (Cl. 242—117)



1. A spool for precision layer winding of wire comprising a barrel portion and a pair of head portions respectively at opposite ends of said barrel portion, said barrel portion having a plurality of part-annular grooves formed therein for respectively positioning the convolutions of the first layer of wire on said spool, the respective ends of said grooves being circumferentially spaced-apart, said spaced-apart ends defining a helically extending groove for accommodating the cross-overs of the wire of said first layer between adjacent convolutions.

3,272,455
WIRE COIL
Huot W. Sternberg, Bridgeport, and Harry G. Robinson, Stratford, Conn., assignors to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 17, 1965, Ser. No. 437,619
3 Claims. (Cl. 242—171)



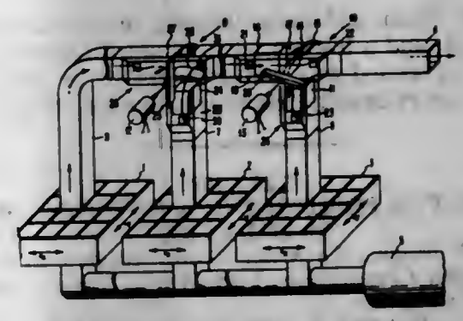
1. In a wire package which includes an annular container and a coil of wire disposed therewithin in a multiplicity of overlying convolutions pressing outwardly against the container and having substantially one elastic back twist per convolution permitting axial withdrawal

of the wire from the container free of net torsional deformation, means for preventing transmission of torsional forces from withdrawn portions of the wire back to convolutions remaining in the container comprising

(a) exit guide means mounted on the container to initially guide the withdrawn portion of the wire along the axis of the container, then in a curved path away from and then back along the container axis,

(b) said curved path being fixed with respect to the container and differing from any free path otherwise taken by the wire when axially withdrawn from the container without engaging the exit guide means.

3,272,456
PNEUMATIC CARRIER SELECTOR VALVE, DECELERATOR AND HOLD MECHANISM
Henry G. Hoehmann, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 10, 1964, Ser. No. 388,377
5 Claims. (Cl. 243—29)



1. A switching apparatus for use in an information handling system wherein a main channel is to be selectively, pneumatically and mechanically coupled to two subchannels, said switching apparatus comprising:

a main switch channel adapted to be connected to said main channel,

first and second switch subchannels adapted to be connected to said two subchannels,

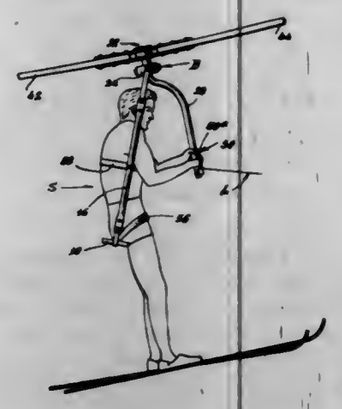
means for selectively, mechanically and pneumatically connecting a switch subchannel to said main switch channel while mechanically and pneumatically blocking the other switch subchannel from said main switch channel, and

a pneumatic bypass to said main switch channel from said blocked switch subchannel.

3,272,457
WATER SKI AUTOGYRO
Donald B. MacMillan, Candlewood Shores, Brookfield, Conn.
Filed July 1, 1964, Ser. No. 379,532
7 Claims. (Cl. 244—17.11)

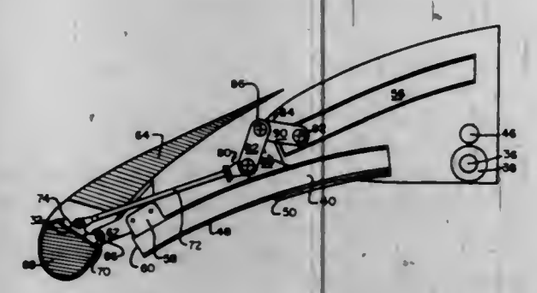
4. A towable lifting device for water-skiers which comprises: a generally rectangular framework including a seat member, right and left side members extending upwardly from said seat member, and an upper cross member interconnecting said side members; a right rotor support member extending upwardly and inwardly from said right side member to an upper end; a left rotor support member extending upwardly and inwardly from said left side member to an upper end, the upper ends of said right and left rotor support members extending vertically in spaced parallel relationship to one another; a gimbal ring pivotally mounted between the second ends of said rotor support members for rotation about a first axis substantially parallel to the plane of said rectangular framework; a control stick pivotally mounted within said gimbal ring for rotation about a second axis substantially normal to said first axis, a first end of said control stick extending

above said gimbal ring and a second end of said control stick depending below said gimbal ring; rotatable thrust bearing means mounted on said first end of said control stick; a plurality of elongated air foil means extending



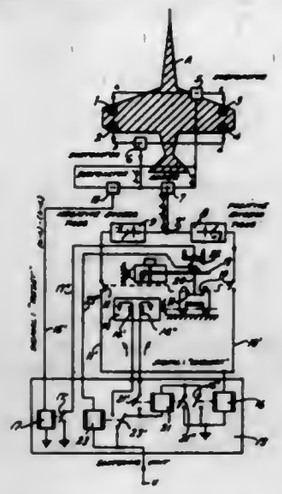
outwardly from said thrust bearing means for rotation thereabout; and a towline latch mounted on said control stick at its second end and arranged to be grasped by the user for releasably retaining a towline therein.

3,272,458
MEANS FOR POSITIONING A ROTATING WING SLAT DEVICE
Bruno W. Bracka, La Mesa, Calif., assignor to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,865
9 Claims. (Cl. 244—42)



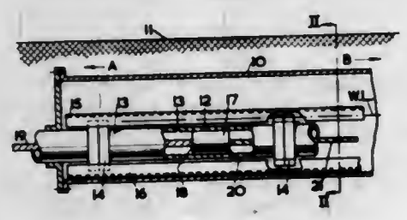
1. In an airfoil construction of the class wherein a composite airfoil structure is comprised of not less than two airfoil components, the first of which when fully retracted is superimposed upon the leading edge portion of the second in such a manner that an essentially new aerodynamically clean composite airfoil configuration is created, and when extended (forwardly and downwardly) defines still other airfoil configurations, each having aerodynamically useful slats for varying airflow over and about said second airfoil, the improvement comprising:
a mechanical linkage means operable for extending the first airfoil forwardly and downwardly in respect to the second airfoil along a predetermined trajectory sequentially and simultaneously causing said first airfoil to vary in camber and chord in such manner as to provide increased high-lift airflow and inversely for retraction of the first airfoil to the superimposed position, said means comprising in part at least one pair of trajectory establishing support means, at least one of said support means movable relative to the other to establish and define the trajectory of the first airfoil, and a connecting means responsive to relative movement of said support means operative to cause rotation of at least a portion of the first airfoil.

3,272,459
FLIGHT CONTROL ARRANGEMENT
Gero Madelung and Leonhard Bräuer, Munich, and Benedikt Emmerich, Krailling, Germany, assignors to Messerschmitt AG., Augsburg, Germany
Filed Mar. 10, 1964, Ser. No. 350,799
19 Claims. (Cl. 244—77)



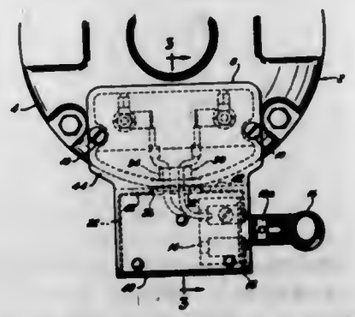
17. An arrangement for controlling the flight regulator of a VTOL aircraft having a plurality of jet propulsion means, comprising in combination, flight regulator operating means; limiter means for normally limiting the range of regulation of said operating means to a normal range; detector means cooperating with said propulsion means to produce an electrical control signal at an operational condition of said propulsion means requiring regulation of said operating means beyond said normal range; and control means controlled by said control signal for inactivating said limiter means so that the range of regulation of said operating means is increased.

3,272,460
ARRESTER GEAR FOR AIRCRAFT
John Thomlinson, Bedford, England, assignor to the Minister of Aviation in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Dec. 31, 1964, Ser. No. 422,731
Claims priority, application Great Britain, Jan. 2, 1964, 171/64; July 10, 1964, 28,538/64
14 Claims. (Cl. 244—110)



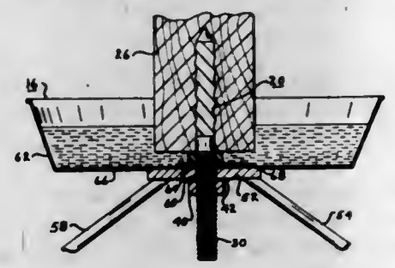
1. An arrester gear for aircraft comprising
a perforated tube, the perforations being distributed lengthwise of the tube,
a piston within the tube,
an arrester cable,
support means supporting the cable across the path of an aircraft to be arrested,
connecting means operatively connecting the arrester cable to the piston,
a housing enclosing the perforated tube,
liquid contained within the housing and in which the perforated tube is submerged, and wherein upon arresting engagement of an aircraft with the arrester cable the piston is drawn along the tube and a braking effect is achieved by the expulsion of liquid from the perforated tube through the perforations in it and the liquid is retained in the housing.

3,272,461
SWITCH MOUNTING STRUCTURE
Robert E. Larkin, Waukesha, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 9, 1965, Ser. No. 438,345
5 Claims. (Cl. 248—27)



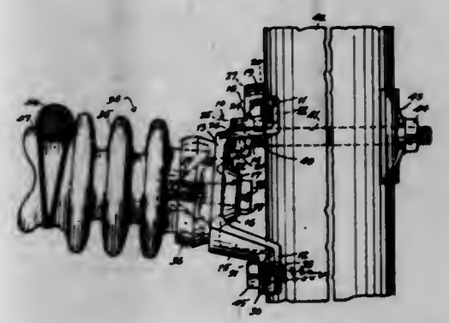
1. For mounting an enclosed electric switch unit on a device having an aperture extending through a wall thereof, the combination with a switch enclosure having a frame and cover member, said frame having an aperture arranged to be in corresponding alinement to that in the device, of attaching and securing means comprising a grommet for penetrating and seating in the alined apertures of the frame and the device, said grommet having a collar seating against a wall adjacent the periphery of one of said apertures and having resilient portions which overlie and grip a wall adjacent the periphery of the other of said apertures which is opposed to the wall first mentioned when said grommet is seated, and further comprising means in engagement with said enclosure and said device to prevent rotational movement of the switch unit about said grommet.

3,272,462
TREE HOLDING DEVICE
Garold E. Apple, R.R. 4, Plymouth, Ind.
Filed Sept. 24, 1964, Ser. No. 399,112
3 Claims. (Cl. 248—44)



1. A Christmas tree display device and stand, comprising a base having a relatively large ring member, a disc-shaped plate at the center of said ring member positioned on an elevated plane and having a vertically positioned hole therein, equally spaced arms connecting said plate and ring member to form a rigid structure therewith, a water receptacle seated on said plate and having a flat bottom with a center hole therethrough in alignment with the hole in said plate, the central area of said bottom around the hole therein being supported and reinforced by said plate, a vertically positioned shaft removably secured to said plate in said hole and having each end threaded, the threads on the upper end having a greater pitch than the threads on the lower end, a washer-like gasket on said shaft above said plate, a nut threaded onto the threads of the lower end of said shaft to a point near the middle thereof and being seated on said gasket, a washer on said shaft below said plate, and a nut on said shaft engaging said washer for securing said shaft to said plate and for clamping said plate and receptacle together and securing said shaft in said holes in an upright position and in a water-tight relationship with said receptacle.

3,272,463
INSULATOR BRACKET
Donald R. Greig, Branford, Conn., assignor to Malleable Iron Fittings Company, Branford, Conn., a corporation of Connecticut
Filed Nov. 3, 1964, Ser. No. 408,625
6 Claims. (Cl. 248—65)

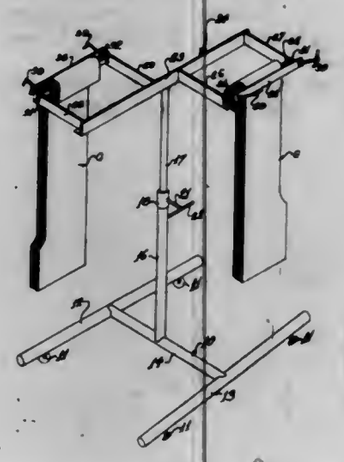


1. An insulator bracket, for mounting an insulator upon a utility pole wherein said insulator includes an insulation body, a base supporting said body having an exposed bearing surface, and a headed securing bolt projecting from said base with its axis substantially central and normal to said bearing surface; said bracket comprising a forward wall portion presenting a forward bearing face for engagement by the bearing surface of said insulator and having a bolt-receiving hole extending therethrough to a rearward bearing face parallel to said forward bearing face and laterally clear of obstructions at each side for receiving said bolt with its head bearing upon said rearward bearing face, top and bottom wall portions extending rearwardly from the upper and lower ends of said forward wall portion in laterally clear relation to said rearward bearing face and defining therewith a wrench space opening to each side of said bracket for wrench manipulation of said bolt, upper and lower pole-engaging pad portions respectively extending upwardly and downwardly from the rearward ends of said top and bottom wall portions, and through-bolt-receiving means including an upright transversely disposed wall portion formed with a through-bolt-receiving hole opening to the rearward side of said upper pad portion and having a forwardly facing bearing surface surrounding said hole for bearing engagement of a bolt head.

3,272,464
BUNDLE HOLDER FOR GARMENT PIECES
Milton D. Jacobson, 2301 1st Ave. N., Birmingham, Ala.
Filed Feb. 16, 1965, Ser. No. 433,043
2 Claims. (Cl. 248—125)

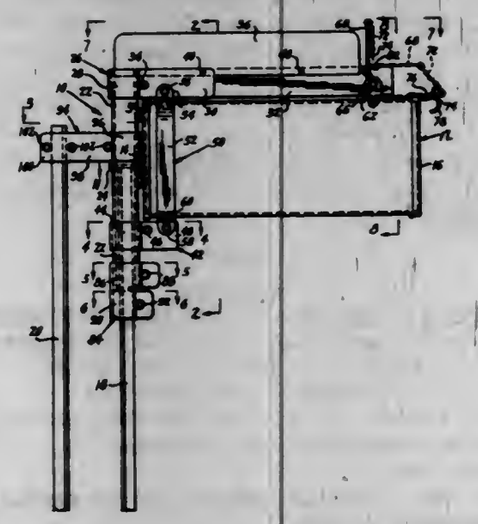
1. In a bundle holder for supporting garment pieces during the manufacture of garments,
(a) a translatable frame,
(b) a first upstanding tubular member carried by said translatable frame,
(c) a second tubular member telescopically engaging said upstanding tubular member and adapted for rotation relative thereto,
(d) means limiting movement of the tubular members relative to each other, whereby said tubular members are held at selected positions relative to each other to vary the elevation of said second tubular member,

(e) an elongated member extending in a horizontal plane and connected intermediate its ends to the upper end of said second tubular member and disposed to rotate therewith,
(f) a first pair of parallel arms extending outwardly from one end of said elongated member in spaced relation to each other,
(g) a second pair of parallel arms extending outwardly from the other end of said elongated member in spaced relation to each other,



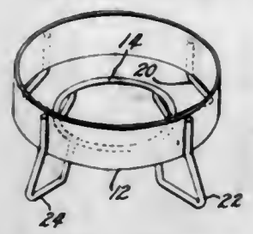
(h) supporting bars carried by said parallel arms in spaced relation to each other in position to support garment pieces,
(i) there being upwardly opening slots adjacent the outer ends of said parallel arms in position to receive said supporting bars whereby a supporting bar is adapted to be supported between each pair of parallel arms, and
(j) clamping means cooperating with said supporting bars to detachably clamp garment pieces therebetween.

3,272,465
SWINGABLE MAILBOX STRUCTURE
Eli J. Baarsgard, Mabel, Minn.
Filed Dec. 29, 1964, Ser. No. 421,937
7 Claims. (Cl. 248—145)



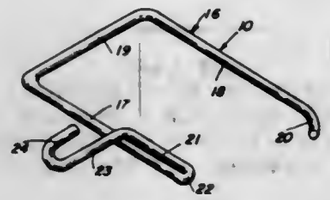
1. A mailbox support comprising an elongated post, an elongated tubular pipe telescopically engaged over said fence post, means in said pipe engaging the upper end of said fence post for limiting the penetration of said fence post in said pipe, a first support member, with a circular clamp and two horizontal straps secured to said pipe, a second support member with a circular clamp and two horizontal straps secured to said pipe and spaced below said first support member, a mailbox, and vertical band means encircling said mailbox and having upper and lower ends secured to said first and second support member straps respectively.

3,272,466
LITTER BARREL MOUNT
David A. Sherman, 1613 S. 8th St., Monroe, La. 71202
Filed Oct. 1, 1965, Ser. No. 492,111
3 Claims. (Cl. 248—146)



1. A litter barrel mount comprising a sheet metal hoop of cylindrical construction adapted to extend about a peripheral portion of a base of a latter barrel for supporting it, a supporting metal concentrically disposed element hoop of smaller diameter than said aforementioned hoop and adjacent a lower edge for fitting under the litter barrel, a series of J-shaped metal brace members spatially disposed in sectored relation about said foregoing hoops for maintaining the spacing of the pair of hoops and supporting a litter barrel in forming a litter barrel mount.

3,272,467
PAIL SUPPORTING DEVICE FOR LADDERS
William C. Kassube, 1337 Fargo, Chicago, Ill.
Filed Nov. 10, 1964, Ser. No. 410,175
2 Claims. (Cl. 248—211)



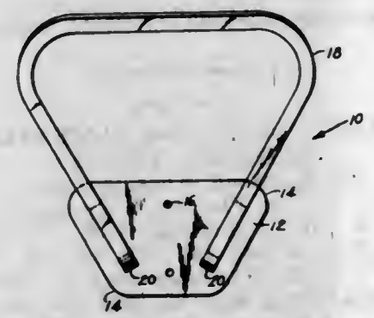
1. A pail supporting device for use with ladders of the type which includes spaced parallel ladder rails having transversely extending rungs extending therebetween and connected thereto, and in which each of said ladder rails includes substantially parallel inner and outer side wall surfaces and substantially parallel front and rear end wall surfaces, said pail supporting device comprising
(a) a generally U-shaped body member including
(b) spaced substantially parallel arms interconnected by a bight portion extending therebetween and defining a plane, one of said arms having
(c) a reversely bent portion bent back upon itself and extending substantially parallel thereto above the said one arm, said reversely bent back portion having
(d) an offset end portion extending generally rightangularly therefrom between the ends of the said one arm and laterally away from the latter, said offset end portion terminating in
(e) a hook-shaped element formed by an integral part of the said laterally extending offset portion and lying above said one arm of said generally U-shaped body member and the other one of said arms terminating in an angled end portion.

3,272,468
SUPPORT BRACKET FOR PERFORATED BOARDS
Edward Wittrock, Hartley, Iowa
Filed Mar. 30, 1965, Ser. No. 443,963
6 Claims. (Cl. 248—225)



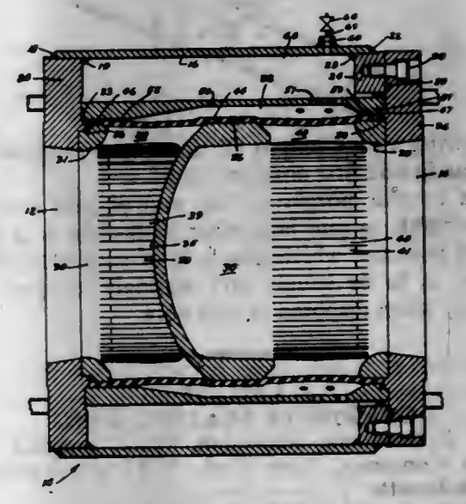
1. In a support bracket,
a first bracket member having an elongated shank and a head portion offset rearwardly therefrom which is adapted to be detachably received by one aperture in a sheet member having a plurality of apertures formed therein,
a second bracket member having an elongated shank and a head portion offset rearwardly therefrom which is adapted to be detachably received by another of the apertures in the sheet member,
and a sleeve means embracing said shanks and extending therebetween,
at least one of said first and second bracket members having a hook member extending forwardly therefrom.

3,272,469
TOWEL RACK
Orval L. Doty, 301 E. Falletti, Claremore, Okla.
Filed Nov. 27, 1964, Ser. No. 414,266
1 Claim. (Cl. 248—309)



A towel rack comprising, in combination, a flat base member providing means for securing to a vertical surface, a towel support member of square cross-sectional configuration carried by said base member providing means for spreading thereupon and suspending therefrom a towel, said base tapering at its lower extremity, the corners of said base being rounded to prevent injury when a towel is placed upon said rack, said means comprising a pair of spaced apart openings for receiving suitable fasteners to secure said base to a wall so to suspend a towel from said rack, and when a towel is placed upon said towel support member said towel rack being no longer visible, said towel support member being substantially triangular in frontal configuration, providing a means for spreading a towel so that air may circulate under a towel as well as on the outside of a towel when a towel is supported on said towel support member, legs being formed by lower extremity of said towel support member and being arcuately curved upwardly and the outer extremities of said legs being secured to said base by spot welding, and the upper extremity of said towel support member being angularly positioned in relation to said base, allowing said towel to depend downwardly away from said base.

3,272,470
FLUID FLOW CONTROL DEVICE
Austin U. Bryant, Walnut Creek, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Feb. 6, 1964, Ser. No. 342,910
5 Claims. (Cl. 251—61)

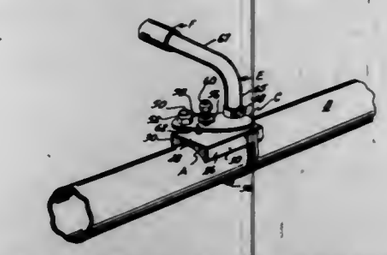


1. A valve construction comprising:
a housing having inlet and outlet flow passages,
a circular barrier having a peripheral cylindrical sealing surface secured within said housing intermediate said flow passages,
an expansible sleeve in sealed communication at opposite ends thereof to said flow passages and snugly embracing the cylindrical sealing surface of said barrier,
a rigid sleeve surrounding said expansible sleeve in closely spaced relationship thereto so that the inner surface of said rigid sleeve limits radial expansion of said expansible sleeve,
said rigid sleeve having at least one aperture therethrough, having a total flow capacity restricted sufficiently so as to control the rate of movement of said expansible sleeve preventing chatter and being mounted in said housing with portions thereof in spaced relationship to said housing to form a fluid chamber of substantial volume within said housing around said rigid sleeve, and,
means for introducing a compressible pressure fluid into one of said rigid sleeve and said chamber.

3,272,471
QUICK COUPLING VALVE
Floyd McCullah, 9111 Holder Road, Cypress, Calif.
Filed Apr. 14, 1964, Ser. No. 359,574
9 Claims. (Cl. 251—146)

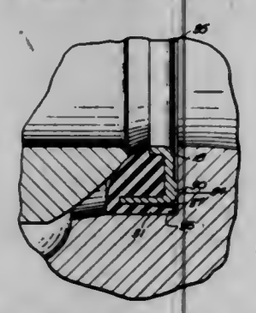
1. A quick coupling valve for use in effecting fluid communication between a hose and a tubular header in the upper portion of which header an opening is formed, including:
(a) a resilient valve body that rests on the upper surface of said header, said body having a bore extending downwardly therethrough, with said bore being in axial alignment with said opening in said header;
(b) a rigid member that at least partially covers the upper surface of said valve body;
(c) first means for holding said valve body on said header, with said bore and opening being in said axial alignment;

(d) a valve plate;
(e) second means for so pivotally supporting said plate from said rigid member that said plate can be moved to a first position where said plate cooperates with said body to seal the upper end of said bore, and to a second position where the upper end of said bore is unobstructed;



(f) spring means that at all times tend to maintain said plate in said first position; and
(g) a tubular nozzle on one end of said hose that is insertable in said bore when said plate is in said second position, which nozzle is of such external diameter as to be snugly and sealingly gripped by said body when disposed in said bore.

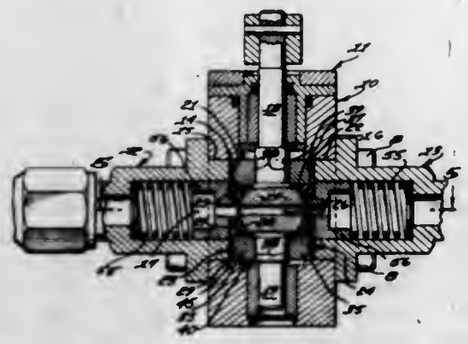
3,272,472
COMPOSITE SEALING RING
Edward J. Goldman, Randolph, Mass., assignor to Walworth Company, New York, N.Y., a corporation of Massachusetts
Original application, Feb. 19, 1962, Ser. No. 174,052. Divided and this application June 9, 1965, Ser. No. 467,178
3 Claims. (Cl. 251—172)



1. A composite sealing ring adapted to be inserted in a cylindrical recess of one cooperating member for sealing with another cooperating member, said sealing ring comprising a metal backing ring U-shaped in cross section and having an inner and outer peripheral rib with a groove therebetween, the outer rib being substantially cylindrical and longer than the inner rib, and an elastic compressible sealing member having a body in the groove of the backing ring and a flange projecting outwardly away from the outer rib of the backing ring, said flange being disposed to make sealing contact with and to be forced radially inwardly of the ring by surrounding surfaces defining the recess in the one cooperating member in which it is inserted, said sealing member having a face exposed in front of the groove in position to provide contact and sealing with the other cooperating member.

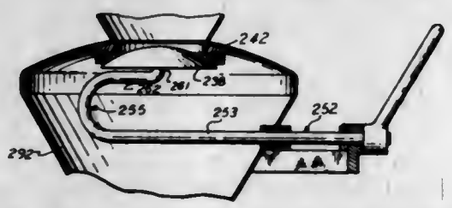
3,272,473
SPHERICAL VALVE HAVING ENCAPSULATED SEAL MEANS
Herbert F. Veit and William R. Day, Fullerton, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,613
11 Claims. (Cl. 251—174)

1. In a valve assembly, the combination comprising a casing having a passageway formed therethrough;
a valve plug of spherical configuration having a bore extending therethrough rotatably mounted within said passageway and adapted to move from a position wherein the bore is out of alignment to a position wherein said bore is in alignment with said passageway;
seal retainer means comprising a pair of juxtaposed half shell members provided with a hemispherical surface corresponding to and closely fitting the spherical surface of said valve plug and having bores located coaxial with the flow passageway of said casing,
said seal retainer members further including a shallow cylindrical chamber formed in the face opposite said hemispherical surface;



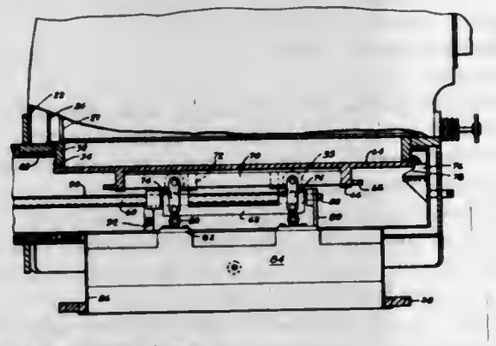
sealing means retained by said seal retainer means comprising a pair of annular elements each having a first portion located within the bore of said seal retainer means and a diametrically enlarged integral second portion located within the shallow cylindrical chamber of the associated seal retainer means,
said first portion having a face provided with a hemispherical surface corresponding to and sealingly engaging the spherical surface of said valve plug;
means provided by said casing abutting the diametrically enlarged portion of said sealing means so as to rigidly clamp said portion between said casing and said seal retainer means; and
means for urging said sealing means against said valve plug.

3,272,474
SHUT-OFF VALVE FOR CEMENTITIOUS PRESSURE VESSELS
George M. Pro, Leawood, Kans., assignor, by mesne assignments, to Air Placement Equipment Co., Inc., Grandview, Mo., a corporation of Massachusetts
Original application Dec. 18, 1958, Ser. No. 781,322, now Patent No. 3,090,593, dated May 21, 1963. Divided and this application Apr. 16, 1963, Ser. No. 273,386
5 Claims. (Cl. 251—175)



5. In a machine for handling particulate material, the combination of a pressure hopper for said material having a material inlet port and a circular, resilient seat in the hopper adjacent the port; a valve in the hopper having a convex outer face shaped substantially in conformity with a sector of a sphere, said outer face normally bearing against the seat in closing relationship to the port; and resilient support means coupled with the valve and including a shaft rotatably carried by the hopper and supporting the valve for movement to and from a position opening said port as said shaft is rotated, said support means flexing in response to pressure in the hopper and mounting the valve for movement toward the seat to compress the latter when the valve is closed, whereby said pressure in the hopper holds the valve tightly against said seat, the support means returning the valve to a disposition out of substantial compressing engagement with the seat in the absence of said pressure, whereby to minimize drag or friction between the seat and the valve during movement of the latter to the open position when the hopper is depressurized.

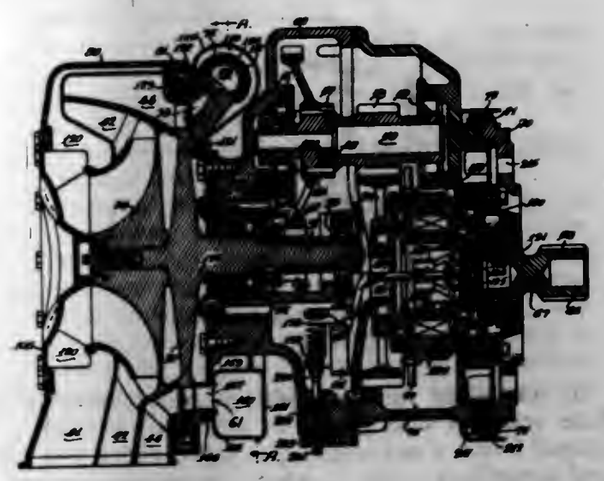
3,272,475
FLEXIBLE GATE VALVE HAVING LOAD BEARING MEANS
Austin U. Bryant, Walnut Creek, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Feb. 8, 1963, Ser. No. 257,141
5 Claims. (Cl. 251—203)



1. A valve comprising:
a valve body,
a flow passageway through said valve body,
an annular valve seat surrounding said flow passageway,
a generally circular, flexible valve plate,
an annular load transmitting member of a diameter smaller than said valve seat and valve plate secured coaxially to said valve plate,
a motion transmitting member,
means connected to said motion transmitting member to produce movement thereof to carry said valve plate into and out of alignment with said valve seat, and
means connecting said motion transmitting member and said load transmitting member and operated in response to movement of said motion transmitting member when said valve plate is moved into alignment with said valve seat to urge said load transmitting member toward said valve seat and force said valve plate into firm engagement with said valve seat.

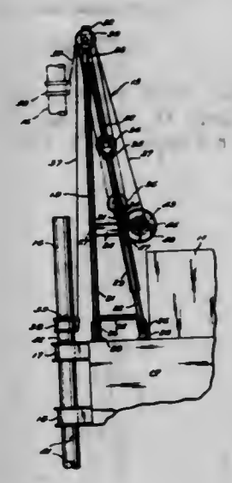
3,272,476
ENGINE STARTER
Augustus C. Durdin, Rockton, and Bernard Kittle and Stephen S. Beitz, Rockford, Ill., and Donald F. Swenski, Arvada, Colo., assignors to Sundstrand Corporation, a corporation of Illinois
Original application Aug. 30, 1960, Ser. No. 52,845. Divided and this application Dec. 18, 1964, Ser. No. 422,066
9 Claims. (Cl. 253—59)

1. A gas and air propelled engine starter for producing self-sustaining engine rotation comprising a main shaft, turbine wheel means mounted on said shaft, an output shaft driven by said main shaft adapted to be connected to drive said engine, air nozzle means for directing compressed air against said turbine wheel means for rotation thereof, combustion gas nozzle means for directing hot gases against said turbine wheel means for rotation thereof, and a drag fan operatively connected to said main shaft separate from said turbine wheel means for preventing rotation of said turbine above a predetermined speed, said drag fan having inlet ducting means connected to a source of constant low pressure fluid and



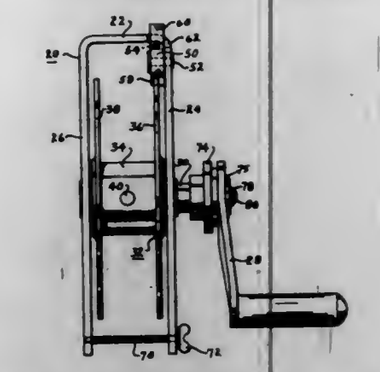
having outlet ducting means connected to a constant low pressure receiver so that the load imposed on the turbine wheel is a function substantially of only the speed of the turbine wheel.

3,272,477
HYDRAULIC SPUD LIFTING ARRANGEMENT FOR DREDGES
Fred J. Schmidt, Baltimore, Md., assignor to Ellicott Machine Corporation, Baltimore, Md., a corporation of Maryland
Filed Apr. 16, 1964, Ser. No. 360,333
14 Claims. (Cl. 254—93)



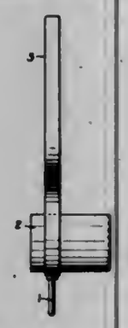
1. A dredge comprising a hull; a spud mounted for generally vertical movement relative to said hull; a hoist on said hull having a cable operatively connected to said spud to control the vertical position of said spud; said hoist including winding means operatively engaging said cable operable to release cable, take in cable and lock to prevent both release or taking in of cable, said winding means including drive means for automatically applying tension to said cable at all times when it is unlocked to release cable or take in cable; and a linear power actuator operatively connected to said cable operable in one direction to raise said spud when said winding means is locked.

3,272,478
ANCHOR REEL
Clem C. Binns, Niles, Mich.
(% Cass Tool & Die, Cassopolis, Mich. 49031)
Filed June 8, 1964, Ser. No. 373,192
4 Claims. (Cl. 254—186)



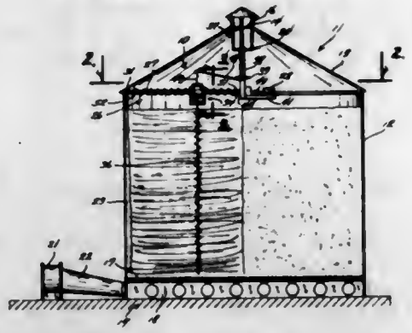
1. An anchor reel comprising a unitary assembly of a base and two sides joined to said base forming a U-shaped frame, a reel assembly mounted within said frame and comprising a hub, a wheel concentric with and integrally connected to one end of said hub, and a ratchet wheel concentric with and integrally connected to the other end of said hub, one of said frame sides being movable toward and away from said hub on opposite sides thereof a shaft extending concentrically from said hub and passing through one of said sides, a handle connected to said shaft for free rotation with respect to said assembly, keying means on said handle, cooperating keying means on said shaft, a spring on said shaft acting between said handle and said frame to bias said handle away from said second mentioned keying means, a pawl resiliently biased into latching contact with said ratchet wheel, frictional means interposed between one of said wheels and the adjacent side wall, and means for urging said last mentioned side wall and said last mentioned wheel into closer contact with said frictional means.

3,272,479
TOOL
Gerard Feltgen, 6908 Fairfax Road, Bethesda, Md.
Filed July 31, 1964, Ser. No. 386,795
8 Claims. (Cl. 259—73)



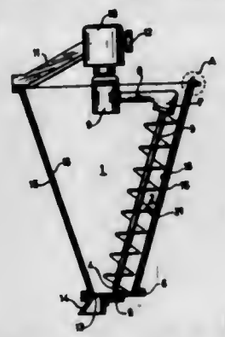
1. A device for facilitating the manual agitation of liquid containers such as paint cans and the like comprising a cradle for holding the container in a generally horizontal position, a support rigidly connected to and projecting from the bottom of the cradle, said support having means at its lower end adapting it to accommodate substantial universal pivotal movement of said support and cradle about the lower end of said support, and an actuator arm fixed to and projecting upwardly from said cradle whereby said actuator arm may be manipulated to impart rapid oscillatory pivotal motion to said entire device and any container resting in said cradle about an axis through the lower end of said support to thereby agitate the contents of such a container.

3,272,480
METHOD AND APPARATUS FOR AERATING STORED GRAIN
Eugene G. Sukup, Dougherty, Iowa, assignor to Sukup Manufacturing Co., Sheffield, Iowa, a corporation of Iowa
Filed Oct. 26, 1964, Ser. No. 406,385
9 Claims. (Cl. 259—111)



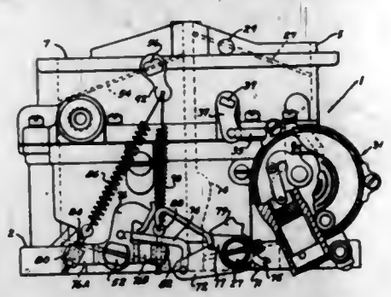
1. A grain moving apparatus for operation within a grain bin having a roof and enclosed by a wall, said apparatus comprising in combination:
rotatable means including a vertically disposed, rotatable auger;
conveyor means for providing sole support for said rotatable means, said conveyor means rotatable about its longitudinal axis to move said rotatable means radially back and forth within the bin;
friction means operably connected to said conveyor means and to the bin wall for effecting horizontal movement of said conveyor means in a circular direction about the bin; and
support means attached to the bin roof and rotatably supporting said conveyor means for movement in a horizontal plane.

3,272,481
MIXING DEVICES
Constant J. Nauta, Bloemendaal, Netherlands, assignor to Nautamix N.V., Haarlem, Netherlands
Filed July 7, 1964, Ser. No. 380,830
Claims priority, application Netherlands, July 12, 1963 295,226; Apr. 9, 1964, 6,403,850
4 Claims. (Cl. 259—111)



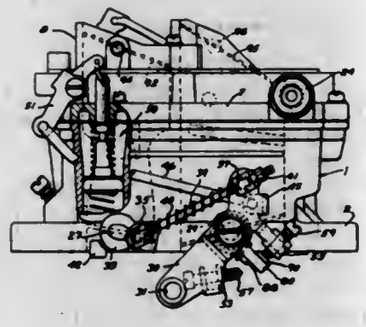
1. In a mixing device having at least one mixing vessel with a side wall of circular cross-section and a bottom, at least one mixing element disposed in said vessel with the longitudinal axis of said element extending parallel to said side wall, means mounting said element for revolving about the longitudinal axis of the vessel in close proximity to said side wall, and drive means for effecting said revolving of said mixing element; said side wall comprising a closed rigid outer casing and a closed elastic inner casing joined together in a fluid-tight manner at their upper and lower edges to define a space therebetween, and valve means carried by said side wall and communicating with said space so that the pressure in said space may be varied through said valve means to cause the movement of said elastic inner casing toward and away from said mixing element.

3,272,482
AIR VALVE SECONDARY CARBURETOR
Harold A. Carlson, St. Louis, Mo., assignor to ACF Industries, New York, N.Y., a corporation of New Jersey
Filed May 6, 1965, Ser. No. 453,711
5 Claims. (Cl. 261—23)



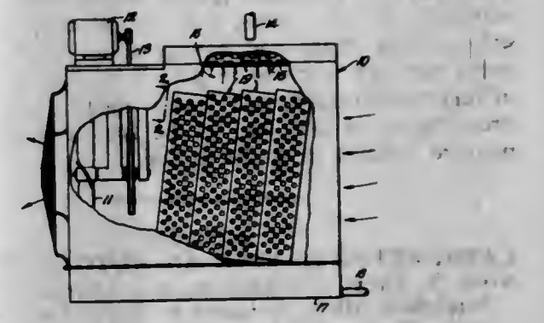
1. A multi-stage carburetor comprising a body structure having a primary mixture conduit and a secondary mixture conduit for the flow of an air and fuel mixture therethrough, means including a primary nozzle for providing fuel flow into the said primary conduit, a secondary nozzle for providing fuel flow into the said secondary conduit, manually operable means including a primary throttle and a secondary throttle movably mounted respectively within said primary and secondary conduits and downstream respectively of said fuel nozzles for controlling the flow of air-fuel mixture therethrough, a control valve within said secondary conduit upstream of said secondary fuel nozzle, means eccentrically mounting said control valve for movement from a closed position and toward an open position by air flow through said secondary conduit, and spring biasing means for said control valve connected to said secondary throttle and responsive to the position of the secondary throttle whereby said control valve is urged into a closed position when said secondary throttle is in a closed position and the degree of bias exerted on said control valve is altered as said secondary throttle is opened.

3,272,483
CARBURETOR
Charles L. Martin, St. Louis, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 10, 1965, Ser. No. 462,981
5 Claims. (Cl. 261—23)



1. A multistage carburetor for an internal combustion engine comprising
(1) a body structure having at least one primary mixture conduit and at least one secondary mixture conduit for the flow of air and fuel mixture therethrough;
(2) idle and main fuel systems including a main fuel nozzle for said primary conduit;
(3) a main fuel system including a main fuel nozzle for said secondary conduit;
(4) manually operated primary and secondary throttles movably mounted on primary and secondary throttle shafts in the respective mixture conduits downstream of said main fuel nozzles for controlling the flow of air-fuel mixture therethrough;
(5) means for sequentially opening said primary and secondary throttles including
(a) a foot pedal actuated lever arm pivotally mounted on the said secondary throttle shaft;
(b) a secondary throttle lever fixed to said secondary throttle shaft;
(c) a primary throttle lever fixed to said primary throttle shaft;
(d) pusher means constituting a connecting rod operatively connected by way of a split lever to said foot actuated lever arm and to said primary lever for urging the latter in a direction to open the said primary throttle, said pusher means and split lever having means to allow the said secondary throttle to continue moving in a direction to open the same after the said primary throttle is fully open.

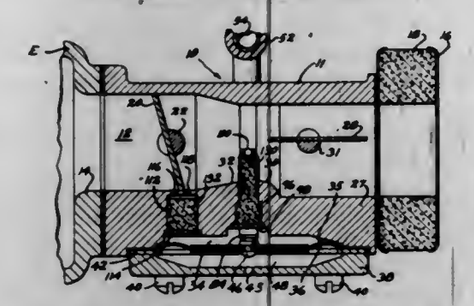
3,272,484
HONEYCOMB FILL FOR COOLING TOWER
Bruce B. Brand, Prairie Village, Kans., and Jerald J. Scott, Kansas City, Mo., assignors to Havens Structural Steel Co., Kansas City, Mo., a corporation of Missouri
Filed Aug. 22, 1963, Ser. No. 303,868
3 Claims. (Cl. 261—24)



1. In a cross flow cooling tower, the combination of a hollow, main tower body, a source of liquid at the top of said body, means for drawing air in a substantially horizontal path through said body, and a fill structure within said body, said fill structure comprising a plurality of abutted corrugated sheets located below said source of liquid, said corrugations forming substantially horizontal, open-ended, parallel passageways arranged with their axes in the direction of air flow, said passageways having lateral openings therein at intervals throughout the fill structure and providing communication between vertically adjacent passageways whereby to provide for dispersed gravity flow of liquid.

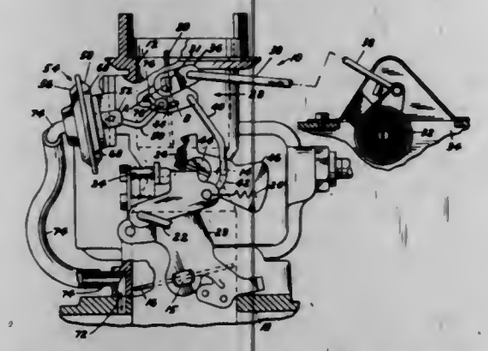
3. In a cross flow cooling tower, the combination of a hollow main tower body, a source of liquid at the top of said body, means for drawing air in a substantially horizontal path through said body, and a fill structure within said body, said fill structure comprising a honeycomb member located below said source of liquid, including a plurality of parallel, separated, flat sheets, and corrugated elements sandwiched between the flat sheets and defining with the flat sheets substantially horizontal open-ended parallel cells arranged with their axes in the direction of the air flow, said cells apertured at intervals along the conjunction between the corrugations and flat sheets and throughout the honeycomb structure, whereby to provide for dispersed gravity flow of liquid.

3,272,485
CARBURETOR
Ottis E. Newman, Normandy, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 21, 1964, Ser. No. 397,724
4 Claims. (Cl. 261—35)



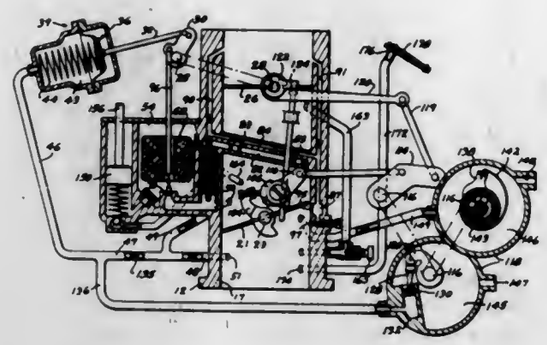
2. A carburetor comprising a body, a fuel and air mixture conduit through the body, a fuel inlet passageway formed in the body, said body formed with a pulsation pump, means for pulsing said pump, said pump being connected to a source of fuel and adapted to deliver fuel under pressure to the fuel inlet passageway, said body formed with a fuel chamber in communication with the fuel inlet passageway, an inlet valve in said fuel inlet passageway for controlling the flow of fuel into the said fuel chamber, means for operating said inlet valve, said body having a fuel connection between the fuel chamber and said mixture conduit, said fuel connection including an enlarged recess opening into said mixture conduit, a mass of fuel absorbent sponge material filling the inner extremity of said recess, said sponge material being of polyurethane foam and having about 60–80 connected pores per inch whereby to permit substantially free flow of fuel therethrough, said sponge material causing partial breaking up of said fuel as the fuel is ejected into the mixture conduit from the nozzle.

3,272,486
CARBURETOR HAVING AN AUTOMATIC CHOKE
Alvin S. Lucas, Farmington, and Charles W. Saussele, Southfield, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Mar. 26, 1963, Ser. No. 268,008
7 Claims. (Cl. 261—39)



1. In an internal combustion engine carburetor having an automatic choke including a choke plate unbalanced to open in response to airflow, thermostatic means adapted to resist opening of the choke plate when the engine is cold and vacuum responsive means for opening said choke plate a predetermined amount against the closing force of the thermostatic means upon starting of the engine, and independent means including slot means for holding said choke plate closed until the engine starts, and link means connecting said vacuum responsive means to said slot means such that said link means becomes disengaged from said slot means when said vacuum responsive means is fully actuated.

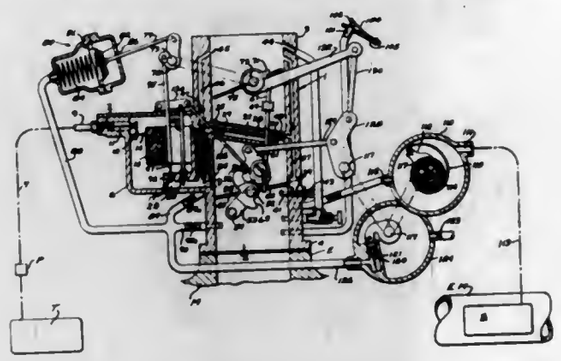
3,272,487
CARBURETOR
Forrest W. Cook, Webster Groves, Mo., James T. Bickhaus, Granite City, Ill., and Robert J. Smith, Florissant, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Apr. 29, 1963, Ser. No. 276,472
14 Claims. (Cl. 261—39)



1. A carburetor for an internal combustion engine, said carburetor comprising a body structure having an air and fuel mixture conduit therethrough, a throttle valve mounted across said mixture conduit for movement from an open to a position closing said mixture conduit, means for operating said throttle valve, an air valve mounted within said mixture conduit anteriorly of said throttle valve for movement from an open to a position closing said mixture conduit, said body structure having a fuel chamber therein and a fuel passage extending from said fuel chamber to said mixture conduit for supplying fuel thereto, said passage having a metering restriction, a metering rod operatively connected to said air valve, said metering rod having a portion of varying thickness within said metering restriction to vary fuel flow through said fuel passage, a servo motor responsive to ambient air pressure connected to said air valve to control said air valve, means forming a first air passage to said servo motor from said mixture conduit downstream of said air valve to expose said servo motor to changes in air pressure in said mixture conduit in response to operation of said throttle, means forming a second air passage from ambient air to said first air passage, and temperature responsive valve means in said second air passage for controlling the flow of air through said second passage whereby to modify the operation of said servo motor in response to engine temperatures.

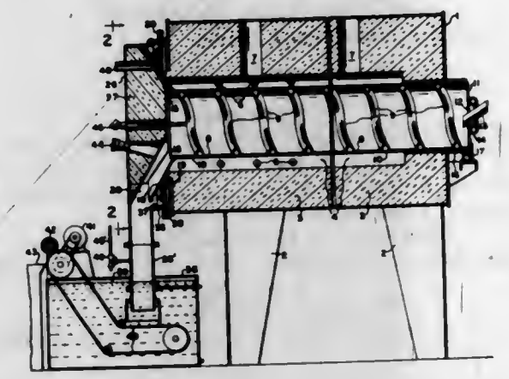
3,272,488
CARBURETOR
James T. Bickhaus, Granite City, Ill., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 23, 1963, Ser. No. 332,466
4 Claims. (Cl. 261—39)

1. A carburetor comprising a body structure having an air and fuel mixture conduit therethrough, a throttle valve mounted across said mixture, conduit for movement from an open to a position closing said mixture conduit, a throttle lever connected to said throttle valve and movable therewith for operating said throttle valve, an air valve mounted within said mixture conduit anteriorly of said throttle valve for movement in response to air flow through said mixture conduit from a position closing said mixture conduit to an open position, a spring connected between said air valve and said carburetor body and biasing said air valve toward a closed position, said carburetor body including a fuel reservoir and first and second fuel passages connected between said fuel reservoir and said mixture conduit, a first metering rod movably mounted on said carburetor and having portions varying sequentially from a first small thcikness to a larger thickness to a second small thickness positioned for movement into said first fuel passage for varying the flow of fuel therethrough, linkage means connecting said metering rod operatively to said air valve to be moved therewith upon the opening and closing movement of said air valve, a second metering rod movably mounted on said carburetor body and having a portion of varying size including a conical shoulder extending into said second fuel passage, a conical surface in said second



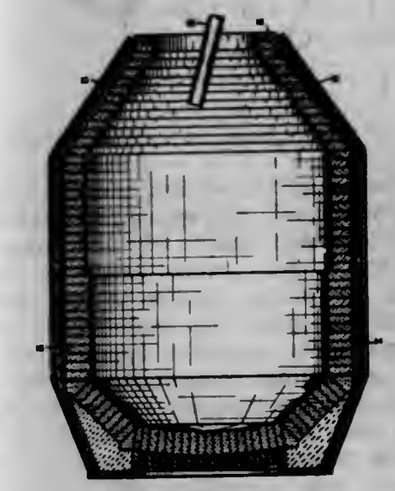
fuel passage, a temperature sensitive spring connected to said second rod for biasing said second metering rod portion into said second fuel passage at temperatures above a predetermined value to reduce fuel flow to said mixture conduit, said temperature sensitive coil being responsive to temperature below said predetermined value to move said second metering rod portion progressively out of said second fuel passage to increase fuel flow in response to drops in temperature.

3,272,489
HEAT TREATING FURNACE WITH REMOVABLE HELICAL INSERT
Walter E. Heyer, Los Alamitos, and Harold E. Mescher, Pico Rivera, Calif., assignors to Pacific Scientific Company, San Francisco, Calif., a corporation of California
Filed Mar. 13, 1964, Ser. No. 351,643
6 Claims. (Cl. 266—4)



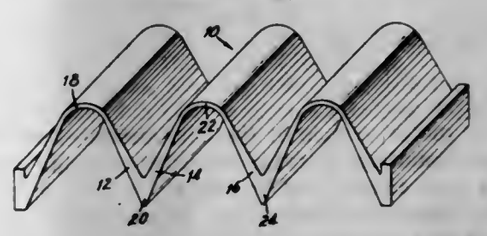
1. A heat treating furnace comprising a furnace casing having a heating chamber therewithin, means for heating said chamber, and a substantially cylindrical retort extending within said heating chamber for rotation therein, said retort having a relatively thin inner lining provided with a hollow smooth rounded helix extending the length thereof, said retort having an outer support casing for supporting said inner lining in use, said inner lining being of slightly lesser diameter than its support casing whereby the former can be slipped into the latter for use and secured therein, said inner lining being readily removable from its support casing for replacement of said lining when worn.

3,272,490
STEELMAKING FURNACE
Robert P. Ross, Louisville, Ky., assignor to Corhart Refractories Company, Louisville, Ky., a corporation of Delaware
Filed Sept. 25, 1963, Ser. No. 311,439
3 Claims. (Cl. 266—35)



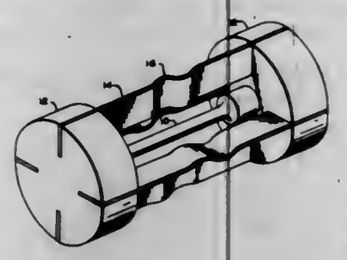
1. In a basic oxygen furnace comprising a generally pear-shaped tank, refractory lining covering the internal surfaces of said tank and means for providing an oxygen blast directed into said refractory lined tank, the improvement comprising a chrome-magnesia fused cast refractory material forming at least part of said refractory lining and having a composition consisting of, analytically by weight, 40% to 79% MgO, up to 20% FeO, 4% to 58% Cr_2O_3, up to 35% Al_2O_3, up to 10% TiO_2, up to 5% SiO_2, up to 3% CaO and up to 5% fluorine.

3,272,491
RESILIENT SPRING
Richard R. Knittel, Martinsville, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Mar. 3, 1964, Ser. No. 349,086
5 Claims. (Cl. 267—1)



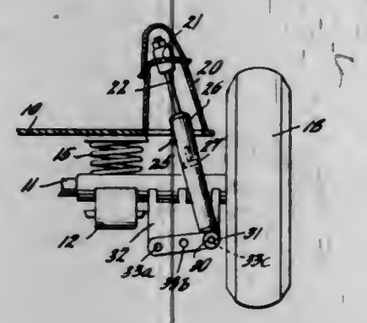
1. A spring comprising an undulating member having resilient leg sections and resilient juncture sections between adjacent leg sections, the junctures having alternating rounded, arcuate configurations and sharp configurations, said rounded configurations having the arc extending over a substantial portion of the convolution, the cross sectional area of the member at the sharp configuration being substantially greater than the cross-sectional area of the member at the rounded juncture, said leg sections being substantially straight and inclined and the cross-sectional area of the leg sections decreasing uniformly over their length from thick, sharp juncture, to the thin rounded juncture.

3,272,492
TRANSVERSELY SUPPORTED TORSION BAR
William A. Jones, Boston, Mass., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Mar. 11, 1964, Ser. No. 350,953
3 Claims. (Cl. 267—1)



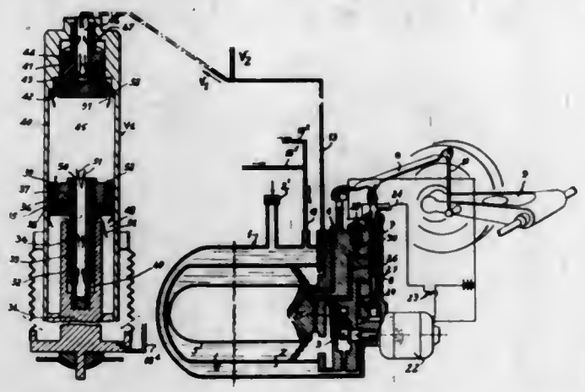
1. A torsional spring assembly, comprising a torsion bar having a relatively high spring rate in torsion and being relatively flexible transversely of a longitudinal axis thereof, a pair of hubs secured axially on opposite ends of said bar for rotation relative to one another, and a plurality of leaf springs circumferentially-spaced about said bar and rigidly secured at opposite ends thereof in said hubs, said springs being relatively stiff transversely of said axis, having a relatively low spring rate in torsion about said axis, and comprising transversely-corrugated strips having relatively low resistance to axial stretching and therefore being compliant with relative rotation of said hubs to torque said torsion bar about said axis.

3,272,493
SHOCK ABSORBERS
Christian Marie Lucien Louis Bourcier de Carbon, 64 Blvd. Maurice-Barres, Neuilly-sur-Seine, France
Filed Aug. 26, 1964, Ser. No. 392,205
3 Claims. (Cl. 267—8)



1. In a motor vehicle of the class described, a chassis, a wheel mounting, a main suspension spring disposed between said chassis and the wheel mounting, a shock absorber disposed between the chassis and the wheel mounting and in general parallelism relative to said supporting spring, said shock absorber including a cylinder and a piston therein and the piston rod fixed to said piston and extending from one end of the cylinder, attaching means at opposite ends of said shock absorber, means pivotally connecting an upper end of said shock absorber to said chassis, and means connecting the lower end of said shock absorber with said wheel mounting, said last-named means comprising a plurality of selective connecting points of attachment aligned in a direction transverse to the direction of travel of the vehicle, whereby there is a choice of different angular positions of installation of said shock absorber in relation to the direction of vibratory movement between said chassis and said wheel mounting, in order to vary the hardness of the ride.

3,272,494
SUSPENSION FOR VEHICLES
René Lucien, Neuilly-sur-Seine, and Emile Tetart, Louvie-Juzon, France, assignors to Societe à Responsabilite Limitee Recherches Etudes Production R.E.P., Paris, France
Original application Mar. 2, 1964, Ser. No. 348,338, now Patent No. 3,208,760, dated Sept. 28, 1965. Divided and this application Aug. 11, 1965, Ser. No. 510,997
3 Claims. (Cl. 267—64)

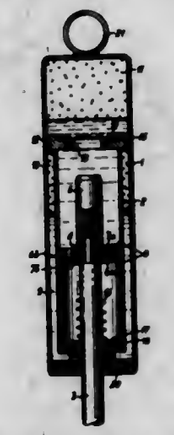


1. In a suspension for vehicles with an oleo-pneumatic accumulator, a shock-absorber jack comprising a cylinder, a piston adapted to move in said cylinder, a piston rod comprising near its upper extremity, two distinct coaxial portions separated by an annular damping space, one of said portions comprising a piston separating two chambers of said cylinder, one upper chamber, the other lower chamber, communicating with each other on the one hand through orifices formed in the separating piston, controlled by a clapper valve and permitting free passage of the liquid when said valve is open, and on the other hand, through the intermediary of said annular damping space and of orifices in the lower portion of the piston rod, said clapper valve being open during the compression stroke and closed during the expansion stroke, at the upper portion of said cylinder and in said cylinder, a member interposed between said upper chamber and the connection to the oleo-pneumatic accumulator, a second annular damping space comprised between said interposed member and the body of the cylinder, channels formed in said member and permitting free passage of the liquid between said connection and said upper chamber, and a second clapper valve for controlling said channels, said valve being open during the expansion stroke and closed during a compression stroke.

3,272,495
HYDROPNEUMATIC SUSPENSION UNIT
Ludwig Axthammer, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed Aug. 17, 1964, Ser. No. 390,063
Claims priority, application Germany, Aug. 20, 1963, F 40,532
19 Claims. (Cl. 267—64)

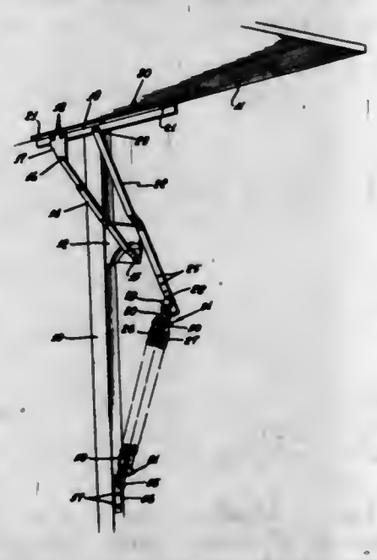
1. In a hydropneumatic suspension unit, in combination:
(a) a cylinder member having an axis and defining a cylinder space therein;
(b) a piston member axially reciprocable in said space between two terminal positions, said piston member axially dividing said cylinder space into two compartments;
(c) a liquid substantially filling said compartments;
(d) air cushion means in pressure transmitting engagement with said liquid;
(e) a storage chamber;
(f) a supply of said liquid in said chamber;

(g) pressure means for maintaining the liquid in said storage chamber under pressure;
(h) resilient valve means interposed between said storage chamber and one compartment of said cylinder space for normally separating the liquid in said storage chamber from the liquid in said cylinder space under the resilient force of said valve means, said valve means including
(1) a valve seat member formed with a conduit having respective orifices in said storage chamber and in said one compartment, said valve



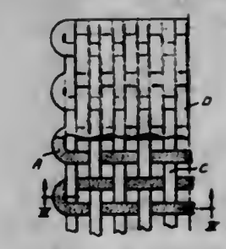
seat member having an annular face in a plane about the orifice of said conduit in said one compartment, and
(2) a valve disk member in said one compartment, said valve disk member having a face portion normally sealingly engaging said annular face; and
(i) yieldably resilient abutment means on said piston member engageable with said valve disk member for moving said face portion thereof away from said plane when said piston member approaches one of the terminal positions thereof.

3,272,496
SPRING CONNECTION
Paul M. Halopoff and William Halopoff, Los Angeles, Calif., assignors to Hally Stamping and Manufacturing Company, Los Angeles, Calif., a corporation of California
Filed Mar. 3, 1964, Ser. No. 349,108
6 Claims. (Cl. 267—74)



1. A spring connecting device for a pair of elongated coiled tension springs comprising a fitting for an end of each spring, each said fitting comprising a plate with a butt at one end having a plurality of coil receiving recesses on opposite edges in spiral spacing and adapted to receive and hold a plurality of endmost coils of spring wire, each said plate having a mounting hole therein, a spring fastener fitting at each end of the pair of springs, mounting means for mounting said springs in pairs and at both ends to a respective one of said fittings comprising a pair of hook elements attached to the respective fitting, one of said plates being mounted on each hook element, and a separate removable connection extending from one plate to the other and in a position attaching said plates together whereby the springs are anchored to the mounting means and to each other to prevent dislodgement should a spring break under tension.

3,272,497
SUPPORTING STRAP FOR FURNITURE UNIT
Philippe Valdelievre, 95 Rue de l'Industrie, Wervicq-Sud, Nord, France
Filed May 7, 1965, Ser. No. 467,800
4 Claims. (Cl. 267—110)

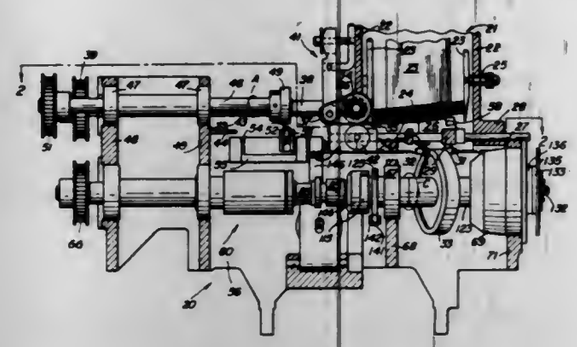


1. A one-way extensible webbing which consists essentially of:
a plurality of extensible cotton-covered rubber warp threads;
and a plurality of inextensible weft threads, interwoven with said extensible cotton-covered warp threads, consisting essentially of jute, said jute weft threads and said cotton-covered rubber warp threads being of similar overall thickness, the interweaving of said jute weft threads with said cotton-covered rubber warp threads frictionally inhibiting the elongation of said cotton-covered rubber warp threads whereby the extensibility of said cotton-covered rubber warp threads is retarded.

3,272,498
INTERMITTENT DRIVE FOR CARD FEED DEVICES OR THE LIKE
Erwin F. C. Schulze, Novelty, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 12, 1964, Ser. No. 374,767
17 Claims. (Cl. 271—5)

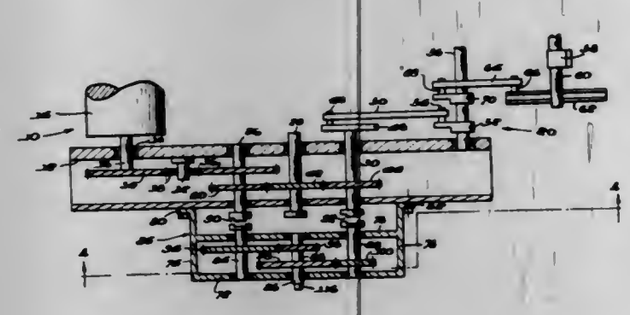
1. A cyclically operable card feed mechanism for feeding individual record cards, one-by-one, at high speeds, from a storage magazine comprising:
a movable feed member for engaging each successive card in the magazine to feed the card therefrom;
an operating shaft;
means coupling said feed member in mechanically driven relation to said operating shaft;
a drive shaft;
a control shaft;
clutch means for engaging said drive shaft in mechanical driving relation to said control shaft;
a torsion bar having one end connected to said control shaft and having its other end connected to said operating shaft;
holding means for maintaining said control shaft stationary in predetermined angular alignment with said

operating shaft and with said torsion bar stressed with a preselected torque;
and actuating means for engaging said clutch means and releasing said holding means in predetermined



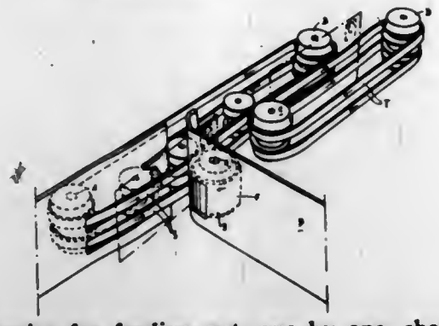
timed relation to each other to permit said torsion bar to initiate rotation of said control shaft at the beginning of a card feed cycle to provide for engagement of said clutch means under minimum inertia conditions.

3,272,499
MECHANISM FOR FEEDING BOX BLANKS
Theodore M. Baum, Baltimore, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,103
12 Claims. (Cl. 271—10)



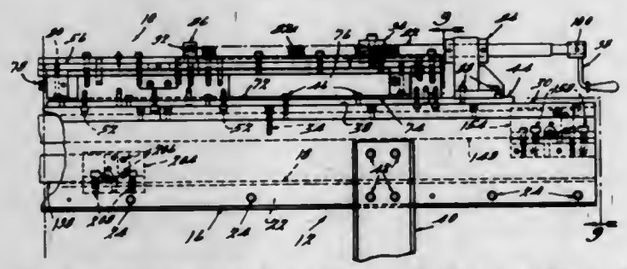
1. Apparatus for feeding box blanks at three timed frequencies with adjacent processing machinery comprising,
a reciprocating feeder for feeding box blanks successively from a stack to adjacent processing machinery,
an output shaft connected to said reciprocating feeder and operable upon rotation to reciprocate said feeder,
an input shaft connected to and driven by said adjacent processing machinery in timed relation thereto,
a primary transmission operable to connect said input shaft to said output shaft for reciprocating said feeder at a first timed frequency relative to adjacent processing machinery,
an auxiliary transmission operable in a first position to connect said input shaft to said output shaft for reciprocating said feeder at a second timed frequency relative to said processing machinery and in a second position to connect said input shaft to said output shaft for reciprocating said feeder at a third timed frequency relative to said processing machinery, and
said primary and auxiliary transmissions constructed and arranged so that in all of said frequencies said reciprocating feeder feeds box blanks into the adjacent processing machinery at a linear velocity substantially equal to the peripheral velocity of a rotating member in said adjacent processing machinery.

3,272,500
DEVICE FOR GUIDING POSTAL ARTICLES, FORMS OR THE LIKE
Christiaan Johannes van Dalen, Leidschendam, and Cornelis Leendert de Jong, The Hague, Netherlands, assignors to de Staat der Nederlanden, ten Deze Vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands
Filed Jan. 23, 1961, Ser. No. 84,268
Claims priority, application Netherlands, Jan. 25, 1960, 247,689
8 Claims. (Cl. 271—34)



1. Device for feeding out, one by one, sheets (Z) of laminar material, which together form a stack, said device comprising a positively driven conveyor member and a moveable friction member (F or 3) cooperating under pressure with the conveyor member (S), the cooperating parts of which members move along closed tracks and between which members the sheets are fed out, the direction of movement of the friction member being dependent on the possible presence between the friction member and the conveyor member of at least two superimposed sheets of laminar material (see FIG. 4), while the friction between the friction member and one of the sheets as well as the friction between the conveyor member and one of the sheets is greater than the friction between two of the sheets, continuously operating driving means 1, 2 for the friction member, including driving members and a slip clutch 5 between the driving members and the friction member, continuously tending to drive the friction member via the slip clutch, with a force which is always sufficient to overcome the friction between two of the sheets of laminar material, in a direction opposite to the direction in which the friction member is influenced by the conveyor member.

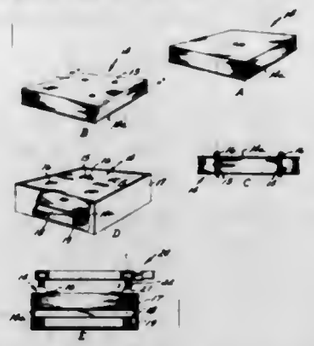
3,272,501
ADJUSTABLE STROKE INTERMITTENT SHEET FEEDER HAVING PLURAL SHUTTLE MEANS
Frederick P. Sharpe, Dearborn, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Feb. 17, 1964, Ser. No. 345,470
10 Claims. (Cl. 271—55)



6. In combination with a sheet metal shearing device, a work feeding apparatus which includes,
a support structure having an elongated work stock supporting surface,
means for laterally aligning sheet metal work stock on said surface including a plurality of rollers and means on said structure for moving said rollers laterally of said structure to and from engagement with the work stock,

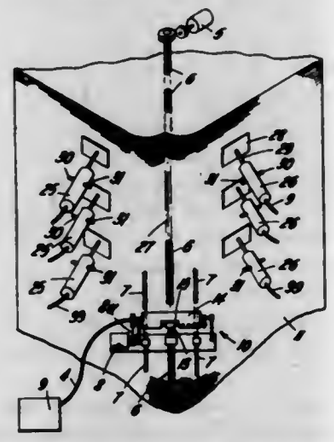
shuttle means longitudinally slidable in said support structure and successively engageable with said work stock to continually bias said work stock into said shearing device, and
means for effecting the longitudinal movement of said shuttle means.

3,272,502
APPARATUS FOR MANIPULATION OF THIN SHEET STOCK
Curtis M. Beachum, 5226 Park Lake Road, East Lansing, Mich.
Original application May 20, 1963, Ser. No. 281,427. Divided and this application Mar. 1, 1965, Ser. No. 440,057
2 Claims. (Cl. 271—62)



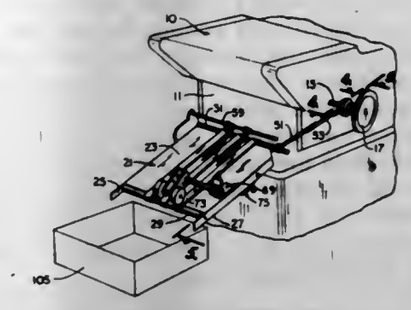
1. A flexible thin sheet stock dispenser comprising:
(a) a stack of thin sheet stock pierced to provide at least one transverse opening therethrough;
(b) a receptacle shaped to support upwardly and enclose from the sides, said stack of thin, pierced sheet stock;
(c) a spring loaded, false bottom providing in said receptacle upward support of said stack of thin sheets; and
(d) at least one elongate resilient member through each of said openings in said sheet stock, said resilient member constricted by said openings against radial expansion whereby friction on each of said sheets in said stack is established at the perimeter of each of said openings.

3,272,503
APPARATUS FOR SUCCESSIVELY OPERATING UPON SHEETS WHILST IN A STACK
Sidney Haines, Dovercourt, England, assignor to Vacumatic Limited, Essex, England, a British company
Filed July 15, 1964, Ser. No. 382,726
Claims priority, application Great Britain, July 16, 1963, 27,440/63
15 Claims. (Cl. 271—62)



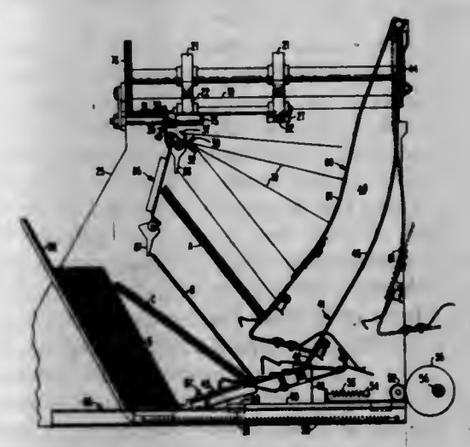
1. An apparatus for successively operating upon sheets whilst in a stack comprising a support for said stack, an operating head movable along and operating on the stack, means engageable with parts of the stack after a predetermined movement of the head along the stack, so as to move the sheets or parts thereof away from the head on one side thereby relieving the pressure of those sheets on the head during its operation.

3,272,504
DELIVERY DEVICE FOR A DUPLICATING MACHINE OR THE LIKE
Carl V. Schnoebelen, 408 E. Gray St., Des Moines, Iowa
Filed Mar. 23, 1964, Ser. No. 353,998
13 Claims. (Cl. 271—68)



1. In a delivery device for a duplicating machine having a delivery end and a drive shaft,
a first roller member operatively secured to the duplicating machine adjacent its delivery end,
a second roller member operatively secured to the duplicating machine outwardly of said first roller member and delivery end of the duplicating machine,
said first and second roller members being parallel,
a belt means extending between said first and second roller members,
means operatively connecting the drive shaft and one of said first and second roller members for rotating said first and second roller members and said belt means,
and a sheet gripping means on the duplicating machine between said first and second roller members.

3,272,505
CAPACITIVE GUIDING APPARATUS FOR RECORD ELEMENTS
Robert Arthur Sanderson, 14 Joyce Road, Wayland, Mass.
Filed Aug. 30, 1965, Ser. No. 494,290
4 Claims. (Cl. 271—71)



1. A unit record card processing machine comprising:
an electrically grounded frame;
feed means mounted on said frame for feeding unit record cards along a predetermined path within said frame; and

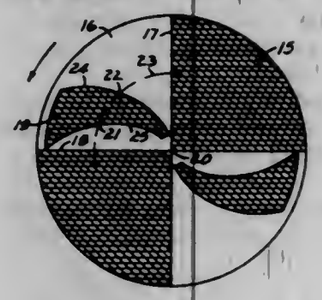
a guide member mounted on said frame and projecting into said predetermined path for preventing unit record cards carrying spurious electrostatic charges from adhering to said frame, said guide member comprising:

a first electrically conductive member mounted on said frame;

a second electrically conductive member projecting into said predetermined path so as to contact each unit record card, and receive a portion of the spurious electrostatic charge therefrom, and thereby electrostatically repel said unit record card; and

a dielectric member mounted on said first electrically conductive member and supporting said second electrically conductive member, said dielectric member having a shunt resistance which is sufficiently high to allow said second electrically conductive member to receive an electrostatic charge for repelling each unit record card, but sufficiently low that the electrostatic charge imparted to said second electrically conductive member by each unit record card is dissipated through leakage current before the arrival of the next unit record card.

3,272,506
PATTERN FOR GENERATING THE SUBJECTIVE EFFECT OF COLOR
George Wright Lescher, 303 Hillwood Drive, Nashville, Tenn.
Filed Nov. 22, 1963, Ser. No. 325,712
16 Claims. (Cl. 272—8)



1. A movable pattern comprising

(A) an illuminable and viewable pattern area, said pattern area having incorporated therewithin

(B) at least one cycle unit so disposed as to be optically repeatable more than about 3 times per second in consequence of continuous motion of said pattern, said cycle unit comprising

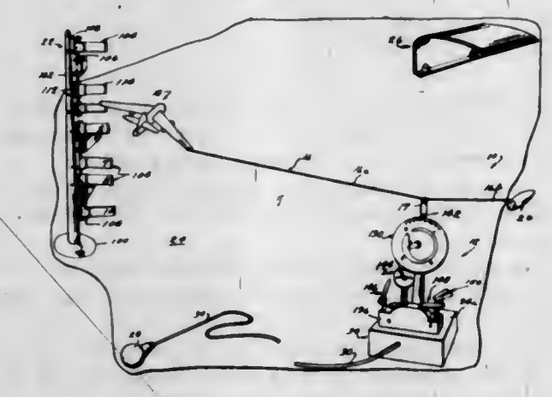
(a) at least one essentially dark-shaded first segment extending transversely of the respective lines of motion of constituent points in said cycle unit, and extending longitudinally of said lines of motion in distance from about 30% to about 55% of the lineal dimensions of said cycle unit along the respective said lines of motion,

(b) at least one essentially light-shaded second segment extending transversely of said lines of motion, and extending longitudinally of said lines of motion for the remainder of the lineal dimensions of said cycle unit along the respective said lines of motion, said light-shaded second segment having a leading edge and a trailing edge, and said light-shaded second segment having disposed therewithin,

(c) at least one dark-shaded configurational element comprising a multiplicity of imaginary constituent lines essentially conjoined transversely of said lines of motion and extending longitudinally of said lines of motion a distance from about 15% to about 35% of the lineal dimensions of said cycle unit along the respective said lines of motion, said conjoined constituent lines terminating in conjoined ends thereof, said conjoined ends forming a leading edge and a trailing edge of said configurational element in a geometric disposition such that, in attitudes relative to said leading edge and said trailing edge of said light-shaded second segment,

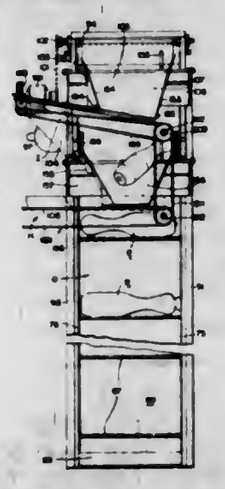
(1) component portions of at least one of the two said leading edges and component portions of at least one of the two said trailing edges are in essence disposed obliquely to, at their respective intersections with, the said lines of motion of the constituent points at such respective intersections.

3,272,507
TETHERED AIRPLANE TOY
Manuel Grau, Guatemala City, Guatemala, assignor of one-half to Aniceto Vasquez Mendez, Mexico City, Mexico
Filed July 10, 1963, Ser. No. 294,207
11 Claims. (Cl. 272—31)



11. An amusement device comprising: a freely rotatable vertically disposed drive shaft fixed against lateral movement; a rod pivotally carried on fulcrum means pivoted intermediate its ends on said shaft for pivotal movement in a vertical plane; model means carried by one end of said rod at a location above the pivot point; balance weight means carried by the other end of said rod at a location above the fulcrum means, all of said means coacting to effect a single pivotal position of said rod at which said balance weight means and said model means balance each other both when said shaft is at rest and when said shaft is rotating, all of said means unbalancing said rod at all other pivotal positions when said shaft is at rest and tending to pivot said rod away from said single balance position when displaced from said position, whereby said model means when disposed below said position during rotation of said shaft swings up with an increase in rotational speed of said shaft and when disposed above said position during rotation of said shaft swings down with an increase in speed and whereby swinging movement of said rod through said position in either direction is effected only by acceleration or deceleration of the rotation of said shaft; a drive system for controllably accelerating and controllably decelerating said drive shaft by an operator, said drive system including a compressible pneumatic chamber remote from said drive shaft, an expansible chamber, a tube connecting said chambers whereby compression and release of said compressible chamber by the operator expands and contracts said expansible chamber, power transmitting means for converting expansion and contraction of said expansible chamber to torque on said drive shaft and for releasing said shaft for free rotation when said compressible chamber is released by the operator, and brake means responsive to full compression of said compressible chamber for decreasing the rotational speed of said shaft whereby alternate compression and release of said compressible chamber by the operator causes said shaft to rotate at a speed dependent on the rate of compression and release and whereby a prolonged and substantially complete compression of said compressible chamber applies braking force to said shaft to rapidly decrease the rotational speed of said shaft.

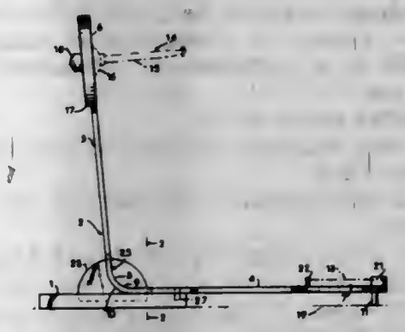
3,272,508
ELEVATOR DISCHARGE ORIENTING MEANS OPERATED IN RESPONSE TO ORIENTATION OF PINS ON THE ELEVATOR
Howard M. Dowd, Littleton, Royal L. Barrows, Middleton, and Oliver A. Landry, Revere, Mass.; W. Leroy Temple and State Street Bank and Trust Company, executors of said Howard M. Dowd, deceased, said Barrows and said Landry assignors, by mesne assignments, to Otis Elevator Company, New York, N.Y., a corporation of New York
Filed June 6, 1963, Ser. No. 286,015
5 Claims. (Cl. 273—43)



1. In an automatic bowling pinsetting machine having means including a bowling pin elevator for sequentially raising horizontally oriented bowling pins from a lower level to a higher level, means associated with said elevator for dislodging said pins therefrom at said higher level, and means including a slide for receiving said dislodged pins; means associated with said elevator for orienting bowling pins of the type having a relatively thick body and a relatively thin neck, and for insuring that such pins enter said slide with their base portion first which comprises a pair of pivoted arms each adapted to move between an upstanding position where said arm is adapted to engage the neck of a pin after said pin has been dislodged from said elevator, and before said pin has reached said slide, and a lowered position where said arm is out of the path of said pin, link means connecting said arms whereby when one of said arms is in the upstanding position the other of said arms is in the lowered position, and pin sensing means responsive to the passage of the pin on said elevator for detecting the neck portion of the pin and erecting the corresponding arm.

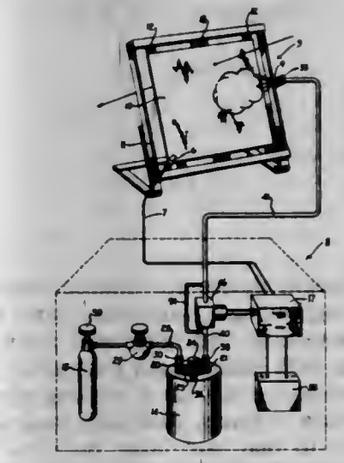
3,272,509
COMBINED ROLL-OVER TARGET AND AUTOMATIC RING-TOSSING AMUSEMENT DEVICE
William J. Rogers, 53—15 66th St., Maspeth 78, N.Y.
Filed Aug. 16, 1963, Ser. No. 302,500
8 Claims. (Cl. 273—102.1)

1. An amusement device comprising a toss-ring; an angular roll-over member having a first arm provided with a flat inner target face at its terminal end, a second arm provided with a flat inner face at its terminal end serving as a rest for the toss-ring, and an arcuate flat bottomed vertex portion joining the said two arms together, the roll-over member having a normal position in which it is in unstable equilibrium under gravity and in which position the first arm is upright and the second arm is prone; and a dart projectable against the target face having sufficient mass so as to unbalance the roll-over member upon impact and cause said member to



roll on its vertex portion and cause the first arm to drop rapidly to a prone position and sharply swing the second arm to an upright position, whereby the toss ring resting on the second arm is tossed toward the target face and the projecting shaft of a dart attached thereto, the dart having a suction cup attachable to the target face upon impact and having a shaft portion which extends perpendicularly to the target face upon attachment of the dart to the latter.

3,272,510
GENERATOR OF SIMULATED SMOKE SIGNALS FOR GUNNERY TARGET PRACTICE
John Alex Ingvar Ohlsson, Huskvarna, and Karl Ragnar Andersson, Jonkoping, Sweden, assignors to Saab Aktiebolag, a corporation of Sweden
Filed Nov. 19, 1962, Ser. No. 238—348
5 Claims. (Cl. 273—102.2)



1. Apparatus for providing to a gunner at a distance from a target a visual indication that he has scored a hit upon the target, in the form of a simulated smoke signal produced immediately after the target is hit, said apparatus comprising:

(A) a container adapted to hold a supply of finely powdered material in contact with gas under pressure and having

(1) a gas-tight closure,

(2) an outlet near its bottom and

(3) an inlet for gas under pressure;

(B) means for connecting said inlet with a source of gas under substantially constant pressure;

(C) a solenoid valve having inlet and outlet ports;

(D) duct means connecting the outlet of the container with the inlet port of the solenoid valve so that the valve can control release from the container of powdered material entrained in gas under pressure;

(E) nozzle means located at the target and connected with the outlet of the solenoid valve, through which gas and entrained powdered material are expelled into the air when the valve is open, to produce the appearance of smoke;

(F) transducer means at the target for producing an electrical impulse in consequence of passage of a projectile in a predetermined relationship to the target; and

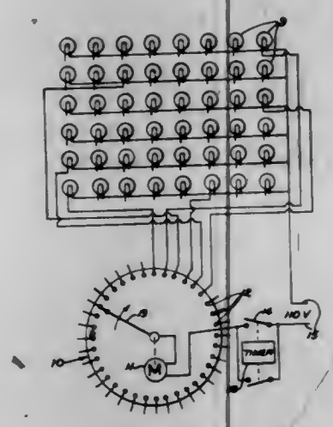
(G) amplifier means having

(1) input terminals connected with the transducer means and

(2) output terminals connected with the solenoid valve,

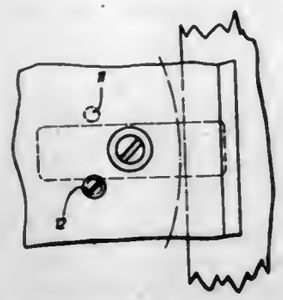
said amplifier means comprising time delay holding means for delivering a current of relatively long duration to said output terminals, to open the solenoid valve for a sufficient time to produce a distinctly visible simulated smoke puff in response to the brief electrical impulse delivered to said input terminals from the transducer means.

3,272,511
ELECTRICAL CHANCE DEVICE
Ennio Joseph Zarich, 747 Greenwich St., San Francisco, Calif.
Filed Feb. 18, 1964, Ser. No. 345,783
3 Claims. (Cl. 273—141)



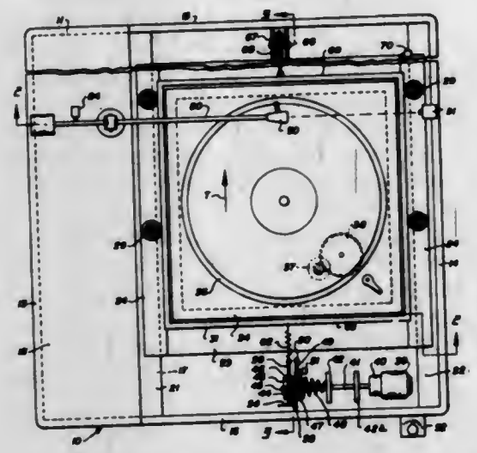
1. An amusement device for chance operation, comprising: a housing having a translucent panel on the front subdivided into vertical and horizontal rows of squares, an electric lamp bulb behind each said square, a stepping switch in said housing having a moving contact and a series of stationary contacts, each said stationary contact being connected to one said lamp bulb and serving to light that said lamp bulb each time said moving contact engages that said stationary contact, so that movement of said moving contact of said stepping switch results in said lamp bulbs blinking on and off cyclically, a unique number on each said square, said numbers being arranged in irregular random order, and a switch for energizing and de-energizing said stepping switch, the connection of the stepping switch contacts to the bulbs behind the squares being arranged in different irregular order from that of the arrangement of the squares, so that the appearance of random blinking of the bulbs is presented to an onlooker during operation of the stepping switch, thereby serving to attract and hold attention, one said bulb remaining lighted when the moving contact of the de-energized stepping switch has become stationary.

3,272,512
TRANSIT LATCH FOR PHONOGRAPH
Horst Zarm, Berlin-Zehlendorf, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 9, 1965, Ser. No. 486,111
Claims priority, application Germany, Sept. 10, 1964, P 35,038
3 Claims. (Cl. 274—1)



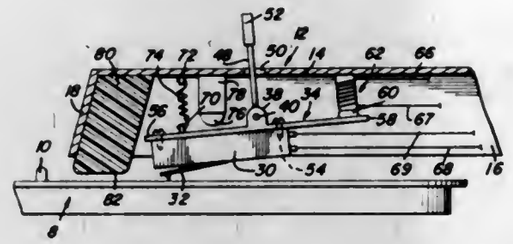
1. A transit latch for phonographs comprising the combination of a turntable mounting plate resiliently supported on a stand member; said latch comprising a locking lever, means movably suspending said lever below said mounting plate for moving said lever toward and away from said mounting plate, said locking lever having coextensive arms, one of said arms engaging said stand member when said lever is moved toward said mounting plate for locking said mounting plate against movement, and guide means on said mounting plate for normally straddling the other arm of said lever, said guide means being removable from said straddling position whereby said lever is angularly movable relative to said mounting plate for removal of said mounting plate from said stand member.

3,272,513
RECORD PLAYER
Joseph Jeles, 9910 Croft St., Chemainus, British Columbia, Canada
Filed Sept. 17, 1963, Ser. No. 309,546
16 Claims. (Cl. 274—13)



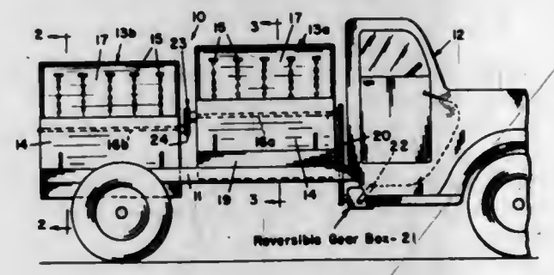
1. A record player for playing spirally grooved records comprising a rotatable record-carrying member, a stylus carrying pivotally mounted arm member normally extending substantially tangentially to the record-carrying member, one of said members being horizontally slidable relative to the other in a direction perpendicular to the arm member when the latter is in its normal position, an electric motor in an electric circuit operably connected to the slidable member to move the latter in said direction, a manually adjustable variable first resistor means in said circuit operable to govern the speed of the electric motor to synchronize the lateral shift of the slidable member to the shift of the arm member as a result of lateral movement of the stylus relative to the record and a second variable resistor means in said circuit and co-operating with the first resistor means, operably responsive to pivotal movements of the arm member as a result of variations in spacing of the spiral groove in the record to vary the total resistance in said circuit as the arm member tends to shift from its normal position to retain the latter in said normal position.

3,272,514
TONE ARM WITH RETRACTABLE CARTRIDGE AND STYLUS ASSEMBLY
Torjus B. Heyerdahl, 3311 Winsome Road, Boise, Idaho
Filed Sept. 13, 1965, Ser. No. 486,941
8 Claims. (Cl. 274—24)



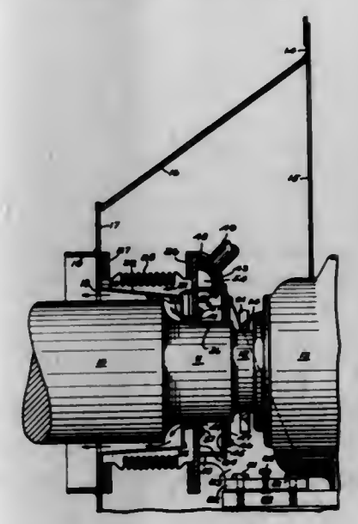
1. For use on a phonograph, an elongated tone arm embodying interconnected top, side and end walls defining a hollow open-bottom chamber, a suitable wired sound-pickup cartridge having a record groove tracking stylus, cartridge cradling mean pivotally mounted on a horizontal axis between the side walls and having end portions vertically tiltable relative to said top wall and open bottom, said cartridge being operatively mounted beneath but on the bottom of said cradling means and movable in conjunction therewith, spring means yieldingly joining one end of said cradling means to said tone arm, and shock responsive electric current controlled means constituting and providing openable and closable coupling means between said tone arm and the other end of said cradling means.

3,272,515
MILL MIXER AND SPREADER WITH TWIN COMPARTMENTS
George C. Wood, Darf Corp., Edenton, N.C.
Filed May 12, 1964, Ser. No. 366,855
5 Claims. (Cl. 275—3)



1. In a material mill, mixer and spreader, the combination of first and second milling, mixing and spreading units each including a material container having a discharge opening and first and second rotatable beater and unloader assemblies provided in the containers of the respective first and second units for discharging material through the container openings, drive means including an over-running clutch operatively connecting the second rotatable assembly to the first rotatable assembly whereby the second assembly may remain stationary when the first assembly is rotated in one direction but whereby the second assembly may be rotated when the first assembly is rotated in the relatively opposite direction, and power actuated means for rotating said first assembly selectively in opposite directions.

3,272,516
PRESSURIZED SEALS FOR THE SHAFTS OF FANS
Joseph H. Hoffman, Norwood, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 31, 1963, Ser. No. 334,772
8 Claims. (Cl. 277—4)

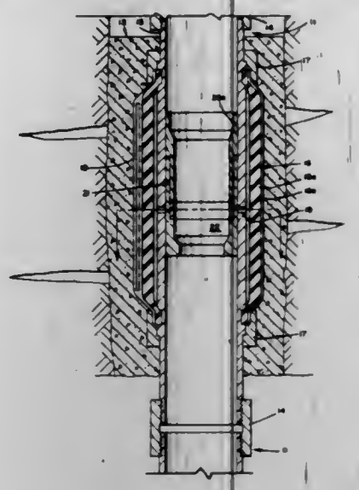


1. A pressurized seal for a shaft of a fan having a casing wall through which the shaft extends, comprising a pair of vertically extending, spaced apart plates spaced inwardly of said wall, an inwardly flared, open ended sleeve around and spaced from said shaft and attached to the innermost of said plates, said innermost plate having an opening around said shaft aligned with the opening in the inner end of said sleeve, a smaller, inwardly flared, open ended sleeve around and spaced from said shaft and attached to the outermost of said plates, and with its inner end adjacent to the outer end of said first mentioned sleeve, said inner end of said smaller sleeve having a smaller diameter than said outer end of said first mentioned sleeve, a seal ring around said shaft and attached to said outermost plate adjacent to the outer end of said smaller sleeve, a third, vertically extending plate spaced outwardly of said outermost plate and having an opening around said shaft, a second seal ring around said shaft and attached to said third plate, means including said third and outermost plates and said seal rings, forming an air chamber around said shaft, and means for supplying compressed air into said chamber.

3,272,517
CASING PACKER
George C. Howard and William G. Bearden, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,459
3 Claims. (Cl. 277—26)

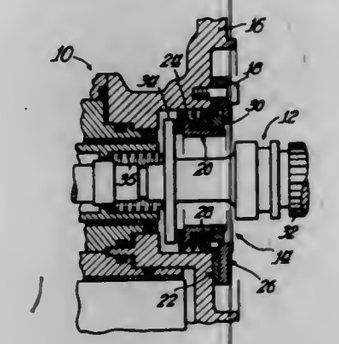
1. A well packer comprising an elongated tubular member adapted to be connected into a casing string to form a portion thereof; port means in the wall of said tubular member; a resilient, inflatable member attached to said tubular member and enclosing said port means; a valve member operatively connected to said port means to control the flow of fluid between the inside of said tubular member and said resilient member; and a non-elastic ther-

mal insulating member covering the outside of said resilient member and providing thermal insulation there-



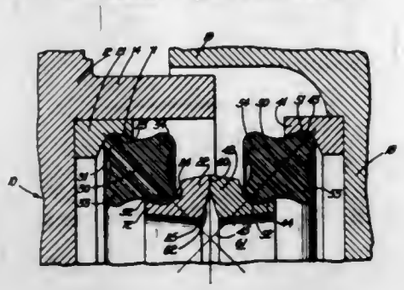
for, said thermal insulating member being of greater resistance to heat transfer than said inflatable member.

3,272,518
PUMP SHAFT SEAL
Edward A. Prijatel, Lyndhurst, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 25, 1963, Ser. No. 267,730
2 Claims. (Cl. 277—30)



1. A fluid seal assembly for a rotary shaft having a radially extending flange thereon comprising: a seal ring assembly encircling the shaft, said seal ring assembly comprising a seal ring and a longitudinally extending seal ring holder; support means encircling the shaft and telescopically supporting said seal ring assembly; spring means positioned between said seal ring assembly and said support means to urge said seal ring assembly into engagement with the radially extending flange on the shaft; retainer ring means for retaining said support means; and axial misalignment compensating means comprising a wobble washer radially positioned between said retaining ring and seal ring assembly and O-ring seal means encircling said longitudinally extending portion of said seal ring assembly and positioned between said longitudinally extending portion and said support means to provide a seal therebetween on said wobble washer for cooperatively associating said wobble washer with said retainer ring means and said seal ring assembly, said means comprising a first pair of tangs on the outer periphery of said washer spaced substantially 180 degrees apart for association with said retainer ring means and a second pair of tangs on the inner periphery of said washer spaced approximately 90 degrees from said first pair of tangs for association with said seal ring assembly.

3,272,519
PIVOT SEAL CONSTRUCTION
Robert M. Voitik, Evanston, Ill., assignor to Continental Illinois National Bank and Trust Company of Chicago (trustee)
Filed Dec. 12, 1962, Ser. No. 244,032
9 Claims. (Cl. 277—92)



1. In a large diameter fluid seal, the combination comprising first and second pairs of inner and outer annular members adjoining one another, each of the members of a given pair axially and radially spaced from one another and having grooves formed therein, said grooves being so oriented as to be facing one another along a conical locus, first and second resilient sealing rings interposed between the respective pairs of annular members, each said sealing ring being of generally square cross section with rounded corners and scalloped sides to define lobes, each said sealing ring having diagonally opposite lobes, disposed on the conical locus of and in sealing engagement with the respective pair of annular members, the adjacent inner ones of the annular members being in bearing contact with one another for relative rotation, said grooves being of smoothly concave section thereby to permit bodily rocking movement of the engaged lobes of each sealing ring with respect to the grooves as the inner and outer annular members are moved axially toward one another into running position, and means for holding the outer ones of the annular members advanced inwardly toward one another so that the sealing rings are deformed into generally diamond-shaped cross section for the development of high sealing and bearing forces over the regions of engagement.

3,272,520
SHAFT SEAL ASSEMBLY
Brian K. Woolfenden, Lexington, Mass., assignor to Air Products and Chemicals, Inc., a corporation of Delaware
Continuation of application Ser. No. 200,515, June 6, 1962. This application Mar. 18, 1965, Ser. No. 444,915
13 Claims. (Cl. 277—165)

1. Apparatus for sealing a shaft which extends through an opening in a housing comprising

a seal assembly encompassing the shaft and extending axially of the shaft and being disposed at least in part within a cavity defined by an internal substantially cylindrical wall of the housing surrounding the shaft,

the seal assembly including a split sealing ring surrounding the shaft and located in a plane substantially perpendicular to the longitudinal axis of the shaft,

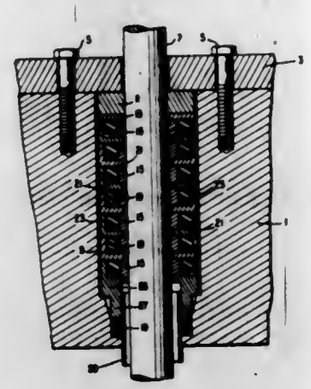
a pair of separate retainer rings surrounding the shaft and located in spaced planes substantially perpendicular to the longitudinal axis of the shaft,

the split ring being disposed between the pair of separate retainer rings in radially overlapping relation therewith and each retainer ring extending radially outwardly of the shaft beyond the outer surface of the split ring and terminating in an outer substantially cylindrical surface,

each retainer ring having an internal diameter greater than the external diameter of the shaft and the diameter of the outer cylindrical surface of each retainer ring being less than the diameter of the internal cylindrical wall of the housing,

means for supporting the pair of retainer rings for relative movement,

an elastic deformable ring disposed between the pair of retainer rings and located radially outwardly of

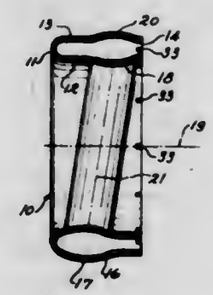


the split ring in contact with the outer surface of the split ring,

and spacer means disposed between the retainer rings radially outwardly of the elastic deformable ring,

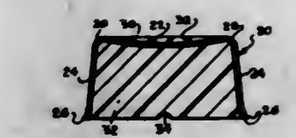
the elastic deformable ring urging the split ring into contact with the shaft and providing a fluid seal with the split ring and a fluid seal with at least one of the retainer rings.

3,272,521
FLUID SEAL
Patrick J. S. McNenny, 11820 Edgewater Drive, Lakewood, Ohio
Continuation of application Ser. No. 164,816, Jan. 8, 1962. This application Mar. 4, 1965, Ser. No. 449,350
9 Claims. (Cl. 277—205)



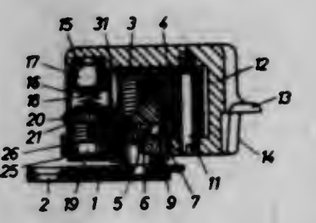
1. A seal comprising a ring formed of metal having axially extending spaced substantially parallel concentric legs having an imperforate surface and connected at one end by an imperforate end wall, annular projecting means integrally formed of said metal on each leg intermediate its ends and extending in a direction away from the other of said legs, each leg being formed of a base metal having a plurality of axially extending slots symmetrically formed in the portion of the base metal constituting the said projecting means and an imperforate layer of thin metal on each side of said base metal preventing leakage of fluid through said slots, said projecting means having a spring rate with respect to pressures producing changes in circumferential length of the extremities thereof which is substantially less than the spring rate of said base metal determined by its modulus of elasticity.

3,272,522
COMPOSITE METAL AND PLASTIC SKI
Michael E. Kennedy III, Seattle, Wash., assignor to Peter Kennedy, Incorporated, Seattle, Wash., a corporation of Washington
Filed June 21, 1965, Ser. No. 465,595
27 Claims. (Cl. 280—11.13)



7. A ski, said ski comprising a skeleton frame and a body, said frame in a lateral cross-sectional view presenting the general configuration of a U with a base and downwardly directed legs, said base curving inwardly, and said downwardly directed legs being directed outwardly so that the lower ends of the legs form the running edges of the ski, and said body being bonded to said frame and encompassing part of said frame.

3,272,523
SAFETY FRONT JAW FOR SKI BINDINGS OR FASTENINGS
Hannes Marker, Alpspitzstrasse 37, Garmisch-Partenkirchen, Bavaria, Germany
Filed Jan. 31, 1964, Ser. No. 342,595
Claims priority, application Germany, Feb. 11, 1963, M 55,747
9 Claims. (Cl. 280—11.35)

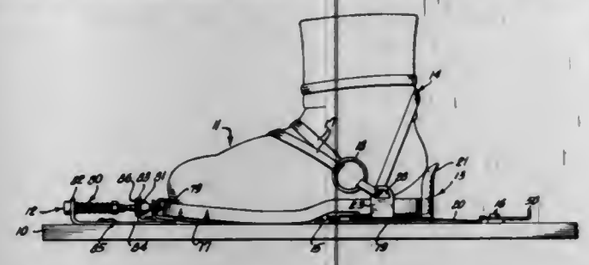


1. A safety front jaw for ski bindings, comprising a baseplate secured to a ski, a pivot pin mounted on said baseplate at right angles to the surface of said ski, a pivoted member rotatably mounted on said pivot pin, a bore within said pivoted member which is preferably parallel to said pivot pin, a detent ball, a detent spring, and a spring abutment mounted within said bore, said spring abutment comprising a non-rotatably mounted, externally screw threaded bolt axially adjustable in the direction of the bore and mounted therein to adjust the spring compression, a knurled nut rotatably mounted on said bolt, said nut being axially non-displaceably mounted in a slot formed in said pivoted member extending at right angles to said bore, the outside peripheral surface of said nut protruding beyond the outside wall of said pivoted member, a detent recess in said baseplate, said detent ball engaging said detent recess.

3,272,524
AUTOMATICALLY RELEASABLE LONG THONG SKI BINDING
Mitchell H. Cubberley, 121 Bell St., Belleville, N.J.
Filed Mar. 4, 1964, Ser. No. 349,243
10 Claims. (Cl. 280—11.35)

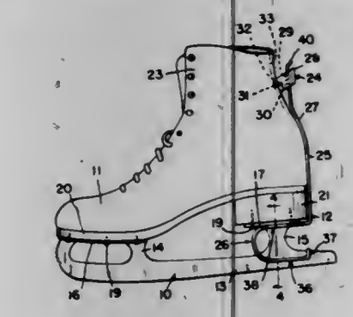
6. An automatically releasable long thong ski binding for securely but resiliently and releasably attaching the heel of a skier's boot to a ski which comprises in combina-

tion, a base plate, a leaf spring having one end connected to said base plate and a free end extending rearwardly therefrom, the free end of said leaf spring curving upwardly from said base plate when said spring is in relaxed



non-operative position but being adapted to be forced downwardly into an operative position whereby said leaf spring is tensioned, and long thong harness engaging means mounted on said ski binding.

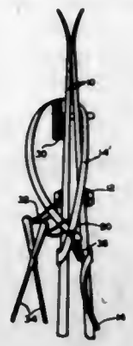
3,272,525
ANKLE SUPPORT FOR SKATERS
August L. Nelson, 2916 Mesa Drive, West Covina, Calif.
Filed May 28, 1964, Ser. No. 370,859
4 Claims. (Cl. 280—11.36)



1. An attachment for a combined skate and shoe wherein the skate has a horizontally extending vertically disposed elongated blade provided at its upper edge with longitudinally spaced upright strut portions and has horizontal plates mounted on said strut portions and secured to the sole and heel respectively of said shoe; comprising a guide member attachable to the upper portion of said shoe at the rear thereof, and a single length of spring steel having a horizontally extending portion attachable to said skate between the elongated blade of said skate and the plate secured to the heel of said shoe, having an upright portion slidably engaging said guide member, and having an upstanding inverted U-shaped portion adapted to straddle the elongated blade of said skate.

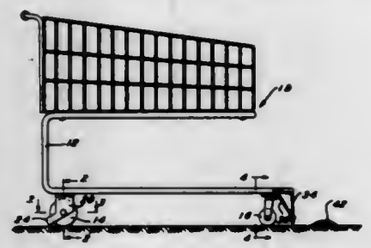
3,272,526
SKI LOCKING MEANS
Merwin B. Rumaner, 310 Albert Road, Syracuse, N.Y.
Filed May 18, 1964, Ser. No. 368,042
5 Claims. (Cl. 280—11.37)

1. In a locking device for preventing the theft of a pair of skis: a flexible locking strap secured to one of the skis and comprising two strips of flexible material one overlying the other, means permanently securing said strips together to form the strap, a pair of grommet elements passing through said strips at spaced apart points on said strap, a flexible wire member disposed between said strips and fixedly secured at each end to one of said spaced grommet elements, the locking strap being adapted to be passed around the skis and a fixed object with a grommet element adjacent one end of the loop being brought into overlying relation to a grommet element adjacent the other end of the loop; and releasable means adapted to



pass through said pair of grommet elements to lock them together.

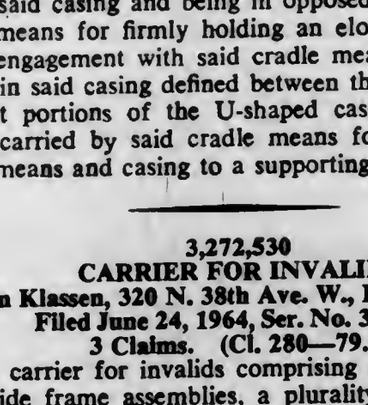
3,272,527
THEFT PROOF SHOPPING CART
Frank V. Martin, 214 Roosevelt Blvd., Brigantine, N.J.
Filed Jan. 13, 1964, Ser. No. 337,214
1 Claim. (Cl. 280—33.99)



Apparatus comprising a shopping cart having a pair of spaced ends, a pair of wheels at each end of said cart, at least one wheel housing depending from one of said ends, an axle mounting one of said wheels within said housing, a substantially U-shaped extension on said wheel housing for confining the movement of the cart within a predetermined area, said extension being separable from said housing and vertically adjustable in respect to said housing, a bracket secured to and depending from the other end of said cart, said bracket being spaced substantially equidistant between the wheels on other end of said cart, said bracket being substantially L-shaped in cross-section, said bracket having a first laterally projecting leg and a second downwardly projecting leg extending substantially perpendicularly from said first leg, a brace, means for connecting one end of said brace to said one end of said cart and the other end of said brace to said second leg of said L-shaped bracket, the lower most portion of said second leg of said bracket and said U-shaped extension being at an elevation lower than the highest portion of an abutment rail defining the limits of said predetermined area, whereby attempted movement of said cart outside of said area will be precluded by the contact of said second leg of said bracket and said U-shaped extension with said abutment rail.

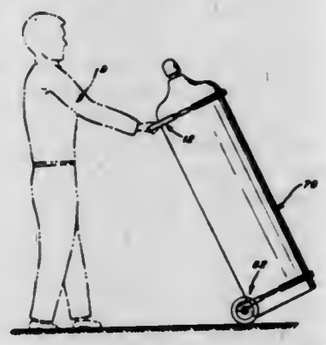
3,272,528
NESTABLE CART
Fred W. Young and Ralph G. Hummer, Oklahoma City, Okla., assignors to Unarco Industries, Inc., a corporation of Illinois
Filed Aug. 3, 1964, Ser. No. 387,016
6 Claims. (Cl. 280—33.99)

1. A nestable cart comprising an upright frame, a plurality of vertically spaced trays pivoted on the frame on horizontal axes, means interconnecting the trays for simultaneous pivotal movement, and means to tilt the trays from a horizontal position to a position at an acute angle to



horizontal in which they will interfit with trays on a similar cart.

3,272,529
SAFETY CLAMP HANDLE CONVERTIBLE TO A WHEEL ASSEMBLY
Isadore B. Rachman, Philadelphia, Pa., assignor to Metal Dynamics, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 25, 1964, Ser. No. 347,242
8 Claims. (Cl. 280—47.13)



7. Means for holding and moving an elongated object or the like comprising a generally U-shaped casing, cradle means secured to said casing for seating an elongated object, flexible clamping means secured to one end of said casing and being in opposed relation to said cradle means for firmly holding an elongated object in seated engagement with said cradle means, at least one handle in said casing defined between the cradle and the adjacent portions of the U-shaped casing, and further means carried by said cradle means for attaching said cradle means and casing to a supporting surface.

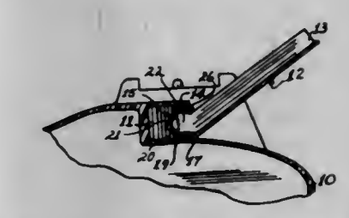
3,272,530
CARRIER FOR INVALIDS
John Klassen, 320 N. 38th Ave. W., Duluth, Minn.
Filed June 24, 1964, Ser. No. 377,721
3 Claims. (Cl. 280—79.2)

2. A carrier for invalids comprising a pair of spaced apart side frame assemblies, a plurality of cross members joining the side frame portions thereof, the side frames each comprising a front vertical member, a lower horizontal member, an intermediate horizontal member, a top hand rail member, means to join said lower, intermediate, and top members together so that the members comprising each side frame assembly all lie in a common plane, wheel means on said lower horizontal members for supporting said carrier for movement over a supporting surface, a removable seat positioned on and extending between said intermediate horizontal members of each side frame adjacent the rear portions thereof, a foot platform extending between said lower horizontal members, said foot platform being mounted for limited pivotal movement about an axis adjacent the forward edge thereof and resilient means urging said platform to a substantially



horizontal position, the rear portion of said platform being pivotable to position engaging the supporting surface against the action of said bias means.

3,272,531
TELEPHONE PAD HOLDER
Walter K. Krauth, Jr., 2631 Mayflower Road, College Park, Ga.
Filed July 27, 1964, Ser. No. 385,306
3 Claims. (Cl. 281—15)

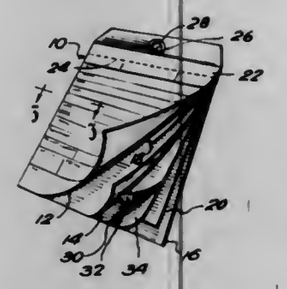


1. Apparatus for releasable attachment to a conventional telephone base, which base defines a carrying slot having a downwardly projecting lip therein including:
(a) an article to be attached to the telephone base;
(b) a holder for attaching said article to the telephone base, said holder comprising a single integral member having a generally plane support surface and an article receiving edge portion;
(1) said article receiving edge portion having a normal inner dimension approximately the same as the thickness of said article, and
(2) a normal outer dimension slightly greater than the vertical dimension of said slot at said lip,
(c) whereby when said holder and article are inserted in said recess, a pressure is created between the outer surface of said article receiving portion and the lip and inner surface of said slot and between the inner surfaces of said article receiving portion and said article.

3,272,532
MULTI-LEAF TAG
Robert W. Owen, Evergreen Park, Ill., assignor to Midwest Chemical Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 1, 1964, Ser. No. 415,102
1 Claim. (Cl. 282—22)

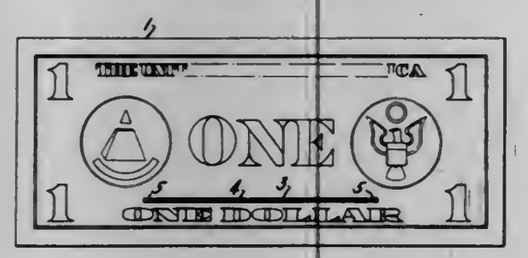
A multi-leaf tag comprising:
a lower leaf;
an upper leaf superimposed relative to the lower leaf;
each of said leaves comprising means upon which information may be recorded;
means attaching a marginal portion of said upper leaf to a corresponding marginal portion of said lower leaf;

a transparent sheet located between the upper leaf and the lower leaf and superimposed relative to the lower leaf;
said transparent sheet comprising means for covering the lower leaf;
said transparent sheet having a sealing coating on the sheet surface adjacent the lower leaf;
detachable backing means covering said sealing coating on the transparent sheet;
means, located between said detachable backing means and said lower leaf and attached to a marginal portion of the lower leaf, for transferring, to the lower



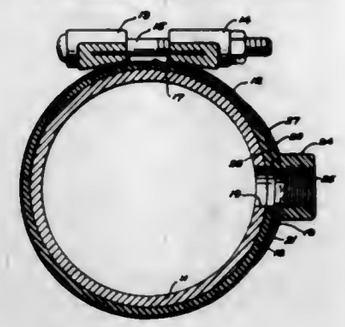
leaf, information recorded on the upper leaf, during the recording operation;
and means, attaching a portion of the transparent sheet to a portion of the lower leaf, for maintaining the transparent sheet between the upper and lower leaves and for preventing said transparent sheet from being moved to a non-superimposed position, relative to the lower leaf, when the upper leaf is in a superimposed position relative to the lower leaf;
whereby said transparent sheet can be sealed to the lower of said leaves, only, upon removal of said detachable backing means, to protect said lower leaf.

3,272,533
DETECTION TREATMENT OF PAPER MONEY AND OTHER NEGOTIABLE PAPER
Milton F. Allen, Decatur, Ga., assignor to Milton Frank Allen Publications, Inc., Decatur, Ga., a corporation of Georgia
Filed Oct. 5, 1964, Ser. No. 401,596
11 Claims. (Cl. 283—7)



1. The method of treating paper money and other negotiable paper for the purpose of imparting to unauthorized handlers and carriers thereof telltale residua of the treating material, which comprises applying to a surface of the said negotiable paper and confined within a frangible container affixed to such surface a treating material of a vaporizable character having a distinctive odor not readily noticeable in the open air or where circulation of air is relatively free but capable when confined in a relatively restricted space with a paucity of air of imparting such odor in readily distinguishable concentration to the negotiable paper and to adjacent articles such as a purse, pocketbook, bill fold, clothing pocket and the like on the person of the unauthorized handler and thus aid in his detection.

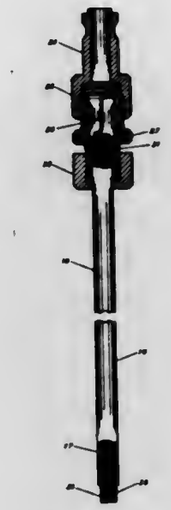
3,272,534
FLEXIBLE BAND COUPLING WITH TAPPED INSERT
Telford L. Smith, 1206 Lake St., Millbrae, Calif.
Filed May 21, 1965, Ser. No. 462,784
8 Claims. (Cl. 285—47)



1. A repair clamp for replacing a leaking or a pulled direct tapped outlet fitting in a fluid conduit, comprising in combination:
a flexible metal band extending around the pipe and having an opening aligned with the orifice in the pipe for the removed damaged fitting;
a gasket between the pipe and said band;
a pair of rigid lug members fixed to the ends of said band;
bolt means supported by said lug members for pulling the lugs together to tighten said band, said band having an outwardly projecting area surrounding said band opening;
a tapped insert member having a curved base portion seated within the recess formed by said projecting area in said band and an integral boss portion with a threaded bore extending through said band opening, the outer periphery of the base portion of the insert member being completely enclosed by the band said base portion having end portions tapered in cross section with spaced apart projections at said end portions forming an irregular shaped edge pattern, whereby when said band is tightened said fitting is secured tightly between said band and said gasket and the gasket material is allowed to flow between the end projections, thereby forming an effective seal around the fitting base portion said gasket having a circumferential length greater than the circumference length of said insert member.

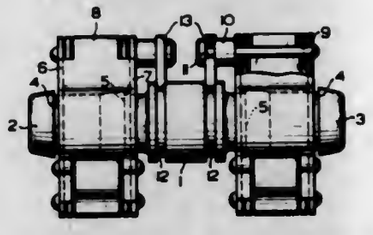
3,272,535
SELF-STRAIGHTENING SUCTION WAND
George L. Neely, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware
Filed July 1, 1963, Ser. No. 292,012
1 Claim. (Cl. 285—114)

A suction wand for removing lubricating oil from the crankcase of an internal combustion engine through the dip stick tube, which comprises
(a) an elongated organic, polymeric plastic tube having a wall thickness thin enough to permit collapse thereof by air pressure upon the application of suction therethrough,
(b) said plastic tube having a uniform outer diameter adapted to pass downwardly through a dip stick tube into an engine crankcase,
(c) an elongated coil spring coextensive in length with said tube and having a uniform outer diameter substantially identical to the inner diameter of said plastic tube to permit frictional engagement between said tube and said spring throughout their lengths,
(d) said coil spring comprising a helical winding of spring wire sound sufficiently tight so that the individual turns are in preloaded contact with each other throughout the length of said coil spring, said preloaded contact being sufficient to provide self-alignment of said member and closing contact between said winding when not subjected to bending stresses, said coil spring and said plastic tube being secured together only at the end remote from the end adapted to enter the engine dip stick tube so that said coil spring will conform said plastic tube to the convolutions in said dip stick tube while still maintaining frictional engagement therebetween and



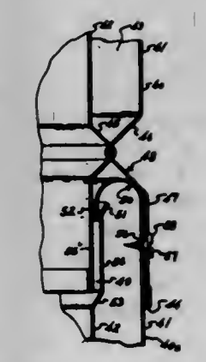
so that upon withdrawal of said plastic tube and coil spring, said coil spring will straighten said plastic tube to its substantially undeflected form by slight relief of the preloaded contact between said individual turns of said spring and by slippage between the inner diameter of said tube and said coil spring, and
(e) means for connecting said remote end of said tube and said coil spring to vacuum applying means for removing oil from an engine crankcase.

3,272,536
QUICK COUPLING DEVICE FOR HOSES
Karl Weinhold, 8 Kreitzweg, Holzheim, near Neuss, Germany
Filed Nov. 12, 1964, Ser. No. 410,405
9 Claims. (Cl. 285—114)



1. A coupling assembly for hoses, comprising,
a tubular section having a central portion of increased diameter and at least one tapered end portion adapted for insertion into the end of a flexible hose, said central portion having at least one circumferential groove provided therein,
at least one coupling device associated with one zone of said tubular section intermediate said central portion and said tapered end portion,
said coupling device comprising two sleeve halves each having two flanged end portions and pivotally connected with each other by means of a first pivot bolt, said sleeve halves when in closed position, surrounding said zone of said tubular section,
a toggle lever, pivotally connected to a first one of said sleeve halves by means of a second pivot bolt,
spring means connecting said toggle lever with the second one of said sleeve halves and adapted to urge said two sleeve halves into closed position upon swivelling said toggle lever into contact with the first sleeve half,
whereby said flange portions of said sleeve halves press a hose into which said free end of said tubular section has been inserted, against the outer wall of said tubular section,
positioning bolt means mounted on said coupling device on the side thereof facing away from the said tapered end portion of said tubular section and extending substantially parallel to the longitudinal axis of said tubular section,
said positioning bolt means having at least one circumferential groove provided therein of a cross sectional area substantially equal to that of said groove of said central tubular section portion, and
connecting means having a cross section adapted to be inserted into said grooves, said connecting means being removably inserted with its one end into a groove of said positioning bolt means and with its other end into said groove of the central portion of said tubular means, thereby securing said coupling device and said tubular section against displacement relative to each other in the direction of the longitudinal axis of said tubular section, while permitting radial displacement of said sleeve halves of said coupling device relative to said tubular section, said connecting means comprising a hoop-shaped fork member of spring steel, rectangular in cross section, the closed curved top end of which is of a curvature adapted to the diameter of said positioning bolt means in said circumferential groove therein, and the legs of said hook-shaped fork member being spaced from each other near the ends thereof by a distance corresponding to the diameter of said central portion of said tubular section in said circumferential groove thereof.

3,272,537
DOUBLE-WALLED VENT PIPE COUPLING
Richard L. Stone, Los Altos Hills, and Renato J. Bellatorre, Redwood City, Calif., assignors to Wallace-Murray Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 422,486
5 Claims. (Cl. 285—187)



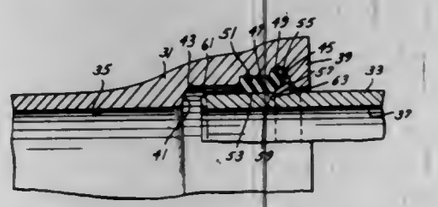
1. A pipe coupling for coupling double-walled flue pipe sections wherein the inner wall is of a material having a different coefficient of expansion than the outer wall, said coupling comprising a female element on one section and a male element on the other section fitted within the female element, said female element comprising radially

inwardly and outwardly extending bends in the outer and inner wall members forming apices, means securing the apices together to form an annular open ended trough with a V-shaped bottom, said male element comprising an arcuate return bend end portion on the outer wall in substantially line contact with the outer leg of the V-bottom of said trough, an outwardly expanded portion on the inner wall overlapping the inner end of the return bend of the outer wall radially outwardly of said end, and means securing the outer walls of the male and female members together, said contact between said arcuate return bend and said outer leg being so constructed and arranged to center the male element in the female element, said expanded element of the male element being so constructed and arranged to avoid buckling of the walls during thermal changes.

ERRATUM

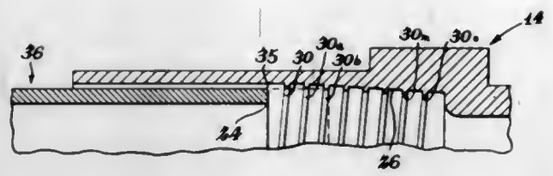
For Class 285—189 see:
Patent No. 3,272,542

3,272,538
RESTRAINED PIPE JOINTS
Myron F. Bergstrom, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
Filed Nov. 17, 1964, Ser. No. 411,775
3 Claims. (Cl. 285—231)



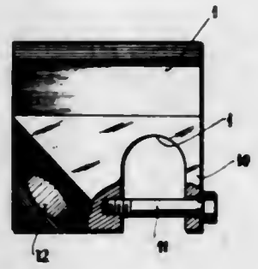
1. A connection for pipes comprising, in combination, a hollow cylindrical member provided with a radially intruding extremity defining a circumference larger than the outer circumference of a pipe section to be connected and having a radially and axially extending annular interior wall; a pipe section substantially coaxially disposed in said member; an annular groove formed in the inner wall of the hollow cylindrical member adjacent the end thereof, said groove being provided with an axially extending wall, a radially inwardly directed shoulder terminating the inner axial end of said groove and said radially and axially extending annular interior wall terminating the other end of said groove; said pipe section having a peripheral latch port formed on its outer surface adjacent its connection end; a resilient annular gasket arranged in and substantially filling said annular groove and sealably engaging said hollow cylindrical member and said pipe section, a portion of said gasket being compressibly confined between and exerting expansive force substantially radially on said pipe section and on said member; and latching means conjunctively arranged and peripherally disposed with said gasket and cooperatively engaging, under the expansive force of said gasket, said peripheral latch port on said pipe section and the radially and axially extending annular interior wall of said hollow cylindrical member along loading lines substantially normal to said radially and axially extending annular interior wall to lockably restrain axial separation of said member and said pipe section, said latching means having a thickness greater than the distance between the radially intruding extremity of the hollow cylindrical member and the outer peripheral surface of the pipe section.

3,272,539
CONDUIT FITTING
Ray W. Asbury, Sr., 222 Birch Place, Kewanee, Ill.
Filed Apr. 6, 1964, Ser. No. 357,694
5 Claims. (Cl. 285—332.4)



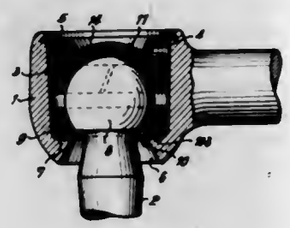
1. In combination, a conduit having an end, a generally continuous cylindrical surface having a constant diameter on said end, a fitting comprising a body having a generally central axis, a portion on said body tapered along said central axis, said tapered portion having a first diametral dimension greater than said cylindrical surface and a second diametral dimension less than said cylindrical surface, and spiral land means on said tapered portion drivingly cooperable with said cylindrical surface for securing together said fitting and said conduit upon relative rotation of said fitting and said conduit, said land means having a cross-sectional shape and size so as to be deformed by said cylindrical surface to cause said surface to engage said tapered portion completely around said cylindrical surface upon securement of said fitting and said conduit.

3,272,540
FASTENING ELEMENT FOR MEMBERS FORMING STRUCTURES OF SCAFFOLDS AND THE LIKE
Jacobo Glanzer, Av. Roque Saenz Pena 570, Buenos Aires, Argentina
Filed Sept. 24, 1963, Ser. No. 311,033
2 Claims. (Cl. 287—54)



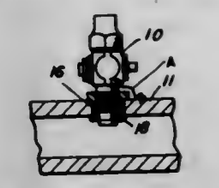
1. A connecting piece, for use in interconnecting three elongated cylindrical elements at right angles to each other free from intersection, comprising a substantially cube shaped body containing three channels at right angles to each other and free from intersection with each other, each channel being located in a separate face of the cube and having a U-shaped cross section including a semi-circular arcuate bottom portion and two straight leg portions connected thereto, the section of said channel between said straight leg portions being unobstructed throughout the length of the channel by any part of said body, the radius of said semi-circular portion corresponding to that of a cylindrical element, each channel being adapted to engage removably an element, and being open throughout its length between said straight leg portions, one of said straight leg portions being relatively narrow and flexible, and an adjustable fastening means connected to and extending between said flexible leg and a part of the body opposite thereto which defines the other leg, said fastening means projecting across said unobstructed channel section and being adjustable so as to move said resilient leg toward the other leg thereby reducing the extent of the channel opening to clamp a cylindrical element in said channel, said cube shaped body also having a passage extending diagonally therethrough from one corner portion to another with the passage being free from intersection with any of the channels, and adapted to receive a cable therethrough.

3,272,541
BALL JOINTS
Josef Latzen, Siegfriedstrasse 7, Dusseldorf, Oberkassel, Germany
Original application June 10, 1954, Ser. No. 435,890. Divided and this application Feb. 8, 1963, Ser. No. 264,467
1 Claim. (Cl. 287—90)



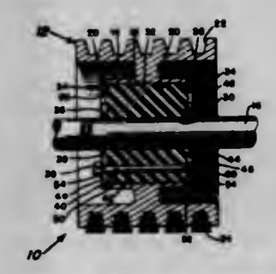
A self-adjusting ball and socket joint particularly adapted for the steering and control linkages of automobiles comprising a joint housing having openings at opposite ends thereof, a ball head movably received within said joint housing, a ball pin connected to said ball head and extending outwardly through one of said openings in said joint housing, a cover closing the remaining opening in said joint housing, the inner wall of said joint housing having a slight conical taper from the closure side of the housing towards the side at which the ball pin projects from the housing, said conical taper of the inside of said joint housing extending as far as a shoulder at the outlet opening of the housing, resilient mounting means positioned within said housing to resiliently secure said ball head both axially of the ball pin and also transversely thereof to permit self-adjusting movement of said ball head in all directions, said mounting means including elastic ring means having a substantially wedge-shaped cross section compressed between said ball head and the inside wall of said housing and disposed so as to exert positive pressure on said ball head over an annular area of said ball head substantially symmetrical with the longitudinal axis of said ball pin and with substantial pressure components both axial of and transverse to said ball pin axis, said elastic ring means including a ring element of potentially variable diameter resiliently surrounding the cover side of said head and an oppositely disposed slotted ring element provided on the side at which the ball pin projects from the housing, said ring elements being spaced on either side of a line extending transverse to said ball pin axis and passing through the center of said head, said slotted ring element on the side of the head at which the ball pin projects from the housing being disposed in spaced relationship with said shoulder of said housing to provide a lower wear gap, a plate disposed between said cover and said ball head and bearing on a surface of said ring means, said plate having a curvature corresponding to that of said ball head and being spaced therefrom to provide a wear gap, and helical spring means extending between said cover and said plate, said helical spring means operating to load said ring means.

3,272,542
RESILIENT CONNECTING DEVICE
Leo J. Haulik, Leonard S. Greer, and Clarence W. Decker, Erie, Pa., assignors to Hays Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 17, 1963, Ser. No. 316,988
5 Claims. (Cl. 285—189)



1. In combination, a pipe having a relatively thick wall and a sealing sleeve for sealingly supporting a branch member communicating with the inside of said pipe adapted to have a second member on the outer end thereof,
said pipe having an opening therein,
said branch member having a cylindrical portion disposed in said opening,
an end of said portion extending through said opening into said pipe,
said end of said portion being of constant diameter,
a groove in said end,
said sealing sleeve being made of flexible resilient material and disposed in said opening over said cylindrical end,
and a thickened portion homogenous with the remainder of said sleeve and made of homogenous material throughout on the inner end of said sleeve disposed in said groove in said end,
said sleeve in its undistorted form being thicker than the space between the outside of said cylindrical portion and the inside surface of said opening.

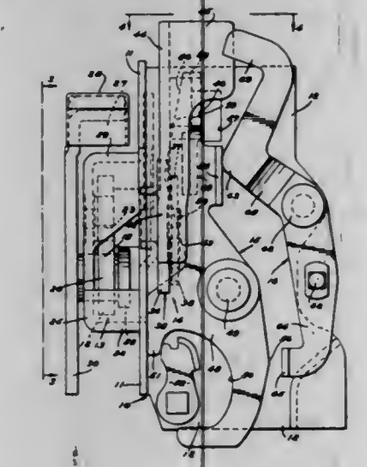
3,272,543
SHEAVE AND ROLLER ASSEMBLIES
William N. Poundstone, Morgantown, W. Va., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application June 30, 1960, Ser. No. 39,985, now Patent No. 3,127,203, dated Mar. 31, 1964. Divided and this application Aug. 21, 1963, Ser. No. 303,552
4 Claims. (Cl. 287—52.07)



1. A flexible joint comprising in combination a rigid outer member having a bore therethrough, a rigid inner member having an outer cylindrical surface with a diameter less than the diameter of said outer member bore, a cylindrical bushing of flexible resilient material having a bore therethrough and an outer diameter substantially equal to the diameter of said outer member bore and an inner diameter greater than the diameter of said inner member outer cylindrical surface, said bushing having an end wall with a frusto-conical outer annular ring portion extending outwardly therefrom, said ring portion having an inner cylindrical wall substantially the same diameter as said bushing inner diameter and an outer sloping wall increasing in diameter toward said bushing end wall, a pair of rigid annular end plates having an outer diameter greater than the diameter of said outer member bore

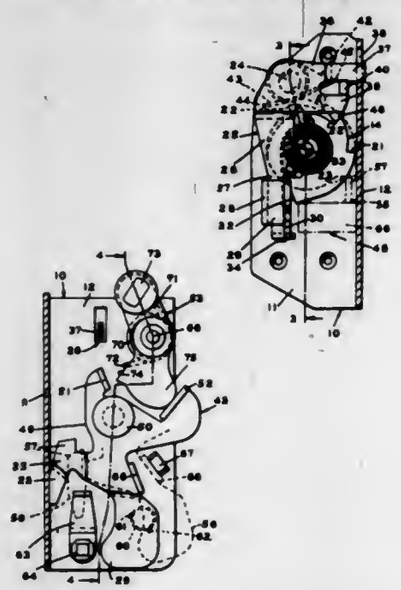
and an aperture forming an inner wall with a diameter greater than the diameter of said rigid inner member outer cylindrical surface, said end plates having slotted portions therein, said bushing being positioned within said outer member bore, said inner member extending through said bushing bore, said end plates being positioned in abutting relation with the respective bushing end walls and with said rigid inner member extending through said respective plate apertures, one of said plate inner walls abutting said bushing ring portion outer sloping wall, and means to urge said end plates toward each other to thereby compress said resilient bushing therebetween to frictionally engage said outer member to said inner member and to extrude portions of said resilient bushing through said end plate slotted portions, said cylindrical bushing ring portion being adapted, upon compression by said end plates, to extrude outwardly between said inner member outer cylindrical surface and an end plate inner wall.

3,272,544
AUTOMOBILE DOOR LOCK
Arthur Moraczewski, Detroit, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan
Filed Jan. 14, 1964, Ser. No. 337,624
4 Claims. (Cl. 292—216)



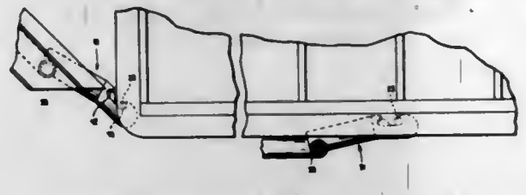
1. In a door lock, a support, a detent having means mounting the same on said support for movement into and out of latching engagement with a latch unit movably mounted on said support, detent operating means to unlatch the lock including a detent operating member medially pivoted on said support, and means to lock the lock including a locking member medially pivoted on the support on an axis paralleling but laterally spaced from the medial axis of said detent operating member, said locking member having a locking element movable therewith into and out of position to prevent movement of said detent out of latching engagement with said latch unit, an unlocking control element movable therewith by which the locking member is actuated out of said position, and a locking control element movable therewith by which the locking member is actuated into said position; said locking, unlocking control and locking control elements being located on said locking member in spaced relation to one another in that order along the latter, said detent operating member having an operating element movable therewith to engage and move said detent out of latching engagement with said latch unit, an unlocking control element movable therewith and in position to actuate said first named unlocking control element, and a locking control element movable therewith and in position to actuate said first named locking control element; said operating, unlocking control and locking control elements of the detent operating member being located in spaced relation to one another along the latter, the unlocking and locking control elements of said detent operating member unidirectionally and respectively facing those of said locking member in an arrangement such that the unlocking control element of the detent operating member actuates the unlocking control element of the locking member prior to movement of said detent out of said latching engagement by said operating element of said detent operating member.

3,272,545
AUTOMOBILE DOOR LOCK
Joseph Pickles, Dearborn, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan
Filed Jan. 4, 1965, Ser. No. 423,036
7 Claims. (Cl. 292—216)



1. A door lock comprising a mounting bracket, a latching member and a detent device both pivotally mounted on said bracket, said latching member having at least one projecting abutment controlled by said detent device to releasably hold said member in a door latching position, and a further projecting kick-off abutment to function in the unlocking of said door lock, said detent device including a detent element engageable with said first-named abutment of said latching member to hold the latter in said door latching position, and an actuating member engageable and movable with said detent element to move the latter out of said holding engagement with the first named abutment in one direction of pivotal movement of the actuating member and detent element, said detent element also being movable relative to said actuating member in said direction in a further movement of the element out of said holding position, a locking device mounted on said bracket for movement into and out of a locking position, said locking device including a member movable upon movement of said locking device to locking position to a position of said member in which it renders said detent element incapable of being moved by said actuating member in said one direction out of said holding position, said locking device also including a kick-off part positioned when said locking device is in said locking condition in position in opposing relation to said kick-off abutment of said latching member, said kick-off part when in said opposing relation being engageable by said kick-off abutment to be shifted out of said last named position, said kick-off part and member of said locking device being operatively connected to one another whereby said last named shift of the part shifts said member of said locking device out of said position rendering said actuating member incapable of moving said detent element out of said holding position, said detent element being actuable by said latching member for said further movement when said latching member moves toward said latching position.

3,272,546
PUSH-PULL DEVICE FOR CONTAINERS
Charles R. Cooley, Louisville, Ky., assignor to Tri-City Industrial Service, Inc., Louisville, Ky., a corporation of Kentucky
Filed Dec. 3, 1964, Ser. No. 415,730
4 Claims. (Cl. 294—2)



1. A push-pull attachment device adapted for cooperation with bars carried on a container spaced in the direction of intended motion of the container and extending transverse to the direction of container motion, said device comprising a tubular housing having a closed arcuate free end, said housing having a portion cut away adjacent said free end to provide two spaced and opposed bar-receiving throats which are spaced from each other along the longitudinal axis of said housing, said housing being adapted to underlie a container with said bar-receiving throats adjacent to the container bars, a rectilinearly movable pivotal mounting for said housing disposed below said bar-receiving throats and permitting pivotal movement of said housing and an axis transverse to its direction of rectilinear motion, resilient means biasing said housing about its pivotal axis to urge said throats into bar-receiving position, an abutment slidably mounted interiorly of said housing and movable between a first position blocking entry of a container bar into the one of said throats adjacent the closed end of said housing and a second position blocking entry of a container bar into the other throat, and a power element within said housing for moving said abutment between said positions, whereby as said housing is moved rectilinearly beneath a container the arcuate closed end of said housing engages the container bars pivoting said housing downwardly so as to initially clear said bars with said resilient means returning said housing to a position forcing the bars into one or the other of said throats depending upon whether said abutment is in its said first or second positions as said cut away portion of the housing registers with the bars.

3,272,547
DETACHABLE HANDLES
Vaughn K. Pryce, 417 4th St., Derry, Pa.
Filed Mar. 23, 1965, Ser. No. 442,108
4 Claims. (Cl. 294—31)



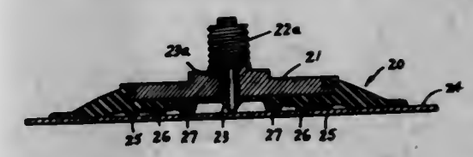
1. A detachable handle for cooking utensils having a projecting lug comprising a hand gripping portion, a fixed gripping jaw integral with the hand gripping portion, said fixed jaw having depending spaced flanges at opposite sides thereof, a movable gripping jaw pivoted intermediate its ends in the depending flanges of said fixed jaw, a stepped cam on the movable gripping jaw adjacent the hand gripping portion, and lever means pivoted in the fixed jaw adjacent the hand gripping portion and having cam engaging means adapted to ride on said stepped cam, said lever means extending through an opening in the fixed gripping jaw and adapted to be moved about a horizontal axis therein to move the end of the movable jaw remote from the lever toward and away from the end of the fixed jaw remote from the hand gripping portion.

3,272,548
WEEDING TOOL
John W. Taylor, 310 Forest Park Drive, Pensacola, Fla.
Filed Nov. 3, 1964, Ser. No. 408,513
3 Claims. (Cl. 294—50.9)



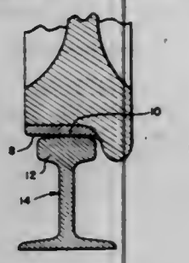
1. A weed pulling tool comprising, in combination, an elongated vertically extending handle member; a pair of normally closed gripping jaws attached to the lower end of said handle member; means pivotally mounting one of said jaws for movement toward and away from the other jaw, a trigger member pivotally attached to the upper end of said handle; a vertically extending elongated operating rod pivotally attached at one end to said trigger, lever means attached to said one jaw; said lever having an upstanding portion and a laterally offset portion extending in the direction toward said other jaw; means pivotally connecting said rod to said offset portion of said lever for moving one jaw away from the other; and horizontally positioned spring means attached to the upstanding portion of said lever urging said one jaw toward the other.

3,272,549
MATERIALS HANDLING DEVICE
David A. Nisula, Simsbury, Conn., assignor to General Electric Company, a corporation of New York
Filed Jan. 13, 1965, Ser. No. 425,190
11 Claims. (Cl. 294—64)



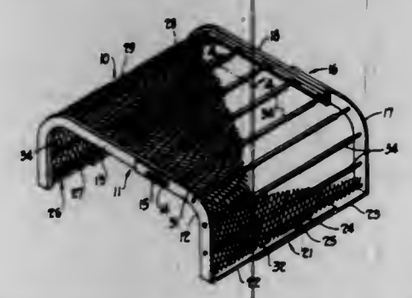
1. A sheet materials handling device comprising a resilient cup member, an aperture in said cup, means adapted to connect said aperture to evacuating means, and at least one pointed member rigidly depending from within said cup, each said member being disposed for its point to engage sheet material held to said cup by its evacuation.

3,272,550
WHEEL FOR RAILROAD
William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed July 22, 1965, Ser. No. 473,959
10 Claims. (Cl. 295—31)



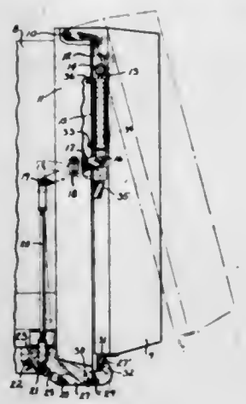
1. A rail vehicle wheel for use on a rail, said wheel having a central portion and having an attached rail contact stress reducing tread portion having modulus of elasticity substantially lower in value than the modulus of elasticity of the rail material which is generally on the order of 29×10^6 p.s.i., and said tread portion having a hardness substantially of at least 10 on the Rockell "C" hardness scale.

3,272,551
THEFT-PROOF CAGE FOR AUTOMOBILE BODY TRUNKS
Alonzo R. Walker, Cleveland, Ohio, assignor of fifty percent to Anthony Viveiros, Cleveland, Ohio
Filed Aug. 26, 1964, Ser. No. 392,192
2 Claims. (Cl. 296—37)



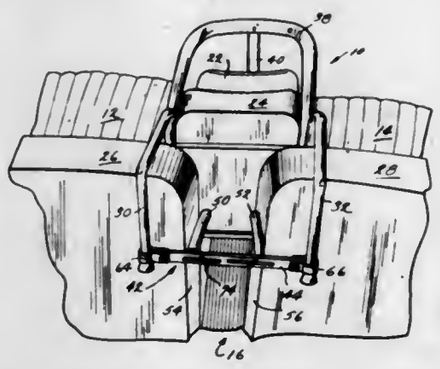
1. In combination with an automobile body trunk, a theft-proof cage, comprising, a frame member having two inverted, substantially U-shaped, flat, tubular channels spaced apart and joined through forward and rear base plates secured to the leg ends of the channels; each channel having a continuous track slot faced inwardly, toward the opposite channel, and aligned with the track slot thereof; a cover member, for the frame, having a plurality of ribs mounted cross-wise of the frame, between the channels, with their ends extending into opposite channel track slots; each rib having rollers journaled on the ends thereof, in the channel tracks, free to roll longitudinally thereof, the so mounted ribs being free to move toward or away from each other; the cover member also having a single length of flexible wire mesh secured to and supported on the upper surfaces of all the ribs, between the frame channels, and immovably anchored at its forward end to the frame member forward base plate, and releasably engageable at its rear end with the frame member rear base plate; the frame member being mountable in the trunk with its channels fitted against the side walls of the trunk, extending from the front to the rear thereof, and with its base plates bolted to the trunk floor; the cover member being movable longitudinally of the frame member channel tracks between a first, closed position wherein the cover member prevents access to the area of the trunk enclosed by the frame member, and a second, open, position wherein the cover member is retracted along the frame channel tracks to provide access to said area; and, means mounted on the rear frame base plate, engageable with the cover member, to prevent movement of the cover member from its first position to its second position, when so engaged.

3,272,552
LATCH AND TAILGATE OPERATING MECHANISM FOR TRUCK BODIES
Glenn S. Park, New Berlin, Wis., assignor to The Heil Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 15, 1964, Ser. No. 337,853
7 Claims. (Cl. 296—56)



1. In combination with a truck body having mounted thereon a pivotal tailgate and a pivotal tailgate latch: a lever intermediately pivotally mounted on said body to rock in a vertical plane, mechanical connections extending from one end portion of said lever to the latch for actuating the latter, an hydraulic jack pivotally carried by the other end portion of said lever and extending to and engaging the tailgate, and stop means rigidly mounted on the body for limiting the rocking movement of said lever in one direction during which movement the mechanical connections actuate the latch following which the jack extends to pivot the tailgate.

3,272,553
SAFEGUARD FOR CHILD'S SEAT
Dennis M. Burns, 143 Silver St., Dover, N.H.
Filed Mar. 18, 1965, Ser. No. 440,819
6 Claims. (Cl. 297—254)



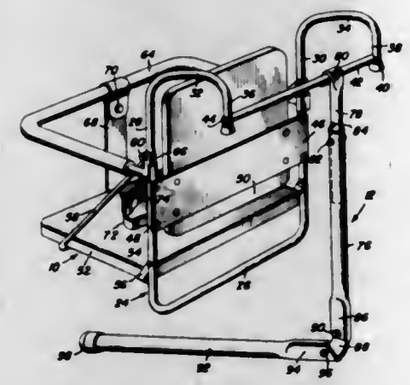
1. A child's seat for mounting in bridging relationship between spaced, adjoining bucket seats in an automobile, said child's seat comprising:

a horizontal base for supporting a child in a sitting position, and a vertical back support connected to said horizontal base, said child's seat being of a size to bridge the space between adjoining bucket seats in an automobile;

attachment means connected to said vertical back support for suspending said child's seat from the bucket seats in said automobile; and

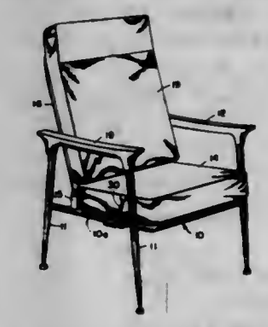
adapter means carried by the child's seat, said adapter means having projecting portions which can be fitted in the space between the two bucket seats to prevent lateral shifting of the child's seat when said child's seat is suspended from the bucket seats in a bridging relationship between the two bucket seats wherein said adapter means comprises a cross bar which bridges the two bucket seats, said cross bar being connected at its ends to the child's seat, and wherein said projection portions comprise two finger elements spaced from one another and projecting at right angles in the same direction from the cross bar, said two finger elements being mounted for adjustment toward and away from each other along the length of said cross bar.

3,272,554
CAR SEAT FOR INFANTS WITH SEAT ANCHOR
George M. P'Simer, Harvey Cedars, N.J., assignor to Holdtite Corporation, a corporation of New Jersey
Filed Dec. 29, 1964, Ser. No. 421,761
1 Claim. (Cl. 297—256)



A car seat assembly for use on a vehicle having a split backrest seat assembly which includes a stationary seat portion and a pivotal backrest portion, an infant's car seat comprising a back frame adapted to extend along the front surface of the backrest portion of the seat assembly of the vehicle, said back frame including spaced hook-shaped elements at the upper end thereof adapted to engage over the upper portion of the backrest portion of the seat assembly, a back panel attached to said back frame, a seat panel attached to said back frame, and yoke retaining means attached to said back frame forming an assembly for receiving an infant whereby the infant is normally supported forwardly of the backrest portion of the seat assembly and is subjected to injury in the event the backrest portion of the seat assembly is pivoted forwardly due to sudden deceleration of the vehicle, an anchor assembly connected to the infant's car seat, said anchor assembly including a rail interconnecting the hook-shaped elements, an elongated vertically extending rigid member connected to the rail and adapted to extend downwardly alongside of the rear surface of the backrest portion of the vehicle seat assembly, and a forwardly extending generally horizontally disposed rigid member rigid with the lower end of the vertically extending member and generally equal in length thereto and adapted to extend forwardly in underlying relation to a major portion of the front to back dimension of the seat portion of the seat asembly, the backrest portion of the seat assembly thus being precluded from forward tilting movement, the upper end of said vertically extending rigid member being flattened and having a downwardly opening hook formed therefrom and in detachable engagement with said rail and retaining the vertically extending rigid member perpendicular thereto and preventing rotation about its longitudinal axis, said vertically extending rigid member including a pair of telescopic tubular members, means releasably securing the telescopic tubular members in longitudinally adjusted position, said means including alignable diametric openings in the tubular members and a fastening bolt extending through the openings to prevent relative rotation of the tubular members about a longitudinal axis, the lower end of the lowermost of said telescopic tubular members being flattened, said forwardly extending rigid member being tubular and having the rear end thereof flattened, the major dimension of the flattened rear end of the forwardly extending rigid member being substantially vertical and perpendicular to the rail, the major dimension of the flattened lower end of the vertically extending rigid member being disposed in substantially the same vertical plane as the major dimension of the flattened rear end of the forwardly extending member, and an angulated connector plate extending into and conforming with the flattened ends, and means releasably securing the connector plate to the flattened ends thereby retaining the forwardly extending rigid member in underlying relation to the seat portion of the seat assembly in generally perpendicular relation to the rail.

3,272,555
ADJUSTABLE BACK LOUNGE CHAIR
Chester J. Barecki and Robert T. Knapp, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Nov. 12, 1964, Ser. No. 410,358
2 Claims. (Cl. 297—369)



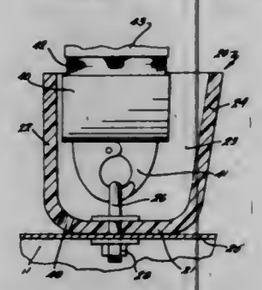
1. In a chair, a horizontal tubular seat frame, a cushion carried by said frame, legs supporting said frame and extending thereabove, armrests carried by said legs above said cushion, pivot standards mounted on said seat frame and extending upwardly therefrom, a back frame pivotally mounted on said standards, a cushion carried by said back frame, one side of said back frame being extended downwardly adjacent a tubular side member of said seat frame, said tubular member being provided on its inner side with a longitudinal slot, a pivot guide slidably mounted in said tubular member and provided at its rear end with a head and at its forward end with a cylindrical ratchet having its lower surface cut away to form downwardly-extending teeth, a pin extending through said slot and connecting said pivot guide head and said extended portion of said back frame, a spring within said tubular member engaging said head, pins extending through said tubular member and restricting forward movement of said spring, a pin extending through said tubular member and engaging a longitudinal slot within said ratchet member, a lever pivotally mounted on said tubular member and having a rearwardly-extending arm equipped with upwardly-extending tooth means, said tubular member being cut away to allow said tooth means to engage selectively said ratchet teeth for latching said ratchet in a plurality of longitudinal positions, and spring means normally urging said arm upwardly.

3,272,556
ADJUSTABLE BABY SEAT
Elmer Rocker, 2887 Falmouth Road, Shaker Heights, Ohio
Filed Apr. 2, 1964, Ser. No. 356,899
10 Claims. (Cl. 297—310)



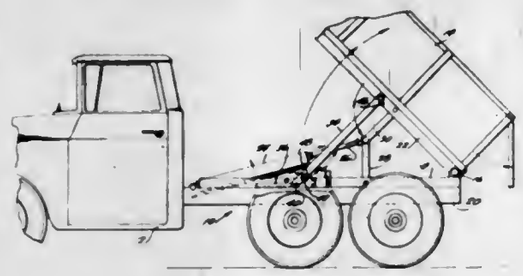
1. In a baby seat or the like comprising a body having a back portion and a seat portion, support means including a first generally U-shaped wire frame having its ends pivotally journaled to a medial portion of said back portion substantially widthwise thereof and adapted to swing from a closed position adjacent said back portion to a position outwardly therefrom, and a second generally U-shaped wire frame having its ends pivotally journaled adjacent an end of said back portion substantially widthwise thereof and adapted to swing from a closed position adjacent said back portion to a position outwardly therefrom, said first U-shaped wire frame having opposed offset loops which are adapted to be engaged by the bight portion of said second U-shaped wire frame upon outward pivoting of said wire frames as aforesaid to interlock said wire frames, the entrance to said loops being of a shorter distance than the diameter of said second wire frame bight portion, whereby said loops must be sprung apart at their entrance to permit entry and removal of said bight portion, the corners defined by the juncture of the bight portion of said second generally U-shaped wire frame with the legs thereof having a resilient elastomeric coating means for frictionally engaging said loops.

3,272,557
RECEIVER FOR BELT RETRACTORS
Arthur S. Nicholas, 915 Carrier Creek Blvd., Grand Rapids, Mich.
Filed July 9, 1964, Ser. No. 381,463
3 Claims. (Cl. 297—388)



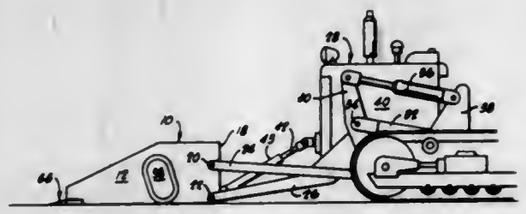
1. In combination with an automotive vehicle having doors and a seat and personal retaining safety belts, said vehicle having a floor structure characterized by a central depressed portion in which said seats having seat and back cushions are located and an upstanding ridge along each side of said central portion between said seats and said door, a safety belt receiving means comprising: a cup-shaped receptacle having side walls and a bottom wall, the top thereof being open; an anchor member having one end within said receptacle and a shank extending through the bottom of said receptacle and means securing it to the top of said ridge with the top of said receptacle close to the top of said seat cushion; said one end having an enlarged portion extending outwardly therefrom to provide a bearing plate; a portion of the bottom wall of said receptacle being tightly clamped between said enlarged portion and said top of said ridge for fixedly locating said receptacle on said ridge; a spring loaded retractor on said safety belt receivable within said receptacle, one end of said safety belt being secured to said anchor member; said safety belt and said retractor being received within said receptacle except for the end portion thereof when said safety belt is retracted, said receptacle being of a flexible material of sufficient rigidity to support the weight of said retractor and belt.

3,272,558
POSITIVE AUTOMATIC DUMP BODY HOIST SAFETY LOCK
Arthur B. Rathman, 520 S. 10th St., and Le Roy H. Rettke, 920 7th St. S., both of St. James, Minn.
Filed Nov. 16, 1964, Ser. No. 411,303
4 Claims. (Cl. 298—22)



1. A positive automatic hoist safety lock comprising a truck frame, a box frame, a hoist frame mounted on the truck frame and having hydraulic jack means on the hoist frame to raise the box frame, a channel mounted on the hoist frame, a locking bar pivotally mounted on the box frame at one end thereof and the other end slidably engaging along the channel on the hoist frame, said other end having a recess therein and continuing along said channel as the box is raised by the hydraulic jack until the box is hoisted, a locking bolt mounted on the hoist frame for engaging the recess at the other end of the locking bar when the box is hoisted to lock the box in the hoist position, a half-moon cam pivotally mounted on said locking bar for riding over a bolt on the hoist frame, a stop pin mounted on the locking bar to limit the displacement of said half-moon cam and allow the locking bar to override engagement of the locking bolt and return the free end of the locking bar into said channel while the box is being lowered onto the hoist frame.

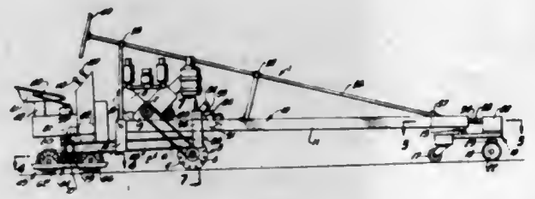
3,272,559
PAVEMENT CUTTING AND EARTH EXCAVATING DEVICE
Louis E. Haynes, 302 S. 6th St., Union City, Tenn.
Filed June 21, 1965, Ser. No. 465,611
42 Claims. (Cl. 299—37)



35. Excavating apparatus for removing a surface layer from the earth comprising:
a prime mover;

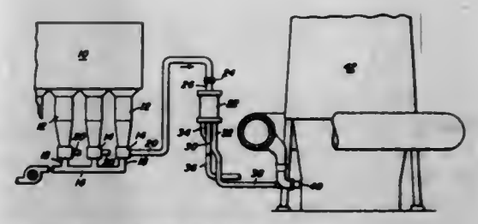
a power takeoff from said prime mover;
a framework having a top portion, a forward portion, a rear portion and a ground engaging portion;
a pair of outer hitch brackets mounted on the forward portion of said framework adjacent the sides of said framework and in horizontaol alignment with each other;
a central hitch bracket mounted on said framework toward the center thereof and vertically offset from the line of horizontal alignment of said outer hitch brackets whereby said framework can be pivoted about a horizontal axis extending through said outer hitch brackets by a hitch link connected to said central hitch bracket;
actuating means connected to said hitch brackets for actuating said hitch brackets to move said framework relative to a plane substantially coplanar with the surface of the ground over which said excavating apparatus is moved;
a plurality of cutter blades movably mounted on the forward portion of said framework in alignment with the ground engaging portion thereof;
dirt supporting means extending upwardly and rearwardly in said framework from a line in juxtaposition to the upper usrface of said cutter blades to receive material severed by said cutter blades and support and lift said material as it moves rearwardly with respect to said framework; and
power transmission means on said framework and having an input end connected to said power takeoff and an output end connected to said cutter blades for reciprocating at least two of said cutter blades on said framework in out-of-phase relation to each other and in a direction of movement advancing from. and returning to, the forward portion of said framework, said power transmission means including timing means adapted to move at least one of said blades forwardly with respect to said framework at a different time than the time at which another of said blades is moved forwardly with respect to said framework, said timing means being disposed beneath said dirt supporting means and to the rear of said cutter blades.

3,272,560
CONCRETE BUMP CUTTER WITH CARRIAGE LEVEL ADJUSTMENT
Cecil W. Hatcher, West Covina, Calif., assignor to Concut Inc., El Monte, Calif., a corporation of California
Filed June 6, 1963, Ser. No. 286,031
9 Claims. (Cl. 299—39)



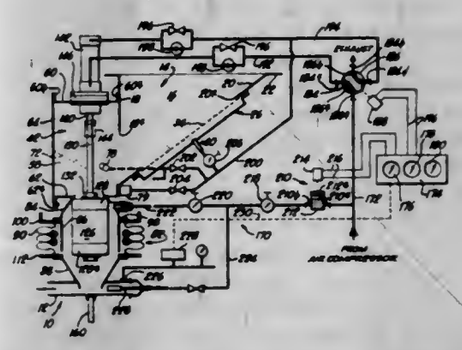
1. A concrete cutting machine comprising a main frame having a forward cutter head, an extension frame having a front vehicle wheel, said extension frame having a rear pivotal connection on said main frame, a rear truck having a drive shaft and front and rear vehicle wheels driven thereby, a universal bearing on opposite ends of said shaft, said main frame having opposite sides, and means for adjustably supporting each side of the rear of said main frame on one of said bearings, means for driving said cutter head, means for driving said drive shaft, and means for supporting the front of said main frame on an intermediate portion of said extension frame.

3,272,561
DISTRIBUTOR
John F. Farnsworth, Pittsburgh, and Somerled MacDonald, Sewickley, Pa., assignors to Koppers Company Inc., a corporation of Delaware
Filed May 21, 1963, Ser. No. 281,911
6 Claims. (Cl. 302—28)



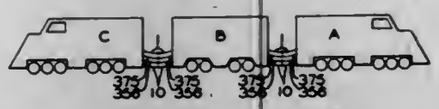
1. A distributor comprising,
a cylindrical casing with end sections,
said casing having a pair of baffles,
said baffles bisecting each other along the axis of said cylindrical casing dividing said casing into symmetrical channels,
inlet means in one of said end sections,
the center of said inlet means coinciding with said axis,
the other of said end sections having outlet means for each channel, and
means connecting opposite outlet means to a common conduit thereby forming a pair of outlet conduits.

3,272,562
MATERIAL FEEDING APPARATUS
John H. Kauffman, Crystal Lake, Ill., assignor to Herbert Simpson Corporation, Chicago, Ill., a corporation of Illinois
Filed July 6, 1965, Ser. No. 469,826
13 Claims. (Cl. 302—55)



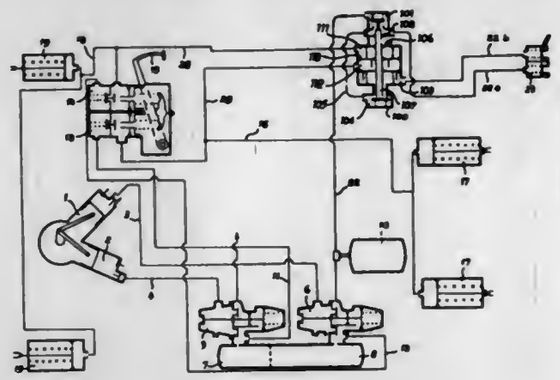
1. Apparatus for feeding material into a fluid conduit, said apparatus comprising a longitudinally expansible valve chamber, said valve chamber including an upper member having a material inlet at the upper end thereof and a valve seat adjacent said inlet, and a lower member having a material outlet therein delivering material to said fluid conduit, bellows means sealingly interconnecting said upper and lower members to permit relative movement between said members to change the effective volume of said chamber; valve means in said chamber including a valve element, means extending into said chamber for supporting said valve element coaxially within said chamber and reciprocally movable to alternately seat and unseat the valve element from said valve seat, operator means externally of said chamber for reciprocally moving said supporting means to effect said alternate seating and unseating, and adjustable support means interconnected between said upper and lower members for selectively adjusting the relative spacing therebetween.

3,272,563
COMBINED FLUID PRESSURE AND VACUUM VEHICLE BRAKE SYSTEM
Harry C. May, East McKeesport, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Mar. 26, 1965, Ser. No. 442,855
14 Claims. (Cl. 303—4)



1. In a multiple unit locomotive brake control system comprising on each locomotive unit the combination of:
(a) a vacuum brake pipe extending from end to end of the respective locomotive unit and connected to a corresponding vacuum brake pipe on an adjacent locomotive unit,
(b) an exhauster and a storage reservoir evacuated thereby,
(c) a communication extending between the storage reservoir and said vacuum brake pipe,
(d) a fluid pressure brake pipe extending through the several locomotive units,
(e) a first fluid pressure operated valve means disposed in said communication and operable in response to variations of pressure in said fluid pressure brake pipe for controlling evacuation of fluid under pressure from said vacuum brake pipe in response to evacuation of the corresponding reservoir by operation of the exhauster on the respective locomotive, said valve means being also operable to vary the amount of fluid at atmospheric pressure admitted to said vacuum brake pipe from a chosen maximum to a chosen minimum accordingly as the pressure in said fluid pressure brake pipe increases from a chosen minimum pressure to a chosen maximum pressure,
(f) a source of fluid under pressure,
(g) a manually operable engineer's brake valve device for controlling the supply of fluid under pressure from said source of fluid under pressure to said brake pipe to effect the charging thereof up to said chosen maximum pressure and for controlling the release of fluid under pressure from said fluid pressure brake pipe to atmosphere to effect a reduction in the pressure therein,
(h) a pair of fluid pressure operated valve means interposed in series in said communication between the storage reservoir and said vacuum brake pipe, one disposed between the storage reservoir and said first fluid pressure operated valve means, and the other disposed between said first fluid pressure operated valve means and said vacuum brake pipe, said three valve means operative cooperatively for controlling the rate of evacuation of fluid under pressure from said vacuum brake pipe in response to evacuation of the corresponding reservoir by operation of the exhauster on the respective locomotive unit,
(i) a fluid pressure operated emergency relay valve device operable to effect venting of fluid under pressure from said fluid pressure brake pipe at an emergency rate to cause an emergency brake application, and
(j) a fluid pressure operated combined charging and break-in-two indication valve device operable so long as the pressure of fluid in said fluid pressure brake pipe is increasing at a rate in excess of a certain rate to effect the supply of fluid under pressure from said source of fluid under pressure to said pair of fluid pressure operated valve means on the corresponding locomotive unit to effect simultaneous operation thereof to effect, in cooperation with said first fluid pressure operated valve means, opening of said communication whereby fluid under pressure is evacuated from said vacuum brake pipe in response to evacuation of the corresponding reservoir, said fluid pressure operated combined charging and break-in-two indication valve device being also operable in response to the admittance of fluid at atmospheric pressure to said vacuum brake pipe at a rate in excess of a chosen rate as the result of rupture of said vacuum brake pipe to effect the supply of fluid under pressure from said source of fluid under pressure to said fluid pressure operated emergency relay valve device to cause the operation thereof.

3,272,564
AIR BRAKE VALVE
Romeo Romanini, Rivoli, Turin, Italy, assignor to Lancia & C. Fabbrica Automobili-Torino S.p.A., Turin, Italy
Filed Dec. 21, 1964, Ser. No. 419,709
Claims priority, application Italy, Jan. 8, 1964, 497/64
4 Claims. (Cl. 303—7)

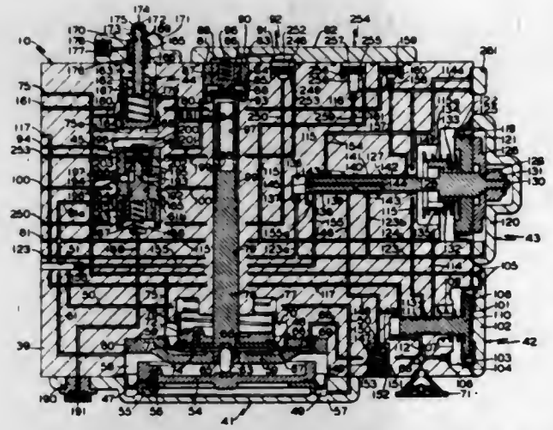


1. A tractor-trailer braking system comprising; first pressure means, automatic control valve means, tractor service line means connected to said first pressure means and said automatic valve means, second pressure means connected to said automatic valve means, trailer service conduit means and trailer emergency conduit means connected to said valve, said automatic valve means having first valve means normally connecting said second pressure means with said trailer emergency conduit means, second valve means normally connecting said trailer service conduit means to the atmosphere and pressure operated means responsive to an increase in tractor service conduit pressure to interconnect said trailer service conduit means with said trailer emergency conduit means and said second pressure means while closing said second valve means, said pressure operated means further responsive to a drop in pressure in said trailer service conduit means to close said first valve means while maintaining connection between said trailer service conduit means and said trailer emergency conduit means.

3,272,565
RAILWAY FLUID PRESSURE BRAKE APPARATUS
Richard L. Wilson, Trafford, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Aug. 31, 1964, Ser. No. 393,166
12 Claims. (Cl. 303—8)

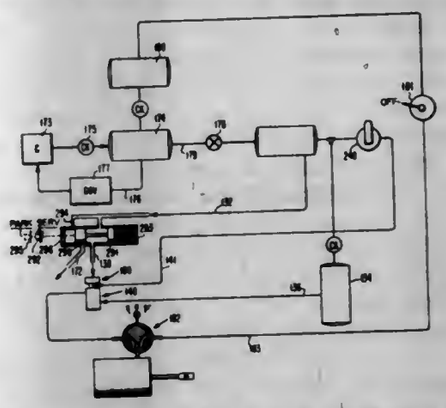
1. In a fluid pressure brake system for railway locomotives and cars, the combination of:
(a) a brake pipe normally charged with fluid at a certain pressure,
(b) a selector volume reservoir normally charged with fluid at said certain pressure, and
(c) a brake control valve device on the locomotive having:

(i) a service valve device responsive, respectively, to a reduction in brake pipe pressure from said certain pressure to effect a brake application, and to an increase in brake pipe pressure to effect a brake release, and
(ii) selector valve means controlling a charging communication through which fluid under pressure may normally flow from the brake pipe to the selector volume reservoir, and two release communications of different flow capacities via which fluid under pressure may be released respectively from the brake pipe at a relatively slow rate and from the selector volume reservoir at a faster rate,
(iii) said selector valve means being subject opposingly to brake pipe pressure and selector volume reservoir pressure and responsive to an initial reduction in brake pipe pressure to below selector volume reservoir pressure at any rate to close said charging communication and open only that one of said release communications through which fluid under pressure may be released from said brake pipe, and
(iv) said selector valve means being responsive to a consequent reduction in brake pipe pressure effected by flow via the open one of said two release communications to effect opening of the other of said two release communications through which fluid under pressure may be released from said selector volume, and
(d) means for limiting the reduction in pressure in said selector volume reservoir to a chosen pressure, by flow through the other of said two release communications, which chosen pressure is less than the reduced brake pipe pressure subsequent to operation of said service valve device to effect a full service brake application.



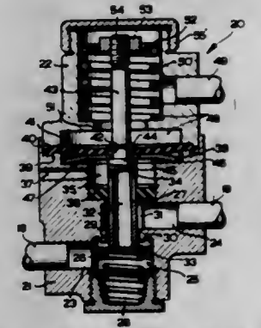
3,272,566
COMBINED SERVICE AND EMERGENCY BRAKE SYSTEM APPARATUS
James H. Clack, 6145 Buckboard Drive, Rio Linda, Calif.
Filed Dec. 30, 1963, Ser. No. 334,505
14 Claims. (Cl. 303—13)

1. A brake system adapted to be carried by a motor vehicle comprising a cam shaft effective to actuate a brake shoe in a first direction of angular shaft rotation and to release a brake shoe in a second direction of angular shaft rotation, biasing means connected to said cam shaft for resiliently urging said cam shaft in said first direction, fluid pressure means connected to said cam shaft for overcoming said biasing means whereby said cam shaft is rotated in said second direction, pressure source means for supplying fluid under pressure to said fluid pressure means, means forming a fluid supply line path connecting the source means and said fluid pressure means, and valve means controlled by the operator of the motor vehicle for both service and emergency operation, said valve means being capable of selectively supplying fluid under pressure from said fluid supply source means to said fluid pressure means and subsequently selectively removing fluid from said fluid pressure means, said valve means being normally



operatively responsive to fluid under pressure from said source serving to operate said valve means to normally condition said path to transmit pressure to said fluid pressure means and rotate said cam shaft in said second direction, and further operatively responsive to selectively apply a counteracting fluid pressure from said source to condition said path to remove fluid from said fluid pressure means and rotate said cam shaft in said first direction.

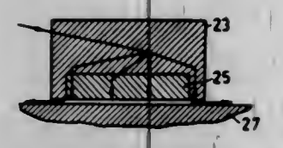
3,272,567
BRAKE INSTALLATIONS FOR TRAILERS
Oskar Vielmo, Stuttgart-Sonnenberg, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Oct. 7, 1964, Ser. No. 402,098
Claims priority, application Germany, Oct. 10, 1963, B 73,824
6 Claims. (Cl. 303—29)



1. In a braking installation for a trailer which is adapted to be hauled by a motor truck, in combination, a plurality of pneumatic brake means and spring brake means adapted to brake wheels of the trailer; control valve means; filling and brake lines situated upstream of and communicting with said control valve means, said filling line being adapted to communicate with a source of compressed air at the motor truck and said brake line being adapted to transmit pressure changes resulting from operation of brakes of the motor truck; a compressed air tank carried by the trailer, said tank communicating with said control valve means; pneumatic brake conduit means communicating with said plurality of pneumatic brake means and situated downstream of and communicating with said control valve means, said control valve means maintaining compressed air in said tank at a pressure determined by the pressure of compressed air in said filling line and said control valve means responding to pressure changes in said brake line for applying to said plurality of pneumatic brake means compressed air from said

tank to apply the pneumatic brake means for retarding the movement of the trailer; spring brake conduit means communicating with said spring brake means and with said filling line upstream of said control valve means so that the compressed air flows from said filling line directly to said spring brake means and said spring brake means responding to the pressure of the compressed air derived from the filling line for remaining in an inoperative, non-braking position, while when said spring brake conduit means is at atmospheric pressure said spring brake means automatically responds to apply its braking force to the trailer for retarding the movement thereof; and flow control means communicating with said tank and connected into said spring brake conduit means and dividing the latter into an upstream portion extending from said flow control means to said filling line and a downstream portion extending from said flow control means to said spring brake means, said flow control means automatically placing said downstream portion of said spring brake conduit means in communication with the outer atmosphere when the pressure of the air in said tank falls below a predetermined value, so that said spring brake means will become operative to retard movement of the trailer when the pressure in said tank is below said value.

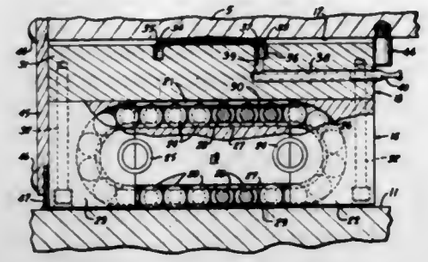
3,272,568
GUIDING DEVICES
Jacob Koörneef, Emmasingel, Eindhoven, Netherlands, Simon Duinker, Hamburg, Germany, and George Ludwig Walther, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 9, 1963, Ser. No. 295,282
Claims priority, application Netherlands, Mar. 28, 1962 276,532
9 Claims. (Cl. 308—5)



1. A system for guiding a part movable in a path relative to a supporting part comprising, a translationally movable body of relatively low mass having a substantially flat surface, a guide member having a substantially flat surface opposite the flat surface of said body for supporting said body, hydrostatic pneumatic means having openings in at least one of said surfaces for separating said body and said guide member throughout said path, and magnetic means urging said flat surfaces of said body and said guide member toward each other throughout said path for maintaining a given spaced relation therebetween, said given spaced relation being substantially equal to a similar space relation by a similar body having a significantly greater mass than the said body of low mass; said magnetic means comprising a composite body of soft steel portions separated by portions of ferromagnetic material.

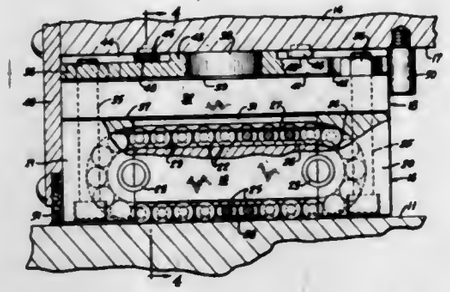
3,272,569
PNEUMATIC LOADING BEARING ARRANGEMENT
Alfred F. Mergen, Sun Prairie, Wis., assignor to Gisholt Corp., a corporation of Wisconsin
Filed Aug. 28, 1963, Ser. No. 305,139
5 Claims. (Cl. 308—6)

2. A roller-spring unit comprising,
(a) a roller bearing having a planar rolling surface and an opposite parallel planar mounting surface,
(b) a supporting body secured to the mounting surface having a cavity in the opposite body surface,
(c) an elastic diaphragm secured to the body overlying said cavity and defining a spring control chamber therewith, said diaphragm constituting a load receiving surface for supporting a member on the roller bearing, and



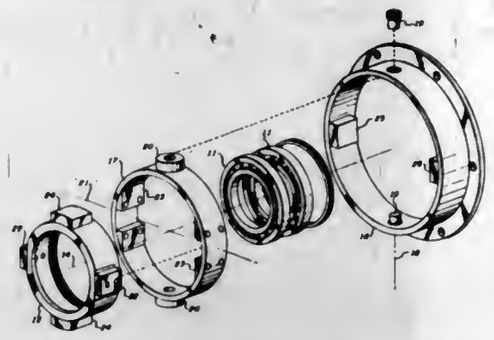
(d) an essentially incompressible material confined within said chamber under a pressure expanding said diaphragm, said material being compressed in response to loads applied to said diaphragm.

3,272,570
SPRING LOADED BEARING ARRANGEMENT
Robert R. Zenk, Cambridge, Wis., assignor to Gisholt Corp., a corporation of Wisconsin
Filed Oct. 1, 1963, Ser. No. 313,109
7 Claims. (Cl. 308—6)



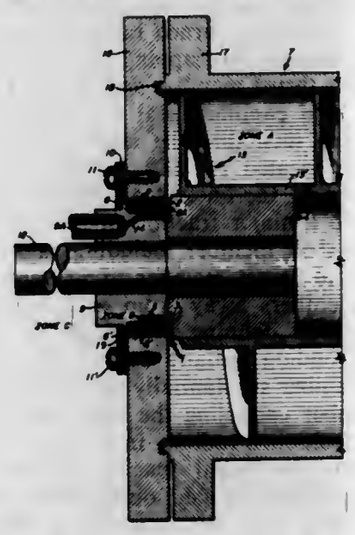
1. A spring loaded rolling mounting assembly comprising
(a) a fixed support member having a planar supporting wall,
(b) a movable member having a planar wall,
(c) a recirculating roller bearing having a body with a back mounting wall and a plurality of recirculating cyclindrical rollers defining a planar rolling surface opposite the back mounting wall, said bearing being disposed on the fixed support member with the rollers on the planar supporting wall,
(d) a mechanical spring unit disposed between the movable member and the roller bearing, said spring unit including a first mechanical spring having a spring constant deflectable under initial loading and a pair of columns extending perpendicularly to the planar wall of the movable member and having a spring beam spanning and bearing upon said pair of columns, said beam constituting a spring having a substantially higher spring constant deflectable after substantially complete deflection of the first spring portion, and
(e) said spring unit having a crowned force transmitting surface establishing self-alignment of the load forces on the movable member to establish perpendicular forces on the spring unit and the roller bearing.

3,272,571
BEARING ASSEMBLY
William J. Ott, Great Neck, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Oct. 11, 1963, Ser. No. 315,585
10 Claims. (Cl. 308—26)



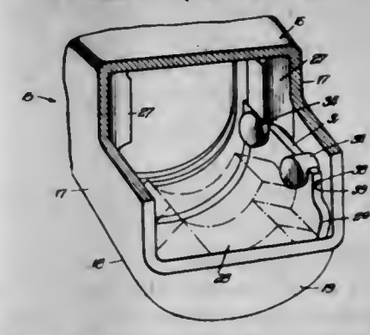
1. A vibration isolating bearing assembly including a bearing having a part movable about an axis, a coupling having three radially spaced elements arranged in concentric and coplanar relation to the bearing axis and in outside, intermediate and inside relation to one another for isolating the bearing from vibrations along the bearing axis, along a second axis normal to the bearing axis and along a third axis normal to the bearing and second axes, an axially spaced pair of slideable fastenings between the intermediate element and one of the other elements providing damping along the second axis and a rigid connection with relation to the bearing and third axes, an axially spaced pair of slideable fastenings between the intermediate element and the other of the elements providing damping along the bearing and third axes and a rigid connection with relation to the second axis, a pair of elastic members axially spaced along the second axis yieldingly connecting the intermediate element and the other of the elements, and a second pair of elastic members axially spaced along the third axis yieldingly connecting the intermediate element and the one of the elements.

3,272,572
DYNAMIC SEAL
Roger A. Lloyd, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of Agriculture
Filed May 20, 1964, Ser. No. 369,042
2 Claims. (Cl. 308—36.1)



1. A dynamic seal for sealing a rotating shaft within a high pressure system and preventing contamination of said seal comprising in combination a rotating sealing ring member secured to said shaft, and a main stationary bearing member journaled on said rotating shaft, having at the outer circumference of said main bearing member a stationary ring sealing member, one side thereof bearing against said rotating sealing ring member, the other side thereof in intimate contact with a pliable static sealing ring, fluid pressure means urging against said pliable static sealing ring, anti-torque members providing a passage for said fluid pressure means against said rotating sealing ring transversely through said stationary ring seal members such that a relatively high fluid pressure is maintained within said seal and against said rotating sealing ring member.

3,272,573
JOURNAL BOX CONSTRUCTION FOR RAILWAY CARS
Edward Payson Smith, 1075 Pelham Road, Winnetka, Ill.; Erwin J. Hasten, Jr., 5934 Forest Glen, Chicago, Ill.; and David S. Neuhart, 9024 Jones Ave., Omaha, Nebr.
Filed July 5, 1963, Ser. No. 293,067
5 Claims. (Cl. 308—38)

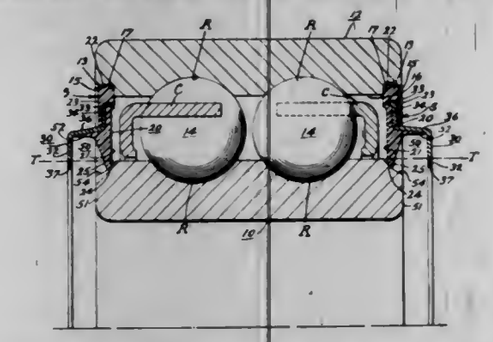


1. In a railway car journal box construction, a journal box having spaced vertical side walls with an axle journal in spaced relation therebetween, top and curved bottom walls interconnecting said side walls above and below said axle journal respectively, and a lubricant in said journal box; the improvement which comprises:
(a) a lubricant absorbing pad overlying said curved bottom wall, extending upwardly past diametrically opposite sides of said axle journal and having slotted ends,
(b) resilient block means extending upwardly from the upper side of said pad,
(c) a fabric overlying said resilient block means to transport the lubricant to the surface of said axle journal,
(d) journal stop means in said slotted ends of said pad interposed between the respective side walls of said journal box and the diametrically opposite sides of said axle journal to limit the movement thereof with respect to said side walls, and
(e) retaining means extending in parallel relation to said axle journal through said slotted ends of said pad and through said journal stop means to hold said journal stop means in said slotted ends,
(f) said journal stop means projecting beyond opposite sides of the respective ends of said pad whereby said slotted ends are spaced from the respective side walls of said journal box and the diametrically opposite sides of said axle journal.

3,272,574
SEAL FOR BEARINGS
Bruno A. Tassone, Philadelphia, and John L. Blake, Jr., Willow Grove, Pa., assignors to SKF Industries, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed Feb. 10, 1964, Ser. No. 343,789
2 Claims. (Cl. 308—187.2)

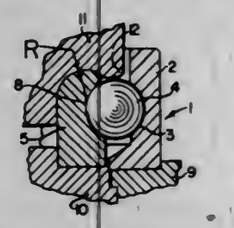
2. A bearing assembly comprising inner and outer rings, said outer ring having an inner circumferentially extending surface spaced from the outer peripheral sur-

face of the inner ring to define an annular space therebetween, a plurality of rolling elements in said annular space, means defining a circumferential groove in the inner peripheral surface of the outer ring adjacent opposite axial ends thereof, said inner ring having an arcuately chamfered circumferential surface at each axial end underlying said grooves in the outer ring, a seal detachably mountable adjacent each axial end of the annular space between the members, each seal comprising a ring-like casing having a rounded outer peripheral edge adapted to seat in said groove in the outer ring and a feathered radially inwardly directed portion having a tapered inner edge adapted to lightly engage the chamfered surface of the inner ring, a lubricant retaining member formed integrally with said casing comprising circumferentially extending offset inner and outer radial wall portions and an axial wall portion connecting the inner



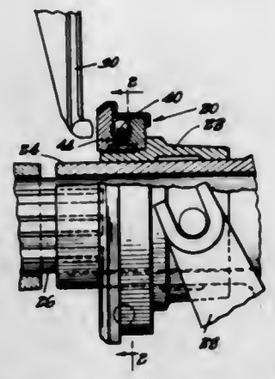
and outer radial wall portions, said outer radial wall portion embedded in said casing and said axial wall portion projecting from the outer face of said casing away from said annular space at approximately the midpoint of said casing, said casing including a thin tapered web covering the inner peripheral surface of said axial wall portion, said axial and inner radial wall portions and said feathered edge portion of said casing defining a cup-like circumferential chamber of generally U-shaped cross section, the open side of said chamber confronting and overlying the axial end wall of the inner ring and the inner circumferential edge of said inner radial wall portion projecting below a circular plane through the outer peripheral surface of the inner ring whereby lubricant which purges by the inner feathered edge of the casing and which is thrown radially outwardly upon relative rotation of the rings is deposited in said chamber.

3,272,575
BALL BEARING ASSEMBLY
Michael Bushi, 3268 W. 33rd St., Cleveland, Ohio
Original application Feb. 21, 1962, Ser. No. 174,730. Divided and this application Mar. 9, 1964, Ser. No. 350,458
3 Claims. (Cl. 308—195)



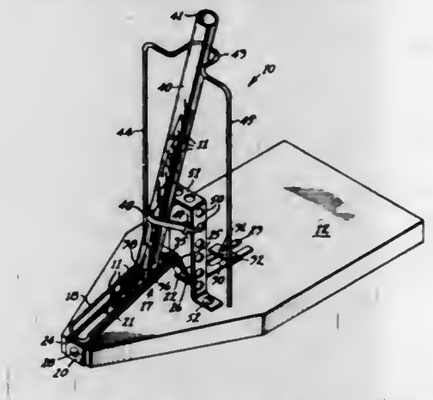
1. A two-part ball bearing assembly having inner and outer race members, with one of said inner and outer race members having a preformed raceway having a radius approximately equal to that of said balls, the other of said inner and outer race members being in its preformed state generally cylindrical and formed with an annular ball-supporting shoulder and in its completely formed state axially compressed to form a raceway radius approximately equal to the radius of said balls to closely conform to the surface thereof, said other race member having a top exterior surface axially compressed to form a radius approximately equal to the radius of said balls.

3,272,576
SEALED BALL THRUST BEARING
Daniel F. Greby, Maywood, Ill., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed May 4, 1965, Ser. No. 453,015
8 Claims. (Cl. 308—233)



1. A sealed ball thrust bearing comprising, in combination, two annular thrust members disposed in mutually confronting concentric relation for rotation relative to each other, said thrust members defining respectively two circular bearing ball races disposed in confronting relation to each other; an annular series of bearing balls disposed between said members in thrust bearing engagement with both of said races and being movable, in response to relative rotation of said thrust members, in an orbital path having an outer boundary; an annular bearing ball spacer disposed in concentric relation to said thrust members and including an annular series of spacer elements projecting radially outward between said thrust members in intervening relation between successive balls of said series of balls to maintain the balls in circumferentially spaced relation to each other, said spacer elements having radially outer extremities which terminate radially short of the outer boundary of said orbital path by distances which are major fractions of the radii of said balls, an outer annular shell member encircling said series of bearing balls in axially spanning relation to the space between said races, said outer shell member having two circumferential marginal edges one of which is sealably joined to one of said thrust members and the other of which is turned radially inward to form an annular lip slidably overlapping an axially outer surface on the other thrust member and forming a capillary seal therewith, said capillary seal extending radially inward to a degree such that the inner periphery of the capillary seal is located radially inward from the ball encircling portion of the outer shell member by a radial distance equal to a major fraction of the radius of each ball, said outer shell member including said lip thereon coacting with said thrust member to prevent movement of the thrust members away from each other, each of said thrust members defining a generally flat inner surface thereon extending radially outward from said race on the thrust member substantially to the portion of said outer shell member encircling the balls, said outer shell member being positioned radially in relation to said bearing balls so that the radial spacing of the individual balls from the portion of said outer shell member encircling the bearing balls between said thrust members does not exceed fifteen percent of the diameter of each bearing ball, an inner annular shell member disposed radially inward of said balls in concentric relation to said thrust members and in axially spanning relation to the space between said thrust members; said inner shell member having two circumferential marginal edges sealed to said respective thrust members, the seal between one of said thrust members and said inner shell member being formed by a capillary seal providing for free rotation of said one thrust member and said inner shell member in relation to each other; said thrust members and said inner and outer shell members as sealed together defining sealed internal void space through which said bills orbit in engagement with said races, and grease disposed in said void space and having a volume that is equal to at least twenty percent but not more than fifty percent of the volume of said void space.

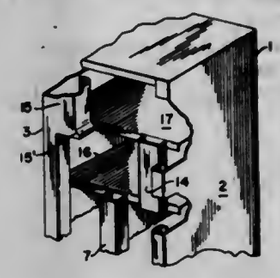
3,272,577
DEVICE FOR DISPENSING STRAIGHT PINS
Woodrow W. Patterson, 3723 Princeton Ave., Nashville, Tenn.
Filed July 30, 1964, Ser. No. 386,292
3 Claims. (Cl. 312—42)



1. A straight pin dispensing device comprising:
(a) a base having a front end and a rear end,
(b) an elongated container having an upper open end and a lower open end,
(c) a plurality of straight pins, each pin having a first end and a second end, said pins being longitudinally received in said container with said first ends down,
(d) means for constraining said pins against end-over-end movement in said container,
(e) an elongated trough having an arcuate cross-section for receiving said pins, and having an upper end and a lower end,
(f) an elongated support member adjustably mounted on said base for holding said trough longitudinally inclined at an angle to the horizontal, with the lower end of said trough extending forwardly,
(g) means adjacent the upper end of said trough for supporting the lower open end of said container spaced vertically above said trough less than the length of each straight pin so that the first ends of said pins will engage said trough before said second ends leave said container,
(h) means on said base for supporting said container in an upright longitudinally inclined position, with the lower end of said container extending forwardly so that the first ends of said straight pins are directed from said container downwardly and forwardly.

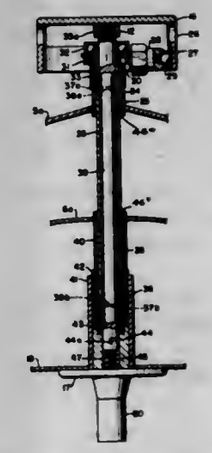
3,272,578
LOCKER CONSTRUCTION
Robert G. Money, 7742 Little Mountain Road, Mentor, Ohio
Filed Sept. 9, 1964, Ser. No. 395,226
13 Claims. (Cl. 312—198)

1. A locker construction for garments and the like comprising a plurality of first compartments positioned in side-by-side relationship having a common rear wall, a door for each compartment, a divider partition between said compartments, and a plurality of second compartments positioned above said first compartments, each of said doors extending vertically on opposite sides of said divider partition and enclosing said first and second compartments to permit access to said first and second compartments when



opened, and a closure plate positioned above one of said first compartments parallel to one of said doors and extending vertically between said first compartment and one of said second compartments to deny access to one of said second compartments when the door to the other of said second compartments is opened.

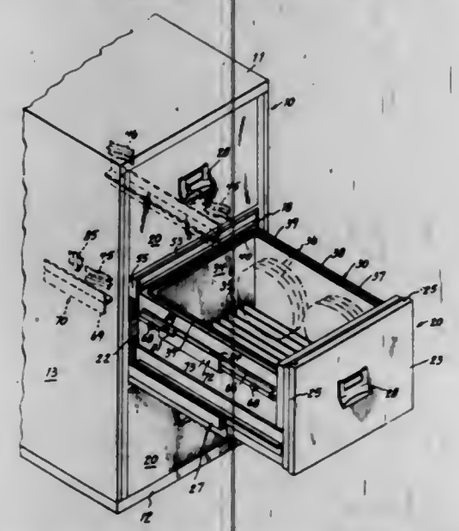
3,272,579
CRYOGENIC STORAGE VESSEL WITH STATION SELECTOR
Kenneth R. Leonard, Boulder, Colo., assignor to Cryogenic Engineering Company, Denver, Colo., a corporation of Colorado
Filed Aug. 24, 1964, Ser. No. 391,553
11 Claims. (Cl. 312—214)



1. A cryogenic storage vessel comprising an outer cylindrical member adapted to stand in an upright position and enclosed at its top and bottom, an inner storage container suspended within the outer member in spaced relation thereto and defining an evacuated insulation space therewith, a hollow member of low heat-conductivity fitted in sealed relation in openings in the outer member and inner container, a rotary shaft of low heat-conductivity extending through the hollow member from outside the outer member into the inner container through an upper portion of said insulation space and in spaced relation with the hollow member, an article support carried on the lower end of said shaft and having a series of support stations at its periphery, a tubular member extending from outside the outer member into the storage container in alinement with a selected station of the article support so as to provide an access passage thereto and interconnecting the outer member with the inner container as one point of suspension, the shaft providing a second point of suspension of the inner container from the outer member, a removable plug normally closing the access passage, and means at the upper end of the

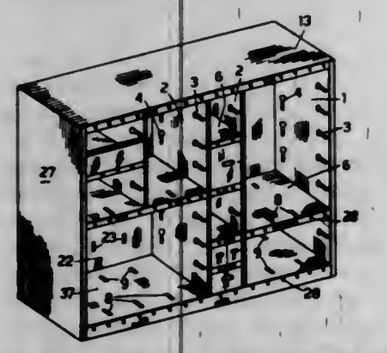
shaft for manual rotation to bring a selected support station in register with the access passage without removing the plug.

3,272,580
ARTICLE STORAGE EQUIPMENT
Lawrence R. Dean, Devola, Ohio, and Donald A. Gunn, Tonawanda, N.Y., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,084
18 Claims. (Cl. 312—214)



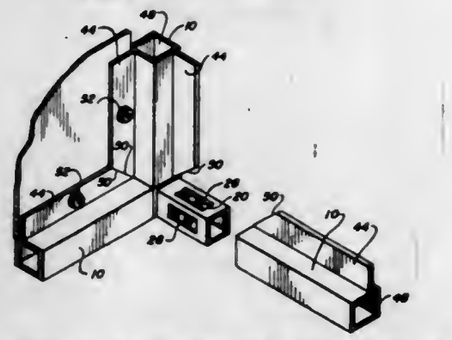
1. A fire resistant storage device of the class described, comprising
(a) a casing having a compartment open at one side thereof and having the wall portions thereof composed of fire resistant material,
(b) closure means for selectively opening and closing said one side of said compartment,
(c) said closure means including a wall of fire resistant material, adapted to coact with said compartment wall portions to seal said compartment when closure means is in closed position,
(d) a storage container arranged within said compartment,
(e) a cover for said storage container, and
(f) means for maintaining said cover in hermetically sealed engagement with said container under conditions where said closure means is in said closed position.

3,272,581
STORAGE RACK
Jakob Stucki, Neulandenstr. 32, Wil, Switzerland
Filed Oct. 3, 1963, Ser. No. 313,463
Claims priority, application Switzerland, Oct. 6, 1962, 11,702/62
10 Claims. (Cl. 312—234.4)



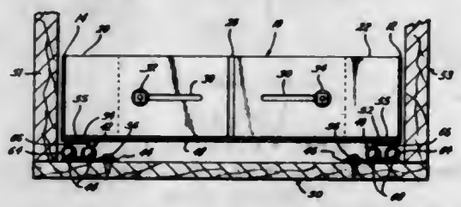
1. In a combinable storage rack comprising two sidewalls, a bottom sheet and a top sheet, intermediate shelves and cell floors adjustable in elevation and of different lengths, some of said cell floors being inclined, and partitions of different height spaced as desired and extending parallel to the sidewalls and also carrying cell floors, said partitions having retainers insertable in elongated holes of the cell floors, whereby may be formed cells of square or rectangular form of the most diversified sizes, either uniform or all the forms and sizes intermixed, the improvement comprising said sidewalls and partitions provided with uniformly spaced elongated holes disposed in series, said cell floors being provided with front and rear flanges, horizontal members for supporting the cell floors, said members being crimped in cross-section and adapted to be detachably secured to the sidewalls and partitions through said holes therein, the cell floors bearing on said members and engaging same from the rear with their rear flange and from the front with their front flange, and unequal angle irons welded to the underside of the cell floors and the top sheet to project therefrom with their unequal legs and to leave a gap between the latter substantially equal in width to the thickness of the partitions, the lower edges of said partitions having retainers inserted in said floor holes and said partitions being positioned with their top edge in said gap between said angle irons.

3,272,582
BUILDING COMPONENTS FOR CONSTRUCTING CABINETS
Edwin V. Anderson and Joseph A. Mack, Glenview, Ill., assignors to Amco Engineering Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 17, 1964, Ser. No. 419,093
14 Claims. (Cl. 312—257)



6. In combination with building components of the type having legs of one member inserted with the hollow interior of other members, said legs each having one or more recesses formed therein, locking plate means comprising a central body portion having upstanding yieldably rigid locking tabs formed therein and a pair of offset side rails integrally formed therewith which are adapted to engage the surface of said legs with said central body portion disposed in said recess.

3,272,583
SLIDING ADJUSTABLE DRAWER
Edward P. Averdieck, 1508 Ennis St., Houston, Tex.
Filed Dec. 21, 1964, Ser. No. 419,678
5 Claims. (Cl. 312—343)

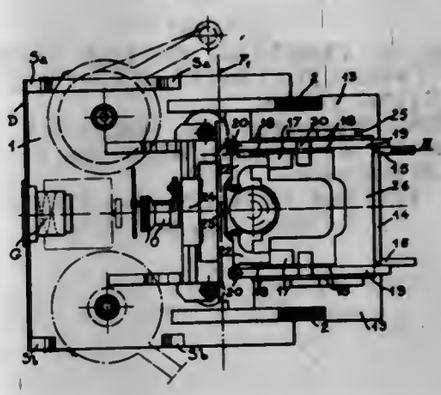


1. In an adjustable drawer for mounting on a cabinet shelf having side walls, said drawer having first and second sides connected together by front and back members which are adjustable in length, the improvement comprising,

slide means connected to each side member for attaching said drawer on said shelf.
supporting means extending inwarly from each side member for supporting a bottom member,
a bottom member adapted to be positioned on said supporting means thereby providing a drawer bottom, and
fastening means connected to the slide means for securing the slide means to said shelf, said fastening means positioned inwardly from said supporting means whereby the drawer may be fully expanded between the cabinet side walls and the fastening means secured to said shelf prior to positioning said bottom.

3,272,584
KINEMATOGRAPHIC PROJECTING APPARATUS INCORPORATING A SCREEN
Angelo Sturnich, 7 Rue Martin Seytour, Nice, France
Filed Nov. 18, 1963, Ser. No. 324,408
Claims priority, application France, Nov. 23, 1962, 7,135, Patent 1,344,587
6 Claims. (Cl. 352—123)

1. A kinematographic film projecting apparatus comprising a frame, an objective carried inside said frame, a divergent optic system located to the front and at a short distance from the objective inside the frame, means projecting a beam of light through and along the optical axis of the objective and optic system, a case in which the frame is slidably carried and including a screen forming front wall facing the divergent optic means in the frame, the case being open at its rear end to provide a passage for the frame between a front inoperative position and a rearwardly shifted operative position, two cylindrical rigidly interconnected spool holders carried by the frame the axes of which are parallel with each other and orthogonal with reference to the optical axis of the objective, coaxial film feeding spools having their axes aligned with the axis of one spool holder and slidingly carried inside the latter, coaxial film take up spools cooperating with the corresponding film feeding spools having their axes aligned with the axis of the other spool holder and slidingly carried inside the latter, and guides extending in parallelism with the spool holder axes and along which said spool holder axes are adapted to be shifted to make the medial cross-sections of the successive pairs of cooperating feed and take up spools enter a position for which they lie in a plane passing through said optical axis to hold the corresponding film in an operative position across said axis.



CHEMICAL

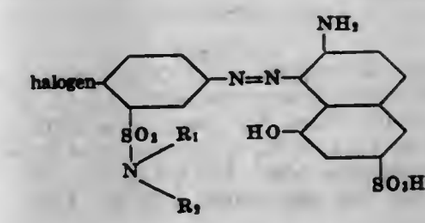
3,272,585
METHOD OF MARKING ANIMAL SKINS AND RESULTING PRODUCT
John W. Rafferty, Marblehead, and George T. Hodgson, Jr., Melrose, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed Apr. 15, 1963, Ser. No. 272,841
9 Claims. (Cl. 8—10)

1. An ink suitable for permanently marking untanned animal skins and hides, consisting essentially of:
(a) a thixotropic gel-like, non-volatile, oxygenated hydrocarbon carrier medium soluble in water and the lower aliphatic alcohols and being further characterized as consisting essentially of a mixture of at least one liquid polyethylene glycol present in an amount equivalent to from 50 to 98% by weight of said carrier medium and at least one solid which is a polyethylene glycol or a copolymer of ethylene and propylene oxides forming the balance of said carrier medium; and
(b) an alcohol-soluble dye having a limited solubility in said carrier medium and suspended therein, said dye being present in a quantity in excess of that which is soluble in said carrier medium at normal room temperatures.

6. Method of permanently marking an animal skin, comprising the steps of:
(a) applying to the non-fur side of an untanned skin a dye suspended in an alcohol-soluble, gelled, non-volatile, oxygenated hydrocarbon carrier medium in which it has a limited solubility, wherein said carrier medium consists essentially of a mixture of at least one liquid polyethylene glycol present in an amount equivalent to from 50 to 98% by weight of said carrier medium and at least one solid which is a polyethylene glycol or a copolymer of ethylene and propylene oxides forming the balance of said carrier medium; and
(b) maintaining said carrier in contact with said skin for a period of time sufficient to cause it to penetrate into said skin and carry dissolved dye into said skin for permanent attachment to fibers thereof.

3,272,586
MIXTURES OF PHENYL SULFONAMIDO-HALOBENZENE AZO AMINO-NAPHTHOL SULFONIC ACIDS
Franz Frisch, Porza, Ticino, Switzerland, assignor to Sandoz Ltd., Basel, Switzerland
No Drawing. Filed Nov. 27, 1963, Ser. No. 326,354
Claims priority, application Switzerland, July 24, 1959, 76,170/59; June 30, 1960, 7,397/60
6 Claims. (Cl. 8—26)

1. As a composition of matter a mixture of two to three monoazo dyes, all of which correspond to the formula



wherein halogen represents a member selected from the group consisting of chlorine and bromine,
R_1 represents a member selected from the group consisting of hydrogen and low molecular alkyl, and
R_2 represents a member selected from the group consisting of phenyl, chlorophenyl, bromophenyl, low

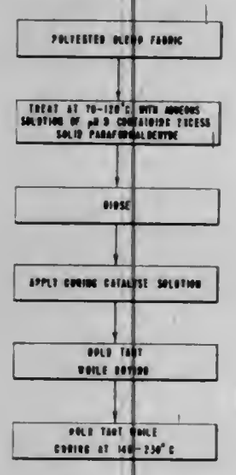
molecular alkylphenyl, low molecular alkoxyphenyl and 2,3-tetramethylenephenyl; and wherein the radicals R_1 and R_2 possess together at least 7 and at the most 10 carbon atoms and the proportions of the two dyes of Formula I in the mixtures is from 80 to 20 parts of one dye of Formula I and 20 to 80 parts of the second dye of Formula I.

3,272,587

METHOD OF FINISHING TEXTILE FABRIC PREPARED FROM POLYESTER BLEND YARNS, AND RESULTING FABRIC

Roy T. Stiehl, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 12, 1961, Ser. No. 137,553
5 Claims. (Cl. 8—115.7)



1. In the process of treating with acid aqueous formaldehyde solution a textile fabric prepared from polyester blend yarns, the blend being a composite of 45% to 80% synthetic linear condensation polyester fibers and 20% to 55% fibers of the group consisting of cellulose, wool and nylon fibers, the improvement of wetting-out said fabric with at least 50%, based on the fabric weight, of a highly acid aqueous solution containing at least 40 parts formaldehyde per 100 parts by weight of solution and sufficiently strong, soluble, non-oxidizing acid to have a pH of less than about 0.5, heating the wet fabric for a period of at least 5 seconds at a temperature of 70° to 120° C., removing the unreacted formaldehyde and acid from the fabric, thereafter applying to the fabric a catalyst solution consisting essentially of a dilute aqueous solution of a non-volatile, non-charring acid, and, while applying tension to the wet fabric to prevent more than 5% shrinkage in any direction, drying and then heating the fabric at a temperature between about 140° and 230° C. for about 0.5 to 5 minutes.

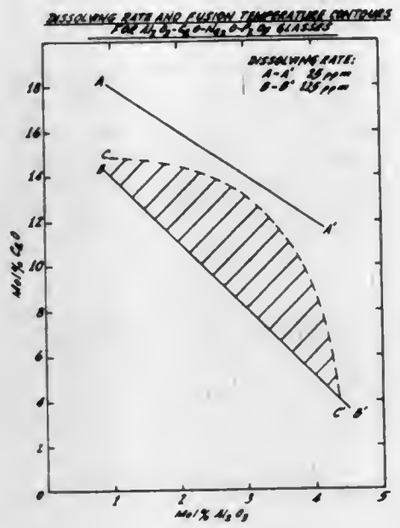
3,272,588

METHOD OF INHIBITING CORROSION WITH SLOWLY SOLUBLE PHOSPHATE GLASSES

Robert J. Fuchs, Clark, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

Original application Mar. 27, 1962, Ser. No. 182,870. Divided and this application July 23, 1962, Ser. No. 211,552
1 Claim. (Cl. 21—2.7)

The method of inhibiting the corrosion of metal in contact with water which consists essentially of adding to said water from about 1 to 125 p.p.m. of a polyphosphate glass having a fusion temperature between about 1148° F. and 1382° F. and a dissolving rate of from about 25 to 125 milligrams per liter, said polyphosphate glass containing from about 46.5 to about 48.5 mole percent P_2O_5, from about 35.5 to about 44.5 mole percent Na_2O,



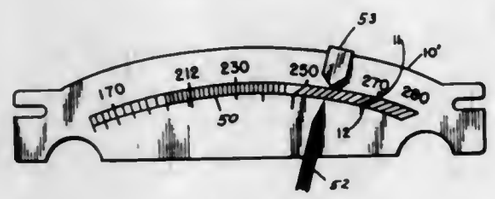
from about 1 to about 4.25 mole percent Al_2O_3, and from about 4 to about 15 mole percent CaO.

3,272,589

TEMPERATURE SCALE FOR STERILIZER

Alfred B. Huston, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania

Filed Mar. 20, 1964, Ser. No. 353,441
1 Claim. (Cl. 21—98)



In combination, an autoclave adapted to carry out a processing cycle below a predetermined temperature and a sterilizing cycle above said predetermined temperature,

control means connected to said autoclave for controlling the temperature therein,

setting means for setting the temperature at which said autoclave is controlled by said control means,

a scale on said control means,

said scale having spaced calibration marks thereon,

said marks indicating temperature,

a setting pointer and an indicating pointer,

said setting pointer adapted to move over one end of said marks and said indicating pointer adapted to move over the other end of said marks,

the said marks indicating temperatures below said predetermined temperature being generally perpendicular to the path of movement of said pointer,

said marks above said predetermined temperature being inclined with regard to the path of movement of said pointer,

the ends of said marks above said predetermined temperature having their ends spaced from each other in a direction parallel to said path of movement of said indicating pointer in an amount equal to a predetermined differential temperature.

3,272,590

SEPARATION OF Hf AND Zr VALUES BY SOLVENT EXTRACTION

William H. Owens, Milton, Fla., assignor, by mesne assignments, to Pittsburgh Plate Glass Company

No Drawing. Filed Mar. 15, 1962, Ser. No. 180,045
4 Claims. (Cl. 23—22)

1. In the process of separating titanium from the group consisting of hafnium and zirconium wherein a water-insoluble organic solvent solution of hafnium and zirconium values containing titanium values as a contaminant which normally remains dissolved in said solutions of hafnium and zirconium is introduced into a extraction system comprising countercurrent flowing liquid components consisting of an aqueous acid phase and a water-insoluble organic solvent phase, the improvement for preventing contamination of said hafnium and zirconium values in said organic solvent phase which comprises introducing a peroxidizing agent into said extraction system with said aqueous acid phase of said system in an amount of one mole of said peroxidizing agent to approximately two moles of the titanium value content of said solution of hafnium and zirconium values, separating said organic solvent and aqueous acid phases, recovering said organic solvent phase containing at least said zirconium values substantially free of said titanium contaminant, and recovering said aqueous acid phase containing substantially all of said titanium contaminant.

3,272,591

PRODUCTION OF SINGLE CRYSTALS FROM INCONGRUENTLY MELTING MATERIAL

Robert G. Rudness and Richard W. Kebler, Indianapolis, Ind., assignors to Union Carbide Corporation, a corporation of New York

Filed May 8, 1959, Ser. No. 811,905
4 Claims. (Cl. 23—50)

1. A process for growing a boule containing a unicrystalline section of yttrium iron garnet ($3Y_2O_3 \cdot 5Fe_2O_3$) comprising (1) preparing a supply of yttrium iron garnet feed material, (2) passing the yttrium iron garnet feed material through a heated zone which is coaxial to an accumulation support, (3) heating said yttrium iron garnet feed material to establish a liquidus composition, (4) maintaining the liquidus composition between the eutectic and peritectic points on an equilibrium phase diagram of $YFeO_3$ and Fe_2O_3 and at a temperature from about 1440° C. to about 1580° C. while accumulating yttrium iron garnet crystal on said support from the liquidus composition, (5) gradually providing relative motion between said support and heated zone and (6) recovering a boule containing a unicrystalline section of yttrium iron garnet.

3,272,592

PREPARATION OF REDUCED VALENCY TRANSITION METAL FLUORIDES

Frank P. Gortsema, Ossining, N.Y., and Rostislav Didchenko, Middleburg Heights, Ohio, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 28, 1964, Ser. No. 385,802
9 Claims. (Cl. 23—88)

1. A process for the preparation of lower valency metal fluorides selected from the group consisting of vanadium, niobium, tantalum and tungsten fluorides, said process comprising the steps of:

(a) forming in an inert atmosphere a mixture comprising a first metal fluoride compound wherein the metal is characterized by a valence higher than that of the desired metal fluoride, and a reducing agent selected from the group consisting of silicon, phosphorous and arsenic;

(b) heating said mixture in an inert atmosphere to a temperature and at a pressure sufficient to prevent volatilization and to reduce said first metal fluoride compound to said lower valency metal fluoride and

(c) thereafter lowering the temperature and pressure of said mixture to volatilize fluorides of said reducing agent.

3,272,593

PROCESS OF REDUCING THE CAKE-FORMING TENDENCY OF POTASSIUM CHLORIDE AND COMPOSITION CONTAINING SAME

Basil S. Fee, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 4, 1964, Ser. No. 364,774
6 Claims. (Cl. 23—89)

1. A method of reducing the cake-forming tendency of potassium chloride which comprises contacting said potassium chloride with up to about four percent by weight of diethylene glycol.

3,272,594

PREPARATION OF MAGNESIUM TRISILICATE

Yoshio Uyeda, San Mateo, Calif., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 152,077, Nov. 13, 1961. This application Oct. 22, 1965, Ser. No. 502,290
7 Claims. (Cl. 23—110)

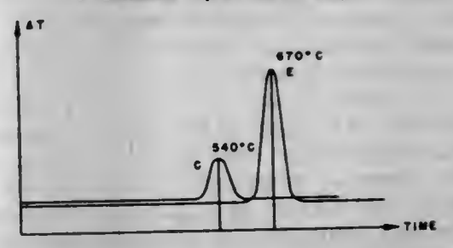
1. The continuous method of producing magnesium trisilicate having enhanced physical charcteristics which comprises continuously and concurrently adding an aqueous alkali metal silicate solution and an aqeous solution of magnesium salt to a reaction vessel, said solutions being added at such rates as to form a precipitate of magnesium trisilicate and to constantly maintain in the mother liquors 0.0008–0.025 moles of said magnesium salt per liter of said mother liquors, withdrawing the precipitate and mother liquors from the reaction zone, and filtering the magnesium trisilicate product from the mother liquors.

3,272,595

METHOD OF PREPARING MAGNETIC ACICULAR GAMMA IRON OXIDE

Charles Maho, Mechelse Steenweg 119, Hove-Antwerp, Belgium

Filed Jan. 11, 1962, Ser. No. 165,610
Claims priority, application Netherlands, Jan. 13, 1961, 260,059
7 Claims. (Cl. 23—200)



1. A method for preparing magnetic acicular γ-Fe_2O_3 with improved thermal stability from Fe_3O_4 comprising the steps of

(a) precipitating an iron (II) salt from an aqueous solution by means of a strong base, said precipitation being carried out in the presence of a compound of a metal selected from the group consisting of molybdenum, and tungsten;

(b) oxidizing the acicular iron (II) hydroxide formed in step a to acicular $Fe_2O_3 \cdot H_2O$ nuclei by blowing air through the suspension obtained in step (a);

(c) adding the suspension obtained step (b) to a solution of an iron (II) salt and treating this composition with air in the presence of iron metal, to enable the $Fe_2O_3 \cdot H_2O$ nuclei to grow;

(d) separating and drying the acicular $Fe_2O_3 \cdot H_2O$ particles obtained in step (c);

(e) dehydrating the acicular $Fe_2O_3 \cdot H_2O$ whilst heating and reducing it between 300 and 450° C. to acicular Fe_3O_4; and

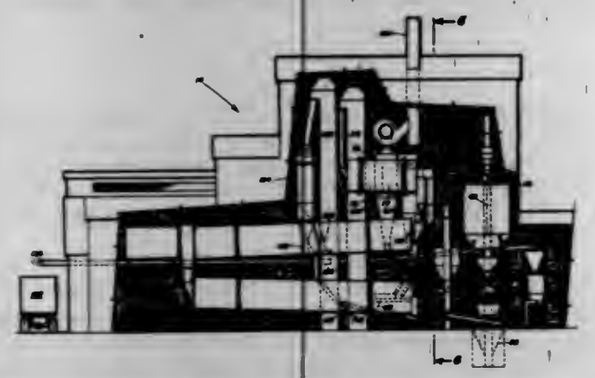
(f) oxidizing at 300–400° C. the Fe_3O_4 to magnetic acicular γ-Fe_2O_3 by means of a gas containing free oxygen.

3,272,596

APPARATUS FOR MANUFACTURING FERTILIZER

Walter J. Sackett, Sr., Baltimore, Md., assignor to The A. J. Sackett & Sons Company, Baltimore, Md., a corporation of Maryland

Original application Sept. 14, 1962, Ser. No. 223,614, now Patent No. 3,189,434, dated June 15, 1965. Divided and this application Dec. 11, 1964, Ser. No. 417,568
1 Claim. (Cl. 23—259.1)



A system for the manufacture of granular fertilizer, comprising means for preparing a batch of a predetermined amount of raw material ingredients for said granular fertilizer, first conveying means for receiving said batch and blending it during conveying, an ammoniator-granulator treating the blending batch with ammonia and acid and graulating the blended batch, pre-classifying screen means classifying the granules so formed into first oversize, intermediate, and fine groups of granules, second conveyor means returning said first oversize and fine groups of granules to said ammoniator-granulator, means including rotary cylinders for drying and cooling said first intermediate group of granules by exposure to currents of air, screen means classifying the dried and cooled first intermediate group of granules into second oversize, intermediate, and fine groups of granules, a mill, third conveyor means transferring said second oversize group of granules to said mill and then to said screen means, a fines splitter adding a pre-determined proportion of said second fine group of granules to said second intermediate group of granules, fourth conveyor means transferring the remainder of said second fine group of granules to said ammoniator-granulator, and means including a pair of cyclones connected in series for recovering fine granules entrained in said currents of air passing through said rotary cylinders and returning the recovered fine granules to said ammoniator-granulator.

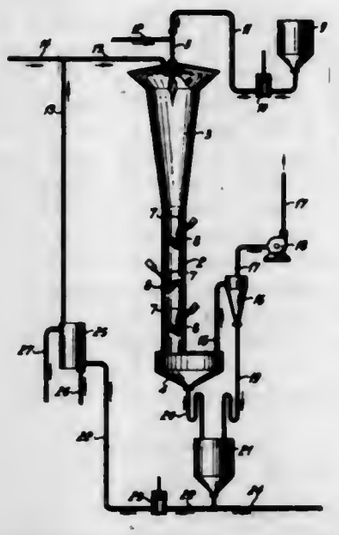
3,272,597

APPARATUS FOR PRODUCING HIGHER POLYPHOSPHORIC ACIDS

Klaus Beltz, Liblar, Germany, and Franz Rodis, deceased, late of Bad Hersfeld, Germany, by Hildegard Rodis, nee Arend, heiress, Bad Hersfeld, Germany, and Herbert Panter, Bruhl, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Original application Mar. 3, 1961, Ser. No. 93,135, now Patent No. 3,193,350, dated July 6, 1965. Divided and this application Mar. 8, 1965, Ser. No. 439,519
4 Claims. (Cl. 23—277)

1. An apparatus for preparing a higher polyphosphoric acid by burning elementary phosphorus with at least one substance selected from the group consisting of air and oxygen-containing gases, followed by absorption of the resultant P_2O_5 in lower polyphosphoric acids, said apparatus comprising a reaction tower having a combustion zone and an absorption zone, a collecting vessel disposed below said reaction tower, an acid circulating system, a downwardly directed nozzle at the upper end of said tower for feeding phosphorus into said combustion zone, a rotating atomizer at said upper end of said tower, said atomizer having a hollow rotation shaft, said nozzle extending through said atomizer shaft for atomizing lower



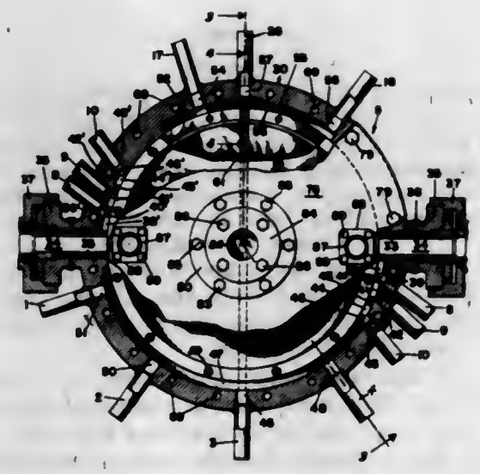
polyphosphoric acid in the direction toward said upper end of the lateral tower walls, means being in said absorption zone for particularly removing polyphosphoric acid which is flowing down on the tower walls, mechanical means for dividing said acid into particles of high velocity within said absorption zone, said mechanical means being a plurality of rotating atomizers disposed one above the other, and a plurality of baffles being disposed to direct flowing liquid on the walls into said rotating atomizers.

3,272,598

WAVE REACTOR

William B. Hansel, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Mar. 9, 1964, Ser. No. 350,463
5 Claims. (Cl. 23—284)



1. In a wave reactor, a disc-like rotor having a single straight channel extending transversely to the axis of the rotor and along a diameter of the disc; a stationary port ring closely surrounding said rotor, ma ns providing a

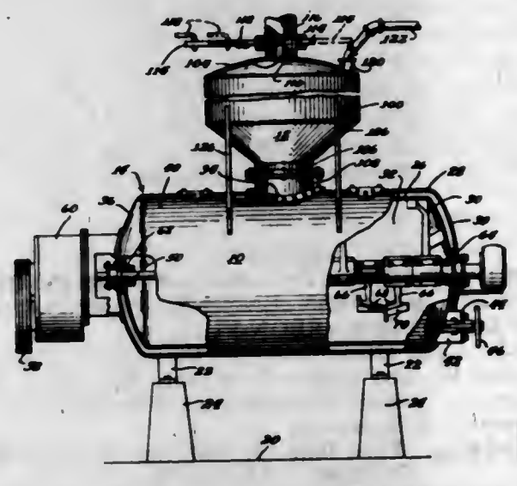
pair of diametrically-opposite driving gas inlets in said ring, said ring having therein at least one pair of diametrically-opposite driving gas outlets; said ring also having at one side thereof, in its inner cylindrical surface, a first arcuately-elongated continuous groove and having at the opposite side thereof, in its inner cylindrical surface, a second arcuately-elongated groove; means providing, in the inner cylindrical surface of said ring, a narrow sampling slot which lies entirely within the confines of said first groove and which is substantially isolated from said first groove, said slot having a cross-sectional area small compared to that of said first groove and being located intermediate the ends of said first groove; an outlet conduit sealed into said ring and communicating through said ring with said first groove, and an inlet conduit sealed into said ring and communicating through said ring with said second groove; said rotor being rotatable to bring one end of said channel, during 180° of rotation of said rotor, successively into communication with a driving gas inlet, a driving gas outlet, and said first groove and outlet conduit, said end of said channel also coming into communication with said sampling slot during its time of communication with said first groove, and to bring the other end of said channel, during the same 180° of rotor rotation, successively into communication with a driving gas inlet, a driving gas outlet, and said second groove and inlet conduit.

3,272,599

RENDERING COOKER WITH HYDROSTATIC CHARGING HEAD

Norman J. Allbright, Hinsdale, Ill., and Alvyn C. Boldon, % Faber Industries, 109 S. Monroe St., Peoria, Ill.; said Allbright assignor to said Boldon

Filed Nov. 5, 1962, Ser. No. 235,273
6 Claims. (Cl. 23—290.5)



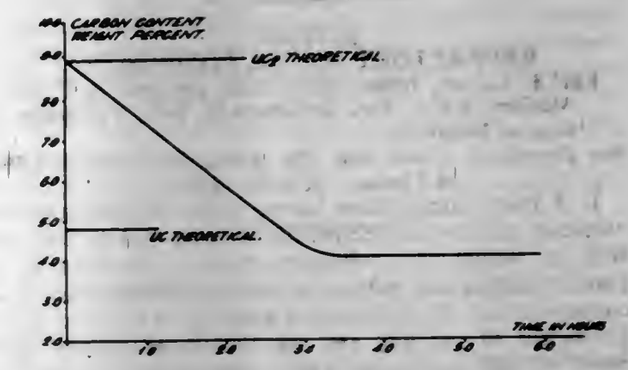
1. A rendering cooker designed for the batch rendering of moisture-containing animal matter by evaporation of moisture therefrom and comprising a cooker shell defining an internal rendering chamber and provided with a discharge opening in the lower portion thereof and an inlet opening in its upper portion, a door associated with said discharge opening and movable between open and closed positions, a steam jacket substantially surrounding said shell and in direct heat transfer relationship therewith, a combined charging head and flash tank positioned above said cooker shell and defining an internal charging chamber, said charging chamber being continuously in communication with said rendering chamber through said inlet opening, the volumetric capacity of said internal charging chamber being at least equal to the volume of moisture to be extracted from the animal material in the rendering chamber when the latter is full, said combined charging head and flash tank being provided with a charging opening and a moisture outlet opening in the upper portion thereof, a closure member associated with said charging opening and movable between open and closed positions, said charging chamber being adapted, when the rendering chamber is completely filled with material to be rendered, to retain a reserve quantity of the material in the form of an hydrostatic head of the material for gravity flow into the rendering chamber during extraction of moisture from the material in the rendering chamber, said moisture outlet being provided with means whereby it may be operatively connected to a source of sub-atmospheric pressure, and means for agitating the material within said rendering chamber.

3,272,600

METHOD OF PRODUCING NUCLEAR FUEL MONOCARBIDES FROM HIGHER CARBIDES

Ronald George Sowden, Wallingford, and Neville Hodge, Oulton, Stone, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Dec. 18, 1963, Ser. No. 331,415
Claims priority, application Great Britain, Dec. 21, 1962, 48,448/62
10 Claims. (Cl. 23—344)



1. A method for the production of fuel material monocarbides selected from the group consisting of uranium monocarbide, plutonium monocarbide and mixtures thereof, such method comprising the step of reacting a fuel material higher carbide selected from the group consisting of uranium sesquicarbide, uranium dicarbide, plutonium sesquicarbide and mixtures thereof with hydrogen at a temperature of not less than 1000° C. in the substantial absence of oxygen and water vapour.

3,272,601

PREPARATION OF BINARY COMPOUNDS OF URANIUM AND THORIUM

Wilford N. Hansen, Thousand Oaks, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 3, 1964, Ser. No. 349,173
9 Claims. (Cl. 23—349)

1. A method for converting uranium or thorium metal into a binary compound selected from the class consisting of carbides, nitrides, and oxides, which comprises dissolving said metal in mercury to form said metal quasi-amalgam reaction product, and then distilling the resulting quasi-amalgam with a preselected gas from the class consisting of hydrocarbon gases, ammonia, and oxygen, whereby the metal is separated from the mercury and there is obtained the corresponding binary compound selected from the class consisting of carbides, nitrides, and oxides.

3,272,602
METHOD OF PRODUCING URANIUM DIOXIDE POWDER
Yoshiyuki Suehiro, 2–212 Moto-machi, Urawa-shi, Saitama-ken, Japan; Akio Takashima and Takashi Suzuki, both of 1–190 Kitabukuro-machi, Omiya-shi, Saitama-ken, Japan; and Hidekazu Doi, 359 Oaza-Sakawa, Urawa-shi, Saitama-ken, Japan
No Drawing. Filed Dec. 9, 1960, Ser. No. 74,749
4 Claims. (Cl. 23—354)

1. A method of producing uranium dioxide powder of an O/U mol ratio of about 2.00 having homogeneous particles of between about 2 to about 150 microns and a particle density of at least 98% comprising the steps of

precipitating ammonium diuranate from an aqueous solution of refined uranyl salt of less than 100 grams per liter by the addition aqueous ammonia of a concentration of about 28% or less at a rate of about 200 grams of ammonia per kilogram of said uranium per minute or less so as to obtain a sufficiently quantative uranium precipitation;

drying and thermally decomposing the precipitate ammonium diuranate at a temperature below 900° C. into material selected from the group consisting of uranium trioxide and triuranium octoxide; and,

reducing and sintering said material in a current of hydrogen gas at a temperature of between about 1200° C. to about 1750° C.

3,272,603
REFRACTORY METAL COMPOSITE
Earl I. Larsen, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
No Drawing. Filed Jan. 23, 1964, Ser. No. 339,586
6 Claims. (Cl. 29—191)

1. A metal composition having improved resistance to oxidation at elevated temperatures composed of 20% to 90% by weight of a refractory metal in the form of a porous matrix, the balance of the composition being a copper-yttrium alloy containing from about 0.1% to 1.0% by weight of yttrium, and the remainder copper, said pores of said refractory metal substantially filled with said copper-yttrium alloy.

3,272,604
RE-IGNITIBLE MATCH
John Burton Tigrett and Voorhis F. Wigal, both of Jackson, Tenn.; said Wigal assignor to said Tigrett
Filed Dec. 9, 1965, Ser. No. 512,751
10 Claims. (Cl. 44—42)



1. A re-ignitible match having a combustible portion comprising an oxidizing agent from the class consisting of chlorates, perchlorates, nitrates and chromates, a combustion rate modifying agent from the class consisting of polymers of aldehydes and ammonia derivatives, a combustion supporting agent consisting of manganese dioxide, a binder from the class consisting of cellulose nitrate and cellulose acetate and a liquid monomeric agent capable of polymerizing in situ for forming a dense non-porous, homogeneous mass for dispersion therein of the match ingredients, said agent being from the class consisting of mono-methyl methacrylate, styrene, vinyl chloride, acrylonitrile, and methyl acrylate, ethyl methacrylate, and iso butyl methacrylate.

3,272,605
FUEL OILS
Henry A. Ambrose, Penn Township, Allegheny County, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed May 18, 1951, Ser. No. 227,108
6 Claims. (Cl. 44—51)

1. A fuel oil composition comprising a major amount of a residual fuel oil yielding a corrosive vanadium-containing ash upon combustion and a minor amount, sufficient to retard the corrosiveness of said ash, of a metal-containing organic compound selected from the group consisting of oil-soluble and oil-dispersible metal salts of an acidic organic compound, the metal of said metal salts being selected from the group consisting of the metals of Group I and calcium.

3,272,606
ANTIKNOCK COMPOSITIONS
Jerome E. Brown, Detroit, Mich., and Hymin Shapiro and Earl G. De Witt, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Aug. 18, 1958, Ser. No. 755,401
3 Claims. (Cl. 44—69)

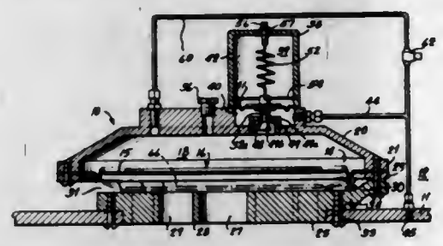
1. A spark ignition internal combustion engine fuel composition consisting essentially of petroleum hydrocarbons boiling within the gasoline boiling range and having a motor octane number when clear of at least about 76, containing an antiknock amount of an organolead antiknock agent selected from the class consisting of alkyllead antiknock agents and aryllead antiknock agents, said antiknock amount being equivalent to from about 0.158 to about 4.86 grams of elemental lead per gallon, having a small amount, sufficient to provide a synergistic octane quality improvement in combination with said organolead compound, but insufficient in itself to materially raise the octane number of the unleaded base gasoline, of a mononuclear aromatic molybdenum tricarbonyl wherein the aromatic portion is an aromatic hydrocarbon molecule, said small amount being equivalent to from about 0.003 to 0.150 gram of elemental molybdenum per gallon.

3,272,607
METHOD OF REDUCING RING WEAR IN COMPRESSION IGNITION ENGINES BURNING RESIDUAL HYDROCARBON FUEL
Everett N. Case, Homewood, and Seymour H. Patinkin, Chicago, Ill., and Hobert D. Young, Hammond, Ind., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 15, 1962, Ser. No. 202,700
7 Claims. (Cl. 44—70)

1. A method for reducing piston ring wear in a compression-ignition engine which comprises the operation of said engine on a fuel consisting essentially of a residual fuel oil and small amounts of a compound selected from the group consisting of lithium naphthenate and potassium naphthenate, said amount being sufficient to reduce piston ring wear.

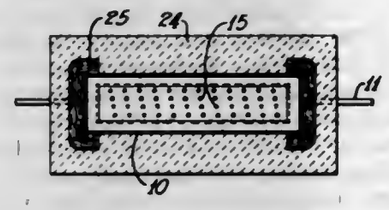
3,272,608
PRESSURE-ACTUATED VALVE FOR USE IN AIRCRAFT
John H. Andresen, Jr., Hewitt, N.J., assignor to Intercontinental Dynamics Corporation, Englewood, N.J., a corporation of New York
Filed Mar. 12, 1964, Ser. No. 351,380
5 Claims. (Cl. 98—1.5)

1. A safety valve for relief of air pressure in a confined locality responsive to variations in the difference between said pressure and the pressure at a locality external thereto, comprising, in combination, a housing defining a closed chamber; a flexible diaphragm peripherally secured to said housing to form one wall of said chamber, in such manner that the entire inner surface of said diaphragm is exposed to air pressure in said chamber, said diaphragm having a thickened central portion freely displaceable toward and away from said chamber in response to variations in pressure differential between air pressures acting on opposite surfaces of said diaphragm; means for admitting air from said confined locality to said chamber at a restricted rate; means for venting said chamber, to reduce the air pressure therein, responsive to increase in the difference between the pressure in said confined locality and the pressure in said external locality above a predetermined limit; manually controllable means for venting said chamber to said external locality; and means defining a valve port adapted to communicate with a first one of said localities and having a rim and further providing a rigid grill extending across said valve port, dis-



posed on the side of said diaphragm opposite to said chamber with said rim positioned, in fixed spaced relation to the periphery of said diaphragm, to be engaged by said thickened portion of said diaphragm for closure of said valve port when said diaphragm is displaced away from said chamber, and to define a passage for air flow between said rim and said diaphragm periphery, said grill providing support for said diaphragm when said diaphragm engages said rim; said passage being adapted to communicate with the second of said localities, such that separate regions of the outer surface of said diaphragm are individually exposed to air pressures in said first and second localities through said port and said passage respectively, whereby said diaphragm is displaced away from said rim when either of said last-mentioned pressures exceeds the pressure in said chamber and is displaced toward said rim whenever the pressure in said chamber exceeds the pressure in one of said localities and is not less than the pressure in the other of said localities.

3,272,609
FEEDER FOR PRODUCING FIBERS
Kenneth R. Benton, Anderson, S.C., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,378
3 Claims. (Cl. 65—1)

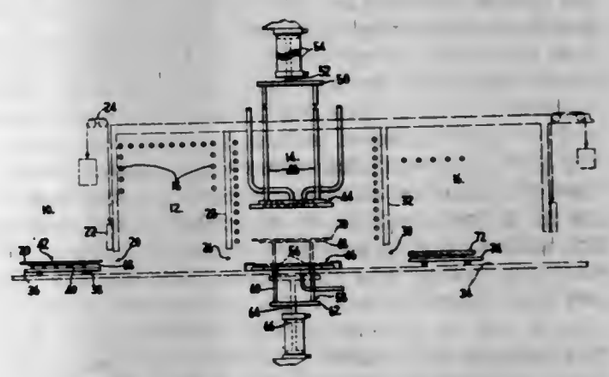


1. An insulated feeder for producing fibers from molten mineral material comprising a generally longitudinal metal chamber having a bottom wall with orifices therein, a refractory type insulating cement cast in situ in completely surrounding relation about the side and end walls of said chamber, compressible pads of high temperature fibrous insulating material interposed between the end walls of said metal chamber and said refractory insulation, said pads being sufficiently compressible that they compensate in compression for differences in thermal expansion between said metal chamber and said refractory insulation, said interposed pads being in direct contact with said feeder walls and being contacted directly by said refractory insulation.

3,272,610
METHOD OF MAKING HIGH STRENGTH DEVITRIFIED GLASS BODIES
Richard A. Eppler, Corning, and John F. MacDowell, Painted Post, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 8, 1962, Ser. No. 215,609
2 Claims. (Cl. 65—33)

1. In the method for manufacturing a glass-ceramic body possessing a modulus of at least about 30,000 p.s.i. and a linear coefficient of thermal expansion of not more than about 70×10^{-7}° C., the improvement which consists in melting a glass-forming composition consisting essentially, by weight on the oxide basis, of 16–19.5% BaO, 7–10% MgO, 16.5–19% Al_2O_3, 46–49% SiO_2, and 6–12% TiO_2, the total of said BaO, MgO, Al_2O_3, SiO_2 and TiO_2 constituting at least 95% by weight of said glass, simultaneously cooling the melt below the transformation point of said melt and forming a glass shape therefrom, thereafter heating said glass shape to a temperature of at least about 1100° C., but not more than about 1175° C., for a time sufficient to obtain crystallization consisting essentially of hexacelsian and magnesium dititanate, and then cooling the crystallized shape to room temperature.

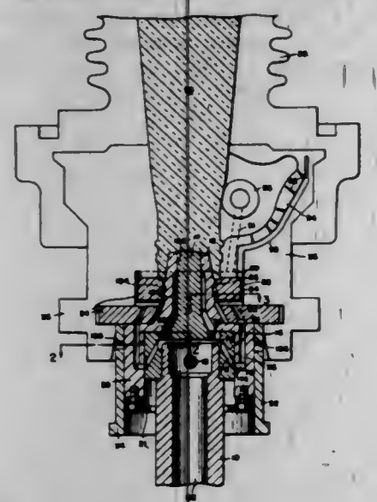
3,272,611
APPARATUS FOR MAKING MULTIPLE GLAZED UNITS
Arlo Jorgensen, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1962, Ser. No. 176,249
4 Claims. (Cl. 65—152)



4. In apparatus for welding the marginal edges of a pair of vertically aligned, horizontally disposed, spaced glass sheets, including fixed means to support the lower sheet of said pair, movable means to support the upper sheet of said pair in spaced, superposed relationship to the lower sheet and welding means to electrically heat and fuse the marginal edges of the sheets together, the improvement which comprises a first vacuum chuck forming a part of said movable means; means to evacuate and release the vacuum of said first vacuum chuck; a second vacuum chuck constructed and arranged to be supported by said first vacuum chuck and to support, in a horizontal plane, the upper sheet of glass of said pair; and means, operable independently from said means to evacuate and release the

vacuum of said first vacuum chuck, to evacuate and release the vacuum of said second vacuum chuck; whereby said upper sheet may be alternately supported and released by said second vacuum chuck while said second vacuum chuck is supported by said first vacuum chuck.

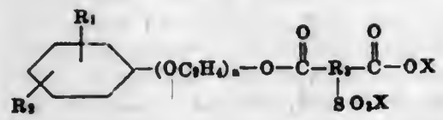
3,272,612
PARISON MOLD WITH FINISH PIN AND PLUNGER CONSTRUCTION FOR GLASSWARE FORMING MACHINES
Joseph R. Hamilton, Anderson, Ind., assignor to Lynch Corporation, Anderson, Ind., a corporation of Indiana
Filed June 3, 1963, Ser. No. 285,087
6 Claims. (Cl. 65—229)



1. In a finish pin and plunger construction for glassware forming machines, a parison mold, a neck ring therefor, a stop plate in said neck ring and having a bore, a hollow finish pin movable into and retractable from said bore and having an outer tubular piston, a finish pin cylinder in which said outer tubular piston is slidably carried, a finish pin plunger movable in said hollow finish pin and having an inner piston slidably carried in said outer tubular piston, actuating means connected with said finish pin plunger for retracting it from said hollow finish pin and moving said inner piston down in said outer piston by movement of said actuating means from up position to mid position, said inner piston having limited movement in said outer piston whereby further movement of said actuating means from mid position to down position moves said outer piston away from said stop plate, said actuating means when moving in an upward direction first effecting movement of said inner piston to its opposite limit of movement at said mid position whereby further movement to said up position moves said outer piston into engagement with said stop plate, and port means for evacuating the interior of said neck ring in said up position, cutting off the vacuum in said mid position, and admitting counter blow air past said finish pin plunger through said hollow finish pin into the parison and discharge of cooling air from within the parison past said hollow pin through said bore of said stop plate and from said finish pin cylinder in said down position.

3,272,613
WEED OIL-FERTILIZER COMPOSITION
Donald C. Young, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Sept. 4, 1962, Ser. No. 221,350
7 Claims. (Cl. 71—2.3)

1. A concentrate spontaneously emulsifiable in concentrated aqueous ammonium salt solutions to provide weed oil-fertilizer compositions comprising between about 49 and 94 weight percent of a hydrocarbon oil, between about 5 and 50 weight percent water and between about 0.5 and 19 weight percent of an emulsifier characterized by the following:



wherein:
R_1 is selected from the class consisting of alkyl and alkenyl groups;
R_2 is selected from the class consisting of hydrogen, alkyl and alkenyl groups;
R_3 is selected from the group consisting of trivalent sulfo-alkylene and sulfo-alkenylene;
X is an organic amine cation having from 1 to about 6 carbon atoms;
n is an integer between about 2 and about 5;
and the total of carbons in each of R_1, R_2, R_3 groups is less than about 12.

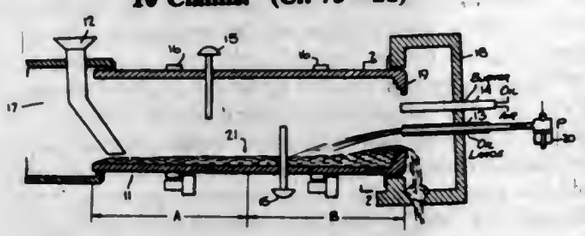
3,272,614
METHOD OF COMBATTING AQUATIC LIVING ORGANISMS
Robert J. Herschler and Wilbur L. Shilling, Camas, Wash., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
No Drawing. Filed July 2, 1963, Ser. No. 292,483
13 Claims. (Cl. 71—2.7)

1. A method of controlling aquatic living organisms selected from the group consisting of aquatic plants, mollusks, and crustaceans, which method comprises applying to at least one of said organisms an effective amount of a compound selected from the group consisting of hexachlorodimethyl sulfone and hexabromodimethyl sulfone, said effective amount being sufficient to control said aquatic living organisms but insufficient to control terrestrial plants.

3,272,615
PRODUCTION OF SPHEROIDIZED PARTICLES
Daniel J. N. Hoffman and Thomas B. Beeton, Pretoria, Transvaal, Republic of South Africa, assignors to South African Iron and Steel Industrial Corporation Limited
Filed July 25, 1963, Ser. No. 297,635
Claims priority, application Republic of South Africa, Aug. 1, 1962, 62/3,266
2 Claims. (Cl. 75—.5)

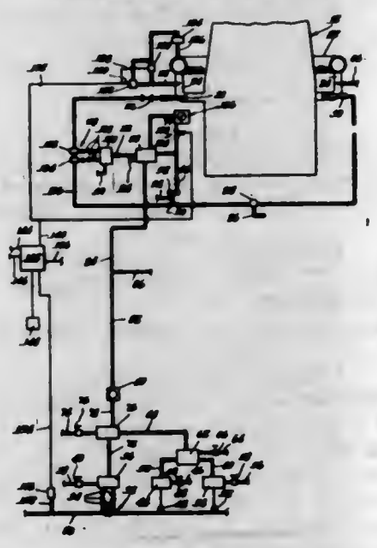
1. In a method of spheroidizing irregularly shaped particles in which a gas containing free oxygen in at least the proportion contained in air is discharged through an inner passage of a flame-producing nozzle into contact with a combustible gas introduced through an annular passage in the nozzle surrounding the inner passage to thus produce a flame having an inner oxidizing zone and a reducing zone at least towards its perimeter; the irregularly shaped particles to be spheroidized being fed into the inner passage and axially therealong, the improvement comprising discharging the combustible gas tangentially into said annular passage along a helical path around said inner passage to entrain the particles issuing from the inner passage and cause said particles to undergo a swirling motion as they leave said passage to pass through the flame and its reducing zone thereby melting the particles at least at their surfaces; the oxygen-containing gas being discharged from the inner passage at an exit velocity substantially the same as the exit velocity of the combustible gas issuing from the surrounding annular passage; and cooling the particles as they pass from the flame.

3,272,616
METHOD FOR RECOVERING NICKEL FROM OXIDE ORES
Paul E. Queneau, Fairfield, Conn., Philip E. Brubaker, Texas City, Tex., and Charles E. O'Neill, Upper Montclair, N.J., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 25, 1964, Ser. No. 354,641
Claims priority, application Canada, Dec. 30, 1963, 892,353
10 Claims. (Cl. 75—21)



1. The process for recovering nickel from lateritic ores which comprises preheating said ore to a temperature of at least about 1500° F., introducing oil into a bed of said preheated ore while maintaining said bed in a state of tumbling movement so as to cause intimate admixture of oil with said bed, combusting said oil under controlled conditions to generate a strong reducing atmosphere within said bed and to heat said bed to a temperature below the incipient fusion temperature, reducing a substantial proportion of the nickel and at least about one part of iron for each part of nickel within said bed material, and melting the reduced ore to recover the nickel content contained therein.

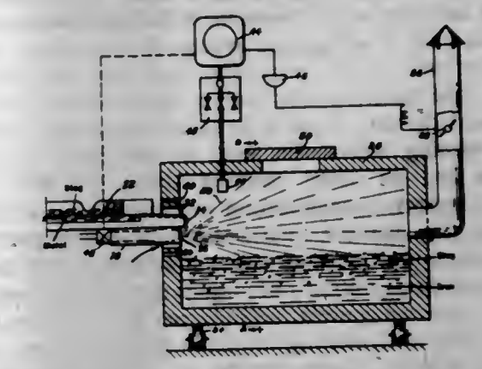
3,272,617
SYSTEM FOR ADDING FLUID FUEL TO FURNACE BLAST
Anthony A. Fennell, % Fennell Corp., 379 E. 147th St., Harvey, Ill.
Filed Nov. 24, 1961, Ser. No. 154,551
7 Claims. (Cl. 75—42)



1. A control system comprising; a first sensing means disposed in sensible contact with a flow of reactable gas which is subject to fluctuations in its physical conditions, said first sensing means being arranged for developing a first signal indicative of the volumetric rate of flow of said reactable gas; a second sensing means disposed in sensible contact with said flow of reactable gas for developing a second signal indicative of the fluctuations of at least one of the physical conditions of said reactable gas; correction means connected to said first and second signal means for developing a third signal indicative of a corrected volumetric rate of flow of said reactable gas corrected for fluctuations of at least one of the physical conditions of said reactable gas; a plurality of nozzles receiving said flow of reactable gas and directing the same into a reaction mass; means directing a flow of fluid fuel to each of said nozzles; a plurality of means for regulating the flow of said fuel to said nozzles, one of said regulating means being operatively associated with each of said nozzles; and means individually associated with each of said regulating means for receiving said third signal and operating the associated regulating means in accordance therewith.

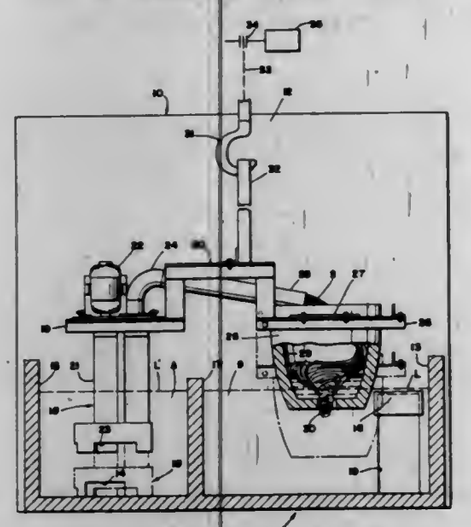
6. The method of controlling the introduction of fluid fuel into the air supply to a blast furnace comprising the steps of: causing a flow of air having a variable pressure and temperature; measuring the volumetric flow of air at a first point in its path to the blast furnace; introducing fluid fuel into said flow of air at a second point downstream from said first point; sensing the pressure and temperature of said flow of air adjacent said first point; altering said measure value of volumetric flow of air in proportion to the sensed changes in pressure and temperature; and regulating the volumetric flow of said fuel in accordance with the altered value of volumetric flow of air.

3,272,618
METHOD FOR MAKING STEEL
Jorge Miller, Carrera 10 No. 1964 Of. 911 y 912, Bogota, Colombia
Filed July 30, 1965, Ser. No. 477,362
1 Claim. (Cl. 75—60)



Method for conversion of molten metal in a furnace comprising:
(A) analyzing temperature and composition of said molten metal;
(B) forming a gaseous compound to conform to the stoichiometry of the desired conversion reaction;
(C) directing a trough-shaped jet of said gaseous compound into said furnace while forcing an auxiliary jet of said compound axially through said trough-shaped jet at the line of vacuum created by the opposed walls of said trough-shaped jet, said forcing of said auxiliary jet being at a pressure sufficient to shatter said molten metal into particles in the range of 10 to 1,000 microns in diameter;
(D) entraining ambient air into said furnace while directing and forcing said gaseous compound;
(E) pouring said molten metal into said trough-shaped jet being directed into said furnace so as to shatter said molten metal into particles and disperse said particles throughout said furnace;
(F) regulating said directing and forcing of said jets and said pouring of said molten metal so that equilibrium between gaseous and liquid reactions in said furnace is obtained;
(G) separately removing the resulting gaseous and liquid reaction products respectively from the top and bottom of said furnace; and
(H) analyzing said resulting gaseous reaction products and correspondingly regulating said forming of gaseous compound in accordance with the desired quality of liquid reaction product.

3,272,619
APPARATUS AND PROCESS FOR ADDING SOLIDS TO A LIQUID
Victor D. Sweeney, Euclid, and Walter U. Kaji, Chagrin Falls, Ohio, assignors to Metal Pumping Services, Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 23, 1963, Ser. No. 297,076
16 Claims. (Cl. 75—65)



3. Apparatus for dissolving a solid in a liquid comprising an open-topped receptacle for maintaining a liquid bath, a wall dividing said receptacle into first and second portions, means providing fluid communication between said portions and below the level of the liquid contained therein, a pump in said first portion having an inlet opening below the level of the bath in the first portion and an outlet opening above the level of the bath, a hopper in said second portion having a relatively small outlet opening in a bottom of the hopper below the level of the liquid in said second portion to confine a predetermined amount of liquid in said hopper, said hopper having a relatively large top opening and a curved side wall sloping inwardly from said top opening to said hopper outlet opening, a conduit connected to the outlet opening of said pump and extending into said hopper so as to direct a stream of liquid tangentially against the side wall of said hopper to thereby create a vortex in the liquid confined in said hopper and in a portion of the bath below the outlet opening of the hopper, means for raising and lowering the hopper relative to the surface of the bath in said second portion and relative to said second portion to thereby alternately increase and decrease the amount of liquid confined in said hopper, to vary the intensity of the vortex, and to submerge solids introduced into said vortex at any desired rate.

3,272,620
OBTAINING URANIUM VALUES FROM BURNT LIGNITES
Adolph E. Meyer, Wheatridge, and Mayer B. Goren, Golden, Colo., assignors to Kerr-McGee Oil Industries, Inc., a corporation of Delaware
No Drawing. Filed Feb. 25, 1964, Ser. No. 347,652
17 Claims. (Cl. 75—84.1)

1. A process for burning mined carbonaceous fossil fuel containing desired metal values and having a substantial amount of fines present comprising agglomerating the fines to provide particles having a size of at least 1/32 inch, preparing a bed of the mined carbonaceous fossil fuel including the agglomerated fines, igniting the prepared bed of fuel, supplying an elemental oxygen-containing gas to the ignited fuel, and passing the resulting gases of combustion through the bed of fuel in the general direction of the advancing flame front, the quantity of elemental oxygen containing gas supplied to the ignited fuel being sufficient to support combustion and being controlled in quantity to provide a desired temperature of burning.

6. A process for recovering metal values from mined carbonaceous fossil fuels containing desired metal values and having a substantial amount of fines present comprising agglomerating the fines to provide particles having a size of at least 1/32 inch, preparing a contained bed of the carbonaceous fossil fuel including the agglomerated fines, igniting the bottom of the prepared bed of fuel, supplying air to the ignited fuel over a period of time sufficient to burn a desired quantity of the fuel and produce ash, the air being supplied to the bottom of the bed of fuel and forced upward under pressure whereby the flame front advances in a generally upward direction and the resulting gases of combustion are passed upward through the bed of fuel, the quantity of air supplied to the ignited fuel being sufficient to support combustion and being controlled in quantity to provide a desired temperature of burning, leaching the ash to produce a leach liquor containing desired metal values, and recovering the desired metal values from the leach liquor.

3,272,621
EXTRACTION OF METAL VALUES USING DENITRIFYING MICROORGANISMS
James E. Zajic, Oklahoma City, Okla., assignor to Kerr-McGee Oil Industries, Inc., a corporation of Delaware
No Drawing. Filed Feb. 10, 1964, Ser. No. 343,450
19 Claims. (Cl. 75—101)

1. A process for extracting copper values from a solid copper bearing material comprising cultivating denitrifying microorganisms in an aqueous nutrient medium therefor, the denitrifying microorganisms being tolerant to the aqueous nutrient medium and capable of reducing nitrate ion to ammonia, the aqueous nutrient medium containing a water soluble inorganic nitrate dissolved therein as a source of nitrate ion for the denitrifying microorganisms, and intimately contacting the solid copper bearing material with aqueous nutrient medium in which the denitrifying microorganisms have reduced nitrate ion to produce an aqueous medium containing dissolved copper values.

3,272,622
HIGH HEAT RESISTANT STEELS
Karl-Inge Bengtsson, Koping, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
No Drawing. Continuation of application Ser. No. 686,556, Sept. 27, 1957. This application Aug. 29, 1962, Ser. No. 220,160
Claims priority, application Sweden, Sept. 29, 1956, 8,890/56
1 Claim. (Cl. 75—126)

An alloy steel with a high heat resistance characterized by the feature that it consists essentially of: 0.28–0.32% carbon, 0.20–0.35% Si, 2.6–3.0% Cr, 2.6–3.0% Mo, 2.6–3.0% Co and 0.45–0.55% V, balance essentially iron.

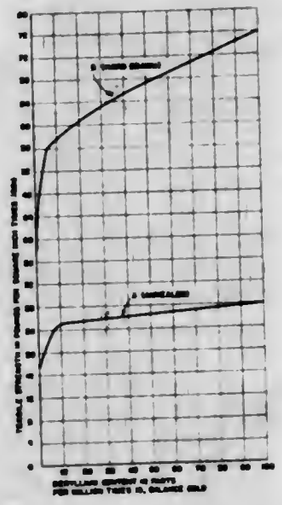
3,272,623
INOCULATING ALLOYS CONSISTING OF Si-Al-Ca-Ba-Mn-Zr-Fe
Walter Crafts, Niagara Falls, N.Y., and Peter F. Wieser, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,505
8 Claims. (Cl. 75—134)

1. An addition alloy for use in the manufacture of cast iron consisting essentially of about 35 to about 85% silicon, about 0.5 to about 1.5% aluminum, about 0.5 to about 4% calcium, about 0.5 to about 4% barium, about 2 to about 7% manganese, about 2 to about 7% zirconium, balance iron.

3,272,624
LITHIUM-ALUMINUM BASE FILLER ALLOY WITH OPTIONAL SILICON
Joseph F. Quass, Island Park, N.Y., assignor to Eutectic Welding Alloys Corporation, a corporation of New York
No Drawing. Filed May 23, 1963, Ser. No. 282,567
3 Claims. (Cl. 75—138)

1. An aluminum base filler alloy consisting essentially of from 0.005 to 0.010 percent by weight of lithium and the balance aluminum.

3,272,625
BERYLLIUM-GOLD ALLOY AND ARTICLE MADE THEREFROM
Bert Brenner, Tenafly, N.J., assignor to James Cohn, White Plains, N.Y., and Richard Cohn, Scarsdale, N.Y., jointly
Filed Oct. 18, 1965, Ser. No. 502,763
2 Claims. (Cl. 75—165)



1. A wire having a diameter less than 0.002 inch and made of an alloy consisting essentially of beryllium in the amount of about 0.001% to about 0.1% by weight and the balance gold, said wire having a tensile strength within the range of about 18,000 pounds per square inch to about 76,000 pounds per square inch.

3,272,626
XEROGRAPHIC METHOD
Charles E. Shinn, Simsbury, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 23, 1962, Ser. No. 175,204
1 Claim. (Cl. 96—1)

A method of xerography comprising the steps of superposing a radiation transparent charged xerographic plate with a non-transparent original to be reproduced with the indicia side of said original in optical contact with the unitary layer of photoconductive insulating material comprising said plate, said charged plate being characterized by a charge potential-radiation exposure curve wherein as the amount of radiation directed therethrough increases, the charge potential on said plate decreases exponentially,

directing visible radiation through said plate to said indicia side of said original whereby clear areas on said original will reflect said radiation and indicia bearing areas will absorb said radiation, said reflected radiation in passing back through said plate causing a greater discharge of said plate areas opposite clear areas on said original,

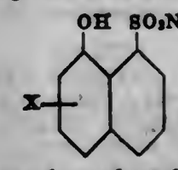
setting the radiation exposure to confine the resulting discharge to the slope region of said exposure curve which will produce a maximum difference between the charge levels on said plate corresponding to indicia bearing and clear areas,

and thereafter subjecting said plate to a bias field of the same polarity and equal in intensity to that of the field intensity of the plate areas corresponding to clear areas such that the resulting ability of plate areas corresponding to clear areas on said original to attract and retain charged powder is eliminated.

3,272,627
PHOTOTHERMOGRAPHIC DIAZO MATERIAL AND ITS METHOD OF USE FOR PHOTOCOPYING
Oskar Süs and Herbert Raubat, Wiesbaden-Biebrich, and Heinz Schäfer, Wiesbaden-Sonnenberg, Germany, assignors, by mesne assignments, to Kalle & Esser Company, Hoboken, N.J.
No Drawing. Filed Nov. 24, 1964, Ser. No. 413,610
Claims priority, application Germany, Nov. 26, 1963, K 51,457
15 Claims. (Cl. 96—49)

14. A method of making a photocopy of an original, which comprises the steps of:

exposing to actinic radiation through an original a photocopying material comprising a support coated with a photosensitive layer including photosensitive diazonium compound, dye-forming coupling component, and at least one 1-hydroxy-naphthalene-8-sulfonamide having the formula:



where R is a member selected from the group consisting of hydrogen and alkyl with one to four carbon atoms; X is a member selected from the group consisting of hydrogen, alkyl with one to four carbon atoms, and the group —SO_2NHR', where R' is a member selected from the group consisting of alkyl, cycloalkyl, arylalkyl, and aryl, said sulfonamides being heat-decomposable at temperatures above 80° C. to liberate a developing agent for said layer; and

heating said material to at least 80° C. to develop an image corresponding to the original on the photocopying material.

3,272,628
"LITH" DEVELOPERS CONTAINING WATER SOLUBLE BLOCK POLYMERS OF POLYOXYPROPYLENE AND POLYOXYETHYLENE
Lewis T. Connolly and Thomas C. Montrois, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Dec. 17, 1963, Ser. No. 331,108
19 Claims. (Cl. 96—66)

12. The process for forming a high contrast image in an image exposed photographic lithographic element comprising the step of contacting said element with an aqueous developer solution comprising:

(1) an alkali;

(2) a p-dihydroxybenzene silver halide developing agent;

(3) an alkali metal sulfite; and

(4) a water-soluble block polymer of polyoxypropylene in which the polyoxypropylene chain has an average molecular weight between 800 and 2,100, and the polyoxyethylene units constitute from about 10 to about 60 percent by weight of said block polymer until a silver image is formed.

3,272,629

PHOTOSENSITIVE DIAZOTYPE MATERIALS

Henry C. Hills, Hollis, N.H., assignor to Nashua Corporation, Nashua, N.H., a corporation of Delaware

No Drawing. Filed Jan. 25, 1962, Ser. No. 168,813
1 Claim. (Cl. 96—75)

A photosensitive medium suitable for receiving inscriptions from a stylus or by the application of heat in a delimited portion of its area comprising a backing, an adherent obscuring film covering its surface which film consists of a normally substantially transparent thermoplastic resinous material and has a three dimensional cellular structure including a multiplicity of discrete microscopic or sub-microscopic enclosed voids beneath the outer surface thereof and distributed throughout the volume of the film in a major proportion of its thickness, the resinous film apart from said voids therein being substantially continuous and homogeneous, the film being normally opaque throughout its area because of its heterogeneous physical structure due to the inclusion of such voids, but adapted for local coalescense under the stylus or by the application of heat to permit release of air from said voids and collapse thereof with resultant production of a substantially homogeneous relatively transparent area disclosing the underlying surface, and a dry acid stabilized mixture of at least one photosensitive diazonium compound and a coupler compound reactive therewith to form an azo dye, said mixture being entirely contained within said voids, occupying a fraction of the volume thereof and distributed among said voids in amounts proportionate to the various volumes thereof.

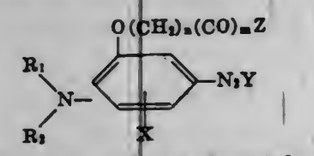
3,272,630

LIGHT-SENSITIVE REPRODUCTION MATERIAL CONTAINING UNILATERALLY DIAZOTIZED p-PHENYLENE-DIAMINE DERIVATIVES AS THE LIGHT SENSITIVE SUBSTANCE

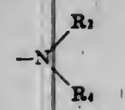
Herbert Rauhut and Oskar Siis, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.

No Drawing. Filed Sept. 24, 1963, Ser. No. 311,220
Claims priority, application Germany, Sept. 26, 1962, K 47,829
31 Claims. (Cl. 96—75)

1. A light sensitive-diazotype reproduction material comprising a sheet-like support and a like-sensitive diazotype layer coated on said support, said layer comprising a light-sensitive diazonium compound of the following formula:



where R_1 and R_2 are members selected from the groups consisting of: group A wherein R_1 is an alkyl group containing up to 4 carbon atoms, and R_2 is a member selected from the group consisting of alkyl groups containing up to 4 carbon atoms and aralkyl groups with up to 10 carbon atoms; and group B wherein R_1 and R_2 are members of the same heterocyclic group; where Z is a member selected from the group consisting of alkoxy, arylated alkoxy, aryloxy and



wherein R_3 and R_4 are members selected from the groups consisting of: group C wherein R_3 and R_4 are alkyl radicals containing up to 4 carbon atoms and group D wherein R_3 and R_4 are members of the same heterocyclic group; X is a member selected from the group consisting of hydrogen, halogen and methyl; Y is the anion of an acid; n is an integer from 1 to 4; m is one of the integers 0 and 1; and where the sum of n and m is at least 2.

ERRATUM

For Class 96—90 see:
Patent No. 3,272,635

3,272,631

HAZE REDUCTION OF PHOTOGRAPHIC EMULSIONS CONTAINING A COVERING POWER AGENT

Alfred Gardner Garrett, Edison, and Raymond Joseph Le Strange, Middletown, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,690
10 Claims. (Cl. 96—107)

3. In a photographic emulsion containing gelatin, a silver halide and a covering power agent the improvement which comprises about 2 to 15 parts per 100 parts of gelatin of a compound selected from the group consisting of alkali metal sulfates and ammonium sulfate.

3,272,632

PROCESS FOR CONVERTING OFFAL AND FEATHERS

Paul Speer, 11048 Candlelight Lane, Dallas 29, Tex.

Filed Nov. 6, 1961, Ser. No. 150,569
15 Claims. (Cl. 99—2)

1. A process for converting poultry wastes consisting essentially of offal, blood and feathers into a nutritious product comprising the steps of contacting the waste with hot oil for a time and at a temperature above 300° F. sufficient to dehydrate, and cook the waste, the oil treatment step being conducted at atmospheric pressure, and at least partially removing the oil from the waste.

3,272,633

PREPARATION OF ACTIVE FERMENTATION BROTHS FROM STABLE INGREDIENTS

Forest H. Clickner, Chicago, Ill. (R.D. 3, Mendota, Ill.)

No Drawing. Continuation of application Ser. No. 76,447, Dec. 19, 1960. This application Apr. 28, 1964, Ser. No. 363,275
6 Claims. (Cl. 99—9)

1. The process for preparing a stable viable fermentation broth comprising the steps of preparing a first composition consisting of a major proportion of water mixed with at least one starch containing non-legume cereal and barley malt in an amount sufficient to convert during fermentation substantially all starch in said non-legume cereal to sugar, adding to said first composition after digesting said starch an effective amount of a non-pathogenic Aspergillus culture to form a second composition, fermenting said second composition until the rate of said fermentation retards, adding to the mass thus obtained an effective amount of *Bacillus subtilis* culture to form a third composition, fermenting said third composition until the rate of said fermentation retards, adding to the resulting mass thus obtained an effective amount of Lactobacillus culture to form a fourth composition, and fermenting said fourth composition until the rate of fermentation retards, thereby forming a viable fermentation broth.

4. A stable viable fermentation broth prepared according to the process of claim 1.

3,272,634

CONTINUOUS BREAD MAKING PROCESS WITH NORMALLY LIQUID SHORTENING

Paul M. Koren, Cincinnati, and Frank R. Schwain, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,727
7 Claims. (Cl. 99—90)

1. In a process for the continuous production of bread comprising the steps of mixing a fermented yeast brew, continuously mixing the brew in a first mixing stage with other dough ingredients including a shortening ingredient as hereinafter defined, passing the resulting mixture through the first mixing stage to produce a premixed dough having substantially uniform properties and thereafter subjecting the premixed dough to high speed mixing to develop a complete dough suitable for extruding and cutting into dough sections, panning, proofing, and baking, the improvement which comprises continuously introducing to the first mixing stage a normally liquid shortening ingredient at a temperature of about 60° F. to about 110° F., said shortening comprising a suspension in a liquid glyceride vehicle of from about 6.0 percent to about 14.0 percent by weight of shortening of substantially fully saturated fatty glyceride solids, having an iodine value not greater than 12, said solids consisting essentially of from about 0.8 percent to about 6.0 percent by weight of shortening of monoglycerides of fatty acids having from 16 to 22 carbon atoms, from 0.0 percent to about 6.0 percent by weight of shortening of diglycerides of fatty acids having from 16 to 22 carbon atoms, and from about 2.0 percent to about 8.0 percent by weight of shortening of triglycerides of fatty acids having from 16 to 22 carbon atoms, the amount of said shortening added at the first mixing stage being an amount not less than 2.8 percent based on the weight of the flour content in the dough.

3,272,635

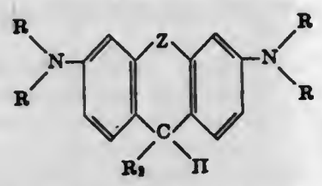
COMPOSITIONS CONTAINING LEUCO XANTHENE DYES AND SUITABLE ACTIVATORS

Robert H. Sprague, Chagrin Falls, John A. Stewart, Parma, and James M. Lewis, Cleveland, Ohio, assignors to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey

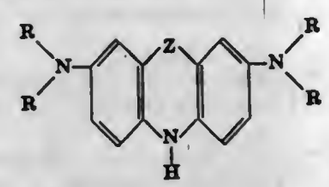
No Drawing. Filed Apr. 17, 1963, Ser. No. 273,569
7 Claims. (Cl. 96—90)

1. A composition which prints out a visible image directly as a result of exposure to visible light said composition comprising an intimate mixture consisting essentially of

(1) at least one leuco compound selected from the group consisting of leuco compounds represented by one of the following general formulas



wherein each R is selected from the group consisting of H, lower alkyl and aryl and not all of the R's need be the same and wherein R_2 is selected from the group consisting of H, lower alkyl and aryl and Z is selected from O, S, Se and —NH:

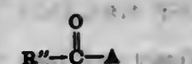


and wherein each R has the same meaning as indicated above and Z represents a member selected from the group consisting of O, S, Se and —NH; and

(2) at least one colorless non-toxic >C=O containing organic compound selected from the group consisting of

(a) carboxylic acids represented by the general formula R'COOH wherein R' is selected from the group consisting of aryl and alkaryl

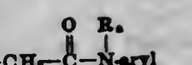
(b) acyclic keto compounds represented by the general formula



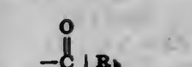
wherein R'' is selected from the group consisting of aryl,



and



wherein R_a is selected from the group consisting of H, alkyl, aralkyl, aryl and



R_b being selected from the group consisting of H, alkyl, aralkyl and aryl; and A is selected from the group consisting of alkyl, alkaryl and aryl and

(c) cyclic keto compounds represented by the general formula



wherein Q represents the non-metallic atoms necessary to complete a heterocyclic ring with at least 5 and not more than 6 atoms in the ring and wherein the keto oxygen is attached to a ring carbon atom in said ring;

said compounds being present in the mixture in proportions ranging between 1:10 and 10:1 relative to each other, by weight.

3,272,636

METHOD OF CONTROLLING MICROORGANISMS IN FOOD PRODUCTS

Isaac N. Fehr and John Rust, Dallas, Tex., assignors to Campbell Taggart Associated Bakeries, Inc., Dallas, Tex., a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 440,016
7 Claims. (Cl. 99—214)

1. The method of controlling microorganisms in a food or beverage product comprising the steps of: packaging the product in a dielectric container; and exposing the packaged product to a field of alternating electromagnetic wave energy having a frequency of 20 to 40 megacycles at intensity of 500 to 3000 volts per centimeter for a sufficient length of time to attenuate the microorganisms in the product.

3,272,637

POLISH EMULSIONS OF SYMMETRICAL WAX ESTERS OF ACETYLENEDICARBOXYLIC ACID AND SATURATED ALCOHOLS

Leslie L. Sims, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,362
4 Claims. (Cl. 106—10)

1. A multicomponent wax emulsion polish consisting essentially of from about 2 to about 40 weight percent of a film-forming agent, from about 5 to about 90 weight percent water and an emulsifying agent, said film-forming agent being at least one selected from the group consisting of didotriacontanyl acetylene dicarboxylate and didocosanyl acetylene dicarboxylate.

3,272,638
METHOD FOR INCREASING THE SPINNING RATE OF CELLULOSE ORGANIC ACID ESTER FILAMENTS
George Patrick Touey and John Edward Kiefer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Feb. 4, 1964, Ser. No. 342,544
7 Claims. (Cl. 106—176)

1. In the method of dry spinning cellulose organic acid ester filaments, the step of increasing the spinning rate which consists in adding to the spinning solution prior to spinning, 10–40 percent based on the weight of the cellulose organic acid ester of a compound selected from the class consisting of non-crystallizing sucrose acetate isobutyrate, sucrose propionate isobutyrate and their mixtures.

3,272,639
TREATMENT OF PROTEINACEOUS MATERIALS WITH PEROXYDISULFATE SALTS
Donald H. Slocum, Wilmington, Del., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Jan. 2, 1963, Ser. No. 248,896
8 Claims. (Cl. 106—125)

6. A method of producing an irreversible heat-set gel which comprises preparing an aqueous medium having a pH between about 2 and about 12 which contains (1) a colloidal dispersion of from about 3% to about 10% of a non-heat-gelable protein and (2) water-soluble peroxydisulfate salt in an amount of from about 0.07 to about 0.15 part for each part of said protein; and heating the protein- and salt-containing medium to a temperature in the range of from about 90° C. to about 100° C.

3,272,640
WATER INSOLUBILIZING AND INSENSITIZING PROCESS
Robert M. Geurden, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 22, 1960, Ser. No. 77,496
The portion of the term of the patent subsequent to Feb. 12, 1980, has been disclaimed
30 Claims. (Cl. 106—131)

1. Process of reducing the water solubility and water sensitivity of water-soluble materials which comprises preparing an aqueous mixture of said water-soluble material and an insolubilizing agent therefor, uniformly and stably distributing a hydrophobic film former throughout said mixture, substantially drying the resulting mixture at a temperature from room temperature to a temperature sufficiently low that neither the constituents of the mixture nor the resulting product being prepared begin to decompose, whereby the hydrophobic film former migrates to the surface of the resulting mixture, the insolubilizing agent substantially insolubilizes the water-soluble material, and the hydrophobic film former forms a substantially continuous water-insoluble water-impervious and water-insensitive film on the surface of said insolubilized water-soluble material, the amount of the insolubilizing agent and hydrophobic film former being about 1%–20% and 3%–25%, respectively, by weight of said water-soluble material being insolubilized, said insolubilizing agent being a material selected from the group consisting of unsaturated monobasic aliphatic acids, unsaturated dibasic aliphatic acids, the anhydrides of said acids, the water-soluble derivatives of said acids and anhydrides, polyamide-epichlorohydrin resins, aldehydes, and the water-soluble salts of polyvalent metals which complex with cellulose, said water-soluble materials being selected from the group consisting of water-soluble carboxyalkyl and hydroxyalkyl ethers and esters of cellulose and starch; starches; vegetable gums; casein, gelatin, animal glue and soy protein; polyvinyl alcohol, polyacrylic acid, substituted polyacrylic acid, copolymers derived from maleic anhydride; polyamides; and polymeric amines, said hydrophobic film former being selected from the group consisting of linseed oil, dehydrogenated castor oil, tung oil, soybean oil, poppyseed oil, hempseed oil, oiticica, fish oil, safflower oil, perilla, tall oil, sunflower oil, beeswax, hydrogenated spermaceti wax, Chinese wax, shellac wax, carnauba wax, ouricury wax, palm wax, candelilla wax, sugar cane wax, montan wax, ozocerite wax, paraffin wax, alkyd resins.

3,272,641
FROSTING COMPOSITION
Joseph R. Ehrlich, 1793 Riverside Drive, New York, 34, N.Y.
Filed Feb. 6, 1963, Ser. No. 256,756
6 Claims. (Cl. 106—238)



1. A sprayable liquid which, when sprayed on smooth surfaces, forms rapidly growing leaf-like and fan-like crystal patterns with long needles, said patterns being resistant to moisture in that they are self-reconstitutable but being removable by water, said liquid comprising:
(a) from about 2 to 84 parts by weight of water;
(b) at least 0.6 part by weight of water soluble volatile base selected from the group consisting of ammonia and an amine of sufficient volatility that when said liquid is sprayed on smooth sufaces said amine evaporates therefrom;
(c) from about 4 to 20 parts by weight of a water-insoluble resin, said resin containing free acid groups capable of reacting with said water-soluble volatile base to form a water-soluble salt of said resin, and said resin having a sufficiently high acid number to dissolve in water containing at least 0.6% by weight of ammonia; and
(d) from about 10 to 30 parts by weight of urea;
whereby said resin forms a water-soluble salt by reaction with said water-soluble volatile base.

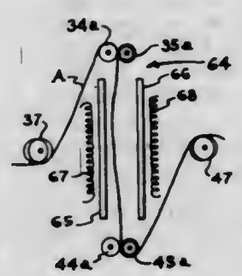
3,272,642
COATING PROCESS AND COMPOSITIONS CONTAINING METAL ALCOHOLATES AND ALKYL ESTERS
Joseph F. Nelson, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 30, 1958, Ser. No. 745,263
12 Claims. (Cl. 106—285)

1. A process of preparing a liquid coating composition which comprises mixing (A) at least one oily butadiene polymer characterized by an average molecular weight from about 700 to about 20,000 selected from the class consisting of (1) homopolymers of butadiene-1,3, (2) copolymers of butadiene-1,3 and styrene having at least 73% by weight of copolymerized units of butadiene-1,3

and (3) said homopolymers and said copolymers modified with an anhydride of an unsaturated dicarboxylic acid selected from the class consisting of maleic anhydride and citraconic anhydride in an amount up to 20% by weight of said polymers with (B) 1 to 15%, based on the weight of component (A), of a compound selected from the class of triamyl borate, trioctyl borate, tributyl phosphate, and aluminum isopropylate.

2. A coating composition consisting essentially of (A) at least one oily butadiene polymer characterized by a molecular weight from about 700 to about 20,000 selected from the class consisting of (1) homopolymers of butadiene-1,3 (2) copolymers of butadiene-1,3 and styrene, said homopolymers and said copolymers modified with an anhydride of an unsaturated carboxylic acid selected from the group consisting of maleic anhydride, fumaric anhydride, thioglycolic anhydride, thiosalicylic anhydride, mercaptophthalic anhydride, itaconic anhydride, mesaconic anhydride, citraconic anhydride, and acrylic anhydride, and (B) 1 to 15% by wt. of component (A) of a compound selected from the group consisting of triamyl borate, tri-octyl tributyl phosphate, and aluminum isopropylate.

3,272,643
PROCESS FOR MAKING COCKLED PAPER
George J. Pasek, Neenah, and Karl E. Seger, Appleton, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Aug. 2, 1962, Ser. No. 214,237
4 Claims. (Cl. 117—11)



2. In a method for making cockled paper, the steps which comprise, applying a moist paper web in contact with a heated surface having a plurality of bosses of random spacing and size and of rounded, irregular and random shapes so as to partially dry the web, and subsequently completing the drying of the web while maintaining the web under a minimum tension.

3,272,644
DEVELOPMENT OF LATENT ELECTROSTATIC IMAGES WITH CRYSTALLINE TONERS
George R. Nelson, Holliston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
No Drawing. Filed July 31, 1963, Ser. No. 299,084
6 Claims. (Cl. 117—17.5)

1. The method of developing a latent electrostatic image on a coating of photoconductive particles suspended in a thermoplastic resin on a support, said method comprising contacting said image with finely divided solid toner particles consisting essentially of dye dispersed in a water insoluble crystalline organic material non-reactive with said dye, said dye constituting from 10 to 60 percent by weight of said toner particles, said material having a melting range within about 1° C. between about 140° F. and the charring temperature of said resin and support, said material, when melted, being a solvent for substantially all of said dye and a solvating agent for said thermoplastic resin, said melted material having a steadily declining viscosity with the temperature and having at its lowest melt temperature a viscosity not exceeding about 40 centipoises, said material having its longest linear carbon chain not exceeding 15 carbon units and a molecular weight not in excess of about 350, and fusing the toner particles adhering to said image to cause the dye to be absorbed by said coating.

3,272,645
MOLDABLE LAMINATED SHEET MATERIALS AND METHOD OF MAKING SAME
Marcel Dubos, Bruay-en-Artois, Robert Fourcade, Gonnay, Claude Haberer, Houdain, and André Mennessier, Bethune, France, assignors to Houillères du Bassin du Nord et du Pas-de-Calais, Douai, France, a French public establishment
No Drawing. Filed Sept. 22, 1960, Ser. No. 57,641
Claims priority, application France, Sept. 29, 1959, 806,262; Nov. 7, 1959, 809,612
10 Claims. (Cl. 117—33)

1. A process for the production of laminated sheet materials in which a fibrous web is coated with an unsaturated cross-linkable polyester resin in the form of a stable, partially cross-linked gel, said process comprising dusting at least one face of the coated web with a finely divided solid organic powder.

3,272,646
IMPREGNATED POROUS PHOTOCHROMIC GLASS
John Andrew Chopoorian, Stamford, and Kay Oesterle Loeffler, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 16, 1963, Ser. No. 273,306
6 Claims. (Cl. 117—33.3)

1. An article of manufacture comprising a porous glass substrate having a pore diameter ranging from about 15 A. to about 200 A., and having a solution of an aromatic diaminotetraacetic acid contained in said pores.

3,272,647
EPOXY TERMINATED POLYESTER COMPLEXES, COATING COMPOSITIONS CONTAINING SAME AND METAL SUBSTRATES COATED THEREWITH
Ralph G. Swanson and Aloysius N. Walus, Flint, Mich., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 23, 1962, Ser. No. 182,085
7 Claims. (Cl. 117—75)

1. The process of preparing an epoxy terminated polyester comprising:
(a) reacting one epoxy equivalent weight of a solid epoxy resin which is the reaction product of epichlorohydrin and bisphenol propane and two carboxyl equivalent weights of polymerized fatty acid to provide a carboxyl terminated prepolymer,
(b) reacting one carboxyl equivalent weight of said prepolymer with two epoxy equivalent weights of a liquid epoxy resin which is the reaction product of epichlorohydrin and bisphenol propane to provide an epoxy terminated polyester.

3. The process of claim 1 in which the polymerized fatty acid is a mixture of dimer and trimer fatty acids.

4. A product of the process of claim 3.

5. A coating composition comprising:
(a) an epoxy acrylic polymer derived from about 88–93% of a lower alkyl methacrylate, up to 10% of a lower alkyl acrylate, and 2–7% of a material selected from the class consisting of glycidyl methacrylate and glycidyl acrylate,
(b) an epoxy terminated polyester defined in claim 4, and
(c) a cross-linking agent for (a) and (b).

7. A metal substrate primed with the composition of claim 5 and surface coated with a composition containing as the essential film former a material selected from the class consisting of

(a) polymethyl methacrylate,

(b) mixture of soya oil modified glyceryl phthalate resin and butylated urea-formaldehyde resin, and

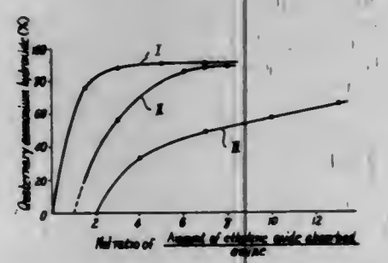
(c) nitrocellulose.

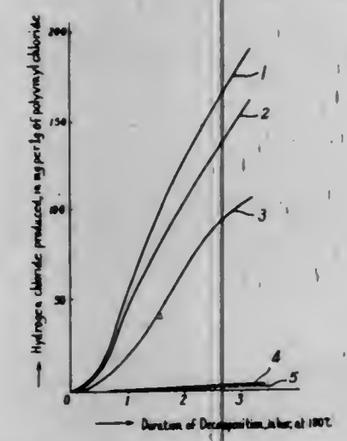
3,272,648

ANTISTATIC TREATMENT WITH A QUATERNARY AMMONIUM PERHALOGENATE AND PRODUCTS THEREOF

Takashi Yamamoto, Amagasaki, Japan, assignor to Nippon Oils and Fats Company Limited, Tokyo, Japan

Filed Oct. 4, 1965, Ser. No. 492,566
3 Claims. (Cl. 117—139.5)





1. A high molecular weight polymeric material normally having a tendency to accumulate a static charge of electricity thereon having associated therewith, at least on the outer surfaces thereof, as an anti-static agent about 0.2–15% by weight of a quaternary ammonium perhalogenate having the general formula:

$$[R_1-\underset{\displaystyle R_4}{\overset{\displaystyle R_2}{\overset{|}{\underset{|}{N}}}}-R_3]XO_4$$

in which X is a halogen; R_1 is a member selected from the group consisting of alkyl, alkyl carboxyamido and N-lower alkyl substituted alkyl carboxyamido radicals in which the alkyl has at least 6 carbon atoms; R_2 and R_4 are members selected from the group consisting of hydrogen and lower alkyl radicals; and R_3 is a lower hydroxyalkyl radical.

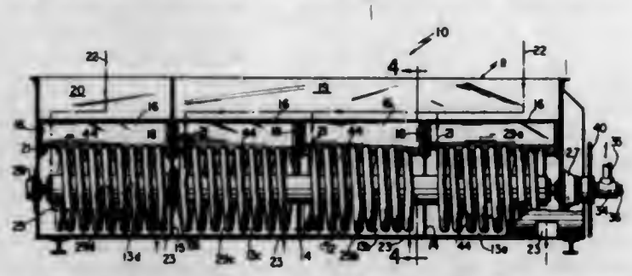
3,272,649

MINGLER FOR TEMPERATURE CONDITIONING SUGAR MASSES

Richard J. Huser, Mount Healthy, Ohio, assignor to The Western States Machine Company, Hamilton, Ohio, a corporation of Utah

Filed May 25, 1964, Ser. No. 369,705
8 Claims. (Cl. 127—17)

1. In an apparatus for conditioning massecuite or like material, an elongated material receiving tank, a hollow rotatable shaft extending longitudinally in said tank, a helical heat transferring-stirrer coil surrounding said shaft within the tank and being connected with the shaft for rotation of the coil with the shaft, so that the material in the tank tends to be moved in one longitudinal direction, and for a circulating flow of fluid through the coil by way of the shaft, said helical coil having turns spaced from said shaft so that heat transfer between the circulating fluid and material in said tank occurs at the surface



of said shaft and at the entire surface of said coil, and impeller blades extending radially from said shaft into the space between the latter and said turns of the coil, said blades being spaced apart angularly and axially on said shaft and inclined relative to the axis of said shaft in the direction opposed to the inclination of said turns of the coil to urge the material within said space in the other longitudinal direction and also radially outward toward the coil.

3,272,650

PROCESS FOR CLEANING CONDUITS

Russell L. MacVittie, Marietta, Ohio, assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 21, 1963, Ser. No. 260,285
5 Claims. (Cl. 134—7)

1. A process for cleaning adhering deposits from the interior surface of a conduit, said process comprising preparing a suspension consisting essentially of water and irregularly shaped particles having sharp corners at surface intersections, said particles being of an organic material chosen from the group consisting of styrene-acrylonitrile copolymers containing 10 to 30 percent acrylonitrile, methyl methacrylates, polycarbonates and nylons, the ratio of particles to water being in the range of 0.4 to 0.6 pound per gallon and said particles and said water being respectively inert to one another and mutually insoluble; said particles being further characterized by having a density of between 80 percent and 120 percent of said water, a hardness within the range of 60 to 120 Rockwell M and a size in the range of from 1/10 to 1/30 of the internal diameter of said conduit to be cleaned; and passing said suspension through the interior of said conduit to be cleaned at a lineal velocity sufficient to provide turbulent flow in said conduit, and for a time sufficient to remove said adherent deposits.

3,272,651

PAPER CUTTING DUST COLLECTOR SYSTEM AND METHOD

Harrison P. Quirk, Ypsilanti, Mich., assignor of ten percent to Peninsular Paper Company, Ypsilanti, Mich.

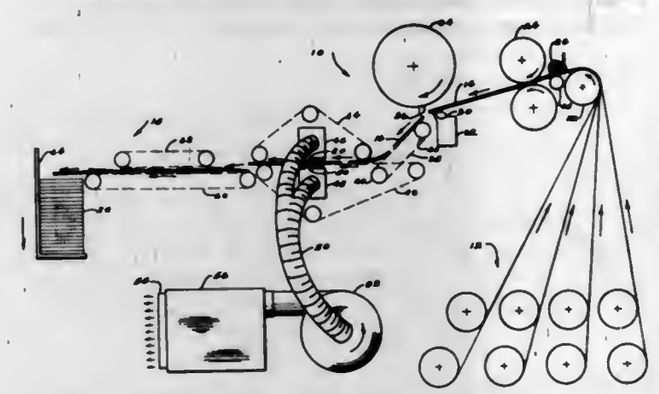
Filed Oct. 30, 1961, Ser. No. 148,505
4 Claims. (Cl. 134—21)

3. Method of removing cutter dust from sheets of paper being conveyed from a sheeting cutter to a layboy stacking system comprising the steps of:

horizontally conveying the cut sheets at a faster speed than that of the uncut web thereby forming gaps between successive cut sheets in the direction of their travel past a cleaning location;

exerting, by vacuum cleaning the full width of the top surface and full expanse of the cut ends of the sheets with a first suction action at said cleaning location, an upward force on the paper sheets as they are conveyed past said cleaning location;

exerting, by vacuum cleaning the full width of the bottom surface of the cut sheets with a second suction action at said cleaning location simultaneously with said first suction action, a downward force on said sheets of a magnitude which in combination with that due to gravity, acting also downwardly, on the sheets compensates for and substantially counter-



balances, with respect to vertical displacement of said sheets at said location, said upward force exerted on said sheets by said first suction action;

and removing cutter dust from the cut ends of the sheets, when the gap between successive sheets along said direction of travel is in said cleaning location, by means of the upward vacuum cleaning force whose magnitude is greater than the lower vacuum cleaning force in the area of the gap by the weight of an individual sheet due to gravity.

3,272,652

METHOD OF REMOVING FILM DEPOSITS

Donald C. Wood, Fredonia, Wis., assignor to Whirlpool Corporation, a corporation of Delaware

Original application Jan. 6, 1961, Ser. No. 81,083. Divided and this application Nov. 12, 1964, Ser. No. 412,281
4 Claims. (Cl. 134—34)

1. The method of removing film on tableware deposited thereon as a result of washing the tableware with phosphate or silicate containing detergents in hard water, comprising the steps of:

forcibly spraying the tableware with a solution of hard water and at least approximately 3% by weight sodium chloride to dissolve the deposited film; and

rinsing the tableware with water to remove said solution and dissolved film.

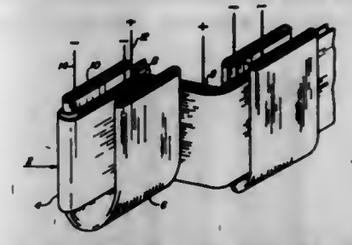
3,272,653

ELECTRODE ASSEMBLY

Frank Solomon, Lake Success, and Albert Himy, Elmhurst, N.Y., assignors to Yardney International Corp., New York, N.Y., a corporation of New York

Original application June 27, 1961, Ser. No. 119,867, now Patent No. 3,207,630, dated Sept. 21, 1965. Divided and this application Oct. 26, 1964, Ser. No. 426,457
3 Claims. (Cl. 136—6)

1. In an electro-chemical battery, an electrode assembly comprising a set of first electrodes of one polarity consisting predominantly of a first active material, a set of second electrodes of the opposite polarity interleaved with said first electrodes and consisting predominantly of a second active material, first separator means in the form of an accordion wrap having successive folds occupied by said first electrodes, and second separator means in contact with said first separator means, said second separator means being composed of several U-wraps embracing alternate ones of said folds and having arms individually occupied by said second electrodes, each of said separator means including at least one inner layer of semi-permeable sheet material and one outermost layer of



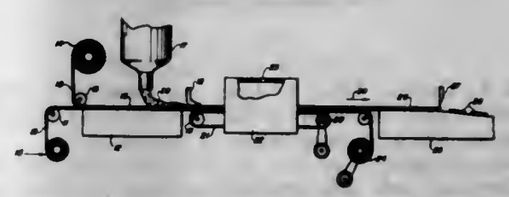
bibulous sheet material, one of said active materials being silver/silver oxide, the other of said active materials being selected from the group which consists of zinc/zinc oxide and cadmium/cadmium oxide.

3,272,654

METHOD OF PRODUCING AN ELECTRODE FOR AN ELECTROCHEMICAL SYSTEM

Maurice Lang, Massapequa, N.Y., assignor to Yardney International Corporation, New York, N.Y.

Filed July 17, 1963, Ser. No. 295,674
11 Claims. (Cl. 136—67)



1. A method of producing an electrode for an electrochemical system, comprising the steps of:

admixing a particulate substance thermally decomposable into an electrochemically active material with a liquid to produce a paste;

disposing a generally planar support grid upon a flat sheet of a refractory material incapable of absorbing said liquid from said paste and nonbonding to said active material at elevated temperatures;

depositing said paste within the interstices of said grid upon said sheet to produce a plate;

exposing said plate on said sheet to an elevated temperature sufficient to drive off at least a major part of said liquid and decompose said substance and sufficient to fuse said substance to said grid while forming a coherent mass of said substance within the interstices thereof;

and thereafter removing said plate from said sheet.

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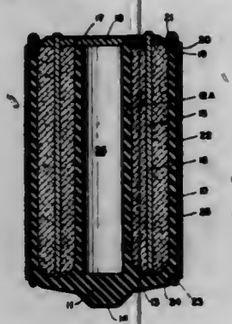
PRIMARY BATTERY

Rodolfo Rodriguez Balaguer, Harbor Beach, Fort Lauderdale, Fla., assignor to J. D. Hedges and Company Limited Partnership, Kingston, Jamaica, British West Indies, a partnership of Cuba

Filed Feb. 21, 1963, Ser. No. 260,270
15 Claims. (Cl. 136—100)

1. A dry cell battery, comprising a carbon cup having a hollow body, a closed end and an open end, a carbon rod projecting from said closed end and disposed generally along the longitudinal axis of said cup and being electrically connected thereto, said cup and said rod forming a cathode structure, a hollow annular metallic anode disposed between said rod and said cap and being substantially concentric therewith, said anode being formed from a metal which increases substantially in volume as a result of the chemical reaction occurring during the discharge of said battery, closure means for said open end of said cup,

battery mix contained in the space between said anode and said cup and said rod to react chemically with said anode when said anode and said cathode structure are electrically connected through an external circuit, said chemical reaction producing a substantially increase in the volume of material within said cell thereby producing a transverse stress tending to rupture said cup, and reinforcing means



surrounding said body of said cup and arranged to resist the rupturing force exerted on said body upon said increase in volume of said material within said cell, said carbon rod being hollow throughout at least a major portion of the height thereof whereby said transverse stress is substantially accommodated by a contraction in the cross sectional area of said rod.

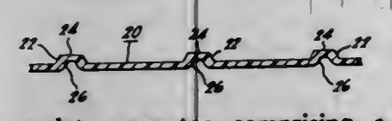
3,272,656

BATTERY SEPARATOR

Ralph L. Corbin, Rine Kruger, and Donald V. Badgley, Muncie, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application Apr. 10, 1961, Ser. No. 102,044. Divided and this application May 4, 1964, Ser. No. 368,441

4 Claims. (Cl. 136—145)



1. A battery plate separator, comprising, a sintered, microporous sheet of compacted, high density polyethylene particles wherein each particle includes a core of alpha cellulose fiber therein, said sheet having a plurality of embossed ribs extending across the sheet wherein each rib has a transverse dimension and contour at one side of the separator different from its dimension and contour at the opposite side thereof for preventing nesting of stacked separators and wherein thickness of the separator is substantially uniform throughout the sheet and ribs, said separator having an apparent density of from 6.2 to 8.5 grams per cubic inch resulting in high tear and chip resistance and having an electrical resistance of less than .030 ohms per square inch taken at any section through said separator, said separator being slightly compressible.

3,272,657

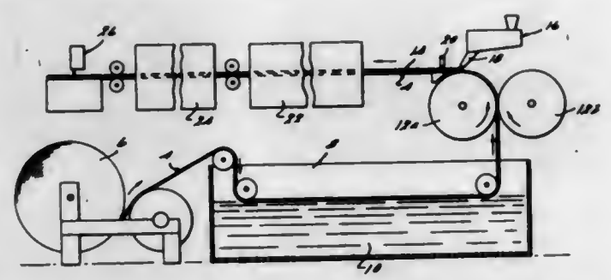
METHOD OF MAKING A BATTERY SEPARATOR

Piotr Zenczak, Corvallis, Oreg., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware

Original application Nov. 14, 1960, Ser. No. 68,878. Divided and this application Jan. 13, 1965, Ser. No. 432,927

1 Claim. (Cl. 136—148)

The method of making a battery separator comprising the steps of providing a porous sheet of bibulous lignocellulosic paper, impregnating said sheet with an aqueous solution containing from about 1% to about 50% of an A-stage phenol aldehyde resin until said sheet contains from about 20% to about 50% by weight resin solids on a dry sheet basis, passing the wet impregnated said sheet between a pair of embossing rolls formed with mating circumferential rib and grooves disposed at longitudinally spaced intervals therealong and imparting a pattern to said sheet comprising a plurality of ribs and webs extending longitudinally of said sheet, immediately thereafter and without any appreciable reduction in the water content of the wet embossed said sheet applying a plastic bead on the crests of each of said ribs of the wet impregnated said sheet, said plastic bead comprising a substantially homogeneous blend of a polyvinyl chloride base



plastisol including a filler, and a thermosetting A-stage phenol aldehyde resin in a solvent and present in the proportions by weight of about 150 parts plastisol, from about 20 to about 50 parts phenol aldehyde resin on a solids basis, from about 75 to about 200 parts filler, and a quantity of solvent sufficient to form a substantially homogeneous blend; drying said sheet to remove the moisture therefrom without appreciably advancing the cure of the phenol aldehyde resins, and thereafter curing said resin and said plastic bead at a temperature ranging from about 450° F. to about 650° F.

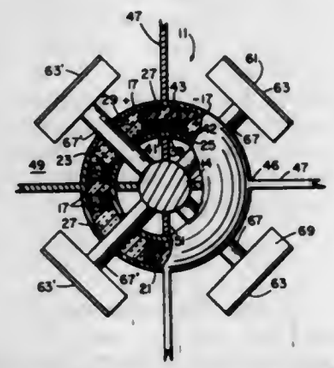
3,272,658

RADIOISOTOPE HEATED THERMOELECTRIC GENERATOR POWER FLATTENING SYSTEM

Robert E. Rush, Livingston, N.J., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 30, 1962, Ser. No. 241,447

6 Claims. (Cl. 136—201)



1. A secondary radiator for removing excess heat from a radioisotope heated thermoelectric generator having a radioisotope heat source and thermocouples for producing an electric current directly from the heat supplied by said heat source, comprising a plurality of oppositely disposed external secondary radiation segments having external radiating surfaces and heat conductors thermally connecting said radiating surfaces with said heat source to remove excess heat from said source, means for thermally shielding adjacent of said radiating surfaces from each other, spring means between said heat conductors and said heat source, means for holding said spring means equally under compression, and means for releasing opposite of said spring means with opposite of

said secondary radiating surfaces to throttle the rejection of heat by said secondary radiators so as to prevent unequal thrusts in the ejectment of said secondary radiator segments by said spring means.

6. The method of flattening the power output of a radioisotope powered thermoelectric generator, comprising the steps of externally rejecting excess heat from the radioisotope through removable radiators that are all operable at the beginning of the operating life-time of said generator, and throttling said rejection of excess heat by ejecting and separating said radiators sequentially at least as the mission time/radioisotope half life ratio increases to at least .62 whereby said generator has high end of mission efficiency.

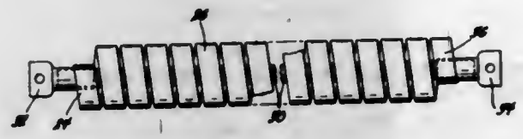
3,272,659

TUBULAR THERMOELECTRIC ARRAY

Arthur T. Bassett, Jr., Richard S. Gaugler, and Keith E. Jenkins, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corportion of Delaware

Filed Apr. 5, 1962, Ser. No. 185,302

2 Claims. (Cl. 136—203)



1. A thermoelectric array including a series of "P" type thermoelectric elements extending in spaced relation in a first row causing gaps between the elements as a result of the spaced relation of the elements, a series of "N" type thermoelectric elements extending in spaced relation in a second row which is substantially uniformly spaced from and substantially parallel to the first row of elements, means for connecting said "P" and "N" type elements alternately in series with each other comprising a first series of spaced metal connector elements located on and connecting one side of the "P" and "N" type elements and a second series of spaced metal connector elements located on and connecting the opposite side of the "P" and "N" type elements, at least two of said series of elements being skewed, said series of elements being constructed and arranged to define a substantially hollow tubular configuration, a rod of electrical insulating material extending from end to end within the interior of said hollow tubular configuration of elements, the ends of said rod being provided with first and second electrical terminal means, means for electrically connecting the first electrical terminal means adjacent the first end of said array to the adjacent P-type thermoelectric element at the first end of said array, and means for electrically connecting the second electrical terminal means at the second end of said array to an adjacent N-type thermoelectric element.

3,272,660

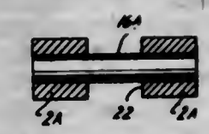
THERMOELECTRIC UNIT WITH ATTACHED TERMINALS

Josef Intrater, New York, N.Y., and Lawrence R. Hill, Short Hills, N.J., said Intrater assignor to Electronics & Alloys, Inc., Ridgefield, N.J., and said Hill assignor to General Instrument Corporation, Newark, N.J., both corporations of New Jersey

Original application Sept. 13, 1962, Ser. No. 223,871, now Patent No. 3,197,845, dated Aug. 3, 1965. Divided and this application Feb. 14, 1964, Ser. No. 345,034

12 Claims. (Cl. 136—205)

1. In combination, a core comprising an intermetallic compound in the form of closely packed and longitudinally elongated needle-like grains, and sheaths of physically workable, electrically conductive material which will not degrade said intermetallic compound, said sheaths respectively surrounding, being pressed closely against, and diffusion bonded to longitudinally spaced portions of said



core, the portion of said core between said sheaths being free of said sheath material.

3,272,661

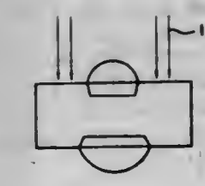
MANUFACTURING METHOD OF A SEMI-CONDUCTOR DEVICE BY CONTROLLING THE RECOMBINATION VELOCITY

Masami Tomono, Hiroshi Kodera, and Hiroshi Ueda, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed July 16, 1963, Ser. No. 295,490

Claims priority, application Japan, July 23, 1962, 37/30,250

1 Claim. (Cl. 148—1.5)



A manufacturing method of semi-conductor devices, wherein the recombination velocity in the vicinity of a semi-conductor surface comprises the steps of

irradiating a semi-conductor specimen, in which the major part is already completed, with a focused electron beam at the position which can affect the recombination velocity, and

monitoring a predetermined characteristic of said semi-conductor specimen which depends on the recombination velocity of minority carriers in the semi-conductor body, so as to obtain a semi-conductor device of controlled characteristics.

3,272,662

PROCESS FOR AFTER-TREATING METAL SURFACES COATED WITH CRYSTALLINE ANTI-CORROSION LAYERS

Willy Herbst, Hofheim, Taunus, and Heinz Ludwig, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 23, 1962, Ser. No. 168,261

Claims priority, application Germany, Feb. 8, 1961, F 33,161

3 Claims. (Cl. 148—6.15)

1. A process for the after-treatment of phosphatized ferrous surfaces in order to improve the corrosion protection, which comprises treating said coated metal surfaces with an aqueous solution containing about 10^{-5} mol per liter solution to about 10^{-1} mol per liter solution of a saturated aliphatic phosphonic acid containing more than 5 carbon atoms, and subsequently drying said metal surfaces.

3,272,663
WASH-PRIMER COATING INCLUDING MOLYBDATE RADICAL
Max Kronstein, New York, N.Y., assignor to Oakite Products Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 13, 1962, Ser. No. 237,282
21 Claims. (Cl. 148—6.16)

21. A metal product consisting essentially of a basis metal with at least part of its surface coated with an adherent integral complex surface coating composed of an inorganic and an organic portion, the inorganic portion of which consists essentially of the principal metal constituent of the basis metal of the product, and the elements phosphorus, zinc and molybdenum, each of the latter three being present in the surface coating in its individually respective ratio to the principal metal of the basis metal greater than the respective ratio of any phosphorus, zinc and molybdenum originally present in the basis metal to the principal metal of the basis metal; and said organic portion is a dry, continuous film of a film-forming reactive resin member of the class consisting of polyvinyl formal, polyvinyl acetal, and polyvinyl butyral.

3,272,664
COMPOSITION AND METHOD FOR COATING METAL SURFACES
Louis Schlossberg, Oak Park, Earl Eugene Logue, Birmingham, and Paul J. Carrier, Detroit, Mich., assignors to Detrex Chemical Industries, Inc., Detroit, Mich., a corporation of Michigan
No Drawing. Filed July 25, 1963, Ser. No. 297,694
6 Claims. (Cl. 148—6.17)

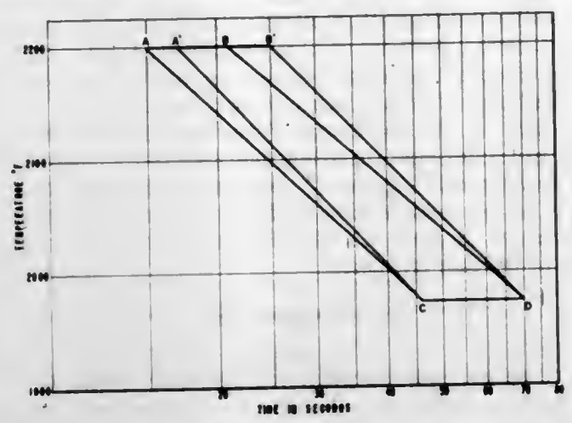
1. A solution for producing phosphate coatings on ferrous metal surfaces consisting essentially of water, an alkali metal acid phosphate, an alkali metal chlorate and an alkali metal dinitrobenzene sulfonate synergistically cooperative with said chlorate.

3,272,665
MOLYBDATE COATINGS ON ALUMINUM AND ALUMINUM BASE ALLOYS
Harmon Brown Romans, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Virginia
No Drawing. Filed Apr. 24, 1963, Ser. No. 275,225
13 Claims. (Cl. 148—6.27)

1. Method for protecting the surface of aluminum and aluminum base alloys against corrosion which comprises immersing said surface in an aqueous solution consisting essentially of water and at least about 4% by weight of an alkali metal molybdate at a temperature between about 325° and about 400° F. for a period of at least 2 hours under pressure sufficient to maintain the solution and the metal surface at said temperature.

3,272,666
METHOD OF HEAT TREATING NICKEL BASE ALLOY ARTICLES UP TO 20 MILS IN THICKNESS
John Symonds, Annapolis, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 329,128
3 Claims. (Cl. 148—13)

1. A method of heat treating a nickel base alloy object of up to 20 mils in thickness containing as essential elements, by weight percent, from 0.04 to 0.15 carbon, 5 to 25 chomium and from 1 to 10 of at least one element selected from the group consisting of aluminum and titanium, which comprises heating said nickel base alloy object to a maximum temperature of from 1975° F. to 2200° F., retaining said nickel base alloy object at said maximum temperature for a period of time such that when the retaining time is plotted against said maximum temperature, the resultant point falls within the area ABDC as set forth in the accompanying drawing, and maintaining the heating of said nickel base alloy object such that when the retaining time plus the heating time

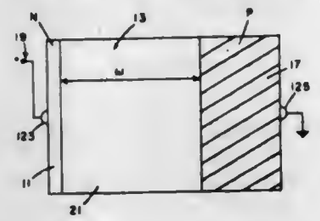


from 1975° F. to the maximum temperature is plotted against said maximum temperature, the resultant point falls within the area A'B'DC as set forth in the accompanying drawing.

3,272,667
SUBMERGED ARC WELDING PROCESS AND FLUX COMPOSITION UTILIZING FLUOROCARBON
John C. Siegle, Hilton, Wilmington, and John Teti, Sr., West Minster, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 10, 1964, Ser. No. 417,467
6 Claims. (Cl. 148—23)

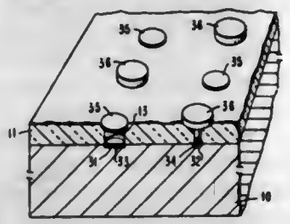
1. In the process of welding metals by the submerged arc technique, the improvement which comprises employing as a welding medium (1) a granular flux material comprising a member of the group consisting of the oxides of calcium, potassium, sodium, silicon, aluminum, titanium, magnesium, and manganese, and mixtures of said oxides, and (2) a solid fluorocarbon polymer or telomer in finely divided particulate form, the fluorocarbon being selected from the group consisting of polytetrafluoroethylene, polychlorotrifluoroethylene, polyvinylidene fluoride, polyhexafluoropropylene, and the copolymers of vinylidene fluoride and tetrafluoroethylene with hexafluoropropylene, and mixtures of said fluorocarbons.

3,272,668
SEMICONDUCTOR DETECTOR METHOD
Gabriel L. Miller, Babylon, and Sanford E. Wagner, Brookhaven, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 11, 1963, Ser. No. 272,497
3 Claims. (Cl. 148—177)



1. A method for producing a semiconductor radiation detector, comprising alloying lithium into p-type silicon, reverse biasing the alloyed structure with a constant wattage supply, and simultaneously removing Joule heat generated in said detector by said reverse biasing with a vapour phase coolant in which said semiconductor is immersed.

3,272,669
METHOD OF SIMULTANEOUSLY FABRICATING A PLURALITY OF SEMICONDUCTOR P-N JUNCTION DEVICES
Samuel S. Im, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 19, 1963, Ser. No. 302,991
15 Claims. (Cl. 148—179)



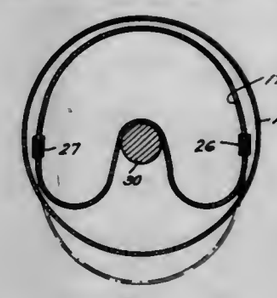
1. The method of simultaneously fabricating a plurality of semiconductor PN junction devices comprising:
establishing on selected portions of a surface of a semiconductor body of one conductivity type a plurality of adherent thin metal film members;
introducing said body and said members into a bath of a molten material which has a temperature less than the melting point of said body and comprises (a) a conductivity-directing impurity that is of a type opposite to that of said body and has an affinity for the metal of said members and (b) a quantity of said metal which substantially saturates said bath, whereby particles of said material adhere to said members;
removing said body, members and particles from said bath and cooling the assembly so that said particles are bonded to said members; and
heating said assembly to the alloying temperature of the materials thereof and thereafter cooling said assembly to form on said body a plurality of PN junctions and recrystallized semiconductor regions of the opposite conductivity type.

3,272,670
TWO-STABLE, HIGH-RESOLUTION ELECTRON-ACTUATED RESISTS
Robert E. Myers, Menlo Park, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
No Drawing. Filed Aug. 27, 1965, Ser. No. 483,326
5 Claims. (Cl. 156—13)

1. The method of producing a microscopic pattern on a thin metal or metal oxide film comprising depositing on said film a covering film of one of the materials selected from the group consisting of tetrakistriphenylsiloxytitanium and tetrakistriphenylsiloxysilane, bombarding predetermined regions of said covering film with electrons having an energy sufficient to alter the structure of the covering film wherever they impinge to a glassy etch resistant surface, removing those portions of the covering film which have not been bombarded heating the portions of said covering film which are not removed over a predetermined interval at a predetermined temperature and thereafter etching the exposed thin film.

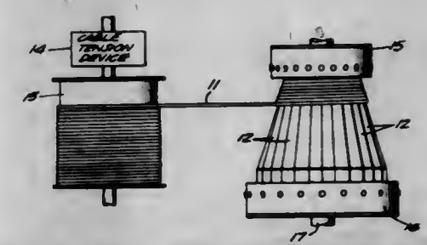
3,272,671
METHOD OF MAKING A COMPOSITE FIBER AND METAL TUBULAR CONTAINER BODY
Paul C. Gaylord, Staten Island, and Herbert L. Carpenter, Jr., Babylon, N.Y., assignors to The Greif Bros. Cooperage Corporation, Delaware, Ohio, a corporation of Delaware
Filed Aug. 28, 1963, Ser. No. 305,111
6 Claims. (Cl. 156—86)

1. The method of making a composite fiber and metal tubular container body which comprises: providing a first tubular shell made of wound layers of fiber adhesively laminated together; providing a second tubular shell with an outside diameter no greater than and approximating the inside diameter of the first shell and made of sheet metal of sufficient resilience so that the shell may be diametrically compressed and will thereafter resume is normal shape; applying compressive force to the second shell across intersecting transverse axes so that all outside diameters of the second shell are reducd to a dimension



less than the corresponding inside diameters of the first shell; then while maintaining the second shell in such transversely compressed condition, telescopically assembling the two shells with the second shell being disposed inside the first shell; and thereafter releasing the compressive forces applied across the second shell so that it expands into engagement with the inside surface of the first shell to thereby provide a composite fiber and metal container body.

3,272,672
METHOD AND APPARATUS FOR PRESSURE LAMINATING TAPE WOUND ARTICLES
James A. Lampman, Inglewood, Glenn E. Young, Carmel, and Ethridge E. Hardesty, Pine Valley, Calif., assignors to Swedlow, Inc., a corporation of California
Filed June 22, 1962, Ser. No. 204,510
7 Claims. (Cl. 156—189)



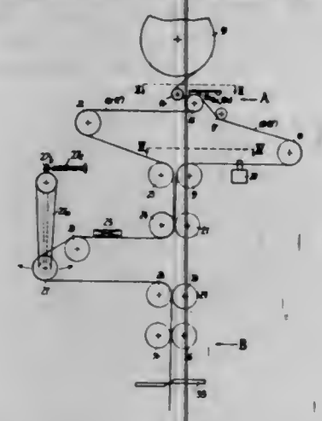
1. A process for pressure laminating comprising spirally winding a pressure curable tape around a mandrel, surrounding said tape with a flexible sleeve, surrounding said sleeve with caul plates, spirally winding at least one layer of cable around said caul plates, and exerting tension on said cable.

2. The process of claim 1 wherein said tape is subjected to heat while said cable is under tension.

3,272,673
METHOD OF AND DEVICE FOR PROVIDING WRAPPING MATERIAL WITH A PULL STRIP
Heinz-Hermann Focke, Bremen-Hemelingen, Germany, assignor to Focke & Pfuhl, Bremen-Hemelingen, Germany
Filed May 14, 1963, Ser. No. 280,359
3 Claims. (Cl. 156—260)

1. A method of continuously and simultaneously providing two similar, composite webs of wrapping material, each of which comprises a relatively wide strip and a relatively narrow tear strip superimposed on said relatively wide strip, which includes the steps of: feeding a web of material longitudinally, simultaneously cutting said web along the center line and along two lines parallel

to said center line and equally spaced on opposite sides of said center line and substantially closer to said center line than to the outer edges of said web so as to form two narrow tear strips of equal width along the sides of the center line and two substantially wider wrappings strips between said narrow strips and said outer edges,



and guiding each relatively narrow strip into superimposed relationship with one of the relatively wide strips.

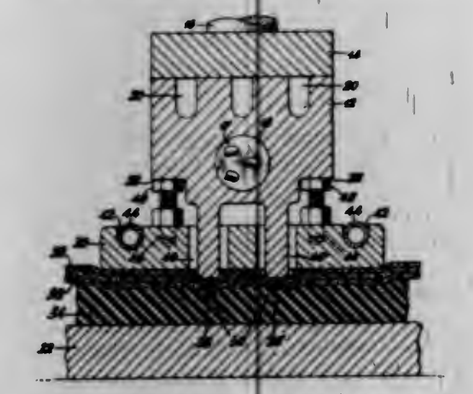
2. A method as claimed in claim 1, and applying an adhesive to the side of each of said narrow strips that engages the corresponding wide strip before said strips are superimposed.

3,272,674

PLASTIC FILM WELDING PROCESS AND APPARATUS

John P. Sachs, La Grange, Howard E. Kasting, Park Forest, and Alvin E. Ericson, Chicago, Ill., assignors to Union Carbide Corporation, a corporation of New York

Filed May 28, 1962, Ser. No. 198,014
5 Claims. (Cl. 156—282)



1. Method of pressure welding thermoplastic films which comprises compressing the overlapping film material between a backup surface, and a platen in an area closely and completely surrounding the weld to be made, thereby flattening such material in such area, then softening with heat and under pressure such material while it is so compressed, by advancing the hot sealing surface of a heat-sealing bar into contact with such material within such area after compressing the overlapping film, with heat and pressure sufficient only to weld the material together, while controlling the degree of compression of such material between said platen and backup surface by variably limiting the advancing of said heat sealing surface toward said backup surface, simultaneously cooling such platen during such welding operation, and finally, first retracting said sealing surface from the weld and then releasing the so-welded material from such compression by withdrawing said platen to avoid springback and bulging of the film plies.

3,272,675

WATER-RESISTANT ADHESIVES

Hideo Suzumura and Hisao Miyahara, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan

No Drawing. Filed June 23, 1961, Ser. No. 119,058
Claims priority, application Japan, July 2, 1960, 35/29,879
2 Claims. (Cl. 156—292)

2. In the manufacture of corrugated cardboard resistant to exfoliation even during prolonged immersion, the improvement which comprises adhesively securing the components of the cardboard to each other by means of a water-resistant adhesive comprising an intimate admixture in water of a three component system consisting essentially of polyvinyl alcohol, a highly siliceous pigment, and an alkali metal silicate, said pigment and filler being present in an amount by weight which is about twice the amount by weight of polyvinyl alcohol, and said silicate being present in an amount by weight which is about one-fifth that of the polyvinyl alcohol.

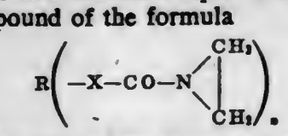
3,272,676

METHOD OF EFFECTING THE ADHESION OF POLYESTER MATERIALS TO RUBBERS

Koji Kigane and Shinichi Yamada, Iwakuni-shi, Yamaguchi-ken, and Yukinori Isozaki, Obtake-shi, Hiroshima-ken, Japan, assignors to Teikoku Jinzo Kenshi Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

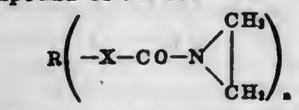
No Drawing. Filed Sept. 11, 1962, Ser. No. 222,968
Claims priority, application Japan, Sept. 14, 1961, 36/33,532; Sept. 14, 1961, 36/33,533; Sept. 19, 1961, 36/33,952; Sept. 19, 1961, 36/33,953
14 claims. (Cl. 156—315)

1. A method for the adhesion of a polyester material to a rubber compound which comprises treating said material with a first treatment liquor containing an ethyleneimino compound of the formula



wherein X is NH or 0; R is a polyvalent organic radical free from active hydrogen; and n is an integer of at least 2 and with a second treatment liquor containing an ethylenically unsaturated monomeric amide compound, followed by a heat treatment at a temperature of 100–250° C., and thereafter effecting the adhesion of the material to the rubber compound.

8. A method for the adhesion of a polyester material to a rubber compound which comprises treating said material with a first treatment liquor containing an ethyleneimino compound of the formula



wherein X is NH or 0; R is a polyvalent organic radical free from active hydrogen, and n is an integer of at least 2, and with a second treatment liquor containing an ethylenically unsaturated epoxy compound, followed by a heat treatment at a temperature of 100–250° C., and thereafter effecting the adhesion of the material to the rubber compound.

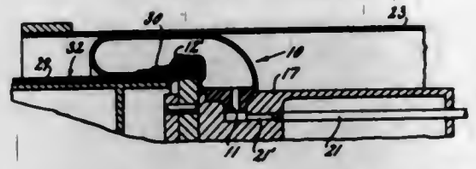
3,272,677

INFLATABLE ANNULAR BLADDER USED TO FORM THE BEAD REGION OF A PNEUMATIC TIRE CARCASS

Sheppard A. Black, Wayne, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 4, 1962, Ser. No. 242,288
8 Claims. (Cl. 156—401)

1. An inflatable annular bladder for use in an apparatus for forming a bead region of a tire carcass from a ply band having the radially interior surface of a bead in contact with the outer surface of said band, the end of said band extending beyond said bead, said apparatus including a bladder support member having a generally cylindrical outer surface on which said bladder is adapted to be operationally mounted and a cage member having a generally cylindrical inner surface surrounding said support member and radially spaced therefrom to form an annular aperture to receive said extending ply band end exterior of said bladder when said bladder is uninflated, said cage member being axially displaceable



with respect to said support member, said bladder comprising:

(a) an air impervious extensible wall portion forming the axial face of said bladder for disposition axially adjacent said bead, said wall portion also forming a relatively narrow annular portion of the radially outermost wall of said bladder contiguous to said face; and

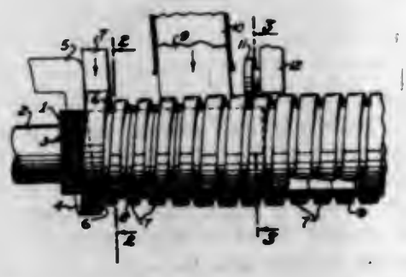
(b) a reinforced air impervious wall portion adjacent to said extensible wall portion and forming the remainder of the bladder wall, said reinforced wall portion being substantially inextensible in a plane including the axis of the bladder.

3,272,678

APPARATUS FOR THE MANUFACTURE OF HOSE BY HELICALLY WINDING AN ELONGATED STRIP OF PLASTIC MATERIAL

Alfred H. Swan, Newport Beach, Calif., assignor, by mesne assignments, to Air Reduction Company, Incorporated, a corporation of New York

Filed Feb. 15, 1962, Ser. No. 173,399
2 Claims. (Cl. 156—429)



1. A hose-making machine, comprising:

(a) a drive shaft;

(b) a mandrel extending coaxially from said shaft;

(c) means for directing a first hose element tangentially onto said mandrel to wrap thereabout as said mandrel is rotated;

(d) a fixed guide encircling said mandrel at its end adjacent said shaft, the inner periphery of the guide being contiguous to but clearing said mandrel, and its axial end directed toward the extended end of the mandrel forming a helical guide face;

(e) said guide face having a helical pitch corresponding to the width of said first hose element to force said first hose element helically onto said mandrel with its convolutions in mutual contact, thereby to crowd said first hose element axially along said mandrel;

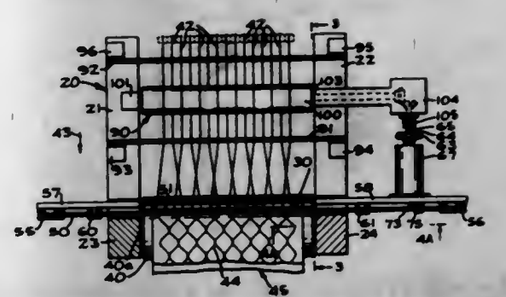
(f) and means for entraining a second hose element on said first hose element for helical travel therewith.

3,272,679

APPARATUS FOR FORMING REINFORCED SHEET MATERIAL

Friedrich Hebberling, 527A Tyrella, Mountain View, Calif.

Filed July 5, 1963, Ser. No. 292,980
14 Claims. (Cl. 156—440)



1. A reciprocating apparatus for imparting a cyclic motion to strands of filamentary material comprising an endless tape with a plurality of runs, means engaging said tape for imparting a reciprocating movement thereto, and means on one of said runs of said tape for receiving strands of filamentary material.

3,272,680

APPARATUS FOR MAKING REINFORCED RUBBER BELTING

Fritz Paasche, Cologne-Weidenpesch, Germany, assignor to Franz Clouth Rheinische Gummiwarenfabrik Aktiengesellschaft, Cologne-Nippes, Germany

Original application Apr. 24, 1961, Ser. No. 105,087. Divided and this application Mar. 19, 1965, Ser. No. 443,774
Claims priority, application Germany, April 25, 1960, C 21,294; Feb. 3, 1961, C 23,333
12 Claims. (Cl. 156—494)



7. An apparatus for the production of belting consisting of vulcanizable rubbery material which is reinforced by metallic cords, said apparatus comprising, in combination, spaced first and second tensioning means for tensioning the cords and for subjecting the cords to identical tension; means for maintaining the cords in parallelism with each other; means reciprocable between said first and second tensioning means for applying rubbery material to the cords while the cords remain under tension; and vulcanizing means reciprocable between said applicator means and one of said tensioning means for vulcanizing the rubbery material while the cords remain under tension.

3,272,681

APPARATUS FOR APPLYING LABELS, PLATENS OR THE LIKE ON HOLLOW BODIES

Erhard Langecker, Meinerzhagen, Westphalia, Germany, assignor to Firma Gebruder Bettenfeld, Meinerzhagen, Germany, a corporation of Germany

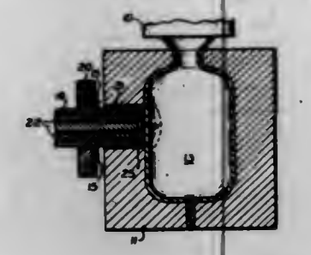
Original application Apr. 12, 1961, Ser. No. 102,581. Divided and this application Jan. 2, 1962, Ser. No. 163,809
Claims priority, application Germany, April 12, 1960, B 57,457
4 Claims. (Cl. 156—518)

1. An apparatus for applying markings to hollow bodies during the molding thereof, comprising

a complete hollow mold comprising two mold halves and defining an opening through one wall thereof,

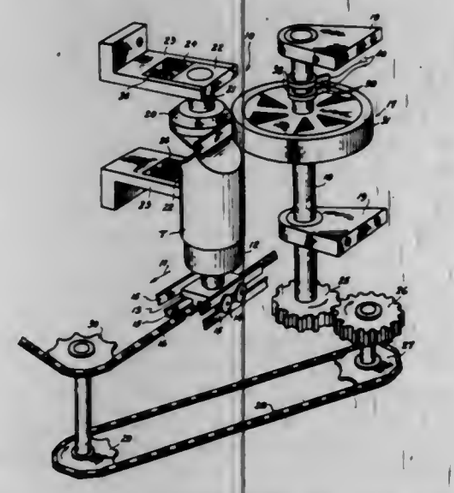
means to supply an extruded hose into and received in said mold and disposed perpendicularly to the longitudinal axis of said opening,

a stamp having an operative end face complementary to said opening, and forming part of the inner wall of said mold, said stamp reciprocating in said opening of said mold during the closed position of said two form halves,



said stamp having at least one axially disposed channel adapted to be connected with a vacuum source, and means for reciprocating said stamp alternately into an inoperative position outside of said opening of said mold with said end face spaced apart from said mold and into an operative position inside said opening, for applying markings to a hollow body.

3,272,682
APPARATUS FOR JOINING THERMOPLASTIC SHEET MATERIAL WITH ULTRASONIC ROTARY VIBRATORS
Lewis Balamuth, New York, and Arthur Kuris, Riverdale, Bronx, N.Y., assignors to Cavitron Ultrasonics Inc., Long Island City, N.Y., a corporation of New York
Original application Aug. 13, 1962, Ser. No. 216,644, now Patent No. 3,224,915, dated Dec. 21, 1965. Divided and this application May 18, 1965, Ser. No. 464,594
16 Claims. (Cl. 156—580)



1. Apparatus for joining together overlapped sheet materials, at least one of which is thermoplastic, comprising

(A) back-up means engageable with the overlapped sheet materials at one side of the latter during the continuous advancement of the sheet materials; and

(B) a rotary vibrator mounted at the other side of the sheet materials for rotation about an axis extending transversely with respect to the direction of said continuous advancement and including

a. a magnetostrictive body of generally circular cross-section,

b. windings on said body to establish alternating electromagnetic fields producing radial vibrations in said body at the fundamental mode of vibration of the latter, and

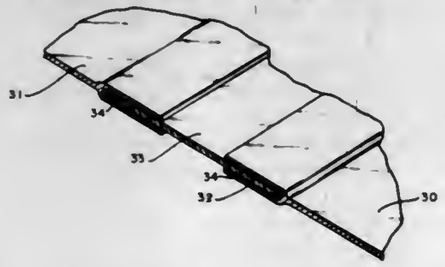
c. at least one tool member joined to the periphery of said body for radial vibration with the latter and for rolling contact with the overlapped sheet materials against said back-up means.

3,272,683
METHOD OF MAKING A PEBBLED FLOOR COVERING AND PRODUCT
Natalie S. Marcus, Trenton, N.J., and Ernest R. Holmstrom and Merrill M. Smith, Morrisville, Pa., assignors to American Biltrite Rubber Co., Inc., Chelsea, Mass., a corporation of Delaware
Filed Mar. 21, 1963, Ser. No. 267,044
8 Claims. (Cl. 161—5)



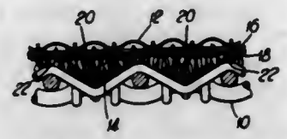
1. An elastomeric flooring of pebbled appearance and surface contour, comprising a translucent matrix of polyvinyl resin containing a random distribution of small compact pellets of glass fibers distributed in visible contact and completely enclosed within said matrix.

3,272,684
EXPANSION JOINT
Howard Nelson Moore, Kensington, Md., George W. Moore, administrator of the estate of Howard N. Moore, deceased, assignor to Lamont & Riley, Inc., Worcester, Mass., a corporation of Massachusetts
Filed Aug. 13, 1963, Ser. No. 301,799
1 Claim. (Cl. 161—37)



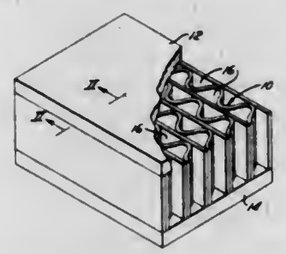
An all plastic joint for building structures comprising a plastic relatively inextensible panel member, an extensible member of an elastomeric material being highly extensible, the marginal edge of at least one of said members having a bifurcation, a marginal edge of at least part of said other member being positioned in smooth bonding contact with the inner walls of said bifurcation and a bonding cement adhering those portions of said members which are in smooth bonding contact, a second marginal edge of said other member being positioned in smooth bonding contact with an outer wall of said bifurcation and additional bonding cement adhering to those portions of said second marginal edge and said outer wall which are in smooth bonding contact, whereby said plastic joint comprises at least four layers of material securely bonded together, said bonding cement containing a material basically related in chemical structure to the chemical structure of both said members, said portion of said elastomeric material in bonding contact with said panel member having cross-linked polymers herein to such an extent that its extensibility is substantially less than that of the elastomeric material of said extensible member removed from said joint, said relatively inextensible member comprising neoprene and a filler material which renders it relatively inextensible, said elastomeric member being of neoprene and said bonding cement having a neoprene base.

3,272,685
WOVEN WATERPROOF FABRICS
Joseph Kagan, 6 Wharncliffe Grove, Frizinghall, Bradford, England
Filed May 5, 1964, Ser. No. 365,003
14 Claims. (Cl. 161—49)



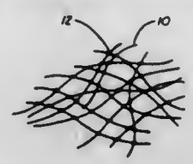
1. A multi-ply fabric comprising a first ply having a multiplicity of fibres projecting substantially uniformly from all parts of one surface, and a second ply connected uniformly over one entire surface to said first ply by adhesive adherence to the ends of the projecting fibres so that the plies may move somewnat in their planes with respect to each other.

3,272,686
STRUCTURAL CERAMIC BODIES AND METHOD OF MAKING SAME
Gail P. Smith, Corning, and Guy E. Stong, Elmira, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 23, 1962, Ser. No. 182,011
5 Claims. (Cl. 161—68)



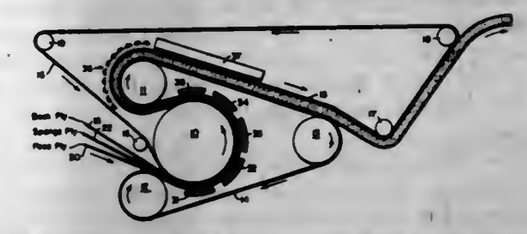
4. A structural ceramic body comprising a ceramic honeycomb having opposed major surfaces, channels extending through said honeycomb and terminating at said surfaces, a rigid ceramic sheet ceramically bonded to each of said major faces by a composition composed, by weight, of about 1 to 16 percent of lead oxide, about 1 to 15 percent of a flux, about 1 to 6 percent of a member selected from the group consisting of silicon carbide and sulfur trioxide, and the remainder substantially all a lithium aluminosilicate ceramic material, said honeycomb, ceramic sheets and ceramic composition having a low coefficient of thermal expansion.

3,272,687
VAPOR PERMEABLE NON-WOVEN FIBROUS ELEMENT
Robert C. Harrington, Jr., James L. Smith, and James H. Bond, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 22, 1964, Ser. No. 384,334
5 Claims. (Cl. 161—143)



1. A vapor permeable non-woven fibrous element comprising substantially longitudinally aligned continuous filaments of polypropylene bonded at a substantial number of the intersects of said filaments with polyethylene.

3,272,688
VINYL SPONGE LAMINATE
Ernest R. Holmstrom, Morrisville, David K. Sloeberg, Yardley, and Merrill M. Smith, Morrisville, Pa., assignors to American Biltrite Rubber Co., Inc., Chelsea, Mass., a corporation of Delaware
Filed May 26, 1965, Ser. No. 459,003
1 Claim. (Cl. 161—161)



A laminated underlayment comprising outer cover plies of asbestos felt impregnated and reinforced with an elastomeric component, in combination with an intermediate vinyl ply of blown sponge consistency which is bonded to the inner faces of the cover plies by penetration of the vinyl structure into the interstices of the felt cover plies, said intermediate vinyl ply of blown sponge consistency consisting of two coextensive ply sections united in face-to-face engagement.

3,272,689
DELIGNIFICATION OF LIGNOCELLULOSE WITH AN N-(LOWER ALKYL)-2-PYRROLIDONE
Bernard L. Lenz, Stockholm, Sweden, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Feb. 4, 1963, Ser. No. 256,131
8 Claims. (Cl. 162—72)

1. A method of delignification which comprises treating wood with a reagent which comprises water and an N-(lower alkyl)-2-pyrrolidone in a weight ratio of from 1:20 to 1:1 at a temperature between 80° C. and 200° C. for a time of about ½ hour to 24 hours and separating a lignin-enriched phase containing said pyrrolidone from a cellulose-enriched pulp phase.

3,272,690
METHOD OF IMPROVING THE WET STRENGTH OF PAPER BY ADDITION OF ETHYLENE-VINYL ACETATE COPOLYMER THERETO
Anna M. Shadan, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
No Drawing. Filed June 26, 1963, Ser. No. 290,640
10 Claims. (Cl. 162—169)

1. A method of improving the wet strength of paper which comprises mixing with the paper pulp which is to be used for making said paper an emulsion composition comprising water, an emulsifying agent and from about 0.25 percent by weight to about 40 percent by weight, based on the dry pulp, of a wax-copolymer mixture comprising from about 50 parts by weight to about 99 parts by weight wax and from about 1 part by weight to about 50 parts by weight of an ethylene-vinyl acetate copolymer containing from about 10 percent by weight to about 40 percent by weight vinyl acetate and having a melt index of from about 3 to about 500, and forming the treated paper pulp thus obtained into paper.

3,272,691
APPARATUS FOR CONTINUOUSLY CHLORINATING PULP INCLUDING AUTOMATIC CONTROL OF THE DEGREE OF CHLORINATION
Brian L. Shera, Tacoma, Wash., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 12, 1964, Ser. No. 344,433
4 Claims. (Cl. 162—252)

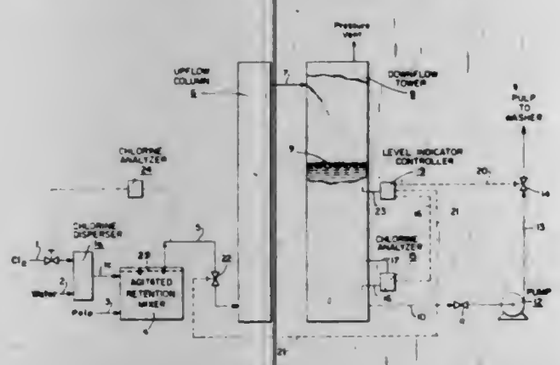
1. Apparatus for continuously chlorinating cellulosic pulp comprising in combination

chlorine gas disperser means having inlets for chlorine gas and water and an outlet for dispersed chlorine gas;

retention chlorinator mixer means connected to the outlet of said dispenser means and having an inlet for said pulp suspended in water; said mixer means being provided with agitator means and being of sufficient capacity to retain an ingoing portion of the pulp in contact with dispersed chlorine gas entering said mixer means from said dispenser means in said mixer means for a period of at least about 1½ minutes; said mixer having an outlet for said pulp;

upflow chlorinating means having a bottom inlet connected to the outlet of said mixer means to receive pulp from said mixer means and having an outlet for said pulp in its upper section;

downflow chlorinator retention means having an upper section arranged to receive pulp discharged from said upflow chlorinator means; said downflow means being larger in capacity than said upflow means; said downflow means being provided with an outlet near its bottom section;



chlorination endpoint determination means including signalling means disposed at the lower level of said downflow means to substantially continuously test pulp at said lower level to determine attainment of a predetermined chlorination state of said pulp;

liquid level indicator and controller means associated with said downflow means and arranged to receive signals from said determination means;

outlet control means associated with the outlet of said downflow means and connected to said controller means to respond to signals from said determination means;

said determination means cooperating with said controller means and said outlet control means to retain pulp in said downflow means until a predetermined chlorination endpoint has been attained and the opening said outlet means to discharge chlorinated pulp from said downflow means, thereby maintaining the level in said downflow means substantially constant and limiting retention of said pulp in said downflow tower to a period at least sufficient but not substantially longer than sufficient to attain the desired endpoint of chlorination.

3,272,692
PRESSURE FORMING APPARATUS IN PAPER MAKING INCLUDING A SUCTION CYLINDER MOLD

Millard F. Hayes and Robert M. Hayes, both of P.O. Box 92, Hudson Falls, N.Y.

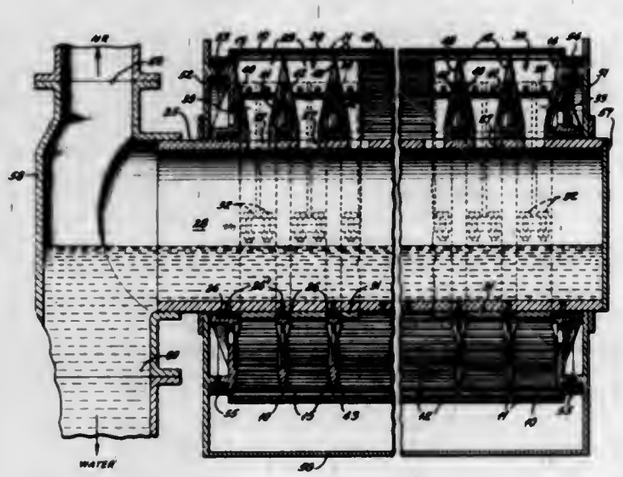
Filed Jan. 20, 1964, Ser. No. 339,011
10 Claims. (Cl. 162—317)

1. Apparatus including a suction roll, for use in paper manufacture, and which comprises

a long cylindrical central hollow stationary core forming an axis for the roll,

a pair of end spiders and a plurality of intermediate spiders each rotatably mounted on said core and spaced apart axially therealong,

a wire mesh face of cylindrical shape mounted on said spiders for rotation therewith about said core and forming a porous cylindrical covering for the roll to support paper fibers traveling in the direction of rotation of the roll, along an arc extending part way around the periphery thereof,



said core having a plurality of slots each extending between an adjacent pair of spiders and through the wall of the core into its central chamber,

a different water collector mating with each of said slots and extending radially outward therefrom, each said collector defining an inner air and water passage extending from adjacent the inner surface of the face to its respective said slot,

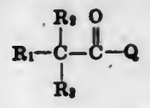
an air pump connected to said central chamber to pump air therefrom so that air and water are pulled through said mesh face into the chamber of said core, and means for discharging the air and water from said chamber.

3,272,693
METHODS OF CONTROLLING FUNGI WITH ALPHA,ALPHA-DIALKYL AND ALKYLENE ALIPHATIC ACIDS AND SALTS THEREOF

Jean Bradley Harrison, Niagara Falls, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 20, 1964, Ser. No. 383,922
6 Claims. (Cl. 167—22)

1. A method for the control of fungi, said method comprising applying to fungi a fungicidally effective amount of a compound of the formula:



wherein

Q is selected from the group consisting of OR_4 and chlorine;

R_1, R_2 and R_3 are each selected from the group consisting of alkyl containing 1 through 10 carbon atoms and alkenyl containing 2 through 10 carbon atoms, with the limitation that R_1, R_2 and R_3 added together will contain at least 6 carbon atoms and not more than 12 carbon atoms; and

R_4 is selected from the group consisting of hydrogen, sodium, potassium, calcium, magnesium, zinc, manganese, copper, iron, nickel, cadmium, basic salts of zinc, manganese, cadmium, copper, iron and nickel, ammonium, mono-, di- and tri-(alkyl)ammonium where each alkyl group has 1 through 4 carbon atoms, mono-, di- and tri-(alkoxyalkyl)ammonium where the alkoxy and alkyl group each has 1 through 4 carbon atoms, mono-, di- and tri-(hydroxyalkyl)ammonium where the alkyl group has 1 through 4 carbon atoms.

3,272,694
SEVIN-LINDANE INSECTICIDAL FUMIGATING COMPOSITION AND METHOD

Gordon N. Emby, Northrand, Transvaal, Republic of South Africa, assignor to African Explosives and Chemical Industries Limited, Johannesburg, Transvaal, South Africa

No Drawing. Filed Apr. 26, 1963, Ser. No. 276,080
Claims priority, application Republic of South Africa, Apr. 27, 1962, 62/1,763
4 Claims. (Cl. 167—30)

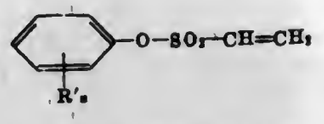
4. An insecticidal fumigating composition comprising as the active ingredients a major quantity of 1-naphthyl N-methyl carbamate, and a minor quantity of lindane, and which includes also a deflagration composition consisting of potassium chlorate and thiourea, an extender consisting of gypsum, and a binder consisting of shellac.

3,272,695
VINYL-SULPHONIC ACID ESTER FUNGICIDES

Paul-Ernst Frohberger, Burscheid, Hansbelmut Schlör, Wuppertal-Barmen, and Rudolf Kress and Rudolf Heiss, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 25, 1964, Ser. No. 347,129
Claims priority, application Germany, Mar. 12, 1963, F 39,226
6 Claims. (Cl. 167—30)

1. A method for combating fungi which comprises applying to said fungi an effective amount of a vinylsulphonic acid ester of the formula



wherein

R′ is a member selected from the group consisting of halo, nitro, alkyl of 1–6 carbon atoms, alkoxy of 1–4 carbon atoms, amino, alkyl amino of 1–4 carbon atoms in the alkyl radical, alkyl mercapto of 1–4 carbon atoms, alkenyl of 2–6 carbon atoms and the $-O-SO_2-CH=CH_2$ group; and

n is a whole number of 0–3.

3,272,696
PORFIROMYCIN INSECTICIDE

Paul W. O'Connell, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,940
15 Claims. (Cl. 167—30)

1. The process of rendering insects reproductively sterile which comprises inducing insects to ingest an effective amount of profiromycin.

3,272,697
PACTAMYCIN INSECTICIDE

Alan J. Lemin, Richland Township, Kalamazoo County, and Paul W. O'Connell, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 30, 1964, Ser. No. 363,978
12 Claims. (Cl. 167—30)

1. The process of controlling insects which comprises applying to said insects an effective amount of pactamycin.

3,272,698
SPARSOMYCIN A INSECTICIDE

Alan J. Lemin, Richland Township, Kalamazoo County, and Paul W. O'Connell, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 30, 1964, Ser. No. 363,998
11 Claims. (Cl. 167—30)

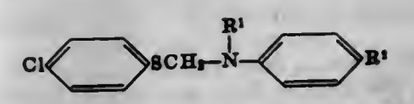
1. The process of controlling insects which comprises applying to said insects an effective amount of sparsomycin A.

3,272,699
N-(4-CHLOROPHENYLTHIOMETHYL)-ANILINE FUNGICIDES

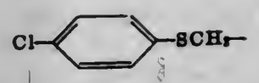
Philip T. S. Lau, Rochester, and Gerald F. Grillot, Syracuse, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 22, 1964, Ser. No. 369,595
6 Claims. (Cl. 167—30)

4. The process for preventing and retarding fungus growth on living plants which comprises applying to said plants an aqueous dispersion of an N-(4-chlorophenylthiomethyl)-aniline of the formula:



wherein R^1 is a member selected from the group consisting of hydrogen and



and R^2 is a member selected from the group consisting of $-NO_2$ and $-OCH_3$, in the proportions of between about ¼ pound and about 2 pounds of the N-(4-chlorophenylthiomethyl)-aniline compound per 100 gallons of water.

3,272,700
STABILIZED AQUEOUS SOLUTION OF TETRACAINE SALT

Irwin S. Sharpe, North Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 3, 1963, Ser. No. 313,422
1 Claim. (Cl. 167—52)

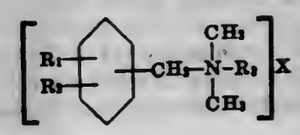
A stabilized aqueous solution of a pharmaceutically-acceptable acid-addition salt of 2-dimethylaminoethyl 4-n-butylaminobenzoate having as the stabilizing agent between about 0.4 to about 1.0 percent tyloxapol per 0.1 to 2 percent of said benzoate.

3,272,701
FREE FLOWING MEDICATED DRINKING WATER FOR POULTRY AND ANIMALS

Charles Kaitz, Vineland, N.J., and Leon Merson, Los Angeles, Calif., assignors, by mesne assignments, to Vineland Laboratories, Inc., Landis Township, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 27, 1962, Ser. No. 176,138
5 Claims. (Cl. 167—53)

1. A composition for providing free-flowing medicated drinking water for poultry and animals which comprises at least one therapeutic substance selected from the group consisting of vitamins and antibiotics in admixture with about 4% to about 13% of a quaternary ammonium salt by weight based on the weight of said therapeutic substance, said quaternary ammonium salt having the formula:



in which R_1 is selected from the group consisting of hydrogen and alkyl having from one to four carbon atoms, R_2 is selected from the group consisting of hydrogen and alkyl having from ten to sixteen carbon atoms, R_3 is selected from the group consisting of alkyl having from one to eighteen carbon atoms, alkoxy, phenoxyalkoxyalkyl and cresoxyalkoxyalkyl, and X is an inorganic anion.

3,272,702
GROWTH PROMOTANT PROCESS
Maurice A. Schooley, White Plains, N.Y., and Byron M. Shinn, Western Springs, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Feb. 6, 1963, Ser. No. 256,542
The portion of the term of the patent subsequent to April 16, 1980, has been disclaimed
11 Claims. (Cl. 167—53)

1. A process for promoting growth in animals, comprising the steps of introducing into said animals a synthetic estrogenic substance and a substantially water-insoluble salt of a cationic surfactant.

3,272,703
ANTACID COMPOSITION AND PROCESS OF MAKING THE SAME
Andrew M. Rubino, New Providence, and James J. Martin, Jr., Old Bridge, N.J., and John E. Garizio, Garden City, N.Y., assignors, by mesne assignments, to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 25, 1962, Ser. No. 233,010
21 Claims. (Cl. 167—55)

1. A process for preparing an antacid composition capable as determined by the Holbert, Noble and Grote test method of maintaining the pH of artificial gastric juice within the range from about 3 to about 5 for at least one hour, which comprises mixing an aqueous medium of (a) a solution of an alkali metal aluminate, selected from the group consisting of sodium aluminate and potassium aluminate (b) a solution of at least one water-soluble salt of calcium and magnesium, selected from the class of salts consisting of chloride, bromide, iodide and nitrate, and (c) a solution containing sufficient alkali, selected from the class consisting of sodium hydroxide, potassium hydroxide, sodium carbonate and potassium carbonate, to provide and maintain said media at a pH of from about 9 to about 10, to form a coprecipitate complex comprising aluminum, at least one member selected from the group consisting of magnesium and calcium, and hydroxide ions, and reacting the coprecipitate complex with carbon dioxide at a solution pH within the range from about 6 to about 10 whereupon a carbonated coprecipitate complex is formed having a molecular weight ratio calculated as Al_2O_3:MO within the range of about 4:1 to about 1:10, wherein M represents at least one member selected from the group consisting of magnesium and calcium.

3,272,704
STABLE ALUMINUM HYDROXIDE-MAGNESIUM COMPOUND CODRIED GEL ANTACIDS AND PROCESS OF MAKING THE SAME
Stewart M. Beekman, Chatham, N.J., assignor, by mesne assignments, to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware
Filed June 6, 1963, Ser. No. 286,040
16 Claims. (Cl. 167—55)

1. An antacid composition capable as determined by the modified Holbert, Noble and Grote test method of maintaining the pH of artificial gastric juice within the range from about 3 to about 5 for at least one hour, comprising the codried combination of a hydrous gelatinous aluminum hydroxide material selected from the group consisting of aluminum hydroxide and aluminum hydroxy carbonate and a gelatinous magnesium compound selected from the group consisting of magnesium hydroxide, magnesium carbonate and magnesium trisilicate in an atomic ratio Al:Mg within the range from about 2:1 to about 0.25:1 and from 2–200 percent of a hexitol selected from the group consisting of sorbitol and mannitol.

3,272,705
LAXATIVE COMPOSITION AND METHOD OF USING SAME
Friedrich Petuely, Graz, Austria, assignor, by mesne assignments, to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 13, 1963, Ser. No. 287,519
8 Claims. (Cl. 167—56)

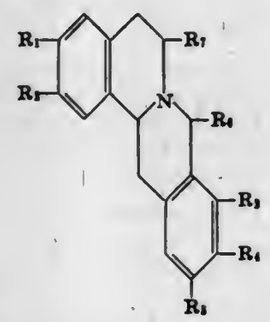
1. A method of improving intestinal peristalsis in constipated humans comprising daily orally administrating to said humans at least 0.05 gms. of lactulose per kg. of body-weight and in an amount effective to treat said constipation.

3,272,706
CRYSTALLIZATION OF ACTINOSPECTACIN SULFATE WITH METHANOL
Vincent J. Peters, Morris Plains, N.J., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Aug. 2, 1961, Ser. No. 128,687
4 Claims. (Cl. 167—65)

4. The process for crystallizing actinospectacin sulfate from aqueous solutions containing the same which comprises adding about 3 to about 5 parts of methanol to 1 part of the aqueous solution at about pH 6 to about pH 7, immediately filtering to remove any precipitate, allowing the actinospectacin sulfate to crystallize at a temperature between 20° C. and 50° C., and recovering the crystals of actinospectacin sulfate thus formed at a temperature between 0° C. and 15° C.

3,272,707
PHARMACEUTICAL COMPOSITIONS AND METHODS FOR THEIR USE
David H. Tedeschi, Pennsauken, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed July 17, 1964, Ser. No. 383,504
11 Claims. (Cl. 167—65)

3. A method of producing tranquilizing and antidepressant activity which comprises internally administering to an animal requiring tranquilization and antidepression an effective amount of a compound selected from the group consisting of a 5,6,13,13a-tetrahydro-8-dibenzo-(a,g)-quinolizine and a nontoxic pharmaceutically acceptable acid addition salt thereof, said dibenzo-(a,g)-quinolizine having the following formula:



in which:

R_1 and R_2 are members selected from the group consisting of hydrogen, hydroxy, methoxy, ethoxy and, when taken together, methylenedioxy;

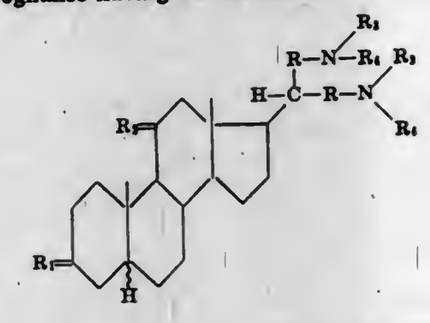
R_3 and R_8 are members selected from the group consisting of hydrogen and methoxy;

R_4 is a member selected from the group consisting of hydrogen, hydroxy, methoxy and ethoxy; and

R_6 and R_7 are members selected from the group consisting of hydrogen and methyl.

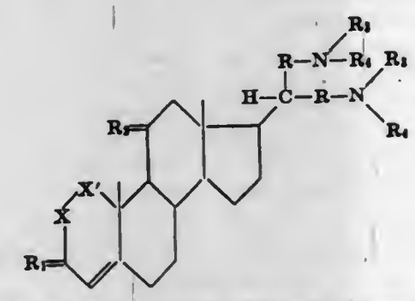
3,272,708
20-AMINOMETHYL-21-AMINO-PREGNANES AND THERAPEUTIC COMPOSITIONS THEREOF
Daniel Bertin, Montrouge, Lucien Nedelec, Clichy-sous-Bois, Seine et Oise, and Jacques Perronnet, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed Feb. 28, 1964, Ser. No. 348,303
Claims priority, application France, June 9, 1961, 864,451, Patent 1,373,654; Mar. 4, 1963, 926,732; May 7, 1963, 933,956
19 Claims. (Cl. 167—65)

1. A compound selected from the group consisting of amino pregnanes having the formulas:



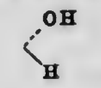
(IA)

and

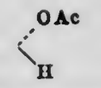


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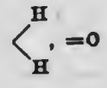
wherein the R's are the same and are selected from the group consisting of methylene and ethylene radicals, R_1 is selected from the group consisting =O,



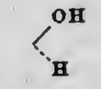
and



Ac is an acyl radical of an organic carboxylic acid having 1 to 18 carbon atoms, R_2 selected from the group consisting of

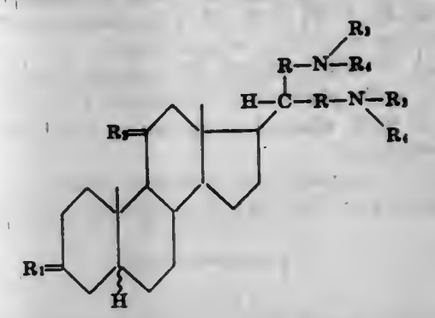


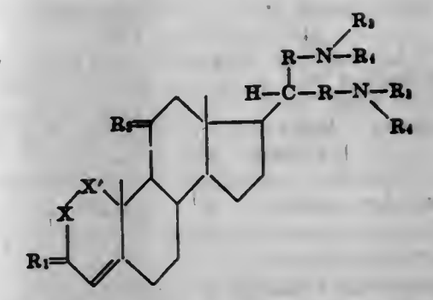
and



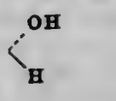
X–X' represents a radical selected from the group consisting of ethylene and vinylene, R_3 and R_4 are selected from the group consisting of hydrogen and lower alkyl, phenyl, phenyl lower alkyl and lower alkyl phenyl radicals and when taken together with the nitrogen atom R_3 and R_4 form a heterocyclic radical selected from the group consisting of morpholino, piperidino and pyrrolidino, and the non-toxic, pharmaceutically acceptable acid addition salts thereof.

8. The method of treating spasms of vascular origin in warm blooded animals which comprises administering daily an effective amount of a compound selected from the group consisting of amino pregnanes having the formulas

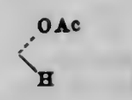




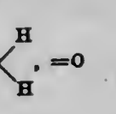
wherein the R's are the same and are selected from the group consisting of methylene and ethylene radicals, R_1 is selected from the group consisting of =O,



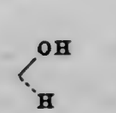
and



Ac is an acyl radical of an organic carboxylic acid having 1 to 18 carbon atoms, R_2 is selected from the group consisting of



and



X–X' represents a radical selected from the group consisting of ethylene and vinylene, R_3 and R_4 are selected from the group consisting of hydrogen and lower alkyl, aryl phenyl, phenyl lower alkyl and lower alkyl phenyl, and when taken together with the nitrogen atom R_3 and R_4 form a heterocyclic radical selected from the group consisting of morpholino, piperidino and pyrrolidino and the non-toxic, pharmaceutically acceptable acid addition salts thereof.

3,272,709
ANTIBIOTIC MELROSPORUS AND METHOD OF PRODUCTION
Malcolm E. Bergy, Kalamazoo, and William L. Lummis, Alamo Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Apr. 22, 1964, Ser. No. 361,849
7 Claims. (Cl. 167—65)

1. A composition of matter, assaying at least 12.4 mcg./mg. of melrosporus, a compound which

(a) is effective in inhibiting the growth of various gram-positive and gram-negative bacteria;

(b) is soluble in water, methanol, ethanol, ethyl acetate, 1-butanol, 2-butanol; slightly soluble in ether, hexane, and cyclohexane; and which in its essentially pure crystalline form
(c) has the following elemental analysis: C, 41.43, 41.68; H, 5.16, 5.06; N, 9.36, 9.59; O, 43.75;
(d) has the molecular weight of 147;
(e) has a characteristic ultraviolet absorption spectrum with maximum absorptivity of 152 at 290 mμ in 95% ethanol as shown in FIGURE II of the drawing; and
(f) has a characteristic infrared absorption spectrum as shown in FIGURE I of the accompanying drawing.

3,272,710
ANTIANDROGENIC COMPOSITIONS AND METHODS OF USE
Leonard J. Lerner, New Brunswick, and Frank L. Weisenborn, Somerset, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,286
8 Claims. (Cl. 167—74)

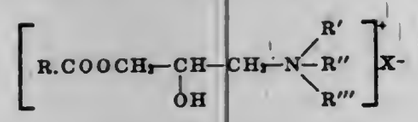
8. A process for producing an anti-androgenic effect which comprises administering to an animal species having a hyper-androgenic condition a composition comprising A-nor-5β-pregnane-2,20-dione in a pharmaceutical carrier therefor in a dosage of about 25 mg. to 250 mg.

3,272,711
SKIN TREATING COMPOSITIONS
Sidney J. M. Walker, Apt. 606, 64 St. Clair Ave. W., Toronto, Ontario, Canada
No Drawing. Filed July 23, 1963, Ser. No. 296,933
Claims priority, application Canada, July 27, 1962, 854,690
3 Claims. (Cl. 167—86)

1. A composition of matter comprising substantially 12 parts of sodium hexadecyl sulphate and substantially 18 parts of sodium bicarbonate.

3,272,712
QUATERNARY AMMONIUM SALTS OF ESTERS OF FATTY ACIDS AND A PRECURSOR OF AMINO-2-HYDROXY PROPANOL, METHODS OF THEIR PREPARATION AND THEIR USE
Gregoire Kalopissis, Paris, and Guy Vanlerberghe, Villiers-le-Bel, France, assignors to Societe Anonyme dite: L'Oreal, a corporation of France
No Drawing. Original application Oct. 29, 1962, Ser. No. 233,909. Divided and this application May 20, 1965, Ser. No. 469,018
Claims priority, application France, Nov. 2, 1961, 877,753
18 Claims. (Cl. 167—87)

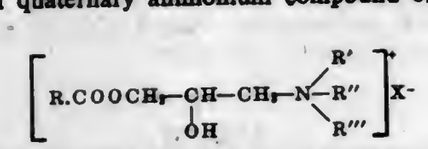
1. A quaternary ammonium compound of the formula:



wherein

(a) R represents a hydrocarbon group of 10 to 18 carbon atoms;
(b) R' and R'' are selected from the group consisting of alkyl groups of 1 to 4 carbon atoms, hydroxyalkyl groups of 1 to 4 carbon atoms, and together with the nitrogen atom form a morpholine, piperidine or pyrrolidine group;
(c) R''' is selected from a group consisting of alkyl groups of 1 to 4 carbon atoms, hydroxyalkyl groups of 1 to 4 carbon atoms and an alkylphenyl group;
(d) and X is an anion.

10. A hair shampoo preparation which consists essentially of a quaternary ammonium compound of the formula:



wherein

(a) R represents a hydrocarbon group of 10 to 18 carbon atoms;
(b) R' and R'' are selected from the group consisting of alkyl groups of 1 to 4 carbon atoms, hydroxyalkyl groups of 1 to 4 carbon atoms, and together with the nitrogen atom form a morpholine, piperidine or pyrrolidine group;
(c) R''' is selected from a group consisting of alkyl groups of 1 to 4 carbon atoms, hydroxyalkyl groups of 1 to 4 carbon atoms and an alkylphenyl group;
(d) and X is an anion, together with an inert carrier.

3,272,713
ACTINIC RADIATION PROTECTION BY COMPOSITIONS COMPRISING QUINONES AND CARBONYL CONTAINING COMPOUNDS
Walter J. Runge, St. Paul, Minn., assignor to The Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota
No Drawing. Filed June 15, 1962, Ser. No. 202,674
16 Claims. (Cl. 167—90)

8. A method for protecting human skin from actinic radiation of wave length between about 2900 and 26,850 angstroms which comprises applying to the skin a dissolved mixture of a quinone selected from the class consisting of alpha and beta tautomers of 1,4-benzo- and 1,4-naphtho-quinones and a carbonyl containing compound selected from the class consisting of dihydroxyacetone, 5-(hydroxymethyl)-2-furaldehyde, pyruvic aldehyde, glyceraldehyde, alloxan and monohydroxyacetone, said quinone and carbonyl containing compound being dissolved in a mutual non-irritating organic solvent.

3,272,714
METHOD OF PRODUCING RIBONUCLEIC ACID
Kiyoshi Watanabe, Takasago, Japan, assignor to Kanegafuchi Chemical Industry Company, Limited, Osaka, Japan, a corporation of Japan
No Drawing. Filed Dec. 9, 1963, Ser. No. 329,305
Claims priority, application Japan, July 2, 1963, 34,835
1 Claim. (Cl. 195—28)

A process for producing yeast ribonucleic acid which comprises culturing a yeast in an aqueous nutrient medium under aerobic conditions wherein the oxygen absorption coefficient is at least 10×10^{-6}, the aqueous nutrient medium being artifically supplemented by zinc ion at a concentration of at least 0.25 p.p.m. and having a phosphate ion concentration of at least 0.15% by weight, and extracting and recovering ribonuclei acid from the yeast.

3,272,715
METHOD FOR PRODUCING AND RECOVERING 6-AMINOPENICILLANIC ACID
Norman H. Grant, Wynnewood, and Harvey E. Alburn, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 17, 1962, Ser. No. 210,575
5 Claims. (Cl. 195—36)

1. The process of converting penicillin in an aqueous medium to 6-aminopenicillanic acid and recovering the latter from said medium, which process comprises:
(A) preparing an aqueous slightly alkaline mixture including penicillin and resuspended cells of a micro-organism that produces amidase capable of cleaving the penicillin at C_6, said micro-organism being selected from the group consisting of *Alcaligenes faecalis*, *E. coli* and *Fusarium equiseti*;
(B) thereafter, incubating said mixture for a period sufficient to cause formation of 6-aminopenicillanic acid; and
(C) then processing said incubated mixture by (1) removing said cells therefrom, (2) adjusting the pH thereof to the range 1.5–3.0, (3) extracting therefrom a compound resulting from the hydrolysis of the acyl side chain of said penicillin, (4) adjusting the pH thereof to the range 3.0–5.0, and (5) concentrating from 10 to 100 fold to crystallize 6-aminopenicillanic acid therefrom.

3,272,716
MICROBIAL OXIDATION OF NAPHTHALENE TO SALICYLIC ACID IN THE PRESENCE OF AN ALUMINUM COMPOUND
Mayer B. Goren, Golden, Colo., and James E. Zajic and William J. Dunlap, Oklahoma City, Okla., assignors to Kerr-McGee Oil Industries, Inc., a corporation of Delaware
No Drawing. Filed Oct. 24, 1963, Ser. No. 318,499
15 Claims. (Cl. 195—51)

1. A process for preparing salicylic acid comprising cultivating a microorganism capable of oxidizing naphthalene to salicylic acid of the genus Pseudomonas in an aqueous nutrient medium containing naphthalene and an added aluminum compound to thereby microbiologically oxidize the naphthalene to salicylic acid.

3,272,717
PROCESS FOR PREPARING THERMALLY STABLE AMYLASE COMPOSITION
Juichiro Fukumoto, 4–227 Kirihata, Aza-Nagoyama, Takarazuka, Japan, and Hideo Negoro, 549–38 Tarumi, Suita, Japan
No Drawing. Filed Jan. 27, 1964, Ser. No. 340,549
Claims priority, application Japan, Jan. 26, 1963, 38/3,827
2 Claims. (Cl. 195—68)

1. A process for preparing thermally stable amylase composition, which comprises mixing starch-liquefying amylase produced by a strain of mesophilic, aerobic bacteria, with a cationic surface active agent in an aqueous medium at a pH of 6.0–6.5, filtering the treated mixture, adding an organic solvent and starch successively to the thus-formed amylase complex contained in the filtrate, filtering the precipitate, and drying it.

3,272,718
MALTING OF BARLEY AND OTHER CEREALS
Alan A. Douglas Comrie, Manchester, and Bernard Dixon, Greygates, Harpenden, England, assignors to The Enzymic Malt Company Limited and the Dixon Malt Company Limited, both of London, England
No Drawing. Filed Aug. 24, 1962, Ser. No. 219,111
8 Claims. (Cl. 195—70)

1. A method of malting cereal, which comprises steeping grain at a temperature of 22° C. to 50° C. for periods of from one to 32 hours, the length of period varying approximately inversely as the temperature, the steep preferably being aerated for at least part of the period and the temperature being optionally varied in the course of the steep, draining away the steep water and subjecting the grain to a germination period of 20 to 72 hours at a temperature of 12° C. to 30° C.; and subjecting the grain after germination and during a modification phase to anaerobic treatment by displacing the atmosphere surrounding the grain by an inert non-toxic substance from the group consisting of water, carbon dioxide, and nitrogen for a period of 1 to 48 hours at a temperature of up to 40° C.

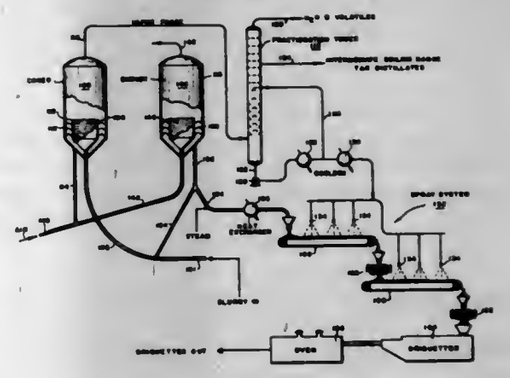
3,272,719
METHOD AND APPARATUS FOR DETERMINING THE SENSITIVITY OF BODY FLUID INFECTANTS TO DRUGS
Souren Avakian, Westport, Conn., assignor to The Denver Chemical Manufacturing Company, Stamford, Conn., a corporation of Colorado
Filed Aug. 6, 1964, Ser. No. 387,933
8 Claims. (Cl. 195—103.5)



1. A method for determining the sensitivity of pathogens in infected body fluids to the action of various drugs in varied concentrations simultaneously which comprises providing a container made of a flat plate having a plurality of adjacent isolated open top compartments, each compartment containing sterile nutrients and different known concentrations of a drug under test, saturating a narrow elongated strip of bibulous material with a sample of said infected fluid, laying said saturated strip across a plurality of said compartments and at each compartment permitting said strip to sag into said nutrient, covering and incubating the treated container, and after incubation counting the bacterial colonies in each compartment.

4. A kit for determining the sensitivity of pathogens in infected body fluids to the action of various drugs which apparatus comprises a flat plate provided on its upper surface with a series of adjacent compartments containing a pool of bacterial nutrient, a flat cover therefor and a plurality of elongated flexible bibulous strips, said compartments being separated by partition walls, and retaining means on walls between adjacent compartments adapted to receive and prevent inadvertent sideways displacement of said strips when laid across said compartments.

3,272,720
COKING PROCESS
Nick P. Peet, Houston, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 267,674
4 Claims. (Cl. 201—5)



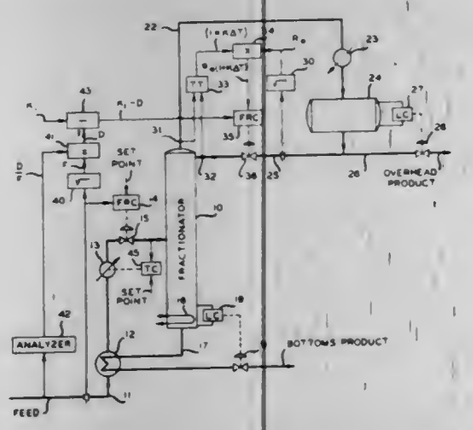
1. A method of producing coke briquettes from a water slurry of finely divided coal, said slurry containing from 50 to 70 weight percent of coal having a particle size distribution within the range of 325 mesh to 8 mesh, U.S. Standard, which comprises

contacting said slurry in a coking zone with a hot coke stream to form an admixture of coal particles and steam at a coking temperature within the range of 900° F. to 1100° F., maintaining said admixture at said coking temperature for a time sufficient to drive off substantially all of the water and carbonaceous material and reduce said coal to coke,
separating said carbonaceous material from said coke,
contacting said coke in a burning zone with a stoichiometric deficiency of oxygen at a temperature of 1200° F. to 1600° F. to consume from 3 to 10 weight percent of said coke,
withdrawing said coke from said burning zone as a hot coke stream,
recycling a first portion of said hot coke stream into contact with said slurry in said coking zone,
cooling a second portion of said hot coke stream to 250° F.to 350° F. to obtain a coke product stream,
admixing said coke product stream with a portion of said carbonaceous materials to obtain a briquetting charge stream,
and forming briquettes from said charge stream.

3,272,721
PROCESS FOR DESULFURIZING AND COKING HIGH SULFUR CONTENT COAL
Hirsch Loevenstein, Los Angeles, Calif., assignor to Harvey Aluminum Incorporated, Torrance, Calif., a corporation of California
No Drawing. Filed Nov. 21, 1963, Ser. No. 325,450
10 Claims. (Cl. 201—36)

1. A coking process comprising heating coal which contains a substantial amount of sulfur and at least 3% volatiles wherein said coal is continuously heated at gradually increasing temperature levels varying from about 500° C. to about 800° C., the coal not having been previously ground to a finely subdivided state and having a particle size of at least 5 millimeters, said heating being performed over a period of at least two hours during which time at least 2% volatiles are retained in the coal and whereby a substantial amount of sulfur is removed, and then heating said desulfurized coal at a temperature above about 800° C. for a time sufficient to produce coke therefrom.

3,272,722
FRACTIONAL DISTILLATION PROCESS AND SYSTEM CONTROL FOR MAXIMUM VAPOR LOAD
Harry L. Walker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 18, 1962, Ser. No. 188,413
8 Claims. (Cl. 203—2)



8. In a fractionation process wherein a fluid mixture to be separated is introduced into a fractionation zone, a kettle product stream is withdrawn from the lower region of said zone, a vapor stream is withdrawn from the upper region of said zone, said vapor stream is cooled to condense same, a potion of the resulting condensate is returned to said zone as external reflux, and the remainder of said condensate is removed as an overhead product stream; a method of controlling the reflux to be employed in said zone to permit a maximum vapor load which comprises establishing a first signal F which is representative of the flow of the fluid mixture to said zone; measuring the composition of the feed mixture and establishing a second signal which is representative of the quantity (D/F), where (D/F) is the volume percent in the fluid mixture of the components therein to be removed from said zone as said overhead product stream; multiplying the second signal by the first signal to establish a product signal D; subtracting the product signal D from a reference signal K_1 to establish a control signal which is representative of the maximum vapor load capacity of said zone which does not result in flooding; and adjusting the rate of flow of said external reflux in response to said control signal.

3,272,723
PURIFICATION OF XYLENES FROM STYRENE BY DISTILLATION IN THE PRESENCE OF COMBINED AZEOTROPING AGENT AND SOLVENT ADDITIVE
Loyd W. Fannin, Bridgeton, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Oct. 24, 1962, Ser. No. 232,858
8 Claims. (Cl. 203—51)

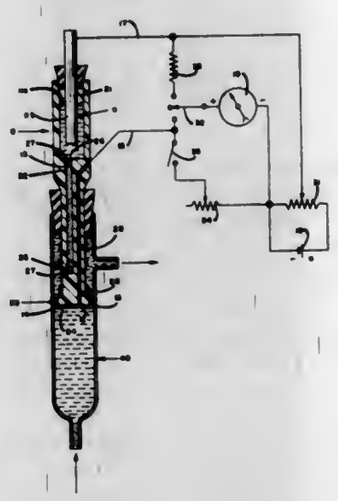
1. A process for the separation of an aromatic hydrocarbon mixture containing vinyl aromatic hydrocarbons and alkyl aromatic hydrocarbons which comprises subjecting such aromatic hydrocarbon mixture to distillation in the presence of a solvent comprised of an organic salt of a metal from Group II–B of the periodic table and an acyclic aliphatic acid of less than 5 carbon atoms, recovering from said distillation an overhead distillate containing said acyclic aliphatic acid and an alkyl aromatic hydrocarbon fraction substantially richer in alkyl aromatic hydrocarbons than the original aromatic hydrocarbon mixture, and recovering a bottoms containing said organic salt of a metal from Group II–B of the periodic table and a vinyl aromatic hydrocarbon fraction substantially richer in vinyl aromatic hydrocarbons than said original aromatic hydrocarbon mixture.

3,272,724
PROCESS FOR THE RECOVERY OF HEXAHYDROAZEPINE
George W. Rigby, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 7, 1963, Ser. No. 263,437
1 Claim. (Cl. 203—81)

A process for the recovery of hexahydroazepine from a waste stream mixture of about 3 to 45% by weight hexahydroazepine, 5 to 40% by weight ammonia, 9 to 92% by weight water, and 1 to 10% by weight based on the weight of hexahydroazepine of impurities selected from the group consisting of hexamethylenediamine, hexylamine, piperidine, pyrrolidine, N-methylpyrrolidine and their mixtures by the steps of:
(1) stripping off ammonia by distillation;
(2) distilling overhead a 50/50 azeotrope of hexahydroazepine and water;
(3) condensing the overhead stream;
(4) separating the condensate into two phases one of which is rich in hexahydroazepine, by heating to a temperature of about 90 to 95° C.;
(5) removing the hexahydroazepine rich phase;

(6) distilling off a 50/50 azeotrope of hexahydroazepine and water from the hexahydroazepine rich phase leaving behind substantially 100% pure hexahydroazepine.

3,272,725
METHOD OF ELECTROLYTICALLY TESTING OXYGEN CONCENTRATION
Arthur W. Garst, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 8, 1963, Ser. No. 278,965
5 Claims. (Cl. 204—1)

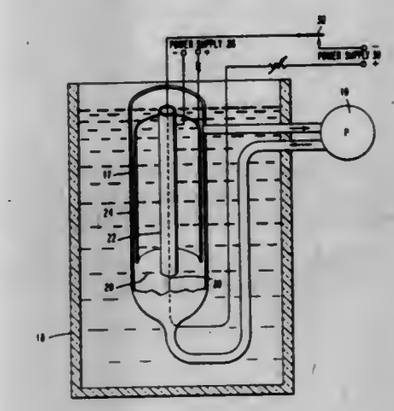


1. In a method for measuring the oxygen concentration in a fluid in which method a sensing electrode is exposed to said fluid and the electrical current between said sensing electrode and a reference electrode is measured as an indication of oxygen concentration in said fluid, the improvement comprising:
employing as said sensing electrode a metal in an electrolyte surrounded by a membrane permeable to oxygen, said electrolyte being an alkaline aqueous solution of ammonium chloride and said metal being inert to said electrolyte,
and employing as said reference electrode carbon in an electrolyte which is an aqueous solution of a sulfur-containing salt selected from the group consisting of alkali metal thiosulfates and alkali metal sulfites.

3,272,726
PRODUCTION OF URANIUM
Allan Robert Gibson, Harwell, and Ronald George Avery, Oxford, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed May 3, 1963, Ser. No. 277,894
Claims priority, application Great Britain, May 10, 1962, 18,109/62
13 Claims. (Cl. 204—1.5)

1. A method for the production of a uranium containing material selected from the group consisting of uranium metal and alloys of uranium comprising the steps of suspending particles of uranium dioxide in an electrolyte consisting essentially of a molten alkaline earth metal chloride, effecting electrolysis in an electrolysis cell containing an anode and a metal cathode which are both unreactive with respect to the molten chloride, and maintaining the temperature of the molten chloride below the melting point of uranium.

3,272,727
PROCESS FOR ELECTROPLATING MAGNETIC ALLOY ONTO A PLATINIZED CHROMIUM SUBSTRATE
Arnold F. Schmeckenbecher, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 23, 1962, Ser. No. 218,875
5 Claims. (Cl. 204—29)



1. A method of fabricating bistable magnetic films having high speed magnetic switching characteristics comprising:
treating a chromium substrate layer with a solution containing from 0.001 to 10 percent by weight of chloroplatinic acid for a time of less than about 30 minutes to produce a thin film of platinum over said substrate layer;
and electroplating a magnetic nickel-iron alloy film having a thickness of thousands of Angstrom units over said chromium layer while applying a uniaxial orienting magnetic field at the surface of said chromium layer.

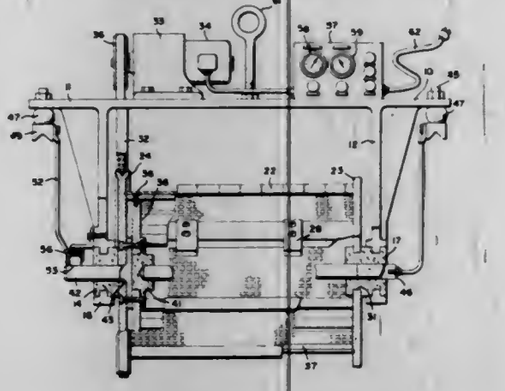
3,272,728
METHOD OF PRODUCING ACTIVATED ELECTRODES
Axel Hahndorff, Berlin-Siemensstadt, and Günther Barthel, Berlin-Grunewald, Germany, assignors to Pintsch Bamag Aktiengesellschaft, Berlin, Germany
No Drawing. Filed Oct. 3, 1961, Ser. No. 142,532
Claims priority, application Germany, Oct. 7, 1960, P 25,800
5 Claims. (Cl. 204—35)

1. In a method of producing electrodes for use in electrolytic cells, the steps of galvanically applying to at least a portion of the surface of a metallic electrode core as a metallic surface layer an alloy consisting essentially of a first component capable of reducing over-voltage at said electrode, and of a further component adapted to be at least partially dissolved so as to activate said surface layer by such at least partial dissolution of said second component; and dissolving at least a portion of said second component substantially without affecting said first component, thereby activating the thus applied metallic surface layer.

3,272,729
METHOD OF ELECTROPOLISHING SMALL METAL OBJECTS
John F. Jumer, 16 W. 131 Timber Trails Drive, Elmhurst, Ill.
Filed Apr. 10, 1963, Ser. No. 272,043
4 Claims. (Cl. 204—140.5)

1. The method of enhancing the uniformity of lustre of small metal objects capable of being electropolished in an electrolytic bath which includes the steps of arranging a plurality of said objects in contact with each other in a relatively thin generally rectangular zone in an elec-

tropolishing electrolytic bath, maintaining said objects motionless while passing electrical current from said parts to a cathode spaced from said zone, thereby forming a gas film on the surfaces of the parts exposed directly to said cathode, maintaining said objects motionless until said gas film consists of a multiplicity of bubbles of ir-



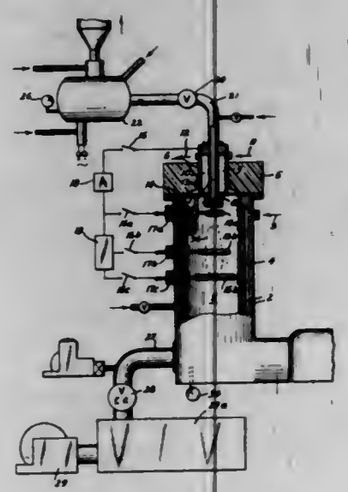
regular size, then destroying said film by tumbling said objects within said zone and thereby exposing a substantially bubble free surface to the cathode, and periodically repeating said steps of holding said objects motionless and tumbling said objects to destroy a film of bubbles of irregular size while continuing the passage of electrical current between the parts and the cathode.

3,272,730

PROCESS OF PREPARING HYDRAZINE-AMMONIA ADDITION COMPOUNDS

Bernhard Berghaus, Zurich, and Maria Staesche, Wettingen, Aargau, Switzerland, assignors to Elektrophysikalische Anstalt Bernhard Berghaus, Vaduz, Liechtenstein, a corporation of Liechtenstein

Filed Aug. 24, 1964, Ser. No. 391,387
13 Claims. (Cl. 204—177)



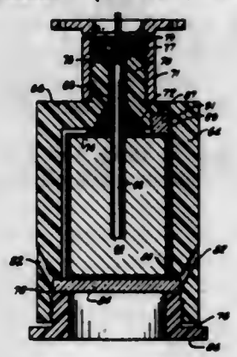
1. A process for the production of addition compounds of hydrazine and ammonia comprising subjecting a gas selected from the group consisting of (1) ammonia and (2) at least two gases of the group consisting of ammonia gas, nitrogen and hydrogen to an electric glow discharge in the form of a jet discharge to form a reaction mixture containing addition compounds of hydrazine and ammonia and removing the formed reaction mixture rapidly from said discharge zone.

3,272,731

EROSION RESISTANT REFERENCE ELECTRODE ASSEMBLY

Merle Hutchison and William P. Banks, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

Filed Feb. 25, 1963, Ser. No. 260,703
10 Claims. (Cl. 204—195)



1. A shield for protecting a reference electrode from the erosive influence of an agitated liquid in which said electrode is immersed comprising:

(a) a reference electrode;

(b) a tubular container dimensioned to closely surround said electrode and having an open lower end and a closed upper end, said closed upper end having an aperture therein facilitating passage therethrough of an electrical lead connected to said electrode;

(c) a liquid permeable member sealingly positioned across the open lower end of said tubular container for supporting the reference electrode in said tubular container; and

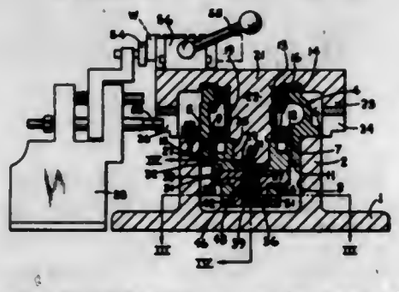
(d) passage means extending outwardly through the wall of said tubular container and only communicating with the periphery of said liquid permeable member to permit gas to escape from said permeable member when said electrode is in operational position.

3,272,732

WORK HOLDING DEVICE

Richard R. Faulkner, Kalamazoo Township, Kalamazoo County, Mich., assignor to Hammond Machinery Builders, Inc., Kalamazoo, Mich., a corporation of Michigan

Filed Dec. 13, 1961, Ser. No. 158,961
8 Claims. (Cl. 204—297)



1. In a working holding device for use with electroerosion apparatus, the combination comprising:

a generally circular table having a depending peripheral skirt and a plurality of notches in said skirt;

a central post supporting said table;

a base having a hollow boss upstanding therefrom and means supported at the upper end of said hollow boss for rotatably engaging and supporting said table;

a generally cup-shaped, upwardly opening upper brush plate snugly embracing and fixed to the lower end of said post and having a substantially planar, lower electrical transfer surface arranged substantially perpendicularly to the axis of said post, said lower surface being located below and underlying the lower end of said post and being of an area greater than the area of the lower end of said post;

a bus bar affixed rigidly with respect to said base and having an opening therethrough;

a lower brush plate having a stem portion extending through said opening and arranged in non-rotatable relationship with respect thereto, said lower brush plate having at its upper end a substantially planar electrical transfer surface, said last-named surface being similar in size and shape, and being in contact with, said first-named electrical transfer surface;

means resiliently urging said lower brush plate against said upper brush plate for urging said electrical transfer surfaces resiliently together;

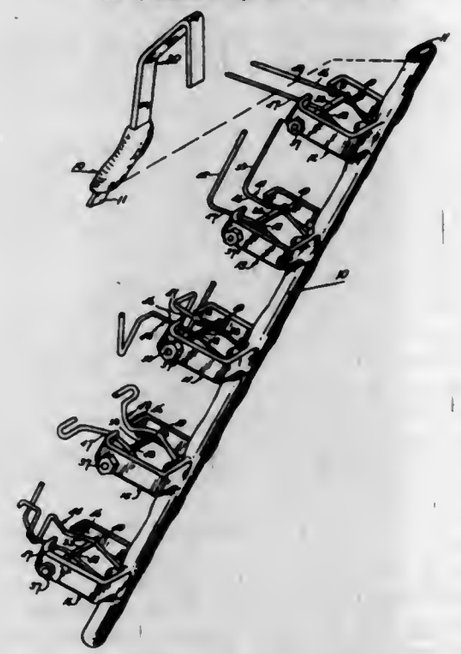
whereby the only respectively movable surfaces through which electrical current is transferred from one body to another are of large area and capable of a conforming in a snug area contact with respect to each other.

3,272,733

ELECTROPLATING RACKS

William E. Belke, Chicago, Ill.; Lester L. Linquist and Ralph E. Belke, executors of said William E. Belke, deceased, assignors to Belke Manufacturing Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 15, 1963, Ser. No. 272,891
13 Claims. (Cl. 204—297)



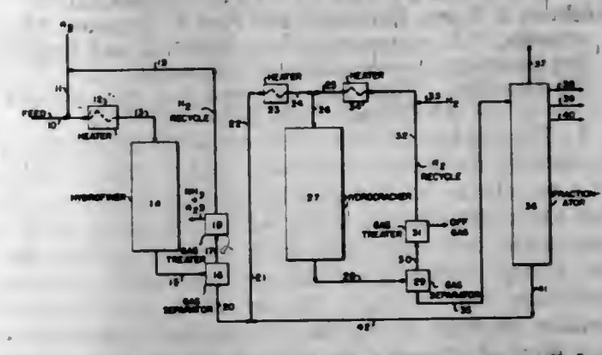
1. An electroplating rack assembly comprising a rack spine having a bare hook at its upper end and having an elongated vertical depending body provided on one side with an outwardly projecting U-shaped stirrup, said stirrup having a pair of forwardly projecting flanges, joined by a yoke, said yoke being secured to the front of said spine with its flanges extending horizontally from the vertical body, said yoke being secured to said spine by a pair of headed members extending through the yoke and spine and having the heads of said bevelled members located on the inner side of the yoke between the flanges thereof, said flanges being turned inward toward each other and having an upwardly bevelled end surface, the said spine and its attachments being covered overall with an initially plastic insulating compound, except at the upper bare hook, the said stirrup having its flanges provided with a pair of aligned bores exposing bare metal in said bores and the bores receiving an electrically conducting threaded bolt, and a quickly attachable finger unit adapted to support and conduct current between the spine and articles to be electroplated, comprising a resilient bendable wire having a U-shaped body with a pair of legs projecting outwardly from a joining yoke, said yoke being engaged below the shoulders formed by said heads and the legs passing over the said bolt and the said legs being sprung together manually and pressed downward until the legs are located below said upwardly bevelled end surface on each flange, the legs springing outwardly under the bevelled end surfaces and pressing against the ends of the flanges to be retained on the spine in good electrical conduction therewith.

3,272,734

HYDROFINING AND HYDROCRACKING PROCESS

Donald D. MacLaren, Plainfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Aug. 23, 1963, Ser. No. 304,163
13 Claims. (Cl. 208—110)



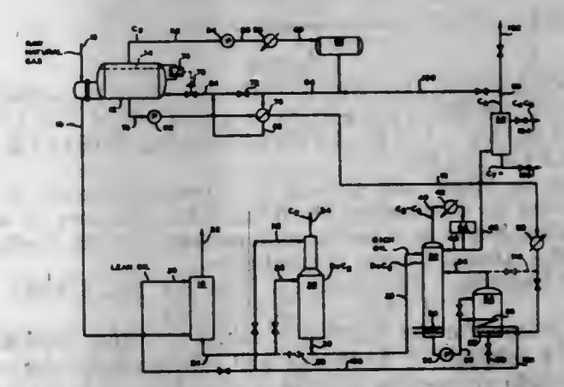
1. A process for hydrocracking a hydrocarbon oil feed having a nitrogen content within the range of about 28 to about 200 parts per million comprising contacting said feed in the presence of hydrogen with a hydrocracking catalyst comprising a crystalline alumino-silicate zeolite composited with a platinum group metal, said zeolite having pore openings of about 6 to about 15 Angstrom units and containing less than about 10 wt. percent alkali metal oxide, at hydrocracking conditions sufficient to obtain the desired conversion to lower boiling product.

3,272,735

OIL REMOVAL FROM LIQUID REFRIGERANT

Julius E. Schneider, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 3, 1964, Ser. No. 342,151
9 Claims. (Cl. 208—341)



1. A process for recovering gasoline boiling range hydrocarbons from natural gas comprising the steps:

(1) cooling a raw natural gas stream in an indirect heat exchanger with liquid propane as a refrigerant wherein propane is vaporized, compressed, cooled, and pumped back into the heat exchanger with a

minor amount of oil impurities picked up from the equipment;

(2) contacting the cooled natural gas from step (1) with lean oil absorbent to recover a rich oil stream containing hydrocarbons in the gasoline boiling range and C_2 and C_3 hydrocarbons in minor proportions;

(3) passing the rich oil from step (2) to a dehexanizer and recovering C_6 and lighter hydrocarbons as an overhead stream and hot lean oil as a bottoms stream; and

(4) withdrawing a minor stream of liquid propane containing oil impurities from the bottom of the heat exchanger of step (1), heating same, and passing the heated propane in vapor form into the dehexanizer of step (3) to separate said oil impurities therefrom and recover the propane in the overhead hydrocarbons.

3,272,736

METHOD OF PREVENTING CORROSION

Anthony J. Petro, Elizabeth, and Paul E. Krystow, Mountainside, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 23, 1964, Ser. No. 384,804
15 Claims. (Cl. 208—348)

1. The process of claim 1 wherein the distillation is a in metallic distillation equipment used for the distillation of a petroleum fraction said fraction containing an alkaline earth chloride and water which comprises admixing ammonium carbonate and a base, said base selected from the group consisting of sodium hydroxide, potassium hydroxide and mixtures thereof, with said petroleum fraction prior to raising the temperature of said fraction to a level of at least about 200° F. and thereby avoiding hydrolysis of the alkaline earth chlorides and thereafter distilling said petroleum fraction.

3,272,737

SEPARATION OF ACIDS BY DIALYSIS WITH ANION-EXCHANGE MEMBRANES

Robert D. Hansen and Robert M. Wheaton, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,381
6 Claims. (Cl. 210—22)

1. In a dialysis process for separating low molecular weight acids in aqueous solution, the improvement which comprises using an anion-exchange membrane as the dialysis membrane to separate a strong acid having an ionization constant less than 1.0×10^{-3} from a weak acid having an ionization constant greater than 1.0×10^{-3}.

3,272,738

PROCESS FOR THE REMOVAL OF METAL CORROSION PRODUCTS FROM A SOLUTION OF HYDRAZINE AND ETHYLENEDIAMINETETRAACETIC ACID

Edgar C. Pitzer and George R. Fountain, Scotia, and Joseph R. Ciaranello, De Witt, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed June 17, 1964, Ser. No. 375,983
1 Claim. (Cl. 210—51)

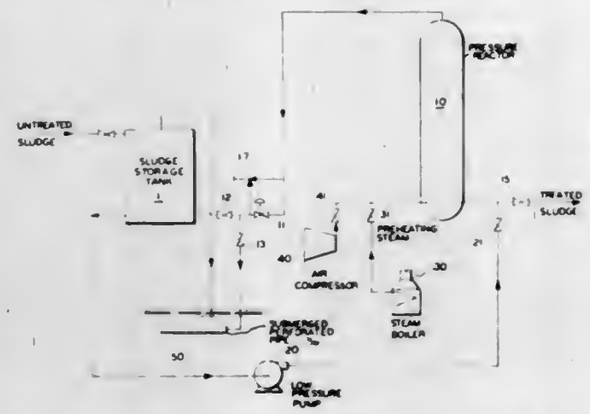
A process for the removal of metal corrosion products from a solution of hydrazine and ethylenediaminetetraacetic acid comprising acidifying a solution of hydrazine and ethylenediaminetetraacetic acid containing corrosion products from the group consisting of iron, nickel, cobalt, and manganese to a pH in the range of 1.0 to 1.5 by the addition of sulfuric acid, adding a solution of potassium ferrocyanide in an excess of 10 mole percent of the stoichiometric amount of said corrosion products to said hydrazine and ethylenediaminetetraacetic acid solution whereupon a precipitate is formed, centrifuging the precipitate containing solution and separating the clear hydrazine and ethylenediaminetetraacetic acid solution from the precipitate.

3,272,739

SEWAGE TREATMENT PROCESS

John S. Earle, Ringle, Eugene W. Schoeffel, Mosinee, and Frederick J. Zimmermann, Wausau, Wis., assignors to Sterling Drug, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 13, 1964, Ser. No. 410,962
9 Claims. (Cl. 210—63)



1. A cyclic process for treating sewage sludge to reduce its specific resistance to filtration and the moisture-holding capacity of the insoluble solids thereof which comprises the successive steps of

(a) heating a portion of sludge pre-heated as in step (e) under pressure in a heating zone insulated against heat loss and adapted to pressurized operation to a selected temperature between 100–225° C. by direct contact with a stream of a hot gas;

(b) discontinuing heating of the sludge;

(c) maintaining the heated sludge under pressure in the heated zone for at least one hour at a temperature above 100° C. while passing gaseous oxygen through the heated sludge during at least the terminal portion of the time during which the sludge is maintained under pressure in the heated zone until the specific resistance to filtration of the sludge in $sec.^2/g.\times10^7$ is reduced to less than 250;

(d) reducing at least partially the pressure in the heating zone,

(e) venting at least a portion of the hot gases thus released through a second portion of sewage sludge, thereby directly heating the second portion of sludge;

(f) discharging the portion of sludge from the pressurized heating zone;

(g) repeating steps (b) through (f) with the second portion of pre-heated sludge.

3,272,740

SEWAGE SLUDGE TREATMENT PROCESS

Wayne B. Gitchel and Clarence A. Hoffman, Rothschild, and Eugene W. Schoeffel, Kronenwetter, Wis., assignors to Sterling Drug, Inc., New York, N.Y., a corporation of Delaware

Filed June 24, 1964, Ser. No. 377,694
3 Claims. (Cl. 210—63)

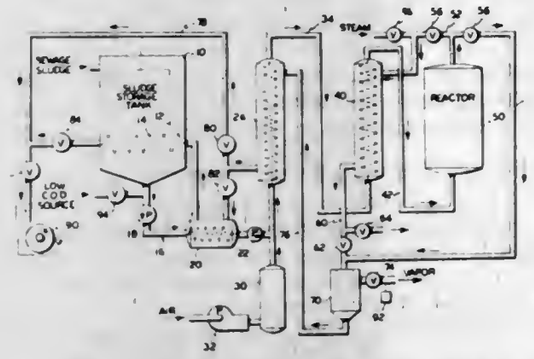
1. A continuous process for producing from sewage sludge innocuous, substantially odor-free, cured organic sludge having optimum processing characteristics which comprises the steps of

(a) continuously mixing a substantially constant volume of sewage sludge with a substantially constant volume of air in a selected proportion which supplies

to the mixture an amount of gaseous oxygen capable of reducing by more than 5 percent the C.O.D. of the sludge by oxidation, to produce a mixture having a gaseous and a liquid phase;

(b) continuously heating a stream of the resultant mixture to a temperature above about 170° C. under conditions capable of consuming all the oxygen in the mixture;

(c) heating the mixture for a period of time which reduces the C.O.D. of the sludge by between 5 percent and 45 percent and which maintains between about 0.5 percent and 6.5 percent gaseous oxygen content in the gaseous phase of the oxidized mixture, thereby



producing a cured innocuous fibrous sludge having lower specific resistance to filtration and a higher settling rate and whose insoluble solids have lower water holding capacity, compared with the starting sludge;

(d) continuously separating the gaseous phase from the liquid phase of the oxidized mixture; and

(e) maintaining substantially constant the amount of gaseous oxygen consumed by adjusting the temperature to which the mixture is heated in a manner which is directly proportional to variations from the average in the gaseous oxygen content of the gaseous phase obtained from the oxidation, thereby maintaining the sludge at all times in the presence of gaseous oxygen during the wet air oxidation.

3,272,741

WELL COMPLETION OR WORKOVER FLUID

John S. Brukner, Houston, and Charles C. Nathan, Bellaire, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 29, 1962, Ser. No. 183,361
11 Claims. (Cl. 252—8.55)

1. A heat stable well completion or workover fluid consisting essentially of an aqueous brine solution having dissolved therein a compatible water soluble inorganic compound selected from the group consisting of a water soluble, chromate, a water soluble polychromate and mixtures thereof, said compound being present in an amount of at least about 15 percent by weight of the solution and to provide a fluid having a density between about 9 and 21 lbs. per gallon.

3,272,742

COATED ADSORBENTS AS TREATING AGENTS FOR MINERAL OILS

Arthur T. Polishuk, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed June 25, 1963, Ser. No. 290,344
8 Claims. (Cl. 252—28)

1. In the treatment of a body of mineral oil with a solid adsorbent to remove water which body of mineral oil contains an additive that would normally be removed by said solid adsorbent during said treatment, the improvement which comprises completely coating said solid adsorbent with a hydroscopic, water-soluble, mineral oil-insoluble material and utilizing the coated solid adsorbent in said system as said solid adsorbent.

3,272,743

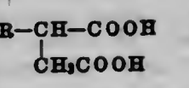
LUBRICANTS CONTAINING METAL-FREE DISPERSANTS AND METALLIC DISPERSANTS

George R. Norman, Lyndhurst, and William M. Le Suer, Cleveland, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

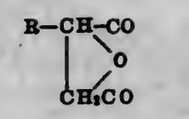
No Drawing. Filed Aug. 5, 1964, Ser. No. 387,757
12 Claims. (Cl. 252—32.5)

1. A lubricating composition consisting essentially of a major proportion of a lubricating oil and

(a) from about 0.1 to about 10 percent by weight of an oil-soluble acylated amine prepared by the process which comprises mixing one equivalent of a substituted succinic compound selected from the class consisting of substituted succinic acids having the structural formula



and substituted succinic anhydrides having the structural formula



in which structural formulas R is a radical selected from the class consisting of large aliphatic hydrocarbon radicals having at least about 50 carbon atoms with at least about one-half an equivalent amount of an alkylene polyamine, and heating the resulting mixture, at a temperature above about 80° C. to effect acylation and remove the water formed thereby, and

(b) from about 0.05 to about 5.0 percent by weight as sulfate ash of an oil-soluble dispersant selected from the class consisting of alkaline earth metal petroleum sulfonates, alkaline earth metal alkyl-aromatic sulfonates, alkaline earth metal alkyl phenates and alkaline earth metal salts of phosphorus acids prepared from polymers of olefins having 2–30 carbon atoms said polymer having a molecular weight of at least about 750.

3,272,744

LUBRICANTS CONTAINING ALKYLENE OXIDE REACTION PRODUCTS

Elmer E. Schallenberg, Fishkill, and Roger G. Lacoste, Hopewell Junction, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 27, 1964, Ser. No. 407,285
15 Claims. (Cl. 252—32.7)

15. A lubricating composition comprising a lubricating oil as the major component, 0.2–10.0 weight percent of an additive selected from the group consisting of monohydroxyalkyl hydrocarbyl thiophosphonate and a mixture of said thiophosphonate and the corresponding monohydroxyalkyl hydrocarbyl phosphonate, said monohydroxyalkyl hydrocarbyl thiophosphonate having the general formula:

wherein R is a monovalent hydrocarbyl radical containing at least 12 carbon atoms, R' and R'' are selected from the group consisting of hydrogen and monovalent aliphatic hydrocarbyl radicals containing 1–6 carbon atoms, and X is sulfur, an alkaline earth metal alkyl phenolate in a concentration between 0.1 and 5.0 weight percent, and a divalent metal alkyl dithiophosphate in a concentration between 0.1 and 3.0 weight percent, said mixture consisting of a major portion of said thiophosphonate and a minor portion of said phosphonate where X is oxygen.

3,272,745

GREASE COMPOSITION

James G. Dadura, Beacon, Norman R. Odell, Wappingers Falls, N.Y., and Paul A. Cantor, Covina, Calif., assignors to Texaco, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,549
7 Claims. (Cl. 252—33.6)

1. A grease composition comprising 51 to 90% by weight of a benzyl C_8–C_{10} branched chain azelate base oil thickened to a grease consistency with 10 to 49% by weight of a sodium salt of an acid selected from the group consisting of N-acyl p-aminobenzoic acid and N-acyl phthalamic acid, said acyl group containing from about 14 to 22 carbon atoms.

3,272,746

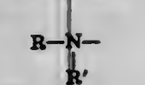
LUBRICATING COMPOSITION CONTAINING AN ACYLATED NITROGEN COMPOUND

William M. Le Suer, Cleveland, and George R. Norman, Lyndhurst, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 22, 1965, Ser. No. 509,172
18 Claims. (Cl. 252—47.5)

1. A composition comprising a major proportion of a lubricating oil and a minor proportion sufficient to impart detergency thereto of an oil-soluble acylated nitrogen compound characterized by the presence within its structure of (A) a substantially saturated hydrocarbon-substituted polar group selected from the class consisting of acyl, acylimidoyl, and acyloxy radicals wherein the substantially saturated hydrocarbon substituent contains at least about 50 aliphatic carbon atoms and (B) a nitrogen-containing group characterized by a nitrogen atom attached directly to said polar radical.

5. The composition of claim 1 wherein the nitrogen-containing group has the formula



wherein R and R' are selected from the group consisting of hydrogen, hydrocarbon, amino-substituted hydrocarbon, hydroxy-substituted hydrocarbon, alkoxy-substituted hydrocarbon, amino, carbamyl, thiocarbamyl, guanyl, and acylimidoyl radicals.

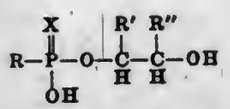
3,272,747

FIRE RESISTANT HYDRAULIC FLUID

William T. Shepherd, Port Arthur, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 12, 1963, Ser. No. 287,213
6 Claims. (Cl. 252—78)

1. A fire resistant water-in-oil emulsion suitable for use as a hydraulic fluid comprising from 60 to 40 volume percent of water and from 40 to 60 volume percent of an oleaginous blend containing a major portion of a mineral oil having a viscosity in the range from 50 to 300 SUS at 100° F., from 1 to 12 volume percent of a lipophilic emulsifying agent selected from the group consisting of a fatty acid partial ester of a 6 carbon polyhydric alcohol mono- and di-anhydride and mixtures thereof, 5 to 20 volume percent of a hydrophilic emulsifying agent based on said lipophilic emulsifying agent comprising an ethylene oxide C_{4-24} alkylphenol adduct in mode ratios of from 10:1 to 40:1, 0.05 to 2.5 volume percent of a concentrate of a mono-(hydroxyalkyl) hydrocarbyl thiophosphonate having the formula:



wherein R is a polyolefin radical having a molecular weight in the range from 250 to 50,000, R' and R'' are selected from the group consisting of hydrogen and a monovalent aliphatic hydrocarbyl radical having from 1 to 6 carbon atoms and X is selected from the group consisting of sulfur and a mixture of sulfur and oxygen, and a volatile corrosion inhibitor in an amount sufficient to inhibit corrosion in the liquid and vapor phases.

3,272,748

ETCHING OF SILICON AND GERMANIUM

Alfons H. Szkudlapski, Bethlehem, Pa., assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed June 29, 1964, Ser. No. 379,015
10 Claims. (Cl. 252—79.3)

1. The method of etching a surface of a semiconductive material selected from the group consisting of silicon and germanium, which comprises treating the surface with a solution containing nitric acid, hydrofluoric acid and iodine monobromide, the amount of iodine monobromide in said solution ranging from more than a trace to saturation.

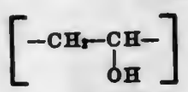
3,272,749

DRILLING MUD AND ADDITIVE THEREFOR

Robert A. Martin, Charleston, W. Va., assignor to Alco Chemical Corporation, Philadelphia, Pa., a corporation of Ohio

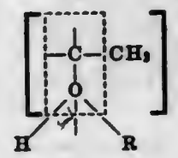
No Drawing. Filed Mar. 31, 1965, Ser. No. 444,433
11 Claims. (Cl. 252—8.5)

1. An improved aqueous drilling fluid comprising water, particulate solid material which forms a filter cake on the wall of a well, and a water-soluble graft polymer comprising a linear chain of vinyl alcohol units of the formula:



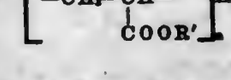
I

and reoccurring units of the formula:



II

in which R is the side chain graft polymerized onto said linear chain and is a radical having the formula



III

wherein R' is selected from the group consisting of Na, K, Li, NH_4, $R''NH_3$, R''_2NH_2, R''_3NH and R''_4N, and R'' is an alkyl group containing from 1 to 4 carbon atoms;

n is a positive integer from 25 to 1200, the ratio of the number of vinyl alcohol groups of Formula I to the number of groups of Formula II is in the range between 30:1 and 200:1, and the total number of vinyl alcohol groups of Formula I is in the range between 800 and 20,000; said polymer being present in an amount sufficient to reduce water loss through the filter cake without increasing the viscosity of said drilling fluid to prevent circulation thereof at elevated temperatures on the order of 350° F.

3,272,750

PROCESS AND COMPOSITION CONTAINING AN OXYGEN RELEASING COMPOUND AND AN ORGANIC CARBONATE

Basil Hugh Chase, Heswall, England, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed May 3, 1963, Ser. No. 277,721
Claims priority, application Great Britain, May 7, 1962, 17,379/62
11 Claims. (Cl. 252—99)

4. A composition for use in bleaching textile material consisting essentially of an inorganic per-salt selected from the group consisting of the alkali metal perborates, percarbonates, perpyrophosphates, and persilicates, and an ester selected from the class consisting of (a) esters of carbonic acid having the formula $R_1—O—CO—O—R_2$ wherein each of R_1 and R_2 is an organic radical, R_1 exerting an electron-attracting effect, and (b) diethyl pyrocarbonate, said esters having a titer in the per-acid formation test of not less than 1.0 ml. of 0.1 N $Na_2S_2O_3$, the hydrogen peroxide and ester being present in amounts sufficient to provide from about ¼ to about 2 molecules of ester per atom of available oxygen.

3,272,751

CLEANING AGENTS CONTAINING CYCLIC IMIDE ADDITION PRODUCTS

William J. Shibe, Jr., Riverton, N.J., and Marcus Sittenfield, Philadelphia, Pa., assignors to Hollichem Corporation, Camden, N.J., a corporation of New Jersey

No Drawing. Original application Mar. 20, 1962, Ser. No. 181,204, now Patent No. 3,223,711, dated Dec. 14, 1965. Divided and this application Aug. 18, 1965, Ser. No. 480,755
4 Claims. (Cl. 252—106)

1. A detergent composition consisting essentially of a a member of the group consisting of benzosulfimide, cleaning agent in an amount sufficient to effect a cleaning action, said cleaning agent being selected from the group consisting of soap and non-soap organic anionic detergents, in admixture with a biocidally effective amount of a product of the reaction of a haloamine and an aromatic cyclic imide wherein the halo-amine has the formula:

$$(R_2N)_nEX_{m-n}\cdot(n-1)X$$

where m is an integer from 3 to 4 and n is an integer from 1 to 4 when m is 4 and is an integer from 1 to 3 when m is 3, where at least one R attached to each nitrogen atom is attached thereto by means of a terminal carbon atom and is selected from the group consisting of alkyl, alkenyl, alkadienyl, hydroxyalkyl and alkyl benzyl, the straight chains of which have from 4 to 22 carbon atoms, and lower polyoxyalkylene having a total of 4 to 22 carbon atoms, any remaining R's being selected from the group consisting of hydrogen, alkyl radicals having from 1 to 5 carbon atoms, phenyl and benzyl, where E is selected from the group consisting of zinc, copper, cobalt, magnesium, manganese, aluminum, boron phthalimide, naphthalimide, benzoxazoline, benzothiazo- and iron, and where X is a halide, the cyclic imide being linone, and their lower alkyl, halo and methoxy analogs.

3,272,752

METHOD OF PRODUCING DETERGENTS

Gerhard Hartlapp, Knapsack, near Cologne, and Waldemar Bielenberg, Cologne-Klettenberg, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Mar. 6, 1962, Ser. No. 177,759
Claims priority, application Germany, Mar. 7, 1961, K 43,106
6 Claims. (Cl. 252—135)

1. In the method of producing detergent compositions consisting essentially of alkali metal triphosphates selected from the group consisting of sodium tripolyphosphate and potassium tripolyphosphates, and other conventional detergent components from an aqueous slurry containing the alkali metal triphosphates and at least a part of said other detergent components, the improvement which comprises adding to the slurry 0.1 to 2.0% by weight of a calcium salt which ionizes substantially complete in the slurry, the amount of the calcium salt being calculated on the amount of alkali metal triphosphate present in the slurry, and spray-drying the resulting mixture.

3,272,753

DETERGENT LIQUID

Harold Eugene Wixon, New Brunswick, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 13, 1965, Ser. No. 425,331
9 Claims. (Cl. 252—137)

2. A liquid detergent composition substantially free from inorganic polyphosphate salts consisting essentially of about 7 to 22% by weight of alkali metal alkyl benzene sulfonate detergent having an alkyl group of 8 to 15 carbon atoms, about 12 to 20% by weight of sodium silicate solids having a sodium oxide to silica ratio from about 1:1 to 1:2, effective as an inorganic builder salt sufficient to exhibit heavy-duty detergency in combination therewith in the absence of said polyphosphates, about 5 to 12% by weight of an alkali metal organic hydrotropic salt selected from the group consisting of sodium and potassium xylene and toluene sulfonates, and the balance being primarily water, said detergent composition forming a pourable, homogeneous liquid composition having a total solids content up to about 52% by weight and a pH of at least about 11.

4. A liquid detergent composition in accordance with claim 2 which contains about 3 to 6% by weight of a higher fatty acid alkylolamide having 8 to 18 carbons in the acyl radical and 2 to 3 carbons in each alkylol group.

3,272,754

DRY CLEANING AGENTS FOR TEXTILE MATERIALS

Gaston Jaccard, Basel, Switzerland, assignor to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed July 9, 1962, Ser. No. 208,627
Claims priority, application Switzerland, Aug. 8, 1961, 9,300/61; Aug. 18, 1961, 9,675/61; Apr. 26, 1962, 5,030/62
18 Claims. (Cl. 252—161)

1. A dry cleaning solution with enhanced water absorbing capacity consisting essentially of a chlorinated hydrocarbon dry cleaning solvent having dissolved therein at least 0.25 grams per liter of said solvent of a mixture consisting of (a) an alkaline earth metal salt selected from the group consisting of calcium and magnesium of alkylarylsulfonic acid selected from the group consisting of alkylbenzene sulfonic acid and alkylnaphthalene sulfonic acid and (b) a surface active polyglycol ether wherein the lipophilic portion has from 12 to 18 carbon atoms and the hydrophilic portion has about 7 to 15 CH_2CH_2O— groups; the ratio of (a) to (b) being 1:2 to 2:1 by weight.

3,272,755

COMPOSITIONS OF POLYMERIC N-VINYL-ORGANIC COMPOUNDS AND PERCHLORIC ACID

Dimitry A. Shiraeff, Kutztown, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,338
8 Claims. (Cl. 252—187)

1. A stable aqueous gel of perchloric acid consisting essentially of perchloric acid of at least about 30% concentration in combination with a polymeric N-vinyl heterocyclic compound selected from the group consisting of polymers of N-vinyl lactams, polymeric N-vinyl oxazolidones, polymeric N-vinyl imidazoles, polymeric N-vinyl morpholones and copolymers thereof with dissimilar vinyl monomers, said polymeric N-vinyl heterocyclic compound constituting from 45 to 55% by weight of said gel.

3,272,756

RADIOACTIVE WASTE DISPOSAL USING COLEMANITE

John D. Kaser, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 31, 1965, Ser. No. 484,136
2 Claims. (Cl. 252—301.1)

1. A process for treating waste liquids resulting from the chemical reprocessing of irradiated nuclear fuel which comprises:

(a) adding finely divided colemanite to said waste liquid, thereby forming a slurry;

(b) subjecting said slurry to spray calcination at a wall temperature in the range 600° C. to 750° C., thereby forming a finely divided solid residue and waste gases; and

(c) separating said solid residue from said gases;

the amount of colemanite being sufficient to form with the calcined constituents of said waste, a product having a melting point of less than 1000° C.

3,272,757

PROCESS OF BREAKING REVERSED EMULSIONS

Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale, Houston, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Original application Jan. 7, 1963, Ser. No. 249,617. Divided and this application Aug. 3, 1964, Ser. No. 387,185
11 Claims. (Cl. 252—344)

1. A process for breaking an oil-in-water emulsion which comprises mixing with said emulsion a polycondensate selected from the group consisting of (*a*) a polycondensate having a molecular weight of at least 1000 of epichlorohydrin and a polyalkylene polyamine of the formula $H_2N(R—NH)_{2-9}H$ wherein R is selected from the group consisting of ethylene, propylene-1,2 and propylene-1,3, (*b*) a polycondensate having a molecular weight of at least 1000 of epichlorohydrin and a precondensate of a polyalkylene polyamine of the formula $H_2N(R—NH)_{2-9}H$ wherein R is as aforedefined and a polyoxyalkylene glycol wherein the oxyalkylene groups are selected from the group consisting of solely oxyethylene groups, both oxyethylene and oxypropylene groups, and both oxyethylene and oxybutylene groups, (*c*) a polycondensate having a molecular weight of at least 1000 of epichlorohydrin, a polyalkylene polyamine of the formula $H_2N(R—NH)_{2-9}H$ wherein R is as aforedefined, and an epichlorohydrin adduct of an aliphatic glycol, and (*d*) a polycondensate having a molecular weight of at least 1000 of a polyalkylene polyamine of the formula

$$H_2N(R—NH)_{2-9}H$$

wherein R is as aforedefined and an epichlorohydrin adduct of a lower alkylene glycol, and resolving the broken emulsion into its water and oil phases.

3,272,758

EMULSION FORMING COMPOSITION AND METHOD OF MAKING AND UTILIZING SAME

Earl R. De Lew, Corte Madera, and Arthur Lazar, Palo Alto, Calif., assignors to Yosemite Chemical Co., San Francisco, Calif., a corporation of California

No Drawing. Filed July 18, 1962, Ser. No. 210,817
8 Claims. (Cl. 252—354)

3. A sprayable liquid composition for producing a rapid forming water-in-oil gel in the presence of water, consisting essentially of a divalent metal soap of fatty acids originally present in but separated from wool grease, a sodium petroleum sulfonate surface active agent which increases the affinity of said soap to water, and a liquid petroleum hydrocarbon diluent non-toxic to marine life in which said soap and surface active agent are soluble; the percent by weight of said soap and said diluent in said composition based on the total amount of said soap and said diluent being about as follows:

	Percent by weight
Soap	20 to 45
Diluent	80 to 55

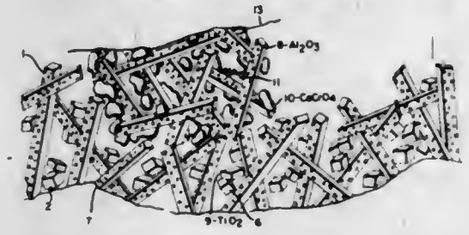
and the amount by weight of said sodium sulfonate surface active agent varying from about 20 to 50% of the weight of said soap.

3,272,759

CATALYST COMPOSITION COMPRISING MANGANO-CHROMIA-MANGANITE AND A CHROMATE

Alvin B. Stiles, Charleston, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 9, 1961, Ser. No. 115,970
1 Claim. (Cl. 252—465)



As a catalyst for the treatment of combustion gases which contain such products as nitrogen oxide, carbon monoxide and hydrocarbon and which additionally contain a lead compound; mangano-chromia-manganite containing an interspersant of similar crystallite size selected from the group consisting of oxides of aluminum, titanium, chromium, magnesium, barium, calcium and strontium and supported upon a particulate refractory and being intermixed with discrete particles of a particulate refractory upon which there is supported a chromate selected from the group consisting of alkali metal and alkaline earth metal chromates, the propotrion of chromate to mangano-chromia-manganite in the mixture being in the range of 10:1 to 0.1:1 by weight.

3,272,760

DEHYDROCYCLIZATION CATALYSIS

Louis C. Doelp, Jr., Glen Mills, Pa., assignor to Air Products and Chemicals Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,245
4 Claims. (Cl. 252—465)

1. The method of preparing dehydrocyclization catalyst which comprises mixing alumina trihydrate with a binder, forming said mix into pellets, dehydrating the pellets, impregnating said pellets to incorporate 0.1 to 2% chromium, drying the impregnated pellets, further impregnating the pellets to incorporate 0.2 to 5% of a metal selected from the class consisting of platinum, palladium and mixtures thereof and calcining the pellets.

3,272,761

METHOD OF RECLAIMING RUBBER

Harry D. Glenn, Baton Rouge, La., and Walter J. Markiewicz, Watertown, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 27, 1961, Ser. No. 141,025
Claims priority, application Canada, Sept. 1, 1961, 830,989
3 Claims. (Cl. 260—2.3)

1. In the digestion process for reclaiming vulcanized rubber scrap by heating comminuted vulcanized rubber scrap in admixture with a substantial volume of water to produce an aqueous reclaim and thereafter drying the said aqueous reclaim to a milleable condition, the improvement consisting of drying the said aqueous reclaim at a temperature not substantially in excess of 220° F. in a substantially oxygen-free atmosphere.

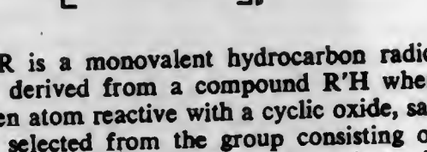
3,272,762

PREPARATION OF CELLULAR POLYURETHANES IN THE PRESENCE OF A SILOXANE-OXYALKYLENE COPOLYMER

Arthur Ibbotson and Edward Jervis Vickers, both of Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 11, 1961, Ser. No. 144,324
Claims priority, application Great Britain, Oct. 19, 1960, 35,823/60; July 6, 1961, 24,470/61
12 Claims. (Cl. 260—2.5)

1. A process for the manufacture of cellular polyurethane foams by the reaction of a hydroxyl group-containing polymer containing at least two isocyanate-reactive groups per molecule and an organic polyisocyanate in the presence of a blowing agent selected from the group consisting of water, a low boiling point liquid chemically inert to water and isocyanate and having a boiling point not exceeding 75° C. and mixtures thereof, the reaction mixture containing a siloxane-oxyalkylene copolymer of the general formula:



wherein R is a monovalent hydrocarbon radical, R′ is a radical derived from a compound R′H wherein H is a hydrogen atom reactive with a cyclic oxide, said radical R′ being selected from the group consisting of alkoxy, aryloxy, amino, acyloxy and amido, *n* is an integer of 2 to 4, *m* and *p* are positive integers of at least 1, and *y* is selected from positive integers and zero.

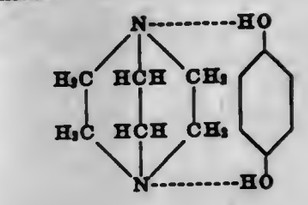
3,272,763

POLYMERIZATION CATALYSIS

William E. Erner, Wilmington, Del., Adalbert Farkas, Media, Pa., and Harold Graboyes, Philadelphia, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

No Drawing. Original application Feb. 11, 1959, Ser. No. 792,479, now Patent No. 3,037,026, dated May 29, 1962. Divided and this application Nov. 22, 1961, Ser. No. 160,682
2 Claims. (Cl. 260—2.5)

2. The method of preparing a polyurethane plastic which includes the steps of preparing a mixture consisting of about 80 parts by weight of tolylene diisocyanate, about 100 parts of polyhydroxypolyester, about 2 parts of water and about 0.5 part of the hydroquinone molecular addition complex of diazabicyclo-octane corresponding to the formula:



and pouring said mixture into a mold in which the polyurethane foam plastic is cured by the exothermic reaction among the hydroxy and isocyanato groups, which reaction is catalyzed at an increasing rate at the at least partly autogenetically increasing temperatures by such addition complex.

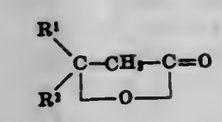
3,272,764

PROCESS FOR PREPARING CELLULAR POLYMERIC PRODUCTS

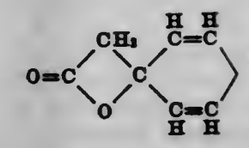
Max B. Mueller, Morristown, and Theodore Largman, Madison, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Feb. 21, 1963, Ser. No. 260,222
16 Claims. (Cl. 260—2.5)

1. A process for making plastic foam which comprises heating a normally solid, thermoplastic macromolecular polymeric material having a decomposition temperature above about 200° C. and a softening temperature below about 150° C. in the presence of a small proportion of a beta propiolactone of the forumla



wherein R^1 is selected from the group consisting of hydrogen and lower alkyl, R^2 is a member selected from the group consisting of hydrogen, methyl, phenyl, lower alkene, lower carboxyalkyl and wherein R^1 and R^2 together are



at a temperature effective to decompose the beta-propiolactone to carbon dioxide and a polymerizable monomer, permitting the polymeric material to expand while preventing escape of substantial proportions of carbon dioxide from the polymer mass, and thereafter cooling the polymer mass before a substantial proportion of the thus generated carbon dioxide has escaped from the polymer mass.

3,272,765

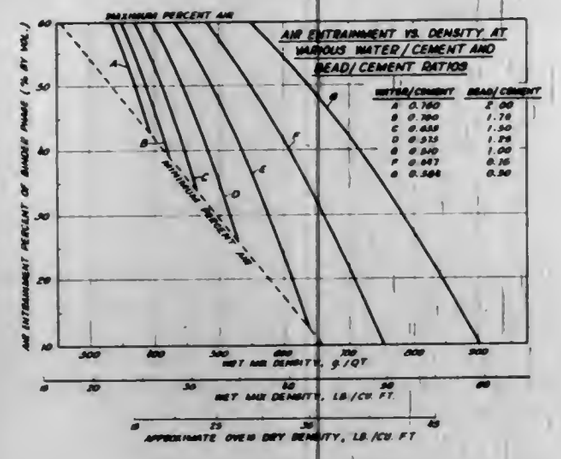
LIGHTWEIGHT CONCRETE

Robert C. Sefton, Bridgeville, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed May 18, 1964, Ser. No. 367,932
8 Claims. (Cl. 260—2.5)

1. A low density concrete composition having an oven dry density of 15–35 pounds per cubic foot, which comprises a lightweight aggregate phase of closed celled, multicellular expanded polymeric particles having a density of 1–10 pounds per cubic foot and a binder phase of hydraulic cement and surface active additive wherein the

mix ratio of bag of cement (94 pounds) to cubic feet of polymeric particles is in a range of 1:2 to 1:8 and said



binder phase contains entrained air in an amount of 13.5–60 percent by volume.

3,272,766

GUM SIMULATING ANATOMICAL MOLDING COMPOSITION

Daniel J. Gowman, Strafford, Pa., assignor to Sartomer Resins, Inc., Essington, Pa., a corporation of Delaware

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,558
2 Claims. (Cl. 260—17)

1. A gum-simulating anatomical molding composition having colored vein-simulating fibers incorporated therein which is adapted to be used in the form of moldable resin beads, said composition consisting of a mixture of methyl methacrylate polymer pearls having a particle size of 50 mesh to 320 mesh, 0.05–2.0% by weight thereof of fiber strands from ⅛" to ¾" in length, 2 to 20 denier in weight and consisting essentially of a material selected from the group consisting of vinyl chloride homopolymer, vinyl chloride-acetate copolymer, vinyl chloride-vinyl acetate-carboxylic acid copolymer, polyacrylonitrile, acrylonitrilo-butadiene copolymer, polyethylene terephthalate, polyhexamethylene adipamide, regenerated viscose rayon, cellulose acetate, cellulose acetobutyrate and ethyl cellulose and about 1 part to 20 parts of a liquid polymeric di lower alkyl siloxane per 1,000 parts of said mixture to prevent separation of fibers and pigment during storage and molding, the foregoing mixture of siloxane, strands and methyl methacrylate polymer pearls being formed when molded to bear vein-simulating fibers which simulate the veins in natural gum and mouth tissue.

3,272,767

SYNTHETIC RUBBER LATEX PREPARED USING POLYOXYETHYLATED CASTOR OIL AND ANIONIC DISPERSING AGENTS

Louis H. Howland, Watertown, Victor S. Chambers, Naugatuck, and Robert MacFarlane, Jr., Hamden, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 6, 1962, Ser. No. 185,509
4 Claims. (Cl. 260—23.7)

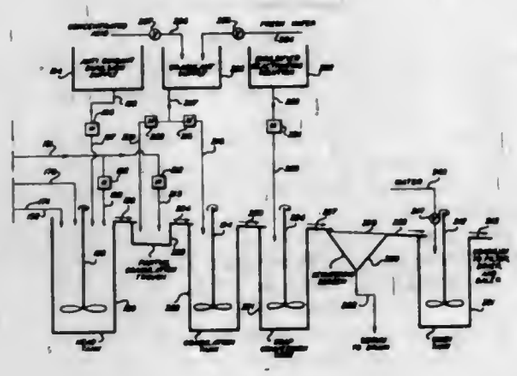
1. In the method of making a synthetic rubber latex by subjecting to polymerizing conditions an aqueous emulsion of polymerizable synthetic rubber forming monomers containing 3 to 10 parts of anionic surface-active dispersing agent per 100 parts of polymerizable monomers, the improvement which comprises carrying out the polymerization in the presence of polyoxyethylated castor oil, the amount of said polyoxyethylated castor oil being from 0.004 to 2 parts per 100 parts of the original rubber forming monomers, said synthetic rubber forming monomers being selected from the group consisting of butadiene-1,3, isoprene, 2,3-dimethylbutadiene-1,3, piperylene, mixtures of such butadienes-1,3 with one another, and mixtures of such butadienes-1,3 with monoethylenic compounds which contain a $CH_2{=}C<$ group and are copolymerizable with butadienes-1,3, said monoethylenic compounds being up to 70% by weight of such mixtures, said anionic surface-active agent comprising 0.2 to 1 part selected from the group consisting of sulfonated and sulfated surface-active agents and the remainder of the 3 to 10 parts being selected from the group consisting of water-soluble soaps of higher fatty acids and water-soluble soaps of rosin acids.

3,272,768

METHOD OF COAGULATING RUBBERY POLYMER LATICES

John D. Sutherland, Jr., Baton Rouge, La., Kjetil Gauslaa, Sarpsborg, Norway, and Robert A. Gerlicher, Baton Rouge, La., assignors to Copolymer Rubber and Chemical Corporation, a corporation of Louisiana

Filed July 10, 1963, Ser. No. 295,285
19 Claims. (Cl. 260—27)



1. A method of coagulating rubbery polymer latices comprising the steps of partially irreversibly coagulating an intimate mixture including rubbery polymer latex and carbon black slurry with fresh coagulant substantially free of recycled serum, the partially coagulated mixture containing visible particles of coagulum and about 5–80% by weight of the rubbery polymer orginally present in the latex being irreversibly coagulated, dispersing rubbery polymer processing oil in the partially coagulated mixture, and further coagulating the partially coagulated mixture with fresh coagulant substantially free of recycled serum in the presence of the rubbery polymer processing oil, the mixture of rubbery polymer latex and carbon black slurry containing 100–200 parts by weight of carbon black for each 100 parts by weight of rubbery polymer and the rubbery polymer latex being selected from the group consisting of latices of homopolymers of conjugated diolefins, latices of copolymers of conjugated diolefins and monoethylenically unsaturated monomers copolymerizable therewith and mixtures thereof.

3,272,769

EPOXIDE-POLYESTER COMPOSITIONS AS MODIFIERS FOR THERMOPLASTIC RESINS

Csaba K. Hunyar, 8533 Apperson St., Sunland, Calif.

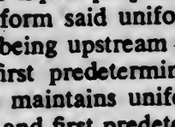
No Drawing. Filed June 14, 1965, Ser. No. 463,867
10 Claims. (Cl. 260—27)

7. The process for modifying a vinyl thermoplastic resin subject to processing for improving the physical properties thereof which comprises the steps of reacting

(I) from about 30 to 60 parts by weight of a polyester material of acid number of about 30–60 containing free carboxyl groups and selected from the class consisting of natural rosins and the reaction product obtained by esterifying polyhydric alcohol and an organic acid containing two carboxyl groups and having a chain length of 1 to 12 carbon atoms, said polyhydric alcohol being selected from the class consisting of alkyl and aryl alcohols containing two hydroxyl groups, with

(II) from about 10 to about 40 parts by weight of a non-plasticizing complex epoxide containing active oxirane rings and selected from the class consisting of epichlorohydrin diphenol condensate and epoxies condensed from organic dioxides,

(III) in the presence of from about 10 to about 50 parts by weight of a catalyst selected from the class consisting of quaternary alkyl and aryl amines of the structural formula:



where R_2, R_3 and R_4 are alkyl groups, R_1 is selected from the class consisting of aryl groups and alkyl groups of a carbon chain length of 8–22, and X^- is an anion that does not form an insoluble product with the action group, thereby to form the thermoplastic modifier composition,

and adding from about 2 to about 50 percent by weight of said modifier composition to a vinyl thermoplastic resin to form a thermoplastic admixture, and mechanically working said admixture.

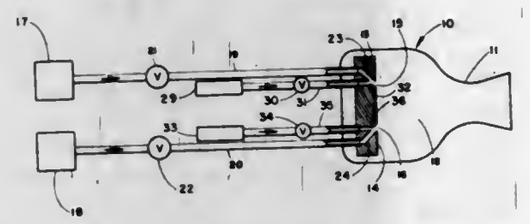
10. The product obtained by the process of claim 7.

3,272,770

METHOD AND MANUFACTURE FOR PROPELLANT AERATION

Duane W. Landahl, San Jose, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Feb. 1, 1963, Ser. No. 255,516
2 Claims. (Cl. 60—35.3)



1. A method of controlling the density of a liquid propellant for consumption in a reaction motor in which the thrust produced is responsive to changes in propellant density comprising the steps of providing a liquid propellant; flowing said liquid propellant to a first predetermined point for combustion; providing a fluid suitable for density modification of said liquid propellant, said fluid being capable of forming an initially uniform two-phase mixture with said liquid propellant which mixture has a tendency to separate into separate phases; injecting said fluid into said liquid propellant at a second predetermined point to form said uniform two-phase mixture, said second point being upstream from and immediately adjacent to said first predetermined point so that said two-phase mixture maintains uniformity during flow between said second and first predetermined points; and selectively varying the rate at which said fluid is injected into said liquid propellant to vary the density of the propellant and to control the thrust of said reaction motor.

3,272,771

METHOD FOR THE CROSSLINKING OF POLYMERIC MATERIALS

Robert Marion Busche and Dennis Light Funck, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 10, 1963, Ser. No. 295,287
24 Claims. (Cl. 260—41)

1. A composition comprising an addition polymer of an ethylenically unsaturated monomer containing polymerized therewith a carboxylic acid group containing monoethylenically unsaturated monomer, said acid group containing monomer being present in a concentration of at least 0.2 mol percent, based on the polymer, and homogeneously admixed therewith, a hydrolyzable, cocrystallized oxide of a base forming metal and an amphoteric element wherein the base forming metal is a metal selected from the class consisting of metals of Group I and Group II of the Periodic Table, and the amphoteric element is an element selected from the group consisting of silicon, aluminum, titanium, vanadium, molybdenum, tungsten, chromium, manganese, arsenic, bismuth, tin, lead, and antimony, said oxide being employed in a concentration of 2 to 90 weight percent, based on the total composition.

3,272,772

FILLED POLYMER COMPOSITIONS

Joseph L. Russell, Ridgewood, N.J., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 30, 1961, Ser. No. 134,863
8 Claims. (Cl. 260—41)

1. A composition of matter which comprises from 1 to 4 parts by weight of chlorinated high density polyethylene and uniformly dispersed throughout said chlorinated polyethylene from 1 to 4 parts by weight of an inorganic filler having adsorbed thereon a polar group-containing polymerizable vinyl monomer.

3,272,773

PROCESS OF PRODUCING STABILIZED POLYCARBONAMIDES CONTAINING A METAL CHELATE OF 8-HYDROXYQUINOLINE

David Holmes Edison, Signal Mountain, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,572
3 Claims. (Cl. 260—45.75)

1. In a process of spinning yarn from a molten synthetic polycarbonamide which has been filtered through a sand pack, the improvement which consists of incorporating in said melt in an amount of at least 0.005% based on the weight of said polycarbonamide, at a point upstream from said sand pack, a metal chelate of an 8-hydroxyquinoline which is stable at the temperature of said melt, whereby to produce a yarn of improved durability to heating in open air without cumulatively plugging said sand pack by deposition of metal particles as the melt passes through it.

3,272,774

POLY(ARYLESTER-AMIDES) DERIVED FROM (1) DIPHENOLS, (2) DIAMINES, AND (3) POLYBASIC ACIDS

Wendell W. Moyer, Jr., Parkersburg, W. Va., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

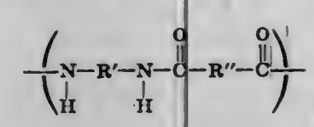
No Drawing. Filed Jan. 2, 1962, Ser. No. 163,902
1 Claim. (Cl. 260—47)

A linear polymeric composition having an inherent viscosity of at least 0.17 when measured in m-cresol at 25° C., said polymer comprising in its linear chain from about

5 to about 95 mole percent recurring phenyl ester groups of the formula



and correspondingly from about 5 percent to about 95 mole percent recurring amide groups of the formula



wherein R, R', and R'', are radicals selected from the group consisting of alkyl, aryl, and benzene ring carbon to benzene ring carbon bonds and Ar is a radical selected from the group consisting of aryl and alkaryl radicals.

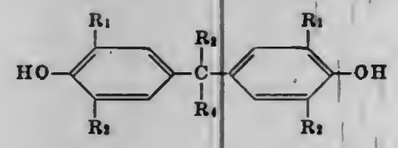
3,272,775

PREPARATION OF AROMATIC POLYETHERS FROM A BISPHENOL

Edward J. McNelis, Wallingford, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed July 16, 1964, Ser. No. 383,252
17 Claims. (Cl. 260—47)

1. Method for preparing aromatic polyethers which comprises contacting a material having the general formula



wherein R_1, R_2, R_3, and R_4 are selected from the group consisting of hydrogen and alkyl radicals having from 1 to 3 carbon atoms with activated manganese dioxide at a temperature in the range of from 20° to 250° C. for a period of time ranging between 10 seconds and 10 hours and thereafter recovering said aromatic polyether product.

9. Method for preparing aromatic polyethers which comprises contacting 2,2' - bis - (4 - hydroxy - 3,5 - dimethyl phenyl)propane with from 0.01 to 100.0 moles of lead dioxide per mole of 2,2' - bis - (4-hydroxy-3,5-dimethyl phenyl)propane at a temperature in the range of from 20° to 250° C. for a period of time ranging between 10 seconds and 10 hours and thereafter recovering said aromatic polyether.

3,272,776

PREPARATION OF POLY(ESTER-AMIDES)

John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 5, 1962, Ser. No. 185,206
17 Claims. (Cl. 260—47)

1. The process of producing a linear high molecular weight film and fiber forming poly(ester-amide) which comprises reacting in an aqueous solution a diammonium salt of a dicarboxylic acid with an aminoalcohol at a temperature within the range of 100–200° C., said diammonium salt and said aminoalcohol being present in substantially equal molecular proportions, continuing the reaction within this temperature range until the water from the solution and the water formed in the reaction are removed, thereafter continuing the reaction at a temperature within the range of 200–300° C. and continuing the reaction at reduced pressure below about 5 mm. of Hg pressure whereby the poly(ester-amide) is formed.

3,272,777

METHOD FOR POLYMERIZING ALDEHYDES

Shinichi Ishida, Itabashi-ku, Tokyo, Japan, assignor to Asahi Kasei Kagyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 18, 1961, Ser. No. 103,711
Claims priority, application Japan, Apr. 26, 1960, 35/22,104; Nov. 2, 1960, 35/44,091; Nov. 10, 1960, 35/44,352, 35/44,353
10 Claims. (Cl. 260—67)

1. A method for producing crystalline polyether type polyaldehydes which comprises premixing a monoaldehyde of 2 to 10 carbon atoms and of the general formula RCHO, wherein R is a member selected from the group consisting of alkyl, cycloalkyl and halogen substituted alkyl, with a catalyst selected from the group consisting of MR'_3 and MR'_2X, wherein R' is a member selected from the group consisting of lower alkyl and lower alkoxy, M is a member selected from the group consisting of aluminum and boron, and X is halogen in a solvent medium at a temperature between room temperature and the polymerization temperature and thereafter lowering the temperature to a temperature of −20° C. to −120° C. to initiate polymerization.

3,272,778

PROCESS FOR POLYMERIZING ALDEHYDES

Shinichi Ishida, Tokyo, Japan, assignor to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 18, 1961, Ser. No. 103,730
Claims priority, application Japan, Nov. 2, 1960, 35/44,091; Nov. 10, 1960, 35/44,352, 35/44,353
3 Claims. (Cl. 260—67)

1. In a process for the production of polymers of aldehydes comprising polymerizing at least one aldehyde in the presence of a catalyst and subsequently separating the polymer formed, the improvement wherein crystalline polyether type polymers are produced by

(1) premixing (a) a member selected from the group consisting of a monoaldehyde having from 2 to 10 carbon atoms in the molecule and having the formula RCHO wherein R represents a member selected from the group consisting of alkyl, haloalkyl, furfural and 2-formyl-3,4-dihydro-2H-pyran (b) a catalyst selected from the group consisting of MR_2' and $MR'X$ wherein R' represents a member selected from the group consisting of alkyl and alkoxy wherein the alkyl moiety is of from 1 to 10 carbon atoms; M represents a member selected from the group consisting of magnesium, calcium and zinc; and X represents halogen, said premixing being conducted in an inert solvent medium and at a temperature between room temperature and −30° C.,

(2) lowering the temperature to a range of from −30° C. to −120° C. to thereby initiate polymerization, and

(3) maintaining the temperature at from −30° C. to −120° C. until the polymerization is complete.

3,272,779

INTERPOLYMERS OF FORMALDEHYDE AND AROMATIC SULFONES

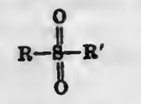
Murray H. Reich, Princeton, N.J., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,569
12 Claims. (Cl. 260—67)

1. A high molecular weight linear thermoplastic copolymer of

(a) a formaldehyde selected from the group consisting of essentially anhydrous monomeric formaldehyde and essentially anhydrous trioxane, and

(b) an aromatic sulfone having the formula



wherein R is selected from a group consisting of aromatic radicals and alkyl substituted aromatic radicals and R' is selected from a group consisting of aryl, alkaryl, alkyl and hydrogen, R and R' each having up to about 60 carbon atoms; the amount of said aromatic sulfone monomer chemically combined in said copolymer ranging from about 0.1 mole percent up to about 15 mole percent of the copolymer; said copolymer being characterized by having a polymer melting temperature of from about 140° C. up to about 190° C.

3,272,780

COPOLYMERS OF TRIOXANE, ANOTHER ALDEHYDE HAVING AT LEAST TWO CARBON ATOMS AND OPTIONALLY A THIRD COMONOMER

Walter Wilson and Herbert May, Birmingham, England, assignors to British Industrial Plastics Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 13, 1961, Ser. No. 144,843
Claims priority, application Great Britain, Oct. 17, 1960, 35,584/60
16 Claims. (Cl. 260—73)

1. A process for the preparation of a copolymer which comprises reacting trioxan with an aldehyde that yields a copolymer having at least 2 carbon atoms under substantially anhydrous conditions and in the presence of an electrophilic catalyst.

3. A process as claimed in claim 1 in which trioxan is reacted with an aldehyde and a compound capable of copolymerizing with trioxan in the presence of an electrophilic catalyst, the compound being selected from the group consisting of a cyclic ether, a vinyl compound, an allyl ether and an allyl ester.

3,272,781

BOROUREAS OF PHOSPHINOBORINE POLYMERS

Marvin H. Goodrow, Los Angeles, Calif., assignor to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,697
16 Claims. (Cl. 260—77.5)

1. A process for preparing a phosphinoborine borourea compound which comprises reacting a phosphinoborine polymer with an amine, said phosphinoborine polymer being selected from at least one of the group consisting of:

(*a*) $[R_4R_3PB(Y)_2]_n$
(*b*) $[R_4R_3PB(Y)_2]_nA$
(*c*) $[(Y)_2BP(R_3)R(R_3)PB(Y)_2]_n$, and
(*d*) $[R_4R_3PB(Y)_2]_m[R_3PBY]_z$

wherein

Y is selected from the group consisting of hydrogen, hydrocarbyl and isocyanato substituents; at least one of said Y substituents in each of said (*a*) (*b*) (*c*) and (*d*) being isocyanato;

R_3 and R_4 are hydrocarbyl substituents which are independently selected for each monomeric unit;

R is a hydrocarbylene substituent;

n is an integer indicative of the degree of polymerization of said phosphinoborine compound;

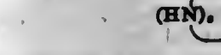
m and *z* are integers, the ratio of which is indicative of the degree of ring fusion in said polymer (*d*);

A is a basic terminating group;

and said amine is selected from at least one of the group consisting of:

(1) $(HNR_1)_sR_s$

and

(2) 

wherein

R_1 and R_s are each independently selected from the group consisting of hydrogen, acyclic, alicyclic and arene substituents;

R is a bivalent hydrocarbyl substituent;

t is an integer equal to the valence of the substituent R_s; and

s is an integer equal to the number of R substituents in the amine having the structural Formula 2; and

recovering said borourea compound.

9. The product prepared by the process of claim 1.

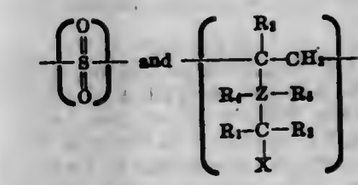
3,272,782

DERIVED COPOLYMERIC SULFONES

John L. Lang, 42 Windgate Drive, Box 820—111, Murrysville, Pa.

No Drawing. Filed July 16, 1962, Ser. No. 210,236
9 Claims. (Cl. 260—79.3)

1. A water-dispersible polyelectrolyte produced by reacting a nuclophilic reagent with a copolymer including repeating units of



wherein

Z is an aromatic nucleus,

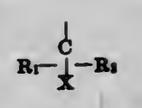
X is a halogen selected from the class consisting of chlorine and bromine,

R_1 and R_2 are individually selected from the class consisting of hydrogen and lower alkyl radicals,

R_3 is selected from the class consisting of hydrogen and methyl, and

R_4 and R_5 are individually selected from the class consisting of hydrogen, chlorine, bromine and lower alkyl radicals; and

wherein at least a portion of the



groups are reacted with said nucleophilic reagent, the reaction being carried out at a temperature and pressure which will preclude decomposition of the copolymer.

3,272,783

RUBBERY POLYMER VULCANIZATION

Robert V. Lucke, Fanwood, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

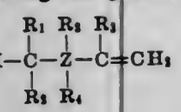
No Drawing. Filed Jan. 31, 1963, Ser. No. 255,220
18 Claims. (Cl. 260—79.3)

1. A vulcanizable composition comprising a rubbery polymer containing a basic nitrogen group and a minor proportion of a disulfonyl halide having the formula $R(SO_2X)_2$, where X is a halogen selected from the group consisting of fluorine, chlorine and bromine; R is a member selected from the group consisting of aliphatic radicals, aromatic radicals, and aromatic radicals separated by a member selected from the group of oxygen, sulfur, and alkylidene groups.

3,272,784
COPOLYMERIC SULFONES
John L. Lang, 42 Windgate Drive, Box 820—111, Murrysville, Pa.
No Drawing. Filed July 16, 1962, Ser. No. 210,237
3 Claims. (Cl. 260—79.3)

1. The process for preparing a water-dispersible polyelectrolyte comprising polymerizing (a) sulfur dioxide and (b) the reaction product of

(i) a monomer having the general formula



wherein

Z is an aromatic nucleus,
X is a halogen selected from the class consisting of hydrogen and lower alkyl radicals,
R_1 and R_2 are individually selected from the class consisting of hydrogen and lower alkyl radicals,
R_3 is selected from the class consisting of hydrogen and methyl, and
R_4 and R_5 are individually selected from the class consisting of hydrogen, chlorine, bromine and lower alkyl radicals; and

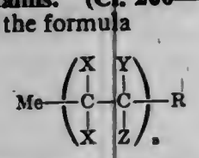
(ii) a nucleophilic reagent.

3,272,785
METHOD OF THERMOSETTING HYDROXYL-CONTAINING ESTER POLYMERS
Sheldon N. Lewis, Willow Grove, and Andrew Mercurio, Philadelphia, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed June 10, 1963, Ser. No. 286,462
7 Claims. (Cl. 260—80.5)

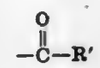
1. A method of curing a composition containing as the sole polymeric components, a polymerized material selected from the group consisting of (1) a polymer containing at least 2% by weight of units having an alcoholic hydroxyl group attached to a carbon atom which is directly attached solely to atoms selected from the group consisting of carbon and hydrogen, said polymers containing at least 2% by weight of units of at least one ester of an α,β-monoethylenically unsaturated acid, and (2) a mixture of (a) a polymer containing units having an alcoholic hydroxyl group attached to a carbon atom which is directly attached solely to atoms selected from the group consisting of carbon and hydrogen and (b) a polymer containing units of at least one ester of an α,β-monoethylenically unsaturated acid, the amount of the hydroxyl-containing units and the amount of the ester units each being at least 2% by weight, based on the weight of the mixture of polymers, which comprises heating the composition in contact with 0.1 to 5% by weight, based on the weight of polymerized material therein, of a compound selected from the group consisting of magnesium perchlorate, zinc perchlorate, and mixtures thereof.

3,272,786
POLYMERIZATION PROCESS USING CHAIN-TRANSFER AGENTS
Eli Perry, Galveston, Tex., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Apr. 21, 1961, Ser. No. 104,543
10 Claims. (Cl. 260—88.7)

1. Compounds of the formula

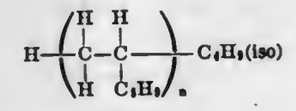


wherein Me is chosen from the group consisting of aluminum, boron, gallium, indium, zinc, cadmium, mercury, silicon, germanium, tin, lead, antimony, and bismuth; X is a member of the group consisting of hydrogen and halogen; Y is chosen from the group consisting of hydrogen, halogen, and the methyl radical; Z is chosen from the group consisting of halogen, aryl, aralkyl, alkaryl, —CN, —COOH, —C—O—R′, and



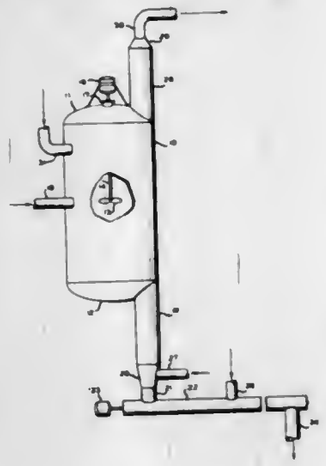
radicals, R′ being an alkyl radical; R is chosen from the group consisting of alkyl, aryl, aralkyl, and alkaryl hydrocarbon radicals; and n is an integer from 2 to 500,000.

3. Compounds of the formula



wherein n is an integer from 2 to 20.

3,272,787
EXTRACTION OF SOLUBLE MATTER FROM POLYMER SOLIDS
Jack S. Scoggin and Lowell T. Price, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed June 5, 1961, Ser. No. 114,727
3 Claims. (Cl. 260—93.7)

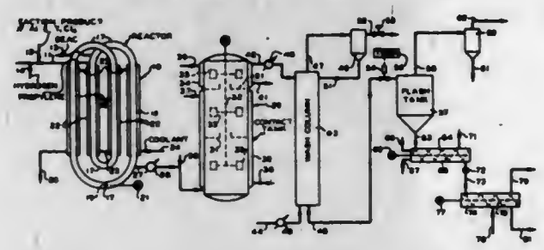


1. A process for removing soluble organometallic catalysts and other soluble matter from polyolefin solids which comprises contacting said solids with a solvent for said organometallic catalyst, said solvent being one selected from the group consisting of low molecular weight organic acids, alcohols and mixtures thereof, under turbulent conditions in a mixing vessel whereby said organometallic catalyst is dissolved by said solvent leaving polymer solids; maintaining a quiescent zone in a lower extension of said vessel so that said polymer solids settle therein, said quiescent zone having a diameter in the range of from ⅕ to ⅓ the diameter of said mixing vessel, a height in the range of from ¾ to 1½ times the height of said mixing vessel and a length to diameter ratio in the range of from 3/1 to 7/1 whereby sufficient quiescence is maintained in said zone to effect the settlement of said polymer solids therein; withdrawing settled polymer solids from said extension; compacting said withdrawn solids while backwashing same with fresh solvent for said other soluble matter, said solvent being forced into said mixing vessel through said lower extension; passing the compacted polymer solids to further recovery steps and withdrawing solution of soluble matter in solvent through an upward extension of said mixing vessel in non-turbulent flow at a velocity below the transport velocity of said solids.

3,272,788
COMBINATION SLURRY-SOLUTION POLYMERIZATION PROCESS
Richard E. Dietz, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Aug. 23, 1962, Ser. No. 218,843
5 Claims. (Cl. 260—93.7)

1. In a solution polymerization process in which a 1-olefin, hereinafter designated a principal monomer, is polymerized in the presence of a catalyst comprising a mixture of a salt of a metal of Groups IV, V, VI and VIII and an organo compound of a metal of Groups I, II and III, the improvement comprising conducting, prior to the polymerization of said principal monomer, polymerization of an auxiliary monomer in the presence of the catalyst to be used for the polymerization of the principal monomer, said auxiliary monomer being a 1-olefin which forms a polymer which is insoluble in the diluent used at the temperature of the solution polymerization of the principal monomer, the polymerization of said auxiliary monomer being carried out at a temperature at which the polymer of the auxiliary monomer is insoluble in the diluent and the polymerization of said principal monomer being carried out at a temperature at which said polymer of said auxiliary monomer is insoluble and said polymer of said principal polymer is soluble in the diluent, and separating said insoluble polymer of said auxiliary monomer from the solution of said polymer of said principal monomer.

3,272,789
TREATMENT OF OLEFIN POLYMERS TO REMOVE CATALYST RESIDUES
Richard S. Joyner and Louis E. Perrier, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 24, 1963, Ser. No. 253,632
15 Claims. (Cl. 260—93.7)



11. In a mass polymerization process wherein a liquid mono-1-olefin is contacted with a catalyst formed by mixing materials comprising an organometal compound and a metal salt under polymerization conditions so as to form solid polymer and wherein an effluent containing solid polymer, soluble polymer, catalyst residues and liquid olefin is recovered from said polymerization and said effluent is mixed with a diketone under conditions such that said olefin remains in the liquid phase, the improvement which comprises recovering the thus treated effluent and introducing same into an upper portion of an elongated washing zone; introducing a wash liquid comprising a low boiling hydrocarbon into a lower portion of said washing zone; maintaining said washing zone under conditions such that said wash liquid remains in the liquid phase, the temperature of said upper portion of said washing zone being in the range of 90 to 130° F. and the temperature of said lower portion of said washing zone being in the range of 50 to 89° F., and recovering from said lower portion of said washing zone a slurry of solid polymer in said wash liquid.

3,272,790
POLYPEPTIDES
Luigi Bernardi, Milan, Germano Bosisio, Palazzolo Milanese, Milan, and Francesco Chillemi and Onofrio Goffredo, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy
No Drawing. Filed Jan. 20, 1964, Ser. No. 338,574
Claims priority, application Italy, Jan. 25, 1963, 1,586/63
12 Claims. (Cl. 260—112.5)

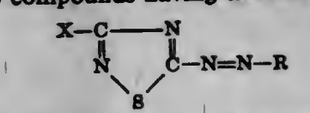
3. A polypeptide of the formula:

X-L-alanyl-L-phenylalanyl-L-isoleucyl-glycyl-L-leucyl-L-methioninamide

wherein X represents L-lysyl-L-aspartyl, L-seryl-L-lysyl-L-aspartyl, or L-prolyl-L-seryl-L-lysyl-L-aspartyl, the salts and protected derivatives thereof having the amino and carboxyl groups not involved in the formation of the peptidic linkage duly blocked by protecting groups capable of being removed.

3,272,791
MONOAZO COMPOUNDS CONTAINING A 5-AMINO - 3 - SUBSTITUTED - 1,2,4 - THIADIAZOLE RADICAL
William H. Moore, Edmund B. Towne, and Joseph B. Dickey, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 29, 1963, Ser. No. 269,167
11 Claims. (Cl. 260—155)

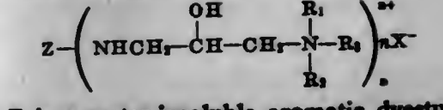
1. The azo compounds having the formula:



wherein X represents a member selected from the group consisting of a low carbon alkylthio radical and a low carbon alkyl sulfonyl radical and R represents a member selected from the group consisting of the radical of a tetrahydroquinoline coupling compound free of a water-solubilizing group and the radical of a benzomorpholine coupling compound free of a water-solubilizing group, and wherein said tetrahydroquinoline and benzomorpholine radicals are joined through the carbon atom in their 6-positions to the azo linkage.

3,272,792
QUATERNARY AMMONIUM SALTS OF AMINO HALOHYDRIN DYESTUFFS
David Taber, Wilmette, Ill., Edgar E. Renfrew, White Bear Lake, Minn., and Henry W. Pons, Lock Haven, Pa., assignors to American Aniline Products, Inc., a corporation of Delaware
No Drawing. Filed June 22, 1964, Ser. No. 377,131
3 Claims. (Cl. 260—155)

1. A dyestuff of the formula:



wherein Z is a water-insoluble aromatic dyestuff moiety selected from the group consisting of azo and anthraquinone; R_1, as an individual substituent, is a member selected from the group consisting of phenyl and lower alkyl, R_2, as an individual substituent, is lower alkyl, R_3, as an individual substituent, is lower alkyl, and R_1, R_2 and R_3 taken collectively with the N atom to which they are attached represent the residue of an azaaromatic nucleus selected from the group consisting of pyridine, lower alkylpyridines, quinoline, and isoquinoline; n is an integer having a value of 2 to 4; and X^- is a member selected from the group consisting of chlorine and bromine, the secondary amino nitrogen of at least two of said n groups being linked directly to one aromatic ring of the Z moiety.

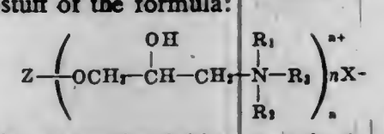
3,272,793

QUATERNARY AMMONIUM SALTS OF HALOHYDRIN ETHER DYESTUFFS

David Taber, Wilmette, Ill., Edgar E. Renfrew, White Bear Lake, Minn., and Henry W. Pons, Lock Haven, Pa., assignors to American Aniline Products, Inc., a corporation of Delaware

No Drawing. Filed June 22, 1964, Ser. No. 377,087
5 Claims. (Cl. 260—156)

1. A dyestuff of the formula:



wherein Z is a water-insoluble aromatic dyestuff moiety selected from the group consisting of azo and anthraquinone; R_1, as an individual substituent, is a member selected from the group consisting of phenyl and lower alkyl; R_2, as an individual substituent, is lower alkyl; R_3, as an individual substituent, is lower alkyl; and R_1, R_2 and R_3 taken collectively with the N atom to which they are attached, represent the residue of an azaaromatic nucleus selected from the group consisting of pyridine, lower alkyl pyridines, quinoline, and isoquinoline; *n* is an integer having a value of 2 to 4; and X is a member selected from the group consisting of chlorine and bromine, the oxygen atom of at least two of said *n* groups being linked directly to one aromatic ring of the Z moiety.

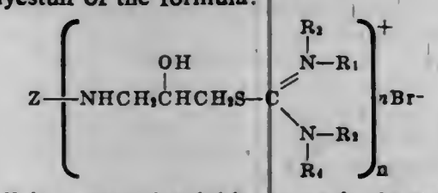
3,272,794

ISOTHIURONIUM SALTS OF AMINO BROMOHYDRIN DYESTUFFS

David Taber, Wilmette, Ill., Edgar E. Renfrew, St. Paul, Minn., and Henry W. Pons, Monroeville, Pa., assignors to American Aniline Products, Inc., a corporation of Delaware

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,251
5 Claims. (Cl. 260—157)

1. A dyestuff of the formula:



wherein Z is a water-insoluble aromatic dyestuff moiety selected from the group consisting of azo, anthraquinone, phthalocyanine and nitro; R_1 and R_2, as individual substituents, are members selected from the group consisting of hydrogen and lower alkyl and, taken collectively, represent an alkylene bridge having from 2 to 3 carbon atoms, said bridge connecting the N atoms to which R_1 and R_2 are attached; R_3 and R_4 are members selected from the group consisting of hydrogen and lower alkyl; and *n* is an integer having a value of from 1 to 4, the amino nitrogen attached to Z being directly linked to an aromatic carbon atom of the Z moiety.

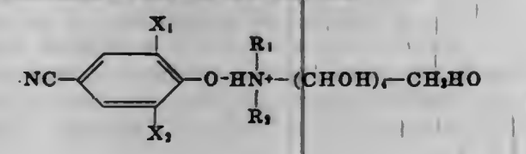
3,272,795

GLUCAMINE SALTS OF BENZONITRILES

Basil Jason Heywood, Hornchurch, William George Leeds, London, and Raymond Frederick Collins, Harold Wood, England, assignors to May & Baker Limited, Dagenham, England

No Drawing. Filed May 24, 1965, Ser. No. 458,414
Claims priority, application Great Britain, May 26, 1964, 21,781/64
3 Claims. (Cl. 260—211)

1. Glucamine salts of the formula:



wherein X_1 and X_2 represent a member of the class consisting of bromine and iodine atoms, and R_1 and R_2 represent a member of the class consisting of hydrogen, methyl, ethyl, 2-hydroxyethyl and 2-hydroxypropyl.

3,272,796

SALT OF ALKALOID FROM *PHYLLANTHUS DISCODEUS*

Jean Louis Paul Mainil, Watermael-Boitsfort, Belgium, assignor to Société Anonyme Oletta, Luxembourg, Luxembourg

No Drawing. Filed Aug. 13, 1962, Ser. No. 216,316
Claims priority, application Belgium, Aug. 16, 1957, 442,303, Patent 560,107
1 Claim. (Cl. 260—236)

The camposulphonate of ethylene diamine and of an alkaloid, said camposulphonate having a slight pink color and a melting point of 202° C., said alkaloid being prepared by a process comprising finely grinding a part of the *discodeus* species of the genus Phyllanthus (Euphorbiaceae), rendering said part alkaline, treating said part with an organic solvent selected from the group consisting of ether, benzene, chloroform and ethylacetate to derive an extract of active material, acidifying the extract with an aqueous solution of an acid at a concentration of from 2% to 20% whereby the alkaloid is caused to pass into the acid solution, adding a base to make the solution alkaline thereby forming a crude alkaloidal product, extracting the alkaloid with one of the group consisting of ether and chloroform, and distilling the extract to obtain a residue comprising the alkaloid and other substances, and separating the alkaloid by dissolution and chromatography, the said alkaloid having the following properties:

3,272,797

CYCLIC ACETALS AND KETALS OF THE 6α-METHYLPREGNANE SERIES AND PROCESS FOR PREPARING SAME

Sheila Mary Booker, Bernard Ellis, and Vladimir Petrow, all of London, England, assignors to The British Drug Houses Limited, London, England, a British company

No Drawing. Filed May 5, 1960, Ser. No. 26,979
Claims priority, application Great Britain, May 11, 1959, 16,117/59
12 Claims. (Cl. 260—239.55)

7. 3β - hydroxy - 16α:17α - (2' - phenyl - 4':5' - dioxolane)pregn-5-en-20-one.

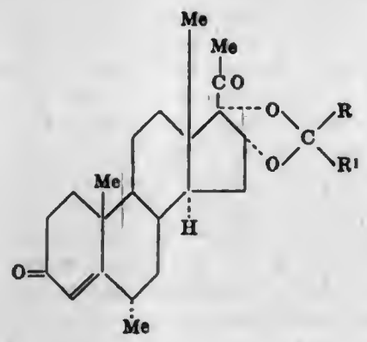
3,272,798

16α:17α-DERIVATIVES OF 6α-METHYL STEROIDS

Bernard Ellis and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited, London, England, a company of Great Britain

No Drawing. Filed Jan. 20, 1960, Ser. No. 3,498
Claims priority, application Great Britain, Jan. 23, 1959, 2,630/59
16 Claims. (Cl. 260—239.55)

1. 6α-methyl steroids of the pregnane series having the general formula

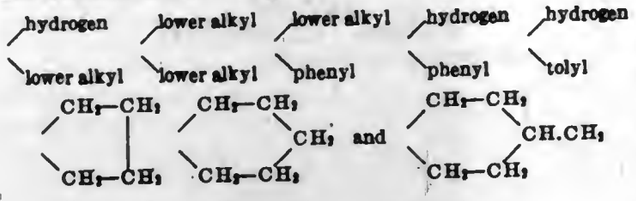


(I)

where



are selected from the group consisting of



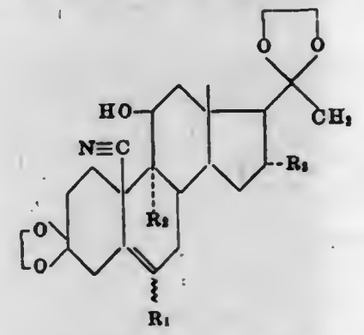
3,272,799

11,19-SUBSTITUTED PROGESTERONES

Kenneth G. Holden, Haddon Heights, N.J., and James F. Kerwin, Broomall, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 25, 1962, Ser. No. 233,137
6 Claims. (Cl. 260—239.55)

5. A chemical compound of the formula:



in which:

R_1 is a member selected from the group consisting of hydrogen, methyl and fluoro;

R_2 is a member selected from the group consisting of hydrogen and fluoro; and

R_3 is a member selected from the group consisting of hydrogen and methyl.

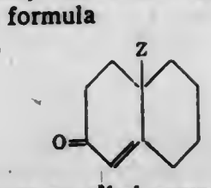
3,272,800

PROCESS FOR PREPARING Δ⁴-3-KETOSTEROIDS

Katsumi Tanabe, Rinji Takasaki, Ryozo Hayashi, Yasuhiro Morisawa, Teruo Hashimoto, and Yutaka Okada, all of Tokyo, Japan, assignors to Sankyo Company Limited, Tokyo, Japan

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,657
Claims priority, application Japan, Sept. 30, 1964, 39/55,859; Oct. 6, 1964, 39/57,012; Jan. 19, 1965, 40/2,850; June 11, 1965, 40/34,704
12 Claims. (Cl. 260—239.55)

1. A process for preparing a Δ⁴-3-ketosteroid having the partial structure, with which only rings A and B are concerned, of the formula

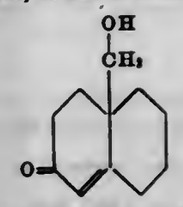


wherein Z represents an alkyl group or a hydroxymethyl group that may be etherified or esterified which comprises heating a 3,5-cyclosteroid having the partial structure, with which only rings A and B are concerned, of the formula



wherein X represents an alkyl group or a hydroxymethyl group that may be etherified or esterified; Y represents hydroxy group, an etherified hydroxy group or an esterified hydroxy group; or X and Y jointly may form a 6β,19-oxido linkage, together with an alkylsulfoxide, the said Z being as defined above with relation to the said X when the said X and Y separately are as defined above and hydroxymethyl group when the said X and Y jointly form a 6β,19-oxido linkage.

5. A process for preparing a 19-hydroxy-Δ⁴-3-ketosteroid having the partial structure, with which only rings A and B are concerned, of the formula



which comprises heating a 3,5-cyclosteroid having the partial structure, with which only rings A and B are concerned, of the formula



together with an alkylsulfoxide.

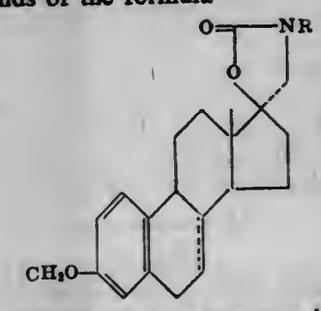
3,272,801

STEROIDAL SPIRO-OXAZOLIDINONES

David J. Marshall, Hampstead, and Clara Revesz, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 19, 1964, Ser. No. 412,303
14 Claims. (Cl. 260—239.55)

1. Compounds of the formula



where R is selected from the group consisting of hydrogen and lower alkyl.

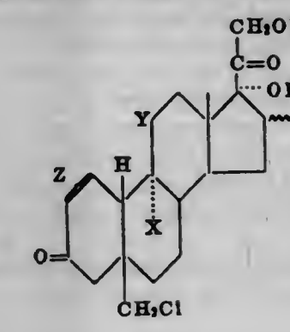
3,272,802

5β-CHLOROMETHYL-19-NOR-ANDROSTANE AND PREGNANE DERIVATIVES AND PROCESS FOR PRODUCTION THEREOF

Lawrence H. Knox, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 23, 1964, Ser. No. 406,157
21 Claims. (Cl. 260—239.55)

12. A compound of the following formula:



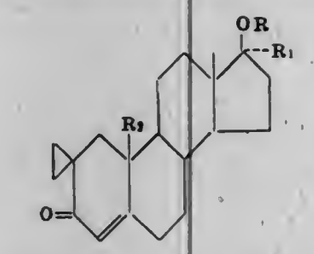
wherein R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; R^3 is a hydrogen; X is selected from the group consisting of hydrogen, fluorine and chlorine; Y is a member of the group consisting of β-hydroxyl and keto; Z is selected from the group consisting of a single bond and a double bond; T is selected from the group consisting of hydrogen and methyl; and OR^3 and T together form a 16α,17a-lower alkylidenedioxy grouping.

3,272,803
2,2-ETHYLENETESTOSTERONES

Kenneth G. Holden, Stratford, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 25, 1965, Ser. No. 435,355
9 Claims. (Cl. 260—239.55)

1. A chemical compound of the formula:



wherein:

R is a member selected from the group consisting of hydrogen, cyclopenten-1-yl, tetrahydropyranyl and acyl of from 2 to 10 carbon atoms;

R_1 is a member selected from the group consisting of hydrogen, methyl, ethyl and ethynyl; and

R_2 is a member selected from the group consisting of hydrogen and methyl.

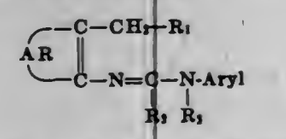
8. 2,2-ethylenetestosterone tetrahydropyranyl ether.

3,272,804
PROCESS AND INTERMEDIATES FOR PREPARING INDOLES

Sydney Archer, Bethlehem, N.Y., Charles Frederick Koelsch, St. Paul, Minn., and Roman R. Lorenz, and Benjamin F. Tullar, East Greenbush, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,949
22 Claims. (Cl. 260—240)

16. A compound of the formula



wherein AR together with the C=C group to which it is attached, represents pyrido-, pyrimido-, or quinolino-; R_1 represents a member of the group consisting of hydrogen, lower-alkyl, and phenyl; R_2 represents a member of the group consisting of hydrogen and lower-alkyl; R_3 represents a member of the group consisting of hydrogen and lower-alkyl; and Aryl represents a member of the group consisting of phenyl, m-tolyl, p-tolyl, α-naphthyl, and β-naphthyl.

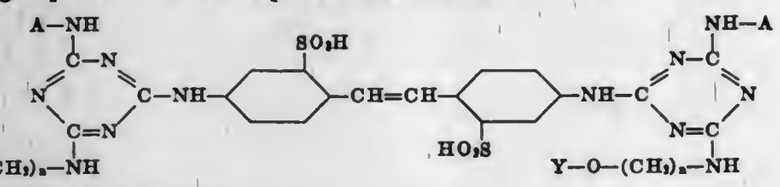
17. N - (3 - methyl - 2 - pyridyl)-N'-methyl-N'-phenylformamidine.

3,272,805
BIS-TRIAZINYLAMINOSTILBENE COMPOUNDS

Heinrich Häusermann and Jakob Bindler, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed July 2, 1964, Ser. No. 380,033
Claims priority, application Switzerland, July 28, 1960, 8,637/60
6 Claims. (Cl. 260—240)

1. A compound of the formula



wherein

A represents a member selected from the group consisting of phenyl, 3-methylphenyl, 4-methylphenyl and 3-methoxyphenyl,

Y represents a member selected from the group consisting of methyl and ethyl, and

n is one of the integers 2 and 3.

3,272,806
4-(3,4-DIMETHOXYBENZYLIDENEAMINO) 6,7-DIMETHOXYQUINOLINE

Alexander Winterstein, Norwich, N.Y., assignor to The Norwich Pharmacal Company, Norwich, N.Y., a corporation of New York

No Drawing. Filed Aug. 25, 1964, Ser. No. 392,046
1 Claim. (Cl. 260—240)

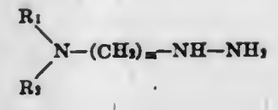
The compound 4-(3,4-dimethoxybenzylideneamino)-6,7-dimethoxyquinoline.

3,272,807
UNSYMMETRICAL DISUBSTITUTED AMINOALKYL HYDRAZINES

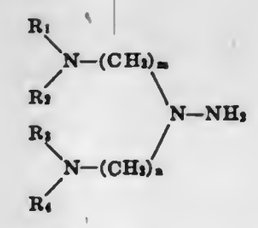
John H. Biel and Wallace K. Hoya, Milwaukee, Wis., assignors to Colgate-Palmolive Company, a corporation of Delaware

No Drawing. Filed Aug. 2, 1962, Ser. No. 214,196
14 Claims. (Cl. 260—243)

1. A member of the group of compounds consisting of compounds of the formulae

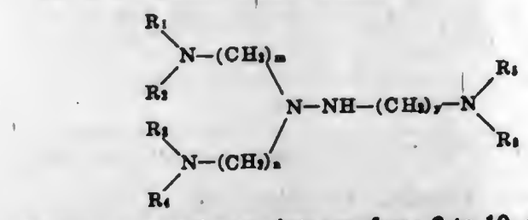


and



nontoxic pharmaceutically acceptable acid addition salts and nontoxic pharmaceutically acceptable quaternary ammonium salts of the group consisting of lower alkyl halides, phenyl-lower alkyl halides and lower alkyl sulfates thereof, wherein m and n are integers from 2 to 10, R_1 and R_2 are joined together to form a secondary amino group of the group consisting of morpholino, pyrrolidino, piperidino, 1,2,3,4-tetrahydroisoquinolino, 1,2,3,4-tetrahydroquinolino 4 - lower alkyl piperazino, 3 - hydroxypiperidino, 4-hydroxypiperidino and theophyllino, and R_3 and R_4 represent members of the group consisting of lower alkyl groups and the secondary amino groups represented by R_1 and R_2.

13. A compound of the formula



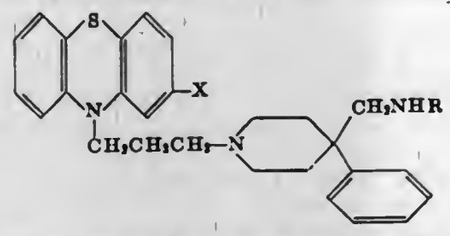
wherein m, n and y are integers from 2 to 10, and R_1 and R_2 are members of the group consisting of lower alkyl, phenyl, lower alkenyl, lower alkynyl, cyclopentyl and cyclohexyl groups and groups in which R_1 and R_2 are joined together to form a secondary amino group of the group consisting of morpholino, pyrrolidino, piperidino, 1,2,3,4-tetrahydroisoquinolino, 1.2,3,4-tetrahydroquinolino, isoindolino, 4-lower alkyl-1-piperazino, 3-hydroxypiperidino, 4-hydroxypiperidino, indolino, theophyllino and phenothiazino groups, R_3 and R_4 are members of the group consisting of lower alkyl, phenyl, phenyl-lower alkyl, lower alkenyl, lower alkynyl, cyclopentyl and cyclohexyl groups and groups in which R_3 and R_4 are joined together to form a secondary amino group of the group consisting of morpholino, pyrrolidino, piperidino, 1,2,3,4-tetrahydroisoquinolino, 1,2,3,4-tetrahydroquinolino, isoindolino, 4-lower alkyl-1-piperazino, 3-hydroxypiperidino, 4-hydroxypiperidino, indolino, theophyllino and phenothiazino groups, and R_5 and R_6 are members of the group consisting of lower alkyl, phenyl, lower alkenyl, phenyl-lower alkyl, lower alkynyl, cyclopentyl and cyclohexyl groups and groups in which R_5 and R_6 are joined together to form a secondary amino group of the group consisting of morpholino, pyrrolidino, piperidino, 1,2,3,4-tetrahydroisoquinolino, 1,2,3,4-tetrahydroquinolino, isoindolino, 4-lower alkyl-1-piperazino, 3-hydroxypiperidino, 4-hydroxypiperidino, indolino, theophyllino and phenothiazino groups.

3,272,808
N-[3-(4-AMINOMETHYL-4-PHENYLPIPERIDINO) PROPYL]PHENOTHIAZINES AND THEIR CARBAMATES

Harman S. Lowrie, Glenview, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 29, 1963, Ser. No. 298,431
4 Claims. (Cl. 260—243)

1. A compound of the formula



wherein X is selected from the group consisting of chlorine and lower alkanoyl and R is selected from the group consisting of hydrogen and (lower alkoxy)carbonyl.

3,272,809
CONVERSION OF 7-CARBOXYLIC ACYLAMINOCEPHALOSPORANIC ACID COMPOUNDS TO 7-ACA

Stephen Eardley, Ruislip, Middlesex, and Alan Gibson Long, Greenford, Middlesex, England, assignors to Glaxo Laboratories Limited, Greenford, England, a British company

No Drawing. Filed Nov. 22, 1963, Ser. No. 325,741
Claims priority, application Great Britain, Nov. 23, 1962, 44,449/62
3 Claims. (Cl. 260—243)

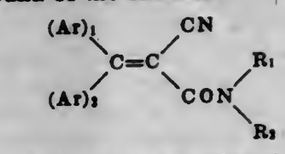
1. In a process for the preparation of 7-aminocephalosporanic acid from 7-carboxylic acylaminocephalosporanic acid, the step which comprises reacting 7-carboxylic acylaminocephalosporanic acid in a solvent medium with boron trifluoride etherate, ethanol and ethyl orthoformate acting in combination as a source of carbonium ions.

3,272,810
α-CYANO-β,β-DIPHENYLACRYLAMIDE COMPOUNDS

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

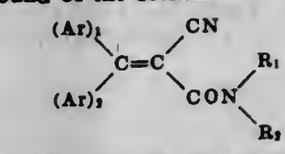
No Drawing. Filed May 1, 1962, Ser. No. 191,459
7 Claims. (Cl. 260—247.1)

1. A compound of the formula:



wherein $(Ar)_1$ and $(Ar)_2$ are phenyl nuclei devoid of nitro and nuclear-bonded amino groups and R_1 and R_2 are independently selected from the group consisting of alkyl of 1 to 30 carbon atoms, alkenyl of 3 to 25 carbon atoms and the atoms to complete a hetero ring with the nitrogen atom, said hetero ring being selected from the class consisting of mono- and bicyclic hetero nuclei.

4. A compound of the formula:



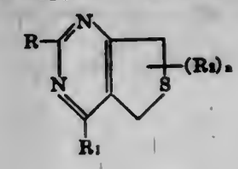
wherein $(Ar)_1$ and $(Ar)_2$ are phenyl nuclei devoid of nitro and nuclear-bonded amino groups and R_1 and R_2 form a heterocycle with the nitrogen atom, said heterocycle being selected from the group consisting of mono- and bicyclic heterocyclics.

3,272,811
DIHYDROTHIENO-[3,4-d]-PYRIMIDINES

Gerhard Ohnacker and Eberhard Woltun, Biberach an der Riss, Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed June 17, 1963, Ser. No. 288,491
Claims priority, application Germany, July 4, 1962, T 22,407
14 Claims. (Cl. 260—247.1)

1. A compound selected from the group consisting of dihydrothieno-[3,4-d]pyrimidines of the formula



wherein

R is selected from the group consisting of hydrogen, lower alkyl, phenyl, benzyl, hydroxyl, lower alkoxy, mercapto, lower alkyl-mercapto, amino, mono-lower alkylamino, di-lower alkylamino, pyrrolidino, piperidino, morpholino, 2-lower alkyl-morpholino and N'-lower alkyl-piperazino,

R_1 is selected from the group consisting of halogen, hydroxyl, lower alkoxy, lower alkoxy-lower alkoxy, di-lower alkylamino-lower alkoxy, lower alkenyloxy, mercapto, lower alkyl-mercapto, amino, hydrazino, phenylhydrazino, mono-lower alkylamino, mono-lower alkenylamino, anilino, cyclohexylamino, phenyl-lower alkylamino, (di-lower alkylamino)-lower alkylamino, (lower alkoxy-lower alkyl)-amino, mono-(hydroxy-lower alkyl)-amino, di-(hydroxy-lower alkyl)-amino, (hydroxy-lower alkyl)-lower alkylamino, lower alkyl-

benzylamino, pyrrolidino, piperidino, morpholino, 2-lower alkyl-morpholino and N'-lower alkyl-piperazino,
R_2 is lower alkyl, and
n is an integer from 0 to 2, inclusive,
and their non-toxic, pharmacologically acceptable acid addition salts.

3,272,812
PREPARATION OF 1,3,5-TRIMETHYLHEXAHYDRO-s-TRIAZINE
James S. Dix and Marvin M. Johnson, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 27, 1963, Ser. No. 312,013
6 Claims. (Cl. 260—248)

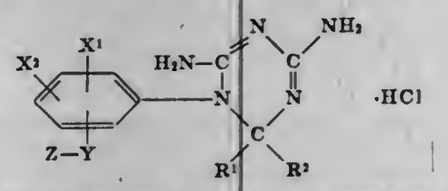
1. A process for the preparation of 1,3,5-trimethylhexahydro-s-triazine which comprises bringing trimethylamine and an oxidizing reactant yielding oxygen together at elevated temperature for a short reaction time of the order of a number of milliseconds and then quenching the reaction mass thus obtained.

3,272,813
POTASSIUM DICHLORO- AND TRICHLORO-ISOCYANURATE COMPLEXES
William F. Symes, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Original application June 21, 1960, Ser. No. 37,565, now Patent No. 3,150,132, dated Sept. 22, 1964. Divided and this application Dec. 10, 1963, Ser. No. 329,388
5 Claims. (Cl. 260—248)

1. A process for preparing a crystalline, potassium containing chloroisocyanurate complex compound selected from the group consisting of [(mono-trichloro,) tetra-(monopotassium dichloro,)] penta-isocyanurate, (mono-trichloro,) (monopotassium dichloro,) di-isocyanurate and mixtures thereof which comprises the steps of bringing together and reacting mono-potassium dichloroisocyanurate and trichloroisocyanuric acid in an inert liquid in a reaction zone wherein the molecular ratio of monopotassium dichloroisocyanurate and trichloroisocyanuric acid is a molecular ratio in the range of 8:1 to 1.15:1 and isolating said crystalline, potassium containing, chloroisocyanurate complex compound.

3,272,814
4,6-DIAMINO-1-ARYL-1,2-DIHYDRO-s-TRIAZINES
Royal A. Cutler, Sand Lake, and Samuel Schallt, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 14, 1963, Ser. No. 258,653
18 Claims. (Cl. 260—249.9)

1. 4,6 - diamino - 1 - (aryl) - 1,2 - dihydro - 2 - (R^1)-2-(R^2)-s-triazine hydrochloride having the structural formula



where R^1 is a member of the group consisting of lower alkyl and hydroxy-lower alkyl, R^2 is a member of the group consisting of hydrogen and lower alkyl, X^1 is a member of the group consisting of hydrogen and lower alkyl, X^1 is a member of the group consisting of lower alkyl-S-, lower alkyl-SO-, lower alkyl-SO_2-, and halogen, X^2 is a member of the group consisting of hydrogen and halogen, Y is a member of the group consisting of —S—, —SO—, and —SO_2—, and Z is a member of the group consisting of lower alkyl, lower alkenyl, cyclohexyl, cyclopentyl, phenyl, lower alkylphenyl, halophenyl, nitrophenyl, halo-nitrophenyl, benzyl, ar-halobenzyl, ar-nitrobenzyl, and ar-halo-ar-nitrobenzyl.

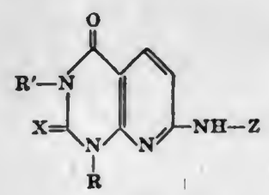
3,272,815
PROCESS FOR THE PRODUCTION OF DIENE ADDUCTS OF HEXAETHYLIDENE-CYCLOHEXANE
Heinrich Hopff, Kusnacht, near Zurich, and Geza Kormany, Buchs, near Aarau, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland
No Drawing. Filed Dec. 14, 1962, Ser. No. 244,551
Claims priority, application Switzerland, Dec. 20, 1961, 14,719/61
8 Claims. (Cl. 260—250)

7. Process for the production of diene adducts of hexaethylidene-cyclohexane which comprises:
(a) refluxing a mixture of hexaethylidene-cyclohexane with a philodiene selected from the group consisting of maleic acid, fumaric acid, maleic acid anhydride, maleic acid lower alkyl ester, fumaric acid lower alkyl ester, acrolein, crotonic aldehyde, acetylene dicarboxylic acid, acetylene dicarboxylic acid lower alkyl ester, benzoquinone, naphthoquinone, acrylic acid lower alkyl ester, acrylic acid, ethylene tetranitrile, azodicarboxylic acid dialkyl ester, and azodicarboxylic acid nitrile,
(b) and recovering the resulting adduct of two moles of said philodiene compound with each mole of hexaethylidene-cyclohexane from the reaction mixture.

8. An adduct of one mole of hexaethylidene-cyclohexane and two moles of a member selected from the group consisting of fumaric acid, maleic acid, maleic acid anhydride, maleic acid lower alkyl ester, fumaric acid lower alkyl ester, acetylene dicarboxylic acid, acetylene dicarboxylic acid lower alkyl ester, acrylic acid, and acrylic acid lower alkyl ester.

3,272,816
7-AMINO-2,4-DIOXO-1,2,3,4-TETRAHYDRO-PYRIDO[2,3-d]PYRIMIDINES
Viktor Papesch, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Apr. 28, 1965, Ser. No. 451,656
5 Claims. (Cl. 260—256.4)

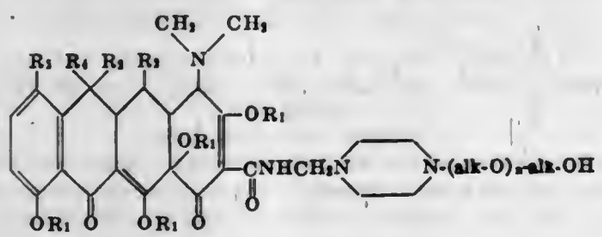
1. A compound of the formula



wherein R is selected from the group consisting of lower alkyl, lower alkenyl, hydroxyethyl, and cyanoethoxyethyl; R' is selected from the group consisting of hydrogen and lower alkyl; X is selected from the group consisting of O and S; and Z is selected from the group consisting of hydrogen and lower alkanoyl.

3,272,817
N-AMINOMETHYLTETRACYCLINE DERIVATIVES
Maxwell Gordon, Elkins Park, and Blaine M. Sutton, Philadelphia, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 7, 1964, Ser. No. 336,119
3 Claims. (Cl. 260—268)

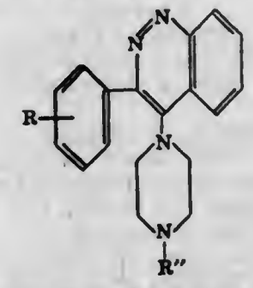
1. A compound having the following formula:



in which:
all of the R_1 groups are the same and are members selected from the group consisting of hydrogen, carbamoyl and lower alkanoyl;
R_2 is a member selected from the group consisting of hydrogen and hydroxy;
R_3 is a member selected from the group consisting of hydrogen, hydroxy, and, when R_1 is carbamoyl and lower alkanoyl, carbamoyloxy and lower alkanoyloxy, respectively;
R_4 is a member selected from the group consisting of hydrogen and methyl;
R_5 is a member selected from the group consisting of hydrogen, halogen, amino, nitro and trifluoromethylsulfonyl;
alk is an alkylene group having 2 to 4 carbon atoms; and
n is an integer of 1 to 2.

3,272,818
3-PHENYL-4-PIPERAZINYLCINNOLINES
Harman S. Lowrie, Glenview, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed July 13, 1964, Ser. No. 382,341
6 Claims. (Cl. 260—268)

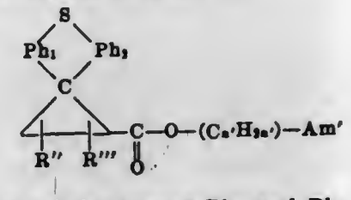
1. A compound of the formula



wherein R is selected from the group consisting of hydrogen, methyl, methoxy, and chlorine; and R'' is selected from the group consisting of hydrogen, lower alkanoyl, carbethoxy, lower alkyl, hydroxyethyl, phenyl and benzyl.

3,272,819
AMINO ESTERS OF SPIRO (CYCLOPROPAN-1,9'-THIOXANTHENE)-2-CARBOXYLIC ACID
Renat Herbert Mizzoni, Long Valley, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 16, 1963, Ser. No. 330,565
13 Claims. (Cl. 260—268)

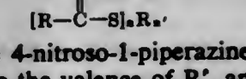
1. A member selected from the group consisting of a compound having the formula



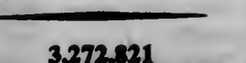
in which each of the groups Ph_1 and Ph_2 is a member selected from the group consisting of 1,2-phenylene, (lower alkyl)-1,2-phenylene, (lower alkoxy)-1,2-phenylene, (halogeno)-1,2-phenylene, and (trifluoromethyl)-1,2-phenylene, each of the groups R'' and R''' is a member selected from the group consisting of hydrogen and lower alkyl, the group of the formula —($C_{n'}H_{2n'}$)— is lower alkylene having from two to three carbon atoms and separating the group Am' from the oxygen atom by two to three carbon atoms, and Am' is a member selected from the group consisting of 1-N,N-lower alkyleneimino with four to six ring-carbon atoms, 4-lower alkyl-1-piperazino, 4-phenyl-1-piperazino and 4-morpholino, an acid addition salt, a quaternary lower alkyl-ammonium salt and a quaternary phenyl-lower alkyl-ammonium salt thereof.

3,272,820
4-NITROSO 1-PIPERAZINETHIOCARBOXYLATES
John J. D'Amico, Dunbar, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Jan. 22, 1965, Ser. No. 427,473
13 Claims. (Cl. 260—268)

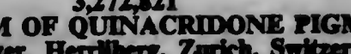
1. A compound selected from the group consisting of
(a) compounds of the formula



where R is the 4-nitroso-1-piperazine group, X is selected from the group consisting of oxygen and sulfur, one X being sulfur and the other oxygen, and R' is selected from the group consisting of alkali metal, ammonium, amine addition salt-forming group, and halogen-substituted benzyl, the halogen substituents being at least two but less than five and
(b) compounds of the formula



where R is the 4-nitroso-1-piperazine group, *n* is an integer equal to the valence of R', and R' is selected from a group consisting of metal, ammonium, amine addition salt-forming group, halogen-substituted benzyl, the halogen substituents being at least two but less than five,

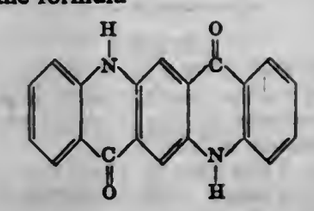


and
when R is the same significance as before.

3,272,821
DELTA FORM OF QUINACRIDONE PIGMENT
Hans R. Schweizer, Herrliberg, Zurich, Switzerland, assignor, by mesne assignments, to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 26, 1962, Ser. No. 190,251
3 Claims. (Cl. 260—279)

1. A method for purifying linear quinacridones which comprises subliming crude linear unsubstituted quinacridone in a high vacuum within the range 0.05–0.1 mm. Hg and at temperatures within the range of 405–480° C.

3. A new linear, unsubstituted, yellowish red quinacridone compound: 5,12-dihydroquino-(2,3-b)-acridine-7,14-dione, having the formula



possessing a new delta crystalline form and characterized by an X-ray diffraction pattern having a very strong line corresponding to an interplanar spacing of 13.6 A.; strong lines corresponding to interplanar spacings of 6.41 A. and 6.75 A.; medium lines corresponding to interplanar spacings of 3.34 A., 3.37 A. and 6.63 A.; and weak lines corresponding to interplanar spacings of 2.81 A., 2.95 A., 3.12 A., 3.18 A., 3.55 A., 3.74 A., 4.11 A., 4.36 A. and 5.23 A., wherein the relative intensity of the diffracted X-ray is measured with a Gieger counter.

3,272,822
POLYCHLOROQUINACRIDONE PIGMENTS
Ronald L. Sweet, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 15, 1963, Ser. No. 316,447
2 Claims. (Cl. 260—279)

1. Octachloroquinacridonequinone.

2. Decachloroquinacridone characterized by being slightly soluble in concentrated sulfuric acid to form a dark green solution, said compound shows no change on heating to about 370° C. but blackens at about 400° C. without melting and exhibits a single X-ray diffraction peak with an interplanar spacing of 3.42 A.

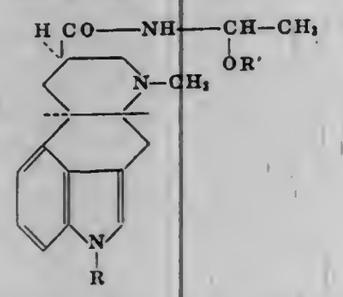
3,272,823

α-HYDROXY DERIVATIVES OF DIHYDRO-D-LYSERGIC AND 1-METHYL-DIHYDRO-D-LYSERGIC ETHYLAMIDES

Federico Arcamone, Milan, Italy, and Aldo Ferretti, Washington, D.C., assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed Oct. 23, 1964, Ser. No. 406,190
Claims priority, application Italy, July 13, 1962, 14,099/62; Dec. 5, 1962, 23,917/62; Oct. 28, 1963, 22,092/63
18 Claims. (Cl. 260—285.5)

1. A compound of the formula:



wherein

R' is selected from the group consisting of hydrogen; and methyl, and

R' is selected from the group consisting of hydrogen, β-(N-carbobenzoxy)-L-alanylhydrazide; cyclohexyl; substituted and unsubstituted saturated alkyl having from 1 to 4 carbon atoms

wherein the substituent is selected from the group consisting of hydroxy, alkoxy, chloro, phenyl, amino and acylamino

wherein the acyl is selected from the group consisting of saturated aliphatic carboxylic acid with from 1 to 4 carbon atoms, phenylcarbonic acid, benzoic acid, nicotinic acid and isonicotinic acid.

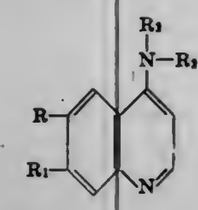
3,272,824

4-AMINO-6,7-DI(LOWER)ALKOXYQUINOLINES

Frank Frederick Ebetino and George Carlin Wright, Norwich, N.Y., assignors to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed Dec. 6, 1962, Ser. No. 242,646
6 Claims. (Cl. 260—288)

1. A member of the group consisting of a base of the formula:



wherein

R and R_1 each represent a member of the group consisting of methoxy and ethoxy;

R_2 represents a member of the group consisting of hydrogen and methyl;

R_3 represents a member of the group consisting of hydrogen, amino, lower alkyl, hydroxy(lower)alkyl, lower alkoxy lower alkyl, carbethoxymethyl, amino(lower)alkyl, di(lower)alkylamino(lower)alkyl, acetyl, cyclohexyl, benzyl and phenyl; and R_2 and R_3 taken together represent the atoms necessary to complete a ring system chosen from the group consisting of morpholinyl and N-methylpiperazinyl, and the physiologically acceptable mineral acid addition salts thereof.

3,272,825

METHOD OF PRODUCING PYRIDINE

Akira Shimizu, Hirakata, Kiyonori Igarashi, Joto-ku, Osaka, and Junichi Hashimoto, deceased, late of Joto-ku, Osaka, Japan, by Shigako Hashimoto, executor, Shimizu, Japan, assignors to Koei Chemical Co., Ltd., Doshomachi, Higashi-ku, Osaka, Japan

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,617
Claims priority, application Japan, Dec. 13, 1962, 37/56,921
5 Claims. (Cl. 260—290)

1. In a process for producing pyridine by heating a gaseous reaction mixture of formaldehyde, acetaldehyde and ammonia in the presence of a pyridine catalyst selected from the group consisting of silica, alumina, silica/alumina, and silica/magnesia, the improvement wherein the amount of acetaldehyde in the reaction mixture is from 2.2 to 3.5 moles per mole of formaldehyde.

3,272,826

SUBSTITUTED 4[PIPERIDYLIDENE(4')]-9,10-DIHYDRO-4H-BENZO [4,5] CYCLOHEPTA [1,2-b] THIOPHENE AND THE 4 PIPERIDYL 4 OL COMPOUNDS

Ernst Jucker, Ettingen, Basel-Land, Anton Ebnöther, Reinach, Basel-Land, André Stoll and Jean-Michel Bastian, Birsfelden, Basel-Land, and Erwin Rissi, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Aug. 29, 1963, Ser. No. 305,522
Claims priority, application Switzerland, Aug. 31, 1962, 10,377/62
7 Claims. (Cl. 260—293.4)

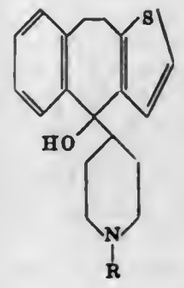
1. A compound selected from the group consisting of an antihistaminic thiophene of the formula:



(I)

wherein R is a lower alkyl radical and the pharmaceutically acceptable acid addition salts of said thiophene.

4. A compound selected from the group consisting of an antihistaminic thiophene of the formula:



(III)

wherein R is a lower alkyl radical and the pharmaceutically acceptable acid addition salts of said thiophene.

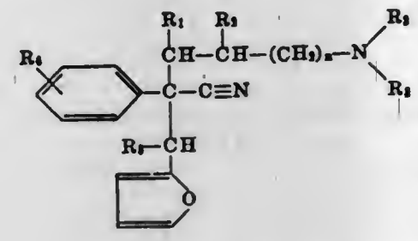
3,272,827

α-PHENYL-β-(2-FURYL PROPIONITRILE COMPOUNDS AND A PROCESS OF MAKING SAME

Marcel Pesson, Paris, France, assignor to Societe anonyme dite: Laboratoire Roger Bellon, Neuilly-sur-Seine, Seine, France, a French company

No Drawing. Filed Oct. 7, 1964, Ser. No. 402,312
Claims priority, application Great Britain, Sept. 13, 1962, 35,021/62
15 Claims. (Cl. 260—294)

1. The α-phenyl-β-2-furyl propionitrile compound selected from the group consisting of an α-phenyl-β-2-furyl propionitrile of the formula



wherein:

R_1 and R_2 are members selected from the group consisting of hydrogen and lower alkyl;

R_3 and R_4 are members selected from the group consisting of lower alkyl and R_3 and R_4, together with the nitrogen atom to which they are attached, forming a saturated mononuclear heterocyclic ring;

R_5 is a member selected from the group consisting of hydrogen, lower alkyl, and cyclohexyl;

R_6 is a member selected from the group consisting of hydrogen, chlorine, lower alkoxy, and phenoxy; and

n indicates one of the integers 0 and 1,

and its pharmaceutically acceptable acid addition salts.

14. The pharmaceutically acceptable acid addition salts of α-piperidino lower alkyl-α-phenyl-β-2-furyl-β-lower alkyl propionitrile.

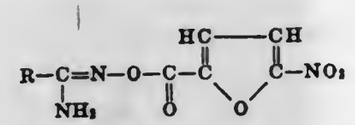
3,272,828

5-NITRO-2-FUROYLAMIDOXIMES

Anne Mary Von Esch, North Chicago, and Aldo J. Crovetti, Lake Forest, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,849
3 Claims. (Cl. 260—295)

3. A compound of the formula



wherein R is selected from the group consisting of pyridyl, furyl, thienyl, pyrimidyl, halofuryl, halothienyl, oxazyl, isoxazyl, quinolyl, pyrazyl, pyridylloweralkyl, furyllower-alkyl, thienylloweralkyl, imidazyl, pyrazinyl, thiazyl, and isoquinolyl.

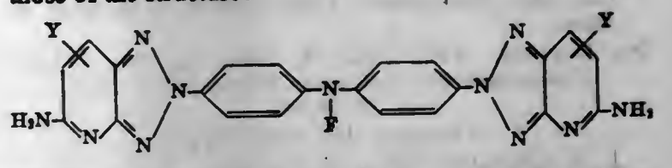
3,272,829

PYRIDOTRIAZOLE BRIGHTENERS

Bennett George Buell, Somerville, and Robert Sidney Long, Bound Brook, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Application Apr. 19, 1962, Ser. No. 188,897, now Patent No. 3,222,371, dated Dec. 7, 1965, which is a division of application Ser. No. 87,754, Feb. 8, 1961, which in turn is a division of application Ser. No. 698,930, Nov. 26, 1957, now Patent No. 3,058,989, dated Oct. 16, 1962. Divided and this application Aug. 25, 1964, Ser. No. 392,021
1 Claim. (Cl. 260—295)

A compound selected from the group consisting of (1) those of the structure:



wherein Y is selected from the group consisting of hydrogen, halogen, alkyl, carboxy, carbalkoxy and carboxamide, and F is selected from the group consisting of hydrogen and alkyl, and (2) quaternary salts of (1).

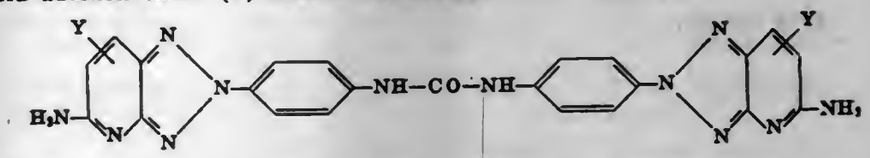
3,272,830

PYRIDOTRIAZOLE BRIGHTENERS

Bennett George Buell, Somerville, and Robert Sidney Long, Bound Brook, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Application Apr. 19, 1962, Ser. No. 188,897, now Patent No. 3,222,371, dated Dec. 7, 1965, which is a division of application Ser. No. 87,754, Feb. 8, 1961, which in turn is a division of application Ser. No. 698,930, Nov. 26, 1957, now Patent No. 3,058,989, dated Oct. 16, 1962. Divided and this application Aug. 25, 1964, Ser. No. 392,047
1 Claim. (Cl. 260—295)

A compound selected from the group consisting of (1) those of the formula:



wherein Y is selected from the group consisting of hydrogen, alkyl, halogen, carboxy, carbalkoxy and carboxamide, and (2) quaternary salts of (1).

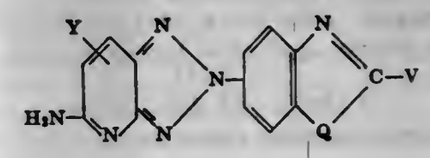
3,272,831

PYRIDOTRIAZOLE BRIGHTENERS

Bennett George Buell, Somerville, and Robert Sidney Long, Bound Brook, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Application Apr. 19, 1962, Ser. No. 188,897, now Patent No. 3,222,371, dated Dec. 7, 1965, which is a division of application Ser. No. 87,754, Feb. 8, 1961, which in turn is a division of application Ser. No. 698,930, Nov. 26, 1957, now Patent No. 3,058,989, dated Oct. 16, 1962. Divided and this application Aug. 25, 1964, Ser. No. 392,048
1 Claim. (Cl. 260—295)

A compound selected from the group consisting of (1) those of the structure:



wherein Y is selected from the group consisting of hydrogen, halogen, alkyl, carboxy, carbalkoxy and carboxamide, Q is selected from the group consisting of —O—, —NH— and —S— and V is selected from the group consisting of hydrogen, alkyl and aryl, and (2) quaternary salts of (1).

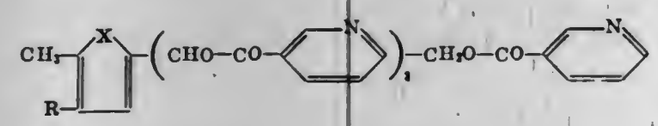
3,272,832

NICOTINIC ACID DERIVATIVES AND PROCESS FOR THE PREPARATION THEREOF

Hiroshi Nakano, Toyonaka, Akira Morimoto, Matsubara, Hideyuki Yoshimitsu, Kyoto, and Akira Kimata, Kyoto Prefecture, Japan, assignors to Fujisawa Pharmaceutical Co., Ltd., Doshomachi, Osaka, Japan, a company of Japan

No Drawing. Filed June 24, 1964, Ser. No. 377,483
Claims priority, application Japan, July 3, 1963, 38/34,982
9 Claims. (Cl. 260—295.5)

1. A compound having the formula



wherein X is oxygen or an imino radical, and R is a carboxyl, acid salt thereof, alkoxycarbonyl or carbamoyl, radical.

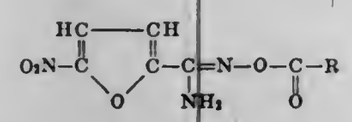
3,272,833

CERTAIN SUBSTITUTED 5-NITRO-2-FURYLAMIDOXIMES

Anne Mary Von Esch, North Chicago, and Aldo J. Crovetti, Lake Forest, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,875
6 Claims. (Cl. 260—295.5)

1. A compound of the formula



wherein R is selected from the group consisting of hydrogen, arylthioloweralkyl, aryllowerlkyl, aryloxyloweralkyl, carboloweralkoxyvinyl, diloweralkylamino, loweralkenyl, carboloweralkoxy, carboloweralkoxyloweralkyl, halophenyl, cyanoloweralkyl, loweralkoxyphenyl, hydroxyphenyl, loweralkylthiophenyl, nitrophenyl, aminophenyl, sulfonamidophenyl, halosulfonamidophenyl, pyridyl, furyl, thienyl, pyrimidyl, oxazyl, isoxazyl, quinolyl, pyrazyl, halofuryl, halothienyl, furylloweralkyl, thienylloweralkyl, imidazyl, pyrazinyl, thiazyl and isoquinolyl and non-toxic salts thereof.

3,272,834

DIISOPROPYL AMMONIUM NICOTINATE

Alfred Kraushaar and Kurt Riedl, Tyrol, Austria, assignors to Biochemie Gesellschaft mit beschrankter Haftung, Tyrol, Austria, a corporation of Austria

No Drawing. Filed Dec. 6, 1963, Ser. No. 328,515
Claims priority, application Austria, Dec. 14, 1962, A 9,797
1 Claim. (Cl. 260—295.5)

Diisopropylammonium nicotinate.

3,272,835

PROCESS FOR THE MANUFACTURE OF BIPYRIDYLS

Philip Brook Dransfield and Michael Hill Watson, Widnes, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,657
Claims priority, application Great Britain, Nov. 12, 1962, 42,616/62
25 Claims. (Cl. 260—296)

1. In a process for the manufacture of a bipyridyl by reaction of a metal selected from the group consisting of alkali metals and calcium and a pyridine to form a metal-pyridine interaction product and oxidizing said interaction product to bipyridyl, the improvement which comprises using a solution of said metal in liquid ammonia for reaction with the pyridine to form said interaction product.

3,272,836

PROCESS FOR THE MANUFACTURE OF BIPYRIDYLS

Roy Duffy and Alexander Hunter McQuillan, Widnes, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 6 1963, Ser. No. 321,678
Claims priority, application Great Britain, Nov. 12, 1962, 42,617/62
11 Claims. (Cl. 260—296)

1. In a process for the manufacture of a bipyridyl by the reaction of a metal and a pyridine to form a metal-pyridine interaction product and oxidation of said inter action product to bipyridyl, the improvement which comprises carrying out siad reaction and oxidation simultaneously.

3,272,837

SUBSTITUTED TETRAHYDROPYRIDINES AND PROCESS THEREFOR

Marshall D. Draper, Woodland Hills, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Oct. 30, 1964, Ser. No. 407,846
13 Claims. (Cl. 260—297)

1. 1-lower alkyl - 3 - (α - hydroxybenzyl) - 4 - phenyl-1,2,3,6-tetrahydropyridine.

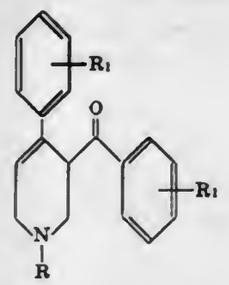
3,272,838

SUBSTITUTED TETRAHYDROPYRIDINES

Marshall D. Draper, Woodland Hills, and Fred Keller, Northridge, Calif., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Oct. 30, 1964, Ser. No. 407,861
7 Claims. (Cl. 260—297)

1. A compound of the formula



wherein R is a member selected from the group consisting of lower alkyl, lower alkenyl and phenyl-lower alkyl, and R_1 is a member selected from the group consisting of halo and low alkoxy.

3,272,839

SUBSTITUTED METHYLHYDRAZINE COMPOUNDS

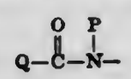
Werner Bollag, Basel, Hugo Gutmann, Reinach, Balthasar Hegedus, Binningen, Ado Kaiser, Neu-Frenkendorf, Albert Langemann, Binningen, Marcel Muller, Reinach, and Paul Zeller, Allschwil, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 20, 1965, Ser. No. 449,636
Claims priority, application Switzerland, Sept. 29, 1961, 11,355/61
16 Claims. (Cl. 260—304)

1. A compound selected from the group consisting of compounds of the formula

A—NH—NH—CH_3

and corresponding azo of the formula A—N=N—CH_3 and azoxy of the formula A—N(O)N—CH_3 compounds, and acid addition salts thereof; wherein A is selected from the group consisting of lower alkyl of up to 10 carbon atoms, lower alkenyl and cyclo-lower alkyl moieties substituted by at least one substituent selected from the group consisting of halogen, (2-methylhydrazino)-lower alkylamino-lower alkyl, lower alkylamino-lower alkoxy, di-lower alkylamino-lower alkoxy, allophanoyl, lower alkylallophanoyl, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl, N-phenylcarbamoyl, N-benzothiazolylcarbamoyl, N-(lower alkylthio-lower alkyl)-carbamoyl, N-(carbamoyl-lower alkyl)-carbamoyl, N-(lower alkyl-sulfonyl-lower alkyl)-carbamoyl, N-(halo-lower alkyl)-carbamoyl, N-(lower alkenyl)-carbamoyl, N-(phenyl-lower alkyl)-carbamoyl, N-furfuryl-carbamoyl, N-cyclo-lower alkylcarbamoyl, N-(lower alkylamino-lower alkyl)-carbamoyl, N-(di-lower alkylamino-lower alkyl)-carbamoyl, N-(2-methylhydrazino-lower alkyl)-carbamoyl, N,N-(lower alkylene)-carbamoyl, phthalimido, an acylamino moiety of the formula



wherein Q is selected from the group consisting of lower alkyl, phenyl, a monocyclic 5 to 6 membered heterocyclic ring moiety containing 1 to 2 heteroatoms selected from the group consisting of oxygen and nitrogen and wherein the heterocyclic moiety can bear a lower alkyl substituent; P is hydrogen or lower alkyl,

ureido, phenylureido, lower alkylureido, hydroxy-lower alkylureido, (2-methylhydrazino)-lower alkylureido, thioureido, guanidino, lower alkylguanidino, hydroxy-lower alkylguanidino, amidino, lower alkylamidino, di-lower alkylamidino, cyclo-lower alkylamidino, phenyl-lower alkylamidino, phenylamidino, isoxazoylamidino, lower alkanoyl, benzoyl, (2-methylhydrazino)-methyl, (2-methylhdrazino)-lower alkoxy and (2-methylhydrazino)-lower alkanoyl.

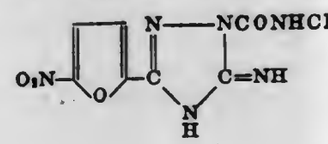
3,272,840

5 - IMINO - 1 - METHYLCARBAMOYL-3-(5-NITRO-2-FURYL)-Δ^2-1,2,4-TRIAZOLINE AND ITS PREPARATION

Louis Edmond Benjamin, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed June 10, 1965, Ser. No. 463,030
2 Claims. (Cl. 260—308)

1. The compound 5-imino-1-methylcarbamoyl-3-(5-nitro-2-furyl)-Δ^2-1,2,4-triazoline of the formula:



2. The method of preparing 5-imino-1-methylcarbamoyl-3-(5-nitro-2-furyl)-Δ^2-1,2,4-triazoline which comprises reacting 5-imino - 3 - (5-nitro-2-furyl)-Δ^2-1,2,4-triazoline with methyl isocyanate.

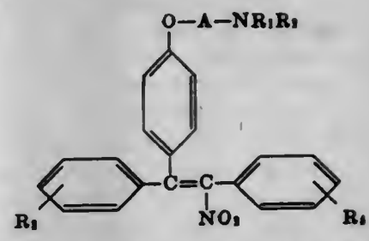
3,272,841

α-(AMINOALKOXYPHENYL)-α'-NITROSTILBENE COMPOUNDS

Horace A. De Wald, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,104
5 Claims. (Cl. 260—326.5)

1. A member of the class consisting of compounds of the formula



and pharmaceutically-acceptable acid-addition and quaternary ammonium salts thereof, where A is a member of the class consisting of ethylene and propylene; R_1 and R_2 are members of the class consisting of lower alkyl and further members wherein R_1 and R_2 are combined and are selected from among

(a) oxydiethylene and

(b) lower alkylene of more than 3 and fewer than 9 carbon atoms, more than 3 and fewer than 6 of which are in annular position with the nitrogen atom;

and R_3 and R_4 are members of the class consisting of hydrogen, lower alkyl, lower alkoxy, halogen, and trifluoromethyl.

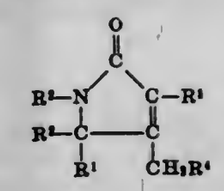
3,272,842

NOVEL PYRROLINONES

Nelson R. Easton and Robert D. Dillard, both of Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana.

No Drawing. Filed June 25, 1965, Ser. No. 467,106
6 Claims. (Cl. 260—326.5)

1. A compound of the formula



wherein

R^1 and R^2, when taken alone, are members of the group consisting of lower alkyl, phenyl, mono-substituted phenyl, and di-substituted phenyl, the substituents being of the group consisting of methyl, trifluoromethyl, and halo;

R^1 and R^2, when taken together with the carbon atom to which they are attached, complete a C_5–C_8 cycloalkyl ring;

R^3 is a member of the group consisting of hydrogen, lower alkyl, C_5–C_6 cycloalkyl, lower-alkoxy-lower alkyl, and tetrahydrofurfuryl;

R^4 is a member of the group consisting of hydrogen, lower alkyl, phenyl, and naphthyl; and

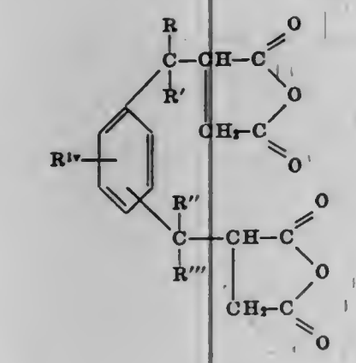
R^5 is a member of the group consisting of phenyl, mono- and di-halo phenyl, phenoxy, mono- and di-halo phenoxy, phenylthio, mono- and di-halo phenylthio, naphthyl, mono- and di-halo naphthyl, naphthyloxy, mono- and di-halo naphthyloxy, naphthylthio, mono- and di-halo naphthylthio, and thienyl.

3,272,843
PHENYLENE-BIS-(3-BUTANE-1,2-DICARBOXYLIC ANHYDRIDES)

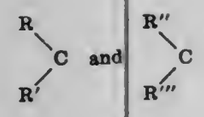
Sydney M. Spatz, Buffalo, and Russell I. Steiner, Williamsville, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 1, 1961, Ser. No. 86,308
4 Claims. (Cl. 260—347.3)

1. Dianhydride having the structural formula:



in which



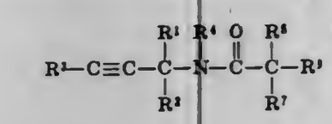
are alkylidene radicals each containing 2 to 6 carbon atoms and R^{iv} represents 4 nuclear substituents each selected from the group consisting of hydrogen and C_1–C_6 alkyl radicals.

3,272,844
NOVEL ACETYLENIC AMIDES

Nelson R. Easton and Robert D. Dillard, both of Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed June 3, 1965, Ser. No. 461,197
6 Claims. (Cl. 260—347.3)

1. A compound of the formula



wherein

R^1 and R^2, when taken alone, are members of the group consisting of lower alkyl, phenyl, and phenyl bearing not more than two substituents selected from the group consisting of methyl, trifluoromethyl, halo, and methoxy;

R^1 and R^2, when taken together with the carbon atom to which they are attached, complete a C_3–C_8 cycloalkyl ring;

R^3 is a member of the group consisting of hydrogen, lower alkyl, halo, phenyl, and naphthyl;

R^4 is a member of the group consisting of hydrogen, lower alkyl, C_3–C_6 cycloalkyl, lower-alkoxy-lower alkyl, and tetrahydrofurfuryl;

R^5 is a member of the group consisting of phenoxy-monosubstituted phenoxy, disubstituted phenoxy, phenylthio, monosubstituted phenylthio, disubstituted phenylthio, naphthyloxy, monosubstituted naphthyloxy, disubstituted naphthyloxy, naphthylthio, monosubstituted naphthylthio, disubstituted naphthylthio, the substituents being from the group consisting of methyl, trifluoromethyl, and halo;

R^6 and R^7 are members of the group consisting of hydrogen, methyl and ethyl.

3,272,845
BISGLYCIDYL ETHERS OF ISOHEXIDES

John D. Zech, Wilmington, and John W. Le Maistre, Claymont, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,790
3 Claims. (Cl. 260—347.8)

1. Isosorbide bisglycidyl ether.

3,272,846
PROCESS FOR PRODUCING PHOSPHINYL AZIDES

Kazimiera J. L. Paciorek and Reinhold H. Kratzer, Costa Mesa, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed June 8, 1965, Ser. No. 462,422
6 Claims. (Cl. 260—349)

1. A process for preparing phosphinyl azides which comprises: admixing and reacting at a temperature of from about −15° C., to 150° C. a phosphinyl halide having the formula $R_2P(O)X$, and a silyl azide having the formula R_3SiN_3, for a period of time sufficient to produce a phosphinyl azide having the formula $R_2P(O)N_3$, wherein each R is a hydrocarbon group selected from the class consisting of lower alkyl groups containing from 1 to 5 carbon atoms, phenyl, and lower alkyl substituted phenyl groups containing from 7 to 10 carbon atoms, and X is a halogen selected from the group consisting of chlorine and bromine, and recovering said phosphinyl azide.

3,272,847
PROCESS FOR PREPARING EQUILIN AND THE INTERMEDIATES PRODUCED THEREIN

Douglas S. Irvine, Rosemere, Quebec, Jehan F. Bagli, Montreal, Quebec, Peter F. Morand, Ottawa, Ontario, Claude Vezina, Oka, Quebec, and Karel Wiesner, Westmount, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 15, 1964, Ser. No. 337,753
17 Claims. (Cl. 260—397.3)

7. The method of deconjugating estra-4,6-diene-3,17-dione which comprises treating said estra-4,6-diene-3,17-dione with an alkali metal alkoxide in a solvent selected from the group which consists of dimethylsulfoxide, dimethylformamide, and methylsulfinyl anion in dimethyl sulfoxide.

3,272,848
PROCESS FOR THE PREPARATION OF EQUILIN

Douglas S. Irvine, Rosemere, Quebec, Jehan F. Bagli, Montreal, Quebec, Peter F. Morand, Ottawa, Ontario, Claude Vezina, Oka, Quebec, and Karel Wiesner, Westmount, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,636
18 Claims. (Cl. 260—397.3)

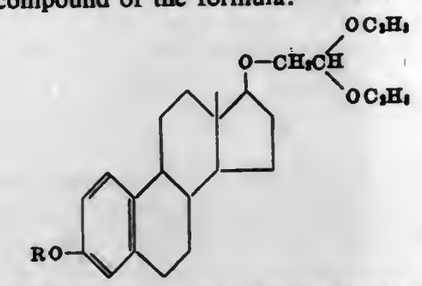
8. The process of preparing androsta-1,4,7-triene-3,17-dione which comprises treating 17β-acetoxyandrosta-4,6-dien-3-one with acetic anhydride and acetyl chloride in an organic base, thereby obtaining its corresponding enol acetate, 3,17β-diacetoxyandrosta-3,5,7-triene; subjecting said last-named compound to base-catalysed selective hydrolysis, thereby obtaining 17β-hydroxyandrosta-4,7-diene-3-one; and treating said last-named compound with a microorganism selected from the group consisting of *Septomyxa affinis*, *Corynebacterium simplex* and *Bacillus sphaericus*, thereby obtaining androsta - 1,4,7-triene-3,17-dione.

3,272,849
17-DIETHOXYETHYL ETHERS OF 3-ALKOXY-1,3,5(10)-ESTRATRIENES

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,304
3 Claims. (Cl. 260—397.5)

1. A compound of the formula:



wherein R is a lower alkyl group having from 1 to 6 carbon atoms.

3,272,850
DEODORIZATION OF LANOLIN AND LANOLIN DERIVATIVES

Thomas B. Richey, Jr., Westfield, N.J., and Conrad J. Sunde, Garden City, N.Y., assignors to Malmstrom Chemical Corporation, Newark, N.J., a corporation of New Jersey

No Drawing. Filed June 14, 1963, Ser. No. 287,798
13 Claims. (Cl. 260—428)

1. A process for deodorizing a lanolin material selected from the group consisting of lanolin, lanolin oil, wool wax alcohols, lanolin wax fractions, ethoxylates of each of the foregoing, and esterified lanolins, which comprises continuously feeding said lanolin material into contact with the inner wall of a heated jacket, causing the feed material to flow downwardly along the surface of said wall to be heated thereby while in the form of a wiped film of relatively minute thickness, said film being formed by a wiping action which imparts turbulence to said film and causes it to spiral as it flows downwardly along said surface, subjecting said film to a vacuum in the range of from 0.5 to 100 mm. mercury absolute while thus heated, and simultaneously subjecting the thus heated film to the action of a countercurrent flow of steam.

3,272,851
PURIFICATION OF ACYLATED LANOLIN PRODUCTS

Conrad J. Sunde, Garden City, N.Y., and Thomas B. Richey, Jr., Westfield, N.J., assignors to Malmstrom Chemical Corp., Newark, N.J., a corporation of New Jersey

No Drawing. Filed July 24, 1963, Ser. No. 297,196
13 Claims. (Cl. 260—428)

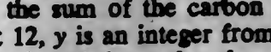
1. The method of purifying reaction products resulting from acylation of a lanolin material and having a hydroxyl value of from about 15 to about 150, said material being selected from the group consisting of lanolin, lanolin oil, lanolin wax, lanolin fatty acids, wool grease acids, lanolin alcohols, wool grease alcohols, ethoxylated lanolin, ethoxylated lanolin alcohols, ethoxylated lanolin wax and lanolin derivatives containing amine groups, said method comprising continuously feeding said products of acylation into contact with the surface of the inner wall of a heated jacket, causing the feed material to flow downwardly along the surface of said wall to be heated thereby while in the form of a wiped film of relatively minute thickness, said film being formed by a wiping action which imparts turbulence to said film and causes it to spiral as it flows downwardly along said surface, subjecting said film to a vacuum in the range of from about 1.0 to about 50 mm. mercury absolute, while thus heated, and simultaneously subjecting the thus flowing heated film to the action of a counter-current flow of steam, whereby to remove excess acylating agent and simultaneously eliminate odoriferous constituents from said products.

3,272,852
SCHIFF BASE-INORGANIC HALIDE ADDUCT

Frederic C. McCoy, Beacon, and Edwin C. Knowles, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 10, 1963, Ser. No. 307,791
10 Claims. (Cl. 260—429.5)

1. A novel composition represented by the formula:



in which R is an alkyl radical having from 1 to 30 carbon atoms, R′ is selected from the group consisting of hydrogen and an alkyl radical having from 1 to 18 carbon atoms, the sum of the carbon atoms in R and R′ being at least 12, y is an integer from 1 to 6, M is a polyvalent cation selected from the class consisting of boron, aluminum, titanium, tin, zinc, copper, cadmium, magnesium, mercury, zirconium, antimony, manganese and iron, X is a halide ion selected from the group consisting of chloride, bromide and iodide ions and in the case of divalent tin and the cations having a valence of 3 to 4 the fluoride ion, and z is an integer from 2 to 4 equal to the valence of M.

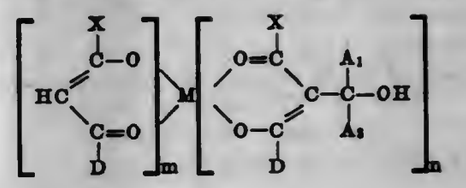
2. A composition according to claim 1 in which M is titanium.

3,272,853
METAL CHELATES CONTAINING PERHALOALKYL GROUPS

Robert A. Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 9, 1963, Ser. No. 271,579
10 Claims. (Cl. 260—438.1)

1. A compound having the formula



where

A_1 and A_2 are selected from the group consisting of perchloroalkyl, perfluoroalkyl and mixed perchlorofluoroalkyl radicals all containing 1 through 5 carbon atoms;

X is selected from the group consisting of alkyl radicals containing 1 through 5 carbon atoms; perchloroalkyl, perfluoroalkyl and mixed perchloro-fluoroalkyl radicals all containing 1 through 5 carbon atoms, aryl radicals; —OCH_3, —Cl, —CH_3, and —NO_2 substituted aryl radicals; and thienyl;

D is selected from the group consisting of X and —OX;

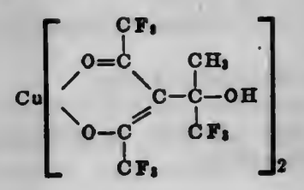
M is a metal having a valence of 2–4;

n is a number 1–4; and

m is a number 0–3;

provided, however, that the sum of n and m cannot exceed the valence number of the metal.

4. A compound of the formula

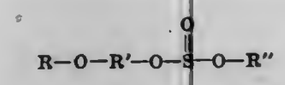


3,272,854
CYCLOALIPHATIC SULFITE ESTERS

Rupert A. Covey, Wolcott, Allen E. Smith, Oxford, and Winchester L. Hubbard, Woodbridge, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed July 18, 1963, Ser. No. 296,107
9 Claims. (Cl. 260—456)

1. A compound represented by the formula



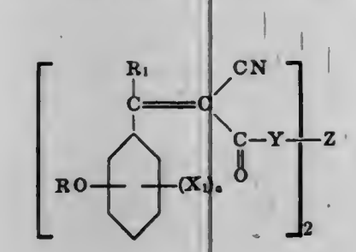
in which R has not more than 18 carbon atoms and is selected from the group consisting of alkyl, alkenyl, alkynyl having from 3 to 10 carbon atoms, cycloalkyl, alkoxycycloalkyl, chloroalkyl, bromoalkyl, cyanoalkyl, phenyl, naphthyl, phenyl and naphthyl having substituents selected from the group consisting of alkyl, cycloalkyl, chloroalkyl, bromoalkyl, alkoxy, chloro, bromo and nitro, R'' has not more than 18 carbon atoms and is selected from the group consisting of alkyl, alkenyl, alkynyl having from 3 to 10 carbon atoms, cycloalkyl, alkoxycycloalkyl, chloroalkyl, bromoalkyl, cyanoalkyl, alkoxyalkyl, carbalkoxyalkyl, phenyl, naphthyl, phenyl and naphthyl having substituents selected from the group consisting of alkyl, cycloalkyl, chloroalkyl, bromoalkyl alkoxy and chloro, bromo, and R' has not more than 12 carbon atoms and is a divalent cycloaliphatic radical having from 4 to 8 ring carbons in which the two valences are on two different carbon atoms selected from the group consisting of cycloalkylene, alkyl substituted cycloalkylene and alkenyl substituted cycloalkylene.

3,272,855
BIS-α-CYANO-β-SUBSTITUTED CINNAMIC ACID AMIDES AND ESTERS

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 27, 1962, Ser. No. 213,002
The portion of the term of the patent subsequent to Dec. 18, 1979, has been disclaimed
14 Claims. (Cl. 260—465)

1. A colorless compound of the formula:



wherein:

R is selected from the group consisting of hydrogen alkyl, alkenyl, benzyl and phenyl radicals;

R_1 is selected from the group consisting of alkyl of 1 to about 30 carbon atoms and alkenyl of 3 to about 30 carbon atoms;

X_1 is a non-auxochrome having a bathochromism of less than 250 A;

n is an integer from 0 to 4;

Y is selected from the group consisting of —O— and —N—R_2;

R_2 is selected similarly as R and

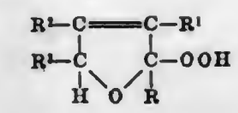
Z is a bivalent radical, selected from the group consisting of lower alkylene, cyclohexylene, phenylene, and xylylene radicals.

3,272,856
PREPARATION OF HALO AND ALKYL-THIO SUBSTITUTED ALLYL ESTERS

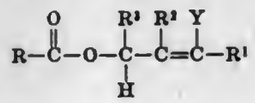
John B. Braunwarth, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,628
20 Claims. (Cl. 260—488)

1. The method which comprises reacting a peroxide compound of the formula

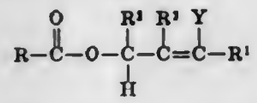


wherein R, R^1, R^2 and R^3 are substituents of the group consisting of hydrogen and C_1 to C_5 alkyl, with a reactant of the group consisting of polyhalomethane compounds of the formula CH_nX_{4-n} wherein X is halogen of the group consisting of chlorine, bromine and iodine, combinations thereof and fluorine when at least one of the other halogens is present in the molecule and *n* is an integer of 0 to 1, chlorine, bromine, iodine, hydrogen chloride, hydrogen bromide, hydrogen iodide and mercaptans of the formula R^4SH wherein R^4 is C_1–C_5 alkyl, in the presence of redox reducing agent and separating allyl ester products fo the formula



wherein R, R^1, R^2 and R^3 are as above defined and Y is a member of the group consisting of chlorine, bromine, iodine, the group —CX_3 wherein X is halogen and the group —SR^4 wherein R^4 is as above defined.

12. Allyl esters of the formula



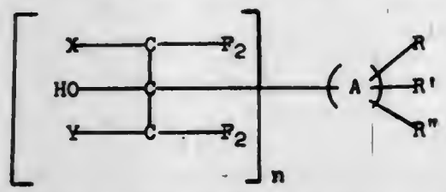
wherein R, R^1, R^2 and R^3 are substituents of the group consisting of hydrogen and C_1–C_5 alkyl, Y is a member of the group consisting of chlorine, bromine, iodine, the group —CX_3 wherein X is halogen and the group —SR^4 wherein R^4 is C_1–C_5 alkyl.

3,272,857
PROCESS FOR THE PREPARATION OF AROMATIC CARBOXYLIC ACIDS

Basil S. Farah and Everett E. Gilbert, Morris Township, Morris County, Edward S. Jones, Hanover Township, Morris County, and Julian A. Otto, Stockholm, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,639
12 Claims. (Cl. 260—516)

1. A process for the preparation of an aromatic carboxylic acid which comprises admixing a hexahalohydroxyisopropyl aryl derivative of the formula



wherein X and Y are halogens independently selected from the group consisting of chlorine and fluorine, *n* is an integer from 1 to 2, A is an aryl radical, R, R' and R'' are members independently selected from the group consisting of hydrogen, alkyl, alkoxy, hydroxy, amino, dialkylamino and halogen with an alkali metal hydroxide, heating the resulting reaction mixture to a temperature of from about 100° C. to the boiling point of the reaction mixture, acidifying the reaction mixture and recovering the resulting aromatic carboxylic acid.

3,272,858
METHOD OF PRODUCING ARYLAMINO ACID COLOR COUPLERS

Gerald Noel White, Carshalton, Surrey, England, assignor to The Pavelle Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 23, 1962, Ser. No. 182,082
8 Claims. (Cl. 260—518)

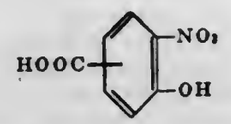
1. A method of producing aryl amino acid color couplers consisting essentially of condensing malonic dialkyl esters selected from the group consisting of malonic dialkyl esters having alkyl groups containing from 1 to 5 carbon atoms with an aryl amino ester chosen from the group consisting of p-aminobenzoic methyl and ethyl esters, 5-amino isophthalic methylester, and 2-methoxy-4-amino benzoic ethyl ester and subjecting the condensation product to hydrolysis at a temperature of between 60° C. and 80° C.

3,272,859
PREPARATION OF HYDROXYNITRO-BENZOIC ACIDS

Henry J. Peterson, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,070
4 Claims. (Cl. 260—521)

1. Method for preparing hydroxynitrobenzoic acids having the general formula



wherein the carboxyl radical occurs other than ortho to the nitro radical, which comprises contacting a mono-nitrotoluene selected from the group consisting of meta- and para-nitrotoluene with a weight percent excess of powdered potassium hydroxide at a temperature in the range of 0° C. to about 100° C., for a period of time in the range of 0.1 hour to 72 hours whereby the mono-nitrotoluene is converted to dipotassium salt of hydroxynitrobenzoic acid, acidifying said salt in aqueous solution with mineral acid, and thereafter separating and recovering said hydroxynitrobenzoic acid.

3,272,860
PREPARATION OF METHIONINE ANALOGUES

Hans L. Nufer, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,946
4 Claims. (Cl. 260—535)

1. The process of preparing high quality monomeric calcium 2-hydroxy-4-(methylthio)butyrate which comprises contacting an aqueous solution of 2-hydroxy-4-(methylthio)butyric acid with a calcium compound of the group consisting of calcium oxide and calcium hydroxide in the presence of a compound of the structure

$$R—OCH_2CH_2—OH$$

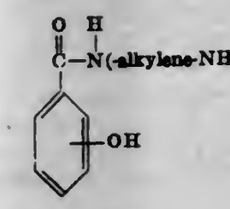
wherein R is an alkyl group having one to four carbon atoms and filtering the resulting slurry of the monomeric calcium 2-hydroxy-4-(methylthio)butyrate.

3,272,861
POLYALKYLENE POLYAMINE DERIVATIVES OF HYDROXYBENZOIC ACID

Olen L. Riggs, Jr., Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed Aug. 23, 1962, Ser. No. 218,815
4 Claims. (Cl. 260—559)

1. A hydroxybenzamide of the formula



wherein the alkylene radical is selected from the group consisting of ethylene and trimethylene groups and *x* is an integer varying from 2 to 4.

3,272,862
RECOVERY OF TETRACYCLINE ANTIBIOTICS FROM FERMENTATION BROTHS

Ezio Caputo and Enzo Zanaini, Milan, Italy, assignors to Ankerfarm S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,298
Claims priority, application Italy, Oct. 19, 1963, 21,463/63
11 Claims. (Cl. 260—559)

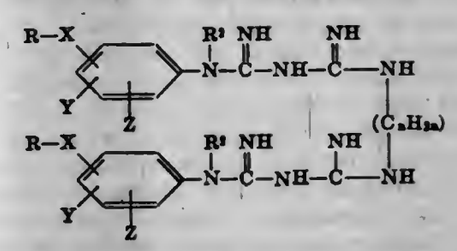
1. A process for the recovery of a tetracycline antibiotic selected from the group consisting of tetracycline, 7-chlortetracycline, and 5-oxytetracycline from a fermentation broth which comprises filtering the broth free of mycelia, adjusting the pH of the broth to a pH of between 0.5 and 6.0, adding cupric ions and a surface active agent to precipitate a cupric complex of the tetracycline antiobiotic, separating by filtration said cupric complex of the tetracycline antibiotic, dissolving said precipitate of said cupric complex of the tetracycline antibiotic in an organic solvent which is immiscible with water, and removing the cupric ions from said dissolved cupric complex of the tetracycline antibiotic by aqueous extraction of said organic solution with an aqueous solution of a chelating agent which has a greater propensity for the cupric ions than does the tetracycline antibiotic and which removes the cupric ions into said aqueous solution, whereby a solution of the tetracycline antibiotic in said organic solvent is obtained.

3,272,863
1,1'-(ALKYLENE)BIS(5-ARYLBIGUANIDES)

Royal A. Cutler, Sand Lake, and Samuel Schalit, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,478
18 Claims. (Cl. 260—565)

1. A compound of the group consisting of: 1,1'-(alkylenebis(5-arylbiguanides) having the formula



wherein: C_nH_{2n} represents a bivalent alkylene bridge in which the free valence bonds are on two different carbon

atoms and *n* is an integer from 2 to 12 inclusive; R^2 is a member of the group consisting of hydrogen and alkyl containing 1–4 carbon atoms; Y is a member of the group consisting of hydrogen, halogen, trifluoromethyl, nitro, lower alkyl —O—, lower alkyl —S—, lower alkyl —SO—, and lower alkyl —SO_2—; Z is a member of the group consisting of hydrogen, halogen, nitro, lower alkyl, and lower alkyl —O—; R is a member of the group consisting of alkyl containing 1–18 carbon atoms, halo-lower alkyl, lower alkenyl, benzyl, ar-halobenzyl, ar-nitrobenzyl, ar-lower alkylbenzyl, ar-lower alkoxybenzyl, cyclohexyl, phenyl, lower alkylphenyl, nitrophenyl, lower alkoxyphenyl, halophenyl, and, when neither of Y and Z is nitro, the further members ar-aminobenzyl and aminophenyl; and X is a member of the group consisting of —S—, —SO—, and —SO_2—; and acid-addition salts thereof.

3,272,864

PROCESS FOR PREPARING 5-(3-AMINOPROPYLIDENE)-5H-DIBENZO[a,d]CYCLOHEPTENE AND 5H - DIBENZO[a,d]-10,11-DIHYDRO - CYCLOHEPTENE DERIVATIVES

Robert D. Hoffsommer, Jr., and David Taub, Metuchen, and Norman L. Wendler, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 19, 1962, Ser. No. 188,873
5 Claims. (Cl. 260—570.8)

1. A method of introducing a γ-aminopropylidene moiety at the 5 position of a 5H-dibenzo[a,d]-10,11-dihydrocycloheptene or a 5H-dibenzo[a,d]cycloheptene, which comprises reacting a compound selected from the group consisting of a 5H-dibenzo[a,d-]-10,11-dihydrocycloheptene-5-one and a 5H-dibenzo[a,d]cycloheptene-5-one with a Grignard reagent derived from a cyclopropylhalide to produce the corresponding intermediate selected from the group consisting of 5-cyclopropyl-5-hydroxy-5H-dibenzo[a,d] - 10,11 - dihydrocycloheptene and 5-cyclopropyl - 5 - hydroxy-5H-dibenzo[a,d]cycloheptene, rearranging said intermediate to form the corresponding 5-(γ-hydroxypropylidene) - 5H - dibenzo-[a,d]-10,11-dihydrocycloheptene and 5-(γ-hydroxypropylidene) - 5H - dibenzo[a,d]cycloheptene, halogenating said derivative to the corresponding 5-(γ-halopropylidene)-5H-dibenzo[a,d]-10,11-dihydrocycloheptene and 5-(γ-halopropylidene) - 5H - dibenzo[a,d]cycloheptene, and then aminating said halogen derivative to the amine compound.

3,272,865

PREPARATION OF AMINATED BENZENES FROM HYDROXY BENZENES

Robert S. Barker, Port Washington, N.Y., assignor to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed Aug. 10, 1962, Ser. No. 216,063
6 Claims. (Cl. 260—581)

1. A process for the preparation of an aminated benzene which comprises: contacting an aminating agent selected from the group consisting of ammonia, ammonium chloride, ammonium carbonate, methylamine, aniline, N-methyl aniline, and an hydroxybenzene selected from the group consisting of phenol and derivatives thereof having from 1 to 3 ring hydrogens replaced by a radical selected from the group consisting of aromatic and aliphatic hydrocarbon radicals having from 1 to 6 carbon atoms in the presence of a catalyst selected from the group consisting of silica-alumina having from 10 to 20% silica, silica-alumina having from 10 to 20% alumina, zirconia-alumina, titania-alumina, phosphoric acid and tungsten oxide, at a temperature between 300 and 600° C. and pressures in excess of 7 atmospheres; and withdrawing a stream containing an aminated benzene.

3,272,866

PROCESS FOR CATALYTIC HYDROGENATION OF ADIPONITRILE

John W. Conner, Phillip W. Evans, Albert J. Isacks, Jr., and Chester P. Nieswender, Jr., Pensacola, Fla., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,160
5 Claims. (Cl. 260—583)

1. A process for catalytically hydrogenating adiponitrile to produce hexamethylenediamine comprising contacting, at a temperature between 25° C. and 200° C. and at a pressure between 25 and 10,000 pounds per square inch, a mixture comprising adiponitrile, ammonia, and hydrogen with a hydrogenation catalyst selected from the group consisting of cobalt and nickel prepared from a corresponding oxide, said oxide having magnetic properties when subjected to a mangetic field of intensity between 200 gauss and 10,000 gauss.

3,272,867

PROCESS FOR CATALYTIC HYDROGENATION OF ADIPONITRILE

John W. Conner, Phillip W. Evans, Albert J. Isacks, Jr., and Chester P. Neiswender, Jr., Pensacola, Fla., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,161
5 Claims. (Cl. 260—583)

1. A process for catalytically hydrogenating adiponitrile to produce hexamethylenediamine comprising contacting, at a temperature between 25° C. and 200° C. and at a pressure between 25 and 10,000 pounds per square inch, a mixture comprising adiponitrile, ammonia, and hydrogen with hydrogenation catalyst selected from the group consisting of cobalt and nickel prepared from a corresponding oxide, said oxide having nonmagnetic properties when subjected to a magnetic field of intensity between 200 gauss and 10,000 gauss.

3,272,868

INTERMITTENT WATER VAPOR ADDITION DURING FORMALDEHYDE SYNTHESIS

Alvin B. Stiles, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 2, 1964, Ser. No. 403,689
5 Claims. (Cl. 260—603)

1. In the process of oxidatively dehydrogenating methanol to make formaldehyde by passing a mixture of methanol vapor, water vapor, and air over a catalyst, wherein the amount of methanol vapor in the feed is in the range of about 50 to 100 volume percent based on the volume of air, the improvement which comprises operating normally at a feed humidity of about 8 to 12% by weight of water based on methanol, and intermittently raising and lowering the water content of the feed so as to operate at a feed humidity of about 16–20% by weight of water based on methanol during a total of about 0.5% to 20% of the time.

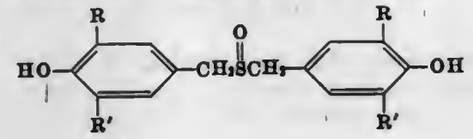
3,272,869

ORGANIC SULFIDE AND SULFOXIDE ANTIOXIDANTS AND METHOD FOR THEIR PREPARATION

Francis X. O'Shea, Wolcott, Conn., assignor to the United States Rubber Company, New York, N.Y., a corporation of New Jersey

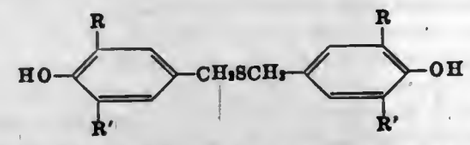
No Drawing. Filed May 25, 1960, Ser. No. 31,542
6 Claims. (Cl. 260—607)

1. The bis-(3,5-dihydrocarbyl-4-hydroxybenzyl)sulfoxides as represented by the structural formula:



wherein R is selected from the group consisting of alkyl, cycloalkyl and aralkyl radicals containing less than 13 carbon atoms and R' is selected from the group consisting of tert-alkyl, cycloalkyl and aralkyl radicals containing less than 13 carbon atoms.

3. A method of preparing bis-(3,5-dihydrocarbyl-4-hydroxybenzyl)sulfides as represented by the structural formula:



wherein R is selected from the group consisting of alkyl, cycloalkyl, and aralkyl radicals containing less than 13 carbon atoms and R' is selected from the group consisting of tert-alkyl, cycloalkyl and aralkyl radicals containing less than 13 carbon atoms, comprising reacting one molar proportion of a 2,6-dihydrocarbylphenol with one to about three molar proportions of formaldehyde and one-half to about two molar proportions of a compound selected from the group consisting of alkali metal sulfide and hydrosulfide and in a solvent selected from the group consisting of lower alkanols and ethylene glycol monoethyl ether at a temperature of from about 25° C. to about 150° C. for a period of from about 0.5 to about 24 hours.

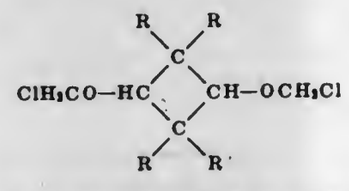
3,272,870

CYCLOBUTANE DERIVATIVES

John R. Caldwell and Winston J. Jackson, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 23, 1962, Ser. No. 189,308
6 Claims. (Cl. 260—611)

1. A cyclobutane derivative of the formula:



wherein each R is independently selected from the group consisting of (a) lower alkyl radicals and (b) nuclear members of saturated 5–6 carbon atom rings comprising an adjacent R as a nuclear member.

3,272,871

FLUOROCARBON-HYDROCARBON POLYETHERS

Joseph Leo Warnell, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 1, 1962, Ser. No. 170,499
5 Claims. (Cl. 260—615)

1. A fluorocarbon-hydrocarbon polyether having the formula

$$RO\{CF_2—CF_2—O\}_nR'$$

where *n* is the number of divalent tetrafluoroethylene epoxide units in the polyether and is from one to 20, and R and R' are radicals selected from the class consisting of alkyl radicals and alkoxy substituted alkyl radicals, said radicals having from one to 6 carbon atoms.

5. The process of preparing a fluorocarbon-hydrocarbon polyether having the formula $RO(CF_2—CF_2—O)_nR'$ wherein *n* is the number of divalent tetrafluoroethylene epoxide units in said polyether and is from one to 20 and R and R' are radicals selected from the class consisting of alkyl radicals and alkoxy substituted alkyl radicals, said radicals having from one to 6 carbon atoms, said process consisting essentially of reacting tetrafluoroethylene epoxide with a hydrocarbon ether having the formula ROR', wherein R and R' have the same meaning as previously stated in this claim, at a temperature of —80 to +50° C.

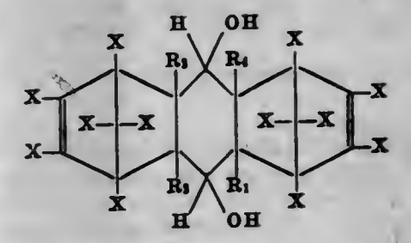
3,272,872

HALOGENATED 1,4:5,8-DIMETHANOANTHRAHYDROQUINONES

Daniel S. Raden, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Apr. 16, 1962, Ser. No. 187,955
11 Claims. (Cl. 260—617)

1. A compound of the formula:



wherein each X is independently selected from the group consisting of chlorine and bromine; and R_1, R_2, R_3, and R_4 are independently selected from the group consisting of hydrogen, chlorine, bromine, and alkyl radicals of from 1 to 3 carbon atoms.

3,272,873

HYDROGENATION OF ALPHA,BETA-UNSATURATED ALDEHYDES

Walter James Porter, Jr., Baton Rouge, La., Rhea N. Watts, deceased, late of St. Francisville, La., by Beulah Smith Watts, legal representative, St. Francisville, La., and Leroy Virgil Robbins, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 18, 1961, Ser. No. 146,037
8 Claims. (Cl. 260—638)

1. A process for producing a dimer alcohol from a feed containing at least 5 wt. percent of a C_6 to C_{40} alpha,beta unsaturated dimer aldehyde and from 0.05 to 5 wt. percent of a cobalt soap of a C_6 to C_{22} carboxylic acid which comprises contacting said feed with hydrogen at a hydrogen pressure above 500 p.s.i.g., but not exceeding 3500 p.s.i.g., and at a temperature between 300° and 475° F. whereby said cobalt soap is reduced to cobalt metal and the olefinic bond in said alpha-beta-unsaturated dimer aldehyde is saturated with hydrogen, removing said cobalt metal and thereafter hydrogenating the resultant saturated dimer aldehyde product to the corresponding dimer alcohol in the presence of a hydrogenation catalyst.

3,272,874

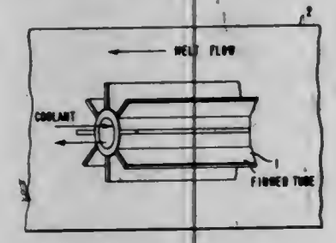
PRODUCTION OF NITROALKANES

Richard L. Abbott, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Nov. 18, 1964, Ser. No. 412,244
3 Claims. (Cl. 260—644)

1. In a process for the production of substantial amounts of nitromethane, nitroethane, 1-nitropropane and 2-nitropropane by the vapor phase nitration of propane at predetermined elevated temperatures and pressures, with a nitrating agent selected from the group consisting of nitric acid, nitrogen dioxide and mixtures thereof, the improvement which comprises effecting said nitration in the presence of sulfur dioxide, thereby producing enhanced amounts of nitromethane and 2-nitropropane while still producing lesser but substantial amounts of nitroethane and 1-nitropropane as compared with a process conducted in the absence of an oxygenated sulfur compound.

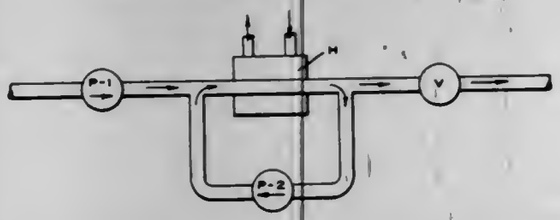
3,272,875
SURFACE CRYSTALLIZATION PROCESS
Mendel T. Gordon and Gilbert P. Monet, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,818
7 Claims. (Cl. 260—646)



1. A crystallization process for depositing a dense, glass-like crystal layer on a cooling surface which comprises contacting a liquid mixture having at least one crystallizable component with said cooling surface and circulating said mixture over said cooling surface at a constant rate while simultaneously controlling the liquid melt temperature and coolant temperature so as to maintain a controlled constant concentration gradient at the mother liquor-crystal interface.

7. A surface crystallization process for separating 3,4-dichloronitrobenzene from its admixture with 2,3-dichloronitrobenzene which comprises circulating said mixture over a cooling surface at a constant rate of one foot per second while simultaneously controlling the liquid melt temperature and coolant temperature so as to maintain a controlled constant concentration gradient at the mother liquor-crystal interface.

3,272,876
CYCLOOLEFIN PRODUCTION
Ralph Levine, Lake Charles, La., assignor, by mesne assignments, to Columbian Carbon Company, a corporation of Delaware
Filed June 14, 1962, Ser. No. 202,416
31 Claims. (Cl. 260—666)



1. In a method of continuously reacting substituted or unsubstituted conjugated open-chain diolefins to give a polyolefinic cyclooligomer of said diolefin, said cyclooligomer having at least eight cyclic carbon atoms, which method comprises the steps of continuously introducing said diolefin into a reaction zone, introducing a catalyst into said reaction zone, said catalyst comprising zero-valent nickel and having the empirical formula

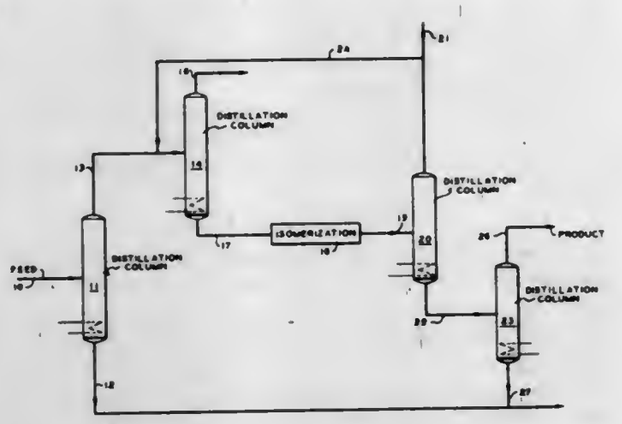
$$[(RO_a)_3Z]_xNi(CO)_{4-x}$$

wherein R is an organic radical, Z is selected from the group of trivalent elements phosphorus, arsenic, and antimony, "a" is from one to zero, and "x" is between one and four inclusive, the quantity of said catalyst being between about 0.001 and 10%, based on the weight of said diolefin, heating the contents of said reaction zone to a temperature between about 40° C. and 250° C., applying a pressure throughout the reaction zone at least equivalent to the vapor pressure of the reaction mixture, said catalyst being in solution in said mixture, and continuously withdrawing a part of the reactiion mixture including products of a reaction as final products; the improvement comprising continuously backmixing the balance of the reaction mixture with said diolefin introduced; controlling the volume of reaction mixture, the rate of introduction of diolefin, and the rate of withdrawal of reaction mixture as final product to give a mass flow rate of between about 0.01 and about 10 grams of said diolefin introduced per millilitre of volume of liquid-occupied space in said reaction zone per hour; maintaining a substantially constant concentration of said diolefin in said reaction mixture at a point in the range of 3–60% by weight of the reaction mixture, and maintaining a relatively uniform composition of said reaction mixture throughout said occupied space by the backmixing per unit of time at least an amount of the reaction mixture equal in weight to the weight of diolefin introduced.

3,272,877
OLEFIN CONVERSION TO ALICYCLIC HYDROCARBONS
Raymond A. Franz, Kirkwood, and Richard N. Moore, Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed May 16, 1963, Ser. No. 281,008
14 Claims. (Cl. 260—666)

1. A process for producing alicyclic hydrocarbons from olefin hydrocarbons which comprises subjecting olefin hydrocarbons of 2 to 20 carbon atoms in the absence of a catalyst to a temperature of 300 to 500° C. and a pressure of 200 to 20,000 p.s.i.g. in a non-catalytic reaction zone in the presence of a mixture of at least two different modifying agents, one of said modifying agents being selected from the group consisting of hydrogen chloride, hydrogen bromide, hydrogen iodide and mixtures thereof and compounds and elements which under the conditions of the reaction zone will form a member of the group consisting of hydrogen chloride, hydrogen bromide, hydrogen iodide and mixtures thereof, and the other of said modifying agents being one selected from the group consisting of hydrogen sulfide, elemental sulfur and compounds which under the conditions of the reaction zone will form hydrogen sulfide.

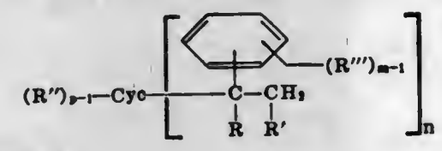
3,272,878
PRODUCTION OF C_6 CYCLIC HYDROCARBONS
John T. Cabbage, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 7, 1964, Ser. No. 357,888
4 Claims. (Cl. 260—666)



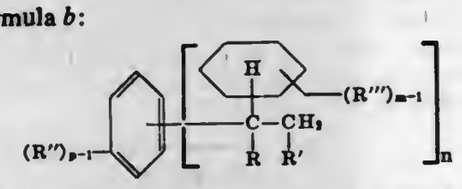
1. A process which comprises passing a hydrocarbon mixture to a first distillation zone, said hydrocarbon mixture comprising isohexane and lighter materials, normal hexane, methylcyclopentane, 2,2-dimethylpentane, 2,4-dimethylpentane, benzene, cyclohexane and materials heavier than cyclohexane; withdrawing from said first distillation zone a residual hydrocarbon fraction containing hydrocarbons heavier than cyclohexane; passing the remainder of said hydrocarbon mixture containing cyclohexane and materials lighter than cyclohexane from the upper region of said first distillation zone to a second distillation zone; withdrawing from said second distillation zone an overhead stream containing isohexane and lighter hydrocarbons; withdrawing from said second distillation zone a first bottoms stream containing 2,2-dimethylpentane, 2,4-dimethylpentane, benzene, cyclohexane, substantially all of the methylcyclopentane contained in said hydrocarbon mixture and a major portion of normal hexane contained in said hydrocarbon mixture; passing the thus withdrawn first bottoms stream into an isomerization zone containing a catalyst consisting of fluoride promoted platinum-alumina; maintaining the temperature and pressure in said isomerization zone in the ranges of 400 to 750° F. and 300 to 500 p.s.i.g., respectively, to isomerize: normal hexane in the hydrocarbon feed to said isomerization zone to isohexane; 2,2-dimethylpentane and 2,4-dimethylpentane in the hydrocarbon feed to said isomerization zone to higher boiling isoheptanes; and cyclohexane in the hydrocarbon feed to said isomerization zone to methylcyclopentane; passing the effluent from said isomerization zone to a third distillation zone; withdrawing from said third distillation zone an overhead stream containing hydrocarbons lighter than normal hexane and a minor amount of the normal hexane contained in said isomerization zone effluent; withdrawing from said third distillation zone a second bottoms stream containing methylcyclopentane, benzene, cyclohexane and heavier hydrocarbons and a major portion of the normal hexane contained in said isomerization zone effluent; passing the thus withdrawn second bottoms stream into a fourth distillation zone; withdrawing from said fourth distillation zone an overhead product containing substantially all of the normal hexane contained in said second bottoms stream and at least 60 volume percent cyclic C_6 hydrocarbons, and withdrawing isoheptane and heavier hydrocarbons from the lower region of said fourth distillation zone.

3,272,879
HIGH ENERGY FUELS AND METHODS
Eldon E. Stahly, Birmingham, Mich., assignor, by mesne assignments, to Sinclair Research, Inc., a corporation of Delaware
No Drawing. Filed Dec. 28, 1959, Ser. No. 862,017
3 Claims. (Cl. 260—668)

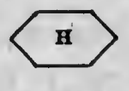
1. A composition of matter comprising a mixture of position isomers of at least one of Formula *a*:



and Formula *b*:



wherein in Formulas *a* and *b*



is a cyclohexane ring, R and R' are members of the group consisting of hydrogen, alkyl, and Cyc-alkyl which together with the ethyl group contain 2 to 12 carbon atoms, R'' is a member of the group consisting of hydrogen, alkyl, and Cyc-alkyl, R''' is a member of the group consisting of alkyl, Cyc-cycloalkyl, hexahydroindanyl and hexahydroalkindanyl, the hydrocarbon radicals R'' and R''' each having from 1 to 12 carbon atoms, Cyc is a member of the group consisting of cyclo-C_5 and cyclo-C_6 alkanes, *m* is an integer of 1 to 5, *n* is an integer of 1 to 3 and *p* is an integer from 1 to 4.

3,272,880
CHEMICAL PROCESS AND PRODUCTS PRODUCED THEREBY
Norman L. Wendler, Summit, and David Taub, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed July 24, 1962, Ser. No. 212,144
2 Claims. (Cl. 260—668)

1. A method of making a 5-allyl-5H-dibenzo-[a,d]-cycloheptene which comprises reacting a 5-metallo-5H-dibenzo-[a,d]-cycloheptene with an allyl halide.

3,272,881
PREPARATION OF DETERGENT ALKYLATES
Brij L. Kapur and Oliver C. Kerfoot, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
No Drawing. Filed Nov. 4, 1963, Ser. No. 321,338
6 Claims. (Cl. 260—668)

1. A method for converting polyphenylalkanes present in a bottoms fraction obtained as a by-product in alkylating benzene with a chlorination product of from 0.1–0.8 atom of chlorine per mole of an alkane selected from the group consisting of C_{10}–C_{16} normal paraffins and mixtures thereof, into detergent grade polycyclic compounds boiling in the range from about 570–725° F., which comprises reacting said bottoms fraction with aluminum chloride at a temperature between about 40 and 150° C.

3,272,882
PREPARATION OF β-PHENYLNAPHTHALENE
John J. van Veenooy, Wyncroft, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Dec. 20, 1963, Ser. No. 332,298
2 Claims. (Cl. 260—668)

1. Method of making β-phenylnaphthalene which consists essentially of treating β-chlorostyrene with a non-acidic aqueous medium at a temperature in the range of 225 to 400° C.

3,272,883
SYNTHESIS OF 3-PHENYLINDENE
Lawrence J. Hughes, Hitchcock, Tex., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 27, 1963, Ser. No. 334,030
10 Claims. (Cl. 260—668)

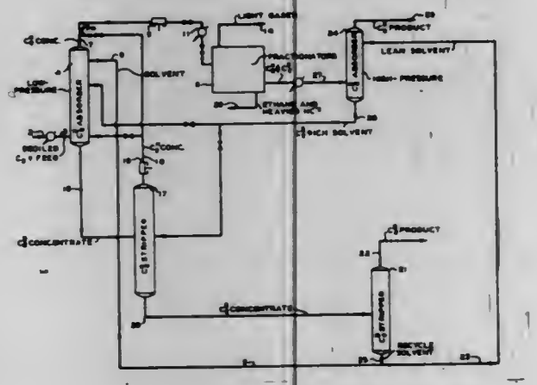
1. A method for the production of 3-phenylindene which comprises reacting benzene with a halohydrocarbon chosen from the group consisting of 1,3-dihalopropenes, 1,2,3-trihalopropanes, and 1,3,3-trihalopropanes in the presence of a Friedel-Crafts catalyst and recovering 3-phenylindene from the resulting reaction mixture.

3,272,884
METHOD FOR THE RECOVERY OF ANTHRACENE
Norman S. Boodman, Monroeville, Philip X. Masciantonio, Penn Township, Westmoreland County, and George W. Perkins, Delmont, Pa., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed June 7, 1965, Ser. No. 462,078
12 Claims. (Cl. 260—675)

1. A process for the recovery of purified anthracene from a middle creosote fraction of coal tar containing

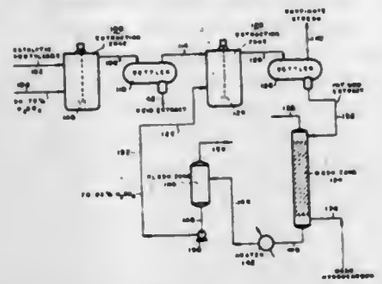
anthracene and boiling in a range between about 315° and 355° C., said process comprising heating and dissolving said fraction in a light creosote fraction of coal tar boiling below about 315° C., at least about 20% by weight of said light creosote fraction boiling below about 280° C., cooling said mixture to at least about 65° C., separating anthracene cake and creosote fraction, heating and dissolving said anthracene cake in a recycled heavy tar-base fraction of coal tar, cooling said mixture to at least about 55° C., separating anthracene crystals and tar-base fraction, heating and dissolving said anthracene crystals in a fresh portion of heavy tar-base fraction of coal tar boiling in a range between about 230° and 270° C., cooling said mixture to at least about 55° C., separating purified anthracene crystals and tar-base fraction and recycling the latter to said first crystallization step with a heavy tar-base fraction.

3,272,885
SEPARATION OF ETHYLENE FROM ACETYLENE
Joseph W. Davison, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,147
9 Claims. (Cl. 260—677)



1. A process for the separation of ethylene and acetylene from a gaseous mixture containing the same in approximately equal proportions which comprises: introducing said mixture to the lower portion of a first absorber zone operating at a first pressure and passing the same upwardly countercurrent to a downwardly moving stream of a lean solvent selective for said acetylene; passing ethylene concentrate containing some acetylene from the upper portion of said first absorber zone to a fractionation zone; drawing solvent enriched with acetylene from the lower portion of said first absorber and passing the same to a first stripping zone; passing additional stripped ethylene from the upper portion of said first stripping zone to the lower portion of said first absorber zone; drawing solvent further enriched with acetylene from the lower portion of said first stripping zone and passing the same to a second stripping zone; recovering acetylene product from the upper portion of said second stripping zone; drawing stripped solvent from the bottom portion of said second stripping zone suitable for further use; removing light gases from said fractionation zone; drawing ethane and higher hydrocarbons from said fractionation zone; passing a stream rich in acetylene and ethylene from said fractionation zone to a second absorption zone operating at a second pressure, said second pressure being considerably higher than said first pressure; recycling solvent rich in acetylene from the bottom portion of said second absorber to said first stripping zone; and recovering ethylene product substantially free of acetylene from the upper portion of said second absorber zone.

3,272,886
PRODUCTION OF NORMAL PENTENES
William R. Edwards and Robert D. Wesselhoft, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,256
3 Claims. (Cl. 260—677)



1. A method of producing high-purity normal pentene which comprises
contacting a catalytic pentylene stream containing tertiary pentenes, normal pentenes, and C_5 paraffins with H_2SO_4 having a weight concentration of 50% to 75%
at a temperature of 20° F. to 70° F.
a ratio of acid-to-hydrocarbon stream of 10:1 to 1:10 and a residence time of 0.1 to 4 hours,
whereby a tertiary pentylene-free raffinate is obtained,
contacting said raffinate with H_2SO_4 having a concentration of 78 to 82 weight percent
at a temperature of 20° F. to 50° F.,
a ratio of acid to first raffinate of 10:1 to 1:10,
and a residence time of 1 to 6 hours,
whereby a normal pentene-containing fat acid extract is obtained,
washing said flat acid by contact with a wash hydrocarbon stream at a temperature of 20° F. to 50° F.,
said wash hydrocarbon boiling within a range substantially different from said normal pentene,
and indirectly heating said washed fat acid extract without dilution to a final temperature of 275° F. to 325° F.,
and at a rate of at least 1000° F. per minute,
whereby a substantially pure normal pentene stream is obtained with only minimal losses to polymer.

3,272,887
ISOMERIZATION OF OLEFINS USING SEPIOLITE CATALYST
Robert Chalmers Pitkethly, John Frederick Ford, and Arnold Fisher, all of Sunbury-on-Thames, Middlesex, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation
No Drawing. Filed Oct. 15, 1963, Ser. No. 316,469
Claims priority, application Great Britain, Nov. 6, 1962, 41,931/62
8 Claims. (Cl. 260—683.2)

1. A process for the isomerization of a mono-olefin having between 4 and 6 carbon atoms per molecule, which is capable of undergoing double bond shift, which process comprises isomerising the olefin in contact with a sepiolite catalyst at between 50° and 500° C.

3,272,888
REDUCING PROPANE PRODUCTION IN AN ALKYLATION PROCESS
Richard S. Logan and Thomas Hutson, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 16, 1964, Ser. No. 411,572
4 Claims. (Cl. 260—683.43)

1. A process which comprises passing propylene to an alkylation zone containing an alkylation catalyst, passing

isobutane to said alkylation zone, maintaining liquid phase alkylation conditions within said alkylation zone, maintaining a concentration of propane in the range of about 14 to about 16 weight percent in the total hydrocarbon feed to said alkylation zone, and maintaining said propane in the liquid phase throughout the alkylation reaction.

3,272,889
EPOXIDE COPOLYMERS
Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed May 27, 1964, Ser. No. 370,717
12 Claims. (Cl. 260—823)

1. A crystalline copolymer consisting of cis-butene-2-oxide and a second epoxide monomer of the formula

where Z and Z' are each selected from the group consisting hydrogen and a radical of the formula

$$—CH_2—(O—CH_2—CH_2)_n—OCH_3$$

where n is 0 or 1, and when Z and Z' are

$$—CH_2—(O—CH_2CH_2)_n—OCH_3$$

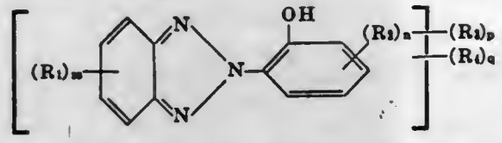
the monomer has a cis configuration, said copolymer containing about 1% to about 30% of said second epoxide based on the weight of the copolymer.

3,272,890
COMPATIBLE POLYOLEFIN AND POLYURETHANE COMPOSITION
John M. O'Leary, Jr., Wilmington, Del., assignor, by mesne assignments, to Container Corporation of America, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Mar. 4, 1963, Ser. No. 262,362
4 Claims. (Cl. 260—859)

1. A molded article formed from a compatible polymer composition consisting essentially of a homogeneous mixture of 85 to 75 weight percent of a polyolefin selected from the group consisting of polyethylene, polypropylene, polyethylene copolymer having a major weight percentage of polyethylene, and mixtures thereof, and from 15 to 25 weight percent of polyurethane, which composition possesses excellent resistance characteristics in the cold state to hydrocarbon solvents, and may be readily compression molded.

3,272,891
STABILIZING POLYMERS WITH ALKENOYL-AMIDO- AND PHENYLBENZATRIAZOLES
Jerry Peter Millonis, Franklin Township, Somerset County, William Baptist Hardy, Bound Brook, and William Frederick Baltinger, Jr., Belle Mead, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Oct. 14, 1964, Ser. No. 403,928
6 Claims. (Cl. 260—895)

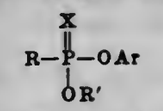
1. A composition comprising 0.01 to 2.0% of a member selected from the group consisting of (a) the compound of the formula:



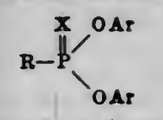
wherein R_1 and R_2 are selected from the group consisting of lower alkyl, lower alkoxy, halogen, nitro, carboxy, sulfonic acid and sulfonamido, R_3 is either acrylylamino or methacrylylamino, R_4 is either acrylyloxy or methacrylyloxy, m and n are integers less than three, and p and q are integers less than four, at least one of p and q being greater than zero, and R_3 and R_4 being bonded directly to carbocyclic aromatic rings in the phenyl benzotriazole nucleus; and (b) a homopolymer of the compound of (a) having an intrinsic viscosity at 30° C. of 0.03 to 0.50 and a DMAC solubility of at least 5%; and a polymer selected from the group consisting of polyesters, polystyrenes, polyolefins, polyacrylates, polycarbonates, polyvinylchlorides and polyvinylfluorides.

3,272,892
METHOD OF PREPARING ORGANIC PHOSPHONATES BY TRANSESTERIFICATION
Karoly Szabo, Pleasantville, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 4, 1963, Ser. No. 262,340
5 Claims. (Cl. 260—982)

1. The method of preparing a mixed alkyl aryl alkylphosphonate of the following formula:

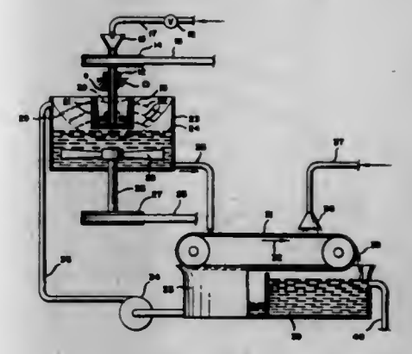


wherein each of R and R' represents an alkyl radical of from 1 to 18 carbon atoms, Ar represents an aromatic hydrocarbon residue selected from the class consisting of a phenyl radical and a naphthyl radical and X is a chalcogen selected from the class consisting of oxygen and sulfur, which comprises reacting under anhydrous conditions in the presence of an alkali metal salt of a weak acid capable of forming a phenoxide ion with phenol as the catalyst and in approximately equal molar amounts an aliphatic alcohol of the formula R'—OH wherein R' has the significance as above set forth with an alkyl phosphonate of the formula:



wherein R, X, Ar have the values as above defined and separating the resulting mixed alkyl aryl alkylphosphonate from the phenolic by-product.

3,272,893
METHOD FOR THE PRODUCTION OF FLUID PEARLS
Sten Mogensen, Djursholm, Sweden, assignor to AGA Aktiebolag, a corporation of Sweden
Filed Feb. 25, 1963, Ser. No. 260,615
Claims priority, application Sweden, Mar. 19, 1962, 3,033/62
4 Claims. (Cl. 264—8)



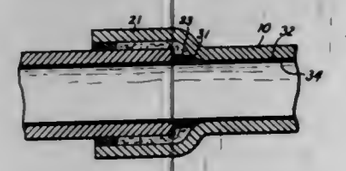
1. In a method for the production of fluid pearls, the steps comprising: feeding a pearl forming material to a rotatable body provided with orifices sized in accordance with the desired dimensions of the pearls, the orifices being inclined in a direction away from the direction of rotation of the body, rotating the body so that the pearl

forming fluid is ejected from the orifices in the form of drops into an atmosphere through which they pass until they reach the surface of a curing bath located in a second vessel where the fluid pearls are cured, said drops of pearl forming material being ejected from the orifices in a direction of movement which has a component in a direction opposite to the surface rotational direction of the rotating body, and removing the cured fluid pearls from the curing bath.

3,272,894
METHOD OF SEALING VESSELS AND JOINTS THEREOF

Robert Lee Roach, West Chester, Pa., assignor to West Chester Chemical Company, West Chester, Pa., a partnership consisting of W. L. Williams, H. A. Bogle, and E. O. Hilbush

Original application Sept. 24, 1957, Ser. No. 685,784. Divided and this application June 6, 1961, Ser. No. 115,099
9 Claims. (Cl. 264—36)

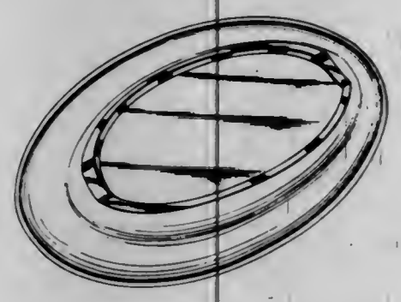


1. The method of sealing and coating a leak in a vessel wherein the leak region comprises a joint having packing and adjacent surfaces, said leak region having an electrical charge; which comprises the steps of wetting the articles to be sealed with a sealant composition containing a stable aqueous dispersion of elastomeric rubbery solids and a surface-active agent, said composition having an ionic-active charge opposite to the electrical charge of said leak region so as to penetrate said leaks; removing excess of the sealant composition to leave a film deposited on said article, and drying the sealant composition retained by said article to provide an elastic rubbery mass for sealing said leaks.

3,272,895
METHOD OF MAKING CERAMIC DISHWARE

William J. Rech, Neshannock Township, Lawrence County, Pa., assignor to Shenango Ceramics, Inc., New Castle, Pa., a corporation of Pennsylvania

Original application Oct. 15, 1959, Ser. No. 846,571, now Patent No. 3,190,486, dated June 22, 1965. Divided and this application May 6, 1965, Ser. No. 453,650
4 Claims. (Cl. 264—62)

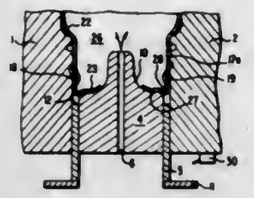


1. In the method of making vitrified ceramic elongated ware adapted to be stable in use on a horizontal planar surface, by means of spaced arcuate feet symmetrically disposed with respect to the longitudinal center line of the ware, comprising the steps of forming said ware in a green state, firing, and glazing the same, the steps of forming said ware with a continuous elliptical foot and eliminating end portions of said foot prior to firing.

3,272,896
METHOD AND APPARATUS FOR FORMING PLASTIC ARTICLES

Raymond E. Winchester, Jr., Pawcatuck, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Nov. 13, 1963, Ser. No. 323,398
16 Claims. (Cl. 264—98)



1. A method of forming an article from plastic material, said method comprising:

positioning a generally tubular length of plastic material within a closed, sectional mold, with one end of said length being open and engaging an end of mandrel means, said end of said length being unrestrained against radially outward movement and spaced from interior wall portions of said closed mold sections; and

thereafter introducing pressurized fluid into the interior of said length of plastic material so as to cause radial expansion thereof while said end of said length remains in engagement with said end of said mandrel means and the extremity of said end of said length remains spaced from said interior wall portions of said closed mold sections and moving said mandrel means toward said end of said length of plastic material so as to cause said end of said length to fold over inwardly toward the interior of said length and lie adjacent an inner, tubular wall portion of said length.

7. An apparatus for forming an article from plastic material, said apparatus comprising:

means for positioning a generally tubular length of a plastic material within a closed, sectional mold, with one end of said length being open and engaging an end portion of mandrel means, said mandrel means having a gradually outwardly expanding shoulder, said end of said length being unrestrained against radially outward movement;

said closed mold sections including interior wall portions radially spaced from said end of said length; and

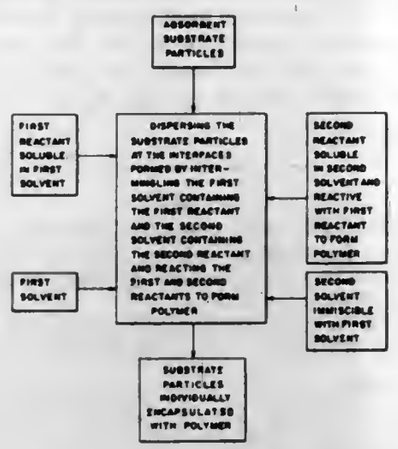
means for moving said mandrel means toward said end of said length of plastic material so as to cause said end of said length to fold over inwardly along said shoulder toward the interior of said length and lie adjacent an inner, tubular wall portion of said length.

3,272,897
METHOD OF MAKING POLYMER COATED SUBSTANCES AND MOLDING THEM INTO AN ARTICLE

Daniel F. Herman, Princeton, N.J., and Albert L. Resnick, Jericho, N.Y., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Nov. 1, 1962, Ser. No. 234,845
20 Claims. (Cl. 264—109)

1. A process for the encapsulation of finely divided particles with a polymer comprising dispersing the finely divided particles at the interfaces of two intermingled, immiscible solutions, one of said solutions containing a first reactant capable of reacting with a second reactant dissolved in the other solution to form a polymer, where-

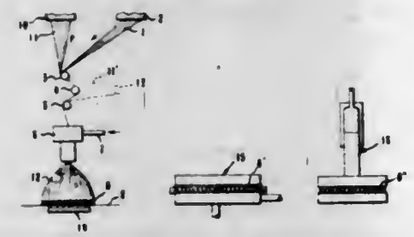


by each of the particles is individually encapsulated by said polymer formed by said reactants.

3,272,898
PROCESS FOR PRODUCING A NONWOVEN WEB

Terence Edward Creasey Knee, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 11, 1965, Ser. No. 468,668
6 Claims. (Cl. 264—119)



1. A process for producing a bulked nonwoven structure of continuous filaments of synthetic organic polymeric composition comprising (1) forming an unbonded nonwoven web composed of continuous filaments of synthetic, organic polymeric composition with a major portion of said continuous filaments having a shrinkage value of less than about 15%, and a minor portion of said continuous filaments having a shrinkage value of at least about 40%, said forming characterized by the process conditions necessary to form the said continuous filaments having the said shrinkage values, said major and minor portions of said continuous filaments being randomly and thoroughly admixed with one another, and then (2) subjecting said unbonded nonwoven web to shrinkage conditions while in an unrestrained state in order to cause said minor portion of said continuous filaments to draw together the major portion of said continuous filaments into twisted, convoluted, crimped configurations, and cause bulking of said nonwoven web as well as a reduction in area of said nonwoven web of at least about 20%.

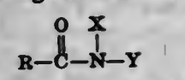
3,272,899
PROCESS FOR PRODUCING A SOLID RINSE BLOCK

Jack Diamond, Culver City, and Wayne M. Gauntt, Los Angeles, Calif., assignors to Hagan Chemicals & Controls, Inc., Pittsburgh, Pa.

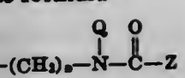
Original application Dec. 6, 1960, Ser. No. 74,178, now Patent No. 3,154,498, dated Oct. 27, 1964. Divided and this application Apr. 3, 1964, Ser. No. 362,546
5 Claims. (Cl. 264—126)

1. Method of making a solid rinse and block which will dissolve gradually and uniformly comprising:

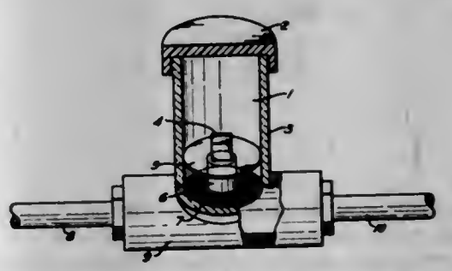
(a) melting together at least one solid nonionic wetting agent and, in an amount about 3% to about 20% of the total weight of the melt, an alkyl substituted amide having the formula



where "R" is an alkyl group of at least about 6 carbon atoms, "X" is selected from the group consisting of hydrogen and alkyl groups, and "Y" is selected from the group consisting of hydrogen, alkyl group, and radicals of the formula



where "*n*" is an integer from 1 to about 4, "Z" is an alkyl group having at least about 6 carbon atoms, and "Q" is selected from the group consisting of hydrogen and alkyl groups;



(b) pouring the melt thus formed in a shallow pan; and

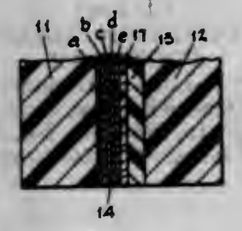
(c) cooling the melt in said shallow pan in the temperature range from about 0° F. to room temperature, whereby a solidified mass is formed.

2. The method of claim 1 including the steps of dividing the solidified mass into particles, and pressing said particles into a desired shape.

3,272,900
METHOD OF FABRICATION OF LAMINATED STRUCTURES

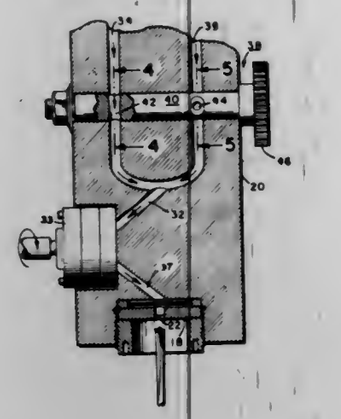
Joseph D. Ryan and Paul T. Mattimoe, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed May 13, 1963, Ser. No. 279,754
8 Claims. (Cl. 264—135)



1. A method of producing a laminated electrically conductive structure, comprising applying a transparent electrically conductive film to a first plastic sheet, applying a protective coating over said film, arranging said first sheet in spaced relation to a second plastic sheet, with the protective coating toward said second sheet, casting a flowable plastic material into the space between said sheets and in contact with the inner surface of said second sheet and the protective coating on said first sheet, said protective coating being effective to chemically protect and inhibit crazing of said electrically conductive film and prevent contact between said film and said flowable plastic material, and curing the structure whereby said plastic material sets to form a flexible plastic interlayer bonding the sheets into a unitary structure.

3,272,901
TEXTILE FILAMENT HAVING APPARENT VARIABLE DENIER
James G. Sims, Pensacola, Fla., assignor to Monsanto Company, a corporation of Delaware
Original application Nov. 21, 1962, Ser. No. 239,189, now Patent No. 3,138,516, dated June 23, 1964. Divided and this application Oct. 2, 1963, Ser. No. 313,375
4 Claims. (Cl. 264—177)



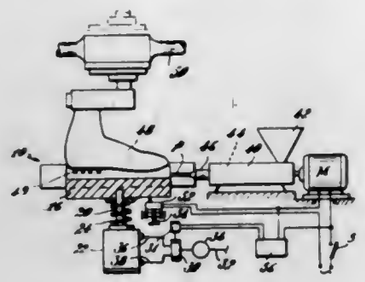
1. In a method of making a textured continuous filament, the steps comprising in combination:
(a) extruding through a non-circular orifice a continuous stream of a molten macroscopically non-homogeneous mixture of first and second compatible polymer components, said first component having a relatively high ratio of viscosity to surface tension as compared to said second component, said mixture being sufficiently non-homogeneous that substantially the entire stream leaving said orifice at particular times consists of said first component and substantially the entire stream leaving said orifice at other particular times consists of said second component and
(b) solidifying the polymer stream so extruded at a rate such that the portions composed of said second component assume a substantially circular cross-section while the portions composed substantially of said first component assume a substantially non-circular cross-section.

3,272,902
METHOD OF INJECTION MOLDING PLASTIC FOOTWEAR
Herbert P. Ludwig, Desmastr. 112, Uesen, near Bremen, Germany
Filed Apr. 16, 1964, Ser. No. 360,290
5 Claims. (Cl. 264—244)



2. The method of making plastic footwear comprising the steps of:
injection molding an integrated upper, midsole and heel core by injecting a charge of liquid plastic into a first mold about a rigid form of the desired shape;
cooling the molded article to effect solidification and shrinkage;
placing the mold article over a second injection mold; and
injection molding an integrated outsole and heel cover to cover the insole and heel core by injecting a second charge of liquid plastic into the second mold to cover the insole and heel core while holding the injected plastic confined by said second mold to the desired dimensions.

3,272,903
METHOD FOR MAKING SHOES
Henry Hardy, Cambridge, Mass., assignor to International Vulcanizing Corporation, Boston, Mass., a corporation of Massachusetts
Filed Nov. 12, 1963, Ser. No. 322,749
6 Claims. (Cl. 264—244)



1. The method of attaching a shoe bottom of predetermined thickness to an upper comprising as steps: providing a mold having an open top and comprising a side wall defining a space of the precise transverse shape and dimensions of the shoe bottom to be formed and a movable bottom wall, supporting a lasted upper with its bottom in registry with the open top of the mold and with the bottom of the mold at a predetermined distance therefrom, yieldably opposing relative movement between the bottom of the upper and the mold bottom, injecting a liquid bottom-forming composition into the mold between the bottom of the upper and the mold, employing the displacement of the bottom wall as the elastomer is injected to terminate injection when the volume of elastomer injected is such that upon transformation from liquid to solid it will form a bottom of said predetermined thickness, applying added pressure to the sole plate following termination of injection and maintaining said added pressure until transformation of the liquid to solid is completed.

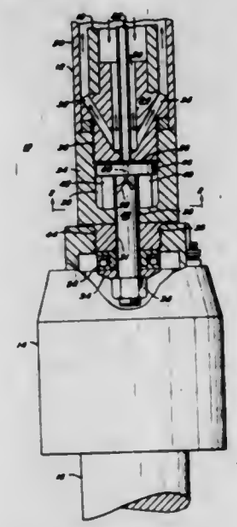
3,272,904
METHOD OF MAKING SEALING MEMBERS
Phillip V. Millard, Detroit, Mich., assignor to Automotive Rubber Company, Inc., Detroit, Mich., a corporation of Michigan
Original applications Jan. 3, 1961, Ser. No. 80,444, now Patent No. 3,182,119, dated May 4, 1965, and Jan. 2, 1962, Ser. No. 163,411. Divided and this application Nov. 5, 1964, Ser. No. 409,141
2 Claims. (Cl. 264—275)



1. The method of making a sealing member having a sheet metal body with a portion embedded in a resilient plastic body that has accurately formed sealing surfaces which are accurately positioned relative to the metal body, which comprises forming a registering surface on the underside of said metal body on which the plastic body is to be formed, supporting the metal body at said registering surface from an area of a mold which is spaced inwardly from the peripheral edge of the metal body such that the portion of the metal body on which the plastic body is to be formed extends into a cavity of the mold and is suspended in the cavity in accurately spaced relation to the bottom of the cavity and in accurately spaced relation laterally of the cavity, introducing a predetermined quantity of uncured vinyl plastic material into said cavity, and curing said vinyl plastic material to form a resilient plastic body on said portion of the metal body which is suspended within said cavity.

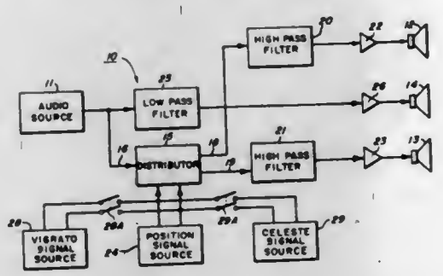
ELECTRICAL

3,272,905
CONTINUOUS WEIGHING OF A CONSUMABLE ELECTRODE
Patrick J. Wooding, Moorestown, N.J., assignor to Consarc Corporation, Rancocas, N.J., a corporation of New Jersey
Filed June 24, 1963, Ser. No. 290,076
20 Claims. (Cl. 13—9)



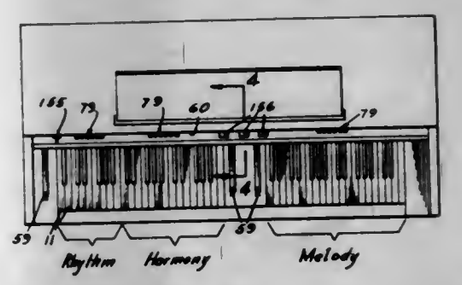
1. Apparatus comprising a vacuum furnace, an electrically conducting ram, an electrode stub clamp, connecting means within the furnace for connecting said ram to said clamp, said connecting means including a load sensing means for sensing the weight of an electrode held by said clamp by determining the stress on said connecting means, said connecting means being operative to conduct current from said ram to said clamp.

3,272,906
AUDIO REPRODUCTION SYSTEM
Adrian J. De Vries, Elmhurst, George V. Morris, Chicago, and Erwin M. Roschke, Des Plaines, Ill., assignors to Zenith Radio Corporation, a corporation of Delaware
Filed Oct. 25, 1960, Ser. No. 64,762
12 Claims. (Cl. 84—1.25)



1. An audio reproduction system comprising: a source of audio signals; a plurality of individual audio reproduction devices; means for utilizing said audio signals to energize said reproduction devices including at least one electric discharge device responsive to an applied control signal to control the relative intensity of sound reproduction by said audio reproduction devices; means for developing a first control signal having a frequency in the low-frequency portion of the audio spectrum and for developing a second control signal also having a frequency in the low-frequency portion of the audio spectrum but higher in frequency than said first control signal; and means for applying said first control signal to said discharge device of said utilizing means for effecting a predetermined amplitude variation in said audio signals at the frequency of said first control signal to vary the effective dominant source of sound reproduced by said audio reproduction devices and for concurrently applying said second control signal to said utilizing means for effecting a predetermined amplitude variation in said audio signals at the frequency of said second control signal to produce a "vibrato" or "celeste" subjective listening effect.

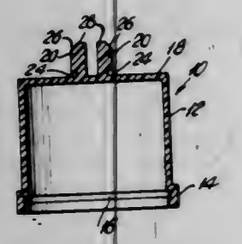
3,272,907
ELECTRICAL MUSICAL INSTRUMENT HAVING PRE-RECORDED TAPE FOR TONE GENERATION
Harry C. Chamberlin, 354 Winn Drive., Upland, Calif.
Filed Feb. 3, 1964, Ser. No. 341,952
6 Claims. (Cl. 84—1.28)



1. An instrument for playing musical compositions, comprising:
(a) a rhythm reproducing part;
(b) and a melody reproducing part;
(c) said rhythm reproducing part including a first set of twelve tapes, each tape of said first set having recorded thereon an incomplete chord consisting of the first or fundamental, fifth and octave of a certain musical fundamental tone without the third, said first set of tapes corresponding to twelve consecutive half tones of the chromatic scale;
(d) twelve manually operable keys, each for selecting one of said first set of tapes;
(e) means for reproducing the chords recorded on a selected tape of said first set, whereby one incomplete chord of twelve consecutive half tones can be reproduced at will;
(f) said melody reproducing part including a second set of a plurality of tapes, each having recorded thereon a particular tone played by a selected instrument;
(g) a corresponding plurality of keys for selecting a particular one of said second set of tapes; and

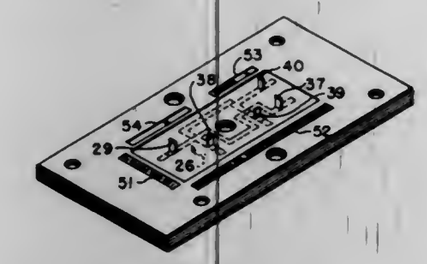
(h) means for reproducing the sound recorded on a selected one of said second set of tapes.

3,272,908
COMBINED COVER MEMBER AND MOUNT
Joel K. Beecher, Morristown, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed July 17, 1964, Ser. No. 383,399
2 Claims. (Cl. 174—52)



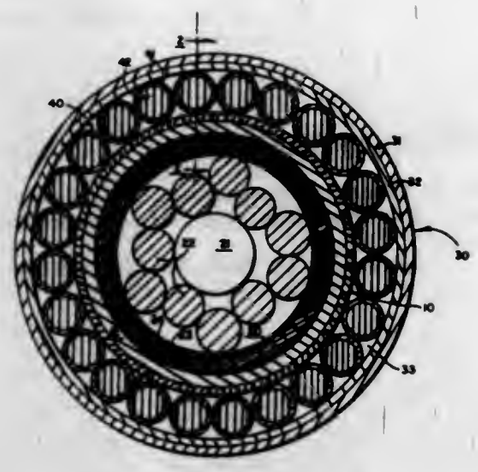
1. A casing for an electrical device comprising, a unitary molded plastic member having an open end, a closed end, integral mounting lugs extending axially from the closed end, and an inner annular peripheral groove adjacent the open end, whereby when the electrical device which is to be received into said member has a base with the peripheral shape of said groove, the periphery of the base can be resiliently held in said groove.

3,272,909
PRINTED CIRCUIT PACKAGE WITH INDICIA
George Bruck and John F. Freno, Cincinnati, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 4, 1964, Ser. No. 408,911
1 Claim. (Cl. 174—68.5)



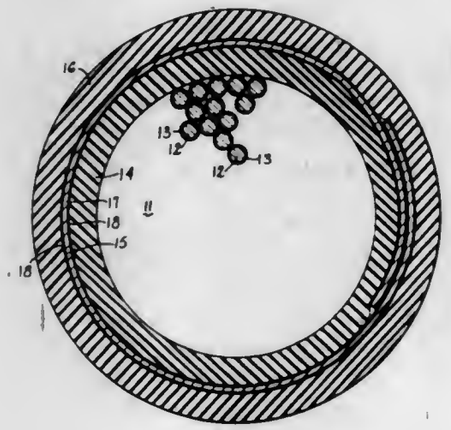
A circuit package comprising:
- a plurality of insulating laminates, each comprising a sheet of light-transmitting insulating material with at least one metallic marginal reinforcement;
- a plurality of circuit laminates each comprising a sheet of insulating material with metallic marginal reinforcements and an individually associated circuit pattern;
- the insulating sheets of said circuit laminates being formed with windows adjacent the ends of the associated circuit patterns;
- said ends being bent relative to the associated circuit laminates to form projecting tabs;
- the insulating sheets of said circuit laminates being formed with apertures as required to permit passage of non-associated tabs;
- said insulating laminates being formed with apertures as required to permit passage of projecting tabs;
- and the metallic marginal reinforcements being formed with aligned slots to permit reading of indicia on at least one of the sheets of insulating material.

3,272,910
BUOYANCY SYSTEM FOR UNDERWATER CONDUCTOR CABLE
Edward F. Flint, Fullerton, Calif., assignor to North American Aviation, Inc.
Filed Sept. 21, 1964, Ser. No. 398,014
2 Claims. (Cl. 174—101.5)



1. An underwater buoyancy cable for electrical conductors comprising a first flexible tubular member having a plurality of electrical conductors longitudinally disposed therein, a relatively large second flexible tubular member, said first tubular member longitudinally disposed within said second tubular member to form a longitudinal chamber between the outer surface of said first tubular member and the inner surface of said second tubular member, a third relatively small flexible tube extending longitudinally of said longitudinal chamber, and a plurality of cellular buoyancy members longitudinally disposed within said tubular member.

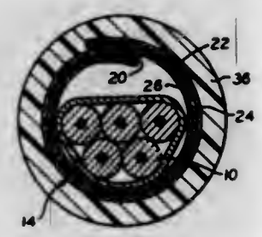
3,272,911
SHIELDED CABLE CONSTRUCTION
Gordon C. Rollins, Cumberland, and William A. Fallon, Riverside, R.I., assignors to The Ansonia Wire & Cable Company, Ashton, R.I., a corporation of Connecticut
Filed Apr. 14, 1964, Ser. No. 359,636
12 Claims. (Cl. 174—106)



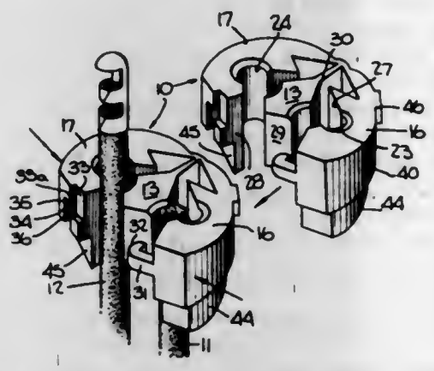
1. A communication cable comprising a plurality of conductors forming a central core, an inner insulating jacket surrounding said core, a shield surrounding said inner jacket and an outer insulating jacket surrounding said shield, said shield comprising a first metal metallurgically bonded between two layers of a second metal, the total thickness of said second metal being no less than 10% of the total thickness of said shield.

3,272,912
FLEXIBLE TUBING AND THE MANUFACTURE THEREOF
Ludwik Jachimowicz, Elizabeth, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Feb. 1, 1965, Ser. No. 429,526
19 Claims. (Cl. 174—107)

1. A jacketed electrical cable comprising a core of insulated conductors, a metallic strip co-extensive with the core and folded into tubular form thereabout, and an extruded jacket of plastic enclosing the tubular form, characterized by the fact that the said tubular form loosely encloses the core unsupported thereby, and by the further fact that the plastic is a thermoplastic material exhibiting a volume contraction of about 20% between extruding temperature and atmospheric temperature, and by the further fact that the plastic jacket is firmly bonded to the metallic strip at the interface so as to prevent relative movement between the jacket and the folded strip at the interface and thereby prevent collapse of the otherwise unsupported tubular form.

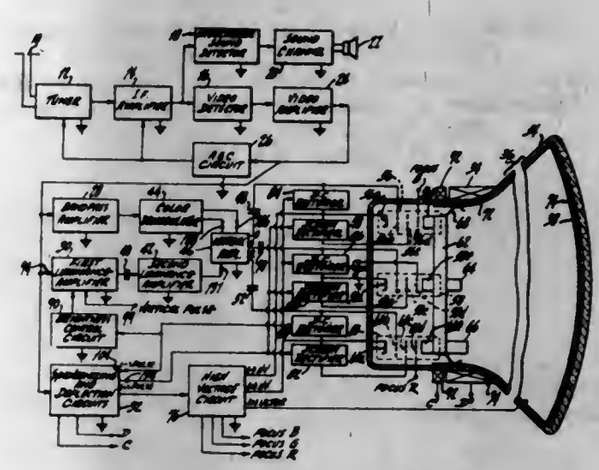


3,272,913
TWO-WIRE SOCKET INSULATOR
David J. Crimmins, Pennington, and Robert W. Croghan, Belle Mead, N.J., assignors to The Thomas & Betts Co., Inc., Elizabeth, N.J., a corporation of New Jersey
Filed Mar. 18, 1964, Ser. No. 352,779
7 Claims. (Cl. 174—138)



5. An insulator for a pair of electrically conductive elements comprising an abutment member having a pair of oppositely disposed sides each intersected by a relieved portion disposed therein, said relieved portions dividing each of said sides into two surfaces, and a pair of support members, each of said support members being pivotally attached to one end portion thereof and facing a different one of the opposite sides of said abutment member and being intersected by an additional relieved portion in a facing relationship with the relieved portion in the side of said abutment member adjacent thereto, each of said additional relieved portions dividing said support member into two additional surfaces, each support member when positioned apart from said abutment member being adapted to receive a conductive element therebetween and when positioned with said additional surfaces contiguous with said surfaces of said abutment member being adapted to retain said conductive element therebetween.

3,272,914
DIRECT-CURRENT RESTORER SYSTEM FOR COLOR TELEVISION RECEIVER
Warren H. Moles, Trenton, N.J., and Roland N. Rhodes, Levittown, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed Nov. 20, 1961, Ser. No. 153,287
9 Claims. (Cl. 178—5.4)

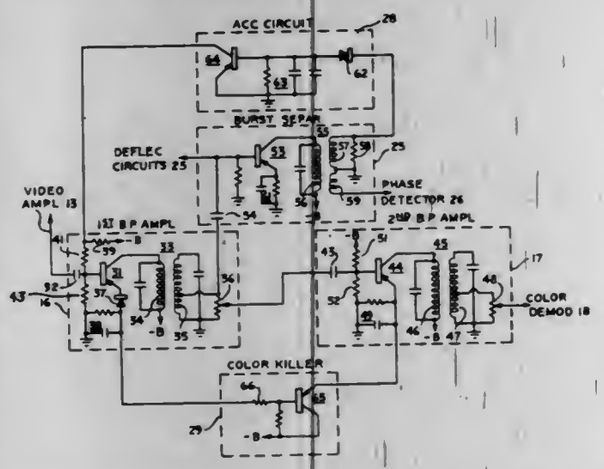


1. In a color television receiver having a source of luminance signal, including vertical and horizontal blanking intervals, a luminance signal processing circuit, the combination comprising:
- a cathode ray tube having a light emitting phosphor screen and a plurality of electron guns, each of said guns having at least a cathode and a control electrode;
- power supply means for said receiver to supply operating potentials to said cathode ray tube for maintaining the cathodes of said electron guns at substantially different direct operating potentials;
- a luminance signal translating circuit having a signal input circuit and a signal output circuit;
- means for applying said luminance signal from said source of luminance signal to the signal input circuit of said luminance signal translating circuit and to derive a luminance signal in the signal output circuit of said luminance signal translating circuit;
- a source of first pulse signals occurring at the rate of the horizontal blanking intervals of said luminance signal;
- means for applying said first pulse signals to said luminance signal translating circuit to prevent signal translation therethrough during the application of said first pulse signals to incorporate into said luminance signal a first pulse portion occurring at the rate of said horizontal blanking intervals;
- a source of second pulse signals occurring at the rate of the vertical blanking intervals of said luminance signal;
- means for applying said second pulse signals to said luminance signal translating circuit to prevent signal translation therethrough during the occurrence of said second pulse signals to incorporate a second pulse portion into said luminance signal occurring at the rate of said vertical blanking intervals;
- a plurality of signal coupling means for applying said luminance signal, including said first and second

pulse portions, between the control electrodes and cathodes of the electron guns of said cathode ray tube; and

a plurality of direct current restoring means each connected individually between said control electrode and the cathode of one of said electron guns of said cathode ray tube for providing a bias voltage between said control electrode and cathode of each of said electron guns and for clamping the peaks of the first and second pulse portions of said luminance signal at said bias voltage such that cathode current in said electron guns is cut off during the occurrence of said first and second pulse portions of said luminance signal.

3,272,915
COLOR TELEVISION RECEIVER INCLUDING TRANSISTORIZED COLOR KILLER
Gerald E. Theriault, Hopewell, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 2, 1962, Ser. No. 184,157
10 Claims. (Cl. 178—5.4)



1. In a television receiver adapted to receive both color and black and white television signals, said color signal including a chrominance video signal component in the form of a phase and amplitude modulated subcarrier wave of a given frequency and color synchronizing bursts comprising several cycles of said subcarrier wave frequency and having a fixed amplitude, the combination comprising:

a first transistor amplifier provided with input and output circuits and having said composite television signal impressed upon its input circuit and adapted to amplify and develop in its output circuit substantially only signals in the frequency range of said subcarrier wave and its modulation sidebands;

a second transistor amplifier provided with input and output circuits and having its input circuit coupled to the output circuit of said first transistor amplifier and adapted to amplify and develop in its output circuit substantially only signals in the range of said subcarrier wave and its modulation sidebands;

means coupled to said first transistor amplifier to develop a unidirectional control signal representative of the amplitude of said color synchronizing bursts;

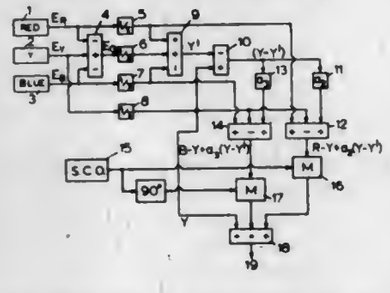
means to impress said control signal on the input circuit of said first transistor amplifier to vary its gain inversely to the amplitude of said color synchronizing bursts;

a color killer circuit including a color killer transistor;

means responsive to current flow in said first transistor amplifier to bias said color killer transistor so that the current in said first transistor amplifier produced in the absence of said modulated subcarrier wave effects current conduction of a first magnitude in said color killer circuit and so that the current in said first transistor amplifier produced in response to a modulated subcarrier wave effects current conduction of a scond magnitude in said color killer circuit; and

means responsive to current flow in said color killer circuit to bias said second transistor amplifier so that said second transistor amplifier is rendered in operative in response to said first magnitude of current conduction in said color killer circuit and is rendered operative to amplify said chrominance video signal component in response to said second magnitude of current conduction in said color killer circuit.

3,272,916
COLOR TELEVISION SYSTEMS UTILIZING A TRUE LUMINANCE SIGNAL
Ivanhoe John Penfound James and Wieslaw Antoni Karwowski, London, England, assignors to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain
Filed May 14, 1963, Ser. No. 280,293
Claims priority, application Great Britain, May 16, 1962, 18,771/62; June 15, 1962, 23,013/62
6 Claims. (Cl. 178—5.4)



1. A colour television system comprising means for producing a video waveform representing a picture to be transmitted including means for generating a relatively wide frequency band luminance signal of the form

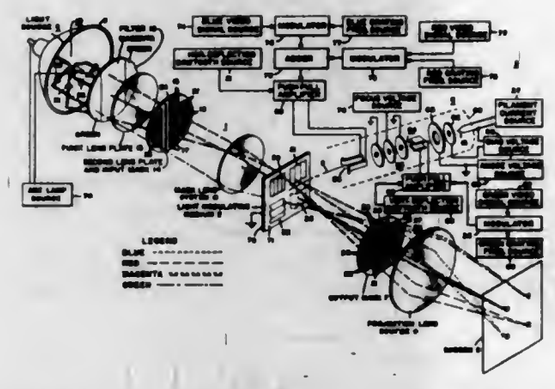
$$(E_Y)^{1/\gamma}-a_1A_1$$

wherein E_Y is a signal of the form obtainable from a monochrome television camera, and means for generating two relatively narrow frequency band colour signals of the form $R_D+a_2A_2$ and $B_D+a_3A_3$ wherein R_D and B_D are colour difference signals, A_1, A_2 and A_3 are signals which are zero for uncoloured portions of the picture and increase with the increase of the product of colour saturation and luminance, and a_1, a_2 and a_3 are numerical constants which have selected magnitudes and signs to allow three substantially correct primary colour control signals to be derived by linear operations on said luminance signal and said colour signals, means for generating a composite video waveform responsive to said luminance signal and said colour signals, and means for modulating a carrier oscillation by said video waveform.

3,272,917
FIRST AND SECOND ORDER DIFFRACTION COLOR PROJECTION SYSTEM
William E. Good, Liverpool, Thomas T. True, Camillus, and Henry J. Vanderlaan, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed Feb. 11, 1964, Ser. No. 343,990
13 Claims. (Cl. 178—5.4)

1. The combination in a light diffraction system of a transparent light modulating medium formable into diffraction gratings by electric charges deposited thereon, means to direct an electron beam upon said medium to produce such electric charges in said medium, means to deflect said beam in one direction at successively spaced distances over said medium to form a raster thereon,

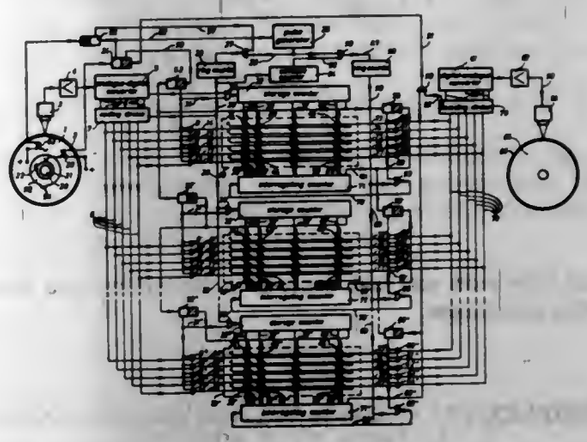
means for modulating said beam with a signal of a fixed frequency corresponding to the one of a pair of primary color components of a color image having the longer wave lengths and an amplitude varying in accordance with the point to point intensity of said color component in said image to form in said medium a diffraction grating, the spacing between adjacent lines thereof being dependent on said frequency, means for simultaneously modulating said beam with another signal of another fixed frequency lower than said one fixed frequency corresponding to said other primary color component of said color image and amplitude varying in accordance with the point to point intensity of said other color component in said image to form in said medium another diffraction grating having lines oriented parallel to the lines of said one grating, the spacing between adjacent lines of said other grating being de-



pendent upon said other frequency, said diffraction gratings forming in said medium a third diffraction grating the spacing between adjacent lines of which correspond to a frequency which is the difference of said fixed frequencies, said difference being less than either of said fixed frequencies, said gratings diffracting light in a direction orthogonal to the lines thereof, a mask having an opaque portion and a transparent portion, said transparent portion having an extent in said orthogonal direction and so positioned as to pass first order light of said one color component and second order light of said other color component therethrough, said mask having another transparent portion spaced in said orthogonal direction on said mask so as to pass all of the first order light of said two color components diffracted by said third diffraction grating and to pass first order light of said other color component diffracted by said other grating.

3,272,918
METHOD OF AND APPARATUS FOR RECORDING PICTURE SIGNALS, OBTAINED BY SCANNING PICTURE ORIGINALS TO BE REPRODUCED, WITH STEADILY VARIABLE REPRODUCTION SCALE
Roman Koll, Kiel-Wellingdorf, and Fritz-Otto Zeyen, Kitzeberg, near Kiel, Germany, assignors to Dr.-Ing. Rudolf Hell Kommanditgesellschaft Kiel, a German company
Filed Dec. 23, 1964, Ser. No. 420,832
Claims priority, application Germany, Dec. 27, 1963, H 51,239
17 Claims. (Cl. 178—6.6)

1. A method of recording picture signals obtained by scanning picture originals to be reproduced, with continuously variable reproduction scale, using rotating drums for tensioning the picture original and the recording carrier, comprising the steps of rotating the drums at the same speed, scanning a picture original on the one drum to translate such picture original into a series of picture signals, storing the picture signals, reading out the stored picture signals, recording a picture reproduction on a recording carrier on the drum by means of said read-out picture signals, adjusting the relative speeds at which the storage and subsequent read-out of the picture signals



take place, dependent upon a selected line density, to provide a desired reproduction ratio between the picture original and the reproduction thereof.

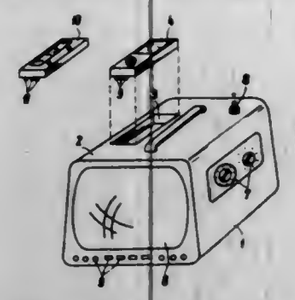
3,272,919
TELEVISION FADER AMPLIFIER
Gordon B. Thompson, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Nov. 15, 1963, Ser. No. 324,119
8 Claims. (Cl. 178—7.1)

1. A television fader amplifier comprising input means for an at least semi-composite video signal, means for subtracting set-up from said signal, means for amplifying the remainder signal after said subtraction, means for clamping the amplified remainder signal to a reference voltage during blanking intervals to produce a clamped non-composite signal of selected amplitude, and means for combining said non-composite signal with set-up and sync pulses of known amplitude to generate a composite output signal.

3,272,920
PORTABLE TELEVISION RECEIVER INCLUDING MEASURING DEVICE
Heinz-Hubert Meurer, Kronach, Upper Franconia, Germany, assignor to Loewe Opta G.m.b.H., Berlin, Germany, a company of Germany
Filed Apr. 29, 1965, Ser. No. 452,461
Claims priority, application Germany, May 6, 1964, Reg. No. (utility model) 1,902,049
4 Claims. (Cl. 178—7.9)

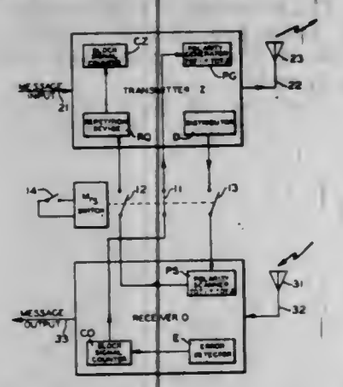
1. A portable television set in combination with an instrument for measuring field strength received with said television set; said measuring instrument having contact elements for electrical connection with the receiver cir-

cuit, said contact elements engaging with corresponding opposed contact elements disposed in a depression of



said television set, said depression containing said measuring instrument.

3,272,921
SIMPLEX TELEGRAPH SYSTEM FOR SCANNING ANSWER-BACK SIGNALS
Hendrik Cornelis Anthony van Duuren, Wassenaar, Netherlands, assignor to de Staat der Nederlanden ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands
Filed Nov. 1, 1962, Ser. No. 234,746
Claims priority, application Netherlands, Nov. 3, 1961, 271,031/61
14 Claims. (Cl. 178—69)



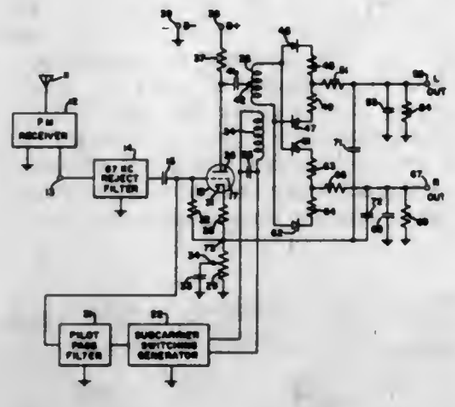
1. In a telecommunication system for transmitting intermittent groups of message signals from one station to another and transmitting answer-back signals from said other station to said one station during the space between the transmission of adjacent groups of message signals, said answer-back signals being of two types and indicating that said other station correctly received the just prior group of message signals and that the next group should now be transmitted, the improvement comprising the steps of:

(A) transmitting the proper one of said answer-back signals from said other station continuously from the end of the reception of each said group of signals to substantially the end of the time between that group and the next adjacent group of signals, and

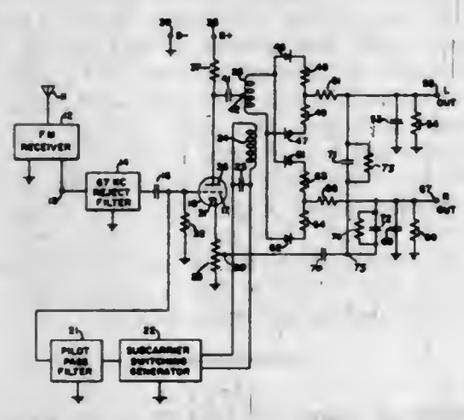
(B) scanning said answer-back signals in said one station for at least a part of said space between the transmission of adjacent message signals.

3,272,922
RECEIVER CIRCUIT FOR STEREO SEPARATION
Robert M. Linz and Antal Csicsatka, Utica, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,941
5 Claims. (Cl. 179—15)

1. In a reception circuit having a stereo demodulation circuit for deriving L and R stereo output signals from a composite signal comprising an $L+R$ signal component and $L-R$ sidebands, in which the L output signal tends to contain an undesired component of R signal and the R output signal tends to contain an undesired component of L signal, means for improving the stereo separation of said L and R output signals, comprising first compensation means connected and adapted to substantially reduce the amplitudes of said undesired components in a first part of the audio frequency range, and second compensation means connected and adapted to substantially reduce the amplitudes of said desired components only in a second part of the audio frequency range.

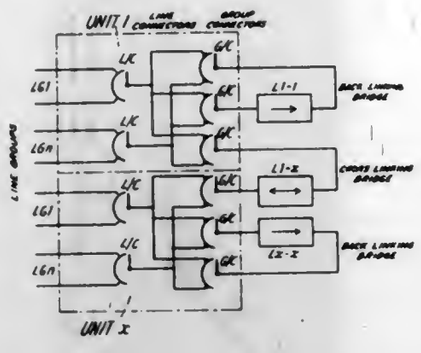


3,272,923
RECEIVER CIRCUIT FOR STEREO SEPARATION
Antal Csicsatka, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,942
4 Claims. (Cl. 179—15)



1. In a reception circuit having a stereo demodulator circuit for deriving L and R stereo output signals from a composite signal comprising an $L+R$ component and $L-R$ sidebands, in which the L output signal tends to contain an undesired component of R signal and the R output signal tends to contain an undesired component of L signal, said undesired components having relatively greater amplitudes of relatively higher audio frequencies, means for improving the stereo separation of said L and R output signals, comprising a signal cancellation network arrangement conpected to apply an arithmetical combination of L and R signals which is derived from the composite signal to said L and R output signals in a phase tending to cancel said undesired components, said network arrangement having the characteristic of passing the higher audio frequencies with greater amplitude than the lower audio frequencies, whereby good stereo separation of the L and R output signals is achieved over the entire audio frequency range.

3,272,924
AUTOMATIC TELECOMMUNICATION SWITCHING SYSTEMS
Bloomfield James Warman, Charlton, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed July 6, 1961, Ser. No. 122,137
Claims priority, application Great Britain, July 18, 1960, 25,065/60, Patent 989,336
34 Claims. (Cl. 179—18)



1. A switching arrangement for an automatic telecommunications exchange comprising switching equipment permitting selective establishment of communication path between lines connected to the exchange, a plurality of switching sections constituted by respective sub-divisions of said switching equipment, connections affording access of each line to a plurality of said sections, the switching equipment in each section affording a plurality of selectable routes through it as portions of such communication paths, the routes through each section being separate from an independent of the other sections, a plurality of links connected to the switching sections and co-operating therewith in providing between any two of said lines a plurality of possible communication paths each comprising incoming and outgoing portions interconnected by one of said links with the incoming portions of the several paths extending over respective routes in different sections and likewise the outgoing portions of the several paths extending over respective routes in different sections and a section selecting arrangement comprising means operable in respect of a call between two lines for ascertaining pertinent conditions in the several sections, means for selecting from said path portions in accordance with the so ascertained conditions an incoming path portion and an outgoing path portion for a communication path between the call lines, and means for establishing this communication path over the selected path portions and the link which interconnects them.

3,272,925
CODED DISK REPERTORY TELEPHONE DIALER
Robert I. Worley, 4011 Sinclair, and Gaston K. Worley, 511 Bowser, both of Austin, Tex.
Filed June 11, 1962, Ser. No. 201,522
4 Claims. (Cl. 179—90)

2. In an automatic telephone dialer:

a source of electrical power;

a support;

a shaft rotatably mounted on said support;

electrical power means coupled with said shaft for rotating the latter;

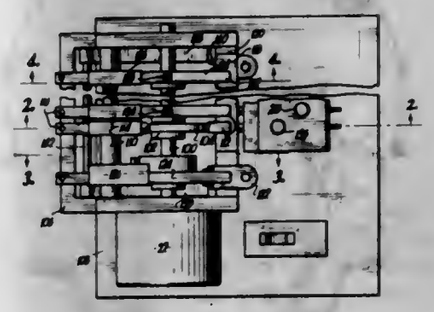
a plurality of dialing cams having raised and depressed camming surfaces thereon representing a corresponding plurality of preselected telephone numbers, said dialing cams being mounted on said shaft for rotation therewith and axially spaced therealong;

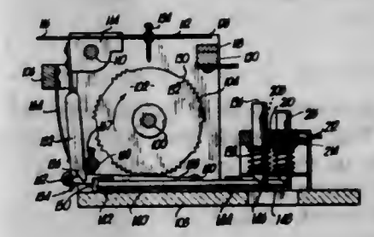
electrical contact means mounted on said support;

a plurality of electrically conductive cam followers, each of the latter being shiftably mounted on said support and normally disengaged from the camming surfaces of a corresponding cam, each follower being responsive to its corresponding cam, upon movement into engagement therewith and rotation of said shaft, to alternately engage and disengage said electrical contact means;

terminal means electrically interconnecting said followers;

shiftable means coupled with said followers for moving a selected follower into engagement with the camming surfaces of the corresponding cam upon actuation of said shiftable means;





switch means electrically intercoupling said power source and said power means and normally preventing energization of the latter, said switch means being responsive to said actuation of the shiftable means for effecting energization of said power means to thereby rotate said shaft, whereby the selected follower alternately engages and disengages said contact means during a dialing period to alternately close and open the electric circuit from said contact means to said terminal means to produce dialing impulses corresponding to the preselected telephone number; and

reset means rotatable with said shaft and operable to engage said shiftable means at the end of said dialing period to effect return movement of the selected follower to its normal position, whereby to de-energize said power means and thereby maintain the dialer in condition for subsequent actuation of the shiftable means to again dial a preselected telephone number.

3,272,926
HEADPHONE ASSEMBLY
Gustave F. Falkenberg, Brookfield, Wis., assignor to Dimensional Products, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 24, 1963, Ser. No. 275,425
4 Claims. (Cl. 179—182)

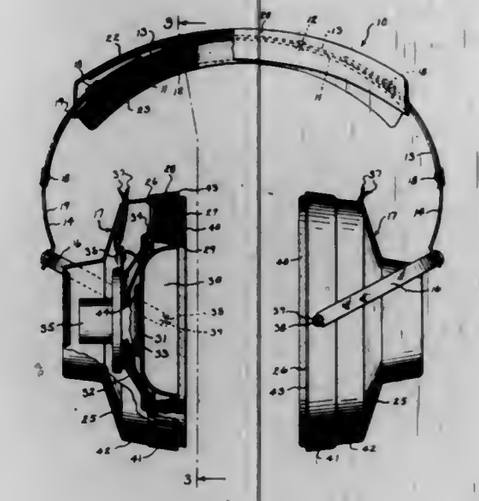
1. In a headphone for a headset, the combination of:

an outer shell forming a housing that has a peripheral rim defining an open end, said rim having apertures at two oppositely disposed points;

an earcup extending over the open end of said outer shell and including a peripheral wall nesting within the peripheral rim of said outer shell and having

apertures at two points each in alignment with an aperture in the outer shell, a depressed panel portion inward of and adjacent to said peripheral wall, an inner ridge defining the inner extent of said panel portion and forming a channel with said panel portion and said peripheral wall, and an ear receiving cavity to the inside of said inner ridge;

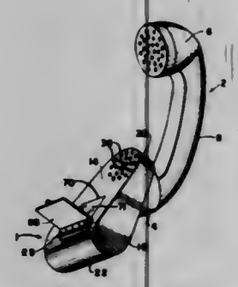
a speaker within said headphone and mounted upon the rear of said earcup panel portion;



a resilient cushion disposed in said channel; and

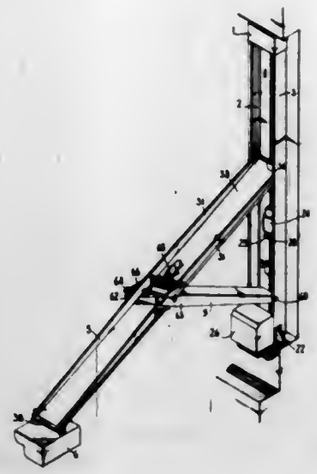
a resilient bail with ends inserted through the aligned apertures in the peripheral rim of said outer shell and the peripheral wall of said earcup, which bail ends are urged toward one another by the resilience of the same.

3,272,927
TELEPHONE STERILIZING ATTACHMENT
John G. Peebles, 117 Charles St., New York, N.Y.
Filed Sept. 3, 1963, Ser. No. 306,248
9 Claims. (Cl. 179—185)



3. An attachment for a telephone instrument having transmitting and receiving portions, comprised of a hollow casing including means for connecting said casing to either said transmitting and receiving portions, a germicidal lamp extending within said casing, one surface of said casing having an opening therein for emitting light emanating from said lamp, closure means removably associated with said opening to thereby enable selective exposure or closure of said opening, said casing being provided with a plurality of apertures disposed through said one surface, said apertures being positioned opposite said means for connecting said casing, light emitted by said lamp being incident with respect to said apertures and said opening.

3,272,928
APPARATUS FOR ELECTRICAL AND FLUID CONNECTION
Jean Hainzelin, Paris, France, assignor to Electricite de France—Service National, Paris, France
Filed Feb. 25, 1963, Ser. No. 260,405
Claims priority, application France, Mar. 7, 1962, 890,320
3 Claims. (Cl. 191—1)



1. Apparatus for articulation of a supporting arm and a connecting arm to maintain a connector in position, irrespective of the angle of inclination of the supporting arm, on a moving machine comprising a laterally moving frame, a supporting arm, a coupling connector, one end of said supporting arm being slidably mounted on said frame and the other end of said supporting arm supporting said coupling connector, a connecting arm pivotally mounted between said supporting arm and said frame for setting the angle of inclination of said supporting arm with respect to said frame, means for articulation of said connecting arm mounted on said supporting arm, means for controlling the pivoting of said connecting arm and the translation of said coupling connector perpendicularly to said frame, means for synchronizing the angular movement of said coupling connector with the movement of said supporting arm and for maintaining said coupling connector in a predetermined position irrespective of the angle of inclination of said supporting arm, said means for articulation of said connecting arm including a motor mounted on said supporting arm, spaced threaded rods rotated by said motor, nuts on said connecting arm receiving said rods one of said rods and the associated one of said nuts being disposed on each side of said supporting arm and a micro-contact breaker connected to said motor controlling the rotation of said rods in synchronism with the movement of said coupling connector.

3,272,929
CARD READER SWITCH WITH INSULATED CYLINDRICAL FLUTED PORTION AND SMALLER CONCENTRIC CYLINDRICAL CONTACT PORTION
Emil A. Hacker, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Sept. 2, 1964, Ser. No. 394,004
3 Claims. (Cl. 200—1)

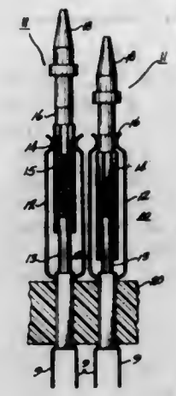
1. Sensing apparatus having yieldably biased switching means, said means comprising in combination:

(a) reciprocating contact means including:

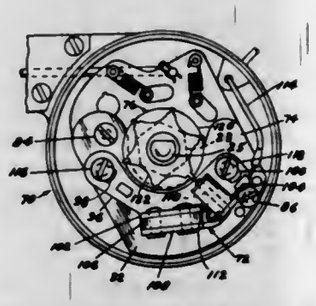
(1) a cylindrical longitudinally fluted electrical insulating portion in combination with

(2) a smaller diameter cylindrical electrical conducting portion, said cylinder portions sharing a common longitudinal axis; and

(b) a set of electrical contact means disposed to slide along the surface of said reciprocating contact means, said set of electrical contact means comprising at least two members of such configuration that under open circuit conditions only a first portion of said at least two members makes contact with said cylindrical longitudinally fluted electrical insulating portion of said reciprocating contact means and under closed circuit conditions only a second portion of said at least two members makes contact with said smaller diameter cylindrical electrical conducting portion of said reciprocating contact means.

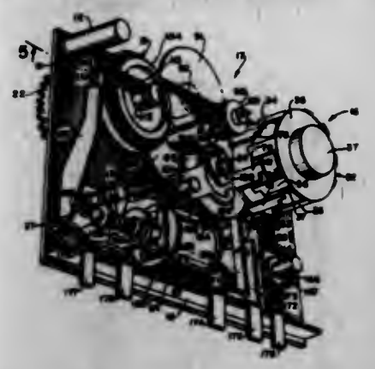


3,272,930
MAGNETIC PULSE GENERATOR IGNITION DISTRIBUTOR
Robert K. Frank, Mount Clemens, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Sept. 18, 1963, Ser. No. 309,790
5 Claims. (Cl. 200—19)



1. A pulse wheel assembly for converting a breaker contact type ignition distributor having a multi-lobe cam formed on the shaft thereof to a magnetic pulse type distributor, said pulse wheel assembly comprising a resilient tubular member adapted to be applied to the outer periphery of the cam by stretching the same over said cam, and a magnetically permeable member having a generally circular portion and equally spaced prongs extending axially from the periphery thereof, said permeable member being adapted to be applied over the said resilient member once said resilient member has been applied to the outer periphery of the cam and in a manner so that said generally circular portion is parallel to an end face of the cam and so that said prongs retain said permeable member on the cam by compression of said resilient member.

3,272,931
TIMER MECHANISM HAVING CAM-SOLENOID ACTUATOR AND COMMON COIL FOR SOLENOID AND MOTOR
Roger D. Ruisch, Two Rivers, Wis., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Sept. 24, 1963, Ser. No. 311,064
6 Claims. (Cl. 200—35)



1. An electrical timer including in combination

a clock mechanism including a synchronous electric timing motor, said motor having pole pieces for the transmission of the magnetic field required for operation of said motor;

a timing cam mounted for rotation about its axis from a first rotary position toward a second rotary position;

biasing means normally biasing said timing cam toward said first rotary position;

means to permit adjusting one of said rotary positions of said timing cam;

a clutch surface fixedly connected to said timing cam;

the combination of said timing cam and said clutch surface shiftable from a disengaged position to an engaged position in which said clutch surface engages said clock mechanism so that said timing cam is driven from said first rotary position toward said second rotary position when said timing motor is operating;

means normally biasing the combination of said timing cam and said clutch surface toward said disengaged position;

a solenoid;

means magnetically coupling said motor pole pieces to said solenoid to provide the magnetic field for said motor when said solenoid is energized with alternating current;

switch actuating means engaging said cam when said solenoid is energized, and movable to a switch actuating position when said timing cam is in said second rotary position;

an armature magnetically coupled with and actuatable by said solenoid upon energization of said solenoid with alternating current; and

means operable in response to actuation of said armature to move said combination of timing cam and clutch surface to said engaged position.

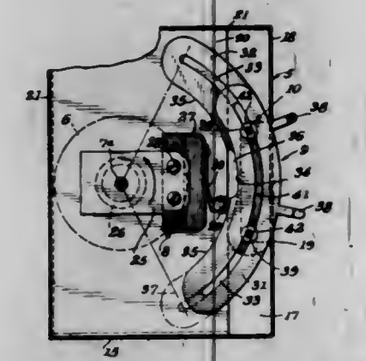
3,272,932
CYCLE TIMER WITH ADJUSTABLE ARCUATE CAMS
David L. Radford, Salt Lake City, Utah, assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Sept. 22, 1964, Ser. No. 398,188
5 Claims. (Cl. 200—38)

5. In a cycle timer having a bank of electric switches with actuator rollers and mounted to move in an arcuate path around an axis and provided with means to move said bank in one direction to an elevated position,

means to engage said switch rollers to open and close said switches comprising:

(a) a bank of arcuate cams formed on a curve having its center on said axis,

(b) each said cam comprising two similar cam members in face-to-face relation and having a concave cam edge with a relief portion, said relief portions of the two cam members combining to form a relief recess,



(c) said switch rollers being resiliently biased to bear against and ride over said concave edges of the cam members,

(d) means to adjustably fixedly mount said cams, and

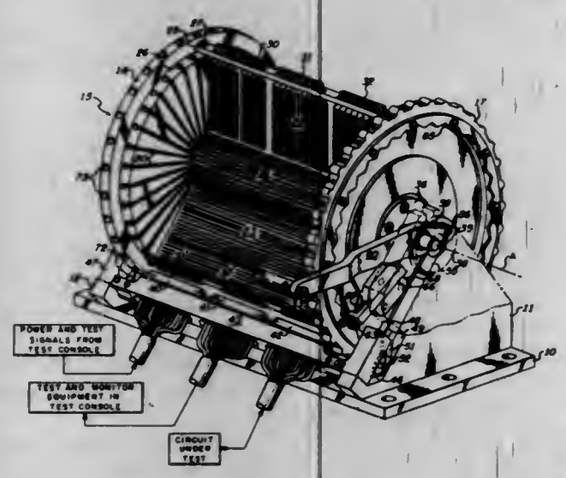
(e) spring means to bias the switch bank to return position in the opposite direction.

3,272,933

ROTARY INDEXING PROGRAMMER SWITCH USING CIRCUIT BOARDS

Billy J. Henderson, Clearwater, Fla., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed July 10, 1964, Ser. No. 381,847
3 Claims. (Cl. 200—46)



2. Apparatus for compactly storing and rapidly and accurately selecting any one of a plurality of pre-constructed electrical circuit boards comprising,

a reel rotatable about its central axis,

a plurality of planar members each supporting electrical circuit means thereon,

said planar members being supported by said reel and being disposed radially in spaced angular relationship about and axis,

electrical terminal means disposed along the outermost edge of each of said planar members and providing circuit connections to the electrical circuit means on the respective planar members,

at least one electrical connector plug disposed at a fixed angular position beyond the outermost edge of said planar members and aligned for insertion into contact with the terminal means on a planar member positioned at said fixed angular position,

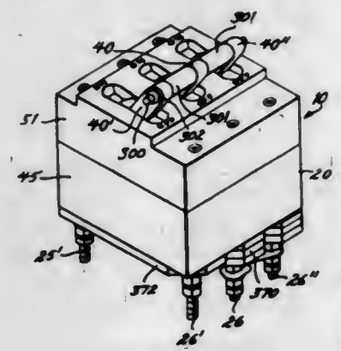
means imparting a linear radial motion to said connector plug to move said plug inwardly and outwardly to insert and withdraw it into and from engagement with the terminal means of a radially aligned planar member.

3,272,934

CIRCUIT BREAKER UNIT FOR ABNORMALLY HIGH INRUSH CURRENTS AND/OR INRUSH CURRENTS OF LONG DURATION

Norman J. Schwartz, Yardley, Pa., Norman E. Taylor, West Trenton, and Hal H. Bakes, Browns Mills, N.J., assignors to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey

Filed Dec. 30, 1963, Ser. No. 334,108
9 Claims. (Cl. 200—50)



7. A circuit breaker unit comprising first and second circuit breaker means for controlling a load, said first circuit breaker means comprising an electromagnetic tripping device controlling said load for a predetermined time period subsequent to initial energization, said second circuit means comprising another electromagnetic tripping device controlling said load at the end of said time period, both means including handles connected for joint movement to the contacts closed and open positions, the first means further comprising a collapsible mechanism connected to its handle and actuatable by said first mentioned tripping device, whereby at the end of said predetermined time period the contacts of the first means move to the contacts open position, since its mechanism remains collapsed, but the handle thereof remains in its contacts closed position because of the connection between the handles.

3,272,935

REMOTELY OPERATED LATCH MECHANISM FOR LAUNDRY MACHINES

Wilbert E. Beller, Park Ridge, and Edwin A. Ostrowski, Mount Prospect, Ill., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware

Filed Jan. 10, 1964, Ser. No. 336,991
8 Claims. (Cl. 200—61.7)

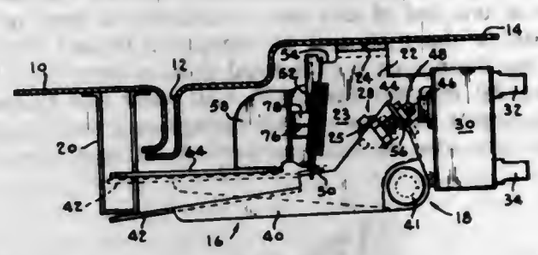
1. A latch mechanism comprising, in combination,

support means including a generally planar portion,

switch means connected on one side of said planar portion and electrically actuated means connected on the other side thereof, said switch means connected in circuit with said electrically actuated means and operative, when actuated, to set-up a circuit to said electrically actuated means the completion of which energizes said electrically actuated means,

actuating means for said switch means pivotally mounted on said planar portion for movement in a plane parallel to said planar portion to actuate said switch means,

said support means including a portion extending laterally of said planar portion on said other side thereof,



and a first latch member having one end positioned adjacent said switch actuating means, its other end positioned adjacent said electrically actuated means and being pivotally supported intermediate its ends on said lateral portion for movement transversely of said plane,

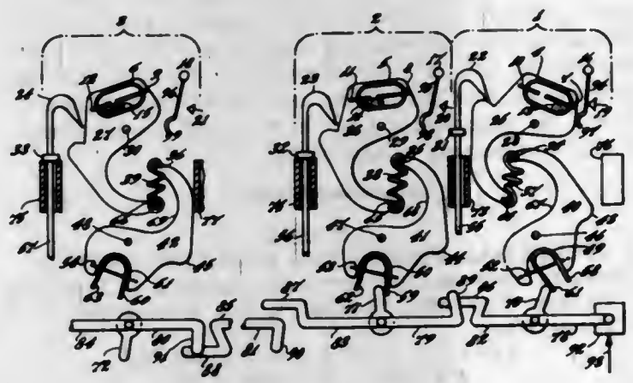
said electrically actuated means operative when actuated to pivot said first latch member.

3,272,936

DIRECTION OF ROTATION RESPONSIVE BISTABLE SWITCH MECHANISM

James A. Potter, 12 Greenhouse Blvd., West Hartford, Conn.

Original application Feb. 24, 1964, Ser. No. 346,630, now Patent No. 3,224,518, dated Dec. 21, 1965. Divided and this application May 3, 1965, Ser. No. 465,226
2 Claims. (Cl. 200—67)



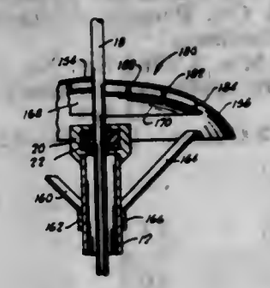
1. A bistable switch mechanism indicating the direction of rotation of an associated finger, said switch consisting essentially of: a pair of pivoted members, each member being pivoted for limited arcuate movement; a spring connecting portions of each of the pair of pivoted members and yieldingly permitting the shifting of the pair of pivoted members to and from a stable position designated as an advanced position and a stable position designated as a withdrawn position but normally urging the pivoted members toward such a stable position; a U-shaped spring in a slot in one of the pivoted members, said spring having two spring tips extending from such slot, a spring tip yieldingly flexing during the continued rotation of an associated finger in the direction corresponding to the position of the bistable switch, and a spring tip being actuated to shift the bistable switch to the position corresponding to the direction of rotation of the finger when contacted by the initial rotation of the finger through a contact zone in a direction opposite to that corresponding to the position of the bistable switch; and an electrical switch operatively shifted by the shifting of the pair of pivoted members.

3,272,937

AUTOMATIC SHUTDOWN DEVICE FOR PUMPING UNITS

John A. Queen, Hobbs, N. Mex., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Original application Nov. 5, 1962, Ser. No. 235,325, now Patent No. 3,211,848, dated Oct. 12, 1965. Divided and this application Mar. 29, 1965, Ser. No. 443,411
4 Claims. (Cl. 200—81)



1. A shutdown device for automatically disabling a pumping unit having a prime mover which drives a rod member extending through a stuffing box, the shutdown device comprising:

baffle means adapted to be disposed substantially around the rod member adjacent the stuffing box;

impact plate means connected to the baffle means and adapted to be disposed adjacent the stuffing box so as to be impacted by fluid sprayed from the stuffing box;

switch means disposed between the baffle means and the impact plate means adapted to be actuated upon impact of fluid against the impact plate means; and

circuit means adapted to be connected to the switch means and to the prime mover for disabling the prime mover upon actuation of the switch means,

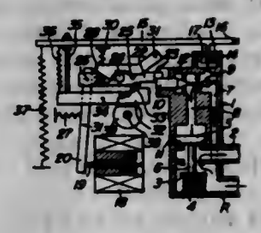
whereby upon leakage of fluid through the stuffing box the pumping unit will be shut down.

3,272,938

CONTROL VALVE MEANS FOR AIR OPERATING ELECTRIC SWITCH

Seizo Nakano and Haruji Nakano, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

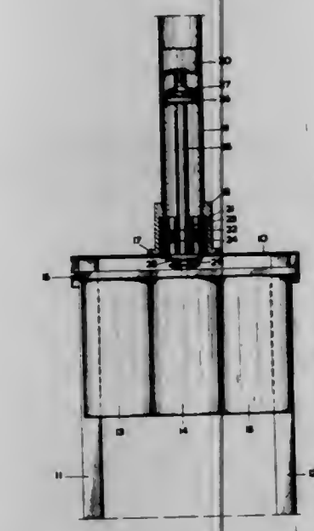
Filed Jan. 14, 1964, Ser. No. 337,616
Claims priority, application Japan, Jan. 16, 1963, 38/1,248
14 Claims. (Cl. 200—82)



1. Control valve means for a fluid operated electric switch and a fluid pressure source, comprising: main valve means controlling the flow of fluid from the fluid pressure source to the electric switch; control valve means controlling the operation of said main valve means; operating means responsive to a first electric switching signal for operating said control valve means to a control position; means for maintaining said control valve means at said control position until the operation of the electric switch corresponding to said switching signal has been completed; and means for rendering said operating means ineffective to operate said control valve means in re-

sponse to any electric signal after the completion of the operation of the electric switch corresponding to said switching signal.

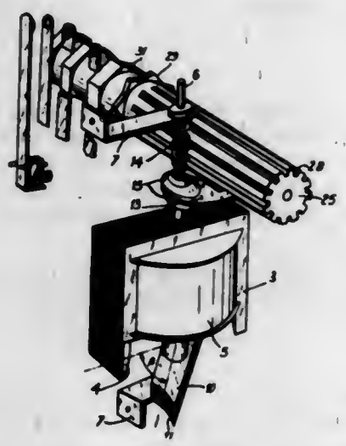
3,272,939
SINGLE OR THREE-PHASE LOAD-BREAKING SWITCH WITH PERMANENT MAGNET ACTUATOR ASSEMBLY
Jan Christiaan Clason, Hengelo, Netherlands, assignor to N.V. Fabriek van Electrische Apparaten Voorheen F. Hazemeijer & Co., Hengelo, Netherlands, a corporation of the Netherlands
Filed Mar. 3, 1964, Ser. No. 349,094
Claims priority, application Germany, Mar. 4, 1963, N 22,844
2 Claims. (Cl. 200—82)



1. An actuator assembly system for a load-breaking isolator switch comprising a movable hood assembly adapted to contain switch contacts which may be opened and closed by movement of the hood between two limiting positions, a housing for conveying controllable pneumatic pressure, a piston reversibly movable within said housing responsive to said pressure, a piston rod rigidly connected to both the movable hood assembly and the piston to move the hood between said limiting positions responsive to the pneumatic pressure, a permanent magnet system affixed within said housing to intercept respectively the path of said piston and said hood near corresponding ones of the two limiting positions, and two plates of magnetically soft material affixed to said piston rod respectively near the hood and piston to move therewith and intercept said permanent magnet system to magnetically engage the permanent magnet system at the respective limits and hold said piston rod in place wherefrom the contacts may be changed by breaking the plates away from the magnet quickly only after said pneumatic pressure is changed on said piston to an extent exceeding the holding force of the magnet on said plates.

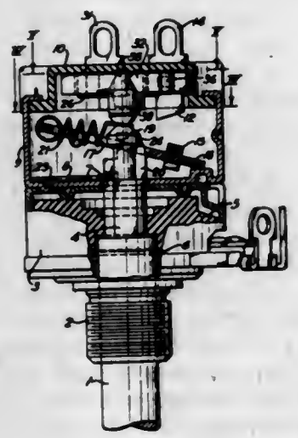
3,272,940
ELECTROMAGNETIC DEVICE, MORE PARTICULARLY FOR USE WITH CONTACTORS, RELAYS AND TELEBREAKERS
Pierre Franck, 53 Ave. de Trudaine, Paris, France
Filed Mar. 31, 1964, Ser. No. 356,236
Claims priority, application France, June 19, 1963, 938,636
9 Claims. (Cl. 335—122)

1. An electromagnetic device for rotating intermittently a mechanical member comprising in combination a solenoid type coil having a vertical axis, two pole-pieces arranged in diametrically opposed adjacent positions with respect to said coil, a movable assembly having a vertical shaft extending beyond said coil, a plunger core connected with said shaft adapted to move axially and rotatably within said coil, and a transverse armature member carried at one end of said core, a mechanical drum member rotatable about an axis perpendicular to said shaft and having flutings on a cylindrical portion thereof, an operating flat member carried by said shaft and shaped for engaging at least one of said flutings in a position spaced from the axis of said mechanical member, means for



energizing said coil and causing an axial movement of said plunger core and shaft thus moving axially said operating member towards the horizontal diametral plane of said mechanical member, whereby the relative movement of said fluting with respect to said shaft causes the initial rotation of said shaft by a pushing action of said fluting against said operating member in a direction which reduces the angular gap between said armature and said pole pieces, thus permitting the electromagnetic flux between the pole pieces and the armature to complete a rotation movement of said shaft.

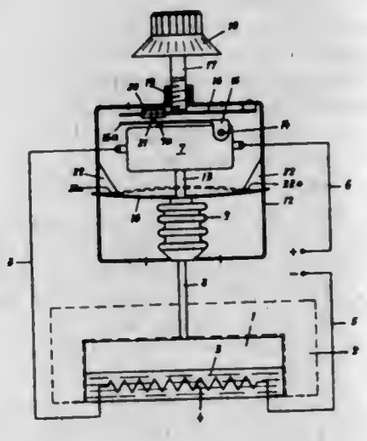
3,272,941
OVERLOAD PROTECTED ELECTRIC SWITCH
James F. Sullivan, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Oct. 2, 1964, Ser. No. 401,081
6 Claims. (Cl. 200—116)



1. An overload protected electric switch comprising a housing, a pair of fixed electric contacts inside the housing, one of said contacts being a circuit breaker contact,

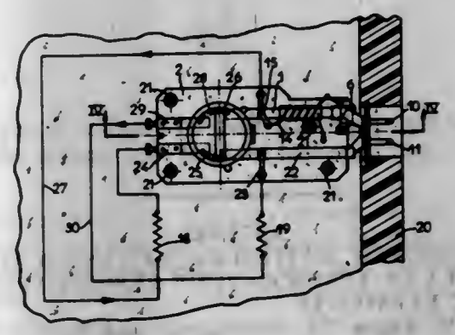
a thermally responsive bimetallic conductor strip secured at one end to the other contact, the strip having a laterally projecting contact end normally hooked onto said breaker contact, said strip being adapted to bend and spring away from the breaker contact when overheated by excessive electric current flowing therethrough, a third fixed contact beside one of said pair of fixed contacts, a movable bridging contact in the housing, a control shaft for moving the movable contact into and out of engagement with said third contact and the fixed contact beside it, a resilient reset strip extending lengthwise of the conductor strip along the side thereof remote from said circuit breaker contact, means in the housing anchoring one end of the reset strip adjacent said other fixed contact, the reset strip being spaced from the other strip while said contact end is hooked onto the breaker contact, and means actuated by the control shaft for bending the reset strip to force its free end toward the adjacent end of the conductor strip when the shaft is operated to open the switch, whereby if the conductor strip has become unhooked from the breaker contact the free end of the reset strip will push said contact end back into hooked-on engagement with the breaker contact.

3,272,942
CONTROL SWITCH FOR AN ELECTRICAL HEATING APPLIANCE
Wilhelm Brandl, 12 Scharbungert, Zurich, Switzerland
Filed Apr. 3, 1964, Ser. No. 357,159
Claims priority, application Switzerland, Apr. 5, 1963, 4,414/63
2 Claims. (Cl. 200—122)



1. A control device for an electric heating apparatus, comprising a hollow body adapted to be evacuated and partly filled with a liquid, an electric heating coil located within said body and serving for the evaporation of the liquid, a resilient member, means connecting said resilient member with said hollow body, whereby said resilient member is elastically deformed in accordance with vapor pressure prevailing in the interior of said hollow body, a switch member, means connecting said switch member with said resilient member, means electrically connecting said switch member with said heating coil, whereby the supply of current to said heating coil is switched on and off according to the degree of deformation of the resilient member, a leaf spring supporting said resilient member, said leaf spring resting on both its ends and having two support points, guide cams located at said two support points and having curved abutment faces for said leaf spring, whereby upon flexure of said leaf spring caused by expansion of said resilient member said guide cams effect a shortening of the effective length of the spring by displacing the support points thereof so that there is a progressive stiffening of the resilient member with increasing pressure in the interior of the hollow body such as to cause the spring characteristic to follow the characteristic of the change of vapor pressure with temperature.

3,272,943
ELECTRIC SHAVER CONTROL ASSEMBLY
Maurice Marie Achille Trouilhet, Lyon, France, assignor to Calor Appareils Electro-Domestiques, Lyon, France, a body corporate of France
Filed Apr. 16, 1964, Ser. No. 360,312
Claims priority, application France, Feb. 6, 1964, 962,922
8 Claims. (Cl. 200—122)

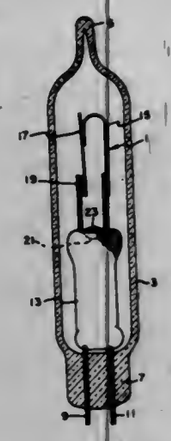


1. A control assembly for a shaver comprising a casing and an electric motor having two identical windings, said control assembly including an electric insulating plate secured to and spaced from one wall of said casing, a first, a second, a third and a fourth electrically conductive strip-like members, secured to the face of said plate facing said casing wall, said members having respective free ends disposed at angularly spaced consecutive locations on a common imaginary circle parallel to said casing wall, said first and second members being respectively connectable to the terminals of a source of electric current, said first member being formed by a bimetal strip carrying at its end opposite to said free end a movable contact engageable with a fixed contact carried by a metal part secured to said insulating plate, said motor windings being respectively connected between said first and said third members and between said second and said fourth members, a voltage-switch button mounted in a hole formed in said casing wall coaxially with said imaginary circle and angularly movable between a first and a second position, the inner face of said button being provided with two sectoral contacts, said sectoral contacts respectively connecting said first to said fourth member and said second to said third member when said button is in said first position and one of said sectoral contacts connecting said third to said fourth member when said button is in said second position.

3,272,944
ENCAPSULATED THERMOSTATIC SWITCH HAVING A HEATER DISPOSED IN THE STEM
William C. Ricker, Waldoboro, and George H. Simpson, Boothbay, Maine, assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,467
2 Claims. (Cl. 200—122)

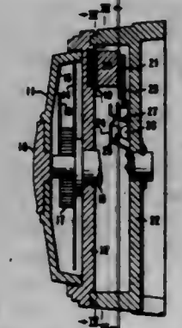
1. A thermostatic switch comprising: a glass envelope; a stem of insulating material disposed in said envelope, said stem having a cavity formed in the top thereof; a pair of spaced lead-in wires extending through said stem and through an end of said envelope; a bimetal armature secured to one of said lead-in wires; a compensator secured to said armature; an electrical contact secured to

said compensator, said contact being normally closed with respect to the other of said lead-in wires; and a body of



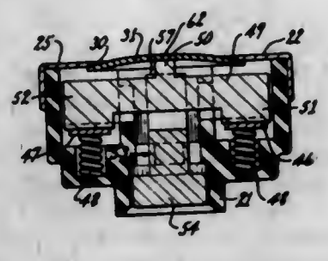
powdered high resistance material disposed in said cavity formed in said stem and bridging said lead-in wires.

3,272,945
THERMOSTATIC SWITCH EMPLOYING A MATCHING SET OF TEMPERATURE RESPONSIVE MAGNETIC ELEMENTS
William M. Flook, Jr., Wilmington, and Paul A. Vance, Jr., Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,299
8 Claims. (Cl. 200—138)



1. A device for controlling the temperature of an environment by controlling the current to a heat transfer plant at said environment which comprises, in combination, a support assembly; a movable member on said support assembly; indicator means on said movable member for selecting a desired temperature of an environment; a series of adjacent temperature responsive magnetic elements mounted upon said movable member, said elements each exhibiting a reversible change in saturation induction at a different discrete transition temperature level, said elements arranged and positioned in a sequential order of graduated transition temperature levels corresponding to said indicator means for selecting a desired temperature of an environment; resilient means movably mounted on said support assembly to and from a rest position; magnetic means mounted on said resilient means, said magnetic means positioned to be attracted to a selected temperature responsive magnetic element when said element is in a magnetic state thereby forcing said resilient means from rest position; and switch means for actuating said heat transfer plant, said switch means located on said support assembly and positioned to operatively engage said resilient means for actuation and deactuation upon movement of said resilient means to and from rest position.

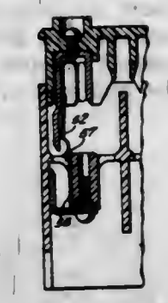
3,272,946
THERMOSTATICALLY CONTROLLED SWITCH MEANS HAVING IMPROVED RESET MEANS THEREFOR
Siegfried E. Manecke, Indiana, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 361,141
8 Claims. (Cl. 200—138)



1. In combination a support means, a control member carried by said support means and having at least a portion thereof being movable between two positions relative to said support means, contact means carried by said support means, one of said contact means being movable against and away from the other contact means, said movable contact means having contact closing means normally tending to place said movable contact means into contact with said other contact means, movable actuating means disposed between said control member and said movable contact means and having opposed ends respectively engageable with said control member and said movable contact means whereby said contact closing means places said contact means in electrical contact with each other when said control member is in one of said two positions thereof and whereby said actuating means moves said movable contact means away from said other contact means when said control member is moved to said other position thereof, and movable reset means carried by said support means for resetting said control member from said other position thereof to said one position thereof, said reset means being movable between first and second positions thereof relative to said support means, said reset means having an end engaging said control member when said reset means is moved to said second portion thereof and said control member is in said other position thereof, said reset means when moved to said second position thereof only moving said control member from said other position thereof towards said one position thereof to a reset point insufficient to have said contact closing means move said movable contact means against said other contact means whereby said contact means are not electrically interconnected together unless said control member moves beyond said reset point toward said one position thereof.

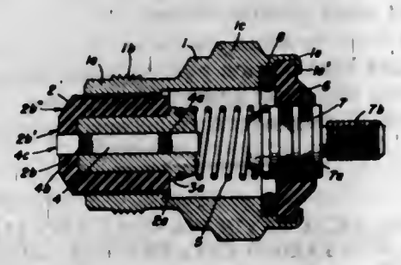
3,272,947
SWITCH CONTACT ARRANGEMENT
Herman H. Kobryner, Forest Hills, N.Y., assignor to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York
Filed May 11, 1964, Ser. No. 366,351
2 Claims. (Cl. 200—163)

2. A pull-out switch comprising engageable male and female contacts; said male contact comprising physically and electrically parallel primary and auxiliary contact elements, said auxiliary contact element being formed of resilient material and being dimensioned to be of lesser cross-section and of greater relative length than said primary contact for making first with said female contact and breaking last, absorbing any arc in a greater resistance path; a puller and a tub; means for mounting the male contact in said puller; means for mounting the female contact in said tub at a location to permit engagement of said male and female contacts upon the seating of said puller in said tub; said male auxiliary contact element including a projecting portion at the end thereof, and a non-conducting lip in said tub adjacent the end of



the female contact element and disposed relative thereto to contact first the projecting end of the male auxiliary contact element and require additional force to seat and unseat said puller immediately before make and break, respectively, of said male and female contacts.

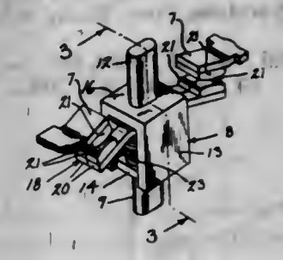
3,272,948
ELECTRIC SWITCH STRUCTURE
Stanley J. Gloviak, Westchester, and Roger A. Weller, Skokie, Ill., assignors to Carter Precision Electric Co., Skokie, Ill., a corporation of Illinois
Filed June 3, 1964, Ser. No. 372,276
7 Claims. (Cl. 200—166)



6. An electric switch structure comprising a tubular metallic shell having an open end portion, insulating means closing the other end portion of said shell, a plunger mounted for reciprocating movement within said open end portion and comprising an insulating member having free sliding movement with the inner wall of said open-end shell portion, said insulating member having an end portion extending outside of said open-end portion and having a central aperture formed therein, a metallic contact pin mounted within said shell and having one end thereof extending through the aperture in said insulating member, a holder for said pin formed separately from said insulating member and frictionally holding said pin for longitudinally adjusting said pin with respect to said insulating member, and spring means mounted within said shell and acting on said pin holder to resiliently bias said holder into a position where an end portion of said pin extends through said aperture.

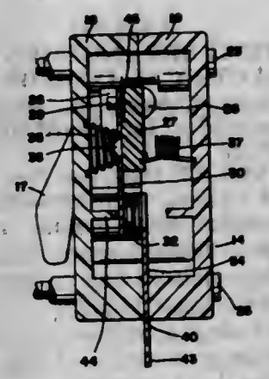
3,272,949
BIFURCATED PARALLEL CONTACTS FOR RELAY
Leland E. Lawrence, Wauwatosa, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 14, 1964, Ser. No. 390,271
6 Claims. (Cl. 200—166)

6. In a contact assembly the combination comprising:
a supporting structure;
a pair of stationary contacts spaced from one another and mounted upon said supporting structure to form an electrical pole for the assembly;
a contact actuator movable in a path of action substantially normal to a line between said spaced stationary contacts which is guided in such movement by said supporting structure, said contact actuator including a contact receiving cage with a seat having surfaces oblique to said line between said spaced stationary contacts;
means associated with said supporting structure for reciprocating said contact actuator in said path of action;



a pair of movable contacts formed of two separate pieces mounted in said contact receiving cage for bridging engagement between said stationary contacts, said movable contacts lying in closely adjacent side by side relation within said cage and forming parallel electrical paths between said stationary contacts when in engagement therewith, each of said movable contacts having a saddle engageable with said oblique surfaces of said seat to preclude endwise shift of said movable contacts when said seat and saddles are in engagement;
said contact receiving cage having side walls between which said movable contacts are closely held to preclude any substantial sidewise shift of said movable contacts; and
a common bias spring means working against said pair of movable contacts.

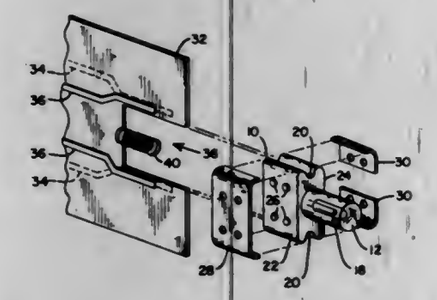
3,272,950
CONSTANT-LOAD SPRING-LOADED ELECTRICAL SWITCH
Joseph Greenblut, University Heights, Ohio (3333 Warrensville Center Road, Shaker Heights, Ohio 44122)
Filed Sept. 28, 1964, Ser. No. 399,536
9 Claims. (Cl. 200—166)



1. In an electrical switch, the combination of contact elements mounted for relative movement into and out of circuit-closing relationship, first spring means bearing upon and urging one of said contact elements toward circuit-closing position, second spring means bearing upon and urging said one contact element toward circuit-opening position in opposition to said first spring means, one

of said spring means exerting a force upon said one contact element less than one-half the force exerted by the other of said spring means, and movable switch-operating means operatively interposed between said first and second spring means for selectively disengaging said spring means from opposition to each other.

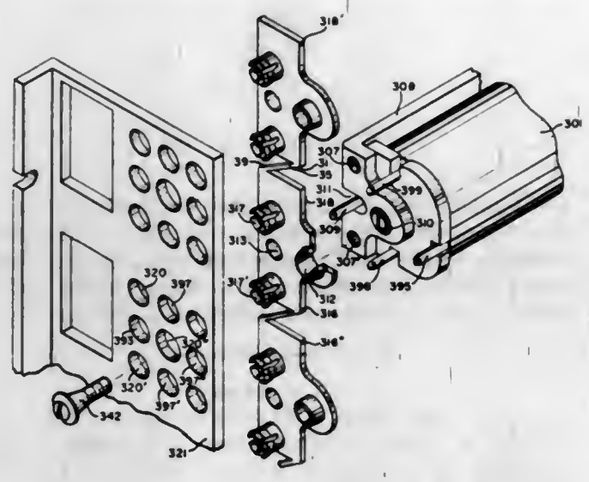
3,272,951
SWITCH INDICATOR DEVICE FOR PRINTED CIRCUIT
Harold G. O'Brien, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,724
14 Claims. (Cl. 200—167)



1. A switch-indicator assembly comprising in combination:
(a) an actuator assembly consisting of an insulation block mounting an indicator light means;
(b) a switch shorting bar means mounted on one side of said actuator assembly;
(c) indicator electrode means mounted on an opposite side of said actuator assembly;
(d) a printed circuit board containing printed circuit means and containing a notch adapted to receive said actuator assembly in a sliding manner;
(e) a panel member having secured to one face thereof an edge of said printed circuit board;
(f) and a biasing means secured to one end of said notch for urging said actuator assembly in a direction toward said panel face whereby the application of a force in opposition to the bias effects an electrical function through a circuit including the printed circuit means.

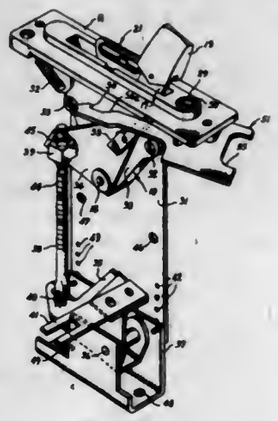
3,272,952
MOUNTING ARRANGEMENT FOR AN ELECTRICAL COMPONENT
Patrick E. McKeon, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Mar. 17, 1965, Ser. No. 440,491
5 Claims. (Cl. 200—168)

1. An arrangement for mounting an electrical component in insulated fashion comprising, in combination:
(1) a mounting plate having an aperture of predetermined diameter therethrough,
(2) a screw having a washer-type head portion with a diameter larger than that of said aperture, a shank and therebetween a portion tapering in the direction from said head towards said shank,
(3) and an insert of insulating material comprising:
a base portion and extending therefrom and integrally formed therewith a resilient collar portion having a flange at its free end, a hole being formed through said insert, which is surrounded by said collar portion, said flange having an outside diameter slightly larger than that of said aperture,
said collar portion with its flange being inserted into said aperture from said component side of said mounting plate, said flange emerging from the other side of said mounting plate and overlapping the edges of said aperture so as to retain said insert on said mounting plate,
said flanged end of said collar portion receiving said shank which in turn passes through said collar portion into said component, said flange,



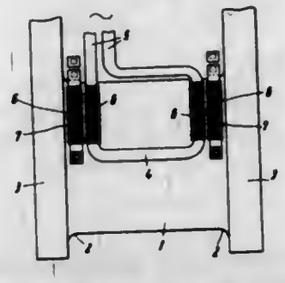
upon the tightening of said screw, being engaged and deformed by said tapered screw portion and said head portion, thereby forming an insulating layer between said head and said plate,
and said base portion portion being interposed between said plate and said component to provide an insulating layer therebetween.

3,272,953
EXTERNAL ACTUATOR HANDLE MECHANISM FOR ENCLOSED CIRCUIT BREAKER
Robert S. Tillson, Bristol, Conn., assignor to General Electric Company, a corporation of New York
Filed Feb. 8, 1965, Ser. No. 430,801
14 Claims. (Cl. 200—172)



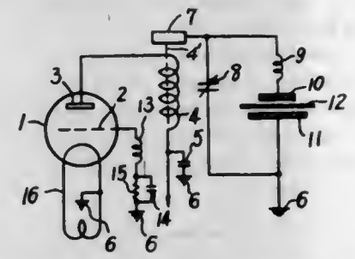
1. A handle mechanism comprising: an escutcheon having an elongate slot therein; a body portion integral with said escutcheon and extending in a planar axis in general alignment with said slot; handle pivot means carried by said integral body portion; a handle extending through said slot and supported by said handle pivot means for selective reciprocal positioning; and means engaged with said handle pivot means adjacent said body portion for reciprocal movement responsive to the positioning of said handle, said means being adapted to engage and reciprocally operate separate switch means.

3,272,954
METHOD OF HEATING BY INDUCTION
Gerhard Seulen, Remscheid, and Hermann Kuhlbars, Wuppertal-Elberfeld, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany, and Allgemeine Elektricitats-Gesellschaft, Berlin-Grunewald, Germany
Filed Sept. 25, 1964, Ser. No. 399,303
Claims priority, application Germany, Sept. 25, 1963, D 42,556
3 Claims. (Cl. 219—10.43)



1. A method of inductively heating a workpiece by means of at least two inductors, in which the said inductors have the form of heating conductor loops which provide substantially closed paths for the current over the workpiece surface, and while air coupling between the inductors is substantially suppressed the said inductors act simultaneously on different areas of the work surface while energised by current sources having different characteristics, frequencies and outputs.

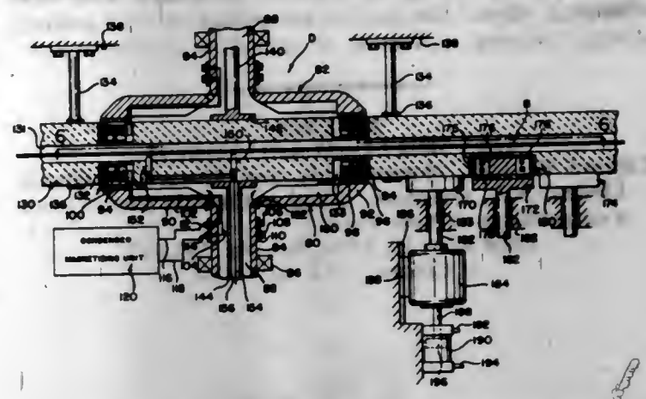
3,272,955
METHOD OF COUPLING HIGH FREQUENCY ELECTRIC CIRCUIT
Sakuji Yamaguchi, 12 1-chome, Enjo-cho, Showa-ku, Nagoya, Japan
Filed Feb. 7, 1964, Ser. No. 343,259
Claims priority, application Japan, Feb. 13, 1963, 38/6,942
2 Claims. (Cl. 219—10.53)



1. A circuit for coupling a high frequency oscillatory circuit to a load circuit which comprises a flat metal plate located on and transverse to the axial line of a tank coil of said oscillatory circuit and in spaced relation thereto, and a connection between said metal plate and the load circuit which includes a paralleled circuit combination of a variable tuning capacitor and a load impedance.

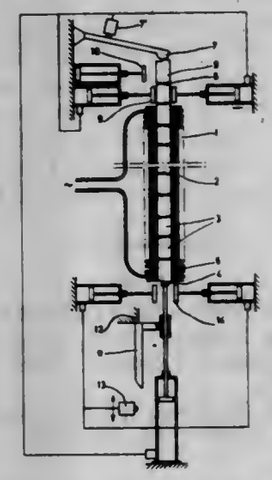
3,272,956
MAGNETIC HEATING AND SUPPORTING DEVICE FOR MOVING ELONGATED METAL ARTICLES
Max Baermann, Bensberg Wulfshof, Cologne (Rhine), Germany
Filed Mar. 26, 1964, Ser. No. 354,861
Claims priority, application Germany, Apr. 1, 1963, B 71,367
24 Claims. (Cl. 219—10.61)

1. A device for heating an electrically conductive strip traveling in a given path comprising vertically spaced first and second rotors, means for rotating said rotors about an axis generally perpendicular to said strip with the rotors being on opposite sides of said strip, one of said rotors having a plurality of circumferentially spaced, alternate north and south magnetic poles, means for synchronizing the speed of said rotors and flux directing



means for causing the flux from the poles on said one rotor to extend to the other rotor and generally perpendicularly through said strip.

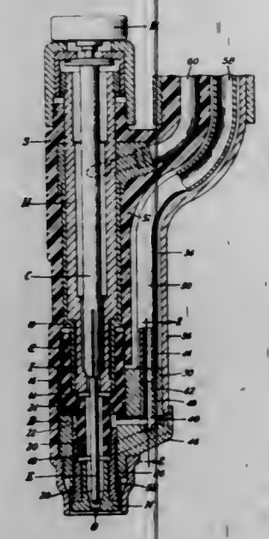
3,272,957
APPARATUS FOR FEEDING AND EXTRACTING A WORK-PIECE FROM A COLUMN OF WORK-PIECES OF VARYING LENGTHS
Heinz Koesling, Notzingen, and Robert Brauneisen, Oberboihingen, Germany, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 417,948
Claims priority, application Germany, Dec. 13, 1963, P 33,187
2 Claims. (Cl. 219—10.69)



1. The combination with a vertically positioned oven having an exit at one end and an entrance at the other end and apparatus for feeding and extracting one work-piece at a time from a column of work-pieces of varying length within said oven comprising, a slide member for raising and lowering said column in a vertical direction, means for moving said slide member, column elevation determining means positioned relative to the exit end of said oven for engaging a work-piece externally of said exit end and terminating movement of said slide member, means operatively connecting said elevation determining means and said means for moving said slide member, a follower member frictionally coupled with said slide member, stop means for engaging said follower member in the raising direction of movement of said slide member whereby said slide moving relative to said follower when said follower is engaged with said stop means, clamping means positioned relative to the entrance end of said oven for engaging a work-piece externally of said other end upon lowering movement of

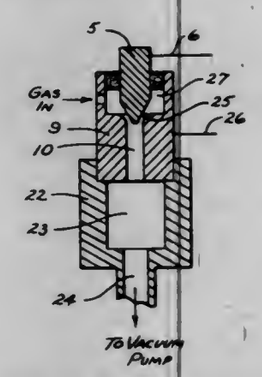
said slide member and adjustable means in the path of lowering movement of said follower member, said adjustable means being operatively associated with said clamping means for halting movement of said column during lowering movement of said slide member.

3,272,958
GAS SHIELDED ARC TORCH
Clifford W. Hill, Mountainside, and Edward A. Obuch, Linden, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Mar. 18, 1964, Ser. No. 352,927
8 Claims. (Cl. 219—75)



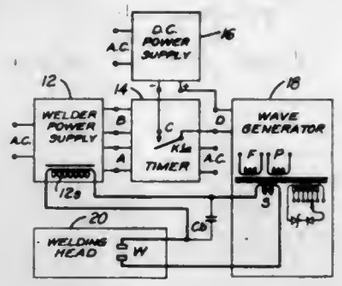
1. In an arc torch, a barrel comprising a metal front body having an annular fluid chamber therein concentric with said barrel, said front body having a lateral extension eccentric to said barrel with a passage therein leading to said annular fluid chamber with an inlet therefor in the rear thereof, and a metal supply tube brazed to said inlet and extending rearwardly therefrom parallel and eccentric to said barrel.

3,272,959
ELECTRIC ARC TORCHES
James A. Browning, Hanover, N.H., assignor to Thermal Dynamics Corporation, Lebanon, N.H., a corporation of New Hampshire
Filed Feb. 24, 1965, Ser. No. 434,779
6 Claims. (Cl. 219—75)



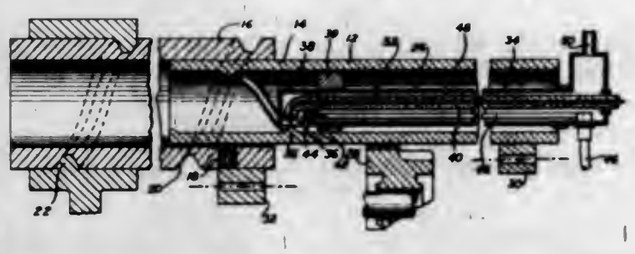
1. In an electric arc torch having an arc gap, the method of initiating an arc in said torch comprising applying a voltage across said gap, said voltage being below the breakdown value required to bridge said gap at substantially one atmosphere; and reducing the fluid pressure in the region of said gap until an arc is struck across said gap.

3,272,960
WELDING APPARATUS AND METHOD
Melvin H. Smith, Perris, Calif., assignor to Bourns, Inc., a corporation of California
Filed Mar. 4, 1965, Ser. No. 437,213
9 Claims. (Cl. 219—91)



1. A method of electrically welding a fine-gauge insulated conductive wire to a base conductor without separate stripping of insulation from the wire, said method comprising as steps:
bringing the insulated wire and base conductor into longitudinal juxtaposition in a path between a set of welding electrodes with insulation on the wire separating the wire from the base conductor and from one of the electrodes and advancing at least one of the electrodes toward the other with said wire and base therebetween to press the insulation on said wire firmly against said base conductor and against one of said electrodes;
applying across the electrodes a high-voltage high-frequency A.C. potential sufficient to cause ionization of material and degradation of insulation along the said path between the electrodes;
thereafter during continued ionization of material along said path, applying force tending to close said electrodes and concurrently passing a first pulse of direct current between the electrodes along said path, whereby to sufficiently degrade the insulation that the electrodes bring the wire into metallic contact with the base conductor, and
thereafter passing a second pulse of current between the electrodes and through the contacting wire and base conductor in said path whereby the melt portions of the wire and conductor and cause fusion-union thereof in said path.

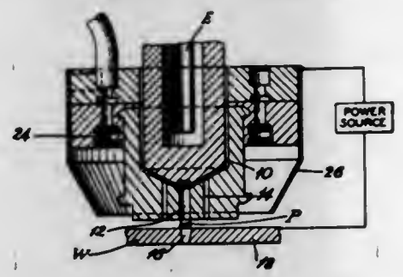
3,272,961
METHOD FOR MAKING RIBBED VAPOR GENERATING TUBES
Leo A. Maier, Jr., Dansville, N.Y., and Robert A. Lorenzini, Westport, Conn., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Nov. 5, 1964, Ser. No. 409,197
2 Claims. (Cl. 219—125)



1. A method for forming a turbulator weld bead of predetermined configuration on the inside of an elongated tube wherein longitudinally aligned points of successive

crests of the weld bead are a substantial distance apart comprising the steps of
positioning and centering a welding torch nozzle within the tube so that a free end thereof is disposed at one end of the tube;
feeding an electrode wire within the torch at a predetermined rate of speed, the wire passing through said free end;
rotating the tube at a predetermined rate of rotation;
withdrawing the welding torch and electrode wire from the tube at a speed independent of the speed of rotation of the tube but programmed with the speed of rotation to give the desired weld bead configuration;
the welding torch changing the electrode wire position along the tube from one axial with respect to the tube to one normal to the surface of the tube; and
supplying a welding current to the electrode wire.

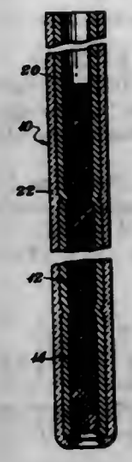
3,272,962
ELECTRIC ARC WORKING PROCESS
Leonard Mauskapf, Wilkes-Barre, Pa., assignor to Union Carbide Corporation, a corporation of New York
Filed May 3, 1965, Ser. No. 452,697
3 Claims. (Cl. 219—137)



1. An electric arc welding process with an arc torch device including an electrode and a nozzle having a constricting arc passageway in substantial axial alignment with, but spaced from, said electrode to thereby provide a chamber between said electrode and the mouth of said arc passageway and having gas ports communicating with said chamber which comprises establishing an arc between said electrode and workpiece; introducing a gas into said arc torch and into said chamber, passing said arc and at least some of said gas through said constricting arc passageway to direct an arc plasma effluent upon said workpiece, directing the remainder of said gas through said gas ports in discrete streams on substantially diametrically opposite sides of said arc plasma along and outside of, but not surrounding, said arc plasma effluent to thereby elongate the arc plasma effluent.

3,272,963
FLUX-COATED CARBIDE WELDING ROD
Rene D. Wasserman, Cummings Point, Stamford, Conn., and Joseph F. Quaas, Island Park, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
Filed Mar. 21, 1962, Ser. No. 181,304
4 Claims. (Cl. 219—146)

1. A welding rod for depositing a refractory carbide-laden surface layer upon a parent metal comprising an elongated compressed and sintered mass of fine carbide particles, a metallic binder cementing said mass of fine carbide particles together, an elongated relatively strong metal member supporting said carbide mass, attaching means securing said carbide mass and supporting member together to permit said supporting member to protect said carbide mass from breaking, the metal composition of said supporting member being capable of fusion with said fine carbide particles and said parent metal, a flux coating upon said welding rod consisting essentially of the following constituents in the indicated ranges of percents by weight which are attached to said rod by a suitable binder:



Constituent:	Percent by weight
Active metal fluorides	5–35
Alkaline earth metal carbonates	20–70
Carbon	2–35
Metallic powders	5–60
Chromium oxide	1–5

3,272,964
FABRIC STEAMER
J. Paul Carlos, 6 Driver Lane, and Charles W. Gamble, 5914 S. Datura, both of Littleton, Colo.
Filed June 15, 1964, Ser. No. 375,228
9 Claims. (Cl. 219—271)



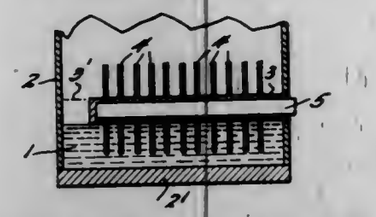
1. A portable fabric steamer comprising a housing, an enclosed reservoir within the housing for containing a column of water having an air column portion for assisting flow of the water through a bottom opening in the reservoir by gravity flow, a passage extending from the bottom opening of the reservoir to a point of discharge in a wall of the housing for converting water to steam, at least one layer of heat insulation between the passage and the adjoining housing surfaces and between the passage and the reservoir, an orifice between the opening of the reservoir and the passage for controlling the flow of water from the reservoir to the passage, heating means disposed adjacent and in heat exchange relation with the passage for heating the passage, a manifold member disposed on the housing having a fluid conductive portion inclusive of an input branch extending from the insulated passage and plural output branches having outlets at in-

tervals along a plane transverse to the insulated passage to disperse the steam released from the passage, and a nozzle portion enclosing the output branches adapted to direct the steam discharge in a spreading pattern to a surface area of a fabric over which the steamer is moved.

3,272,965
VACUUM DIFFUSION PUMP

Walter Reichelt, Hanau, Germany, assignor to W. C. Heraeus G.m.b.H., Hanau am Main, Germany, a corporation of Germany

Filed June 1, 1964, Ser. No. 371,564
Claims priority, application Germany, June 14, 1963, H 49,451
5 Claims. (Cl. 219—275)

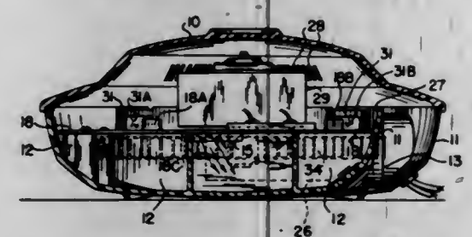


1. In a vacuum diffusion pump having a vertical cylindrical housing and a bottom wall secured to the lower end thereof and defining therewith a nozzle assembly for expanding and accelerating oil vapor, an oil charge disposed in the lower end of said housing, a plurality of horizontally disposed cylindrical tubes secured within said housing above the upper surface of said oil charge, said tubes being each provided with an open end which is disposed exteriorly of said housing, an electric heating element disposed within each of said tubes for continuously generating oil vapor from said oil charge, each of said tubes having a plurality of longitudinally spaced parallel heat conductive plates secured thereto perpendicular to the axis thereof, the lower parts of said plates being immersed into said oil charge for heating and vaporizing said oil, and the upper parts of said plates extending above the liquid oil charge to further heat the vapor which rises vertically after being formed and which passes between the upper parts of said plates, said further heating by the upper parts of said plates accelerating the flow of vapor formed from said oil charge.

3,272,966
DEVICE FOR DRYING HAIR AND FINGERNAILS

Earl E. Sutton, Mansfield, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio

Filed June 20, 1963, Ser. No. 289,363
3 Claims. (Cl. 219—370)

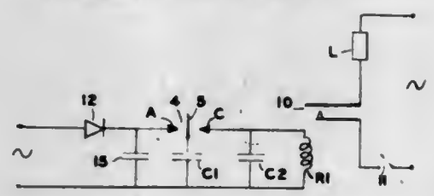


1. A drying device for hair and fingernails comprising the combination of a lower shell, an upper shell joined to the lower shell to form a hollow enclosure, a supporting plate carried by the lower shell and positioned to divide the enclosure into upper and lower sections, an electric motor carried by the plate and extending into the upper section, a rotary fan carried by the plate and extending into the lower section, said lower shell having an outlet adapted to engage an air hose for conduction of air therefrom for the drying of hair, said upper shell having inlet means for the ingress of air into the enclosure, said plate having a central opening to permit air from said inlet means to be drawn by the rotary fan through said central opening into the lower section of the enclosure, said lower shell having a convolute confining wall cooperating with said rotary fan for the driving of air drawn into said lower section to said outlet, an electric resistance heating element carried by said plate and extending into the lower section adjacent said outlet for heating air driven by the rotary fan prior to its egress from said outlet, a compartment in the enclosure formed by cooperating portions of said shells and plate at a location adjacent the periphery of the joined shells, said compartment having an opening into the lower section for the leaking of driven air in the lower section into said compartment before reaching said outlet, said compartment having an exit for the egress of said driven air exteriorly of said joined shells for the drying of fingernails, said joined shells at said exit having portions forming a slideway, and a closure slidable in said slideway for closing and opening said exit as desired.

3,272,967
LAMP CONTROL MEANS

Marvin I. Mindell, Great Neck, N.Y., assignor to Viewlex, Inc., Holbrook, N.Y.

Filed May 4, 1965, Ser. No. 453,045
4 Claims. (Cl. 219—471)

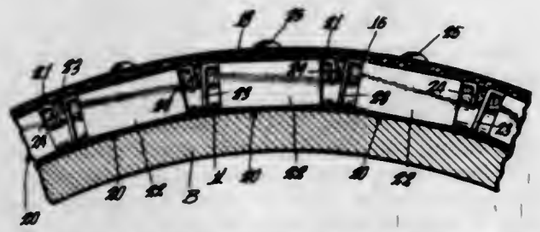


1. In apparatus having a heat lamp of the type directing heat onto papers passed between two rollers,
means to apply voltage to said lamp only while said rollers are rotating comprising:
a solenoid,
a lamp switch connected in series with said lamp and a source of power,
said switch being normally open but being adapted to be closed by said solenoid,
means to apply voltage across said solenoid for a time slightly greater than one rotation of said rollers, and
means operated by said rollers to reactivate said voltage applying means once each cycle of said rollers.

3,272,968
FLEXIBLE ELECTRIC SURFACE HEATING ASSEMBLY

John F. Volker, Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.

Filed Dec. 5, 1963, Ser. No. 328,294
8 Claims. (Cl. 219—535)

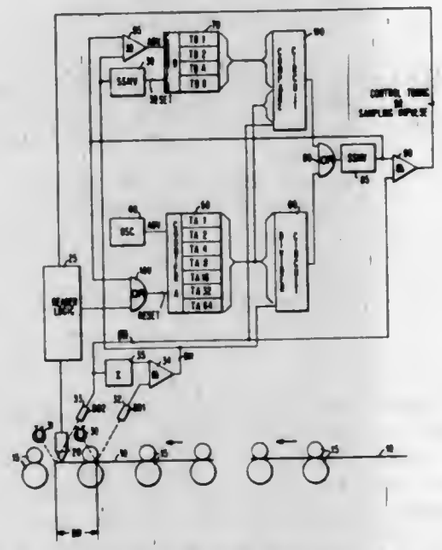


1. A body heater assembly to be applied to body surfaces which may be non-planar, comprising an elongated, longitudinally flexible, heat-resistant support member, an elongated, tubular, longitudinally flexible, metallic sheathed, electric resistance heating element generally coextensive with said support member, said element being disposed adjacent to but spaced laterally of said support member and being positioned intermediate the latter and the body to be heated, and a plurality of sheet-metal spacer members in end-to-end relation intermediate said support member and said element for maintaining the spaced relationship therebetween, each spacer member being channel-shaped in cross-section with its web portion disposed adjacent to and parallel with said support member and with other portions projecting transversely of said support member toward said element for engagement with longitudinally spaced element portions.

3,272,969
DIGITAL PULSE GENERATOR WITH COMPENSATION FOR DOCUMENT VELOCITY VARIATIONS

Alfred Cutaia, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 6, 1963, Ser. No. 328,678
10 Claims. (Cl. 235—61.11)

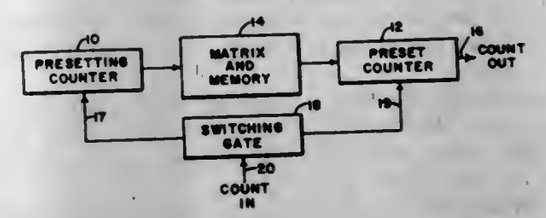


3. In a document reading machine, the combination comprising:
a first document detector positioned at a predetermined distance downstream of the read station in the document path of said document reading machine and operable to generate a signal upon detecting the presence of a document,
a second document detector positioned at a predetermined distance upstream of the read station and operable to generate a signal upon detecting the presence of a document,
logic circuit means connected to said first and second document detectors and operable to generate an output signal only when said first document detector alone is detecting the presence of a document,
an oscillator,
a first counter connected to said oscillator to be advanced thereby,
a frequency divider circuit connected to said logic circuit means to be rendered operable thereby, and connected to said first counter to provide an output signal every time said first counter reaches a predetermined value, the output of said frequency divider circuit being connected to said first counter to reset the same with said output signal,
a second counter connected to said logic circuit means to be rendered operable thereby and connected to said frequency divider circuit to be advanced by the output signal therefrom,
comparing means connected to said second document detector to be rendered operable during the period a signal is generated by said second document detector and connected to said first and second counters to generate an output signal upon the values in said counters being equal, the output of said comparing means being connected to said first counter to reset the same to enable successive comparisons to be made between said first and second counters.

3,272,970
AUTOMATIC PRESET COUNTERS

John F. Laycak, Duquesne, and Walter A. Wilson, Pittsburgh, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 21, 1962, Ser. No. 218,418
16 Claims. (Cl. 235—92)

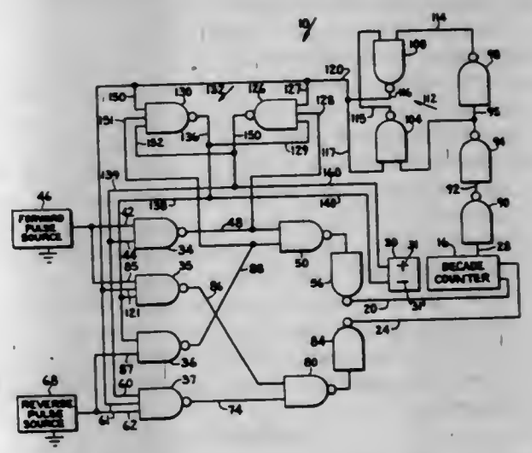


1. Pulse counting apparatus comprising a first counter, means for feeding input pulses to said first counter, a second counter, means for selectively stopping the feed of input pulses to said first counter and for starting the feed of input pulses to the second counter, and means electrically connected to said first and second counters for presetting the second counter to count the number of pulses counted by the first counter prior to stoppage of the feed of input pulses thereto.

3,272,971
ELECTRONIC COUNT ACCUMULATOR

James J. Klinikowski, Somerville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 5, 1963, Ser. No. 256,384
1 Claim. (Cl. 235—92)



A count accumulating circuit, in which all gates are NAND gates, comprising:
a first gate having two inputs and an output,
a second gate having three inputs and one output,
a source of forward count pulses coupled to one input of each of said first and second gates,
a third gate having two inputs and one output,
a fourth gate having three inputs and one output,
a source of reverse count pulses coupled to one input of each of said third and fourth gates,
a fifth gate having two inputs and an output,

a sixth gate having one input and one output and having its input coupled to the output of said fifth gate, the output of said first gate being coupled to an input of said fifth gate,

a seventh gate having two inputs and one output, the output of said fourth gate being coupled to an input of said seventh gate,

an eighth gate having one input and one output and having its input coupled to the output of said seventh gate,

the output of said third gate being coupled to one input of said fifth gate,

the output of said second gate being coupled to one input of said seventh gate,

a reversible decade counter having a forward count input line and a reverse count input line and an output, the forward count input line being coupled to the output of said sixth gate, the reverse count input line being coupled to the output of said eighth gate,

a control flip-flop comprising ninth and tenth gates each having three inputs and one output, the output of each of said flip-flop gates being coupled to one input of the other,

the output of said third gate being coupled also to one input of said ninth gate,

the output of said first gate also being coupled to an input of said tenth gate,

the output of said ninth flip-flop gate also being coupled to one input of each of said second and third gates and to a minus sign indicator,

the output of said tenth gate also being coupled to one input of each of said first and fourth gates and to a plus sign indicator,

the output of said decade counter being coupled to the single input of an eleventh gate, the output of which is coupled to the single input of a twelfth gate,

the output of said twelfth gate being coupled to the single input of a thirteenth gate which has one output,

the output of said twelfth gate also being coupled to an input of a fourteenth gate, the output of which is coupled to an input of a fifteenth gate,

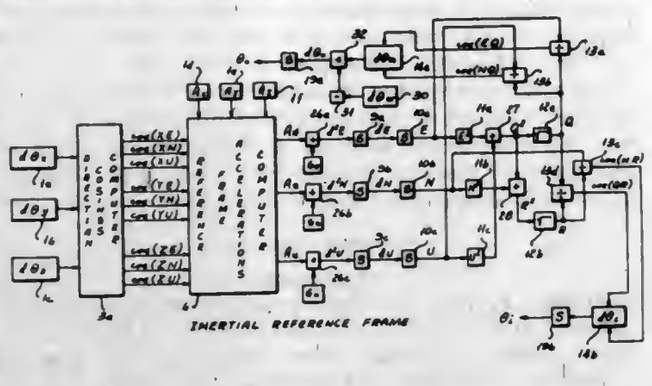
the output of the thirteenth gate being coupled to a second input of the fifteenth gate,

the output of the fifteenth gate being coupled both to an input of the fourteenth gate and to an input of each of said ninth and tenth flip-flop gates and to an input of said second and fourth gates,

the states of said ninth and tenth flip-flops gates being determined by the polarity of the count in the decade counter, said flip-flop gates controlling the operation of said plus and minus signs and further controlling the states of said first, second, third, and fourth gates and the path into the forward or reverse counting lines of the decade counter whereby the correct count sign is operated and counting pulses are automatically applied to the decade counter in the proper direction.

3,272,972
RANDOM ORIENTATION INERTIAL SYSTEM
Joseph Yamron, West Hartford, and Andrew E. Scoville, Ellington, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 15, 1962, Ser. No. 164,649
12 Claims. (Cl. 235—150.25)

1. A random orientation inertial system including in combination an inertial measurements unit comprising a plurality of gyroscopes and a plurality of accelerometers. means responsive to the gyroscopes for computing direction cosines defining the orientation of the measurements unit relative to an earth-fixed reference frame, means responsive to the direction cosines and to the accelerometers for determining accelerations in the reference



frame, means providing the rate of rotation of the earth, and means coupling the earth rate means to said direction cosines computing means.

3,272,973
UNIVERSAL TURBULENCE INDICATOR
Paul B. MacCready, Jr., Pasadena, Calif., assignor to Meteorology Research, Inc., Altadena, Calif., a corporation of California
Filed Aug. 27, 1962, Ser. No. 219,643
6 Claims. (Cl. 235—151.3)



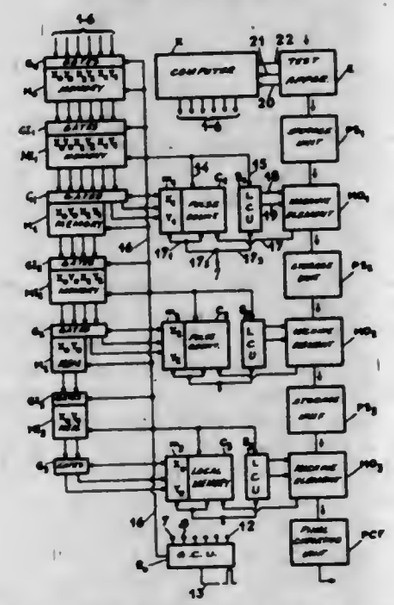
1. Apparatus for measuring air turbulence comprising an airspeed sensor, electrical signal generator means connected to said airspeed sensor for generating an electrical signal which is a function of the two-thirds power of the airspeed sensed, signal filter means having an input and an output and operable to pass a band of frequencies corresponding to frequencies less than a frequency of two hundred meters divided by the airspeed sensed, means for applying the electrical signal from the signal filter means to the filter input, and indicator means connected to the output of the filter means and operable in response to the electrical signal output of the filter means to provide an indication which is a function of the electrical signal output of the signal means.

3,272,974
UNIVERSAL TURBULENCE INDICATOR
Paul B. MacCready, Jr., Pasadena, Calif., assignor to Meteorology Research, Inc., Altadena, Calif., a corporation of California
Filed Apr. 8, 1963, Ser. No. 271,408
8 Claims. (Cl. 235—151.3)



1. Apparatus for measuring fluid turbulence comprising a fluid velocity sensor, electrical signal generator means connected to said fluid velocity sensor for generating an electrical signal which is a predetermined function of the fluid velocity sensed, signal filter means having an input and an output and operable to pass a band of frequencies corresponding to wavelengths within a five-thirds spectral power range of fluid turbulence, and indicator means connected to the output of the filter means and operable in response to the electrical signal output of the filter means to provide an indication which is a function of the electrical signal output of the signal means.

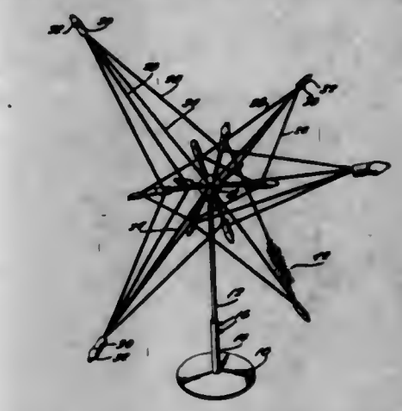
3,272,975
AUTOMATIC MACHINE-TOOL CONTROL SYSTEM FOR TRUING MECHANICAL PARTS
Joseph Czech, Paris, France, assignor to Compagnie Generale d'Automatisme, Paris, France
Filed Oct. 23, 1962, Ser. No. 232,354
Claims priority, application France, Oct. 27, 1961, 877,231
22 Claims. (Cl. 235—151.11)



1. In an automatic machine for balancing mechanical parts with respect to a given rotation axis by removing material from predetermined portions of said parts, an electric control system comprising test means for translating the unbalance of said parts into a plurality of electric voltages, electric circuit means for deriving from said voltages analogue voltages, the amplitude of each one of which is proportional to the quantity of material to be removed from one corresponding of said predetermined portions, coding means for translating each said amplitude into a group of coded digital data representing a binary number according to a predetermined non-linear relationship between said amplitude and number, means for storing said group of coded digital data and means for causing said stored group of coded digital data to control the infeed of at least one corresponding tool proportionally to said binary number into one of said portions, wherein said coding means comprise servomechanism means for controlling the displacement of a first movable member with respect to a reference position, a coder including a second movable member, the position of which controls a plurality of electric currents each having one or the other of two possible intensity values, said currents constituting said group of coded digital data, and a mechanical linkage between said first and second movable members so arranged as to ensure said predetermined non-linear relationship between the respective displacements of said members.

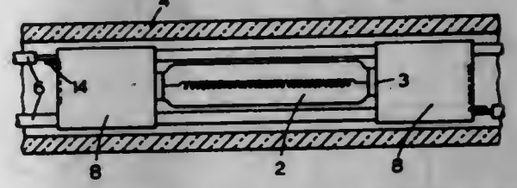
3,272,976
STAR SHAPED ORNAMENT
Michael Charchan and William Charchan both of N. Grove St. Road, Standish, Mich.
Filed July 12, 1963, Ser. No. 294,541
3 Claims. (Cl. 240—10)

1. A star shaped ornament comprising a standard, a plurality of elongated support members projecting outwardly from the upper end of said standard, said members being in two groups with the first group lying in a plane perpendicular to the plane of the second group, there being four members in each group, a plurality of rods projecting outwardly from the free end of each



of said members, the four rods from the four adjacent members on each side of said standard converging together at their free ends in a connecting element to form a single point of a six-pointed star, said connecting element including a socket for an electric light bulb.

3,272,977
LIGHT SOURCES
John W. Holmes, 45 Bodmin Road, St. Austell, Cornwall, England
Filed Apr. 17, 1964, Ser. No. 360,637
12 Claims. (Cl. 240—11.2)

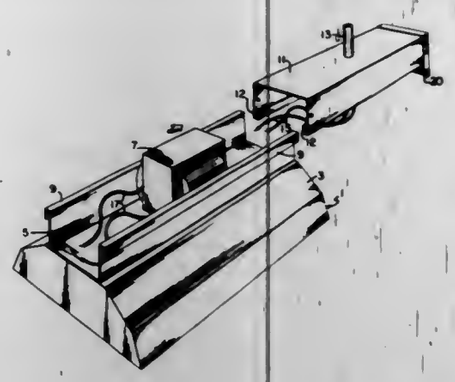


2. A light source comprising a hollow waterproof tube of flexible transparent plastic material housing a series of lamps spaced apart and slidable within and along the length of the tube, the said lamps being electrically connected together by conductors extending inwardly from part of an electrical coupling positioned at each end of the tube and mechanically connected together by at least one tension member, means for keeping the tension member in tension, the said means for keeping the tension member in tension being in the form of an anchorage to which the tension member is connected at one end of the tube and a tension spring connected to the tension member at the other end of the tube, the said conductors being a pair of insulated conductors which extend along the length of the tube and act also as tension members, each lamp extending between a pair of lamp carriers and each conductor being electrically associated with and mechanically connected to one carrier of each pair, each pair of carriers including spring contacts which together exert an axial load on the lamp, and the reaction force exerted on the carriers being taken up by the conductors extending between them.

3,272,978
LIGHTING FIXTURE
Donald L. Jackson, Moundsville, W. Va., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 24, 1963, Ser. No. 333,024
2 Claims. (Cl. 240—78)

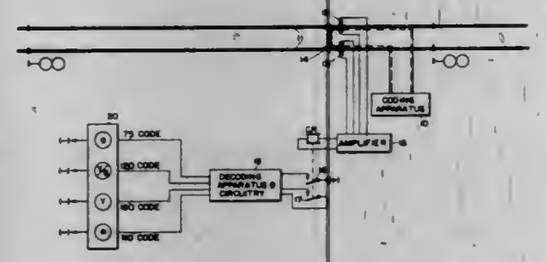
1. A lighting fixture assembly comprising: a reflector; an open-ended trough mounted on the top of said reflector, the upper longitudinal edges of said trough defining

channels; a ballast mounted in said trough, said ballast having wiring connected thereto and extending therefrom; and an open-ended canopy, the lower longitudinal edges of which define channels, said first mentioned channels



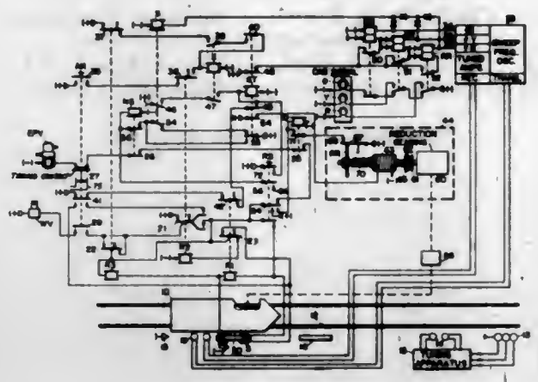
and said second mentioned channels being disposed in interlocking relationship to support said trough from said canopy, and said open-ended trough and said open-ended canopy defining an accessible chamber within which wiring connections may be effected.

3,272,979
DECODING APPARATUS FOR CONTINUOUS INDUCTIVE TRANSMISSION SYSTEM
Simon Reich, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 24, 1963, Ser. No. 253,612
11 Claims. (Cl. 246—63)



1. In a continuous inductive system for a railway vehicle wherein time spaced pulses of electrical energy of a predetermined characteristic are transmitted recurrently from wayside to the vehicle at a selected one of a plurality of code rates to govern the operation of the vehicle in accordance with the rate of recurrence of the pulses, comprising means on the vehicle to receive each pulse, code following means operatively connected to the receiving means to operate to each one of two conditions in response to the reception of each pulse, a timing means for each one of the plurality of code rates effective when activated to produce an output after a time interval corresponding to a respective one of the plurality of code rates, means responsive to the operation of the code following means to one condition effective to activate each of the timing means only during alternate pulses, means controlled by the operation of the code following means to its other condition upon termination of each of the alternate pulses to cause deactivation of the timing means upon the subsequent operation of the code following means in response to a next pulse, and means responive to the recurrent output of each timing means occurring prior to each operation of the code following means to its one condition in response to said next pulses respectively to govern selectively the operation of the railway vehicle.

3,272,980
INTERMITTENT TRAIN CONTROL SYSTEM
Sydney W. Freeman, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,661
8 Claims. (Cl. 246—63)

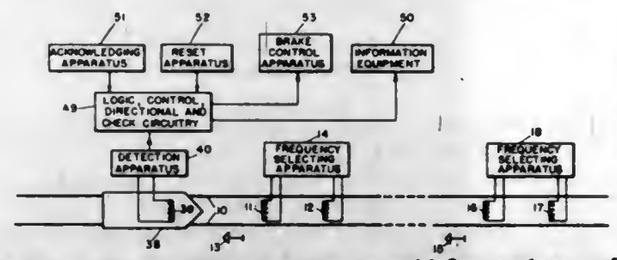


1. In a train control system wherein a normally energized electro-responsive valve circuit means on a vehicle is deenergized to apply the brakes of the vehicle by electro-magnetic means operated in response to the influence of a device that is adapted to be positioned along the wayside, and wherein acknowledging means when manually operated during operation of the electro-magnetic means maintains the electro-responsive valve circuit means energized, the combination of a receiving means on the vehicle responsive to a signal received from a wayside transmitting means that is disposed along the wayside ahead of the wayside device as the vehicle passes the transmitting means, a normally inactive distance detecting means on the vehicle operative when active to deenergize the valve circuit means when the vehicle travels a predetermined distance after being activated, a first means normally in one condition and operated to its other condition in response to the operation of either one of the acknowledging means and the electro-magnetic means to activate the distance detecting means, a second means normally in one condition and operated to its other condition in response to the detected operation of both the acknowledging means and the electro-magnetic means, a third means responsive to the signal received by the receiving means when the second means is in its other condition to operate the first means to its one condition to deactivate the distance detecting means before the vehicle has traversed all of said predetermined distance of travel, and a fourth means responsive to the reception of a signal from the receiving means when the first means is in its one condition to deenergize the valve circuit means.

3,272,981
INTERMITTENT INDUCTIVE TRANSMISSION SYSTEM
William J. Matthews, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 4, 1963, Ser. No. 270,615
10 Claims. (Cl. 246—63)

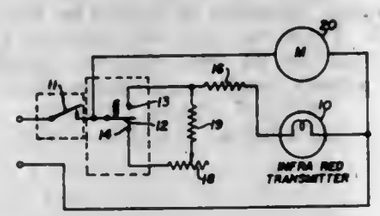
1. An intermittent inductive system for communicating information from the wayside to a moving vehicle comprising, a pair of transmitting coils disposed along the wayside, one of the coils being disposed ahead of the other in the direction of travel of the vehicle, each of the coils being tuned to a selected distinctive frequency, receiving means on the vehicle having a sweep frequency oscillator connected to a receiving coil positioned to be influenced by the distinctive frequency to which each of the transmitting coils is tuned when the

receiving coils passes in close proximity with the transmitting coils respectively, acknowledging means on the vehicle activated for a predetermined time interval in response to manual operation thereof, first and second means on the vehicle for registering the reception of distinctive frequencies of the respective transmitting coils as they are received by said receiving means, information output means on the vehicle operative when activated to provide a single information code in response to the



distinctive frequencies registering by said first and second means jointly, control means governed by the acknowledging means and the first and second means operative to activate the output means in response to the reception of the vehicle from both of the transmitting coils provided such reception is within the predetermined time interval and only provided that the distinctive frequencies registered by said first and second means are in a predetermined order as to relative frequency values.

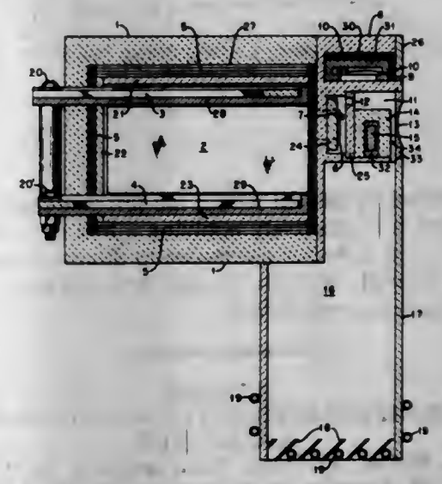
3,272,982
INFRARED REMOTE CONTROLLER
John K. Stewart, 60 Ballantyne Terrace, Dorval, Quebec, Canada
Filed Mar. 26, 1963, Ser. No. 268,079
Claims priority, application Canada, May 25, 1962, 850,058
4 Claims. (Cl. 246—187)



1. Distance control means for use in a railroad surveying system including a main rail car and a satellite rail car having a prime mover, which control means comprises a high frequency beam source; means on the main car for directing a command high frequency beam towards the satellite rail car; a beam receiver on said satellite rail car to receive the command high frequency beam; and means on the satellite rail car responsive to the intensity of the received beam to control the prime mover to selectively drive the satellite car towards or away from said main rail car, whereby to regulate the distance therebetween.

3,272,983
ION-PRODUCING MECHANISM FOR CALUTRONS
Allen M. Veach and Oliver C. Yonts, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 10, 1964, Ser. No. 337,112
1 Claim. (Cl. 250—41.9)

In a calutron, an improved ion-producing mechanism comprising a unitized graphite enclosure defining both an arc chamber section and an oven section, said oven section being provided with a large central cavity, a charge bottle adapted to contain therewithin a charge material, said charge bottle being disposed within said large cavity, first heaters disposed adjacent to two sides of said charge bottle within said large cavity for heating and vaporizing said charge material, said arc chamber section being provided with a second cavity for the ionization of the vapors from said charge material and at least one heater cavity of rectangular cross section with a second heater disposed therein and in close proximity to said second cavity for supplying heat thereto, said second cavity being subdivided by a perforated baffle into a vapor manifold region and an ionizing region, a slotted graphite insert adjacent to said ionizing region and defining an ion exit slit, said charge bottle being provided with at least two vapor-exit nipples extending therefrom into said vapor manifold region for conveying vapors from said charge bottle directly into said manifold region, a baffle provided with a third heater, said heated baffle being dis-

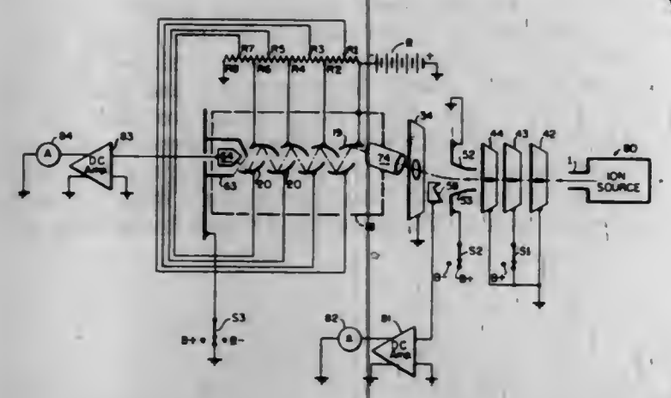


posed within said ionizing region and defining a narrow channel behind said ion exit slit for directing said feed vapors from said manifold region into the path of an arc discharge passing through said narrow channel for ionizing said feed vapor, a divergent channel and collection chamber communicating directly with said narrow channel, and means for cooling said collection chamber, said chamber being bottom vented by means of a plurality of water cooled baffles, whereby substantially all of said feed vapor which is not ionized by said arc discharge is withdrawn into said divergent channel and condensed within said cooled chamber thereby essentially eliminating contamination of other calutron components from any charge material reactive constituents and also preventing high pressures from existing in the accelerating regions of the calutron unit.

3,272,984
ELECTRON MULTIPLIER FOR MEASURING THE FLOW OF POSITIVELY CHARGED PARTICLES
Richard F. Herzog, Lexington, Gerhard O. Sassermann, Burlington, and William J. McMahon, Watertown, Mass., assignors to GCA Corporation, Bedford, Mass., a corporation of Delaware
Filed June 7, 1963, Ser. No. 286,264
13 Claims. (Cl. 250—83)

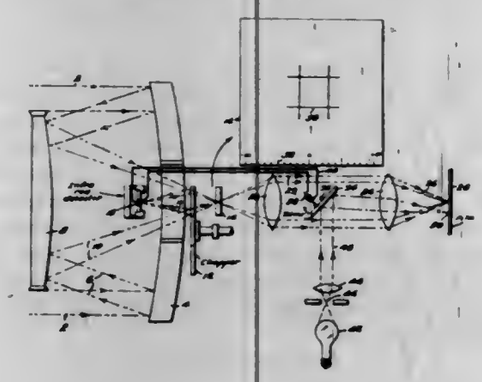
12. Apparatus for measuring the flow of positively charged particles, comprising an evacuated ferromagnetic housing, a first collector electrode mounted in said housing and insulated therefrom, an electron multiplier comprising a second collector electrode and a series of dynodes interconnected by resistors and arrayed to form an electron multiplier, said series having an input end comprising a first dynode and an output end comprising a last dynode confronting said second collector electrode, a conductive housing surrounding said dynodes and electrically connected to said first dynode, means for applying a negative potential to said first dynode with respect to said last

dynode, an ion lens comprising an aperture in said housing for focusing a stream of ion on said first dynode, an aperture in said ferromagnetic housing comprising means defining a slit for admitting a beam of ions to said housing, a pair of deflector electrodes on either side of the



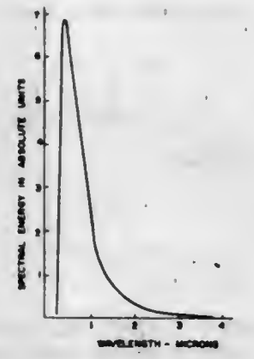
beam defined by the slit within the ferromagnetic housing, and means for selectively applying a first or a second potential to said deflector electrodes to direct a beam of ions flowing through said slit to said first collector electrode or said ion lens, respectively.

3,272,985
INFRARED RADIOMETER-PHOTOGRAPHIC APPARATUS
Jack H. Hayes, El Paso, Tex., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 11, 1963, Ser. No. 329,929
2 Claims. (Cl. 250—83.3)



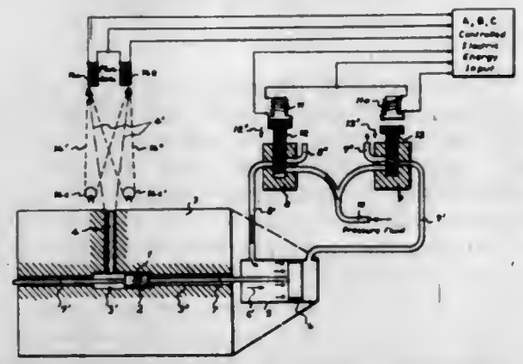
1. Apparatus for receiving radiations from an object in both the visible and the infra-red spectrums comprising:
condensing reflector apparatus to concentrate the radiations;
a chopper, to pass the radiations and to reflect the radiations alternately, placed in the path of radiations being received;
a detector located to intercept infra-red type of radiations being received;
a detector located to intercept visible type radiations being received;
the apparatus thereby utilizing the same condensing reflector apparatus to concentrate both types of radiations and wherein the chopper reflects incoming radiations to the infra-red detector at one period of time and passes incoming radiations on through the systems to the second-mentioned detector at another period of time.

3,272,986
SOLAR HEAT ABSORBERS COMPRISING ALTERNATE LAYERS OF METAL AND DIELECTRIC MATERIAL
Roger N. Schmidt, Minnetonka, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 27, 1963, Ser. No. 312,034
5 Claims. (Cl. 250—86)



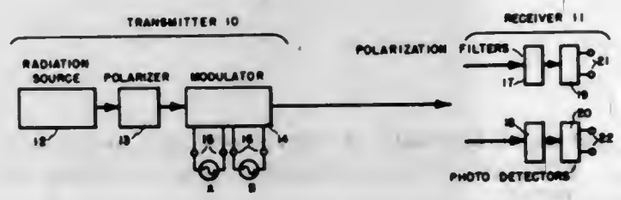
4. A solar heat absorber exhibiting high absorption in the solar spectral region and low emissivity in the infrared region comprising: an opaque molybdenum substrate; and at least one dielectric film and molybdenum film respectively placed thereon in laminar relationship to provide a surface adapted to be exposed to solar radiation, said dielectric ranging from about ¼λ at 0.2 micron to about ¼λ at 0.5 micron in optical thickness, said molybdenum film ranging from about 500 ohms/square to about 2000 ohms/square in resistivity.

3,272,987
ARRANGEMENT FOR IRRADIATING AN OBJECT WITH RADIOACTIVE RADIATION
André Kohn, Saint-Germain-en-Laye, and Jean Aupée, Le Pecq, France, assignors to Institut de Recherches de la Siderurgie Francaise, Saint-Germain-en-Laye, France
Filed Oct. 24, 1962, Ser. No. 232,827
Claims priority, application France, Nov. 7, 1961, 878,165, Patent 1,313,153
13 Claims. (Cl. 250—106)



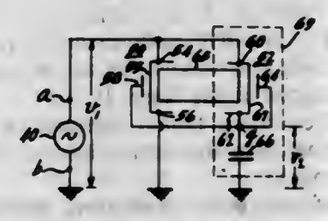
1. An arrangement for irradiating an object with radioactive radiation, comprising, in combination, container means composed predominantly of material absorbing radioactive radiation and including an inner chamber of predetermined dimensions, said container means further including a channel leading in a predetermined direction from a selected portion of said inner chamber to the outside of said container means; a body of radioactive material arranged within said inner chamber and having dimensions smaller than those of said inner chamber so as to be movable therein between a first position in which said body of radioactive material is located opposite the inner end of said channel whereby its radiation is released to the outside in said direction of said channel toward an object that may be present opposite the outer end of said channel, and a second position in which said body of radioactive material is located within said inner chamber at a distance from said inner end of said channel whereby said radiation is blocked from reaching the outside; moving means for alternatively moving said body of radioactive material from said first position to said second position, and vice versa; and control means in operative proximity with said body of radioactive material and in the area of said object and electrically connected to said moving means for controlling the operation of said moving means in accordance with the position of said object relative to said radiation.

3,272,988
POLARIZATION MODULATION SYSTEM FOR TRANSMITTING AND RECEIVING TWO INDEPENDENT SIGNALS OVER A SINGLE ELECTROMAGNETIC CARRIER
Louis R. Bloom, Westbury, and Carl F. Buhrer, Hempstead, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 267,599
13 Claims. (Cl. 250—199)



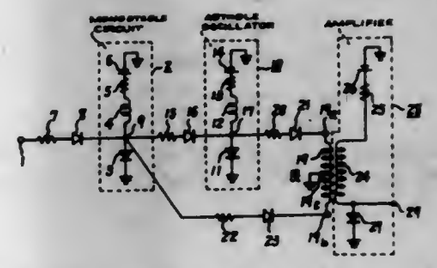
13. In a signal transmission system for modulating a light beam by first and second independent signals and for detecting said signals, a receiver comprising
(a) a polarizing prism for receiving a light signal having horizontally and vertically polarized components, one of said components being transmitted along a first path in said prism and the other of said components being transmitted along a second path in said prism,
(b) first and second photocells positioned in the paths of said first and second components respectively, and
(c) means for combining the output of said first and second photocells, the output of said means being proportional to one of said independent signals.

3,272,989
INTEGRATED ELECTRICAL CIRCUIT
Michael E. Sekely, Belle Mead, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 17, 1963, Ser. No. 331,271
7 Claims. (Cl. 307—88.5)



1. An integrated circuit comprising in combination:
a semiconductor device having input, common and control electrodes formed on a substrate of semiconductor material;
a pair of input terminals for applying an input signal voltage V_1,
a phase shifting network formed on said substrate and connected between said input terminals for deriving a voltage V_2 having a phase angle θ with respect to said input voltage V_1, said phase shifting network including resistive circuit means and capacitive circuit means,
means for connecting said input and common electrodes to said pair of input terminals, and
circuit means coupled to said control electrode for applying said voltage V_2 so that the net current flowing through said input terminals lags said input voltage V_1.

3,272,990
OSCILLATORY TYPE NOT LOGIC CIRCUITRY
Takuya Kawamoto, Tokyo, and Shinji Tomita, Yokosuka-shi, Kanagawa-ken, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Jan. 15, 1962, Ser. No. 166,074
Claims priority, application Japan, Jan. 18, 1961, 36/1830
11 Claims. (Cl. 307—88.5)

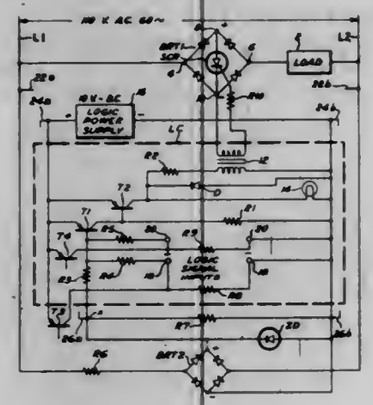


9. In a logic circuit arranged to respond to an input signal containing numerical information indicated by the presence and absence of an A.C. signal component of a certain frequency, an astable oscillator operable continuously at a frequency approximately equal to said certain frequency and arranged to be controlled in response to an A.C. input signal component to be synchronized therewith, a differential circuit, means for applying a first signal to said differential circuit from said oscillator, means for applying a second signal to said differential circuit corresponding to an A.C. input signal component, said first and second signals being of the same order of amplitude and being applied in phase opposition in said differential circuit to produce an A.C. output signal from said differential circuit in the absence of an A.C. input signal component which is substantially greater than any output signal produced from said differential circuit in the presence of an A.C. input signal component, a tunnel diode having two terminals, coupling means for respectively coupling said terminals to opposite terminals of a D.C. source, impedance means included in said coupling means for causing operation of said tunnel diode as an amplifier, and means applying the output from said differential circuit to said amplifier.

3,272,991
STATIC SWITCH
Gene C. Lutsch, Hales Corners, and Carl J. Weiss, Milwaukee, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,693
7 Claims. (Cl. 307—88.5)

5. In a static switching system for energizing a load device, in combination:
(a) an A.C. power supply source;
(b) a controlled rectifier;
(c) means comprising rectifier means connecting said source to said controlled rectifier and to said load

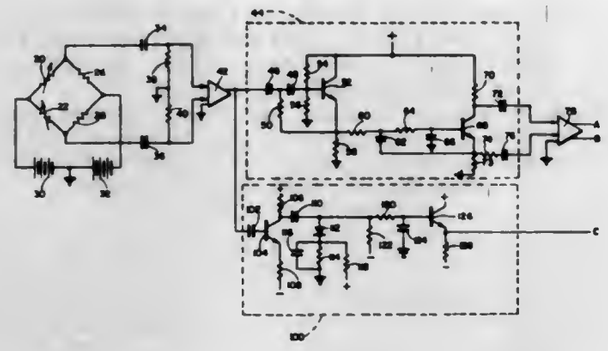
device whereby said controlled rectifier controls current flow to the load device;
(d) and means for controlling said controlled rectifier to render it conducting comprising;
(e) a first transistor and a second transistor;
(f) means comprising a D.C. power supply source and circuit means for supplying operating voltage to said transistors and for supplying control voltage to said first transistors normally to render the latter conducting;
(g) means connecting said first transistor to said second transistor whereby conduction in said first transistor renders said second transistor non-conducting and non-conduction in said first transistor renders said second transistor conducting;



(h) and means for applying to said first transistor a synchronizing voltage and two input voltages all of which must be applied thereto to render it non-conducting comprising;
(i) means comprising rectifier means connected to said A.C. source for applying to said first transistor a voltage synchronized with the voltage applied from said A.C. source to said controlled rectifier;
(j) and means for applying to said first transistor two D.C. input voltages which together with said synchronized voltage renders said first transistor non-conducting thereby to render said second transistor conducting;
(k) and means connected to said second transistor for applying a firing voltage pulse to said controlled rectifier to render the latter conducting and to energize the load device.

3,272,992
STAR TRACKER SIGNAL CONDITIONER OF AMPLITUDE, FREQUENCY, SLOPE AND WIDTH
James D. Carpenter, Long Beach, Calif., assignor to North American Aviation, Inc.
Filed June 28, 1963, Ser. No. 291,557
9 Claims. (Cl. 307—88.5)

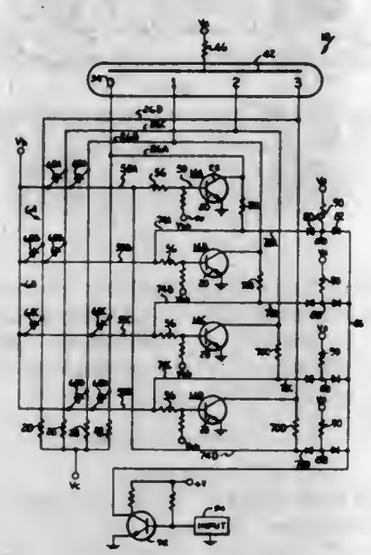
1. An electronic circuit for generating a spike voltage indicating the presence of a pair of signal pulses of predetermined polarity sequence, minimum slope, minimum pulse width, and maximum pulse width comprising:
a first rectangular wave generator adapted to generate a first singular rectangular pulse of a first predetermined time duration when a negative signal is applied to its input terminals;
a second rectangular wave generator responsive to input signals of positive slope, adapted to generate as an output signal a second single rectangular pulse of a second predetermined time duration and to extinguish its output signal when a positive slope signal is applied to its input terminals during said predetermined time duration;
a third rectangular wave generator connected to receive the output signal of said first generator and said second generator, adapted to generate a third single rectangular pulse equal in length to said second pulse plus a predetermined time period;
a fourth rectangular wave generator adapted to generate a fourth single rectangular pulse of a fourth predetermined time duration when a negative signal is applied to its input terminals;
signal receiving terminals;
signal inverting means, connected to receive signals from said receiving terminals and to deliver an inverted signal to the input of said first generator;



the input terminals of said second and fourth wave generators being connected to said receiving terminals;
spike voltage generating means connected to the output terminals of said third wave generator to generate a spike at the occurrence of the trailing edge of the output signal of said third generator; and
means connected to the outputs of said first, second and fourth wave generators for inhibiting the generation of a spike by said spike voltage generating means when said first generator has an output signal, or when said second generator has on output signal, or when said fourth generator has no output signal.

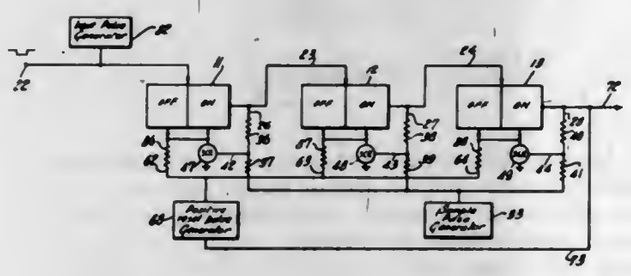
3,272,993
SEMICONDUCTOR GATING CIRCUITS FOR COUNTER EMPLOYING SINGLE SIGNAL SOURCE AND DIODE MATRIX FOR EFFECTING SEQUENCING
Arpad Somlyody, Raritan, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 4, 1963, Ser. No. 327,986
2 Claims. (Cl. 307—88.5)

1. A counting circuit including
a plurality of counting stages, each comprising a counting device having input and output electrodes,
all of said devices being interconnected so that only one device at a time can register a count,
each input electrode being connected through a first diode and a resistive path to a voltage source and through said first diode and a second diode to a common signal input line,
a source of counting pulses comprising a pulse generating semiconductor device having input and output electrodes,
the output of said pulse generating semiconductor device being connected to said signal input line and thus through said first and second diodes to the input electrode of each of said counting devices,
said pulse generating semiconductor device being normally on and being turned off to generate an input counting pulse on said signal input line,
said pulse generating semiconductor device being normally on so that current flows from said voltage source through all of said second diodes to ground, said current flow serving to block all of said first diodes except the first diode positioned between a counting device which is on and the next adjacent counting device which is off, this excepted first diode



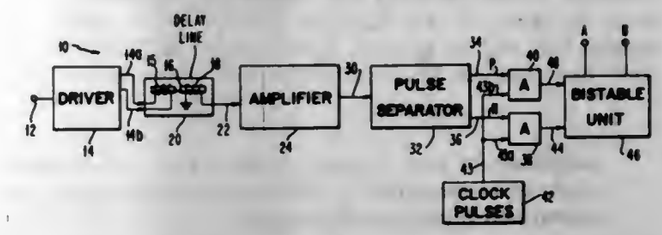
being in a primed state so that, when said pulse generating semiconductor device is turned off and generates an input count pulse, only the excepted first diode can pass the count pulse and only the next adjacent device can be turned on thereby to register a count.

3,272,994
VARIABLE CAPACITY BINARY COUNTER
William F. Brown, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,790
13 Claims. (Cl. 307—88.5)



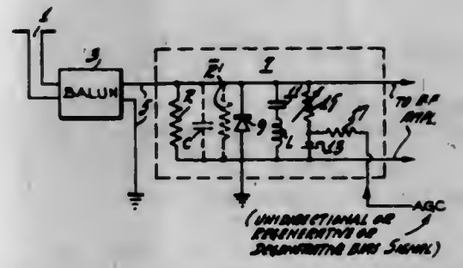
1. In a binary pulse counter having an input, an output and a plurality of cascaded two-state circuits; the combination comprising means for providing a predetermined count within said counter, means separate from the counter input for reversing the state of said two-state circuits, means for sampling the state of each of said two-state circuits, means for providing an output pulse from said counter when a full capacity count in said counter has been reached, means for energizing said reversing means to provide a further reversal of said two-state circuits upon receipt of said output pulse from said counter, and means for preventing said further reversal of said two-state circuits having a predetermined state when sampled by said sampling means, thereby setting the counter to repetitively count to a capacity determined by said predetermined count.

3,272,995
APPARATUS FOR TRANSLATING A WAVEFORM
David C. Alexander, Yorktown Heights, and Robert H. Dennard, Croton-on-Hudson, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 1, 1964, Ser. No. 379,519
12 Claims. (Cl. 307—88.5)



1. Apparatus for waveform translation comprising, in combination:
first magnetostrictive delay line means to provide a plurality of pulse doublets from said waveform;
second means to provide pulses from said doublets; and
third means operable by said pulses to provide a replica of said waveform.

3,272,996
SIGNAL LIMITER
Wen Yuan Pan, Haddon Heights, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 31, 1959, Ser. No. 863,132
10 Claims. (Cl. 307—88.5)

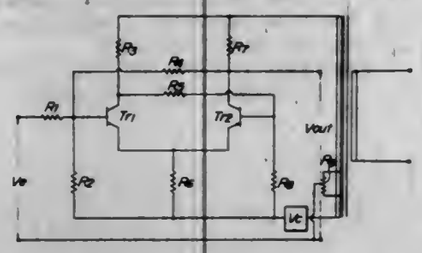


1. A signal limiting circuit comprising a semiconductor tunnel diode having an operating characteristic with positive conductance and negative conductance portions, means for applying signals to said diode, means for biasing said diode to operate at a selected negative conductance value in the absence of applied signals, resistive means effectively coupled in parallel with said diode, said resistive means having a resistance value relative to that of the negative resistance of said diode to present in combination with said diode a high shunt positive impedance to said applied signals having an amplitude below a selected value and to attenuate said applied signals above said selected value substantially to said selected value, and automatic gain control means coupled to said diode for changing the bias applied to said diode as a function of the amplitude of the signals applied to said diode.

3,272,997
ON-OFF SIGNAL GENERATORS
Naokazu Kimura, Katsuta-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 16, 1964, Ser. No. 418,605
9 Claims. (Cl. 307—88.5)

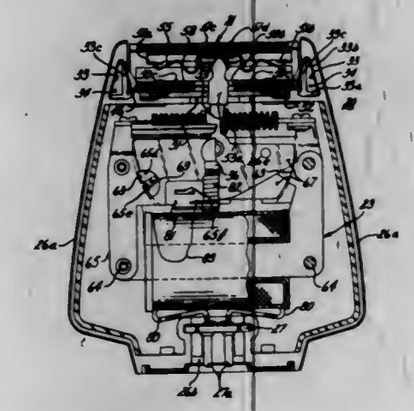
1. A device for detecting the amplitude of a signal applied thereto as compared to a reference quantity represented by a reference voltage comprising:
bistable circuit means including a pair of cross coupled parallel connected amplifiers capable of selectively providing respective stable states of amplification and bistable operation in dependence upon the power supply voltage applied thereto,

alternating current voltage supply means providing said power supply voltage connected in parallel with the



amplifiers of said bistable circuit means for continuously and repetitively switching said circuit means between said respective stable states.

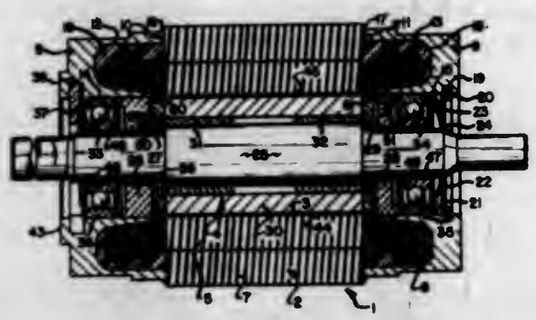
3,272,998
VIBRATOR MOTOR FOR ELECTRIC SHAVER
Albert R. Spohr, Park Ridge, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application June 7, 1963, Ser. No. 286,248, now Patent No. 3,218,708, dated Nov. 23, 1965. Divided and this application June 21, 1965, Ser. No. 465,472
4 Claims. (Cl. 310—22)



1. A motor comprising a vibratory type motor having a pair of armatures mounted for oscillation about a common axis, said motor having a field with two spaced poles, frame means carried by said field and supporting said armatures, spring means biasing said armatures to rest positions in which they are diplaced with respect to said field poles whereby energization of said field causes said armature to rotate in opposite directions into alignment with each other and with said field poles, said spring means being adjustable with respect to said frame means to establish said rest position with said armatures displaced an equal angular amount in opposite directions from an aligned position with respect to said field poles.

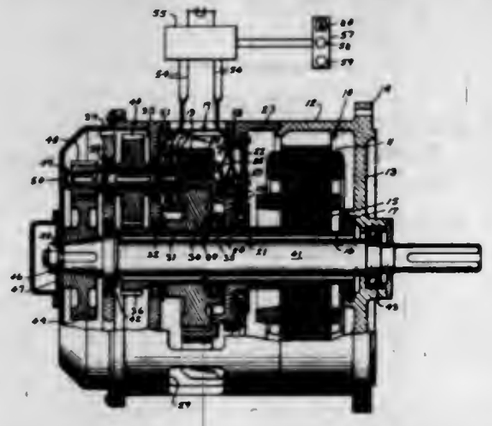
3,272,999
AIR BEARINGS FOR DYNAMOELECTRIC MACHINE
James R. Turk, Solon, Ohio, assignor to Vincent K. Smith, Gates Mills, Ohio
Filed Oct. 17, 1963, Ser. No. 316,884
9 Claims. (Cl. 310—90)

1. A dynamoelectric machine comprising a stator assembly having a smooth cylindrical bore; a rotor having a rotor shaft concentrically disposed within said bore, said rotor having a smooth cylindrical surface which is complemental with the surface of said station bore and defines therewith a minute air gap in which there is produced an air film when said rotor is rotated at operational speeds; ball bearings disposed adjacent the ends of said stator assembly, the ends of said rotor shaft being journaled in said ball bearings; minute air gaps between the ends of said rotor shaft and said ball bearings, said air gaps being slightly smaller than the air gap between the surfaces of said bore and rotor so that when the rotor is at rest or is rotating at starting and stopping



speeds, said rotor is maintained out of contact with said stator, but sufficiently large to constitute an air film when said rotor is rotating at operational speeds; said air films being adapted to maintain the ends of said rotor shaft out of contact with said bearings.

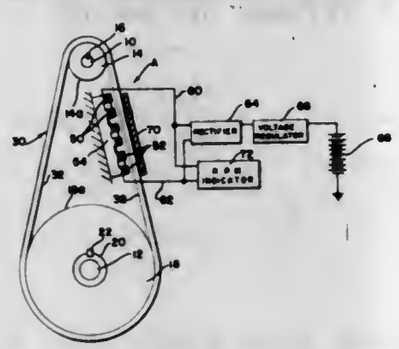
3,273,000
VARIABLE SPEED THRU-MOTOR DRIVE
Walter P. Schmitter, deceased, late of Wauwatosa, Wis., by A. Louise Schmitter, Wauwatosa, Wis., and Robert V. Abendroth, Whitefish Bay, Wis., co-executors, and David G. Bernard, Milwaukee, Wis., assignors to The Falk Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 8, 1963, Ser. No. 250,189
6 Claims. (Cl. 310—98)



1. In a variable speed power drive, the combination comprising: a housing; an electric motor having a hollow motor drive shaft journaled in said housing; an electromagnetic slip coupling including torque transmitting driving and driven rotors that are rotatable relative to each other and electromagnetic means on one of said rotors reacting on the other of said rotors to impart the torque transmitting function thereto, said driving rotor being secured about said hollow drive shaft for rotation in response to said motor; a quill shaft journaled in said housing coaxial with and axially spaced from said hollow drive shaft, said quill shaft mounting said driven rotor for rotation therewith; a pinion on said quill shaft; an intermediate shaft journaled for support in said housing in parallel spaced relationship with said hollow drive shaft and said quill shaft, the ends of said intermediate shaft projecting beyond its supports in said housing; an intermediate gear within said housing and affixed to said intermediate shaft in meshing engagement with said pinion; a driven output shaft journaled in said housing and extending through said quill shaft and said hollow drive shaft and outwardly of said housing at each end thereof; a pair of meshing gears respectively removably

mounted on adjacent projecting ends of said intermediate and output shafts and forming one of a plurality of sets change gears having different gear ratios; a cover removably applied to said housing to form an enclosure for said last named pair of gears and for said projecting ends of said intermediate and output shafts; a tachometer generator having its stator secured within said housing and its rotor secured to an opposite projecting end of said intermediate shaft, said tachometer generator adapted to produce an output signal proportional to the speed of said intermediate shaft; and means for modifying and regulating the strength of said electromagnetic means to vary the speed of said driven output shaft, such means being responsive to the output signal of said tachometer generator to maintain a selected speed for said driven output shaft.

3,273,001
PERMANENT MAGNET DEVICE FOR GENERATING ELECTRICAL ENERGY
Max Baermann, Bensberg, Wulfshof, Bezirk Cologne, Germany
Filed June 1, 1965, Ser. No. 460,203
10 Claims. (Cl. 310—152)



1. In a device for generating electrical energy, said device comprising: a flexible belt, means for moving said belt longitudinally along a preselected path, said belt having a plurality of alternate north and south magnetic poles longitudinally spaced along one surface of said belt with magnetic lines of force extending outward from said one surface and between said adjacent poles and an electric coil means positioned adjacent said path and opposite said one surface, said lines of force intersecting said coil means as said belt moves past said coil means whereby electrical energy is generated within said coil means, the improvement comprising: said flexible belt drivingly coupling a rotatable driving drum and a rotatable driven drum, said drums each having an outer, peripheral driving surface for receiving said belt, a set of alternate north and south magnetic poles equally spaced in a circumferential direction on said peripheral surfaces, the longitudinal spacing of said poles on said belt being substantially equal to the circumferential spacing of said poles on said drum surfaces and said belt poles being on the surface of said belt contacting said drum surfaces.

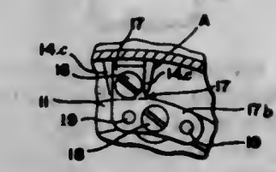
3,273,002
ELECTRIC MOTOR
Le Roy H. Easton, Cuyahoga Falls, Ohio, assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,752
7 Claims. (Cl. 310—191)

1. In a commutating dynamo electric machine, including a casing member adapted to receive through one end a field having a field core member, field seating and securing structure comprising:

said casing member having near its other end shoulder means adapted to engage endwise a corresponding first end of said core member and also having interior surface portions adapted to engage the core member on peripheral portions;

said shoulder means and surface portions forming a core seat;

said field core member having external arcuate portions engaged by said surface portions of the casing member whereby the core may be shifted rotationally about a shaft axis of the machine at least through a limited angle relative to the said casing member and to brushes mounted thereon; and core

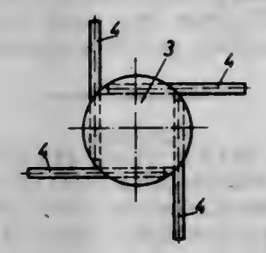


clamping means including at each of a plurality of angularly spaced positions

a respective clamp member spanning and secured to adjacent end portions of the casing member and of the other end of the core member, and

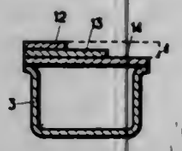
means securing the clamp member to the casing member and core member, the last said means including a series of angularly spaced apertures in one of said members for selectively receiving a clamping screw engaged in an aperture of another of said members, said apertures being spaced along an arc coaxial with said axis.

3,273,003
SUPPORTING MEMBERS FOR A HOT CATHODE BLOCK
Walter Dietrich, Hanau am Main, Germany, assignor to W. C. Heraeus G.m.b.H., Hanau am Main, Germany, a corporation of Germany
Filed Feb. 6, 1963, Ser. No. 256,588
Claims priority, application Germany, Feb. 17, 1962, H 44,917
2 Claims. (Cl. 313—82)



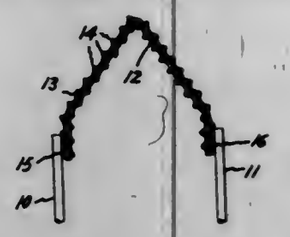
1. Means for centrally mounting a hot cathode block in an electron gun comprising, a pair of opposed diametrically spaced straight parallel grooves formed in the periphery of said cathode block, and a pair of similar straight rods, one of said rods being disposed in one of said grooves in frictional engagement with the bottom and side walls of said one of said grooves and extending outwardly therefrom in one direction parallel to the said bottom wall of the said one of said grooves, and the other of said rods being disposed in the other of said grooves in frictional engagement with the bottom and side walls of the said other of said grooves and extending outwardly therefrom parallel to the said bottom wall of the said other of said grooves in a direction opposite to the direction in which the said one of said rods extends outwardly from the said one of said grooves, the outer ends of said rods being adapted to be secured in fixed position to said electron gun, said mounting means being operative to compensate for the expansion or contraction of said cathode block due to temperature changes of said cathode block during operation.

3,273,004
CATHODE STRUCTURE IN A REFLEX KLYSTRON TUBE
Daniel Reverdin, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed June 15, 1962, Ser. No. 202,802
Claims priority, application France, June 21, 1961, 865,579
10 Claims. (Cl. 313—310)



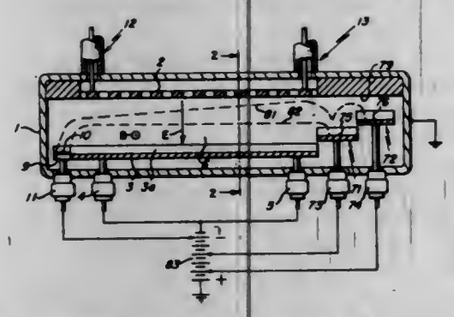
1. In a reflex klystron oscillator provided with a substantially axial direction, a primary electron source having at least one one first point and at least one second point of emissive surface, said first and second points being spaced in the axial direction of said klystron by a distance d substantially equal, in millimeters, to $50\sqrt{V_o}/f$, wherein V_o is the anode voltage in volts of said klystron, and f is the operating frequency in megacycles.

3,273,005
ELECTRON EMITTER UTILIZING NITRIDE EMISSIVE MATERIAL
James M. Lafferty, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 1, 1963, Ser. No. 269,352
6 Claims. (Cl. 313—346)



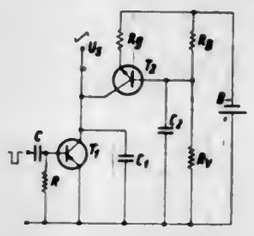
1. A thermionic cathode including an emitter consisting essentially of at least one metal nitride selected from the group consisting of the nitrides of thorium, uranium, and the lanthanide series rare earth metals, and means supporting said emitter providing a conductive connection therewith.

3,273,006
TRAVELING WAVE TUBE HAVING A CONTOURED ANODE COLLECTING SURFACE
John M. Osepchuk, Lexington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Feb. 1, 1962, Ser. No. 170,470
5 Claims. (Cl. 315—3.5)



1. A traveling wave tube comprising:
a slow wave propagating structure;
a cathode injecting electrons into an interaction space adjacent said structure wherein said electrons exchange energy with waves propagating in said structure;
means for producing a magnetic field transverse to said interaction space;
means including a plurality of electrodes each having electron collecting surfaces and each energized at a different potential disposed at the end of said interaction space;
and a contoured collecting anode disposed adjacent to said slow wave propagating structure and spaced from said electron collecting surfaces to produce therewith progressively varying electric field strengths to intercept and direct to the respective electron collecting surfaces electrons issuing from said interaction space at levels of total kinetic and potential energy closely equivalent to the respective varying electric field strengths adjacent said collecting surfaces.

3,273,007
CIRCUIT ARRANGEMENT FOR PRODUCING A SAWTOOTH WAVEFORM OF HIGH LINEARITY
Hans-Dieter Schneider, Gross-Gerau, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed Apr. 10, 1963, Ser. No. 271,978
Claims priority, application Germany, Apr. 11, 1962, F 36,527; Sept. 20, 1962, F 37,844
15 Claims. (Cl. 315—27)

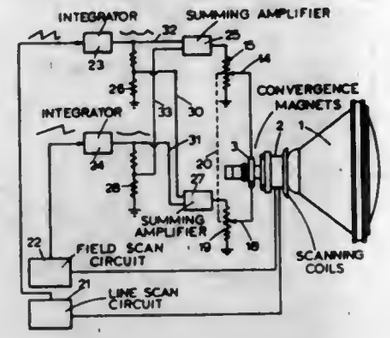


1. A sawtooth voltage generator circuit arrangement for providing a determined type of sawtooth voltage, comprising a capacitor for producing a sawtooth voltage; and a time constant circuit directly connected in series with said capacitor for controlling the charging and discharging of said capacitor by a time constant which provides an exponential function having a curvature opposed to the curvature of the charging voltage of said capacitor.

3,273,008
DYNAMIC CONVERGENCE SYSTEMS FOR COLOUR KINESCOPES
Robert de Peignefort Galloway, Addlestone, Weybridge, Surrey, and Eric William Bull, Hounslow, Middlesex, England, assignors to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain
Filed June 17, 1963, Ser. No. 288,305
Claims priority, application Great Britain, June 20, 1962, 23,683/62
10 Claims. (Cl. 315—27)

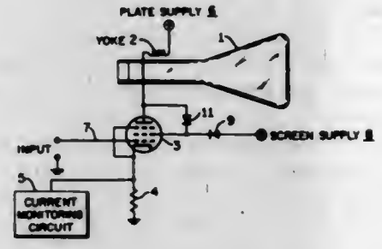
6. A circuit arrangement for controlling the dynamic convergence of a three gun cathode ray tube for displaying coloured images, comprising electromagnetic means associated with each gun which when energised by convergence currents set up magnetic fields causing convergence movements of the beams from each of said guns, two of said electromagnetic means being substantially symmetrically located with respect to the vertical plane containing the axis of the cathode ray tube, means for developing a substantially parabolic waveform of line scanning frequency, means for developing a substantially parabolic waveform of frame scanning frequency, means for energising said two electromagnetic means by similar convergence currents in response to said waveforms to set up respective dynamic convergence magnetic fields each including components of line and frame scanning

frequencies, means for energising the remaining said electromagnetic means by convergence current in response at least to said waveform of line scanning frequency to set up a respective dynamic convergence magnetic field including at least a component of line scanning frequency,



and control means for controlling the amplitude of the line and frame frequency components of the time varying components of the resultant magnetic fields set up by said convergence currents substantially without changing the relative amplitudes of the line and frame frequency components.

3,273,009
YOKE DRIVING CIRCUIT WHICH REDUCES TRANSIENTS
Carlos A. Tomaszewski, Canoga Park, Calif., assignor, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,194
5 Claims. (Cl. 315—27)



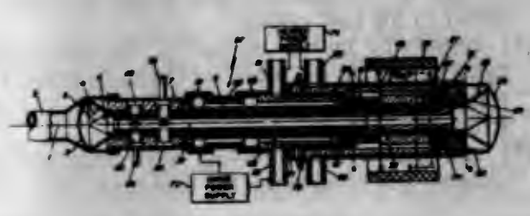
4. In combination, a multi-element electron tube having at least an anode, a cathode, a control grid and a screen grid; a cathode-ray tube having a beam-positioning electromagnetic yoke winding associated therewith, a power supply having a first terminal for supplying B+ to the anode of said electron tube, a second terminal for applying a positive D.C. screen potential to the screen electrode of said electron tube and a third ground reference potential terminal, means for coupling the cathode of said electron tube to the third terminal of said power supply, means for coupling said yoke winding between the first terminal of said power supply and said anode, an input circuit coupled to the control grid of said electron tube for abruptly increasing the current flowing through said tube thereby to reduce the potential at the plate of said electron tube below the potential at the second terminal of said power supply, means for effectively coupling said screen grid to said plate and for decoupling said screen grid from the second terminal of said power supply as long as the potential at said anode is higher than a predetermined voltage somewhat lower than the potential at the second output terminal of said power supply and for effectively decoupling the screen grid from said plate and for causing the second terminal of said power supply to be effectively coupled to said screen grid as long as the voltage at said anode remains below said predetermined voltage.

3,273,010
ARC ARRESTING SPARK GAP ASSEMBLY FOR LIGHTNING ARRESTERS
Joze Sacer, Neuenhof, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Nov. 22, 1963, Ser. No. 325,698
Claims priority, application Switzerland, Nov. 28, 1962, 13,950/62
6 Claims. (Cl. 315—36)



1. In an arc arresting spark gap assembly for lightning arresters of the type wherein the spark gaps are connected in circuit with voltage-dependent resistances and quenching of the arcs in the gaps is effected by an arc produced magnetic field, the combination comprising a plurality of axially stacked cylindrical plates made from insulating material and an electrode piece inserted into each said plate, each said electrode piece being essentially of hairpin shape, the two legs of each electrode piece including an indenture forming a point of arc response and the free ends of the legs being bent back to establish horns, said two legs of each electrode piece being disposed substantially parallel to a diametral axis of the insulator plate and located respectively on opposite sides of the insulator plate in which it is inserted such that each arc gap is established by the indentures of respective legs of electrode pieces inserted in adjacent insulator plates, said legs of all of said electrode pieces having a length substantially exceeding the radius of said cylindrical insulator plates thereby to establish a maximum possible length of arc in each arc gap greater than the circumference of the quenching chamber formed within each adjacent pair of said insulator plates, and all of said arc gaps being located axially one above the other.

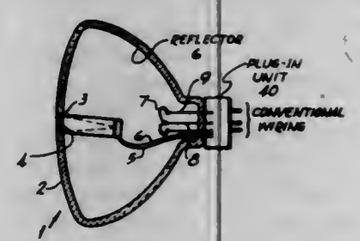
3,273,011
TRAVELING FAST-WAVE DEVICE
William C. Brown, Weston, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,510
5 Claims. (Cl. 315—39)



1. A traveling wave device comprising:
an anode structure;
said anode structure having a plurality of parallel axially-extending vanes defining a plurality of uncoupled electromagnetic wave conducting paths arranged side by side;
means communicating with said anode structure for shifting the phase of waves in alternately disposed paths whereby waves in adjacent paths are in opposite phase;

an electron emitting cathode structure coextensive with and surrounding said anode structure defining a substantially continuous interaction space therebetween;
means for establishing a magnetic field directed parallel to the axis of said anode structure and an electric field directed radially to said axis whereby the electrons form a space charge in the interaction space which circulates substantially circumferentially;
means for directing electromagnetic waves along the wave conducting paths in an axial direction to result in phase shifted fringing electric fields between adjacent vanes extending into the interaction space;
said crossed magnetic and electric fields together with said fringing electric fields imparting a phase focusing effect to the electron space charge such that the crossover point of said space charge relative to said traversing waves is in velocity synchronous relationship along a path coaxial to said wave paths whereby said waves are amplified by the net flow of energy from the electron space charge;
and means for launching said amplified waves into space disposed at one end of said device.

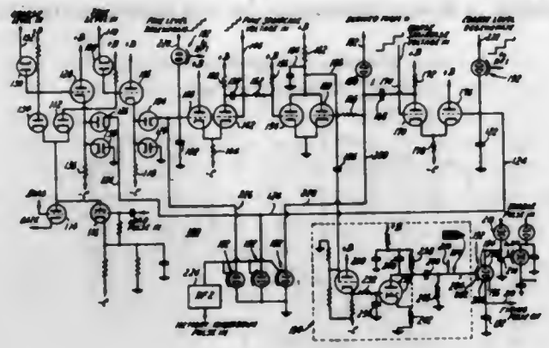
3,273,012
AUTOMATIC HEADLIGHT CONTROL SYSTEM
Irving Rosenblum, Bronx, N.Y., assignor to Dim-O-Matic, Inc., New York, N.Y., a corporation of New York
Filed Nov. 13, 1963, Ser. No. 323,483
4 Claims. (Cl. 315—82)



1. A sealed-beam automobile headlight lamp control for controlling the light output of said headlight comprising,
(a) a parabolic shaped casing,
(b) a source of light carried within and adjacent the rear of said casing,
(c) a lens-shaped transparent glass member forming the frontal part of casing,
(d) a cell-like light sensitive current carrying resistive element structure carried by the glass member and disposed to change its resistivity and corresponding current in response to light intensity variations external to the said casing,
(e) amplifying means carried by the said casing and external thereto for receiving the said current changes responsive to resistive variations of the said cell-like structure,
(f) and means for receiving said amplified current changes and controlling the seal-beam light output.

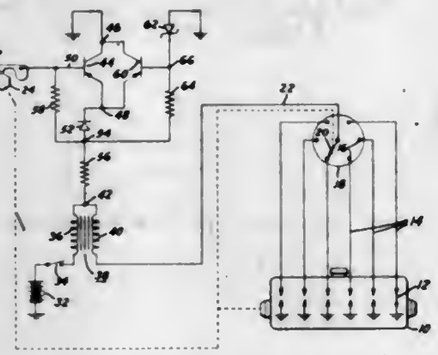
3,273,013
ELECTRIC SWITCH ARRANGEMENT
Francis H. Shepard, Jr., Lee Lane, Berkley Heights, N.J.
Filed May 19, 1960, Ser. No. 30,216
4 Claims. (Cl. 315—168)

1. An electric switch arrangement comprising an electric circuit adapted to be switched on and off whenever desired, a gas tube connected in series with said circuit, said tube being ionizable and acting substantially as a short-circuit when ionized and as an open-circuit when de-ionized, and generator means for applying to said tube an ionizing high frequency field, said generator means supplying a substantially continuous ionizing field when on and being substantially independent of said electric



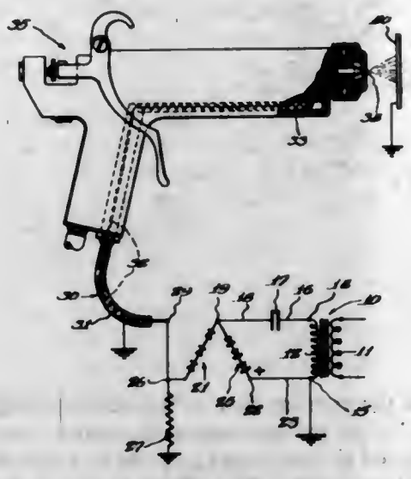
circuit, said generator means giving a gradually decreasing field when turned off so that voltage drop across said tube at the instant of de-ionization is substantially zero.

3,273,014
TRANSISTOR IGNITION SYSTEM HAVING A PROTECTIVE CIRCUIT
Bernard J. Gershen, Edison, N.J., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,584
5 Claims. (Cl. 315—212)



1. In combination, an internal combustion engine, a plurality of spark plugs for said engine, a source of direct current, an ignition coil having a primary winding and a secondary winding, spark distributing means driven by said engine connected with said spark plugs, means connecting said secondary winding with said spark distributing means, a timing device driven by said engine, a first transistor having emitter, collector and base electrodes, means connecting said primary winding and the emitter and collector electrodes of said first transistor across said source of direct current, means connecting the base electrode of said transistor with said timing device, a second transistor, means connecting the emitter of said second transistor with the emitter of said first transistor, means connecting the collector of said second transistor with the collector of said first transistor, a voltage responsive network connected across the emitter and collector electrodes of said transistors, and means connecting a point on said voltage responsive network with said base electrode of said second transistor, said voltage responsive network including means for biasing said second transistor conductive when a voltage is developed across said emitter and collector electrodes of said first transistor and across said network of a predetermined magnitude and of a polarity to cause current to flow through said first transistor in a forward direction.

3,273,015
ELECTROSTATIC SPRAY GUN SYSTEM
Warren G. Fischer, Elmhurst, Ill., assignor to H. G. Fischer & Co., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 29, 1963, Ser. No. 276,442
2 Claims. (Cl. 317—3)



1. In an electrostatic coasting system including a spray gun having a charging electrode for electrically charging coating material discharged by said gun, the combination of a step-up transformer having a primary winding for energization from an alternating current line, said transformer having a secondary winding, a voltage doubling system having two input terminals connected to the two terminals of said secondary winding, said secondary winding having one terminal grounded and the other terminal at high potential and said coating system including a grounded portion comprising the work to be coated, said voltage doubling system including a first capacitor connected between the high potential secondary winding terminal and a first junction point, one rectifier means connected between said first junction point and ground, a second rectifier means connected between said first junction point and a second junction point, said two rectifier means being properly poled for voltage doubling action, a bleeder resistor connected between said second junction point and ground, a coaxial cable having dielectric material between the central conductor and the outer conductor, a direct connection between said outer conductor and ground, a direct connection between one end of said central conductor and said second junction point, the remaining terminal of said central conductor and ground constituting the output terminals of the voltage doubler system, a connection between the remaining terminal of said central conductor and the gun charging electrode, the cable capacitance functioning as a second capacitor in the voltage doubling system whereby a substantial length of cable for manipulation of said gun in connection with coating operations may be used.

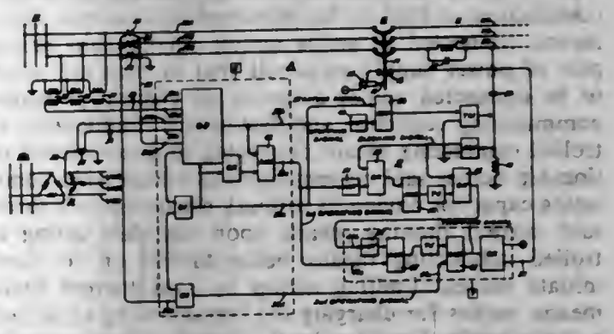
3,273,016
POWDER SPRAYERS
Warren G. Buhler, Westfield, N.J., assignor to Oxy-Dry Sprayer Corporation, New York, N.Y., a body corporate
Filed Apr. 23, 1964, Ser. No. 362,107
6 Claims. (Cl. 317—3)

1. In an electrostatic powder sprayer, the combination of
a pair of spaced apart end members;
means defining a powder receptacle between said end members;
a metering mechanism communicating with said receptacle including a dispensing roller having a powder carrying surface journaled between said end members and located within an opening beneath said receptacle, said dispensing roller having a cylindrical surface consisting of a material having a substantial electrical and electrostatic resistance, and
a wiping blade secured to said receptacle and disposed to tangentially engage said roller;



a tubular means for creating an electrostatic field in the vicinity of said dispensing roller to free particles therefrom and to disperse the same; and
means for mounting said tubular means parrallel to said dispensing roller and in the vicinity thereof.

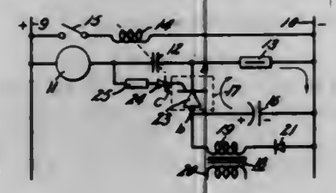
3,273,017
GROUND FAULT RESPONSIVE DIRECTIONAL COMPARISON PROTECTIVE SYSTEM FOR AN ELECTRIC POWER TRANSMISSION LINE
Charles A. Mathews, Springfield, Pa., assignor to General Electric Company, a corporation of New York
Filed Jan. 7, 1963, Ser. No. 249,791
21 Claims. (Cl. 317—18)



1. A directional comparison protective relaying system for initiating a predetermined control function in response to the occurrence of a ground fault on a polyphase A.-C. electric power transmission line having distantly spaced terminals at each of which are located signal transmitting and receiving means so arranged that the transmitting means at each terminal can communicate with the receiving means at any of said terminals remote therefrom, comprising at each of the line terminals:
(a) first ground fault responsive means adapted to be coupled to the line and to the local transmitting means for activating said transmitting means when the magnitude of the zero-phase-sequence component of line current exceeds a predetermined first amount;
(b) ground current directional sensing means connected to the first ground fault responsive means and adapted to be coupled to the line for operation in response to zero-phase-sequence line current of a magnitude exceeding said first amount flowing toward a ground fault located on the protected-line side of the local terminal;
(c) first control means for connecting the ground current directional sensing means to the local transmitting means to deactivate said transmitting means in response to operation of said sensing means;
(d) second ground fault responsive means adapted to be coupled to the line for operation when the magnitude of zero-phase-sequence line current exceeds a predetermined second amount which is greater than said first amount; and

(e) second control means connected to both said sensing means and said second ground fault responsive means and responsive to their contemporaneous operations for effecting initiation of the predetermined control function, said second control means additionally being adapted to be connected to the local receiving means and being so arranged as to be rendered ineffective to initiate said control function whenever said receiving means is receiving a signal from an active remote transmitting means.

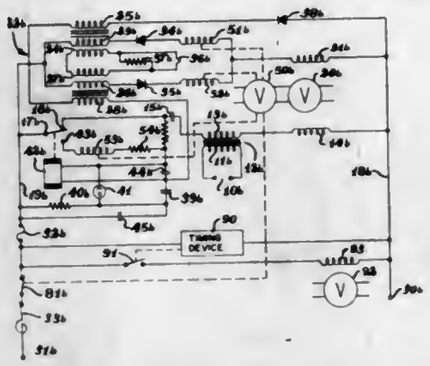
3,273,018
FAST ACTION CURRENT LIMITING CIRCUIT EMPLOYING RELEASE OF STORED ENERGY TO INITIATE CURRENT LIMITING ACTION
Leon Joseph Goldberg, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 15, 1964, Ser. No. 397,365
24 Claims. (Cl. 317—20)



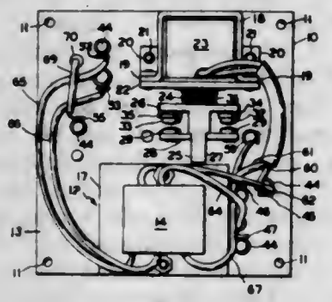
1. A fast-action current limiting circuit including in combination a load to be protected and current limiting means connected in series circuit relationship across a pair of power supply terminals that in turn are adapted to be connected across a source of electric potential, a commutating capacitor and fast-acting conductivity controlled conducting means connected in series circuit relationship across said current limiting means, said commutating capacitor having its primary discharge path through said current limiting means upon said fast acting controlled conducting means being turned on to thereby initiate current limiting action by said current limiting means, means for charging the commutating capacitor to a predetermined voltage level, sensing means operatively connected in circuit relationship with the load for sensing load current flow through the load and deriving an output gating signal upon the load current assuming an undesired load current condition, and means operatively coupling the output of said sensing means to the fast-acting conductivity controlled conducting means for causing the fast-acting conducting means to turn on thereby discharging the commutating capacitor through the current limiting means to initiate its current limiting action.

3,273,019
DIRECT SPARK IGNITION SYSTEM
Russell B. Matthews, Oconomowoc, Wis., assignor to Penn Controls, Inc., a corporation of Indiana
Filed Oct. 8, 1963, Ser. No. 314,744
14 Claims. (Cl. 317—86)

1. A spark ignition system comprising:
a spark gap,
energizing means connected to the spark gap to cause a continuously firing alternating current spark to appear across said gap,
a resistance-capacitance circuit connected to said energizing means to limit a period during which said spark gap continuously fires to a preselected value,
actuation means for opening a fuel valve connected to said energizing means for energization only during said spark firing period,
valve holding means,
flame sensing means, and
a magnetic amplifier comprising a pair of magnetic reactors, each said reactor having a load winding, a bias winding, and a control winding, said load windings being connected to said valve holding means, said bias windings being connected to said energizing means in order to have said energizing means increase the current flow in the bias winding after said spark firing period, and said control winding being connected to said sensing means to produce a current in said control winding whose magnetic field opposes a magnetic field of current flowing in said bias windings.



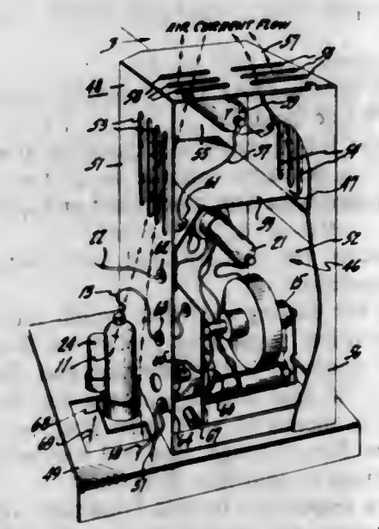
3,273,020
CONTROL APPARATUS
Lloyd H. Murphey, Logansport, Ind., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed Oct. 22, 1964, Ser. No. 405,765
3 Claims. (Cl. 317—99)



1. Control apparatus for an electric motor driving a refrigerant compressor of an air conditioning unit which is controlled by a thermostatic switch comprising:
(a) an insulating mounting panel having a front surface and a rear surface and provided with an opening therethrough;
(b) an electrical transformer of the type in which a shell-type core partially encloses a coil having portions protruding from two opposite sides of said core, said coil comprising a primary winding having two leads and a low voltage secondary winding having two leads;
(c) means securing the core of said transformer to the rear surface of said panel adjacent said opening with one portion of said coil projecting through said opening and beyond said front surface;
(d) an electromagnet having a coil with two leads and a core-type armature;
(e) means securing said electromagnet upon the rear surface of said panel with the armature axis parallel and close to said rear surface;
(f) a contact carrier of insulating material attached to an exposed end of said armature and carrying a bridging contact means movable with said armature;

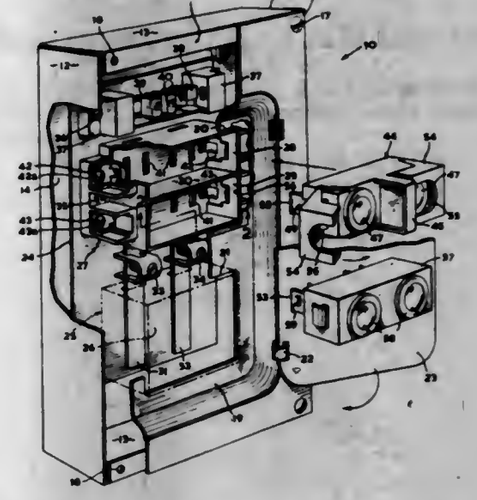
(g) first and second brackets secured to said panel in spaced-apart relation and extending above said rear surface of said panel in the path of movement of said bridging contact means;
(h) stationary contacts on said brackets positioned to be engaged by said bridging contact means when the armature is attracted by the electromagnet coil;
(i) first and second terminals secured on the front surface of said panel in electrical connection with said brackets;
(j) third, fourth and fifth terminals secured on the front surface of said panel;
(k) means connecting one lead of said transformer primary winding to said first terminal and means connecting the other lead of said primary winding to said third terminal; and
(l) means connecting one lead of said electromagnet coil to one lead of said transformer secondary winding, means connecting the other lead of said electromagnet coil to said fourth terminal, and means connecting the other lead of said secondary winding to said fifth terminal.

3,273,021
ENCLOSURE FOR HIGH VOLTAGE APPARATUS
John Stark, Jr., Indianapolis, Ind., Bethel E. Denton, Robards, Ky., and James W. McLeod, Jr., Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,864
4 Claims. (Cl. 317—100)



1. In a television receiver having a substantially horizontal chassis for supporting particular components including a horizontal deflection output tube and transformer, a high voltage rectifier tube connected to said transformer, and a high voltage regulator tube connected to said rectifier tube, said transformer producing only a small amount of heat in normal operation but being subject to damage by high temperatures, said rectifier tube producing only a relatively small amount of heat in normal operation, said output and regulator tubes respectively producing relatively large amounts of heat in normal operation, and said regulator tube also being capable of producing unwanted radiations under abnormal operating conditions,
mounting means for said particular components comprising:
a shelf attached to, and elevated over an opening in, said chassis to mount said output tube in a vertical position so that heat from said tube causes air to be drawn through said opening and raised in temperature, thereby cooling said output tube;
a relatively air-tight metallic compartment mounted on said chassis for enclosing said transformer and said rectifier tube in a combustion-inhibiting environment; and
a ventilated metallic compartment having forward and rear portions, said compartment being disposed above said relatively air-tight compartment for enclosing and mounting said regulator tube on its forward wall,
all of the walls in the forward portion of said ventilated compartment being unbroken to prevent external propagation of any of said unwanted radiations and at least some of the external walls in the rear portion of said ventilated compartment being louvered to conduct air heated by said regulator tube out of said ventilated compartment, thereby cooling said regulator tube, and
one of said louvered walls being positioned relative to said output tube so that the air heated by said output tube is drawn through said ventilated compartment, thereby effectively providing forced ventilation of said ventilated compartment and enhancing the cooling of said output and regulator tubes.

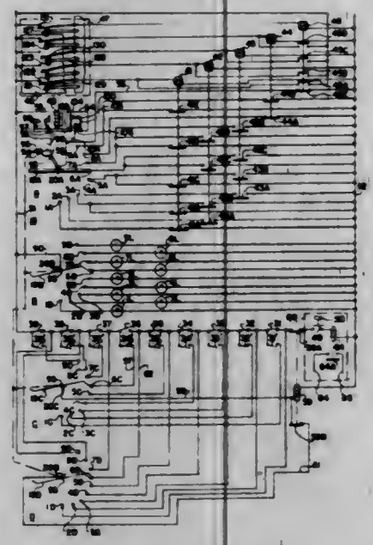
3,273,022
ELECTRICAL LOAD DISTRIBUTION SERVICE CENTRE
Charles E. McRoberts, Toronto, Ontario, Canada, assignor to Amalgamated Electric Corporation, Limited, Toronto, Ontario, Canada
Filed Aug. 5, 1963, Ser. No. 299,749
9 Claims. (Cl. 317—116)



1. An electrical load distribution service centre comprising a housing including a removable panel with at least one opening therein, a neutral busbar and first and second other busbars all electrically insulated from each other and positioned in said housing behind said panel, at least one plug-in receptacle adapted to hold therein two screw-in overcurrent devices threadably engaged within said one receptacle, said receptacle having two first contact means and two second contact means, each of said first contact means being adapted to contact a different one of said first and second busbars when said receptacle is positioned in said housing and being adapted to contact a terminal of a different one of said overcurrent devices when said overcurrent devices are screwed into said receptacle and held therein, each of said second contact means being adapted to contact another terminal of a different one of said overcurrent devices when said overcurrent devices are screwed into said receptacle and held therein, whereby circuits from each of said first and second busbars, through said first contact means, and through said overcurrent devices to said second contact

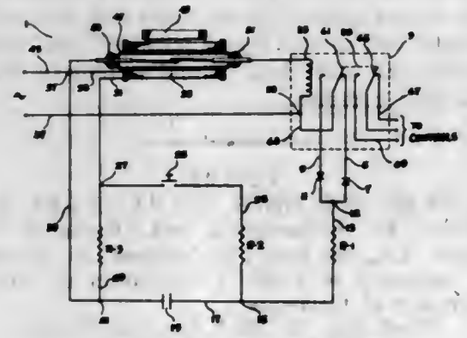
means are established when said receptacle is positioned in said housing and said overcurrent devices are screwed into said receptacle and held therein, and at least two contacts within said housing each adapted to contact a different one of said second contact means when said receptacle is positioned in said housing, the size of the opening in said panel being sufficiently large that said receptacle may be placed in said housing through said opening without removal of said panel and inserted in said housing to an extent sufficient to effect contact between said first and second busbars and said first contact means, means for preventing independent removal of overcurrent devices screwed into said one receptacle and held therein when said one receptacle is positioned in said housing with said first contact means in contact with said first and second busbars, said last-mentioned means comprising flaps mounted on said one receptacle and closable over overcurrent devices screwed into said one receptacle and held therein, and means retaining said flaps in closed position over overcurrent devices screwed into said one receptacle and held therein when said one receptacle is positioned in said housing with said first contact means in contact with said first and second busbars.

3,273,023
SELECTOR CIRCUIT
Henry F. Meyer, Cortland, N.Y., assignor to The Monarch Machine Tool Company, a corporation of Ohio
Continuation of application Ser. No. 90,505, Feb. 20, 1961. This application Sept. 25, 1964, Ser. No. 399,233
11 Claims. (Cl. 317—134)



1. A control circuit comprising, in combination, a controllable device,
a master starter switch,
a plural number of selector switches each having first and second contact means with one thereof being open and the other thereof being closed,
a master switch bank having contacts arranged to correspond to each of said selector switches,
a movable device in said switch bank engageable with the contacts therein to select a predetermined contact position for selecting a desired one of said selector switches,
a power operator for said master starter switch,
means for energizing said master starter switch power operator through the corresponding one of said second contact means and the predetermined contact position of said master switch bank upon the desired selector switch being actuated to open said first contact means and close said second contact means thereof,
means including said master switch bank to establish a shunt circuit around the actuated open first contact means of the actuated selector switch upon the desired selector switch being actuated,
and means for energizing said controllable device through the remaining ones of said first contact means and through said shunt circuit upon the desired selector switch being actuated.

3,273,024
IMPULSE RELAY
Charles A. Sherman, Tacoma, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Dec. 11, 1963, Ser. No. 329,725
4 Claims. (Cl. 317—157)

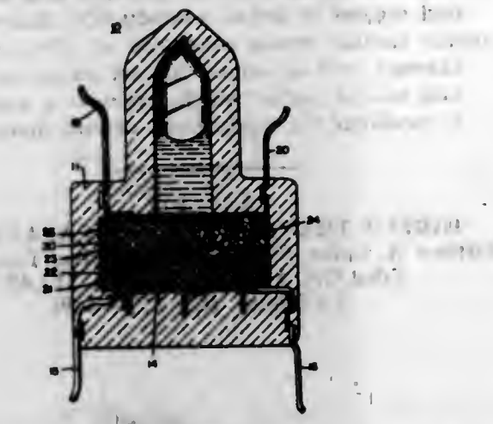


1. An impulse relay apparatus which comprises in combination:
capacitor means,
first means for charging said capacitor means with a charge of one polarity,
second means for charging said capacitor means with a charge of a polarity opposite to said one polarity,
first switch means having an opened and a closed condition,
holding means for holding said first switch in said closed condition,
coil means for biasing said first switch means to said closed position responsive to current flow through said coil means of a first direction and for opposing the force of said holding means for biasing said first switch means to said open position responsive to current flow through said coil means of a direction opposite to said first direction,
relay means responsive to said conditions of said first switch means for switching contact between said capacitor means and said first charging means and between said capacitor means and said second charging means,
second switch means for connecting said coil means to said capacitor means whereby said capacitor means discharges said charges through said coil means to actuate said first switch means to either of said conditions.

3,273,025
SOLION CELL WITH ELECTRODES ENGAGING CONTAINER WALL FOR PREVENTING ION-DRIFT
Harry R. Broadley, Reading, Mass., assignor to General Electric Company, a corporation of New York
Filed Apr. 1, 1963, Ser. No. 269,662
8 Claims. (Cl. 317—230)

1. An electrical readout integrator comprising a container, a redox electrolytic solution in said container; a plurality of spaced electrodes coaxially arranged within said container comprising a common electrode, a read-out

electrode, an input electrode and a shield electrode; porous insulating means interposed between and contacting said input and shield electrodes for spacing one with respect to the other, said insulating means having two opposed surfaces and an encompassing peripheral surface, said shield electrode being in continuous contact with one of said opposed surfaces and said peripheral surface, a portion of said shield electrode continuously engaging said peripheral surface along a portion of its axial length, the portion of said shield electrode in contact with said peripheral surface also being in contact with the interior surface of said container, said input and shield electrodes and said container defining a reservoir compartment, said electrodes being taken from the class consisting of platinum and its noble metal alloys.

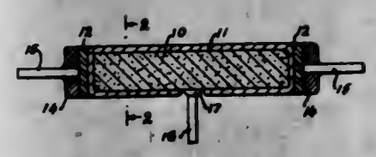


3,273,026
SOLION CELL HAVING ELECTRODES COLD-SEALED WITH CONTAINER WALL
Harry R. Broadley, Reading, Mass., and William R. Grams, Ballston Spa, N.Y., assignors to General Electric Company, a corporation of New York
Filed Apr. 2, 1963, Ser. No. 269,965
17 Claims. (Cl. 317—230)



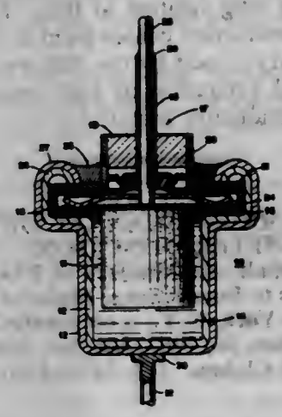
1. An electrical readout integrator comprising a container, a redox electrolytic solution in said containers; a plurality of spaced electrodes within said container comprising a common electrode, a read-out electrode, an input electrode and a shield electrode; porous insulating means interposed between said input and shield electrodes, said porous insulating means having two opposed surfaces and an encompassing peripheral surface, said shield electrode being disposed on one of said opposed surfaces and at least a portion of said peripheral surface; a conductive cup-shaped element contacting said shield electrode and having a large centrally located aperture in the bottom thereof, said shield electrode and said supporting porous insulating means being firmly wedged into said cup-shaped element to provide a reliable low resistance contact with said shield electrode; first and second conductive leads passing through the wall of said container, said leads being connected to said cup-shaped element and said input electrode to provide externally available connections to said electrodes; and third and fourth conductive leads being connected to said common and read-out electrodes.

3,273,027
THREE-TERMINAL ELECTROLYTIC DEVICE
Pierre L. Bourgault, Etobicoke, and Jozef Bakalars, Toronto, Ontario, Canada, assignors to Johnson, Matthey & Mallory Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Sept. 19, 1962, Ser. No. 224,725
12 Claims. (Cl. 317—230)



1. In a device of the character described, the combination comprising an anode of film-forming metal having inter-communicating pores, a continuous dielectric film on the surface of said anode and said pores, a resistive electrolyte covering said film throughout said anode, an anode terminal electrically connected to said anode and insulated from said electrolyte, and a pair of cathode terminals electrically connected to spaced regions of said electrolyte.

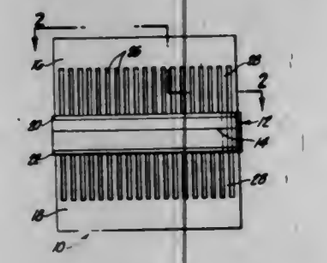
3,273,028
HERMETICALLY SEALED ELECTROLYTIC CAPACITOR
Julian G. Sparkes, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,189
7 Claims. (Cl. 317—230)



1. In an electrolytic capacitor, a container-shaped cathode having one open end and a shoulder adjacent said end, an electrolyte contained within said cathode, an anode of film-forming metal concentrically disposed within said cathode, a resilient insulating member resting on said shoulder of the cathode, a top member affixed to said anode, and having a nonplanar marginal surface engaging said resilient insulating member providing a seal for said cathode and supporting said anode within said cathode, conductive spring means resting upon said anode top member, a positive terminal assembly comprising an inner tubular member and an outer encircling member separated by a glass-like insulating body fused with said inner and outer members forming a hermetic seal, a positive terminal wire projecting through said inner member and bonded thereto forming a hermetic seal, a

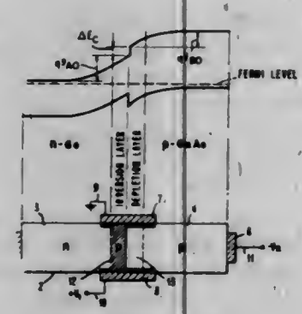
contact washer contiguous with said spring means and affixed to said inner member for anodic contact, an insulating disc separating said contact washer from said outer member, and the open end of said cathode being turned over upon said outer member and comprising said spring means for deforming said resilient insulating member.

3,273,029
METHOD OF ATTACHING LEADS TO A SEMICONDUCTOR BODY AND THE ARTICLE FORMED THEREBY
Bernd Ross, Arcadia, Calif., assignor to Hoffman Electronics Corporation, El Monte, Calif., a corporation of California
Filed Aug. 23, 1963, Ser. No. 304,047
9 Claims. (Cl. 317—234)



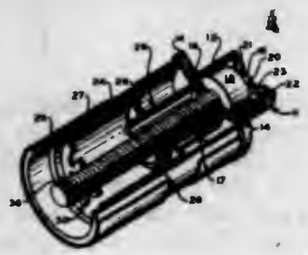
1. A semiconductor device comprising a body of semiconductor material, a pair of electrodes, at least one of said electrodes including a block of electrically conductive material having a coefficient of thermal expansion substantially greater than said semiconductor material, one end of said block having first and second sets of deep channels formed therein, said first set being perpendicular to said second set whereby a plurality of generally parallel, substantially wire-shaped conductors extend from the other end of said block, a layer of solder bonding the ends of said conductors directly to said body, said conductors being sufficiently long relative to their thickness so that heating of said conductors causes them to bow and reduce stress on said body caused by the difference in the coefficients of thermal expansion of said semiconductor material and said conductive material.

3,273,030
MAJORITY CARRIER CHANNEL DEVICE USING HETEROJUNCTIONS
Pieter Balk, Katonah, and Manfred H. Pilkuhn, Mahopac, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,517
10 Claims. (Cl. 317—235)



1. A majority carrier channel device comprising:
a monocrystalline semiconductor body having at least two regions, the first region being constituted of a first semiconductor material having a first band gap being of predetermined conductivity-type, and a second region of a second different semiconductor having a band gap greater than said first band gap and being of opposite conductivity-type,
an inversion layer of opposite conductivity type being created at the narrow surface portion of said first region along the interface between said first and second regions to define a conduction channel,
ohmic contact means connected at either end of said channel, and an ohmic contact means connected to said second region which serves as a gate electrode to modulate the conductivity of said channel.

3,273,031
DIRECT TRAVEL TRIMMER CAPACITOR
Matthew A. Lafer, 955 Columbus Drive, Teaneck, N.J.
Filed Oct. 21, 1963, Ser. No. 317,454
7 Claims. (Cl. 317—249)

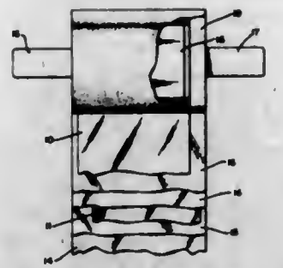


1. A direct travel trimmer capacitor comprising:
(a) a stationary piston support;
(b) a generally flat drive nut defining a movable piston support;
(c) an adjustment screw in threaded engagement with the movable piston support;
(d) a piston connected to the movable support and slidably engaged with the stationary support;
(e) the stationary support and the piston having a noncircular configuration whereby the piston is restrained from rotation;
(f) the stationary support having a slot;
(g) the movable support having an aperture dimensioned to receive the stationary support with complete clearance;
(h) arms on the movable support dimension to pass through the slot.

3,273,032
ELECTRICAL CONDENSERS AND METHOD OF MAKING THE SAME
Peter S. Dokuchitz, Unadilla, and Michael Milkowski, Sidney, N.Y., assignors to The Bendix Corporation, a corporation of Delaware
Filed Jan. 19, 1960, Ser. No. 3,433
11 Claims. (Cl. 317—258)

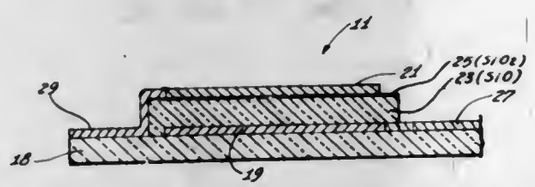
1. An electrical condenser comprising a plurality of tightly stacked superimposed layers of sheet metal, at least one layer of insulating sheet material interposed between each successive pair of metal layers, means electrically connecting alternate metal layers tgoether, and a solid insulating compound filling the spaces between said metal and insulating layers, the insulating compound consisting predominantly of a refractory oxygen compound of boron deposited in situ, the insulating compound impregnating the insulating layers, bonding the layers of the condenser together, and retaining such layers in tightly stacked condition.

5. The method of making an electrical condenser which includes superimposing alternate layers of sheet metal with at least one layer of sheet insulating material interposed between successive layers of sheet metal, substantially completely enclosing the broad surfaces of the thus assembled layers in at least one layer of covering material so as to leave at least an end of the stack uncovered, subjecting the thus covered stack to compression to retain the layers thereof in tight contact, immersing the thus covered and compressed stack in an impregnating bath consisting largely of a solution of an inorganic glass-



forming material in a vehicle, heating the bath while the stack is thus immersed therein, leaving the stack in the bath for a sufficient length of time for the solution to penetrate completely into the stack, withdrawing the stack from the bath, and while the stack is still confined and under compression heating the stack so as to volatilize and drive off the vehicle and to decompose the solid material deposited from the solution to form an inorganic glass dielectric within the condenser which binds the layers of the stack together.

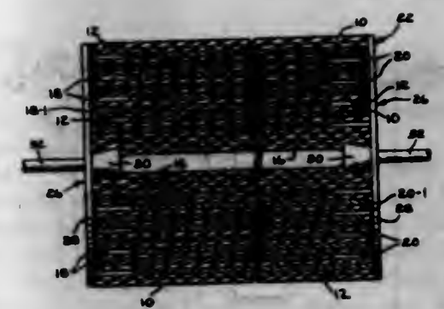
3,273,033
MULTIDIELECTRIC THIN FILM CAPACITORS
Richard Alan Rossmeisl, Woodland Hills, Calif., assignor to Litton Systems, Inc., Woodland Hills, California
Filed Aug. 29, 1963, Ser. No. 305,352
5 Claims. (Cl. 317—258)



2. A capacitor deposited on a thin film circuit substrate comprising a pair of substantially parallel metallic plates, and a dielectric interposed between said plates, said dielectric including a first film of vapor deposited material having a selected low evaporation temperature and a selected dielectric constant to impart a predetermined capacitance to the capacitor, and a second film of vapor deposited material having a selected evaporation temperature substantially higher than that of said first film and a leakage characteristic substantially lower than the leakage characteristic of said first film and being approximately one-seventh the thickness of the first film of vapor deposited material.

5. A method for fabricating thin film circuit capacitors having a selected low leakage characteristic and a predetermined thickness comprising the steps of depositing a first metallic thin film on a thin glass substrate, vapor depositing a first thin film layer of a first dielectric material having characteristics selected to furnish a predetermined dielectric constant to a selected thickness on said first metallic film, vapor depositing a second thin film layer of a second dielectric material having a leakage characteristic substantially lower than that of said first dielectric material to a thickness of approximately one-seventh or less that of said first layer, and depositing a second metallic thin film to cover said film of second dielectric material.

3,273,034
EXTENDED FOIL CAPACITOR WITH DISC-LIKE TERMINALS CENTRALLY ANCHORED THERETO AND A METHOD OF MAKING THE SAME
George P. McGraw, Jr., Downers Grove, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 24, 1965, Ser. No. 435,093
5 Claims. (Cl. 317—260)

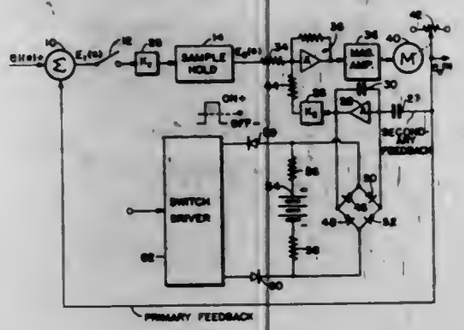


1. A capacitor comprising:
a pair of foils of tin alloy and a pair of thermoplastic dielectric webs convolutely arranged in a roll with the foils interleaved with and supported by the dielectric webs in insulated, superposed and in partially overlapping relation to one another and with a marginal portion of one of the foils extending beyond and compressed against the dielectric webs at one end of the capacitor roll, and with a marginal portion of the other foil extending beyond and compressed against the dielectric webs at the other end of the capacitor roll, and with the leading end portions of said dielectric webs extending beyond the leading ends of the foils and forming a tubular core; and
terminals for the foils, each terminal comprising a flat disc portion bonded to the compressed marginal portion of the foil along the entire length thereof at one end of the capacitor roll, and a hub portion with a reduced neck and an enlarged end of greater diameter than the bore of said tubular core extending centrally from one side of said disc portion and embedded in and anchored to an end portion of said core.

4. A method of making a capacitor which comprises:
forming a tubular thermoplastic dielectric core;
winding a pair of dielectric webs having a width coextensive with the core, and a pair of foils of tin alloy around the core to form a capacitor roll with the foils supported by the webs in insulated, superposed and partially overlapping relation to each other and with a marginal portion of one of the foils extending beyond the core and the webs at one end of the capacitor roll and with the marginal portion of the other foil extending beyond the core and the webs at the other end of the roll;
forming a terminal having a flat disc portion with a central flared hub extending from one side thereof;
heating a pair of such terminals to a temperature sufficient to melt the foils and the thermoplastic core; and
compressing the extended portions of the foils against the webs at the ends of the capacitor roll with the heated terminals and bonding the flat disc portions of the terminals to the marginal portions of the

foils along the entire length thereof, and simultaneously therewith, embedding the hubs of the terminals in the ends of the core.

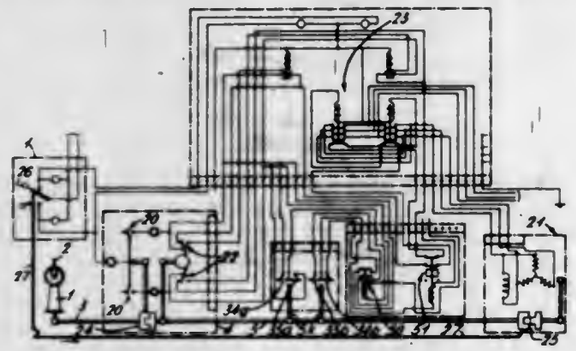
3,273,035
SYSTEM OF STABILIZATION FOR A SAMPLE-DATA SERVO USING A VARIABLE GAIN SAMPLED-DATA LOOP AND A PROPORTIONAL LOOP
John A. Inderbees, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 27, 1963, Ser. No. 326,335
6 Claims. (Cl. 318—18)



1. In a sampled-data servo system including a source of input variable signals, a summer having first and second inputs and an output, said first input being supplied with said input variable signals from said source, sampling means for sampling the output of said summer, a sample-hold circuit for holding said sampled signal in the interval between samplings to produce a sample-hold output signal, a controller for producing an output signal, said controller having an input and an output, said input being supplied with said sample-hold output signal, and a primary negative feedback path from the output of said controller to said second input of said summer to establish a closed primary servo loop, the improvement comprising:
- a second summer interposed between said sample-hold circuit and said controller, said summer having one input supplied from the output of said sample-hold circuit and having a second input supplied from a secondary negative feedback path connected from the output of said controller, said secondary feedback establishing a secondary loop, said secondary negative feedback path including means for producing a feedback variable proportional to the change in said output variable signals during intervals between input samples, whereby said secondary feedback loop effectively maintains a closed loop servo in the intervals between samples;
- and first adjustable gain control means in said primary loop, and second adjustable gain control means in said secondary loop, said means being adjustable to provide equal gains in said loops.

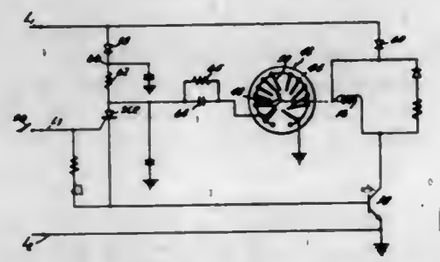
3,273,036
REMOTE CONTROL APPARATUS
Herbert John Goodwin, Ealing, London, England, assignor to Bloctube Controls Limited, Aylesbury, England, a British company
Filed Apr. 23, 1964, Ser. No. 362,021
Claims priority, application Great Britain, May 7, 1963, 18,039/63
3 Claims. (Cl. 318—31)

1. Remote control apparatus comprising a manually operable control handle movable selectively from a neutral position to positions for drive in opposite senses, a first system control shafting extending between said handle and the controls for a prime mover and a transmission gear, said transmission gear driving a second system shafting to a propeller, an electric motor means having clutch means connected to said first system, said clutch means responsive to movement of said handle to either of its drive positions, to transmit movement to members of said control shafting and to said prime mover, transmission gear and said propeller shafting, said members being free to move independently of but correspondingly to the movement of said control handle, means driven by said elec-



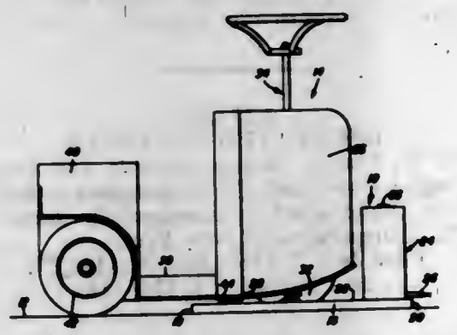
tric motor means with said members of said control shafting for actuating a time delay mechanism after the movement of said control handle from its position for drive in the one sense through its neutral position to its position for drive in the opposite sense, said time delay mechanism comprising means to interrupt the operation of the motor means for a predetermined period of time, and braking means acting on said propeller shafting during said predetermined period for reducing the speed of said prime mover during said motor interruption.

3,273,037
CONTROL CIRCUIT
Bernard J. Winestock, Los Angeles, and Jack D. Sinable, Rolling Hills Estate, Calif., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 317,666
11 Claims. (Cl. 318—467)



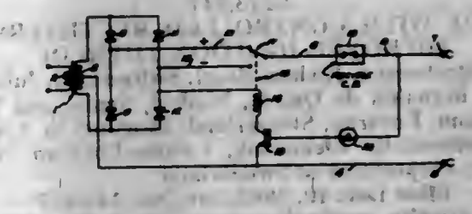
1. In a solenoid-type step drive including a coil, a rotor movable from a rest position through a predetermined angular step when said coil is energized, and means biasing said rotor to said rest position and operative to return said rotor to said rest position when said coil is de-energized; the combination with said coil of,
- a transistor connected in circuit with and controlling current flow through said coil,
- a silicon control rectifier in the base circuit of said transistor and normally in a non-conductive state so that said transistor is non-conductive and said coil is de-energized,
- electrical power supply means connected to and applying a voltage to said silicon control rectifier,
- switch means connected in said circuit with said silicon control rectifier on the input side thereof and having said voltage impressed thereon, said switch means comprising a plurality of relatively spaced grounded contacts and a switch arm movable between said contacts to alternately make and break a circuit from the input side of said silicon control rectifier to ground, said arm normally in engagement with one of said contacts when said silicon control rectifier is non-conductive,
- means for applying a switch-over pulse of relatively short duration to said silicon control rectifier to render it conductive to change the operational state of said transistor and energize said coil to initiate movement of said rotor,
- and means responsive to energization of said coil and operative, concurrently with rendering said silicon control rectifier conductive, to move said switch arm between said contacts and open said circuit to ground so that a voltage at least equal to the maintaining voltage of said silicon control rectifier is applied to said silicon control rectifier and said silicon control rectifier remains conductive until said switch arm reengages one of said contacts to remove at least a portion of the maintaining voltage from said silicon control rectifier to render said silicon control rectifier nonconductive and de-energize said coil, whereby said angular step is determined by movement of said switch arm between contacts and not by the duration of said pulse.

3,273,038
BATTERY RECHARGING METHOD AND APPARATUS FOR ELECTRICALLY POWERED VEHICLES
Walter D. Miller, % Mt. Jefferson Lumber Co., Lyons, Oreg.
Filed Apr. 8, 1963, Ser. No. 271,101
4 Claims. (Cl. 320—2)



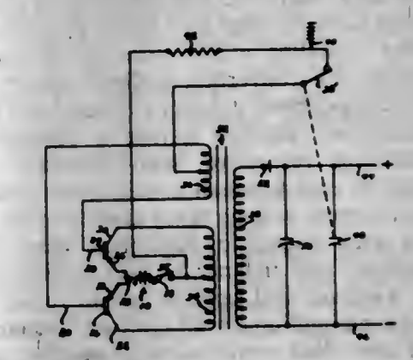
1. In combination with an electrically-powered wheel-supported vehicle having a dirigible wheel and a rechargeable battery source of power, a battery recharging apparatus comprising a platform having guiding means thereon for receiving a vehicle wheel rolled onto said platform and then positioning the wheel thus to define a charging station for the vehicle, said guiding means having an elongated trough formed in the platform for guiding movement of said dirigible wheel and a circular depression formed in the platform at a forward end of the trough permitting angular displacement of said dirigible wheel with the vehicle in said charging station, charging circuit means mounted on said platform in spaced relation to the guiding means for providing charging current for the battery source of power of the vehicle, contact means mounted on said platform in fixed relation to said guiding means for engagement with the vehicle to establish electrical contact between the battery source of power and said charging circuit means, said vehicle having contact elements connected to the battery source of power and exposed below the vehicle for engagement by the contact means, and means operatively mounted on the platform operative in response to forward movement of the vehicle onto the platform into said charging station for rendering the charging circuit means operative.

3,273,039
POLARITY CORRECTING CIRCUITS
James B. Godshalk, West Pikeland Township, Chester County, and Lewis A. Medlar, Lansdale, Pa., assignors to Fox Products Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 24, 1963, Ser. No. 275,267
7 Claims. (Cl. 320—26)



1. In a circuit for connecting a battery to a battery charger with the proper polarity, the combination of
- a pair of leads connectable to the terminals of a battery to be charged;
- a source of charging current for normally applying charging potential of one polarity to said leads, said source having two output conductors and a common conductor, said two output conductors providing charging potential of opposite polarity with respect to a common conductor, one of said leads being connected to said common conductor and the other of said leads being selectively connected to one of the remaining conductors;
- polarity responsive circuit means connected between said leads and operative to reverse the polarity of potential applied by said source to said leads, said polarity responsive circuit means including
  - a relay having an actuating winding and contacts so arranged that said source is connected to said leads to provide potential of one polarity when said actuating winding is not energized, and of the opposite polarity when said actuating winding is energized, and
  - a transistor having three electrodes, one said electrode being connected to said actuating winding of said relay and being operative to energize said actuating winding when energized, said other electrodes being connected between said leads so as to become conductive whenever a battery is connected to said leads with said opposite polarity.

3,273,040
REGULATED CONVERSION SYSTEM
Donald H. Schuster, 548 Forest Drive SE., Cedar Rapids, Iowa
Filed July 16, 1962, Ser. No. 210,039
10 Claims. (Cl. 321—2)



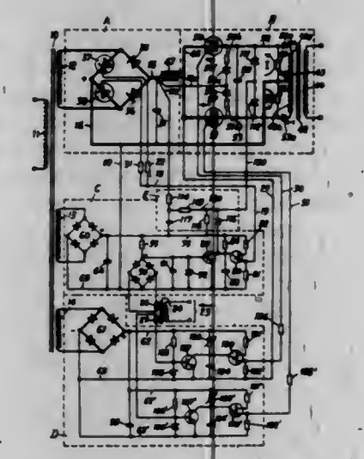
10. In a transistor regulated conversion circuit, comprising,
- a transistor inverter circuit having a bias circuit and an output circuit, and a switch in said bias circuit,

and an electrostrictive capacitor connected across the output of said output circuit, said electrostrictive capacitor operatively connected to said bias circuit switch to open and close said bias circuit as the output voltage across said electrostrictive capacitor moves above and below a predetermined valve.

3,273,041
CIRCUIT WITH CONTROLLED RECTIFIERS AND IMPROVED IGNITION THEREOF

Walter Strohmeier, Rieben, Basel, Switzerland, Julio Gonzales Bernaldo de Quiros, Madrid, Spain, and Werner Ullmann, Locarno, Switzerland, assignors to Agie A.G. fur industrielle Elektronik, Losone-Locarno, Switzerland, a corporation of Switzerland

Filed Dec. 10, 1962, Ser. No. 243,457
Claims priority, application Switzerland, Dec. 13, 1961, 14,453/61
5 Claims. (Cl. 321—4)

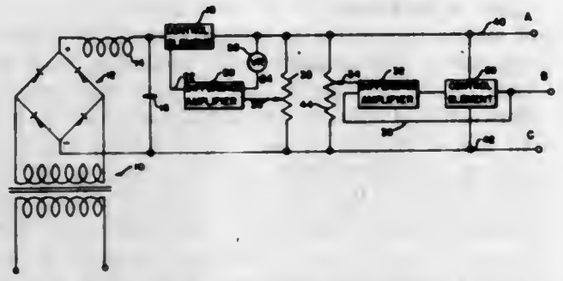


3. An electric circuit provided with controlled semiconductor rectifier means, ignition circuit means for igniting said controlled semi-conductor rectifier means, said ignition circuit means delivering a series of ignition impulses at least during a predetermined ignition period, said electric circuit including a full-wave rectifier provided with four rectifiers connected in a full-wave bridge rectification circuit, two of said rectifiers including said controlled semi-conductor rectifier means and electrically connected to a common terminal of a direct-current voltage outlet of said full-wave rectifier, said ignition circuit means including a first ignition circuit electrically connected with said two controlled semi-conductor rectifier means for delivering an uninterrupted series of said ignition impulses, the pulse repetition frequency of which lies at least above the frequency of an alternating-current voltage to be rectified by a factor of 3, said electric circuit further including a direct-current to alternating-current inverter for converting a direct-current voltage into an alternating-current voltage, a transformer provided with a transformer winding having a center-tap, said inverter including respective semi-conductor rectifier means coupled to each terminal of said transformer winding, the direct current voltage being applied to said center-tap and via said respective controlled semi-conductor rectifier means of said inverter to said terminals of said transformer winding, said ignition circuit means further including a second ignition circuit electrically coupled with both of said controlled semi-conductor rectifier means of said inverter for alternatingly supplying said series of ignition impulses, wherein the alternation in the transmission of said series of impulses corresponds to the desired frequency of the output alternating-current voltage.

3,273,042
DUAL OUTPUT POWER SUPPLY FOR TRANSISTOR CIRCUITS

Alfons A. Tuszynski, Buffalo, N.Y., assignor, by mesne assignments, to Esterline-Angus Instrument Company, Inc., Indianapolis, Ind., a corporation of Delaware

Filed Aug. 9, 1962, Ser. No. 215,917
6 Claims. (Cl. 321—16)

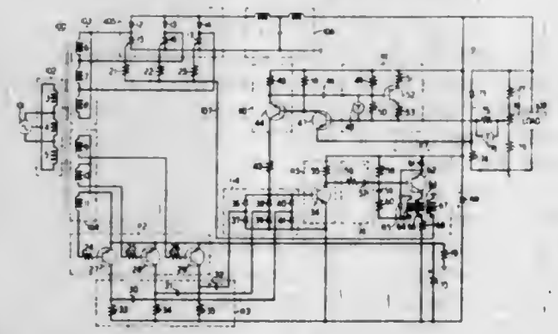


1. A dual output power supply comprising,
a full wave rectifier including terminals adapted for connection to a source and having a main output,
control means for varying the voltage of said output,
a source of fixed reference potential,
differential amplifier means connected to said reference potential and to said output and to said control means and affecting said control means to establish the potential of said main output,
second control means, said second control means being connected across said established main output to split the voltage thereof to provide a secondary output,
and second differential amplifier means connected to said secondary output and to said established main output to establish the potential of said secondary output.

3,273,043
REGULATED RECTIFIER

Patrick W. Clarke, Jackson Heights, and Joseph A. Pirraglia, New York, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 2, 1962, Ser. No. 206,571
16 Claims. (Cl. 321—18)



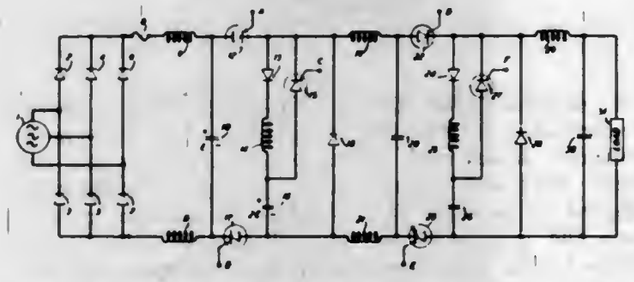
16. A three-phase power supply comprising first, second and third controlled rectifiers each having anode, cathode and gate electrodes, a source of alternating-current potential having a first, second, and third phase, a load, means for serially individually connecting the anode and cathode electrodes of each of said first, second, and third controlled rectifiers between each of said first, second and third phases of said alternating-current source and said load respectively, first, second, third, and fourth transistors each having base, collector and emitter electrodes, first, second and third capacitors, first, second, third, fourth, fifth, and sixth asymmetrically conducting devices, means for coupling the base and emitter electrodes of each of said first, second, and third transistors

to each of said first, second, and third phases of said alternating-current source respectively, means for serially connecting in individual paths the collector electrodes of each of said first, second, and third transistors, said first, second, and third capacitors, said first, second, and third asymmetrically conducting devices and the base electrode of said fourth transistor, respectively, means for controlling the storage rate of said first, second, and third capacitors comprising a variable impedance serially connecting each of said first, second and third capacitors to said load, a source of reference potential, means responsive to the difference between the voltage appearing across said load and said reference potential for controlling said impedance element, inverting means, means responsive to parasitic variations in said energy storage rate of each of said first, second and third capacitors, means for connecting said parasitic variation responsive means to said inverting means, means for connecting said inverting means to said load voltage reference-potential difference responsive means, means for connecting said impedance means to the base electrode of said fourth transistor, first, second and third resistors, means for serially connecting in individual discharge paths said first, second and third capacitors, said first, second and third resistors and said fourth, fifth and sixth asymmetrically conducting devices, means including said first, second and third resistors, respectively, for connecting the emitter electrode of said fourth transistor to the collector electrodes of said first, second and third transistors, a differentiating network, means for connecting the collector electrode of said fourth transistor to said differentiating network, a blocking oscillator, means for connecting said blocking oscillator to said differentiating network, and means for connecting the output of said blocking oscillator to the gate electrodes of each of said first, second, and third controlled rectifiers whereby the state of conduction of each of said first, second and third controlled rectifiers is controlled in accordance with said alternating-current source and load voltage variations.

3,273,044
TRANSFORMER REPLACEMENT SYSTEM

Patrick W. Clarke, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 19, 1962, Ser. No. 245,817
4 Claims. (Cl. 321—18)



3. A transformerless rectifier regulating system having first and second terminals, first, second, third, fourth, fifth, and sixth controlled rectifiers, each having anode, cathode, and gate electrodes, first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth, eleventh, and twelfth energy storage means, first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, and tenth asymmetrically conducting devices, a source of alternating current having first, second, and third phases, a load, means for serially connecting said first and second asymmetrically conducting devices between said first and second input terminals, means for serially connecting said third and fourth asymmetrically conducting devices between said first and second input terminals, means for serially connecting said fifth and sixth asymmetrically conducting devices between said first and second input terminals, means for connecting said first phase of said source of alternating current to said first and second asymmetrically conducting devices, means for connecting said second phase of said source of alternating current to said third and fourth asymmetrically conducting devices, means for connecting said third phase of said source of alternating current to said fifth and sixth asymmetrically conducting devices, means for serially connecting said first input terminal, said first energy storage means, said second energy storage means, said third energy storage means, and said second input terminal, means for serially connecting said first input terminal, said first energy storage means, the anode-cathode electrodes of said first controlled rectifier, said fourth energy storage means, the anode-cathode electrodes of said second controlled rectifier, said fifth energy storage means, said load, the anode-cathode electrodes of said third controlled rectifier, said sixth energy storage means, the anode-cathode electrodes of said fourth controlled rectifier, said third storage means and said second input terminal, means for serially connecting the cathode electrode of said first controlled rectifier, said seventh asymmetrically conducting device, said seventh energy storage means, said eighth energy storage means, and the anode electrode of said fourth controlled rectifier, means for connecting the anode electrode of said fifth controlled rectifier to said seventh and eighth energy storage means, means for connecting the cathode electrode of said fifth controlled rectifier to the cathode electrode of said first controlled rectifier, means for connecting said eighth asymmetrically conducting device between the anode electrode of said fourth controlled rectifier and the cathode electrode of said first controlled rectifier, means for connecting said ninth energy storage means between the cathode electrode of said third controlled rectifier and the anode electrode of said second controlled rectifier, means for serially connecting the cathode electrode of said second controlled rectifier, said ninth asymmetrically conducting device, said tenth energy storage means, said eleventh energy storage means and the anode electrode of said third controlled rectifier, means for connecting the anode electrode of said sixth controlled rectifier to said tenth and eleventh energy storage means, means for connecting the cathode electrode of said sixth controlled rectifier to the cathode electrode of said second controlled rectifier, means for connecting said tenth asymmetrically conducting device between the anode electrode of said third controlled rectifier and the cathode electrode of said second controlled rectifier, means for connecting said twelfth energy storage means across said load, gating means connected to the gate electrodes of each of said first, second, third, and fourth controlled rectifiers to initiate the conductive condition of said controlled rectifiers at fixed equal intervals, said first and fourth controlled rectifiers being conductive at intervals alternate to the intervals that said second and third controlled rectifiers are conductive, means responsive to load voltage variations connected to the gate electrodes of said fifth and sixth controlled rectifiers to control the conductivity of said fifth and sixth controlled rectifiers to extinguish the conductivity of said first and fourth and second and third controlled rectifiers, respectively, to obtain voltage regulation.

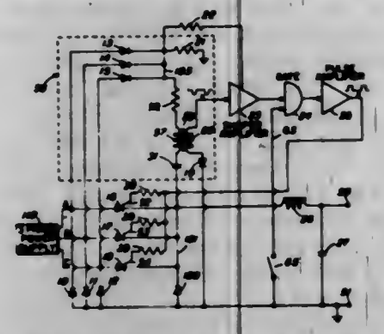
3,273,045
CIRCUIT FOR SYNCHRONIZING FIRING OF DIODES IN DIODE-CONTROLLED RECTIFIER

Albert J. Benson, Huntington Beach, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed July 11, 1962, Ser. No. 208,997
12 Claims. (Cl. 321—43)

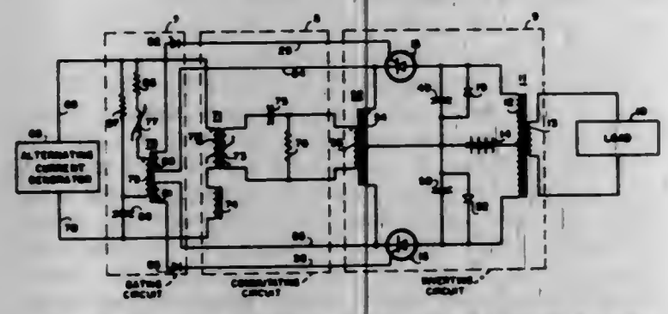
1. Rectifying means for rectifying a three-phase signal source having an output terminal for each phase, comprising three controlled rectifier means each including a

first anode, a first cathode and a control electrode, individual ones of said anodes being connected to an individual one of said three output terminals of said three-phase signal source, said cathodes having a first common terminal, three unilateral impedance means, each having anode means and cathode means, said unilateral impedance anode means being individually connected to individual ones of said three output terminals, said unilateral



impedance cathode means having a second common terminal, pulse forming means responsive to sudden changes in potential between said first and second common terminals to produce corresponding output pulses, means for supplying said output pulses to the said control electrodes of said three controlled rectifiers to fire the particular rectifier whose anode potential is then greater than its cathode potential.

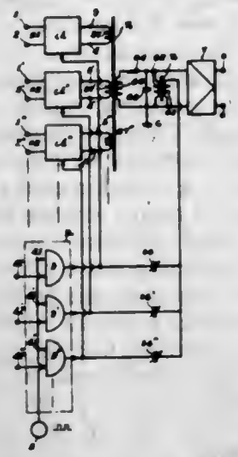
3,273,046
INVERTER CIRCUITS WITH INDEPENDENT COMMUTATION CIRCUITS
Burnice D. Bedford, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 8, 1961, Ser. No. 108,414
14 Claims. (Cl. 321—45)



2. An inverter supplying a reactive load from a direct current source, comprising, a pair of controlled rectifiers connected to conduct current in alternate directions through said load, a source of periodic signals, means responsive to said periodic signals to alternately render said controlled rectifiers conductive, commutating means responsive to said periodic signals operative to render said controlled rectifiers nonconductive a determinable time after conduction is initiated therein, an unidirectional current conducting means connected to provide a low impedance path for current due to electromotive forces generated within said load.

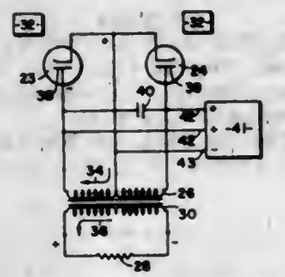
3,273,047
ELECTRICAL SIGNAL SWITCHING DEVICE
Tsuyoshi Takafuji, Musashino-shi, Tokyo, Japan, assignor to Kabushikikaisha Yokogawa Denki Seisakusho (Yokogawa Electric Works Ltd.), Tokyo, Japan, a corporation of Japan
Filed Apr. 2, 1963, Ser. No. 270,062
Claims priority, application Japan, Apr. 10, 1962, 37/14,301
3 Claims. (Cl. 321—48)

1. An electrical signal switching device comprising an output transformer composed of a plurality of primary coils and a secondary coil wound on the same core, a plurality of signal transmission lines respectively terminated with the primary coils of said transformer, a plurality of chopper circuits respectively inserted between said transmisison lines and respective primary coils of said transformer, and a plurality of gate circuits connected



respectively to said chopper circuits for supplying driving signals thereto, said gate circuits being selectively operated by selective command signals so that said chopper circuits are successively operated by said driving signals from said gate circuits, thereby converting respective input signals applied to said chopper circuits into alternating current signals successively.

3,273,048
THERMIONIC DIODE CONVERTER SYSTEM
Rodney G. Hoff, Eugene V. Clark, Jr., and Charles C. Weeks, Canoga Park, Calif., assignors to North American Aviation, Inc.
Filed Sept. 14, 1962, Ser. No. 223,765
16 Claims. (Cl. 322—2)

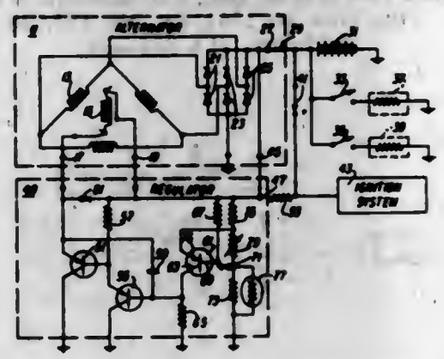


1. Apparatus for directly converting thermal energy to alternating current comprising a pair of thermal energy converter diodes each having a set of emitter and collector electrodes connected in push-pull arrangement adapted to generate D.C. voltages of opposite polarity upon the application of thermal energy, each of said diodes having a first and second mode of operation, load means operatively connected to said push-pull arrangement, and means cooperating with said diodes for alternately switching the mode of operation of said diodes between said first and second modes of operation so that the direct current output of each of said diodes is alternately connected to said load.

3,273,049
VOLTAGE REGULATOR
Charles L. Shano, Morton Grove, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Feb. 14, 1963, Ser. No. 258,484
6 Claims. (Cl. 322—28)

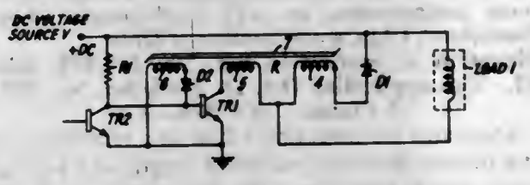
1. A voltage regulator for a vehicular electrical system having an electromechanical source of direct current with

a field winding therein, said source of direct current being connected to a reference potential and providing an output voltage with respect thereto, said regulator including in combination, means for connecting one end of the field winding to the source of direct current, a first transistor having an emitter electrode connected to the other end of the field winding and a collector electrode connected to the reference potential to complete an energizing circuit for the field winding, an emitter loaded second transistor coupled to said first transistor to cut off same when said second transistor is cut off, and a third transistor coupled to said second transistor and conductive to provide cut off bias thereto, said third transistor having base,



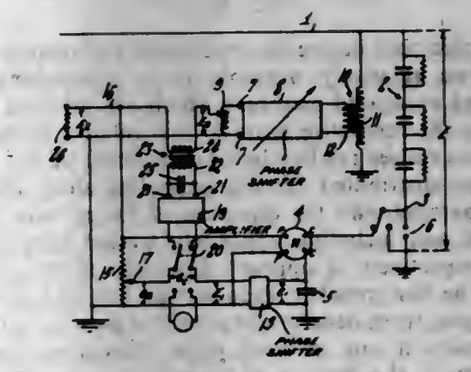
emitter and collector electrodes, a first resistor for connecting said emitter electrode of said third transistor to the source of direct current, a second resistor for connecting said base electrode of said third transistor to the source of direct current, a zener diode connected between said base electrode of said third transistor and the reference potential, said zener diode being poled to conduct in reverse direction from said base electrode to the reference potential, a third resistor coupling said emitter electrode of said third transistor to the reference potential so that when said zener diode is not broken down said first resistor will reverse bias said third transistor, and so that when said zener diode is broken down for reverse conduction said third transistor will be forward biased.

3,273,050
POWER SWITCHING AND REGULATING CIRCUITS
Aloysius W. Pratt, New Carlisle, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed July 22, 1963, Ser. No. 296,772
20 Claims. (Cl. 322—28)



1. A switching circuit for providing power control of a highly inductive load, comprising a source of direct current potential, a saturable reactor having a plurality of windings, said load and a first one of said windings being serially connected across said source, said reactor being saturated in a first direction, a switching amplifier connected in series with said load and said first winding, activating means connected to said source of direct current potential and said switching amplifier and operative to cause said amplifier to conduct and allow current to flow through said load and said serially connected first winding, the current in said first winding being operative to cause said reactor to saturate in a second direction, means operative in response to said reactor saturation in said second direction to cause said amplifier to cease to conduct, a second winding of said reactor and an asymmetric impedance connected in series across said load, said second winding and said impedance being operative when said reactor saturates in said second direction to provide a conductive path for the load current and allow that current to restore said reactor to a saturation state in said first direction, and means for selectively actuating said switching amplifier activating means.

3,273,051
APPARATUS FOR DERIVING LOW VOLTAGES FROM A HIGH VOLTAGE ELECTRICAL SYSTEM
Edmund H. Povey, Medford, and Chester L. Dawes, Winchester, Mass., assignors to Doble Engineering Company, Belmont, Mass., a corporation of Massachusetts
Filed Nov. 19, 1962, Ser. No. 238,590
4 Claims. (Cl. 323—45)



1. Apparatus for establishing and maintaining a low output voltage in a fixed ratio to and in phase with a high voltage comprising a first impedance device of known power characteristics connected to said high voltage, a low voltage source that provides an output voltage of the same frequency as said high voltage and a phase relatively close to that of said high voltage,

first control means coupled to said high voltage including phase shifting and magnitude adjusting means for providing a first reference voltage in fixed magnitude and phase relation to said high voltage,

second control means coupled to said low voltage source including means for varying the magnitude and shifting the phase of said output voltage for providing a second reference voltage that is a fraction of said output voltage,

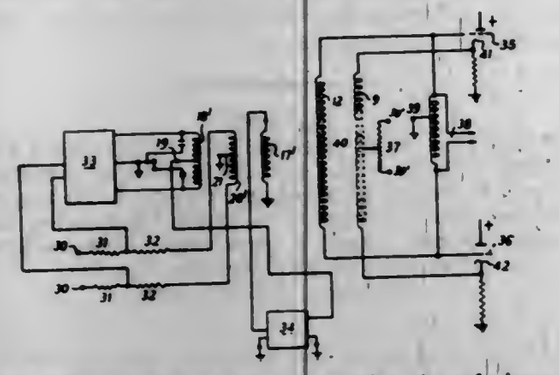
a phase sensitive device coupled to said first impedance device and to said low voltage source for providing an indication of the phase difference between said output voltage and the output of said first impedance device for controlling the adjustment of said first control means to establish said first reference voltage in phase with and in predetermined magnitude relation to said high voltage,

linear amplifying means having an input stage, an output stage, and negative feedback between said input and output stages,

means for applying the difference between said first reference voltage and said second reference voltage to said amplifying means to generate a correction voltage, the power of which is a small fraction of the power of said output voltage,

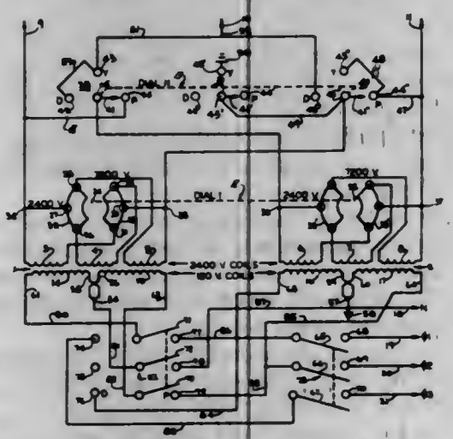
and a transformer connected between the output of said amplifying means and said second control means for inductively combining said correction voltage with said output voltage in an addition operation to provide and maintain a continually compensated low output voltage in a given fixed ratio to and in phase with said high voltage.

3,273,052
INDUCTIVE POSITION INDICATOR SYSTEM
Eric Miles Langham, 14 The Close, Norwich, Norfolk, England
Filed July 5, 1963, Ser. No. 292,904
Claims priority, application Great Britain, Mar. 3, 1958, 6,814/58
16 Claims. (Cl. 323—48)



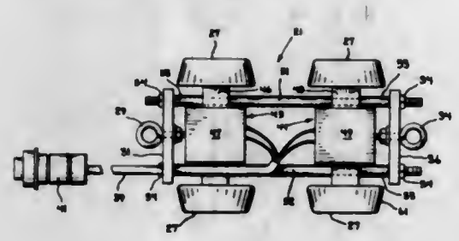
1. An electrical device for measuring the relative position of two relatively movable parts, comprising first and second elongated members which are adapted to be coupled to the respective parts so that relative movement of the parts causes relative linear movement of the members, a first distributed winding extending along the first member parallel with the direction of the relative linear movement and including oppositely wound sections extending respectively in opposed directions from a datum point on the first member, each section having a progressively varying turns density along the first member with the turns density at any selected point therealong linearly proportional to the distance of the selected point from the datum point, and a second distributed winding extending along the second member parallel with the direction of the relative linear movement, the second winding being of smaller extent than that of the first winding, whereby when the first and second members are arranged so that the location of the second winding, along a direction parallel with the direction of relative linear movement, is between the locations of respectively ends of the first winding and an A.C. potential is applied to the second winding an E.M.F. of magnitude linearly proportional to the relative positions of the said members is induced in the first winding.

3,273,053
MULTIPLE CONNECTED TRANSFORMER
Jack W. T. Allen, 312 N. 41st St., Fort Smith, Ark., and Ralph E. Anderson, 905 W. Vandervoort Ave., De Queen, Ark.
Filed Mar. 29, 1963, Ser. No. 269,010
14 Claims. (Cl. 323—48)



14. In a transformer unit,
(a) a plurality of primary windings and a plurality of secondary windings magnetically coupled thereto,
(b) first switch means interconnecting said primary windings to selectively establish a single phase input and a three phase input, and
(c) a second switch means interconnecting said secondary winding to selectively establish a single phase output and a three phase output.

3,273,054
PIPE JOINT LOCATOR COMPRISING MOBILE TRANSFORMER UTILIZING THE PIPE AS LOW RELUCTANCE PATH BETWEEN PRIMARY AND SECONDARY
Robert W. Cook, Decatur, Ind., assignor to C. W. Fuelling, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Nov. 16, 1961, Ser. No. 152,736
4 Claims. (Cl. 324—37)

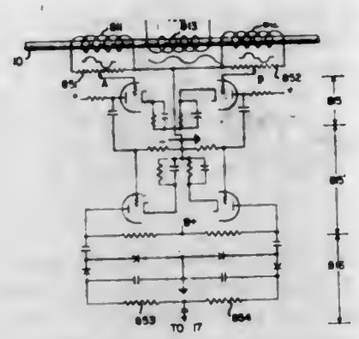


1. A pipeline joint-locating device comprising:
primary and secondary inductors, said primary inductor having a first elongated core of ferromagnetic material and a first coil mounted thereon, and said secondary inductor having a second elongated core of ferromagnetic material and a second coil mounted thereon;
a mobile frame supporting said inductors in mutually inductive spaced relation, the spacing of said inductors being predetermined to provide a high reluctance field between said inductors;
four ferromagnetic wheels mounted to said cores, said wheels being disposesd with their axes of rotation lying in two horizontally spaced planes, said planes being parallel to said cores and said wheels being spaced from each other for stably supporting said device and its frame in a horizontal pipe of ferromagnetic material to provide a low reluctance path between said inductors through the pipe.

3,273,055
CONSTANT IMPEDANCE DUAL CIRCUITS FOR SAMPLE MATERIAL FLAW DETECTION
George F. Quittner, Cleveland Heights, Ohio, assignor, by mesne assignments, to API Instruments Company, Chesterland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 187,875, Apr. 16, 1962. This application Oct. 18, 1965, Ser. No. 502,766
5 Claims. (Cl. 324—37)

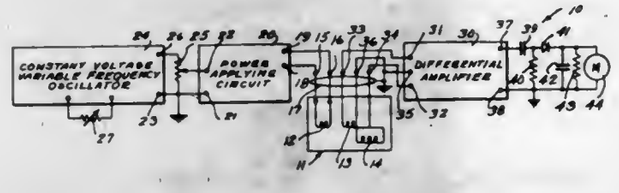
1. Apparatus for detecting a flaw in a relatively moving sample having relatively extended length and a longitudinal axis which coincides with the direction of relative movement, comprising the combination of:
a field generating device having two ends and arranged coaxial with the sample without magnetic material intervening between said field generating device and sample,
a first sensing coil arranged coaxial with the sample without magnetic material intervening between said sensing coil and sample, said sensing coil being located adjacent one of said field generating device ends,
a second sensing coil arranged coaxial with the sample without magnetic material intervening between said second sensing coil and sample, said second sensing coil being located adjacent the other of said field generating device ends,

a first voltage divider having two ends and a tap with the ends thereof connected to be energized by the first sensing coil,
a second voltage divider having two ends and a tap with the ends thereof connected to be energized by the second sensing coil.
first and second controllable electronic devices each having a load circuit and a control circuit and wherein each control circuit has an impedance which is high compared to that of each of said first and second voltage dividers,



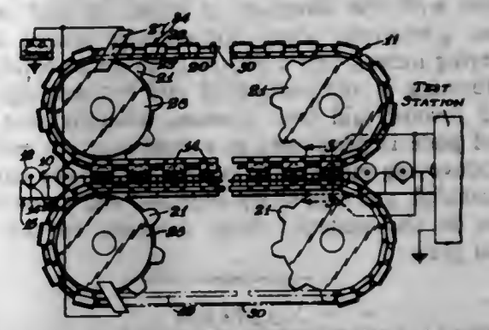
connections connecting the tap and one end of the first voltage divider with the control circuit of the first electronic device and connecting the tap and one end of the second voltage divider with the control circuit of the second electronic device,
voltage supply means,
load resistors, and
connections from said voltage source through said load resistors respectively to the load circuits of each of said first and second electronic devices, to derive useful outputs therefrom.

3,273,056
EDDY CURRENT TESTING SYSTEM IN WHICH THE POWER APPLYING CIRCUIT HAS A LOW OUTPUT IMPEDANCE RELATIVE TO THE EFFECTIVE INPUT IMPEDANCE OF THE TEST COIL UNIT
John J. Flaherty, Elk Grove Village, and John M. Mountz, Niles, Ill., assignors, by mesne assignments, to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 22, 1963, Ser. No. 267,201
7 Claims. (Cl. 324—40)



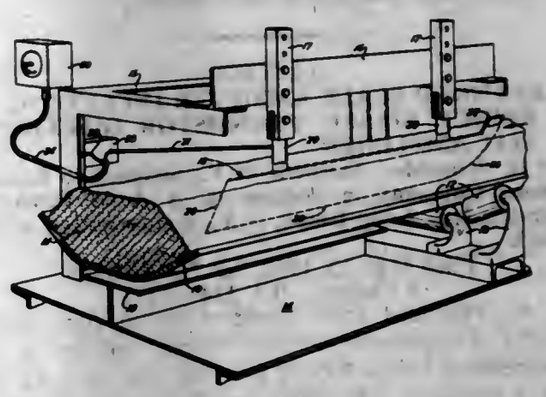
1. In an eddy current testing system for determining the characteristics of a test piece, a test coil unit including a primary winding and a pair of differentially connected secondary windings, signal measuring means connected to said differentially connected secondary windings, a variable frequency oscillator operable over a certain frequency range, and a power applying circuit connected to said oscillator and to said primary winding of said test coil unit, said power applying circuit having a substantially constant voltage output over said frequency range and having a low effective output impedance relative to the effective input impedance of said test coil unit.

3,273,057
APPARATUS FOR CONTINUOUS VOLTAGE APPLICATION IN TESTING
Richard C. Peterson, North Adams, and John M. Seacord, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Dec. 31, 1963, Ser. No. 334,854
3 Claims. (Cl. 324—60)



2. In a method of determining electrical characteristics of an indeterminate plurality of capacitors having axially extending leads, the steps of grasping one lead of a capacitor having axially extending leads between a first pair of moving resilient contacts having a low electrical resistance in relation to the electrical resistance of said capacitor, grasping the other lead of the capacitor between a second pair of moving resilient contacts, moving the capacitors progressively along a line of travel with said leads extending normal to the direction of travel, moving said first and second pairs of grasping contacts in contact with the respective leads along with and in the same direction of travel as said capacitors, applying an electrical potential between the first and the second pairs of contacts, and moving said capacitor and respective grasping contacts together under said applied electrical charge without interruption of application of said electrical charge to fully charge said capacitor with said potential, and subsequently testing the electrical characteristics of said capacitor without interruption of application of said electrical charge.

3,273,058
ELONGATED RELATIVELY THIN METAL CAPACITOR PROBE IN COMBINATION WITH A CONVEYING MEANS FOR DETERMINING THE DIELECTRIC PROPERTIES OF BULK MATERIAL
Samuel B. Prellwitz, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Mar. 23, 1961, Ser. No. 97,857
4 Claims. (Cl. 324—61)



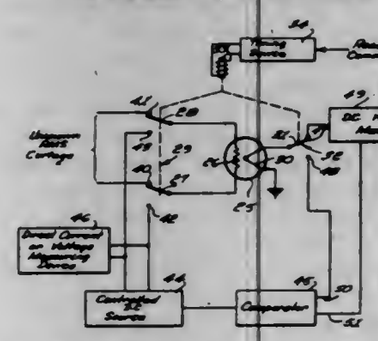
3. In a dielectric apparatus for measuring the moisture content of bulk material subject to contain foreign bodies of the nature of wire or string, which apparatus includes a frame, an electrode plate spaced beneath said frame, a

capacitance bridge circuit to which said plate is connected, and means for conveying a stream of the material through the space between said frame and said plate from a first location to a second location, the combination therewith of a probe electrically connected to said circuit and comprising an elongated relatively thin metal plate, and support means on the upper edge of said second-named plate suspending it from said frame, said second-named plate having flat side faces lying in vertical planes parallel with the direction of travel of said conveying means, a relatively sharp bottom edge spaced over said conveying means, and a relatively sharp smoothly curved end forming a continuation of said bottom edge and directed toward said first location, whereby said second-named plate is positioned to extend into the material on said conveying means and to be substantially covered by the material, and said sharp edge and end prevent foreign bodies in the material from catching on the second-named plate.

3,273,059
THERMAL CONVERTER TYPE R.M.S. METER UTILIZING SIGNAL STORAGE AND COMPARISON

Jack S. Andresen, Pinole, and Alan B. MacLane, Pleasant Hill, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed Oct. 4, 1962, Ser. No. 228,371
16 Claims. (Cl. 324—106)



9. A meter for measuring the root mean square value of an input electrical signal comprising:

a thermal converter element;

storage means for storing an electrical signal;

comparison means responsive to first and second input signals for generating a measured output signal; and

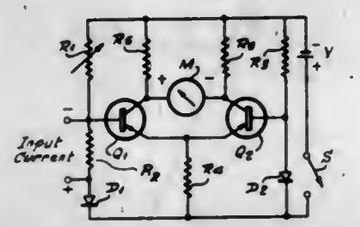
means for selectively connecting first the input of said thermal converter element to said input electrical signal and the output of said thermal converter element to said storage means and then the input of said thermal converter element to said measured output signal and the outputs of said storage means and said thermal converter element to said comparison means as said first and second input signals.

3,273,060
EXPANDED SCALE AMMETER INCLUDING A BRIDGE BIASED TRANSISTOR DIFFERENTIAL AMPLIFIER

Kurt H. Schneider, Maspeth, N.Y., assignor to Expando Meter Company, a division of A & M Instrument Service, Inc., Long Island, N.Y., a corporation of New York

Filed Mar. 13, 1962, Ser. No. 181,225
8 Claims. (Cl. 324—131)

1. An expanded scale ammeter circuit comprising a plurality of impedance elements coupled together to form an impedance bridge having four legs and four leg junctions, a transistor differential amplifier circuit having two signal input terminals and two power input terminals, said amplifier circuit containing a meter, said meter being adapted to produce a meter indication proportional to the magnitude of current therethrough in one direction of current flow but not for the opposite direction of current flow and also proportional to the difference of potential between said two signal input terminals, said two signal input terminals being coupled to two opposing junctions of said bridge circuit, a D.C. voltage source coupled across the other two junctions of said bridge circuit and across the power input terminals of said amplifier circuit, one of said bridge legs comprising a low impedance input shunt having an impedance in the range of approximately 0 to 2 ohms, said low impedance input shunt being connected to current input terminals to receive an input current applied directly thereto and to

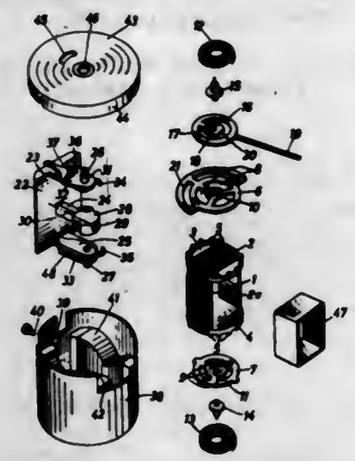


pass all of said latter current therethrough to develop an input signal proportional thereto at one of said two opposing junctions of said bridge circuit, and said impedance bridge being adapted to initially bias said differential amplifier circuit to produce a current flow in said other direction through said meter when said input current is below a predetermined starting level, thereby producing a current flow in said one direction through said meter when said input current is above said predetermined starting current level, whereby said meter deflects in proportion to the magnitude of input current above said predetermined starting current level but not below said predetermined starting current level.

3,273,061
GALVANOMETER COIL ASSEMBLY HAVING A PLASTIC COIL FRAME

Fritz Rümpelein, Munich, and Paul Kopf, Unterhaching, near Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany, a corporation of Germany

Filed Feb. 23, 1962, Ser. No. 175,117
Claims priority, application Germany, Mar. 1, 1961, A 36,855
8 Claims. (Cl. 324—151)



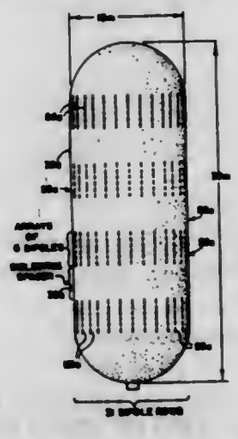
1. A coil assembly for a moving coil type of galvanometer comprising a molded plastic frame having a longitudinal axis and a pair of flat circular ends connected by longitudinal stringers, a plurality of integral plastic lugs on the periphery of the circular ends of said frame projecting away from said ends, said lugs including two pairs of spaced lugs, a coil wound longitudinally about said frame between the pairs of spaced lugs, a

flat circular bearing flange mounted on each of said ends between said lugs with said coil being between each of said ends and its flange, said lugs being bent over the flanges to hold said flanges in place, pivot points secured to each of said flanges located on said longitudinal axis and extending outwardly from said flanges, a pointer unit secured to one of said flanges, and said unit including a circular mounting ring adapted to fit within said lugs mounted against its flange and a pointer extending radially from said mounting ring.

3,273,062
SYSTEM OF PROPAGATING RADIO ENERGY BY MEANS OF ARTIFICIAL SCATTERERS

Herbert P. Raabe, St. Paul, Minn., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed Aug. 30, 1963, Ser. No. 305,683
1 Claim. (Cl. 325—14)



A system of propagating radio energy by means of artificial scatters, which comprises:

a generally cylindical balloon oriented in space with its longitudinal axis pointed toward the earth so that one end thereof is higher than the other;

a network of dipoles supported by said balloon, said dipoles being of a length such as to be substantially tuned to a given frequency, said dipoles being grouped in longitudinally spaced layers with each layer containing a predetermined number of circumferentially spaced rows of dipoles, those of said dipoles farther from the earth in any given layer being longer and those dipoles nearer the earth being shorter than those dipoles located centrally in said given layer;

means for transmitting radio signals from one locus on the earth's surface in the direction of said balloon corresponding generally to said given frequency; and

means for receiving at a different locus on the earth's surface those radio signals scattered from said network.

3,273,063
CARRIER TRANSMISSION TELEGRAPH SYSTEM

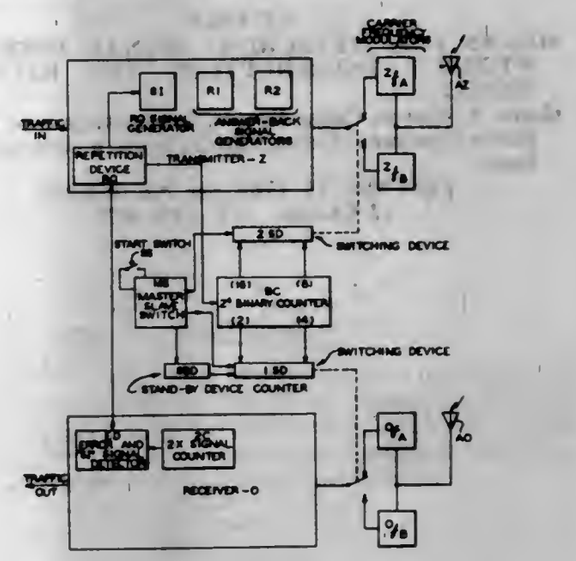
Herman da Silva, Voorburg, and Hendrik Cornelis Anthony van Duuren, Wassenaar, Netherlands, assignors to de Staat Nederlanden, ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed Aug. 23, 1962, Ser. No. 218,894
Claims priority, application Netherlands, Aug. 30, 1961, 268,787/61
23 Claims. (Cl. 325—41)

1. In a telecommunication system in which traffic is sent in separate groups of signals from a master station to a remote slave station, and said slave station sends answer-back signals in the spaces between each group of traffic signals to indicate the next group to be sent depending upon the correct reception of the preceding group by the slave station, said group and space thereafter comprising one signal cycle, the improvement comprising:

(A) transmitting said signals on one of at least two predetermined carrier frequencies,

(B) changing the carrier frequency from one of said signals at its receiving station when one of the two following conditions have been detected:



(1) two successive erroneous signals,

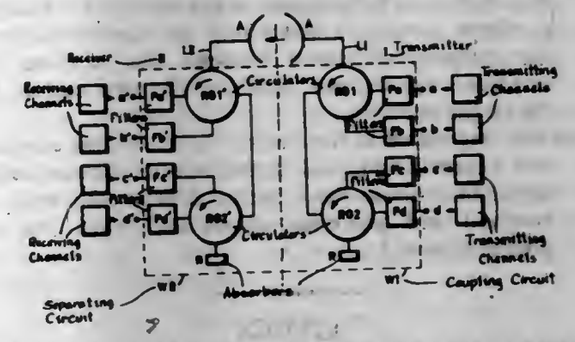
(2) two successive requests for repetition, and

(C) changing the carrier frequency for transmitting said one signal at its transmitting station to said one changed carrier frequency a predetermined number of signal cycles after said one carrier frequency change in said receiving station.

3,273,064
DIRECTIONAL RADIO SYSTEM WITH DISTORTION CORRECTING CIRCUITS

Friedrich Künemund, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Apr. 27, 1962, Ser. No. 190,540
Claims priority, application Germany, Apr. 28, 1961, 73,736
7 Claims. (Cl. 325—55)



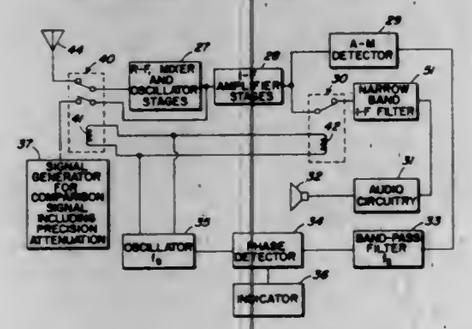
1. A directional radio transmission and cooperating receiving system comprising a number of high-frequency transmission channels, to each of which is allocated an individual transmitter, a combining circuit arrangement operatively connecting the individual transmitters to a common antenna for transmission to a common receiving antenna, a separating circuit arrangement operatively connecting the receiving antenna to individual receivers of like construction, the combining circuit arrangement having different input points, each allocated to a different one of the several channels, which points correspond in circuit positions to a corresponding number of output points from the separating circuit, the input point of each

individual channel to the combining circuit and its output point from the separating circuit being relatively selected so that each channel is subjected to the same number of reflection points between the transmitter and receiver and transist time difference between the signals in different channels are minimized.

3,273,065
MEANS FOR MEASURING SIGNAL INTENSITY WITHOUT INTERRUPTING THE RECEIVED SIGNAL

Harris A. Stover, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Mar. 16, 1964, Ser. No. 352,200
12 Claims. (Cl. 325—67)



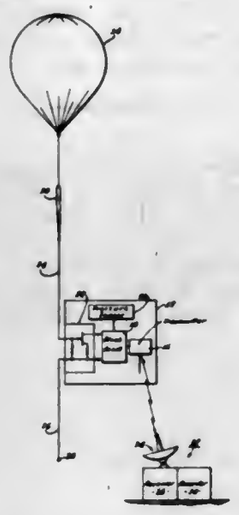
1. Signal intensity measuring means in combination with receiver means which comprises:
R-F stage means,
I-F stage means,
and audio stage means arranged in tandem,
said signal intensity means comprising:
signal generator means for generating a reference signal f_r antenna means for intercepting a received signal of carrier frequency f_c,
first switching means for alternately switching the signal intercepted by said antenna means and the reference signal to said receiver means at a switching frequency f_s,
signal source means for supplying a signal of frequency f_s to energize said first switching means where f_s is at least one and one-half times f_c,
comparison channel means responsive to the intensity difference between the received signal and the reference signal to provide an output signal of frequency f_s whose amplitude and phase are representative of the intensity difference between the received and reference signals and which of the two signals has the larger intensity,
means responsive to the output signal of said comparison channel and said signal source means output signal to indicate the intensity different between the received and reference signals and which has the greater intensity.

3,273,066
APPARATUS FOR DETECTING CHANGES IN THE ATMOSPHERIC ELECTRIC FIELD

Lothar H. Ruhnke, Minneapolis, Minn., assignor to Litton Systems, Inc., Beverly Hills, Calif.

Filed Dec. 20, 1963, Ser. No. 332,186
4 Claims. (Cl. 325—113)

1. An apparatus for sensing electrostatic conditions in the atmosphere comprising:
a radiosonde apparatus including means for modulating the output frequency thereof, said means including an R-C circuit;
a pair of probes positioned in respectively different locations in the atmosphere with respect to said radiosonde;
a field effect transistor having its drain and gate terminals connected across said pair of probes and having its source and drain terminals connected in series with the resistance of said R-C circuit to modulate said radiosonde; and

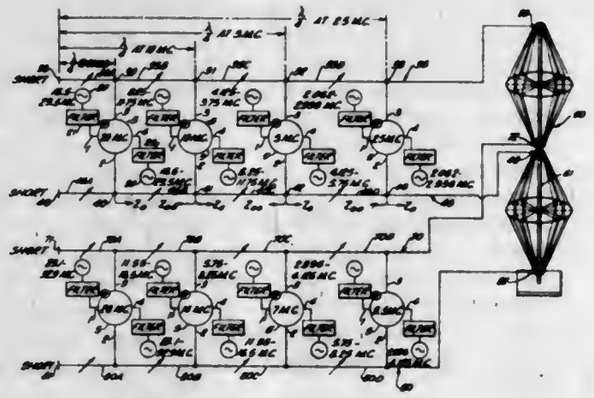


a stabilizing high resistance connected across the two probes and across said gate and drain terminals of said transistor.

3,273,067
HYBRID RING MULTICOUPLER FOR A PLURALITY OF PAIRS OF TRANSMITTERS

Charles E. Wolcott, El Cajon, Calif., assignor to Whittaker Corporation, a corporation of California

Filed Mar. 28, 1963, Ser. No. 268,682
11 Claims. (Cl. 325—129)

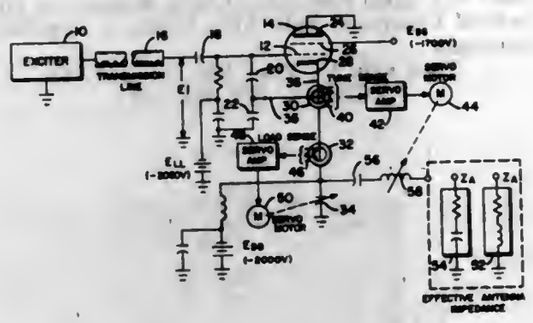


1. In a system of the character described wherein it is desired to couple a plurality of transmitters to a single antenna, a first hybrid ring, a second hybrid ring, a first pair of transmitters each operating at a frequency somewhat different than a first nominal frequency and each being coupled to said first ring, a second pair of transmitters each operating at a frequency different than a second nominal frequency and each being coupled to said second ring, a transmitting antenna, and means coupling each of said rings to said antenna, said coupling means including connections between said first and second rings, said connections having an electrical length substantially equal to one-half of the wavelength of one of said nominal frequencies for isolating said first ring from said second ring.

3,273,068
REMOTE CATHODE FOLLOWER POWER AMPLIFIER WITH AUTOMATIC ADJUSTMENT OF TUNING AND LOADING

Henry E. Bruns, St. Paul, and Edwin M. Stryker, New Brighton, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 1, 1963, Ser. No. 292,032
1 Claim. (Cl. 325—174)



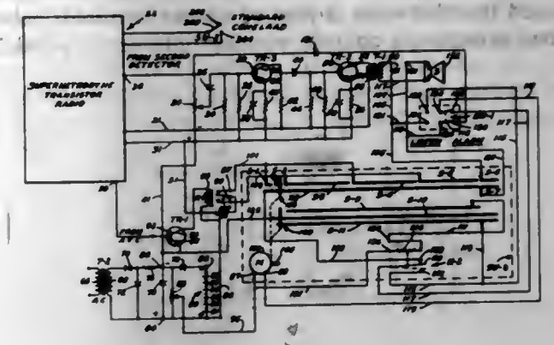
An impedance matching system for coupling the output signal of an RF transmitter to an antenna comprising:
an RF transmitter comprising an exciter for providing an output signal;
a cathode follower power amplifier located remote from said transmitter for amplifying said exciter output signal, said cathode-follower comprising:
an anode coupled to ground,
a control grid coupled to said exciter for receiving said exciter output signal and
a cathode for providing an amplified exciter output signal;
an antenna for transmitting said amplified exciter output signal located in close proximity to said cathode follower;
first variable reactance means coupled to said cathode and to said antenna;
second variable reactance means coupled to said cathode and to ground;
a phase detector coupled to said cathode and said control grid for detecting a phase difference between said exciter output signal and said amplified exciter output signal;
first means coupled to said phase detector and said first variable reactance for automatically varying said first variable reactance to provide maximum antenna power output;
load sensing means coupled to said cathode for sensing the load on said cathode; and
second means coupled to said load sensing means and said second variable reactance for automatically varying said second variable reactance to provide maximum antenna power output.

3,273,069
CONELRAD WARNING DEVICE

Bryant F. Craig, Arlington, Tex., assignor to Amalga Corporation, Dallas, Texas, a corporation of Texas

Filed Nov. 8, 1961, Ser. No. 151,035
8 Claims. (Cl. 325—466)

4. A warning device responsive to a transmitted signal code, comprising; radio receiver means; alert signaling means; decoding means for energizing said alert signaling means, said decoding means being responsive to said signal code; said alert signaling means being rendered operative in response to an output from said receiver means; said decoding means including relay means responsive to said signal code; switch actuating means; driving means for driving said switch actuating means; switch means for energizing said alert signaling means when actuated by said switch actuating means; said relay means sequentially energizing and de-energizing said driving means in accordance with said signal code; said driving means intermittently driving said switch actuating means a predetermined distance toward said switch means when energized by said

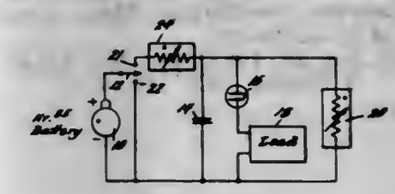


relay means; said switch actuating means actuating said switch means, thereby energizing said alert signaling means; said device further including means for preventing operation of said driving means in response to false actuation of said decoding means.

3,273,070
DELAY TIMER

Laurence R. Alexander, Armonk Village, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Dec. 17, 1962, Ser. No. 245,157
7 Claims. (Cl. 328—84)



4. A time delay circuit comprising a radioactive battery, a charging circuit adapted to be connected to said battery, said charging circuit including a capacitor and a constant current device having a constant current capacity characteristic extending substantially constant over a period exceeding a year connected between said battery and said capacitor, a parallel network connected to said capacitor including a constant current gating device having a decaying current flow characteristic extending over a time period exceeding one month and a parallel branch including voltage responsive threshold means and a serially connected load to pass current to said load when the capacitor is charged with a voltage exceeding the threshold voltage of said threshold means.

3,273,071
MAGNETIC AMPLIFIER

Stuart P. Jackson, Columbus, Ohio, assignor to Solidstate Controls, Inc., a corporation of Ohio

Filed July 11, 1962, Ser. No. 209,063
5 Claims. (Cl. 330—9)

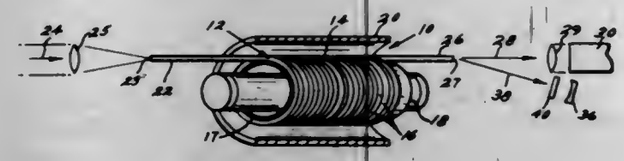
1. A difference amplifier comprising a first and a second loop circuit having a common arm, a gate winding connected in opposition in each of said loop circuits, a source of D.C. reference potential connected between one end of said common arm and one end of said gate winding, a pair of serially connected reset resistors and diodes connecting the other end of said common arm to the other end of said gate windings, a pair of second diodes, a pair

of load resistances, means for serially connecting one of said second diodes and a load resistor to one of said other ends of one of said gate windings means for serially connecting the other of said second diodes and a load resistor to the other end of said other gate winding, the said pair of series connected networks having a junction point connected therebetween, a pair of output terminals across said load resistors, a control winding differentially linking



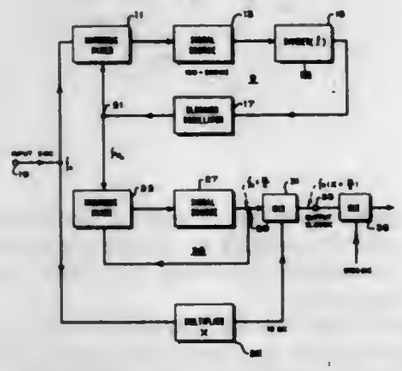
both of said gate windings, a source of direct current control voltage, means for coupling said direct current voltage across said control winding wherein the said voltage is applied through the oppositely poled gate windings and circuitry thereof for producing in the output circuit a difference signal a voltage difference across said output terminals in accordance with the magnitude of current flowing in said control winding.

3,273,072
LASER AMPLIFIER WITH VARIABLE GAIN CONTROL
Charles J. Koester, South Woodstock, Conn., and Noble S. Williams, Starbridge, Mass., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Jan. 18, 1965, Ser. No. 426,030
9 Claims. (Cl. 330—4.3)



1. A laser amplifier construction comprising a thin elongated component formed of a transparent material of a predetermined refractive index and including an active laser ingredient therein, said component having an optically finished flat end surface formed on the entrance end thereof for admitting into said component optical signals to be amplified, said component having a second optically finished flat end surface formed on the opposite exit end thereof for allowing said optical signal after amplification to pass outwardly therethrough, optical pumping means positioned adjacent an extended intermediate portion of said laser component for producing an inversion in population therein and a gain in amplification in optical signals passing therethrough, signal detecting means disposed substantially in axially aligned spaced relation to the exit end of said component so as to receive optical energy and including said amplified signals, and light-collecting and re-directing means disposed in spaced relation to the exit end of said component and in such offset relation to an optical axis extending between said exit end and said detecting means as to intercept off-axis optical energy being emitted from said exit end during said signal amplification, said light-collecting and re-directing means including concavely curved mirror means so angularly positioned relative to said exit end as to direct at least a part of the optical energy received thereby back into said component through said exit surface for effecting a control as to the gain in the optical signal amplification being provided by said component.

3,273,073
FREQUENCY SYNTHESIZER
Leonard S. Cutler, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Feb. 19, 1964, Ser. No. 345,968
3 Claims. (Cl. 331—38)

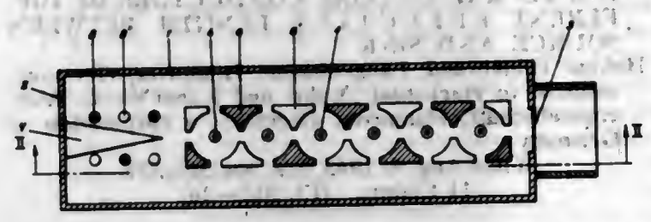


1. Signal apparatus comprising:
first and second harmonic mixers, each having a pair of inputs for producing an output related to the phase relationship between signals applied to the inputs thereof;
a first source of signal of variable frequency having an output which is connected to corresponding inputs of the first and second harmonic mixers for applying said signal of variable frequency thereto, said first source having an input which is connected to receive the output of the first mixer for varying the frequency of signal from said first source to maintain phase lock between a signal applied to the remaining input of the first mixer and a selected integer multiple of the signal of variable frequency from said first source;
a second source of signal of variable frequency having an output which is connected to the remaining input of the second harmonic mixer and having an input which is connected to receive the output of the second harmonic mixer for altering the frequency of signal from said second source to maintain phase lock between the signal therefrom and a selected integer multiple of the signal from said first source; and
means including the output of said second source for providing an output frequency proportional to the frequency of signal applied to said remaining input of the first harmonic mixer.

3,273,074
ELECTRONICALLY TUNABLE MAGNETRON-TYPE MICROWAVE GENERATOR
Walter Sobottka, 79 Blvd. Haussmann, Paris, France
Filed July 20, 1964, Ser. No. 383,673
Claims priority, application France, July 31, 1963, 943,271, Patent 1,372,557
10 Claims. (Cl. 331—50)

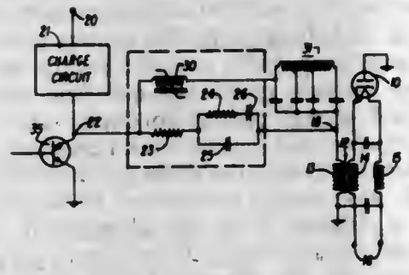
1. A multi-magnetron oscillator arrangement comprising:
an elongated evacuated enclosure having two terminal walls, one of said walls being provided with a window transparent to electromagnetic waves,

absorbing means disposed within the enclosure adjacent the other terminal wall,



and a number of magnetron means, coupled to each other and disposed within the enclosure between said absorbing means and said window.

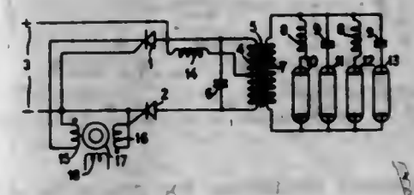
3,273,075
PULSE GENERATOR SYSTEM PROVIDING PULSE SUPERIMPOSED ON PEDESTAL
Howard L. Kennedy, Phoenix, Ariz., assignor to Motorola Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 19, 1963, Ser. No. 303,003
5 Claims. (Cl. 331—87)



2. A circuit for providing an exciting pulse for a magnetron oscillator including in combination, voltage supply means havng a first terminal for providing a charging potential, output means for applying a pulse to the magnetron oscillator connected between a second terminal and a reference potential, a first circuit including a pulse forming network and a saturable reactor connected in series between said first and second terminals, said first circuit providing current flow from said voltage supply means through said saturable reactor to charge said pulse forming network and store energy therein, a second circuit including capacitor means and resistor means connected between said first and second terminals, said second circuit providing current flow from said voltage supply means through said resistor means to charge said capacitor means, and switch means for connecting said first terminal to the reference potential whereby said capacitor means discharges through said resistor means and said output means to provide a voltage thereacross forming a pulse pedestal, and said pulse forming network discharges through said saturable rector and said output means, said saturable reactor initially presenting high impedance to discharge of said pulse forming network with such impedance decreasing as discharge current flows to provide a delayed high power voltage pulse across said output means superimposed on said pulse pedestal.

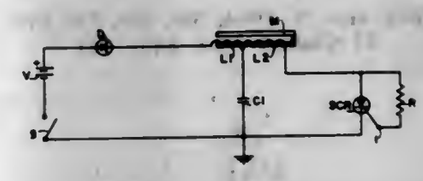
3,273,076
SELF-GENERATING INVERTER WITH CONTROLLED SEMI-CONDUCTOR RECTIFIERS
Johannes Jacobus Wilting, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,493
Claims priority, application Netherlands, Jan. 23, 1961 260,387
9 Claims. (Cl. 331—113)

1. A self-generating inverter comprising: a controlled semi-conductor rectifier having p-n layers, main current circuit electrodes and a control electrode, said rectifier producing in circuitry connected to said control electrode a current pulse as a consequence of the flow of free charge carriers in said rectifier upon the interruption of current flow through said main current circuit electrodes, said main circuit electrodes being direct current conductively connected to respective terminals of a direct current supply source, means for periodically interrupting current flow to said main current circuit electrodes comprising a series oscillatory circuit including a first portion having an inductive reactance and a second portion having a



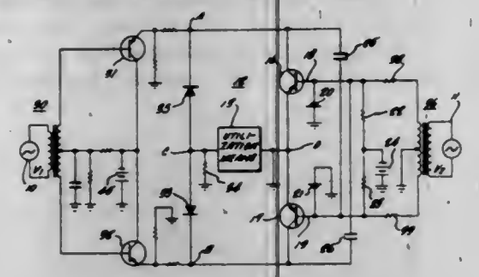
capacitive reactance, said series oscillatory circuit being connected between one of the main circuit electrodes of said rectifier and the corresponding terminal of said direct current supply source, a load coupled to said oscillatory circuit, and means for periodically rendering the controlled rectifier conductive, said means comprising a control circuit connected between a main circuit electrode and the control electrode of said controlled rectifier, polarity-reversing time delay means connected to said control circuit and means for applying said current pulse to said delay means.

3,273,077
SCR SINE WAVE GENERATOR
Hans R. Camenzind, Lexington, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,542
7 Claims. (Cl. 331—116)



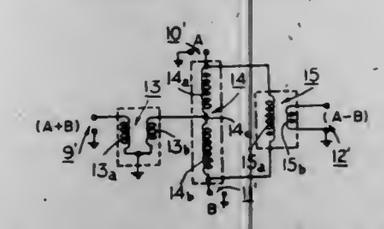
1. An alternating current sine wave generator activated by a direct current source having positive and negative terminals, said generator comprising: a diode having a cathode and an anode; an autotransformer having start and finish terminals with a tap approximately centrally located thereon and a capacitance means attached thereto; a silicon controlled rectifier having an anode, a cathode and a gate; said positive terminal of said direct current source connected to said anode of said diode; said cathode of said diode connected to said start terminal of said autotransformer; said finish terminal of said autotransformer connected to said anode of said silicon controlled rectifier; a capacitor, said capacitor connected between said tap on said autotransformer and a common point between said negative terminal of said direct current source and said cathode of said silicon controlled rectifier; and means for triggering said silicon controlled rectifier at predetermined times so as to provide a sine wave output across said capacitance means at a frequency determined by the characteristics of said capacitance means, said capacitor, and said autotransformer, said triggering means connected to said gate of said silicon controlled rectifier.

3,273,078
DOUBLE SIDEBAND SUPPRESSED CARRIER MODULATOR
Thomas Mollinga, Sierra Madre, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 1, 1963, Ser. No. 291,853
6 Claims. (Cl. 332—43)



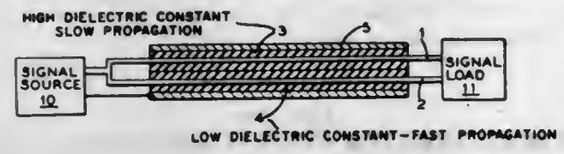
5. A balanced modulator for producing double side band suppressed carrier modulated signals comprising a first source of modulating signals, means for splitting the modulating signals into two signals having substantially equal amplitude and opposite phase relationships, means for utilizing the output signal of the balanced modulator, a diode corresponding to each of the two modulating signals, means for applying each signal in parallel through its corresponding diode to the utilization means, means for forward biasing both diodes, a source of carrier signals, means responsive to the carrier signal source for alternately shunting to ground reference for substantially equal amounts of time each of the two modulating signals so as to back bias the corresponding diode.

3,273,079
HYBRID CIRCUIT HAVING SEPARATE COUPLING TRANSFORMERS AT THE SUM PORT AND DIFFERENCE PORT AND HAVING TUNING MEANS TO IMPROVE OPERATION
John P. Curtis, Reading, Mass., assignor to Adams-Russell Co., Inc., Waltham, Mass., a corporation of Massachusetts
Filed Mar. 5, 1964, Ser. No. 349,583
11 Claims. (Cl. 333—11)



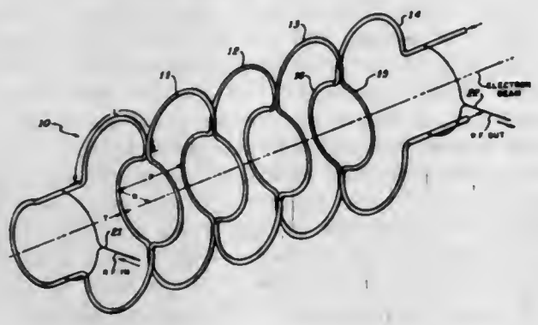
1. Broadband electrical hybrid apparatus comprising a pair of coil sections each having a different connection port at one end thereof, balance-to-unbalance transformer means having winding means connected with said coil sections at the sites of said connection ports and inductively coupling signals between a third connection port and said coil sections, transformer means including winding means connected with the other ends of said coil sections to conduct net currents flowing through said coil sections and thereby inductively coupling signals between a fourth connection port and said coil sections, and means tuning the effective shunt and series inductances of said coil sections and transformer means in bandpass filter relationship, whereby the power of signals independently applied to said fourth port and to said third port is divided equally between said different ports, and whereby signals applied to said different ports produce summation signals at said fourth port and difference signals at said third port.

3,273,080
HIGH-FREQUENCY TRANSMISSION LINE HAVING PLURAL COAXIAL CONDUCTORS OF DIFFERENT EFFECTIVE LENGTH BETWEEN SOURCE AND SINK
Helmut Hildebrand, Langenhagen, Hannover, Germany, assignor to Hackethal Draht- und Kabel-Werke Aktiengesellschaft, Hannover, Germany, a corporation of Germany
Filed Aug. 6, 1963, Ser. No. 300,337
11 Claims. (Cl. 333—26)



1. A symmetrical high-frequency electromagnetic wave energy transmission line comprising two spaced central conductors, a common outer conductor enclosing said central conductors and spaced therefrom, a first dielectric medium surrounding said first central conductor and occupying the space between said first central conductor and said outer conductor, and a second dielectric medium different from the first mentioned dielectric medium surrounding said second central conductor and occupying the space between said second central conductor and said outer conductor whereby the propagation velocity of electromagnetic wave energy transmitted by said first central conductor is different from the propagation velocity of electromagnetic wave energy transmitted by said second central conductor, the physical length of the transmission line being such that the electrical length of said first and second central conductors differ by an integral number of half operating wavelengths.

3,273,081
FLUID-COOLED SLOW-WAVE STRUCTURE HAVING ALTERNATING LONGITUDINAL AND TRANSVERSE EXTENDING PORTIONS
Irving Itzkan, New York, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed May 31, 1962, Ser. No. 198,997
5 Claims. (Cl. 333—31)



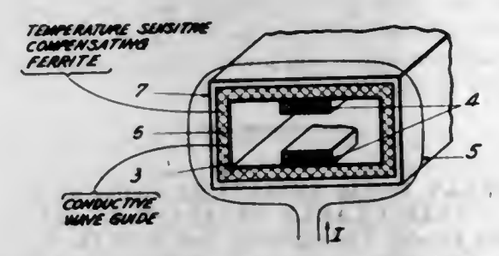
1. A fluid-cooled slow wave propagating structure comprised of

a plurality *n* of tubular conduits of conductive material symmetrically disposed about an axis and each lying substantially entirely within a respective angular sector that extends parallel to said axis, *n* being an integer,

each of said conduits being comprised of alternately disposed longitudinally-extending and transversely-extending portions that are arranged to form a serpentine-like configuration throughout the length of its respective angular sector,

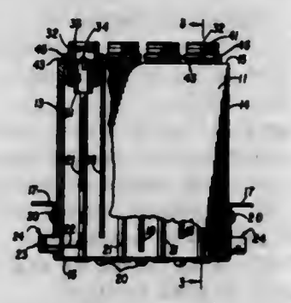
each transversely-extending portion traversing a given angular extent about said axis and the longitudinally-extending portions at the two ends of a transverse portion lying in respective axially-extending planes that intersect along said axis at an oblique angle, the *n* conduits being disposed about said axis with the transverse portions located in successive transverse planes in a manner to form successive closed configurations about said axis.

3,273,082
TEMPERATURE COMPENSATED RECIPROCAL FERRITE PHASE SHIFTER
Bernard Pierre Chiron, Kremlin-Bicetre, France, assignor to Lignes Telegraphiques et Telephoniques, Paris, France, a joint-stock company
Filed Dec. 11, 1963, Ser. No. 329,921
Claims priority, application France, Dec. 12, 1962, 918,341
6 Claims. (Cl. 333—31)



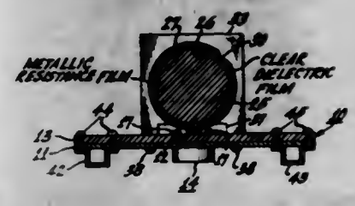
1. Variable phase shifting phase shifter for ultra-high-frequency electromagnetic waves, including a portion of waveguide within which is located at least one element of ferromagnetic material for ultra-high-frequencies and having gyromagnetic properties such as ferrite, a coil wound around said waveguide through which is adapted to pass a D.C. current which can be made to vary in intensity to vary the phase shift of the phase shifter, and at least one tubular ferrite core, called "field compensation" ferrite core, of large variation in permeability with variation in temperature located between said waveguide and said coil wound around said waveguide, the dimensions of said ferrite core or cores and the type of ferrite being selected such that the variation in phase shift with variation in temperature is approximately compensated over a large temperature range.

3,273,083
FREQUENCY RESPONSIVE DEVICE
Gus C. Rose, Wood Dale, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 14, 1964, Ser. No. 359,582
3 Claims. (Cl. 333—73)



3. A resonant cavity device responsive to applied signals of predetermined frequencies, including in combination, a hollow die-cast integral conducting housing having a plurality of walls forming a plurality of cavities therein and being open at one end, a removable end plate for covering said one end of said housing, said walls of said housing between adjacent cavities being formed to leave a space between said walls and said end plate for intercavity coupling, a plurality of conductive members each extending into a respective one of said cavities and fixed at one end thereof to said end plate, and adjustable capacitor means supported in said housing and being adjusted to vary the resonant frequency of each of said cavities, and each of said conductive members being securely supported at one end by said end plate and at the other end by said capacitor means thereby minimizing variations in the resonant frequency of said cavities caused by vibration of said housing.

3,273,084
VARIABLE ATTENUATOR
Joseph F. McSparran, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,683
4 Claims. (Cl. 333—81)



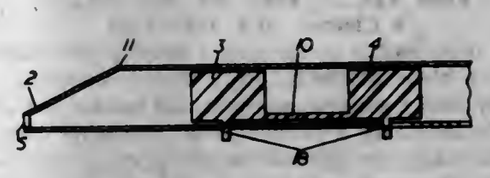
1. A variable attenuator for transmission lines of the type including a first conductor, a second conductor, and means disposing said conductors in close dielectrically spaced parallel relation using a flat board of dielectric material comprising, in combination,

a solid cylinder constructed of dielectric material,

a thin, flexible sheet of dielectric material having a resistive film thereon wrapped around and bonded to said cylinder with said resistive film between said cylinder and said sheet,

support posts mounted on said flat board of dielectric material, means for mounting said cylinder to said support posts for close but free rotative movement over said first conductor with the longitudinal axis of said cylinder being parallel to and equally spaced from said first conductor.

3,273,085
TUNABLE CAVITY RESONATOR
Eric Albert Ash, Eric Andreas Frederik Sell, Thomas Meirion Jackson, and Louis Arthur Vinton, all of London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1964, Ser. No. 361,829
Claims priority, application Great Britain, May 13, 1963, 18,875/63
5 Claims. (Cl. 333—83)

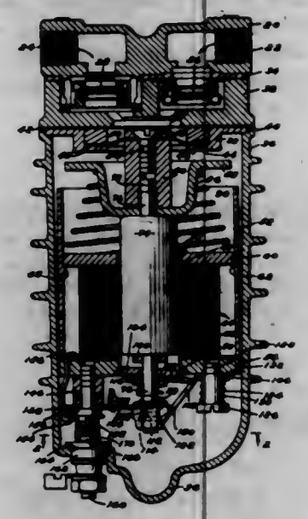


1. A tunable cavity resonator comprising a length of waveguide and a pair of tuning slugs of dielectric material movable longitudinally within the waveguide, one of said tuning slugs providing a wall for the cavity, said slugs being spaced by a dielectric member joining them and means to adjust the positions of the slugs.

3,273,086
ELECTROMAGNETIC SWITCHING MECHANISM IN AN ELECTRIC PUMP

William C. Eberline and Alton J. O'Connor, Cass City, Mich., assignors to Walbro Corporation, Cass City, Mich., a corporation of Michigan

Filed Jan. 8, 1964, Ser. No. 336,575
6 Claims. (Cl. 335—87)



1. In a solenoid actuated pump wherein a flexible diaphragm is actuated in a valve pumping chamber, that improvement in an automatic switching mechanism which comprises:

(a) an actuating solenoid,

(b) opposed contact points for opening and closing a circuit to energize and de-energize said actuating solenoid,

(c) first means mounting one of said points in space adjacent the operating axis of said solenoid,

(d) second means movably mounting the other of said points wherein it may move to and from contact with said first point,

(e) an armature movable axially in said solenoid from a retracted to an extended position when the solenoid is energized having a portion positioned to contact and shift said second means in the extended position, and

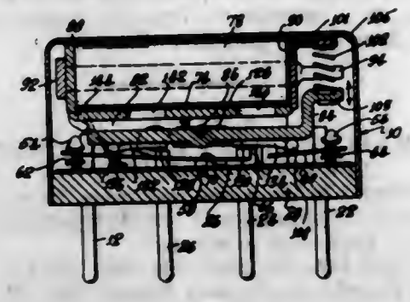
(f) means connecting said armature and said second means resiliently to effect motions of said points toward each other to contact position and means magnetically associating said second means and said armature to bias said points toward each other prior to contact of said armature with said second means to cause positive separation of said points.

3,273,087
MINIATURIZED RELAY

Vandel Curtis Huckabee, Portland, Oreg., assignor to Electronic Specialty Co., Los Angeles, Calif., a corporation of California

Filed Apr. 22, 1963, Ser. No. 274,671
8 Claims. (Cl. 335—128)

1. A relay switch comprising a header and contact assembly, a blade assembly, an armature assembly, a coil assembly, and a suitable housing, said header and contact assembly including a header plate, connector pins, said pins protruding through said header plate in insulated relationship therewith, one end of said pins protruding below said header plate for connection with external circuitry, the other end of said pins extending above said header plate serving as contacts for upper and lower blade contacts, contacts through which coils may be energized, and for connection of switching blades, coils connected to selected pins, said blade assembly including switching blades connected to selected pins, said coil assembly including a frame having downwardly extending legs connected to said header plate and upwardly turned ends for positioning coils therebetween, coils positioned between said ends, a core inserted through said coils, the ends of said core magnetizing said armature upon energization of said coils, said armature assembly consisting of a cross-

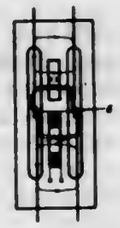


bar for contact with said ends of said core, a body portion pivotally mounted on said frame, and insulated actuators on each side of the pivotal point of said body portion and mounted to the undersurface thereof for movement of said blades between upper and lower blade contacts upon energization of said coil.

3,273,088
RELAY WITH ARMATURE CONTACTS, PARTICULARLY REED CONTACTS

Wolfgang Grobe, Ludwigsburg, and Emil Mattes, Bietigheim, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 12, 1965, Ser. No. 447,347
Claims priority, application Germany, May 8, 1964, St 22,096
7 Claims. (Cl. 335—153)



1. A relay comprising:

two pairs of reed contacts encapsulated in tubes, spaced parallel to each other and surrounded by air spaces,

said air spaces forming distinguishable regions of space located respectively between said pairs of reed contacts, around said pairs of reed contacts, and extending from the ends of said pairs of reed contacts,

a permanent magnet positioned in a selected one of said regions of space near said pairs of reed contacts to form a first series magnetic linkage through said pairs of reed contacts,

an electromagnet including a coil having independent terminals positioned near said permanent magnet and within said selected region of space to enable the formation of a second series magnetic linkage through said pairs of reed contacts,

said reed contacts being biased by said first series magnetic linkage to an open position,

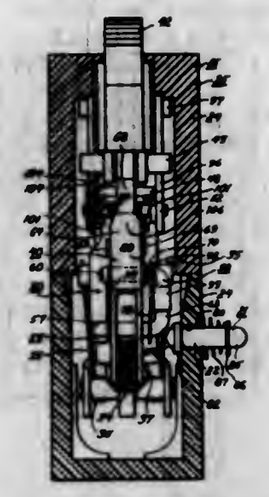
said reed contacts closing in the presence of said second series magnetic linkage induced by a current of a first polarity in said electromagnet, and

said reed contacts remaining open in the presence of said second series magnetic linkage induced by a current of polarity opposite to said first polarity in said electromagnet.

3,273,089
CIRCUIT BREAKER LINKAGE AUXILIARY TRIPPING ARRANGEMENT

Henry P. Franz, Trenton, N.J., assignor to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey

Filed Apr. 29, 1963, Ser. No. 276,358
5 Claims. (Cl. 335—166)

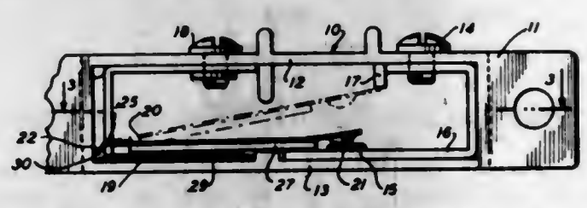


1. In combination, a circuit breaker comprising a case, an automatically resettable linkage for controlling a pair of separable contacts enclosed by said case, said circuit breaker further comprising an electromagnetic means for controlling said linkage, said linkage including a latch releaseable by said electromagnetic means, a spring for automatically resetting said linkage, a trip rod carried by said case, a second spring biasing said trip rod out of engagement with said latch, and said trip rod being movable into engagement with said latch against the bias of said second spring for moving said latch to a position allowing said linkage to collapse and said contacts to open.

3,273,090
MAGNETICALLY OPERATED SWITCH

Jack Malin, Beechhurst, N.Y., assignor, by mesne assignments, to Alarm Device Mfg. Co., a division of Pittsburgh Railway Co., Inc., Carle Place, N.Y., a corporation of Pennsylvania

Filed June 8, 1965, Ser. No. 462,247
4 Claims. (Cl. 335—205)

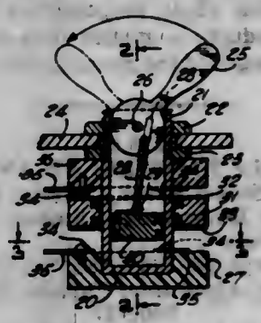


1. In an electrical switch for connection with an electric circuit to be controlled thereby according to the proximity of the switch to a magnet, a casing for the switch having internal spaced upper and lower walls, a first terminal post on the upper wall of the casing for connection with the electric circuit, a first contact member on the lower wall of said casing and within the casing, connected to said first terminal post, a second terminal post on the casing for connection with an electric circuit, a conductor plate connected to the second terminal and extending to the lower wall, an elongated spring plate member, means pivotally connecting one end of said spring plate member to the lower end of said conductor plate and electrically connecting said end of the spring plate member to said second terminal post, a second contact member on said spring plate member, an armature secured to said spring plate member, biasing means engaging the casing and engaging the armature urging the second contact member carrying portion of the spring plate member for movement relative to the first contact member until the attraction of the armature to a magnet overcomes the said biasing means.

3,273,091
HERMETICALLY-SEALED MANUALLY-ACTUATED MAGNETIC SNAP SWITCH

Nathaniel B. Wales, Jr., New York, N.Y., assignor to The Metrodynamics Corporation, Red Bank, N.J., a corporation of New Jersey

Filed Aug. 19, 1965, Ser. No. 480,891
2 Claims. (Cl. 335—207)



1. A switch comprising:

a cup of non-magnetic material;

a first permanent magnet moveably located within and guided by the wall of said cup;

a second moveable permanent magnet surrounding and guided in motion by the wall of said cup;

said first and second magnets being each magnetized parallel to the axis of said cup and in the same direction of polarization;

a bell crank pivoted on an axis transverse to said cup-axis;

link means connecting one of said permanent magnets and said bell crank;

displacement means comprising said bell crank and link to move one of said magnets through a first translational actuating displacement parallel to the axis of said cup;

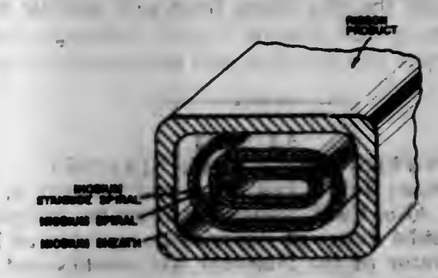
stop means to limit the motion of the other of said magnets to a second translational actuated displacement less in magnitude than and positioned to be within the first translational displacement; and

said stop means comprising switch contacts for at least one end of said second displacement.

3,273,092
ELONGATED SUPERCONDUCTIVE PRODUCT

Milo P. Hullihen, Concord, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 10, 1963, Ser. No. 315,152
5 Claims. (Cl. 335—216)



1. An elongated superconductive wire product for carrying current along the axial length thereof and useful for such purposes as electromagnetic coils, the elongated product itself consisting essentially of:

(a) an annular metal sheath with a hollow core;

(b) a layer of high-field-superconductive alloy material within the core in the form of a first spiral, the said first spiral layer running through the portion of the current carrying length of the elongated product where current is to be carried superconductively;

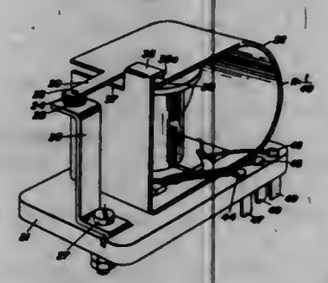
(c) a layer of a second material in the core in the form of a second spiral, the turns of the first spiral being interleaved with turns of the second spiral so that turns of the first spiral are separated from each other, the second material being selected from materials which are non-superconducting under conditions of high field; the said elongated wire product being constructed and arranged so that the lateral length of superconductive alloy within the core, as seen in a cross-section plane perpendicular to the axis of the wire product, is greater than the cross section peripheral length of the metal sheath.

3,273,093

AUTOMOBILE LAMP RELAY AND SYSTEM

Rodney Hayden, Stoney Creek, Ontario, Canada, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Sept. 24, 1965, Ser. No. 490,008
Claims priority, application Canada, Sept. 20, 1965, 940,927
7 Claims. (Cl. 335—203)



1. A direct current electrical relay for automobile lamp circuits and the like and comprising: a spring metal obturator formed of a continuous length of spring strip low carbon ferrous material of high hardness having a free arcuate portion extending through substantially 180° of arc between a free arm portion extending tangentially therefrom and forming a part thereof and a base portion forming a part thereof and terminating in a bracket arm extending to said arm portion and providing a flange part adapted to restrain said arm from outward springing under the inherent spring tension of said strip material; an insulate base; an electro-magnetic coil; means mounting said base portion on said insulate base with said coil in assembly therewith within the bracket arm arcuate portion, arm, and base portion of said obturator and spacing said coil a predetermined distance from said free arm portion; an electrical contact on the free end of said arm portion; and a second electrical contact including support means therefor rising from said insulate base in normal open spaced relation thereto defining a normally open contact gap less than said predetermined spacing.

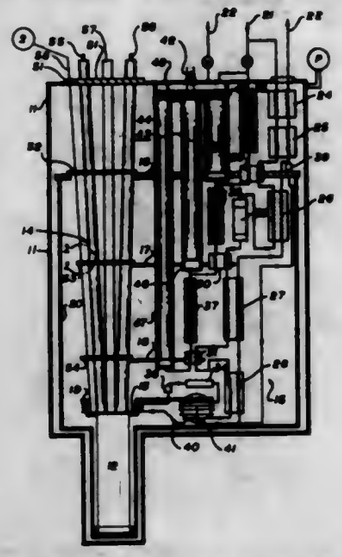
3,273,094

SUPERCONDUCTING MAGNET

William Pinkney Jones, Los Altos, and William A. Peterson, Palo Alto, Calif., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed May 28, 1964, Ser. No. 370,989
5 Claims. (Cl. 335—216)

1. A magnet assembly including: a vacuum envelope; a mounting flange supported within said envelope; means for cooling said flange; and magnet coils mounted from said flange, said coils including a plurality of turns of superconducting wire establishing a magnetic field within said vacuum envelope when cooled to a temperature below the critical temperature of said wire and conducting electrical current, said wire covered with a layer of electrically and thermally conductive metal operative to con-



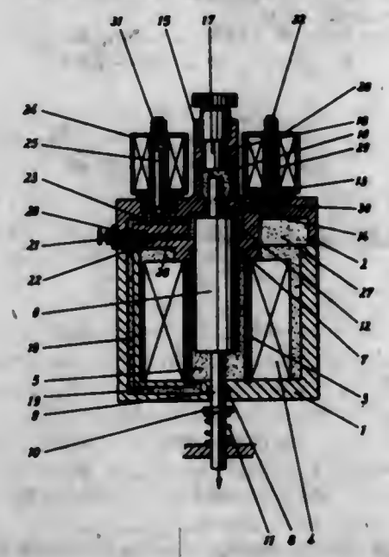
duction cool said superconducting wire and to simulate the magnetic properties of said magnet when current is passed through said metal at temperatures above said critical temperature and a layer of electrically, substantially non-conductive material covering said layer of conductive metal and electrically insulating adjacent turns of said magnet.

3,273,095

ELECTROMAGNETIC CONTROL MECHANISM, ESPECIALLY FOR REGULATING VALVES

Heinz Rossenbeck, Stuttgart-Bad Cannstatt, Germany, assignor to Concordia Maschinen- und Elektrizitats G.m.b.H., Stuttgart-O, Germany

Filed Nov. 3, 1964, Ser. No. 408,568
Claims priority, application Germany, Nov. 8, 1963, C 31,348
9 Claims. (Cl. 335—239)



1. An electromagnetic control mechanism, primarily for operating and controlling a regulating valve, comprising a closed housing, field coil in said housing, an armature in said housing, a return spring acting upon said armature, said armature being adapted to move in its axial direction against the action of said return spring when said field coil is energized, connecting means on one end of said armature for connecting the same to an

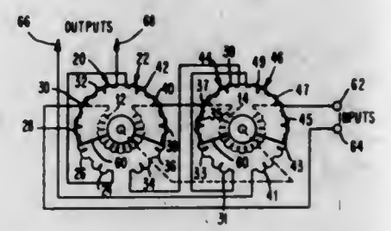
element to be moved and controlled thereby, a pair of fluid-displacement chambers within said housing at the opposite ends of said armature, a control line connecting said chambers with each other, a throttle valve within said control line, means for manually adjusting said throttle valve from the outside of said housing for varying the rate of flow of a pressure fluid through said control line, a by-pass line also connecting said chambers with each other and bypassing said throttle valve; said chambers, said control line, and said by-pass line adapted to be filled with said pressure fluid, and an electromagnetic control valve for opening and closing said by-pass line, said armature projecting with its opposite ends into said chambers and being adapted when moved in one direction to move with one end more deeply into a first of said chambers and with its other end farther out of the second chamber so as to convey said pressure fluid from said first chamber to said second chamber through said control line and said throttle valve when said control valve is closed and also through said by-pass line and said control valve when said control valve is open.

3,273,096

ROTARY DIFFERENTIAL TRANSFORMER

Joseph Lipshutz, Philadelphia, Pa., assignor to Schaevitz Engineering, a corporation of New Jersey

Filed Mar. 25, 1964, Ser. No. 354,549
3 Claims. (Cl. 336—30)



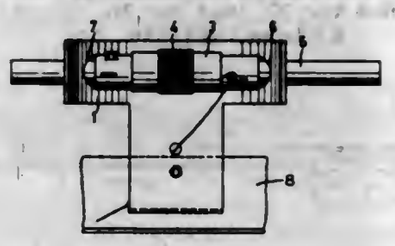
1. A rotary differential transformer comprising a primary winding disposed about a common axis, a pair of secondary windings connected in bucking relationship with respect to each other, each of said secondary windings including a plurality of coils each having an axis substantially parallel to said common axis, and a movable element providing magnetic coupling between said primary and secondary windings to produce an output signal corresponding to the movement of said movable element.

3,273,097

ADJUSTABLE ANTENNA ROD AND SUPPORT ASSEMBLY

Johannes A. Koster, Scarborough, Ontario, Canada, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 21, 1964, Ser. No. 369,238
Claims priority, application Canada, July 3, 1963, 879,245
6 Claims. (Cl. 336—65)



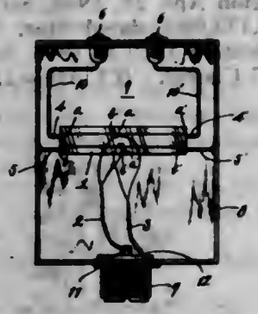
1. A clamping assembly for an adjustable inductor having an axially movable elongated core and coil means encircling said core; said assembly comprising a sheet of resilient insulating material having a pair of spaced apart openings therein for receiving said elongated core in a bowed position of said sheet and securing said core against longitudinal movement with respect to said sheet, said sheet enclosing said coil means within the bowed portion thereof between said openings, the space between said openings being selected for simultaneously contacting both axial ends of said coil means to secure it against longitudinal movement on said core.

3,273,098

HIGH FREQUENCY MATCHING TRANSFORMER

Goichi Saito, 15-2, 3-chome, Toshima, Kita-ku, Tokyo, Japan

Filed June 1, 1964, Ser. No. 371,640
2 Claims. (Cl. 336—69)



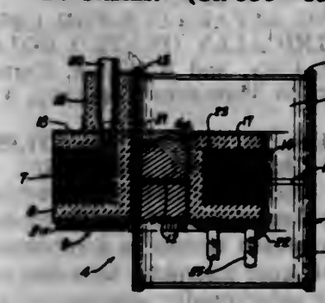
1. A high frequency matching transformer comprising
a bobbin,
a pair of bifilar coils on said bobbin,
one of said bifilar coils extending from the center to a first end of said bobbin,
the other of said bifilar coils extending from the center to a second end of said bobbin,
a metal box having a pair of terminals at one end of said box,
a two-terminal connector at the other end of said box,
first and second conductive leads connecting one coil of each bifilar pair of said metal box,
third and fourth conductive leads connecting the other coil of each bifilar pair to conductive arms, extending parallel to the walls of said box and connecting said terminals on said box, and
two extension wires extending from each coil of said bifilar pair at the center of said bobbin to different terminals of said two-terminal connector.

3,273,099

TRANSFORMER

Floyd M. Minks, Chester, N.H., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware

Filed June 15, 1964, Ser. No. 374,925
14 Claims. (Cl. 336—83)



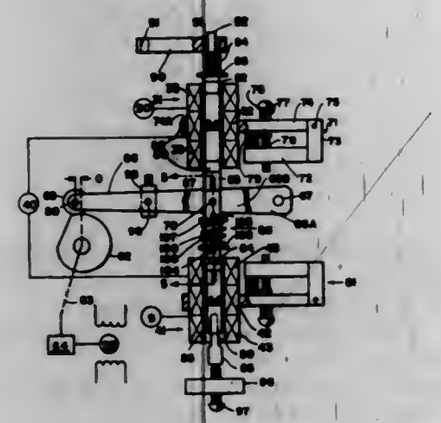
1. A transformer structure comprising,
a magnetic core unit having a winding opening and an adjacent magnetic winding portion,

a secondary winding insulator of a high voltage insulating material encircling the core unit winding portion at the opening and having a secondary winding groove within the insulator and opening generally outwardly of the winding portion,

a secondary winding within the groove and having a high voltage terminal at the base of the groove, and

a primary winding means encircling a portion of the core unit immediately adjacent at least one side of the winding insulator.

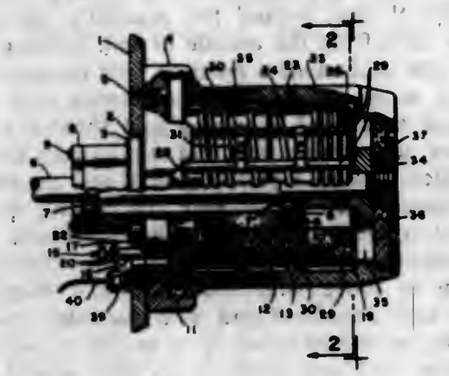
3,273,100
PLURAL MOVABLE CORE TRANSFORMER ASSEMBLY WITH ESCAPEMENT MEANS
Otto Muller-Girard, Rochester, N.Y., assignor to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Original application Apr. 29, 1960, Ser. No. 25,637, now Patent No. 3,173,003, dated Mar. 9, 1965. Divided and this application Dec. 8, 1964, Ser. No. 423,409
7 Claims. (Cl. 336—131)



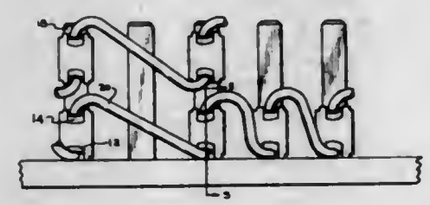
1. A core assembly for a variable transformer arrangement including a pair of transformers, each having a movable core and a plurality of windings inductively coupled together to a degree depending on the position of said core relative thereto, said core assembly comprising a pair of cores coupled together for simultaneous movement of both in consequence of motion applied to either core, and escapement means mechanically coupling said cores, said escapement means including a resilient member and a pair of elements, one on each core, said resilient member being supported between said elements and so arranged as to oppose movement of one of said elements toward the other of said elements, whereby motion of one of said elements is transmitted via said resilient member to the other of said cores.

3,273,101
HEATING APPARATUS FOR USE IN ELECTRICALLY HEATED ROLLS
Sam W. Burdge, Cary, and Rollins S. Carter, Durham, N.C., assignors to Monsanto Company, a corporation of Delaware
Filed Dec. 18, 1963, Ser. No. 331,555
5 Claims. (Cl. 338—316)

2. A heating apparatus for use in electrically heated rolls comprising a spool-shaped core assembly, electrical resistance heater means wound in a substantially helical fashion about said core assembly, fastening means operative to maintain substantially equi-spaced points along said heater means fixed relative to said core assembly, said fastening means comprising pairs of superposed electrical insulating strips spaced circumferentially about said core assembly and extending axially thereof, said heater means extending between the member strips of each of said pairs, means to clamp said strips to said core assembly, whereby thermal expansion of said heater element is effectively and uniformly segmented and caused to be uniformly distributed about the entire circumference of said core assembly.

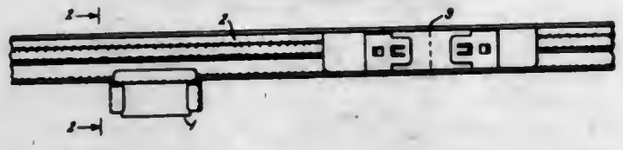


3,273,102
SERIES ELECTRICAL CONNECTIONS
Robert Franklin Cobaugh, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 17, 1965, Ser. No. 480,442
2 Claims. (Cl. 339—18)



1. A series electrical hook-up among a plurality of terminal posts, said posts being straight and having a uniform cross-section throughout their lengths, said hook-up comprising a conductor having a clip-type electrical connection with each of said posts, the clips of said electrical connections having a web portion disposed against one side of the associated terminal post and having outwardly deformed portions at each end of the web, said conductor, in each electrical connection, extending through the outwardly deformed portion which is adjacent to the base of the post, thence axially along a surface of the post and between said surface and said web, and emerging from confined relationship through the outwardly deformed portion of said web which is remote from the base of the post.

3,273,103
POLARIZING MEANS FOR BUSWAY PLUG
Eric A. Ericson, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Filed Apr. 27, 1964, Ser. No. 362,693
8 Claims. (Cl. 339—22)



1. A branch plug-in device for attachment to a busway comprising a housing having longitudinally extending base flanges spaced apart to provide an open slot therebetween

and having spaced apart longitudinally extending busbars within said housing accessible through said slot, one of the longitudinal edges of one of said flanges and the corresponding longitudinal edge of the other of said flanges being unequally distant from the longitudinal central plane of said housing, said plug-in device comprising:

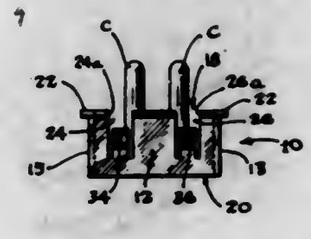
(a) an insulating body provided with a pair of stab contacts for engagement with a preselected pair of said bus bars and having a base for mounting said contacts,

(b) a polarizing plate having upturned opposite lateral flanges disposed on said base with its lateral flanges in position for engaging the outside longitudinal edges of said base flanges of said housing,

(c) means for selectively securing said polarizing plate in either a first or a second position on said base, and

(d) indicating means in cooperative relationship with said securing means for providing an indication of the position in which said polarizing plate is secured.

3,273,104
ELECTRICAL CONNECTOR UNIT WITH SNAP-IN FASTENER MEANS
Stanley J. Krol, Chicago, Ill., assignor to United-Carr, Incorporated
Filed July 21, 1964, Ser. No. 384,116
1 Claim. (Cl. 339—128)



An electrical connector unit comprising an insulating body member having opposed spaced side walls and opposed spaced end walls, said side walls and end walls defining a hollow wall portion having upper and lower open faces, said side walls adjacent said upper open face having opposed slots therein terminating at points spaced from said lower open face, an outwardly extending flange integral with said side walls and said end walls adjacent said open face, flexible ear elements integrally joined to said side walls and disposed for flexible movement within said slots, the outermost end of each of said ears being spaced from the plane of said flange thereby to engage the opposite surface of a supporting panel from said flange, said body member having a contact supporting element bridging the space between said end walls and integral with said end walls at points intermediate said upper and lower faces, said contact supporting element being spaced from said ear elements to permit flexure of said ear elements into and out of said hollow wall portion, and metal contact members carried by said contact supporting element.

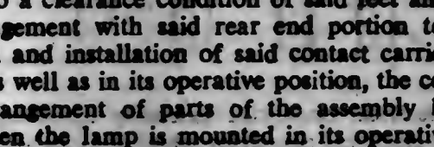
3,273,105
PLUG-JACK CONNECTOR
Stephen L. Klassen, Saddle Brook, N.J., assignor to Thermo Electric Co., Inc., Saddle Brook, N.J., a corporation of New Jersey
Filed May 5, 1964, Ser. No. 364,948
7 Claims. (Cl. 339—176)

1. A connector jack comprising,

(a) a housing of insulating material formed of two matching housing sections removably secured together,

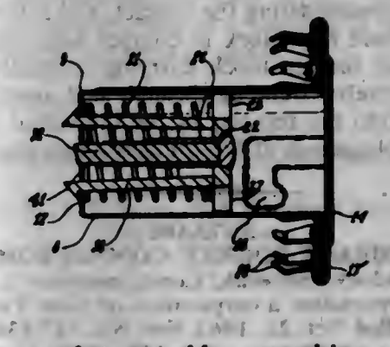
(b) means forming a pair of spaced openings in one end of the housing,

(c) a pair of flat contact strips carried by one housing section and longitudinally aligned with said openings, and



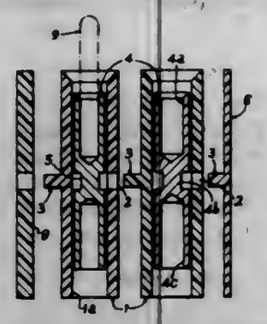
(d) a pair of leaf springs carried by the other housing section and longitudinally aligned with the said contact strips, each leaf spring being bent transversely to form axially-spaced convex portions, which convex portions are spaced a predetermined distance from an associated one of said contact strips.

3,273,106
BAYONET-TYPE LAMP SOCKET ASSEMBLY
Herbert Roy Martin, Glen Waverley, Victoria, Australia, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 26, 1963, Ser. No. 326,271
Claims priority, application Australia, Apr. 19, 1963, 29,682/63
8 Claims. (Cl. 339—188)



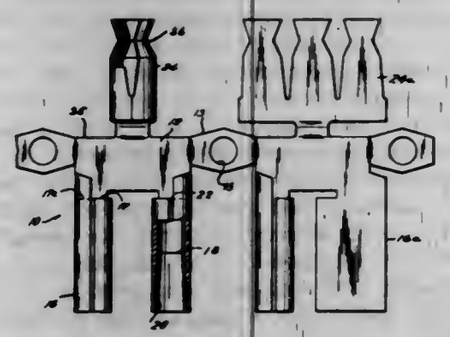
1. A lamp socket assembly, comprising a housing, a compression spring means within said housing, a contact carrier member which incorporates rearwardly extending retaining means specifically including at least a pair of axially diverging resilient legs having at their free ends outward feet each of which in its operative position engages the rear end portion of said housing under the action of said compression spring means which acts to urge said contact carrier member towards the open front end of the housing, said retaining means including said feet and legs being displaceable from its operative position into a clearance condition of said feet and legs free of engagement with said rear end portion to facilitate removal and installation of said contact carrier member from, as well as in its operative position, the construction and arrangement of parts of the assembly being such that when the lamp is mounted in its operative position the contact carrier member is moved rearward bodily against the reaction of said compression spring means thus disengaging said retaining means including both said feet and legs clearly spaced away from said rear end portion, whereas when the lamp is removed, the contact carrier member is moved forward bodily under the action of said compression spring means an axial distance positively limited by automatic re-engagement of said retaining means centralized axially by said legs again with said feet against said rear end portion, thus hindering the possibility of said contact carrier member being unintentionally ejected bodily through the open front end of the housing when the lamp is removed, said feet and legs both engaging said rear end portion during the condition of lamp removal.

3,273,107
PLUG-AND-SOCKET CONNECTORS
Walter Chandler, Theydon Bois, Essex, England, assignor to Plessey (U.K.) Limited, Ilford, England, a British company
Filed Jan. 16, 1964, Ser. No. 338,258
Claims priority, application Great Britain, Jan. 25, 1963, 3,199/63
5 Claims. (Cl. 339—198)



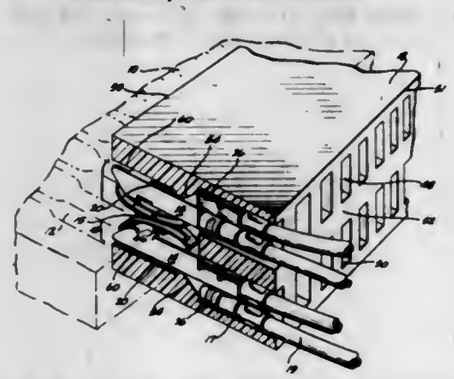
1. A plug-in type electric connector member, comprising a first block made of insulating material and having a plurality of parallel through bores and a side face parallel to said bores, connector contacts respectively accommodated in said bores for at least part of the length of each contact, the block having apertures respectively extending into said bores from said side face, and each contact having a surface recess facing such aperture associated with the bore accommodating the contact, and a further block, secured to said first block in contact with said side face thereof, said further block carrying mutually insulated pegs respectively extending through said apertures of the first block into the recesses of the individual contacts to restrain displacement of the contacts along the said bores.

3,273,108
IMPACT SOCKET CONNECTOR
Ernest Radocy, Norwalk, Conn., assignor to Burndy Corporation, a corporation of New York
Filed Oct. 21, 1963, Ser. No. 317,536
2 Claims. (Cl. 339—210)



1. An electrical connector assembly including a tapered socket electrical connector which may be simply and economically formed by arcuately bending and rolling into tubular shape a unitary piece of substantially flat sheet metal having a portion of uniformly varying thickness, comprising:
a housing member of dielectric material including two parts abutting at a common interface;
a socket contact member including at a forward end thereof a tubular body portion of rolled sheet stock characterized by a pair of longitudinally extending substantially opposed edges;
said body portion having a cylindrical outer surface of substantially uniform diameter, wherein the thickness of said sheet stock varies uniformly from a given value proximate one end of said tubular body to a lesser thickness at the other end thereof, thereby defining a conically tapered interior surface within said body portion for receiving a taper pin connector in force fit relationship;
said socket contact member further including at a rearward end thereof an electrical connection portion;
one part of said housing member having a cylindrical bore therethrough for receiving said tubular body portion therein, and the remaining part of said housing member having an opening therein for receiving said electrical connection portion;
said socket contact member still further including a shoulder thereon substantially intermediate the forward and rearward ends thereof for engaging said housing member to transmit thereto rearwardly directed forces applied to said tubular body portion during insertion of a taper pin contact therein.

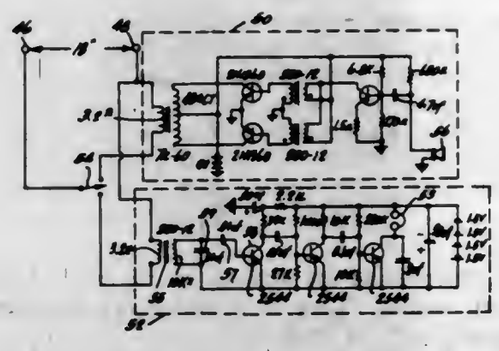
3,273,109
ELECTRICAL CONNECTOR
Norbert L. Moulin, Placentia, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 20, 1964, Ser. No. 338,805
5 Claims. (Cl. 339—217)



1. An electrical connector comprising:
a connector block including at least one transverse chamber having first, second and third portions and a divider separating said first and second portions, said first and second portions each having a retaining shoulder and said third portion having a pair of spring locking grooves; and
a pair of juxtaposed single piece contact members each positioned in a differing one of said first and second portions each of said members including a pair of elongated side walls each having a lanced section, a pair of electrical conductor pin receiving and locking springs, one of which engages said shoulder, a locking spring engaging one of said grooves and a double leaf contact spring extending into said third portion and having a curved extremity engaging said lanced sections whereby said pair of contact members defines a passage adapted to receive a flat conductor and to contact opposite surfaces thereof.

3,273,110
UNDERWATER COMMUNICATION SYSTEM
Harold Richard Monroe, Santa Ana, and Vadim N. Erdman, Los Angeles, Calif., assignors to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Mar. 2, 1964, Ser. No. 348,614
3 Claims. (Cl. 340—4)

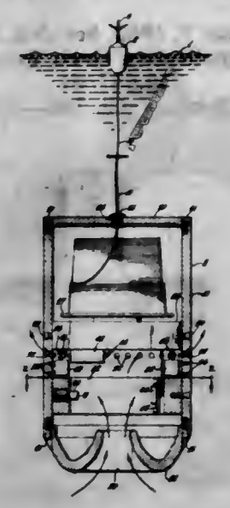
1. A communication system for a station disposed in a conductive medium, said system including a receiver circuit comprising:
an impedance matching input transformer having an input winding and an output winding, said input transformer having an impedance ratio of more than 1 to 1000 and having said input winding adapted to be connected to a pair of spaced probes disposed in the conductive medium;
a first capacitor connected across said output winding, for dissipating signals of higher than audio frequency whereby broadcast signals and the like are generally dissipated;
a first transistor amplifier stage including a first transistor connected in a first common emitter amplifying circuit having a base-emitter input and a collector-emitter output, said first transistor having a floating, non-direct current biased base whereby input signals to said base of said first transistor are not loaded down by a bias resistor;
a second capacitor connected in series between one side of said output winding and said base of said first transistor, the other side of said output winding being connected to said emitter of said first transistor whereby the high impedance side of said input transformer is connected to said base-emitter input of



said first amplifier stage and low frequency hum signals and the like are blocked from said base of said first transistor;
second and third transistor amplifier stages including second and third transistors connected in respective second and third common emitter amplifying circuits which are connected in series, said second amplifier stage being connected to said collector-emitter output of said first amplifier stage, and said second and their transistors having respective direct current biased bases;
sound reproducing means for converting electrical signals received by said pair of spaced probes into audio sounds; and
means connecting said third amplifier stage to said sound reproducing means for driving the same,
whereby a highly efficient and effective interference-free received circuit for communication within a conductive medium is obtained.

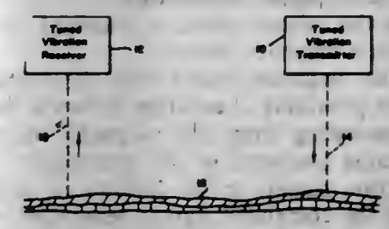
3,273,111
APPARATUS FOR MEASURING THE VELOCITY OF ACOUSTICAL WAVES
William C. Parenti, Philadelphia, Pa., assignor to American Bosch Arma Corporation, Philadelphia, Pa., a corporation of New York
Filed Aug. 3, 1964, Ser. No. 386,890
9 Claims. (Cl. 340—5)

1. Apparatus for measuring the velocity of acoustical waves in a fluid medium, comprising:
an electro-acoustical transducer mechanically coupled to a fluid medium transmissive of acoustical energy;
pulse generating means for generating a series of time-spaced electrical pulses and for applying them to said transducer to launch a series of correspondingly time-spaced acoustical pulses into said fluid medium;
a convex reflector of acoustical energy;
spacer means mounting said reflector in said fluid medium at a predetermined distance from said transducer and in the path of said acoustical pulses so as to reflect only a limited portion of the energy of each of said acoustical pulses from the convex surface of said reflector back to said transducer after the electrical pulse producing it is ended, thereby to produce



an electrical control pulse from said transducer upon reception of each of said pulses of reflected energy by said transducer; and
circuit means responsive to each of said control pulses for controlling the time of generation of the next succeeding electrical pulse of said series.

3,273,112
TUNED SEISMIC WAVE COMMUNICATION SYSTEM
Leland S. Hobson, 508 Wickham Road, Manhattan, Kans.
Filed Dec. 3, 1962, Ser. No. 241,704
1 Claim. (Cl. 340—15)



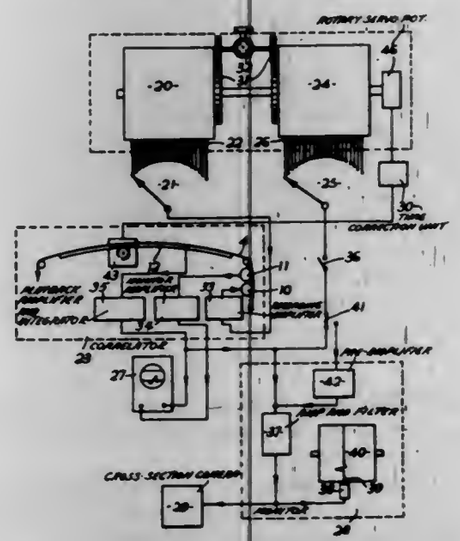
A communications system utilizing the earth's crust as the transmitting medium comprising in combination
(a) a generator for producing physical vibrations at a predetermined frequency selected to be capable of transmission through said transmitting medium;
(b) coupling means connecting said predetermined frequency vibration generator to said transmitting medium at a first position;
(c) a receiver tuned to be sympathetic to said predetermined frequency vibrations, said receiver comprising a reed member mounted and tuned to be resonant to said predetermined frequency, a coil mounted to move with said reed, means providing a magnetic field at said coil, said magnetic field having sufficient strength to produce an alternating current signal in said coil in response to vibration of said reed, and means for detecting the alternating current in said coil; and
(d) coupling means located at a second position remote from said first position connecting said receiver to said transmitting medium for transmitting said predetermined frequency vibrations from said transmitting medium to said receiver.

3,273,113

METHODS OF AND APPARATUS FOR MEASURING THE TRAVEL TIMES OF VIBRATIONS IN THE EARTH'S CRUST

William E. Lerwill, Keston, and Nigel A. Anstey, Chelsfield, England, assignors, by mesne assignments, to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed May 7, 1962, Ser. No. 192,669
Claims priority, application Great Britain, May 8, 1961, 16,687/61
6 Claims. (Cl. 340—15.5)



1. A method of measuring the travel times of a seismic signal, comprising the steps of:

transmitting a seismic signal of known frequency content through the earth from a first point to a second point;

providing a magnetic head transducer having a plurality of conducting elements arranged in a configuration which can be equated to the frequency of the seismic signal transmitted;

recording the seismic signal as received at the second point on a magnetic record;

passing the magnetic record over the transducer in a relation providing a coaction between the magnetic flux emanating from the magnetic record and the conducting elements of the transducer to generate correlation signals in the transducer; and

recording the correlated signals generated in the transducer on a time basis relative to the time of transmission of the seismic signal from the first point, whereby the travel times of the seismic signal may be measured.

3,273,114

ERGODIC SIGNAL PICKING

Lee P. Stephenson and Walter W. Klein, Fullerton, Calif., assignors to Chevron Research Company, a corporation of Delaware

Filed Aug. 2, 1963, Ser. No. 299,601
12 Claims. (Cl. 340—15.5)

1. The method of processing a seismic record, composed of a plurality of seismic traces, to designate a part of the record that contains a meaningful signal, as distinguished from unmeaningful noise, comprising the steps of:

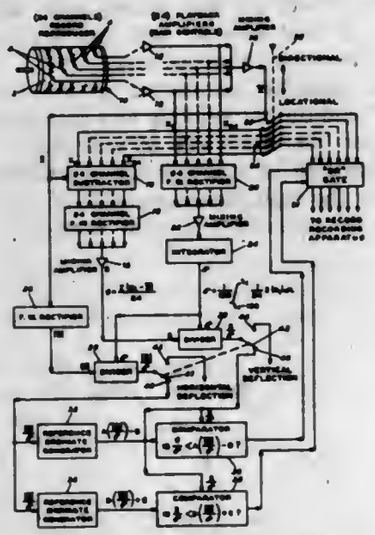
(a) measuring a time-average, across-trace-average, absolute amplitude characteristic of at least a portion of the record in the neighborhood of a particular instantaneous part of the record under examination,

(b) measuring at said particular instantaneous part of the record an across-trace-average amplitude,

(c) measuring at the same said particular instantaneous part of the record an across-trace-average absolute amplitude deviation characteristic,

(d) producing a first signal representing the ratio of said across-trace-average amplitude to said time-average, across-trace-average, absolute amplitude characteristic,

(e) producing a second signal representing the ratio of said across-trace-average absolute amplitude deviation characteristic to said time-average, across-trace-average, absolute amplitude characteristic,



(f) determining the position of the pair of said first and second ratios in a probability distribution of many pairs of such ratios,

(g) and designating said particular instantaneous part of the record as containing a meaningful signal if the position of said paired ratios lies in a region of said probability distribution of many paired ratios in which it would not probably lie due to chance alone.

3,273,115

TRAFFIC LIGHT SYSTEM

Paul Lafon, Le Perreux, France, assignor to Societe Anonyme dite: Compagnie des Freins et Signaux Westinghouse, Paris, France

Filed Feb. 21, 1966, Ser. No. 528,907
Claims priority, application France, Feb. 23, 1965, 6,607
6 Claims. (Cl. 340—41)



1. A road traffic light system comprising a translucent strip, means for mounting said strip in a carriageway at right angles thereto, a plurality of coloured lights, means for mounting said lights beneath said strip, and automatically operable control means for energising said lights cyclically in dependance upon traffic requirements.

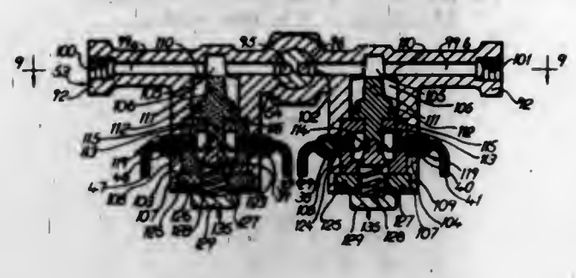
3,273,116

SAFETY SYSTEM FOR HYDRAULIC BRAKES

Alejandro Martínez Quirós and Ramón Martorell Adzeries, Barcelona, Spain; said Quirós assignor to Anthonio J. Gijon and Alejandro Martínez Fornaguera

Filed Mar. 11, 1963, Ser. No. 264,198
3 Claims. (Cl. 340—60)

1. In an automobile having a plurality of brake shoes, cylinders for said brake shoes, separate conduits supplying a brake fluid to said cylinders for actuating said brake shoes, and a pedal-operated pump for transmitting the brake fluid to said cylinders, a safety device comprising a hollow body having a central portion and tubular portions connected with said central portion, said central portion being directly connected with said pump, each tubular portion having an end connected to a separate conduit for transmitting brake fluid from said pump to that conduit, a separate cylindrical projection integral and communicating with each tubular portion, separate pistons movable within said projections and contacted by the brake fluid on only one face thereof, and separate springs engaging said pistons, each of said springs being adapted to press the piston engaged thereby into the tubular portion and automatically interrupt communication between said pump and one of said conduits when there is drop in pressure of the brake fluid therein.

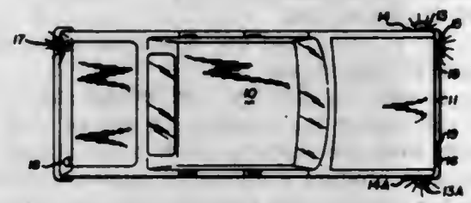


3,273,117

SIGNAL LIGHTS FOR MOTOR VEHICLES

Stanley Martauz, 81 Camvet Drive, Campbell, Ohio

Filed Sept. 30, 1963, Ser. No. 312,398
3 Claims. (Cl. 340—81)



1. A signal light system for a motor vehicle and including spaced red and green signal lights, each respectively on the left and right sides of the rear of the vehicle, and spaced red and green signal lights on the left and right of the front of the vehicle and a pair of spaced red and green signal lights on each side of the vehicle adjacent the front thereof, an energizing circuit for selectively illuminating either said red signal lights or said green signal lights to respectively indicate a turn to the left or to the right, said red and green signal lights being individually positioned and horizontally spaced.

3,273,118

ACCIDENT ILLUMINATING DEVICE

Charles E. Hendershot, Nashville, Ind., assignor, by direct and mesne assignments, to Nitehawk, Inc., Zionsville, Ind., a corporation of Indiana

Filed Dec. 10, 1962, Ser. No. 243,324
5 Claims. (Cl. 340—89)

1. An accident illuminating device for use with an automobile, said device comprising a red transparent dome; a base; a first light socketed therein and projecting upwardly therefrom; a second light socketed therein and projecting downwardly therefrom; said dome being secured to said base, projecting upwardly therefrom and enclosing said first light; a frusto-conical reflector secured about said base and opening downwardly; a transparent cylinder threaded into said base and projecting downwardly therefrom and from within said reflector, said cylinder enclosing said second light; a flexible elongated tube having one end received about the lower end of said cylinder; means clamping said tube in airtight relation to said cylinder; said cylinder having a closed bottom which closes off the upper end of said tube, and means clamping off the lower end of said tube.

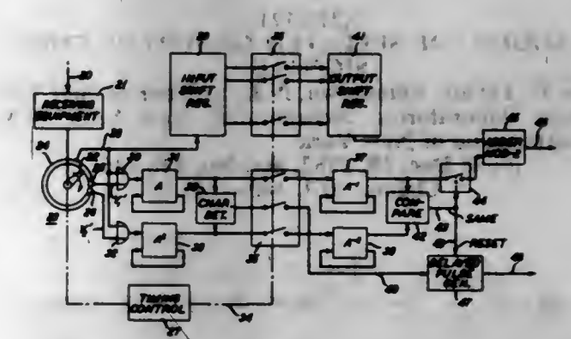


3,273,119

DIGITAL ERROR CORRECTING SYSTEMS

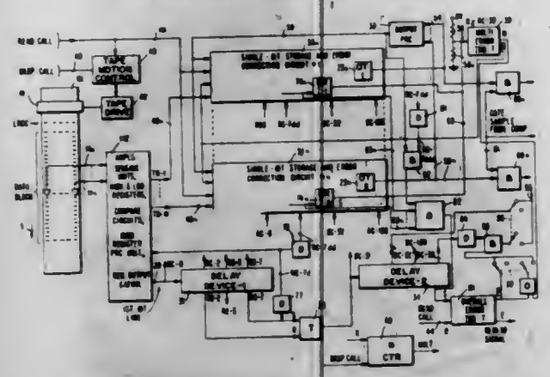
Harry A. Helm, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 21, 1961, Ser. No. 132,925
24 Claims. (Cl. 340—146.1)



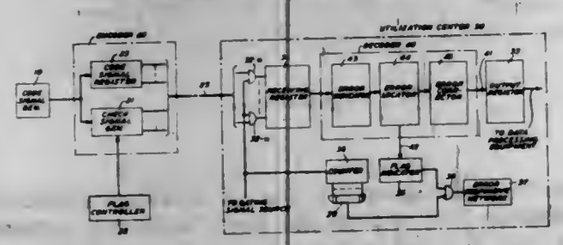
3. In combination, a source of multidigit information characters, first and second linear sequential networks, each said first and second networks including means for linearly operating upon and iteratively combining said information characters to form first and second check characters, means for associating said first and second check charcters with the corresponding information characters, third and fourth linear sequential networks for repeating the operation of said first and second networks on said information characters and said check characters, fifth and sixth linear sequential networks, each said fifth and sixth networks including means for inversely operating upon the outputs of said third and fourth networks, and means responsive to the outputs of said fifth and sixth networks for correcting errors in any symbol in the associated information characters.

3,273,120
ERROR CORRECTION SYSTEM BY RETRANSMISSION OF ERRONEOUS DATA
Donald R. Dustin, Salt Point, Robert V. McFadden, Wappingers Falls, Charles P. Rauf and Gilbert G. Unger, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 24, 1962, Ser. No. 246,707
10 Claims. (Cl. 340—146.1)



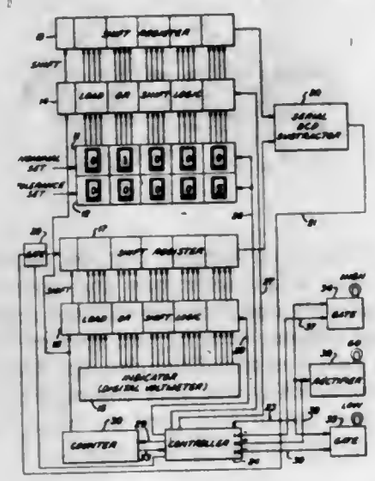
1. A system for correcting a digital data output read from tape comprising:
means for determining the existence of an error in the reading of a tape data block,
means for retaining a track-error identification for each tape track in said block for errors found during a preceding reading,
means for rereading said tape block in response to the detection of an error in said block during the prior reading,
means for registering each byte read from the block,
error-detection means for checking each byte received by said registering means,
gating means connected to and actuated by said registering means for reinserting a bit in any respective track output having an error indicated therein by said retaining means prior to the reception of the next byte by said registering means.

3,273,121
FLAGGING OF SELECTED GROUPS OF CODE SIGNALS
Frank F. Taylor, Eatontown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 28, 1962, Ser. No. 248,146
7 Claims. (Cl. 340—146.1)



1. Apparatus for flagging code signals, which comprises
means for generating data signals occupying n sequential bit positions,
means for generating a flag control signal occupying an $n+1$st bit position,
means responsive to the first and second named generating means for generating check signals which are capable of indicating an error in any one of the $n+1$ bit positions occupied by said data signals and said flag control signal, and
means for decoding said data signals occupying said n bit positions, and checking said data signals by said check signals,
whereby an error indicated in the $n+1$st bit position of the decoded signals indicates that said data signals have been flagged by said flag control signal.

3,273,122
DIGITAL COMPARATOR
Gerald F. Chandler, La Mesa, Calif., assignor to Cohu Electronics, Inc., San Diego, Calif., a corporation of Delaware
Filed Feb. 19, 1964, Ser. No. 346,002
11 Claims. (Cl. 340—146.2)

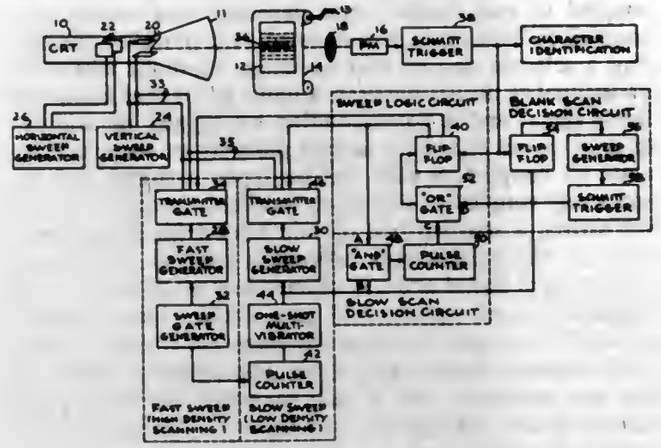


1. A system for determining if a test numerical value differs from a nominal numerical value by less than a predetermined acceptable tolerance, comprising:
first storage means;
means for entering said nominal numerical value into said first storage means;
second storage means;
means for entering said test numerical value into said second storage means;
means coupled to said first and second storage means for subtracting the contents of one of said storage means from the contents of the other of said storage means to produce a difference numerical value;
means for entering said tolerance into one of said storage means; and
means for entering said difference numerical value into the other of said storage means;
said subtracting means again subtracting the contents of one of said storage means from the contents of the other of said storage means to produce a second difference numerical value, the polarity of which indicates whether said test numerical value is within said acceptable tolerance.

3,273,123
CHARACTER RECOGNITION APPARATUS AND METHOD
Gabriel E. Lowitz, Canoga Park, Calif., assignor to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio
Filed May 2, 1962, Ser. No. 191,867
5 Claims. (Cl. 340—146.3)

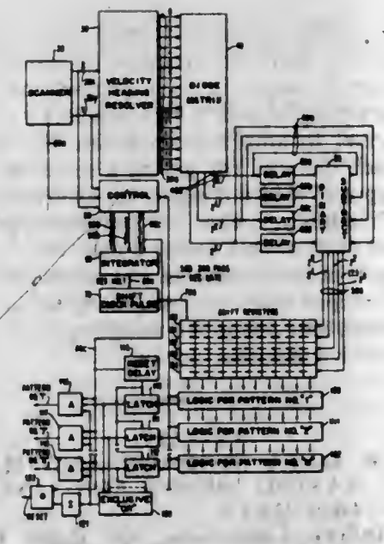
1. Apparatus for recognizing a character in a line of text extending in a first direction including;
a scanning means;
first means for moving said scanning means relative to said line of text in said first direction at a constant rate;
second actuatable means for moving said scanning means through a finite distance in a second direction extending perpendicular to said first direction;

first actuating means operable to actuate said second actuatable means at a high rate;
second actuating means operable to actuate said second actuatable means at a low rate;



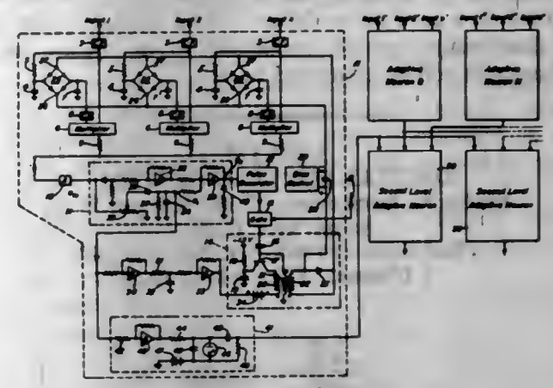
means responsive to said scanning means intercepting said character for subsequently operating said second actuating means and rendering said first actuating means inoperative; and
means responsive to said scanning means not intercepting said character for subsequently operating said first actuating means and rendering said second actuating means inoperative.

3,273,124
ROTATION AND SIZE INVARIANT SHAPE RECOGNITION APPARATUS
Evon C. Greanias, Chappaqua, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 8, 1964, Ser. No. 381,134
5 Claims. (Cl. 340—146.3)



1. A shape identification apparatus comprising:
(a) follower means for following the outline of an unknown shape and producing time variant analog waveforms manifestive of the configuration of the shape;
(b) means for processing said waveforms to produce a succession of binary numbers manifestive of the successive directions of movement of said follower means in following the outline of the shape in a closed trace thereof;
(c) means for obtaining the difference of successive pairs of said binary numbers to produce a succession of binary words equal to the binary difference and the algebraic sign of the differences, each of said pairs of binary numbers including one number from the preceding pair and occurring at predetermined fixed time intervals during the follower action;
(d) means responsive to the peripheral length of the shape being followed for sampling the succession of binary words at time intervals, the duration of which is a linear function of the periphery of the shape;
(e) means for comparing the sampled words with a stored succession of words defining all of the known shapes among which recognition is sought; and
(f) means for precessing the sampled succession of words with respect to the stored succession of words to correct for angular orientation of the unknown shape.

3,273,125
SELF-ADAPTING NEURON
Charles V. Jakowatz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 22, 1961, Ser. No. 133,185
20 Claims. (Cl. 340—172.5)

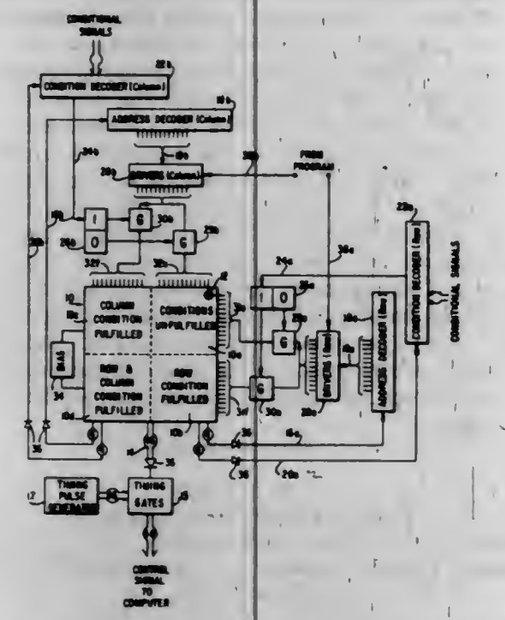


20. An artificial neuron comprising input means for receiving input values, means for integrating said input values, and output means for producing an output whose frequency is indicative of the consistency of said input values.

3,273,126
COMPUTER CONTROL SYSTEM
Charles Edward Owen, Chandlers Ford, Antony Peacock, St. Giles Hill, Winchester, and Daniel M. Taub, Winchester, England, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 25, 1961, Ser. No. 133,867
6 Claims. (Cl. 340—172.5)

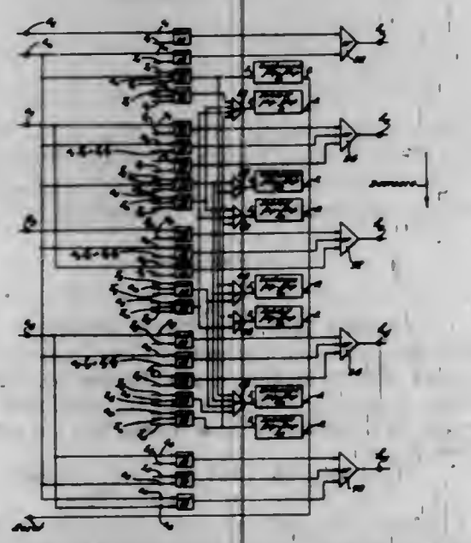
1. A circuit for controlling micro-program steps in a computer comprising in combination a plurality of magnetic cores having at least one stable flux condition, said cores being arranged in rows and columns, all said cores being initially set to said stable condition; a plurality of first separately energizable drive means, one for each of said rows, and a plurality of second separately energizable drive means, one for each of said columns, a core being driven out of said stable condition only in response to the energization of both the row drive means and the columns drive means corresponding to it, at least one of said plurality of drive means being divided into sets, there being, for each drive means of a set, a drive means corre-

sponding to it in each other set of the same plurality of drive means; output means responsive to a core being driven out of its stable condition for generating a set of output signals to the computer; set selecting means responsive to a core being driven out of its stable condition for



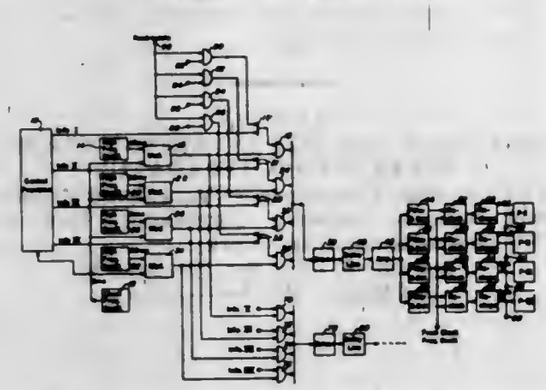
determining the sets in which the next drive means to be selected will be located; and address selecting means responsive to a core being driven out of its stable condition for determining which particular drive means in the selected sets will be energized next.

3,273,127
DIGITAL SORTING SYSTEM
Philip N. Armstrong, 17331 Keegan Way, Santa Ana, Calif.
Filed Sept. 4, 1962, Ser. No. 221,143
3 Claims. (Cl. 340—172.5)



1. A digital compare-sorting network for comparing an unknown multi-bit binary input signal with a plurality of sequenced multi-bit binary input signals, and for shifting the unknown binary input signal into a sorted position in the sequence, said network including: a plurality of input terminals for receiving the sequenced input signals in parallel and on a bit-by-bit serial basis; a further input terminal for receiving the unknown input signal on a bit-by-bit serial basis; a plurality of output terminals across which all said input signals appear in a sorted sequence; a plurality of gate circuits coupling said further input terminal and predetermined selections of said plurality of input terminals to respective ones of said output terminals; a plurality of exchange flip-flops and a plurality of inhibit flip-flops each having output terminals connected selectively to said gate circuits to control the passage of signals therethrough between said input and output terminals; a first plurality of compare circuits all coupled to said further input terminal and respectively coupled to said input terminals of said plurality for setting a selected one of said exchange flip-flops whenever an inequality occurs between a unity bit of said unknown input signal and a corresponding bit of any of said sequenced input signals; a second plurality of compare circuits all coupled to said further input terminal and respectively coupled to said input terminals of said plurality for setting a selected one of said inhibit flip-flops whenever an inequality occurs between a zero bit of said unknown input signal and a corresponding bit of any of said sequenced input signals, said gate circuits being thereby controlled by said exchange flip-flops effectively to shift said unknown input signal from one output terminal to the next whenever one of said exchange flip-flops is set, and to inhibit any further shift thereof when one of said inhibit flip-flops is set.

3,273,128
FREQUENCY MULTIPLEXING CIRCUIT
Leonard B. Ruthazer, Norwood, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,673
12 Claims. (Cl. 340—172.5)

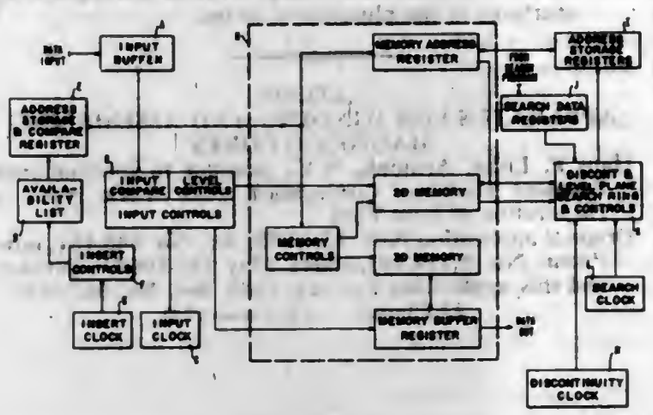


1. Data transfer apparatus comprising a plurality of data channels, a delay line, means for providing a clock frequency signal, means in each channel for mixing said clock frequency signal with a high-frequency signal unique to said channel to amplitude-modulate the latter signal, means in each channel for gating a separate data signal with the output of said mixing means in synchronism with said clock frequency, means for simultaneously coupling the output of each of said gating means to said delay line, means in each channel coupled to said delay line for recovering an output signal corresponding to the data signal in said channel, and means for coupling each of said output signals to a utilization device.

3,273,129
COMPUTER DATA STORAGE AND HANDLING SYSTEM HAVING MEANS FOR LINKING DISCONTINUOUS DATA
Alvin P. Mullery, Chappaqua, and Ralph F. Schauer, Hawthorne, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 5, 1963, Ser. No. 292,862
41 Claims. (Cl. 340—172.5)

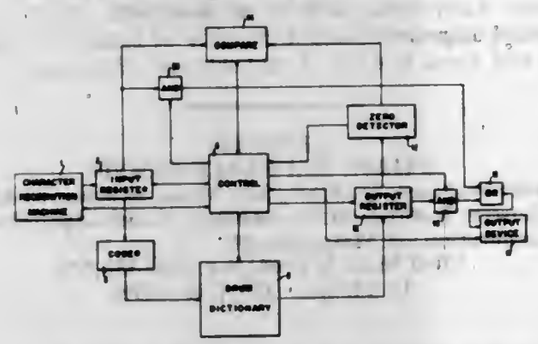
1. A data handling system for inputing data into the main memory of an electronic computer in discontinuous storage locations in said memory including means for

creating and storing a linking address in the data in the machine word stored in the last machine word location of a first discontinuous storage location, said linking address containing the address of the first machine word of



a second discontinuous storage location where the remainder of the data is stored, and means for storing said linking address at a predetermined location in said machine word.

3,273,130
APPLIED SEQUENCE IDENTIFICATION DEVICE
Herbert B. Baskin, Mohegan Lake, and Raymond E. Bonner, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 4, 1963, Ser. No. 327,916
25 Claims. (Cl. 340—172.5)



1. An apparatus for identifying an applied sequence of symbols having a redundant notation comprising, in combination:

means for converting the applied sequence into a second sequence where the second sequence is described by a notation that is less redundant than the notation which describes the applied sequence;

means for providing a plurality of reference sequences,

means for comparing the second sequence with said reference sequences to provide an indication of at least one corresponding sequence in the first notation which corresponds to the second sequence;

and means for selecting one of said at least one corresponding sequence, by comparing at least one of said at least one corresponding sequence with the applied sequence.

3,273,131
QUEUE REDUCING MEMORY
William G. Strohm, Yorktown Heights, and Ernesto F. Yhap, New York, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,761
16 Claims. (Cl. 340—172.5)

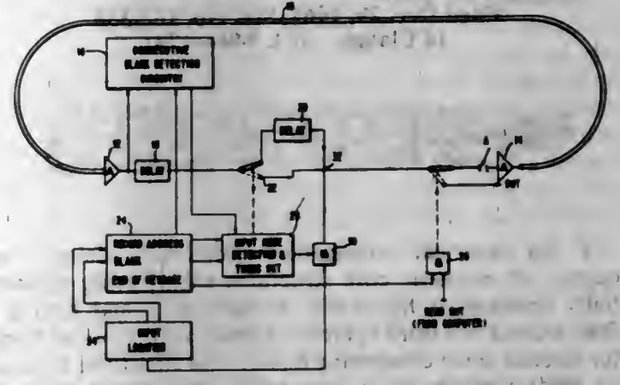
1. An information storage system wherein multiple character messages may be stored in unallocated storage positions and be of variable field length wherein each message begins with a specific "record address" character which identifies a particular message and wherein only one such "record address" character is associated with any one message, said system comprising:

(a) a high-speed serial main memory comprising a recirculating storage loop;

(b) means for continuously recirculating the contents of said loop and for erasing same at any desired time;

(c) input register means selectively connectable to said loop for inputing new data thereto;

(d) means for continuously scanning said loop for a minimum number of available storage locations to ascertain at which point new data is to be inserted;



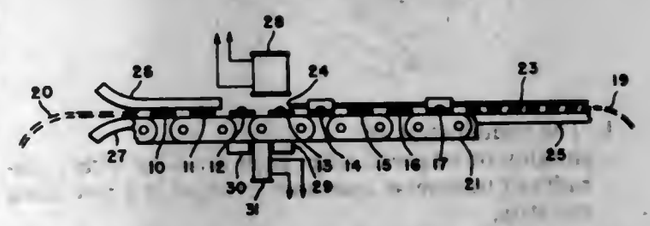
(e) means for entering the new data at said point regardless of information stored in the loop subsequent thereto;

(f) means for inserting a delay in said loop for delaying previously stored data in said loop subsequent to said input point if insufficient "blank" storage locations are available to store a segment of new data without interfering with said previously stored data;

(g) means to scan said loop for a sufficient storage availability condition of said loop subsequent to the entry point of said new data, and

(h) means actuable in response to said last said means to remove said delay from said loop.

3,273,132
MECHANICAL SPRING FINGER DATA STORAGE SYSTEM
Joseph W. Davis, Chester Heights, Pa., assignor to General Atronics Corporation, Wyndmoor, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 132,880, Aug. 21, 1961. This application Dec. 9, 1964, Ser. No. 418,947
2 Claims. (Cl. 340—173)



1. In a data storage system including a barrier, a plurality of deflectable spring fingers moving in their undeflected positions along said barrier adjacent one side thereof, and electro-magnetic means energizable to deflect selected ones of said spring fingers at the beginning of their movement along said barrier so as to cause them to move adjacent the opposite side of said barrier, the improvement comprising auxiliary magnetic means opposing said deflection produced by said electro-magnetic means, said auxiliary magnetic means having insufficient strength to counteract the deflection produced by said electro-mag-

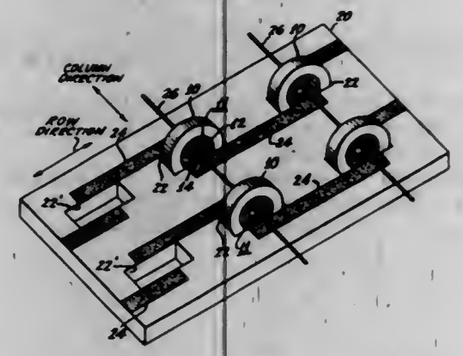
netic means and comprising a first magnet positioned so that any one of said moving spring fingers becomes subject to the substantial influence of said magnet after it has become subject to the influence of said electro-magnet, and a second magnet so positioned that any one of said moving spring fingers traverses the region in which it is subject to the influence of said second magnet before becoming subject to the substantial influence of said electro-magnet.

3,273,133
MAGNETIC CONTROL CIRCUIT
Neal D. Newby, Leonia, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,338
16 Claims. (Cl. 340—174)



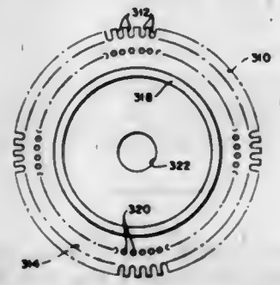
1. An electrical propagation circuit comprising a sequence of magnetic core structures each having substantially rectangular hysteresis characteristics and having a first, second and third aperture therein, a plurality of transfer circuits, each connecting one of said structures through its third aperture to a succeeding structure through its first and second apertures, a single priming circuit serially linking identically each adjacent structure of said sequence through its third aperture, and a single advance circuit serially linking identically each adjacent structure of said sequence through its third aperture.

3,273,134
PRINTED CIRCUIT ASSEMBLIES OF MAGNETIC CORES
Henry P. Lemaire, Natick, and Lloyd B. Smith, Scituate, Mass., assignors to Radio Corporation of America, a corporation of Delaware
Filed Sept. 28, 1962, Ser. No. 226,812
2 Claims. (Cl. 340—174)



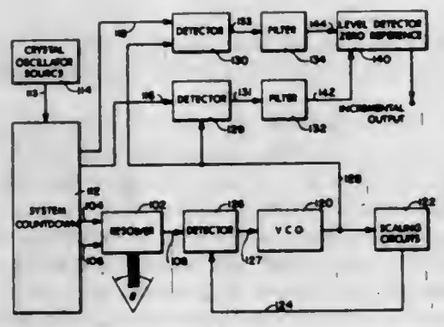
1. The combination of
a plurality of magnetic strips each provided with a plurality of transverse apertures arranged in a row along the strip,
a first printed conductor on each strip extending along one side to an aperture, on the wall of the aperture to the other side, along the other side to the next aperture, and so on,
an insulating layer over said printed conductor on both sides of each strip and on the walls of the apertures,
a plurality of second printed conductors each extending through one insulated aperture and covering areas on the sides of the insulated strip adjacent the aperture,
a sheet of insulating material provided with grooves dimensioned to receive and hold said strips, and
printed conductors on said sheet extending transversely between said grooves and connected to said second printed conductors on said strip to form continuous conductive paths extending through corresponding apertures in the plurality of strips.

3,273,135
APPARATUS FOR WINDING AND ASSEMBLING MAGNETIC CORES
Hans P. Luhn, Armonk, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application Nov. 21, 1955, Ser. No. 548,131, now Patent No. 3,134,163, dated May 26, 1964. Divided and this application Feb. 25, 1964, Ser. No. 363,658
22 Claims. (Cl. 340—174)



9. A magnetic core memory matrix construction comprising a plurality of core mounting means, a plurality of magnetic cores mounted in each of said mounting means, each of said mounting means being movable relative to each other such as to determine said cores in selected alignments, and a plurality of conductors threading said cores in each of said selected alignments.

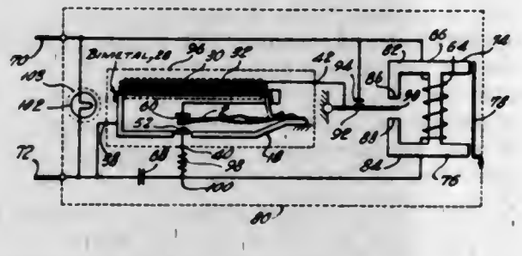
3,273,136
PHASE REPEATER SERVO
Robert W. Steer, Jr., Haverhill, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 9, 1964, Ser. No. 350,226
11 Claims. (Cl. 340—198)



1. In combination
(a) an electromechanical resolver adapted to produce an electrical output S108 in a pick-up coil at a first frequency when excited with a first reference signal S104 at said frequency having a first phase, designated the reference phase, and a second reference signal S106 having a second phase substantially displaced from said reference phase, said output S108 having a phase which varies from said reference phase as the input angle θ, which angle measures the rotation of said coil relative to a reference position.
(b) a source 114 of a high frequency wave S113,
(c) countdown means 112 for producing said reference signals S104 and S106 precisely locked in phase to said high frequency wave S113,

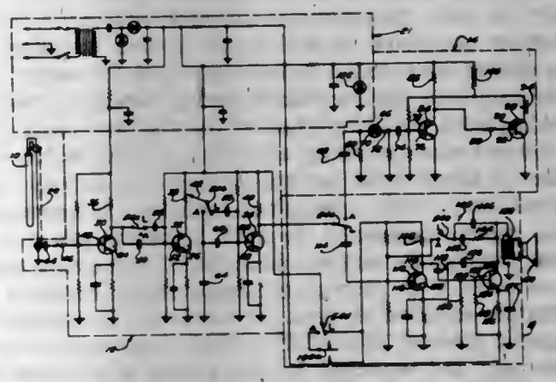
(d) countdown means 112 for producing a third reference signal S116 precisely locked in phase to said high frequency wave, said third signal having an intermediate frequency which is an improper rational fraction of said first frequency,
(e) controlled means 120 for generating a first variable frequency signal S128 having a frequency in the neighborhood of said intermediate frequency,
(f) scaling means 122 for generating a second variable frequency signal S124, phase-locked to said first variable frequency signal S128 at the frequency obtained by dividing said first variable frequency by said improper rational fraction,
(g) means 126 for comparing said second variable signal S124 with said output signal S108 and for generating an error signal S127 which depends upon the phase difference between said second variable signal S124 and said output signal S108,
(h) said controlled means 120 responsive to said error signal S127 for changing said frequency of said first variable signal S128 in the direction to minimize the phase difference between said second variable signal S124 and said output signal S108,
(i) means 129 for comparing said first variable frequency signal S128 with said third reference signal S116 and for generating a signal S131, comprising a difference signal S142 and higher frequency modulation products, where said signal S142 depends upon the phase difference between said first variable signal S128 and said third reference signal S116,
(j) means 132 for separating said difference signal S142 from said higher frequency modulation products, and
(k) means 140 for generating an incremental output signal when said difference signal S142 crosses a predetermined level.

3,273,137
TIME DELAY SNAP SWITCH
George G. Merkl, New Milford, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Sept 24, 1963, Ser. No. 311,133
1 Claim. (Cl. 340—310)



A receiver responsive to signals sent over power transmission lines when the normal line voltage and at a higher frequency than the normal line voltage which comprises:
(a) a connection means for electrically coupling said receiver to said power transmission lines;
(b) a capacitor;
(c) an electro magnet whose coil is connected in series with the capacitor and said connection means to permit current to flow through said coil when said receiver is coupled to said power transmission lines;
(d) two normally open contacts;
(e) a paramagnetic armature carrying one of said normally open contacts, said paramagnetic armature being positioned and designed to close said two contacts when the magnetic field of said electro magnet exceedes a certain threshold level, said threshold level being greater than the magnitude of the magnetic field set up by the normal level of line voltage being transmitted through said power transmission lines and less than the magnetic field set up by both the normal level of line voltage and the signals of higher frequency than the line voltage being transmitted over the power transmission lines;
(f) an indirectly heated snap switch having:
(i) a snap plate;
(ii) an electric heater;
(iii) a pull ribbon positioned adjacent the heater and coupled to the snap plate to hold the snap plate compressed so that said snap plate switches from a first circuit controlling position to a second circuit controlling position in response to the heating of said pull ribbon by said heater, said pull ribbon having on one side thereof a first metal with a small coefficient of expansion at lower temperatures and a higher coefficient of expansion at higher temperatures and having on the other side thereof a second metal with a coefficient of expansion at lower temperatures which is greater than the coefficient of expansion of the first metal at lower temperatures;
(iv) a first pair of contacts which are closed while the snap plate is in its first circuit controlling position and opened when the snap plate is in its second circuit controlling position; and
(v) a second pair of contacts which are open when the snap plate of said snap switch in its first circuit controlling position and closed when said snap plate is in its second circuit controlling position;
(g) a series circuit including said two normally open contacts, the heater coil, the first pair of contacts, and the connection means;
(h) a second series circuit including the coil of the electro magnet the second pair of contacts and the connection means; and
(i) a paramagnetic buzzer armature responsive to the magnetic field of the electro magnet when the second pair of contacts is closed.

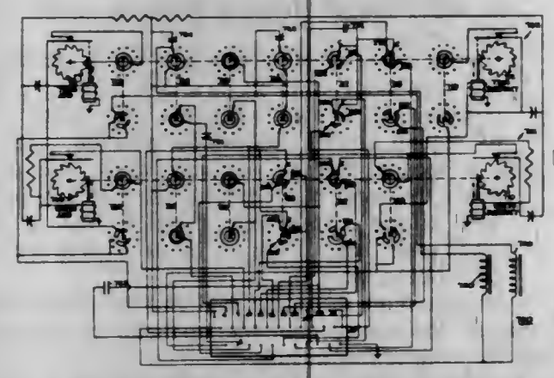
3,273,138
SWIMMING POOL MONITOR
Eric A. Kolm, Brookline, Mass., assignor to Sonus Corporation, Cambridge, Mass.
Filed Apr. 28, 1964, Ser. No. 363,206
7 Claims. (Cl. 340—261)



2. A swimming pool monitor comprising a first transducer for positioning in the water in said pool, said first transducer producing electric signals in response to sound vibrations in the pool, first amplifier means connected to the output of said transducer, said first amplifier means including switch means operative between two positions so as to feed the output of said first amplifier

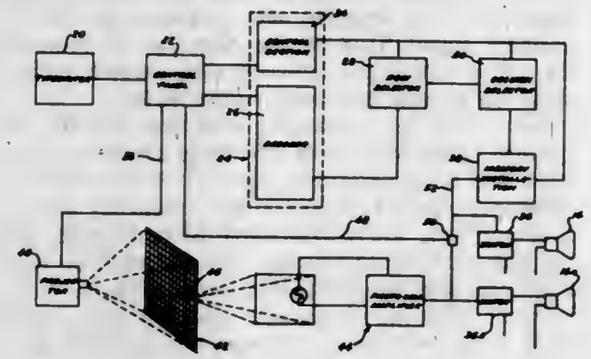
means selectively to said positions, second amplifier means connected to one position of said switch means, regenerative feedback means in said second amplifier means, said feedback means including a second switch operative coincidentally with said switch so as to disable said feedback circuit when said switch means is in its said one position and to enable said feedback circuit when said switch means is in its other said position, a second transducer connected to the output of said second amplifier means and a detector circuit connected between said other switch means position and said second amplifier means, said detector circuit causing said second amplifier means to oscillate only upon arrival of signals from said first transducer.

3,273,139
TIME AND TEMPERATURE DISPLAY SIGN
Thomas E. Flactiff and Melvin R. Holmes, Grand Island, Nebr., assignors to Chronolux Corporation, Grand Island, Nebr., a corporation of Nebraska
Filed Feb. 3, 1964, Ser. No. 341,869
9 Claims. (Cl. 340—334)



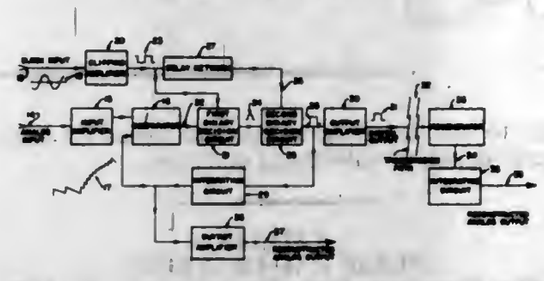
4. A time and temperature display sign comprising a display panel having a plurality of neon strips each being connected to a separate energizing transformer, said transformers being connected to a plurality of separate energizing circuits for energization in various combinations to provide a visual display of time and temperature including a plurality of uni-directional rotary stepping switches operable for selectively energizing said transformers to display a visual indication of time, a plurality of bi-directional rotary stepping switches operable for selectively energizing said transformers to display a visual indication of temperature, transfer switching means for alternately interconnecting said uni-directional rotary stepping switches and said bi-directional rotary stepping switches to said transformers, a power source, a clock mechanism connected to said power source including a motor driven cam and a switch arranged for actuation by said cam in a predetermined timing sequence, means connecting said uni-directional rotary stepping switch to said power source whereby actuation of said switch establishes a signal with respect to time for setting said uni-directional rotary stepping switches, temperature sensing means connected to said bi-directional rotary stepping switches for setting said bi-directional rotary stepping switches with respect to temperature including a temperature sensitive element for measuring temperature, a magnetic element connected to said temperature sensitive element and mounted for movement in response to changes in temperature, a pair of magnetically actuable switches movably supported adjacent said magnetic element and actuable in response to movement of said magnetic element, relay means serially connected in circuit with said switch means for energization in response to actuation of one of said pair of switches and a stepping motor arranged to be energized upon actuation of said motor driven cam to position said pair of switches such that said magnetic element is disposed between said pair of switches in a neutral position, and means connecting said transfer switching means to said power source including a change-over switch arranged to be actuated by said motor driven cam for establishing a predetermined timing sequence of interconnection of said unidirectional rotary stepping switches and said bi-directional rotary stepping switches.

3,273,140
COMBINATION MESSAGE AND IMAGE DISPLAY UNIT
Jacques Y. Foster and Le Roy J. Thompson, Des Moines, Iowa, assignors to Fair-Play Manufacturing Co., Des Moines, Iowa, a corporation of Iowa
Filed July 19, 1963, Ser. No. 296,317
1 Claim. (Cl. 340—334)



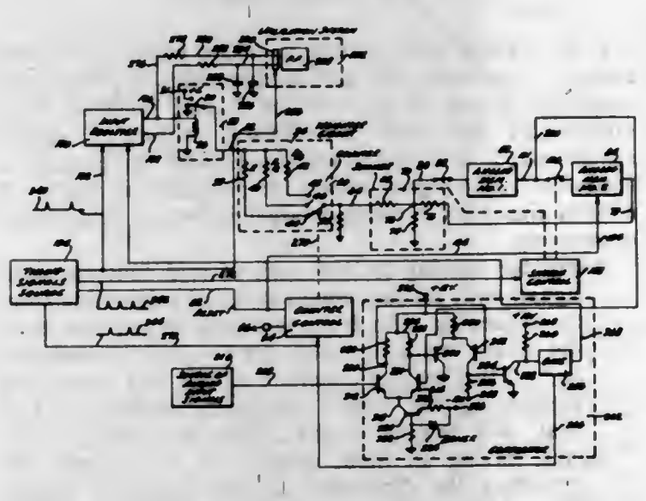
In a device of the class described,
a sign structure,
a first group of electrical display lamps mounted on said sign structure,
a second group of electrical display lamps mounted on said sign structure adjacent to said first group of electrical display lamps,
a first electrical control circuit electrically connected to each of said lamps in each group of lamps,
first means electrically connected to said first electrical circuit for selectively illuminating various of said lamps whereby said illuminated lamps will formulate only a message in the form of letters and numerals,
a second electrical control circuit electrically connected only to said second group of lamps,
second means electrically connected only to said second electrical control circuit for illuminating various of said lamps whereby said illuminated lamps will formulate an image in the form of pictures, said second means including means for projecting a light image having varying degrees of light intensity on a photo-cell grid comprised of a plurality of individual photo-cells, with each photo-cell being electrically connected only to a single lamp in said second group of lamps; said photo-cells and the corresponding lamps to which they are connected being positioned in an identical pattern,
and a control means electrically interconnecting said first and second control circuits to control and coordinate the illumination of said first and second groups of lamps, said control means including means for selectively limiting the energization of said first electrical control circuit to said first group of lamps while said second electrical control circuit is energized to form an image on said second group of lamps, whereby a message in the form of numerals and letters is formed only on various lamps in said first group of lamps, and an image is simultaneously formed only on various of said lamps in said second group of lamps.

3,273,141
HIGH SPEED ANALOG-TO-DIGITAL CONVERTER
Kenneth R. Hackett, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado
Filed Mar. 19, 1963, Ser. No. 266,283
17 Claims. (Cl. 340—347)



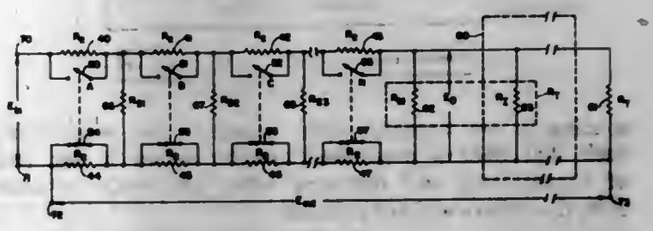
1. A high speed analog-to-digital converter comprising an analog input amplifier circuit, a comparator circuit coupled with the amplifier circuit, a plurality of binary decision circuits connected in cascade relationship with each other and coupled with the comparator circuit, an integrating circuit coupled with the decision circuits and with the comparator circuit in feedback loop relationship, and an output amplifier circuit coupled with the decision circuits for transmitting therefrom a digital output converted from an analog input fed to the input amplifier.

3,273,142
CONVERSION SYSTEMS
Arthur S. Zukin, Encino, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 267,663
9 Claims. (Cl. 340—347)



9. A digital-to-analog conversion device responsive to a sequence of binary signals of selected binary significance comprising binary input register means for sequentially storing binary bits representative of the binary signals, first analog memory means for storing a sum during a first period, second analog memory means for storing a sum during a second period, combining means for responding to said binary input register and to said second memory means for developing a sum of analog voltages sequentially equivalent to accumulated analog voltages representative of said binary pulses, first switching means for closing during a first period to apply the sum developed by said combining means to said first memory means and for opening during a second period, second switching means for closing during said second period to apply said sum stored in said first memory means to said second memory means and for opening during said first period, and means for controlling said first and second switching means to combine said sum stored in said second memory means and said analog voltage equivalent of said binary input pulse for storing the sum in said first memory means during said first period, and to store the sum in said second memory means during said second period.

3,273,143
DIGITAL-TO-ANALOG CONVERTER
Philip D. Wasserman, San Pablo, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Jan. 24, 1964, Ser. No. 340,865
10 Claims. (Cl. 340—347)

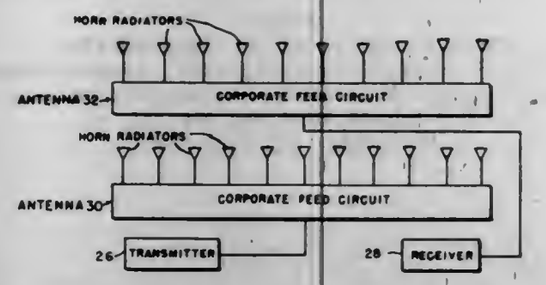


1. A digitally operated potentiometer for providing digitally weighted output voltages, said potentiometer including a plurality of decades each of which has a pair of input terminals and a pair of output terminals, the input terminals of the first of said decades being adapted to receive a source of reference voltage, one of said input terminals of the first of said decades and one of the output terminals of the last of said decades serving as the output terminals of the potentiometer for providing the digitally weighted output voltages, the improvement comprising
each of said decades including a first plurality of resistances of equal ohmic value connected between the first input and output terminals thereof,
each of said decades including a second plurality of resistances of equal ohmic value connected between the second input and output terminals thereof,
the resistances connected between the first input and output terminals respectively being equal to the resistances connected between the second input and output terminals of each decade,
shunting switches connected across each of said retances in each decade, with the shunting switches connected across each of the resistances between the first input and output terminals of each decade respectively operating in a complementary fashion with respect to the shunting switches connected across each of the resistances between the second input and output terminals of each decade,
a terminating resistance connected across the first and second output terminals of each of said decades, and
shunt resistances respectively connected from the junctions of certain, but not all, of the resistances of the first plurality of resistances of each decade to respective corresponding junctions between the resistances of the second plurality of resistances of each decade, said shunt resistances functioning to select the incremental output voltage weights provided by the potentiometer.

3,273,144
NARROW BEAM ANTENNA SYSTEM
William Fishbein, New Shrewsbury, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 2, 1963, Ser. No. 270,123
3 Claims. (Cl. 343—5)

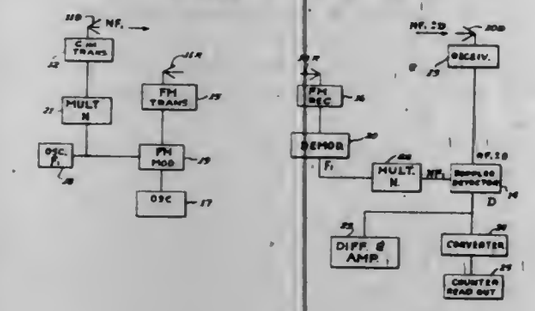
1. A radar antenna system providing improved resolution comprising, a first multiple-beam antenna for radiating R-F signal energy, said first antenna having a

directivity characteristic of a plurality of angularly spaced lobes, a second multiple-beam antenna for intercepting reflections of the radiated R-F signal energy, said second antenna having a directivity characteristic of a plurality of angularly spaced lobes in substantially the same direction as the lobes of said first antenna, the lobe



spacing in one antenna with respect to the other being such that over a prescribed angular sector if one pair of transmitting and receiving lobes are made to coincide, the others will not coincide.

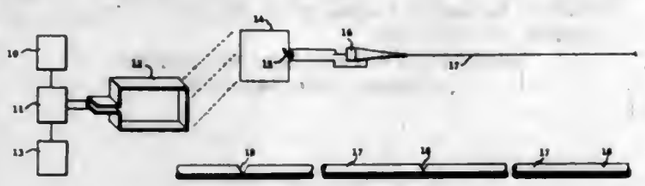
3,273,145
TRAIN SLACK MEASURING APPARATUS
Ivan L. Joy and James W. Loehring, Topeka, Kans.; Ivan L. Joy as trustee
Filed Feb. 16, 1965, Ser. No. 433,114
9 Claims. (Cl. 343—6)



1. Apparatus for measuring position variations between front and rear ends of a train, and comprising means at one end of said train for generating a fixed frequency reference signal, means at said one end for transmitting a radiated carrier signal having an FM modulation component derived from said reference signal, means at the other end of said train for receiving and demodulating said carrier signal to provide output consisting of said reference signal, means at the rear end for transmitting a radiated continuous wave signal derived from and consisting of a certain frequency multiple of the reference signal thereat, means at the front end for receiving said continuous wave signal at a Doppler shifted frequency, and means at the front end connected to respond to any frequency difference between said certain frequency multiple of the reference signal at the front end and the received Doppler shifted frequency for producing a signal representative of position variations between said front and rear ends of the train.

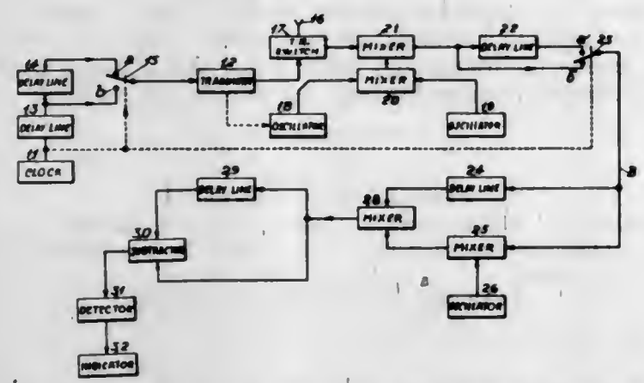
3,273,146
OBJECT IDENTIFYING APPARATUS
Henry Hurwitz, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 7, 1964, Ser. No. 388,243
5 Claims. (Cl. 343—6.8)

1. An object identifying apparatus comprising signal reflecting means including a piezoelectric element and an acoustic delay line having a length of sonic transmitting material with reflecting elements therein at spaced locations corresponding to predetermined coding representative of the identity of said object, said delay line being mutually coupled to said element, means for transmitting



signals to said reflecting means, and means for receiving reflected signals for identifying said object.

3,273,147
PULSE RADAR SYSTEM
Stélian Herscovici, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Nov. 5, 1964, Ser. No. 409,175
Claims priority, application France, Nov. 8, 1963, 953,090
9 Claims. (Cl. 343—7.7)



1. In a pulse radar system in which pulses of radiant energy, transmitted by said system with a birecurrent repetition period of mean value T and reflected from targets, are beat with a reference "coherent" signal, synchronized with the transmitted pulse to provide a "coherent" echo signal, means for providing an improved control signal for a moving target indicator, said means comprising:

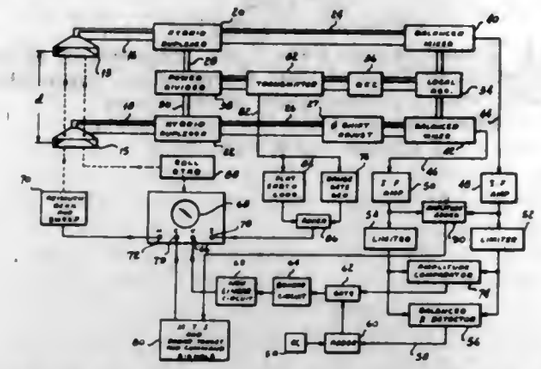
means for causing to beat each of said coherent echo signals with the said coherent signal originating from the preceding echo from the same target, said beating means including means for frequency translating one of the beating coherent signals and means for eliminating the "sum" frequency signals of said beat, said beating means having an output;

means, having an input coupled to said output, for providing the difference of two successive signals supplied to said input;

and detecting means, coupled to said last mentioned output and having an output supplying said improved control signal.

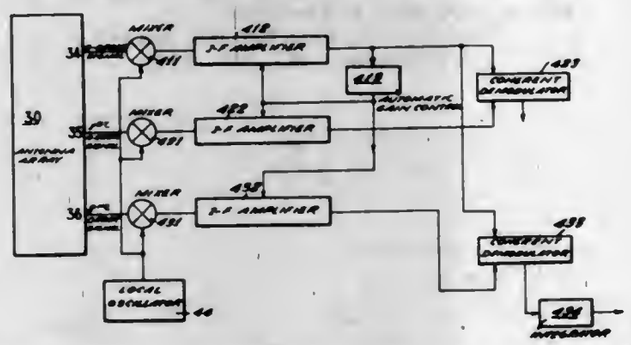
3,273,148
TERRAIN-VIEWING SYSTEM
Albert G. Wood, Pleasantville, N.Y., William W. Fenn, Old Greenwich, Conn., Thomas D. Kegelman, West Nyack, N.Y., and Howard S. Halpern, Stamford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 14, 1959, Ser. No. 859,489
24 Claims. (Cl. 343—11)

1. A terrain-viewing system including in combination a display tube providing a normally illuminated spot, means for transmitting signals in a downward directed pattern which is a vertical and substantially knife-like plane subtending a small azimuthal angle, a pair of reflected signal sensors disposed in a vertical plane, and means responsive to both reflected signal sensors for vertically sweeping the illuminated spot in an upward direction.



19. An information recording system including in combination a recording area, means for exciting a spot in the area, a signal source providing a variable output in accordance with the information to be recorded, and means responsive to said output for causing the excited spot to scan the area at varying instantaneous sweep rates.

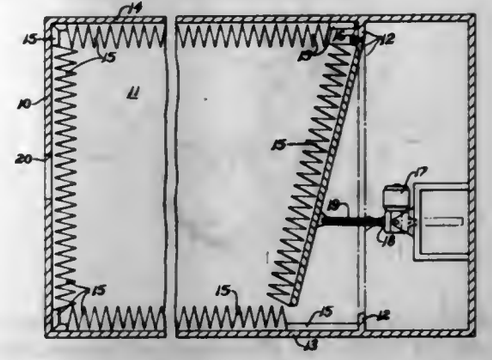
3,273,149
RADAR SYSTEMS USING SECOND- AND HIGHER-ORDER RESPONSE SIGNALS
Serge V. Drabowitch, Paris, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France
Filed May 14, 1964, Ser. No. 367,332
Claims priority, application France, May 17, 1963, 935,219, Patent 1,366,828; Apr. 29, 1964, 972,812, Patent 85,770
23 Claims. (Cl. 343—16)



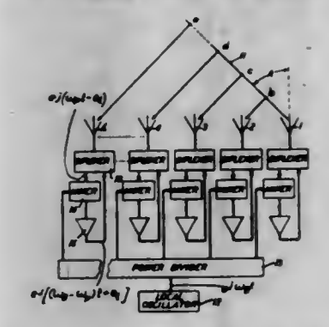
1. A radar system comprising means for irradiating a target with a radar beam, means for receiving a response beam, means for deriving from the response beam a series of at least three independent signals the variations of which as a function of angular displacement to opposite sides from target direction approximately follow a zero-order law, a first-order law and at least one law of higher order, respectively, means for exploiting said first-order-law signal to determine target direction and means for exploiting said at least one higher-order signal to derive additional information concerning the target.

3,273,150
ANECHOIC CHAMBER
William H. Emerson, Huntington, Conn., assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 26, 1964, Ser. No. 355,118
3 Claims. (Cl. 343—18)

1. An anechoic chamber for providing an environment simulating that of outer space in which electronic devices can be evaluated and studied, the interior wall surfaces of said chamber being lined with microwave energy absorbing material for absorbing microwave energy impinged thereagainst, said chamber comprising a back wall toward which microwave energy is directed during the evaluation and study of electronic devices in said chamber, said back wall being provided with means for varying the angle which said back wall presents to the direction from which the microwave energy is emitted in order to vary the angle at which the microwave energy absorbing material disposed on the interior surface of said back wall presents itself to microwave energy directed toward said back wall of the chamber.



3,273,151
ANTENNA SYSTEM
Cassius C. Cutler, Gillette, Rudolf Kompfner, Middletown, and Le Roy C. Tillotson, Holmdel, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 26, 1961, Ser. No. 162,165
13 Claims. (Cl. 343—100)

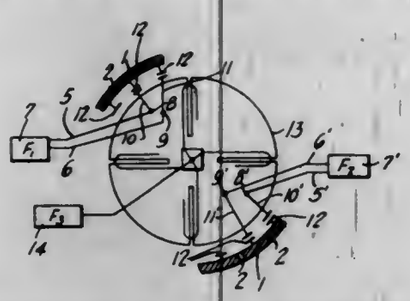


2. In a communication system, an array of antenna elements, a source of information-bearing electromagnetic waves for irradiating said array, combining means, a local oscillator, and apparatus individual to each of said antenna elements comprising means for recovering an information component and an unmodulated sine wave signal to serve as a pilot component from the portion of said wave impinging upon said antenna element, first means for mixing said pilot component with the output of said oscillator, second means for mixing said information component with the difference frequency modulation sideband produced by said first mixing means, and means for applying the sum frequency modulation sideband produced by said second mixing means to said combining means.

3,273,152
DOPPLER VOR BEACON
Charles William Earp, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 16, 1963, Ser. No. 280,834
Claims priority, application Great Britain, May 30, 1962, 20,747/62
6 Claims. (Cl. 343—108)

1. Radio beacon equipment including, a hollow metal circular cylinder having in its curved surface a row of

parallel slots constituting a circular array of slot antennas, means to feed the slot antennas cyclically and consecutively around the circle with a first wave train, means to feed the antennas in a similar order with a second wave



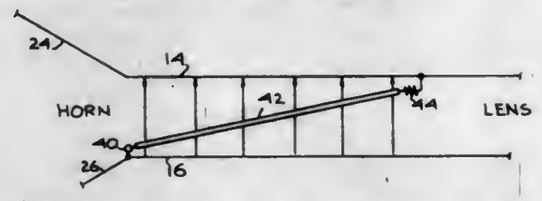
train, the two feeding cycles being always diametrically opposite on the circle and progressing at a constant rate, and means to radiate via one or more slot antennas a third wave train midway in frequency between the first and second wave trains.

3,273,153
PORTABLE FIELD ANTENNA, USABLE ABOVE DENSE FOLIAGE
Phineas J. Icenbice, Jr., Los Angeles (Northridge), Calif., assignor to Litton Systems, Inc., Woodland Hills, California
Filed Sept. 16, 1963, Ser. No. 309,017
11 Claims. (Cl. 343—706)



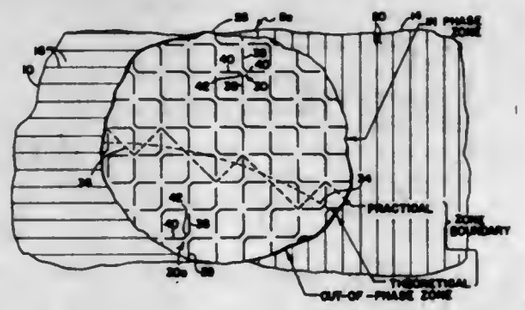
1. Apparatus for raising a portable field antenna above heavily wooded areas, said apparatus comprising:
first means for launching a projectile-like body to a predetermined altitude;
a projectile having a container therein and being engageable with said first means for being launched thereby;
an antenna housed within said container;
second means housed within said container for extending said antenna from said container;
third means connected to said antenna for supporting said antenna when extended;
a length of transmission line connected to said antenna, said length of transmission line defining said predetermined altitude;
fourth means for dispensing said transmission lines;
a plurality of spring-biased arms mounted to the side of said projectile, and radially extendable therefrom; and
means for holding said arms close to said projectile as said projectile is launched and for pivoting said arms to extend outward from said projectile when said arms contact foliage of the wooded area, said arms being operative to support said container on said foliage and to provide a ground plane for said antenna.

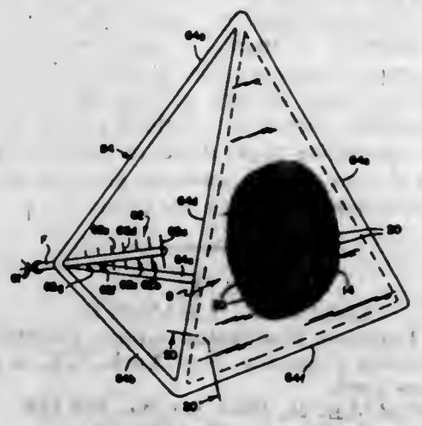
3,273,154
LENS FEED SYSTEM
Robert L. Tanner, Menlo Park, Calif., assignor, by mesne assignments, to Control Data Corporation, South Minneapolis, Minn., a corporation of Minnesota
Filed May 27, 1964, Ser. No. 370,471
9 Claims. (Cl. 343—753)



1. In a wire grid lens antenna of the type wherein said wire grid lens comprises an upper and a lower lens element each being made of wire grid and each having substantially the shape of a disc, both resembling two spaced nesting shallow saucers, said upper and lower elements being spaced a predetermined distance from one another, an improved feeding structure comprising conductor means extending from an edge of one of said two spaced lens elements radially inwardly to the surface of the other of said two lens elements, means for applying excitation between said edge and said conductor means, and means for coupling said conductor means to the surface of said lens element to which it extends.

3,273,155
FRESNEL ZONE LENS ANTENNA
Herbert P. Raabe, St. Paul, Minn., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed Sept. 13, 1963, Ser. No. 308,861
13 Claims. (Cl. 343—753)





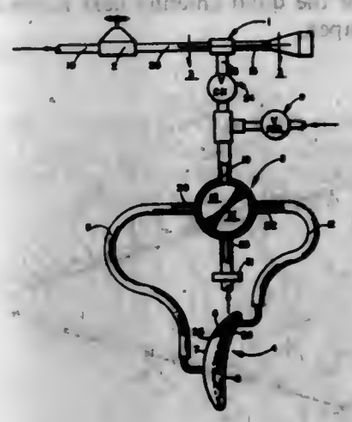
1. A Fresnel zone lens antenna comprising:
first polarizing means residing in a first plane;
second polarizing means residing in a second plane parallel to said first plane and spaced a predetermined distance therefrom, the plane of polarization of said second polarizing means being oriented at an angle of 90 degrees relative to that of said first means;
said first and second polarizing means include polarizing grids oriented at an angle of 90 degrees with respect to each other;
third means residing in a third parallel plane between said first and second planes for rotating the polarization plane of an incident wave through 90 degrees as the wave energy passes from said first polarizing means to said second polarizing means, said third means including a polarizing grid oriented at an angle of 45 degrees with respect to the grid of said first means and at an angle of 45 degrees with respect to the grid of said second means;
said third means further including zones of alternate rotation of polarization composed of said polarizing grids, the grids in one zone being inclined at an angle of 45 degrees in one direction and the grids in the next adjacent zone being inclined at an angle of 45 degrees in the opposite direction.

3,273,156
RADIO TELESCOPE HAVING A SCANNING FEED SUPPORTED BY A CABLE SUSPENSION OVER A STATIONARY REFLECTOR
Helias Doundoulakis, Brooklyn, N.Y., assignor, by direct and mesne assignments, of twenty-five percent to Constantine A. Michaloz, Fort Lee, N.J., and twenty-five percent to William J. Casey, Long Island, N.Y.
Filed Sept. 11, 1961, Ser. No. 137,202
8 Claims. (Cl. 343—765)

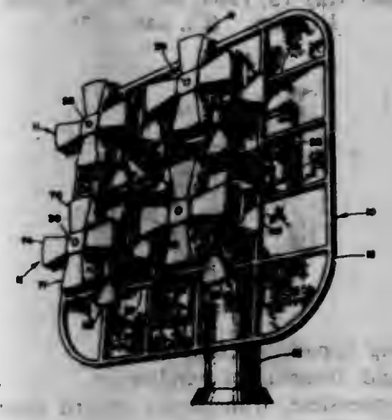
1. An antenna comprising, in combination, a concave reflector affixed to the surface of the earth, and a radio beam feeding and scanning mechanism including a network of cables, a skeleton frame, said frame being supported by said network at an accurately determinable position above said reflector, a circular track mounted and aligned generally horizontally upon said frame, an arm mounted upon and being revolvable on said circular track, and a beam radiating element mounted upon said arm, said beam radiating element being movable along said arm, the rotation of said arm on said circular track and the movement of said radiating element along said arm providing feeding and scanning motion for said radiating element.

3,273,157
PNEUMATIC CONTROL SYSTEM FOR RADAR ANTENNA
Thomas C. Kirstein, Anaheim, Calif., assignor to North American Aviation, Inc.
Filed Feb. 21, 1964, Ser. No. 346,569
2 Claims. (Cl. 343—781)

1. An antenna comprising:
first and second bulkheads defining a chamber case;
a deformable reflective diaphragm mounted in said case between said bulkheads to define a first and second chamber;
evacuating pneumatic control means for evacuating one of said chambers and venting the other to the atmosphere whereby said diaphragm is selectively urged against a selected one of said bulkheads.



3,273,158
MULTI-POLARIZED TRACKING ANTENNA
Thomas R. Fouts, Fort Worth, and Edwin G. Keiffer and Charles T. Wadlington, Dallas, Tex., assignors, by mesne assignments, to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed July 19, 1961, Ser. No. 125,122
10 Claims. (Cl. 343—792)

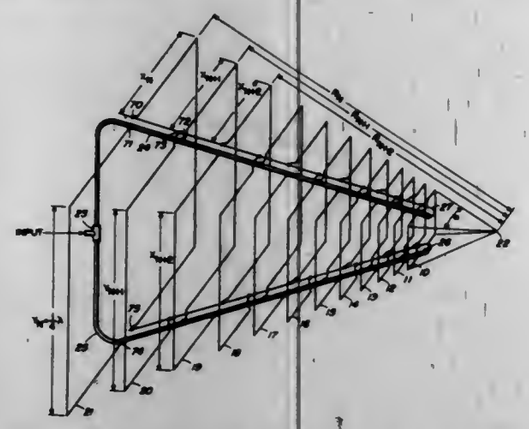


6. In an antenna arrangement, the combination of a first pair of half-wavelength dipoles and a second pair of half-wavelength dipoles mounted in a cruciform arrangement, at least one set of directors including in each set first and second pairs of retarding elements disposed in spaced-apart and generally aligned relation to said first and second pairs of dipoles, the retarding elements of each pair being electrically isolated from each other and also from the retarding elements of the other pairs.

3,273,159
LOG PERIODIC ANTENNA COMPRISED OF PARALLEL FED QUAD ELEMENTS
Jesse Carol Holloway, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 23, 1964, Ser. No. 377,283
12 Claims. (Cl. 343—792.5)

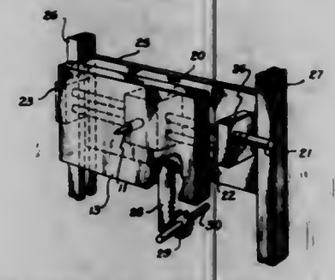
1. Logarithmically periodic antenna means comprising a plurality of at least four quad antenna elements constructed to form a frustum with each quad lying in a plane substantially perpendicular to the axis of said frustum,

the radial distance of the plane of any quad antenna element measured from the apex of the frustum, bearing a constant ratio τ to the radial distance of the plane of the quad antenna next farthest removed from said apex,



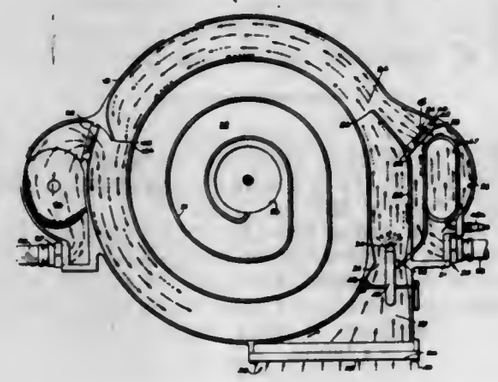
said apex being defined as the point of convergence of the frustum when extended,
and feed means for supplying an input signal to each of said quad antenna elements in a parallel manner.

3,273,160
INDENTING RECORDER WITH ILLUMINATION MEANS
Gustave Shapiro, Silver Spring, and Robert O. Stone, Kensington, Md., assignors to the United States of America as represented by the Secretary of Commerce
Filed May 15, 1964, Ser. No. 367,908
1 Claim. (Cl. 346—77)



A recording apparatus comprising:
a hard, rigid, translucent window,
a thin, impressible, transparent record sheet,
means for positioning a selected portion of said record sheet firmly against the rear surface of said window,
an indenting pin,
means for positioning said indenting pin adjacent the exposed surface of said record sheet at a selected point within the area of said window,
means for selectively pressing the point of said indenting pin into said record sheet to form a small dent in said sheet at said selected point, said record sheet being supported by said window, and
a light panel disposed about said indenting pin and parallel to said window, said light panel having a length and width substantially at least twice the length and width, respectively, of said window, said indenting pin extending centrally of said light panel, whereby all points of said portion of said record sheet disposed against said window are illuminated with light rays normal thereto at any selected position of said indenting pin, causing the dents in said record sheet to appear as distinct dark dots in a bright field, and whereby said indenting pin in the non-operated position adjacent said record sheet is not visible through said translucent window.

3,273,161
FUEL ECONOMIZER AND EXHAUST GAS PURIFIER DEVICE
Rocco F. Di Giorgio, Miami, Fla., assignor to Keller Industries, Inc., Miami, Fla.
Filed Mar. 3, 1966, Ser. No. 531,533
16 Claims. (Cl. 123—119)

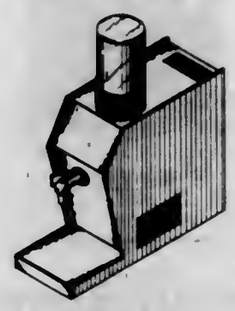


10. In a fuel economizer and exhaust gas purifier device for an internal combustion engine having a carburetor and exhaust pipe, a generally cylindrical base having a central outlet opening for connection with the air intake of the carburetor, a generally cylindrical wall integral with and upstanding from the periphery of said base, and a cover removably secured to and over the rim of said wall to form a housing with said base and wall, first and second circumferentially-spaced inlets through said wall, said first inlet including a venturi throat through which ambient air passes into said housing, a connection to said second inlet to supply exhaust gas to said housing from the exhaust pipe of the engine, fuel injector means mounted in said venturi throat for supplying fuel to air entering through said first inlet, conduit means connected with said injector for supplying fuel thereto, said fuel-air mixture being blended with exhaust gas entering through said second inlet, in said housing, prior to passage of the blended mixture to said central outlet opening; and
a third inlet in said wall for connection with the engine exhaust manifold to supply heated gas, said conduit means for supplying fuel to said injector, including a portion in said housing in heat exchange relation with gas entering said third inlet, said heated gas and fuel-air mixture being blended in said housing prior to admixture with exhaust gas entering said second inlet.

DESIGNS

SEPTEMBER 13, 1966

205,702
COOLER AND DISPENSER UNIT FOR USE IN MAKING COLD BEVERAGES, DRINKS, SOUPS AND THE LIKE
William C. Christine, Catasauqua, and Joseph E. Pierce, Allentown, Pa., assignors to Allen Electronics, Inc., Allentown, Pa., a corporation of Pennsylvania
Substituted for abandoned design application Ser. No. 81,392, Aug. 21, 1964. This application Oct. 22, 1965, Ser. No. 358
Term of patent 14 years
(Cl. D2—3)



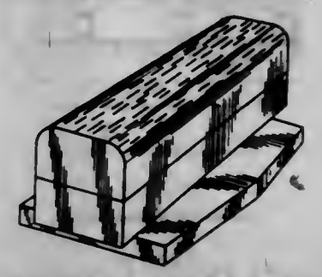
205,703
SHIRT
Bernard S. Kulesa, 29 Alfred St., Rochester, N.Y.
Filed Aug. 25, 1965, Ser. No. 86,707
Term of patent 14 years
(Cl. D3—25)



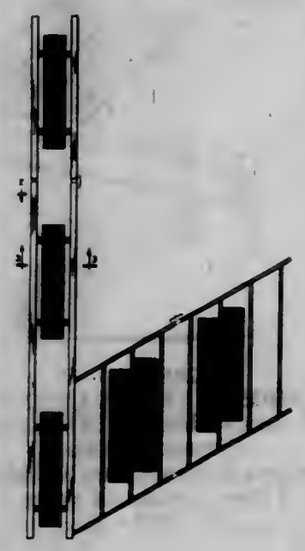
205,704
COWBOY BOOT
Harry Vise, Nashville, Tenn., assignor to Texas Boot Manufacturing Company, Inc., Lebanon, Tenn., a corporation of Tennessee
Filed Mar. 10, 1966, Ser. No. 1,392
Term of patent 14 years
(Cl. D7—7)



205,705
CLAW CONDITIONER FOR ANIMALS
Robert C. Greider, E. 734 38th Ave., Spokane, Wash.
Filed Sept. 13, 1965, Ser. No. 86,966
Term of patent 14 years
(Cl. D12—2)



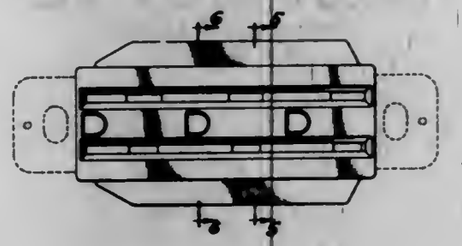
205,706
COMBINED RAILING AND END COLUMN
Sherman Shore, Pittsburgh, Pa., assignor to Napco, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 23, 1965, Ser. No. 83,927
Term of patent 14 years
(Cl. D13—7)



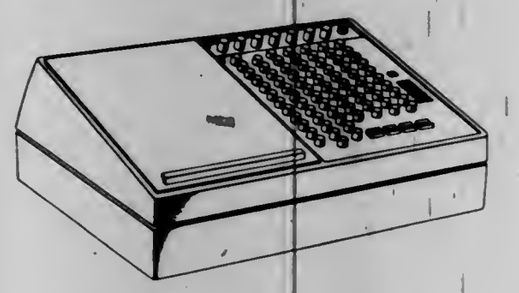
205,707
UPHOLSTERED CHAIR
Theodore A. Cowen, Jr., Belvidere, Ill., assignor to Belvedere Products Inc., Belvidere, Ill., a corporation of Illinois
Filed Jan. 15, 1965, Ser. No. 83,460
Term of patent 14 years
(Cl. D15—1)



205,708
ELECTRICAL RECEPTACLE FACE PLATE
Lee T. Bordner, Los Angeles, Calif., assignor to Sierra Electric Corporation, Gardena, Calif., a corporation of California
Filed June 1, 1965, Ser. No. 85,538
Term of patent 14 years
(Cl. D26—1)



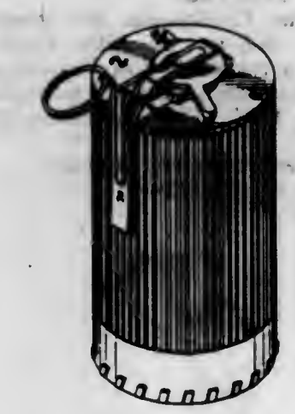
205,709
MANUAL DATA ENTRY KEYBOARD CONSOLE
Rae F. Tankard, Owego, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 6, 1964, Ser. No. 78,543
Term of patent 14 years
(Cl. D26—5)



205,710
CHRISTMAS ORNAMENT
James F. Kirchenbauer, 1187 E. 169th St., Cleveland, Ohio
Filed June 21, 1965, Ser. No. 85,826
Term of patent 14 years
(Cl. D29—1)



205,711
GRENADE FOR DISPENSING GASES, LIQUIDS, OR THE LIKE
Robert W. Schnepfe, Jr., 111 Cinder Road, Timonium, Md.; Francis J. Pilarski, 4618 Raspe Ave., Raspeburg, Md.; Irwin R. Barr, 110 Martingale Road, Lutherville, Md.; and David Sylvester, P.O. Box 32, Phoenix, Md.
Filed Sept. 8, 1965, Ser. No. 86,901
Term of patent 14 years
(Cl. D30—1)



205,712
GRENADE CANISTER
David Sylvester, Rte. 1, Phoenix, Md.; Irwin R. Barr, 110 Martingale Road, Lutherville, Md.; Robert W. Schnepfe, Jr., 111 Cinder Road, Timonium, Md.; and Francis J. Pilarski, 4618 Raspe Road, Raspeburg, Md.
Filed Sept. 8, 1965, Ser. No. 86,903
Term of patent 14 years
(Cl. D30—1)



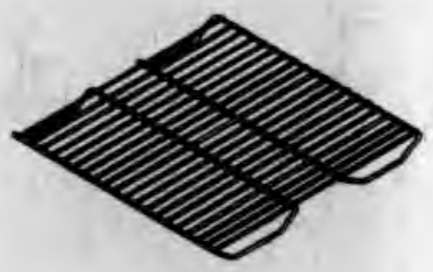
205,713
TOY ANIMAL FIGURE OR SIMILAR ARTICLE
Edmund C. Wilson, New York, N.Y., assignor to Wingfield-Wilson, New York, N.Y., a firm
Filed Oct. 23, 1965, Ser. No. 87,831
Term of patent 7 years
(Cl. D34—2)



205,714
PULL TOY
Milton A. Traka, North Aurora, Ill. (403 W. Galena, Aurora, Ill.)
Filed Oct. 5, 1965, Ser. No. 87,324
Term of patent 14 years
(Cl. D34—15)



205,715
BAKER'S COOLING RACK
Kurt Christoffersen, Norwich, Conn., assignor to The Artistic Wire Products Co. of Conn., Incorporated, Taftville, Conn., a corporation of Connecticut
Original design application Jan. 22, 1964, Ser. No. 78,318, now Design Patent No. 201,903, dated Aug. 10, 1965. Divided and this application Apr. 27, 1965, Ser. No. 84,976
Term of patent 14 years
(Cl. D44—29)



205,716
BAKER'S COOLING RACK
Kurt Christoffersen, Norwich, Conn., assignor to The Artistic Wire Products Co. of Conn., Incorporated, Taftville, Conn., a corporation of Connecticut
Original design application Jan. 22, 1964, Ser. No. 78,318, now Design Patent No. 201,903, dated Aug. 10, 1965. Divided and this application Apr. 29, 1965, Ser. No. 85,024
Term of patent 14 years
(Cl. D44—29)



205,717
END LINK FOR A WATCH BRACELET OR SIMILAR ARTICLE
Murray L. Cowan, Norwood, Mass., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed June 28, 1965, Ser. No. 85,923
Term of patent 7 years
(Cl. D45—4)



205,718
STOCKING
Paul R. Nestler, Sr., Walnut St., Green Lane, Pa.
Filed Mar. 17, 1966, Ser. No. 1,514
Term of patent 14 years
(Cl. D47—7)



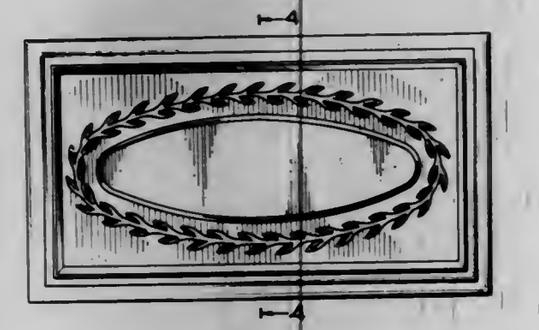
205,719
STREET LIGHTING FIXTURE
Myron F. Pettengill, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed Aug. 19, 1965, Ser. No. 86,775
Term of patent 14 years
(Cl. D48—31)



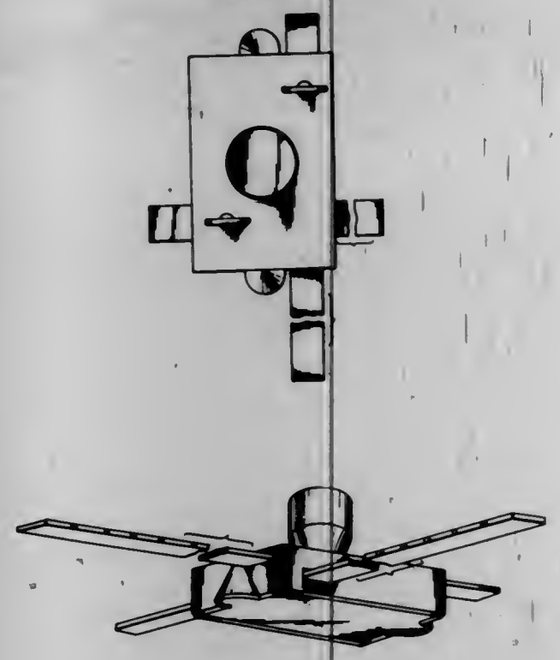
205,720
STREET LAMP
Luis F. Villa, 1727 Moravian St., Philadelphia, Pa.
Filed Sept. 21, 1965, Ser. No. 87,095
Term of patent 14 years
(Cl. D48—31)



205,721
TISSUE BOX
Robert A. O'Neil, Pittsburgh, Pa., assignor to Fesco, Inc., New York, N.Y., a corporation of Delaware
Filed July 8, 1965, Ser. No. 86,076
Term of patent 14 years
(Cl. D52—2)



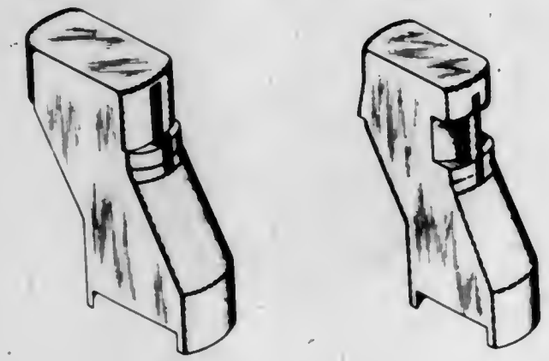
205,722
COMBINATION LOCATING-AND-MARKING GAUGE FOR JUNCTION BOXES
Herschel L. Sunley, 1814 S. 8th St., Springfield, Ill.
Filed Oct. 7, 1965, Ser. No. 87,363
Term of patent 14 years
(Cl. D52—6)



205,723
MOLDED GUITAR CARRYING CASE SHELL
Howard S. Cohen, Highland Park, Ill., and Gordon Palais, New Buffalo, Mich., assignors of one-half to Cincinnati Industries, Inc., Cincinnati, Ohio, a corporation of Ohio, and one-half to Titan Molders Corporation, Grayslake, Ill., a corporation of Illinois
Filed May 7, 1965, Ser. No. 85,178
Term of patent 14 years
(Cl. D56—1)



205,724
PHONOGRAPH SPINDLE ADAPTOR OR THE LIKE
Jack L. Kelly, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Continuation of design applications Ser. No. 80,996, July 24, 1964 and Ser. No. 80,997, July 24, 1964. This application Oct. 20, 1965, Ser. No. 433
Term of patent 14 years
(Cl. D56—4)



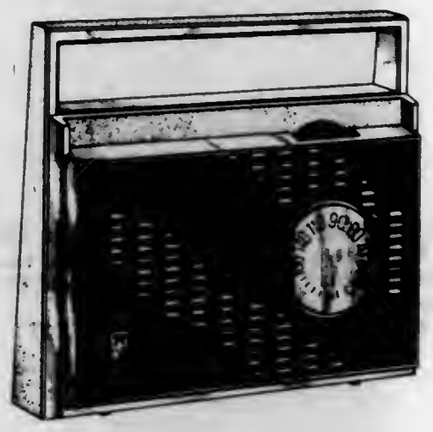
205,725
PORTABLE RADIO CABINET
Melvin H. Boldt, Glenview, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 3, 1966, Ser. No. 898
Term of patent 14 years
(Cl. D56—4)



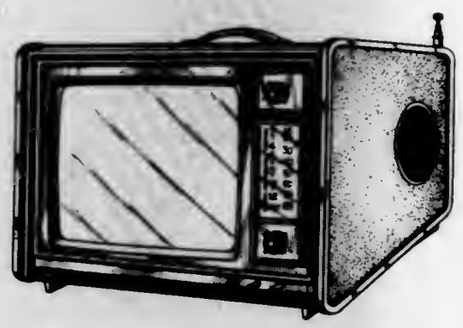
205,726
PORTABLE RADIO CABINET
Melvin H. Boldt, Glenview, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 3, 1966, Ser. No. 911
Term of patent 14 years
(Cl. D56—4)



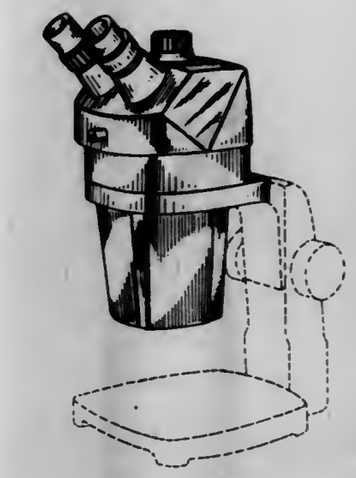
205,727
PORTABLE RADIO CABINET
Melvin H. Boldt, Glenview, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 4, 1966, Ser. No. 921
Term of patent 14 years
(Cl. D56—4)



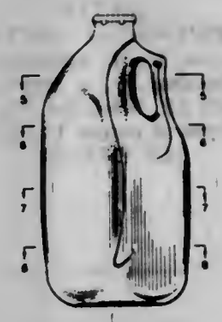
205,728
PORTABLE TELEVISION RECEIVER
Melvin H. Boldt, Glenview, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 86,818
Term of patent 14 years
(Cl. D56—4)



205,729
STEREO MICROSCOPE
Paul A. Hoogesteger, Brighton, and Jacob W. Patia, Rochester, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 85,954
Term of patent 14 years
(Cl. D57—1)



205,730
JUG
Richard L. Platte, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich.
Filed Sept. 13, 1965, Ser. No. 86,963
Term of patent 14 years
(Cl. D58—5)



205,731
BOTTLE
Edward D. Levy, 5 Forestdale Road, Spring Valley, N.Y.
Filed July 20, 1965, Ser. No. 86,219
Term of patent 14 years
(Cl. D58—6)



205,732
DISPENSING BOTTLE
Jerome Gould, Encino, Calif., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed July 2, 1964, Ser. No. 80,671
Term of patent 14 years
(Cl. D58—8)



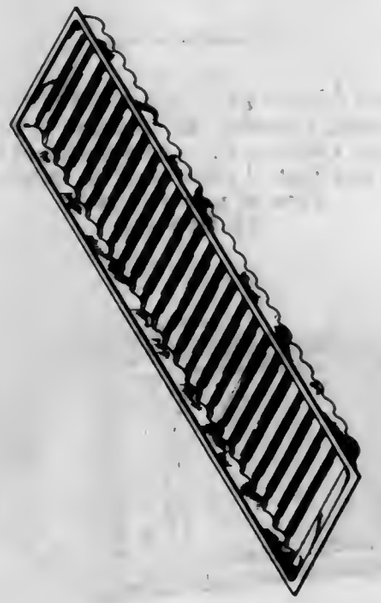
205,733
DISPENSING BOTTLE
Jerome Gould, Encino, Calif., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed July 30, 1964, Ser. No. 81,067
Term of patent 14 years
(Cl. D58—8)



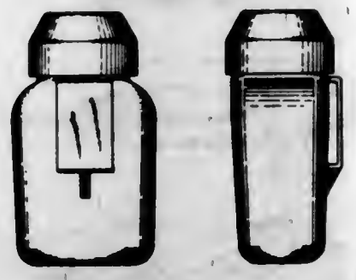
205,734
COMBINED DECANTER AND CLOSURE THEREFOR
Ernest L. Du Pree, New York, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 87,080
Term of patent 14 years
(Cl. D58—8)



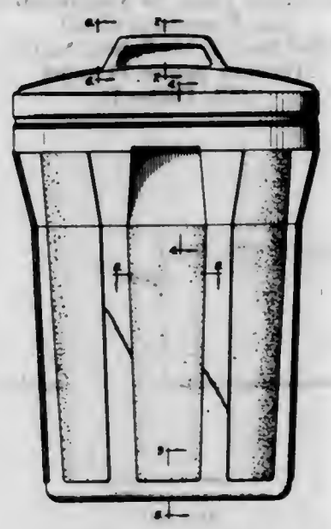
205,735
PACKAGING TRAY FOR CYLINDRICAL OBJECTS
Benjamin F. Weiner, North Belmore, N.Y., assignor to Chase Instruments Corporation, Long Island City, N.Y., a corporation of New York
Filed Mar. 12, 1965, Ser. No. 84,227
Term of patent 14 years
(Cl. D58—13)



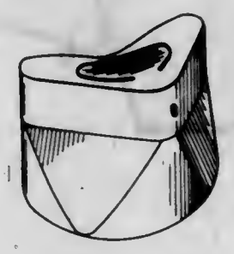
205,736
FOOD CONTAINER
Vincent Jordan, Star Rte. 2, Rhinelander, Wis.
Filed Sept. 13, 1965, Ser. No. 86,978
Term of patent 14 years
(Cl. D58—17)



205,737
WASTE RECEPTACLE
John D. Braught, Northbrook, Ill., assignor to General American Transportation Corporation, a corporation of New York
Filed Oct. 11, 1965, Ser. No. 87,392
Term of patent 14 years
(Cl. D58—17)



205,738
DISPENSER CAP FOR A PRESSURIZED CAN
Joseph Charles Pizzurro, Scarsdale, N.Y., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 197
Term of patent 14 years
(Cl. D58—26)



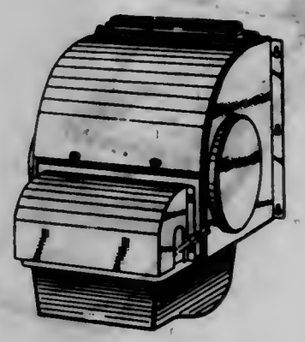
205,739
DISPENSER CAP FOR A PRESSURIZED CAN
Joseph Charles Pizzurro, Scarsdale, N.Y., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 204
Term of patent 14 years
(Cl. D58—26)



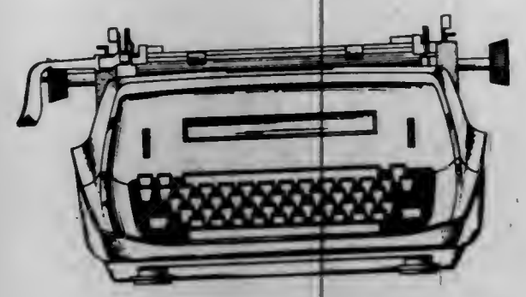
205,740
DISPENSER CAP FOR A PRESSURIZED CAN
Joseph Charles Pizzurro, Scarsdale, N.Y., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 205
Term of patent 14 years
(Cl. D58—26)



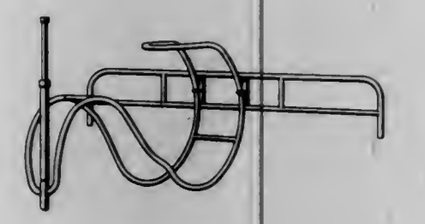
205,741
HUMIDIFIER
Leonard L. White, 19504 Stansbury, Detroit, Mich., and James H. McNelece, 200145 Woodhill Drive, Northville, Mich.
Filed Aug. 2, 1965, Ser. No. 86,390
Term of patent 14 years
(Cl. D62—4)



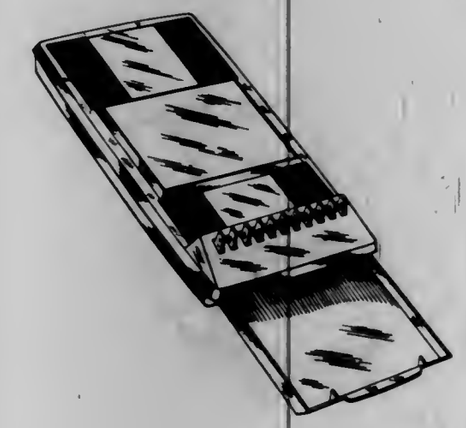
205,742
TYPEWRITER
Carl W. Sundberg, Bloomfield Hills, and Montgomery Ferar, Huntington Woods, Mich., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 87,250
Term of patent 14 years
(Cl. D64—11)



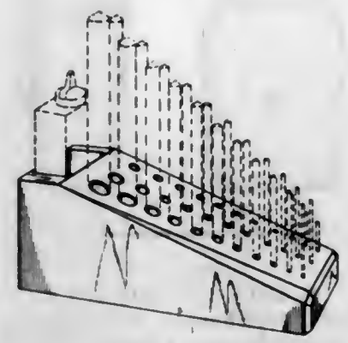
205,743
WATER CRAFT FRAME
Charles O. Hoover, 2132 Pearson Drive, Oklahoma City, Okla.
Filed Aug. 13, 1965, Ser. No. 86,578
Term of patent 14 years
(Cl. D71—1)



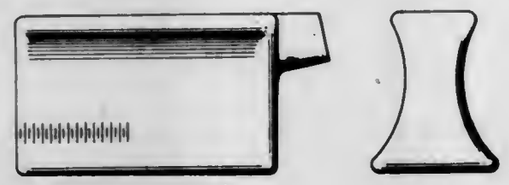
205,744
MEMORANDUM INDEX
Clayton A. Laughlin, Minneapolis, Minn., assignor to Standard Packaging Corporation, New York, N.Y., a corporation of Virginia
Filed Oct. 15, 1965, Ser. No. 87,498
Term of patent 14 years
(Cl. D74—1)



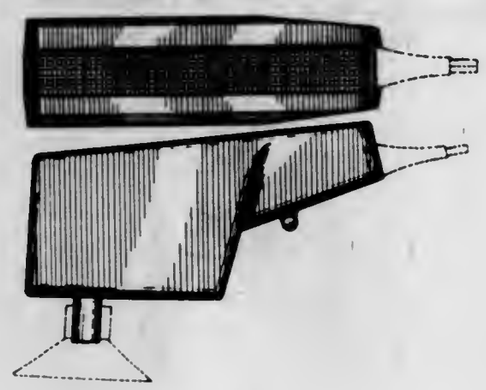
205,745
RACK FOR DRILL BITS, TAPS AND THE LIKE
Olie A. Nannfeldt, Pokagon Township, Cass County, Mich. (3102 M–40 North, Niles, Mich.)
Filed July 15, 1965, Ser. No. 86,168
Term of patent 7 years
(Cl. D80—9)



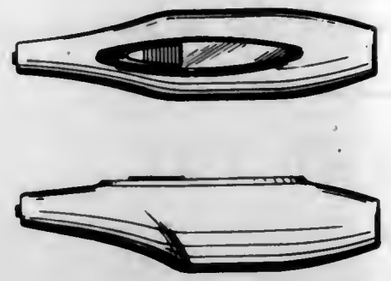
205,746
MALE URINAL
Edna Maria Cain, 74 Valparaiso St., San Francisco, Calif.
Filed Dec. 2, 1965, Ser. No. 24
Term of patent 14 years
(Cl. D83—1)



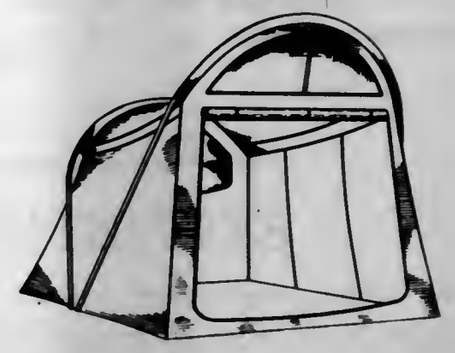
205,747
ELECTRIC VIBRATOR
Charles S. Myers, Evanston, Ill., assignor to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois
Filed Jan. 5, 1965, Ser. No. 83,271
Term of patent 14 years
(Cl. D83—1)



205,748
HANDLE FOR MANICURING IMPLEMENT OR THE LIKE
Richard B. Hall, Akron, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Feb. 7, 1966, Ser. No. 937
Term of patent 14 years
(Cl. D86—10)



205,749
TENT OR SIMILAR ARTICLE
Charles W. Moss, 5270 Geddes Road, Ann Arbor, Mich.
Filed June 30, 1965, Ser. No. 85,963
Term of patent 14 years
(Cl. D88—3)



LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 13TH DAY OF SEPTEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Kircher, George C. Peach tree. 2,671, 9–13–66, Cl. 42.

LIST OF DESIGN PATENTEES

Abbott Laboratories: *See*—
Gould, Jerome. 205,732.
Gould, Jerome. 205,733.

Artistic Wire Products Co., of Conn., Inc., The: *See*—
Christoffersen, Kurt. 205,715.
Curistoffersen, Kurt. 205,716.

Allen Electronics, Inc.: *See*—
Christine, William C., and Pierce. 205,702.

Barr, Irwin R.: *See*—
Schnepfe, Robert W., Jr., Pilarski, Barr, and Sylvester. 205,711.
Sylvester, David, Barr, Schnepfe, and Pilarski. 205,712.

Bausch & Lomb Inc.: *See*—
Hoogesteger, Paul A., and Petla. 205,729.

Belvedere Products Inc.: *See*—
Cowen, Theodore A., Jr. 205,707.

Boldt, Melvin H., to Zenith Radio Corp. Portable radio cabinet. 205,725, 9–13–66, Cl. D56—4.

Boldt, Melvin H., to Zenith Radio Corp. Portable radio cabinet. 205,726, 9–13–66, Cl. D56—4.

Boldt, Melvin H., to Zenith Radio Corp. Portable radio cabinet. 205,727, 9–13–66, Cl. D56—4.

Boldt, Melvin H., to Zenith Radio Corp. Portable television receiver. 205,728, 9–13–66, Cl. D56—4.

Bordner, Lee T., to Sierra Electric Corp. Electrical receptacle face plate. 205,708, 9–13–66, Cl. D26—1.

Braught, John D., to General American Transportation Corp. Waste receptacle. 205,737, 9–13–66, Cl. D58—17.

Cain, Edna M. Male urinal. 205,746, 9–13–66, Cl. D83—1.

Chase Instruments Corp.: *See*—
Weiner, Benjamin F. 205,735.

Christine, William C., and J. E. Pierce, to Allen Electronics, Inc. Cooler and dispenser unit for use in making cold beverages, drinks, soups and the like. 205,702, 9–13–66, Cl. D2—3.

Christoffersen, Kurt, to The Artistic Wire Products Co. of Conn., Inc. Baker's cooling rack. 205,715, 9–13–66, Cl. D44—29.

Christoffersen, Kurt, to The Artistic Wire Products Co. of Conn., Inc. Baker's cooling rack. 205,716, 9–13–66, Cl. D44—29.

Cincinnati Industries, Inc.: *See*—
Cohen, Howard S., and Palais. 205,723.

Cohen, Howard S., and G. Palais; ½ to Cincinnati Industries, Inc., ½ to Titan Molders Corp. Molded guitar carrying case shell. 205,723, 9–13–66, Cl. D56—1.

Cowan, Murray L., to Textron Inc. End link for a watch bracelet or similar article. 205,717, 9–13–66, Cl. D45—4.

Cowen, Theodore A., Jr., to Belvedere Products Inc. Upholstered chair. 205,707, 9–13–66, Cl. D15—1.

Dominion Electric Corp.: *See*—
Hall, Richard B. 205,748.

DuPree, Ernest L., to Schenley Industries, Inc. Combined decanter and closure therefor. 205,734, 9–13–66, Cl. D58—8.

Ferar, Montgomery: *See*—
Sundberg, Carl W. 205,742.

Fesco, Inc.: *See*—
O'Neil, Robert A. 205,721.

General American Transportation Corp.: *See*—
Braught, John D. 205,737.

General Electric Co.: *See*—
Kelly, Jack L. 205,724.
Pettengill, Myron F. 205,719.

Gould, Jerome to Abbott Laboratories. Dispensing bottle. 205,732, 9–13–66, Cl. D58—8.

Gould, Jerome, to Abbott Laboratories. Dispensing bottle. 205,733, 9–13–66, Cl. D58—8.

Greider, Robert C. Claw conditioner for animals. 205,705, 9–13–66, Cl. D12—2.

Hall, Richard B., to Dominion Electric Corp. Handle for manicuring implement or the like. 205,748, 9–13–66, Cl. D86—10.

Hoogesteger, Paul A., and J. W. Patla, to Bausch & Lomb Inc. Stereo microscope. 205,729, 9–13–66, Cl. D57—1.

Hoover Ball and Bearing Co.: *See*—
Platte, Richard L. 205,730.

Hoover, Charles O. Water craft frame. 205,743, 9–13–66, Cl. D71—1.

International Business Machines Corp.: *See*—
Tankard, Rae F. 205,709.

Jordan, Vincent. Food container. 205,736, 9–13–66, Cl. D58—17.

Kelly, Jack L., to General Electric Co. Phonograph spindle adaptor or the like. 205,724, 9–13–66, Cl. D56—4.

Kirchenbauer, James F. Christmas ornament. 205,710, 9–13–66, Cl. D29—1.

Kuiesa, Bernard S. Shirt. 205,703, 9–13–66, Cl. D3—25.

Laughlin, Clayton A., to Standard Packaging Corp. Memorandum index. 205,744, 9–13–66, Cl. D74—1.

Levy, Edward D. Bottle. 205,731, 9–13–66, Cl. D58—6.

McNeiece, James H.: *See*—
White, Leonard L. 205,741.

Moss, Charles W. Tent or similar article. 205,749, 9–13–66, Cl. D88—3.

Myers, Charles S., to Wahl Clipper Corp. Electric vibrator. 205,747, 9–13–66, Cl. D83—1.

Nannfeldt, Olie A. Rack for drill bits, taps and the like. 205,745, 9–13–66, Cl. D80—9.

Napco, Inc.: *See*—
Shore, Sherman. 205,706.

Nestler, Paul R., Sr. Stocking. 205,718, 9–13–66, Cl. D47—7.

O'Neil, Robert A., to Fesco, Inc. Tissue box. 205,721, 9–13–66, Cl. D52—2.

Palais, Gordon: *See*—
Cohen, Howard S., and Palais. 205,723.

Patla, Jacob W.: *See*—
Hoogesteger, Paul A., and Patla. 205,729.

Pettengill, Myron F., to General Electric Co. Street lighting fixture. 205,719, 9–13–66, Cl. D48—31.

Pierce, Joseph E.: *See*—
Christine, William C., and Pierce. 205,702.

Pilarski, Francis J.: *See*—
Schnepfe, Robert W., Jr., Pilarski, Barr, and Sylvester. 205,711.
Sylvester, David, Barr, Schnepfe, and Pilarski. 205,712.

Pizzurro, Joseph C., to Precision Valve Corp. Dispenser cap for a pressurized can. 205,738, 9–13–66, Cl. D58—26.

Pizzurro, Joseph C., to Precision Valve Corp. Dispenser cap for a pressurized can. 205,739, 9–13–66, Cl. D58—26.

Pizzurro, Joseph C., to Precision Valve Corp. Dispenser cap for a pressurized can. 205,740, 9–13–66, Cl. D58—26.

Platte, Richard L., to Hoover Ball and Bearing Co. Jug. 205,730, 9–13–66, Cl. D58—5.

Precision Valve Corp.: *See*—
Pizzurro, Joseph C. 205,738.
Pizzurro, Joseph C. 205,739.
Pizzurro, Joseph C. 205,740.

Schenley Industries, Inc.: *See*—
DuPree, Ernest L. 205,734.

Schnepfe, Robert W., Jr., F. J. Pilarski, I. R. Barr, and D. Sylvester. Grenade for dispensing gases, liquids, or the like. 205,711, 9–13–66, Cl. D30—1.

Schnepfe, Robert W., Jr.: *See*—
Sylvester, David, Barr, Schnepfe, and Pilarski. 205,712.

Shore, Sherman, to Napco, Inc. Combined railing and end column. 205,706, 9–13–66, Cl. D13—7.

Sierra Electric Corp.: *See*—
Bordner, Lee T. 205,708.

Sperry Rand Corp.: *See*—
Sundberg, Carl W., and Ferar. 205,742.

Standard Packaging Corp.: *See*—
Laughlin, Clayton A. 205,744.

Sundberg, Carl W., and M. Ferar, to Sperry Rand Corp. Typewriter. 205,742, 9–13–66, Cl. D64—11.

Sunley, Herschel L. Combination locating-and-marking gauge for junction boxes. 205,722, 9–13–66, Cl. D52—6.

Sylvester, David: *See*—
Schnepfe, Robert W., Jr., Pilarski, Barr, and Sylvester. 205,711.

Sylvester, David, I. R. Barr, R. W. Schnepfe, Jr., and F. J. Pilarski. Grenade canister. 205,712, 9–13–66, Cl. D30—1.

Tankard Rae F., to International Business Machines Corp. Manual data entry keyboard console. 205,709, 9–13–66, Cl. D26—5.

Texas Boot Mfg. Co., Inc.: *See*—
Vise, Harry. 205,704.

Textron Inc.: *See*—
Cowan, Murray L. 205,717.

Trnka, Milton A. Pull toy. 205,714, 9–13–66, Cl. D34—15.

Villa, Luis F. Street lamp. 205,720, 9–13–66, Cl. D48—31.

Vise, Harry, to Texas Boot Mfg. Co., Inc. Cowboy boot. 205,704, 9–13–66, Cl. D7—7.
Wahl Clipper Corp.: *See*—
Myers, Charles S. 205,747.
Weiner, Benjamin F., to Chase Instruments Corp. Packaging tray for cylindrical objects. 205,735, 9–13–66, Cl. D58—13.
Wingfield-Wilson: *See*—
Wilson, Edmund C. 205,713.
White, Leonard L., and J. H. McNeiece. Humidifier. 205,741, 9–13–66, Cl. D62—4.
Wilson, Edmund C., to Wingfield-Wilson. Toy animal figure or similar article. 205,713, 9–13–66, Cl. D34—2.
Zenith Radio Corp.: *See*—
Boldt, Melvin H. 205,725.
Boldt, Melvin H. 205,726.
Boldt, Melvin H. 205,727.
Boldt, Melvin H. 205,728.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 13TH DAY OF SEPTEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Bickhaus, James T. 3,272,486.
Carlson, Harold A. 3,272,482.
Cook, Forrest W., Bickhaus, and Smith. 3,272,487.
Martin, Charles L. 3,272,483.
Newman, Ottis E. 3,272,485.
A & D Fabricating Co., Inc.: *See*—
Dirubbo, Angelo. 3,272,257.
AGA Aktiebolag: *See*—
Mogensen, Sten. 3,272,893.
AMP Inc.: *See*—
Cobaugh, Robert F. 3,273,102.
API Instruments Co.: *See*—
Quittner, George F. 3,273,055.
Abbott Laboratories: *See*—
Von Esch, Anne M., and Crovetti. 3,272,828.
Von Esch, Anne M., and Crovetti. 3,272,833.
Abbott, Richard L., to Commercial Solvents Corp. Production of nitroalkanes. 3,272,874, 9–13–66, Cl. 260—644.
Abendroth, Robert V.: *See*—
Schmitter, Walter P., Abendroth, and Bernard. 3,273,000
Ackley, Charles E., to R. W. Hartnett Co. Article marking machine. 3,272,118, 9–13–66, Cl. 101—37.
Actis, Paul. Cutting and perforating press. 3,272,051, 9–13–66, Cl. 83—527.
Adams, Dale G., to United States of America, Army. Three-way fuze. 3,272,125, 9–13–66, Cl. 102—70.
Adams, Wayne W., and T. Garrison. Agricultural bale-handling machine. 3,272,352, 9–13–66, Cl. 214—7.
Adams-Russell Co., Inc.: *See*—
Curtis, John P. 3,273,079.
Addison Products Co.: *See*—
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Alexander, Claude L., to American Can Co. Valve for pressure container. 3,272,403, 9–13–66, Cl. 222—394.
Alexander, David C., and R. H. Dennard, to International Business Machines Corp. Apparatus for translating a waveform. 3,272,995, 9–13–66, Cl. 307—88.5.
Alexander, Laurence R., to Leesona Corp. Delay timer. 3,273,070, 9–13–66, Cl. 328—84.
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Allbright, Norman J., and A. C. Boldon, said Allbright assor. to said Boldon. Rendering cooker with hydrostatic charging head. 3,272,599, 9–13–66, Cl. 23—290.5.
Alleaume, Jean H., and D. M. H. Hamel. Flexible and elastic tanks for transporting liquids in bulk. 3,272,373, 9–13–66, Cl. 220—9.
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Rest, Frederick G., and Newsted. 3,271,938.
Allen, Herbert, to Cameron Iron Works, Inc. Blowout preventer. 3,272,222, 9–13–66, Cl. 137—315.
Allen, Jack W. T., and R. E. Anderson. Multiple connected transformer. 3,273,053, 9–13–66, Cl. 323—48.
Allen, Milton F., to Milton F. Allen Publications, Inc. Detection treatment of paper money and other negotiable paper. 3,272,533, 9–13–66, Cl. 283—7.
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Allen, Milton F. 3,272,533.
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American Aniline Products, Inc.: *See*—
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Marcus, Natalie S., Holmstrom, and Smith. 3,272,683.
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Irvine, Douglas S., Bagli, Morand, Vezina, and Wiesner. 3,272,848.
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Ancet, Victor M. J., and Marius Fayolle (also known as Marcel Fayolle). Mechanism for the control of weft threads in shuttleless looms. 3,272,236, 9–13–66, Cl. 139—122.
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Antolini, Henry S. Earth-moving equipment. 3,272,264, 9–13–66, Cl. 172—273.
Antonious, Anthony J., to The Ajac Corp. Packet for carrying golf tees and discs. 3,272,412, 9–13–66, Cl. 224—26.
Apple, Garold E. Tree holding device. 3,272,462, 9–13–66, Cl. 248—44.
Arcamone, Federico, and A. Ferretti, to Societá Farmaceutici Italia. α-Hydroxy derivatives of dihydro-D-lysergic and 1-methyl-dihydro-D-lysergic ethylamides. 3,272,823, 9–13–66, Cl. 260—285.5.
Archer, Anthony H., to Louis Newmark Ltd., and T.M.M. (Research) Ltd. Apparatus for the detection of broken yarn and the like on textile machines. 3,272,048, 9–13–66, Cl. 83—370.
Archer, Sydney, C. F. Koelsch, R. R. Lorens, and B. F. Tullar, to Sterling Drug Inc. Process and intermediates for preparing indoles. 3,272,804, 9–13–66, Cl. 260—240.
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Armstrong, Philip N. Digital sorting system. 3,273,127, 9–13–66, Cl. 340—172.5.
Artandi, Charles, and L. D. Bechtol, to Ethicon, Inc. Absorbable collagen prosthetic implant with nonabsorbable reinforcing strands. 3,272,204, 9–13–66, Cl. 128—334.
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Asbury, Ray W., Sr. Conduit fitting. 3,272,539, 9–13–66, Cl. 285—332.4.
Ash, Eric A., E. A. F. Sell, T. M. Jackson, and L. A. Vinton, to International Standard Electric Corp. Tunable cavity resonator. 3,273,085, 9–13–66, Cl. 333—83.
Ashton, Robert, M. L. Gullickson, and J. G. Butler, to Massey-Ferguson Ltd. Corn harvester. 3,271,940, 9–13–66, Cl. 56—105.
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Atkins, John H., and G. A. Wood, Jr., to Oversewing Machine Co. of America. Automatic feed apparatus for booksewing machine. 3,272,160, 9–13–66, Cl. 112—21.
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Frenl, Letterio. 3,272,357.
Atlas-Pacific Engineering Co.: *See*—
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Atomic Energy of Canada Ltd.: *See*—
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Au, Tin Y., and E. H. Olson, to E. I. du Pont de Nemours and Co. Method of manufacturing stockings from two-component filaments. 3,271,837, 9–13–66, Cl. 28—74.
Aubery, Francois. Packing machines. 3,271,925, 9–13–66, Cl. 53—128.
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Harrison, Walter G., Gary, and Audet. 3,272,354.
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Automatic Electric Laboratories, Inc.: *See*—
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Avellino, Sebastian. Toy boat. 3,272,173, 9–13–66, Cl. 115—22.3.
Averdieck, Edward P. Sliding adjustable drawer. 3,272,583, 9–13–66, Cl. 312—343.
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Craig, Burnie M. 3,272,301.
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Balamuth, Lewis, and A. Kuris, to Cavitron Ultrasonics Inc. Apparatus for joining thermoplastic sheet material with ultrasonic rotary vibrators. 3,272,682, 9–13–66, Cl. 156—580.
Baldwin-Lima-Hamilton Corp.: *See*—
Stulen, Walter H. 3,271,986.
Balk, Pieter, and M. H. Pilkuhn, to International Business Machines Corp. Majority carrier channel device using heterojunctions. 3,273,030, 9–13–66, Cl. 317—235.
Balkin, Burton E. Method for inducing state of reduced awareness. 3,272,198, 9–13–66, Cl. 128—1.
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Barecki, Chester J., and R. T. Knapp, to American Seating Co. Adjustable back lounge chair. 3,272,535, 9–13–66, Cl. 297—369.
Barker, Robert S., to Halcon International, Inc. Preparation of aminated benzenes from hydroxy benzenes. 3,272,865, 9–13–66, Cl. 260—581.
Barley, Leo D., to Harris-Intertype Corp. Adjustable knife and clamp assembly. 3,272,050, 9–13–66, Cl. 83—390.
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Barnes, Jeffery W., to Ferranti, Ltd. Gyro-vertical apparatus. 3,272,019, 9–13–66, Cl. 74—5.43.
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Barnum, Leslie F. Molded pallet. 3,272,158, 9–13–66, Cl. 108—51.
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Baskin, Herbert B., and R. E. Bonner, to International Business Machines Corp. Applied sequence identification device. 3,273,130, 9–13–66, Cl. 340—172.5.
Bassett, Arthur T., Jr., R. S. Gaugler, and K. E. Jenkins, to General Motors Corp. Tubular thermoelectric array. 3,272,639, 9–13–66, Cl. 136—203.
Bassoff, Arthur B.: *See*—
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Baum, Theodore M., to Koppers Co., Inc. Mechanism for feeding box blanks. 3,272,499, 9–13–66, Cl. 271—10.
Bauml, Johannes H., to Aktiebolaget Mohogs Mekaniska Verkstad. Device for sawing and stacking sheet material. 3,272,242, 9–13–66, Cl. 143—48.
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Ziegler, George F. 3,272,072.
Beachum, Curtis M. Apparatus for manipulation of thin sheet stock. 3,272,502, 9–13–66, Cl. 271—62.
Bean, Sherman G. Feeder of non-flowing material. 3,272,397, 9–13–66, Cl. 222—200.
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Beck, Herbert H., to McGraw-Edison Co. Adjustable stop for rotary selector switches. 3,272,031, 9–13–66, Cl. 74—526.

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Bedford, Burnice D., to General Electric Co. Inverter circuits with 1 independent commutation circuits. 3,273,046, 9–13–66, Cl. 321—45.
Bednar, Charles B., to Van Dorn Co. Jail door operator. 3,271,901, 9–13–66, Cl. 49—17.
Beecher, Joel K., to Tung-Sol Electric Inc. Combined cover member and mount. 3,272,903, 9–13–66, Cl. 174—52.
Beekman, Stewart M., to Armour Pharmaceutical Co. Stable aluminum hydroxide-magnesium compound codried gel antacids and process of making same. 3,272,704, 9–13–66, Cl. 167—55.
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Behm, Carl M. Rotor balancing device. 3,272,015, 9–13–66, Cl. 73—470.
Behrens, Otto R., to Controls Co. of America. Dryer control device. 3,271,876, 9–13–66, Cl. 34—45.
Behringer, Alfred C., to Publication Corp. Method of adjusting a foreshortened impression roller. 3,272,122, 9–13–66, Cl. 101—426.
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Beike, William E., deceased; L. L. Linquist, and E. E. Beike, executors, to Beike Mfg. Co. Electroplating racks. 3,272,733, 9–13–66, Cl. 204—297.
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Helm, Harry A. 3,273,119.
Newby, Neal D. 3,273,133.
Taylor, Frank F. 3,273,121.
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Stone, Richard L., and Bellatorre. 3,272,537.
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Beloit Corp.: *See*—
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Belts, Klaus, F. Rodis, deceased (by H. Rodis, nee Arend, heiress), and H. Panter, to Knapsack-Griesheim Aktiengesellschaft. Apparatus for producing higher polyphosphoric acids. 3,272,597 9–13–66 Cl. 23—277.
Bender, Emil A. Trackless swimming pool cover. 3,271,788, 9–13–66, Cl. 4—172.
Bender, Emil A. Swimming pool cover. 3,271,789, 9–13–66, Cl. 4—172.
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Bengtsson, Karl-Inge, to Bofors Aktiebolaget. High-heat resistant steels. 3,272,622, 9–13–66, Cl. 75—126.
Benjamin, Louis E., to The Norwich Pharmacal Co. 5-imino-1-methylcarbamoyl-3-(5-nitro-2-furyl)-Δ²-1,2,4-triazoline and its preparation. 3,272,840, 9–13–66, Cl. 260—308.
Bennett, John D., and J. W. Peret, to Sun Oil Co. Rotative gas lift system. 3,272,146, 9–13–66, Cl. 103—232.
Benson, Albert J., to Collins Radio Co. Circuit for synchronising firing of diodes in diode-controlled rectifier. 3,273,045, 9–13–66, Cl. 321—43.
Benson, Jack J.: *See*—
Jones, John F., Benson, and Williams. 3,271,949.
Bent, John H., to Standard Pneumatic Motor Co. Fluid pressure-operated motor. 3,272,079, 9–13–66, Cl. 91—175.
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Menne, Heinrich, and Weinreich. 3,271,850.
Bentley Engineering Co Ltd., The: *See*—
Wainwright, Carlyle H. 3,272,294.
Benton, Kenneth R., to Owens-Corning Fiberglas Corp. Feeder for producing fibers. 3,272,609, 9–13–66, Cl. 65—1.
Berghaus, Bernhard, and M Staesche, to Elektronhysikalische Anstalt Bernhard Berghaus. Process of preparing hydrazine-ammonia addition compounds. 3,272,730, 9–13–66, Cl. 204—177.
Bergstrom, Myron F., to Union Carbide Corp. Restrained pipe joints. 3,272,538, 9–13–66, Cl. 285—231.
Bergy, Malcolm E., and W. L. Lummis, to The Upjohn Co. Antibiotic melrosporus and method of production. 3,272,709, 9–13–66 Cl. 167—65.
Berna, Albert J. Angular rotary drive unit. 3,271,978, 9–13–66, Cl. 64—20.
Bernaldo de Quiros, Julio G.: *See*—
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Bernard, David G.: *See*—
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Bernard, Luigi, G. Bosisio, F. Chillemi, and O. Goffredo, to Societa Farmaceutici Italia. Polypepetides. 3,272,790, 9–13–66, Cl. 260—112.5.
Berner, Erling, to Pennsylvania WMB, Inc. Insulated cold storage rooms or similar enclosures. 3,271,970, 9–13–66, Cl. 62—223.
Bertin, Daniel, L. Nedelec, and J. Perronnet, to Rousset-UCLAF. 20-aminomethyl-21-amino-pregnanes and therapeutic compositions thereof. 3,272,708, 9–13–66, Cl. 167—65.
Bertram, Benjamin Q., and R. Walters, to The Sperry Gyroscope Co. Ltd. Hydraulic apparatus. 3,272,082, 9–13–66, Cl. 91—378.
Betts, Robert E., and N. P. Williams, to United States of America, Army. Igniter squib. 3,272,127, 9–13–66, Cl. 102—70.2.
Bickhaus, James T.: *See*—
Cook, Forrest W., Bickhaus, and Smith. 3,272,467.
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Biel, John H., and W. K. Hoya, to Colgate-Palmolive Co. Unsymmetrical disubstituted amino-alkyl hydrazines. 3,272,807, 9–13–66, Cl. 260—243.
Bielenberg, Waldemar: *See*—
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Big Dutchman, Inc.: *See*—
Van Huis, Robert L. 3,272,400.
Bindler, Jakob: *See*—
Hausermann, Heinrich, and Bindler. 3,272,805.
Binns, Clem C. Anchor reel. 3,272,475, 9–13–66, Cl. 254—186.
Biochemie Gesellschaft mit beschraankter Haftung: *See*—
Kraushaar, Alfred, and Riedl. 3,272,834.
Bjarno, Knud M. H. Container structures. 3,272,423, 9–13–66, Cl. 229—55.
Bjornsen, Bjorn G., and T. J. Lechner, Jr., to Johnson Service Co. Fluid control apparatus. 3,272,215, 9–13–66, Cl. 137—81.5.
Black, Sheppard A., to United States Rubber Co. Inflatable annular bladder used to form the bead region of a pneumatic tire carcass. 3,272,677, 9–13–66, Cl. 156—401.
Blackstone Corp.: *See*—
Carlson, Richard E., and Paulin. 3,272,165.
Blake, John L., Jr.: *See*—
Tassone, Bruno A., and Blake. 3,272,574.
Blaker, David P., and K. J. Conrad. Bowling ball hole gauging device. 3,271,870, 9–13–66, Cl. 33—174.
Blakewell, Roland F., L. H. Smith, and M. W. Loveland, to Atlas-Pacific Engineering Co. Fruit orientor. 3,272,311, 9–13–66, Cl. 198—33.
Blase, George: *See*—
Hanson, Roy R. 3,272,411.
Blenkarn, Kenneth A., to Pan American Petroleum Corp. Marine structure. 3,271,963, 9–13–66, Cl. 61—46.
Blickisdorf, Eduard, and W. Landenmann, to Mesmmel & Co. Aktiengesellschaft. Apparatus for orienting articles, particularly ampoules. 3,272,310, 9–13–66, Cl. 198—33.
Bliss, Denys S.: *See*—
Hall, Kenneth, Bliss, and Charity. 3,272,272.
Bloctube Controls Ltd.: *See*—
Goodwin, Herbert J. 3,273,036.
Bloemendaal, Stanley D., to Geo Space Corp., a Division of Western Equities, Inc. Radial vane shutter. 3,272,107, 9–13–66, Cl. 95—59.
Bloom, Louis R., and C. F. Buhrer, to General Telephone and Electronics Laboratories, Inc. Polarization modulation system for transmitting and receiving two independent signals over a single electromagnetic carrier. 3,272,908, 9–13–66, Cl. 250—199.
Bloomquist, James V., to Sperry Rand Corp. Power transmission. 3,272,135 9–13–66, Cl. 103—38.
Blozis, Peter P., to Hahn, Inc. Combined engine throttle and transmission control means. 3,272,030, 9–13–66, Cl. 74—472.
Boehringer Ingelheim G.m.b.H.: *See*—
Ohnacker, Gerhard, and Woltun. 3,272,811.
Boeing Co., The: *See*—
Hacker, Emil A. 3 272 929.
Harting, Darrell R. 3,272,003.
Bofors Aktiebolaget: *See*—
Bengtsson, Karl-Inge. 3,272,622.
Bogle, H. A.: *See*—
Roach, Robert L. 3,272,894.
Bohlinger, Ernst, and S. Friedman. Jewelry shortener lock with pin. 3,271 977, 9–13–66, Cl. 63—1.
Bohnet, Emil. Hand tool with axially movable clutch means. 3,272,246, 9–13–66, Cl. 145—76.
Boillat S. A.: *See*—
Montandon, Louis. 3,271,848.
Boldon, Alvyn C.: *See*—
Allbright, Norman J., and Boldon. 3,272,599.
Bollag, Werner, H. Gutmann, B. Hegedus, A. Kaiser, A. Langemann, M. Muller, and P. Zeller, to Hoffmann-La Roche Inc. Substituted methyl hydrazine compounds. 3,272,839, 9–13–66, Cl. 260—304.
Bolling, Carl, to Imperial-Eastman Corp. Gage valve. 3,272,230, 9–13–66, Cl. 137—557.
Bolton, Douglas H. H., F. Pawling, and M. C. Potts, to Dowty Mining Equipment Ltd. Roof support assemblies suitable for use in mines. 3,272 084, 9–13–66, Cl. 91—414.
Bond, James H.: *See*—
Harrington, Robert C., Jr., Smith, and Bond. 3,272,687.
Bonner, Bernice B.: *See*—
Sanders, Shelby W. 3,272,282.
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Sanders, Shelby W. 3,272,282.
Bonner, Raymond E.: *See*—
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Boodman, Norman S., P. X. Masciantonio, and G. W. Perkins, to United States Steel Corp. Method for the recovery of anthracene. 3,272 884, 9–13–66, Cl. 260—676.
Booker Sheila M., B. Ellis, and V. Petrow, to The British Drug House Ltd. Cyclic acetals and ketals of the 6-methyl-pregnane series and process for preparing same. 3,272,797, 9–13–66, Cl. 260—239.55.
Borg-Warner Corp.: *See*—
Flinn, George E. 3,272,291.
Hendry, James W. 3,271 820.
Moyer, Wendell W., Jr. 3 272,774.
Prijatel, Edward A. 3,272,518.
Rezin, Leonard A. 3,271,975.

Boruvka, Otto. Telescopic folding crutch. 3,272,210, 9–13–66, Cl. 135—50.

Borzym, Alexander. Tubular stock cutoff method and apparatus. 3,273,433, 9–13–66, Cl. 83—54.

Bosch, Robert, G.m.b.H.: *See*—
Vielmo, Oskar. 3,272,567.
Vielmo, Oskar, and Trui. 3,272,092.

Bosisio, Germano: *See*—
Bernardi, Luigi, Bosisio, Chillemi, and Goffredo. 3,272,790.

Bourcier de Carbon, Christian M. L. L. Shock absorbers. 3,272,493, 9–13–66, Cl. 267—8.

Bourgault, Pierre L., and J. Batelaan, to Johnson, Matthey & Mallony Ltd. Three-terminal electrolytic device. 3,273,027, 9–13–66, Cl. 317—230.

Bourns, Inc.: *See*—
Smith, Melvin H. 3,272,960.

Bourquard, Fernand E. G. Means for keeping a high degree of temperature stability within a chamber of substantial dimensions. 3,272,258, 9–13–66, Cl. 165—26.

Bowden, J. E., and C. G. Lynch, to Vortex Tool & Mfg. Co. Vortex type reconditioner and reconditioning method for used drilling mud. 3,271,929, 9–13–66, Cl. 55—52.

Bowers, Marvin T. Detachable fishing float. 3,271,893, 9–13–66, Cl. 43—43.14.

Bowles Engineering Corp.: *See*—
Jones, Donnie R. 3,272,213.

Bowles, Romald E., to United States of America, Army. Pure fluid comparator. 3,272,212, 9–13–66, Cl. 137—81.5.

Bowser, Inc.: *See*—
Topol, George J. 3,271,998.

Boyce, William C., to Ling-Temco-Vought, Inc. Impact protective device. 3,271,797, 9–13–66, Cl. 5—348.

Boyd, Charles A., to Aeroprojects Inc. Chemical energy laser pump. 3,271,980, 9–13–66, Cl. 67—33.

Boyett, Maxie F. Collapsible mantel. 3,271,914, 9–13–66, Cl. 52—36.

Boyle, Robert F.: *See*—
Menlendyk, John W., and Boyle. 3,272,077.

Bosek, John S., to Continental Can Co., Inc. Can end for easy opening beverage cans. 3,272,381, 9–13–66, Cl. 220—54.

Bracka, Bruno W., to General Dynamics Corp. Means for positioning a rotating wing slat device. 3,272,458, 9–13–66, Cl. 244—42.

Bradfield, Thomas A.: *See*—
Allenbach, Charles R., Bradfield, Gunning, and Rink. 3,272,442.

Brad-Mar Corp., The: *See*—
Wallace, John W. 3,272,345.

Brand, Bruce B., and J. J. Scott, to Havens Structural Steel Co. Honeycomb fill for cooling tower. 3,272,484, 9–13–66, Cl. 261—24.

Brandes, Ernest E. Air flow disseminating apparatus. 3,272,109, 9–13–66, Cl. 98—40.

Brandl, Wilhelm. Control switch for an electrical appliance. 3,272,942, 9–13–66, Cl. 200—122.

Brauer, Leonhard: *See*—
Madelung, Gero, Brauer, and Emmerich. 3,272,459.

Braun, Robert A., to E. I. du Pont de Nemours and Co. Metal chelates containing perhaloalkyl groups. 3,272,853, 9–13–66, Cl. 260—438.1.

Brauneisen, Robert: *See*—
Koesling, Heins, and Brauneisen. 3,272,957.

Braunwarth, John B., to Union Oil Co. of California. Preparation of halo and alkyl-thio substituted allyl esters. 3,272,856, 9–13–66, Cl. 260—488.

Breher, Rudolf, to F. Stubbe. Method of manufacturing rotary valves. 3,271,845, 9–13–66, Cl. 29—157.1.

Brenner, Bert, to J. and R. Cohn. Beryllium-gold alloy and article made therefrom. 3,272,625, 9–13–66, Cl. 75—165.

Brenner, Charles: *See*—
Cirino, John F., and Brenner. 3,271,803.

Breuning, Robert. Exchangeable tool bit. 3,271,842, 9–13–66, Cl. 29—96.

Brewer, John H., to Hynson, Westcott & Dunning, Inc. Immunological test kit. 3,272,319, 9–13–66, Cl. 206—12.

Bristol Siddeley Engines Ltd.: *See*—
Fuller, John R. D. 3,271,948.

British Drug House Ltd., The: *See*—
Booker, Sheila M., Ellis, and Petrow. 3,272,797.
Ellis, Bernard, and Petrow. 3,272,798.

British Industrial Plastics Ltd.: *See*—
Wilson, Walter, and May. 3,272,780.

British Petroleum Co. Ltd., The: *See*—
Pitkethly, Robert C., Ford, and Fisher. 3,272,887.

Broadley, Harry R., to General Electric Co. Solion cell with electrodes engaging container wall for preventing ion-drift. 3,273,025, 9–13–66, C. 317—230.

Broadley, Harry R., and W. R. Grams, to General Electric Co. Solion cell having electrodes cold-sealed with container wall. 3,273,026, 9–13–66, Cl. 317—230.

Brockman, John J.: *See*—
Rich, Edward A. E., and Brockman. 3,272,444.

Brockmuller, Friedrich F., to Windmoeller & Hoelscher. Method and apparatus for the manufacture of a square-bottom-bag of a weldable material. 3,272,093, 9–13–66, Cl. 93—8.

Brogdex Co.: *See*—
Russell, Kenneth F. 3,272,334.

Brose, Horace B. Tire repair insert. 3,272,253, 9–13–66, Cl. 152—370.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Sacer, Jose. 3,273,010.

Brown Citrus Machinery Corp.: *See*—
White, David U., and Rebeck. 3,272,116.

Brown, Jerome E., H. Shapiro, and E. G. De Witt, to Ethyl Corp. Antiknock compositions. 3,272,606, 9–13–66, Cl. 44—69.

Brown, William C., to Raytheon Co. Traveling fast-wave device. 3,273,011, 9–13–66, Cl. 315—39.

Brown, William F., to Texaco Inc. Variable capacity binary counter. 3,272,994, 9–13–66, Cl. 307—88.5.

Brownell, Carl A., Jr. Smog accumulation preventing apparatus. 3,272,435, 9–13–66, Cl. 239—14.

Browning, James A., to Thermal Dynamics Corp. Electric arc torches. 3,272,959, 9–13–66, Cl. 219—75.

Brubaker, Philip E.: *See*—
Queneau, Paul E., Brubaker, and O'Neill. 3,272,616.

Bruck, George, and J. F. Freno, to Avco Corp. Printed circuit package with indicia. 3,272,909, 9–13–66, Cl. 174—68.5.

Bruehl, Jerome J. Mechanical turning tool unit. 3,272,037, 9–13–66, Cl. 81—57.

Brukner, John S., and C. C. Nathan, to Texaco Inc. Well completion or workover fluid. 3,272,741, 9–13–66, Cl. 252—8.55.

Brundage, Robert W., to The Emerson Electric Co. Variable volume reversible hydraulic device. 3,272,128, 9–13–66, Cl. 103—3.

Brungardt, Arthur V. Cigarette package. 3,272,320, 9–13–66, Cl. 206—41.

Brunner, Alfred, to Sulzer Brothers Ltd. Method and apparatus for supply of steam to an auxiliary turbine in a steam power plant. 3,271,960, 9–13–66, Cl. 60—67.

Bruns, Henry E., and E. M. Stryker, to Sperry Rand Corp. Remote cathode follower power amplifier with automatic adjustment of tuning and loading. 3,273,068, 9–13–66, Cl. 325—174.

Bryan, James C., to E. I. du Pont de Nemours and Co. Quenching apparatus. 3,271,818, 9–13–66, Cl. 18—8.

Bryant, Austin U., to Grove Valve and Regulator Co. Fluid flow control device. 3,272,470, 9–13–66, Cl. 251—61.

Bryant, Austin U., to Grove Valve and Regulator Co. Flexible gate valve having load bearing means. 3,272,475, 9–13–66, Cl. 251—203.

Buckminster, Lloyd A., ½ to Textron, Inc., and ½ to American Optical Co. Lens blocks. 3,271,912, 9–13–66, Cl. 51—216.

Buchholtz, Theodore, G. M. Rambosek, and R. G. Drew, to Minnesota Mining and Mfg. Co. Paving material and paving surfacing. 3,272,098, 9–13–66, Cl. 94—7.

Budzich, Tadeusz. Fluid power synchronized drives for vehicles. 3,272,276, 9–13–66, Cl. 180—44.

Budzich, Tadeusz. Synchronization of fluid power drives. 3,272,277, 9–13–66, Cl. 180—44.

Budzich, Tadeusz. Response controls for fluid drives. 3,272,278, 9–13–66, Cl. 180—44.

Budzich, Tadeusz. Fluid pressure operated drive and clutch systems. 3,272,279, 9–13–66, Cl. 180—44.

Buechele, Calvin F., and J. R. Westwood, to Reynolds Metals Co. Multi-layer laminates and method of manufacturing hollow articles therefrom. 3,271,846, 9–13–66, Cl. 29—157.3.

Buell, Bennett G., and R. S. Long, to American Cyanamid Co. Pyridotriazole brighteners. 3,272,829, 9–13–66, Cl. 260—295.

Buell, Bennett G., and R. S. Long, to American Cyanamid Co. Pyridotriazole brighteners. 3,272,830, 9–13–66, Cl. 260—295.

Buell, Bennett G., and R. S. Long, to American Cyanamid Co. Pyridotriazole brighteners. 3,272,831, 9–13–66, Cl. 260—295.

Buhler, Warren G., to Oxy-Dry Sprayer Corp. Powder sprayers. 3,273,016, 9–13–66, Cl. 317—3.

Buhrer, Carl F.: *See*—
Bloom, Louis R., and Buhrer. 3,272,988.

Bull, Eric W.: *See*—
De Peignefort Galloway, Robert, and Bull. 3,273,008.

Bullard, Denzol E., and H. W. King. Safety climber. 3,272,283, 9–13–66, Cl. 182—141.

Bulova Watch Co., Inc.: *See*—
Anderson, David H. 3,271,945.

Burdge, Sam W., and R. S. Carter, to Monsanto Co. Heating apparatus for use in electrically heated rolls. 3,273,101, 9–13–66, Cl. 338—316.

Burdick, Elliott S.: *See*—
Lamer, Gerald P., and Burdick. 3,272,362.

Burgess, Ralph D.: *See*—
Thiele, Edward G., and Burgess. 3,272,331.

Burndy Corp.: *See*—
Radocy, Ernest. 3,273,108.

Burns, Dennis M. Safeguard for child's seat. 3,272,553, 9–13–66, Cl. 297—254.

Burns, Harry J., ½ to M. Fallon, Jr. Hydrotherapy device for animals. 3,272,201, 9–13–66, Cl. 128—66.

Burroughs Corp.: *See*—
Klinikowski, James J. 3,272,971.
Mollinga, Thomas. 3,273,078.
Somlyody, Arpad. 3,272,993.

Burst, Francis J.: *See*—
Hillenbrand, William A., Burst, and Drew. 3,271,795.

Burstall, William M., to Bryon Jackson Inc. Gripping means. 3,272,038, 9–13–66, Cl. 81—186.

Burt, Robert V.: *See*—
Thomas, James H., and Burt. 3,272,359.

Burton, John A., and W. E. Follett, to Crown Zellerbach Canada Ltd. Sheet handling apparatus. 3,272,351, 9–13–66, Cl. 214—6.

Burton, William E. Cabinet having sterilizable instrument tray. 3,271,860, 9–13–66, Cl. 32—22.

Busch, John. Article dispenser with plastic twisting mechanism. 3,272,327, 9–13–66, Cl. 206—56.

Busche, Robert M., and D. L. Funck, to E. I. du Pont de Nemours and Co. Method for the crosslinking of polymeric materials. 3,272,771, 9–13–66, Cl. 260—41.

Bushi, Michael. Ball bearing assembly. 3,272,575, 9–13–66, Cl. 308—195.

Butler, James G.: *See*—
Ashton, Robert, Gullickson, and Butler. 3,271,940.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Herscovici, Stellan. 3,273,147.
Reverdin, Daniel. 3,273,004.

Cabbage, John T., to Phillips Petroleum Co. Production of Cs cyclic hydrocarbons. 3,272,878, 9–13–66, Cl. 260—666.

Cabot, Samuel. Devices for use in applying surface treating liquids. 3,271,807, 9–13–66, Cl. 15—223.

Cakora, Henry J., to Tazewell Machine Works, Inc. Cart system for foundries or the like. 3,272,147, 9–13–66, Cl. 104—1.

Caldwell, John R., to Eastman Kodak Co. Preparation of poly(ester-amides). 3,272,776, 9–13–66, Cl. 260—47.

Caldwell, John R., and W. J. Jackson, Jr., to Eastman Kodak Co. Cyclobutane derivatives. 3,272,870, 9–13–66, Cl. 260—611.

Caldwell, Thomas, to Smith Fullerton Ltd. Apparatus for separating liquids or solids from liquids. 3,272,343, 9–13–66, Cl. 210—521.

Calmec (Mfg.) Ltd.: *See*—
Schneider, Jack M. 3,271,816.

Calor Appareils Electro-Domestiques: *See*—
Trouilhet, Maurice M. A. 3,272,948.

Camardella, Giuseppe. Continuous coil winding machine. 3,271,839, 9–13–66, Cl. 29—33.

Cameron Iron Works, Inc.: *See*—
Allen, Herbert. 3,272,222.

Campbell Taggart Associated Bakeries, Inc.: *See*—
Fehr, Isaac N., and Russ. 3,272,636.

Canadian Ingersoll-Rand Co., Ltd.: *See*—
Dick, George M., and Kapralos. 3,272,245.

Canadian International Paper Co.: *See*—
Watkins, Cecil H. 3,272,385.

Cantor, Paul A.: *See*—
Dadura, James G., Odell, and Cantor. 3,272,745.

Capin, Stanley: *See*—
Miller, Carlos. 3,272,409.

Caputo, Ezio, and E. Zannini, to Ankerfarm S.p.A. Recovery of tetracycline antibiotics from fermentation broths. 3,272,862, 9–13–66, Cl. 260—559.

Caravella, Frank S. Roll support mountings. 3,272,448, 9–13–66, Cl. 242—55.2.

Carhart Refractories Co.: *See*—
Ross, Robert P. 3,272,490.

Carlos, J. Paul, and C. W. Gamble. Fabric steamer. 3,272,964, 9–13–66, Cl. 219—271.

Carlson, Adolph C.: *See*—
Rutt, Richard D., and Carlson. 3,271,909.

Carlson, Harold A., to ACF Industries. Air valve secondary carburetor. 3,272,482, 9–13–66, Cl. 261—23.

Carlson, Richard E., and J. E. Paulin, to Blackstone Corp. Machines for manufacturing heat transfer units. 3,272,165, 9–13–66, Cl. 113—1.

Carpenter, Herbert L., Jr., to The Greif Bros. Cooperage Corp. Tapered fiber drum and method of making the same. 3,272,094, 9–13–66, Cl. 93—39.1.

Carpenter, Herbert L., Jr.: *See*—
Gaylord, Paul C., and Carpenter. 3,272,671.

Carpenter, James D., to North American Aviation, Inc. Star tracker signal conditioner of amplitude, frequency, slope and width. 3,272,992, 9–13–66, Cl. 307—88.5.

Carpenter, Virgil R., and J. E. Jennings, to The Unipress Co., Inc. Garment buck apparatus. 3,272,408, 9–13–66, Cl. 223—73.

Carrier Corp.: *See*—
Palmatier, Everett P. 3,271,976.
Shields, James R. 3,271,934.
Shields, James R. 3,272,259.

Carrier, Michel. Machine for cutting spectacle-legs or the like. 3,272,076, 9–13–66, C. 90—13.

Carrier, Paul J.: *See*—
Schlossberg, Louis, Logue, and Carrier. 3,272,664.

Carson, Robert L., to General Electric Co. Compound control system for a turbine. 3,271,953, 9–13–66, Cl. 60—43.

Carter, Paul H.: *See*—
Morse, Raymond L., and Carter. 3,272,418.

Carter Precision Electric Co.: *See*—
Gloviak, Stanley J., and Weller. 3,272,948.

Carter, Rollins S.: *See*—
Burdge, Sam W., and Carter. 3,273,101.

Casco Products Corp.: *See*—
Horwitt, Laurence G. 3,272,390.

Case, Everett N., S. H. Patinkin, and H. D. Young, to Sinclair Research, Inc. Method of reducing ring wear in compression ignition engines burning residual hydrocarbon fuel. 3,272,607, 9–13–66, Cl. 44—70.

Catino, Sigmund C.: *See*—
Strobel, Albert F., and Catino. 3,272,810.

Casey, William J.: *See*—
Doundoulakis, Helias. 3,273,156.

Catino, Sigmund C.: *See*—
Strobel, Albert F., and Catino. 3,272,855.

Cato, Carl P., to Dacam Corp. Multi-path feed in a conveyor assembly. 3,272,298, 9–13–66, Cl. 193—36.

Cavitron Ultrasonics Inc.: *See*—
Balamuth, Lewis, and Kuris. 3,272,682.

Chamberlin, Harry C. Electrical musical instrument having pre-recorded tape for tone generation. 3,272,907, 9–13–66, Cl. 84—1.28.

Chandler, Gerald F., to Cohu Electronics, Inc. Digital comparator. 3,273,122, 9–13–66, Cl. 340—146.2.

Chandler, Walter, to Plessey (U.K.) Ltd. Plug-and-socket connectors. 3,273,107, 9–13–66, Cl. 339—198.

Charchan, Michael and W. Star-shaped ornament. 3,272,976, 9–13–66, Cl. 240—10.

Charchan, William: *See*—
Charchan, Michael and W. 3,272,976.

Charity, Michael: *See*—
Hall, Bliss, and Charity. 3,272,272.

Chase, Basil H., to Lever Bros. Co. Process and composition containing an oxygen releasing compound and an organic carbonate. 3,272,750, 9–13–66, Cl. 252—99.

Chato, John C. Surgical probe. 3,272,203, 9–13–66, Cl. 128—303.1.

Chillemi, Francesco: *See*—
Bernardi, Luigi, Bosisio, Chillemi, and Goffredo. 3,272,790.

Chiron, Bernard P., to Lignes Telegraphiques et Telephoniques. Temperature compensated reciprocal ferrite phase shifter. 3,273,082, 9–13–66, Cl. 333—31.

Chopoorian, John A., and K. O. Loeffler, to American Cyanamid Co. Impregnated porous photochromic glass. 3,272,646, 9–13–66, Cl. 117—33.3.

Chuy, Ruth G. Flash card game and stand. 3,271,882, 9–13–66, Cl. 35—31.

Ciaranello, Joseph R.: *See*—
Pitzer, Edgar C., Fountain, and Ciaranello. 3,272,738.

Ciba Corp.: *See*—
Mizzoni, Renat H. 3,272,819.

Cirino, John F., and C. Brenner, to Universal Robot Inc. Vehicle washing apparatus. 3,271,803, 9–13–66, Cl. 15—21.

Chambers, Victor S.: *See*—
Howland, Louis H., Chambers, and MacFarlane. 3,272,767.

Champion Papers, Inc.: *See*—
Thiele, Edward G., and Burgess. 3,272,331.

Charchan, William: *See*—
Charchan, Michael and W. 3,272,976.

Char-Lynn Co.: *See*—
Easton, Wayne B. 3,272,142.

Charron Research Co.: *See*—
Neely, George L. 3,272,535.

Chase Instruments Corp.: *See*—
Weiner, Benjamin F. 3,272,371.

Chemetron Corp.: *See*—
Groppe, Alvin F. 3,272,238.

Chessick, John J.: *See*—
Zettlemoyer, Albert C., Chessick, and Tcheurekdjian. 3,272,434.

Chevron Research Co.: *See*—
Driza, Charles E., and Price. 3,272,379.
Stephenson, Lee P., and Klein. 3,273,114.

Chicago Aerial Industries, Inc.: *See*—
Singer, Joseph, Jr. 3,272,063.

Chicago Bridge & Iron Co.: *See*—
Maher, James B., and Mair. 3,271,965.

Chun, J., & Co.: *See*—
Sefcik, Robert. 3,272,054.

Cincinnati Milling Machine Co., The: *See*—
Pfister, Stanley A. 3,271,853.

Clack, James H. Combined service and emergency brake system apparatus. 3,272,566, 9–13–66, Cl. 303—13.

Clark Equipment Co.: *See*—
Mindrum, Kenneth H., and Newhouse. 3,272,364.
Stevens, Daryl W. 3,272,365.

Clark, Eugene V., Jr.: *See*—
Hoff, Rodney G., Clark, and Weeks. 3,273,048.

Clark, Floyd E.: *See*—
Sokoloff, Alexis N., and Clark. 3,271,985.

Clark, Patrick A., J. F. Alsop, and J. E. Ogle, to Davy and United Engineering Co. Ltd. Cooling beds. 3,272,812, 9–13–66, Cl. 198—34.

Clarke, Patrick W., to Bell Telephone Laboratories Inc. Transformer replacement system. 3,273,044, 9–13–66, Cl. 321—18.

Clarke, Patrick W., and J. A. Pirraglia, to Bell Telephone Laboratories, Inc. Regulated rectifier. 3,273,043, 9–13–66, Cl. 321—18.

Clary, Arthur L. Resilient swimming pool coping. 3,271,878, 9–13–66, Cl. 4—172.

Clason, Jan C., to Voorheen F. Hazemeijer & Co., Fabriek van Electrische Apparaten, N.V. Single or three-phase load-breaking switch with permanent magnet actuator assembly. 3,272,939, 9–13–66, Cl. 200—82.

Clements, Herbert A., to S.S.S. Patents Ltd. Rotary clutches. 3,272,295, 9–13–66, Cl. 192—67.

Cleveland Metal Abrasive Co., The: *See*—
Stewart, Orald L. 3,271,992.

Cleveland Trust Co.: *See*—
Webb, Ernest C. 3,272,123.

Clickner, Forest H. Preparation of active fermentation broths from stable ingredients. 3,272,683, 9–13–66, Cl. 99—9.

Cobaugh, Robert F., to AMP Inc. Series electrical connections. 3,273,102, 9–13–66, Cl. 339—18.

Cockerell, Christopher S., to Hovercraft Development Ltd. Air cushion vehicles having movable cushion-containing walls. 3,272,271, 9–13–66, Cl. 180—7.

Cohen, Gerald D., to Potter Instrument Co., Inc. Contractile reel hub. 3,272,452, 9–13–66, Cl. 242—72.

Cohn, James: *See*—
Brenner, Bert. 3,272,625.

Cohn, Richard: *See*—
Brenner, Bert. 3,272,625.

Cohu Electronics, Inc.: *See*—
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Colgate-Palmolive Co.: *See*—
Biel, John H., and Hoya. 3,272,807.
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Collins Radio Co.: *See*—
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Holloway, Jesse C. 3,273,159.
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Levine, Ralph. 3,272,876.
Commercial Solvents Corp.: *See*—
Abbott, Richard L. 3,272,874.
Compagnie des Ateliers et Forges de La Loire: *See*—
Pollet, Georges. 3,272,053.
Compagnie Francaise Thomson-Houston: *See*—
Drabowitch, Serge V. 3,273,149.
Compagnie Generale d'Automatisme: *See*—
Csech, Joseph. 3,272,975.
Compressed Air Service Co.: *See*—
Culver, Perrin C. 3,272,087.
Computer Instruments Corp.: *See*—
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Comrie, Alan A. D., and B. Dixon, to The Enzymic Malt Co. Ltd. and Dixon Malt Co. Ltd. Malting of barley and other cereals. 3,272,718, 9–13–66, Cl. 195—70.
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Concordia Maschinen- und Elektrizitats G.m.b.H.: *See*—
Rossenbeck, Heinz. 3,273,095.
Concut Inc.: *See*—
Hatcher, Cecil W. 3,272,560.
Connelly, Robert F.: *See*—
Dwyer, James L., and Connelly. 3,271,999.
Conner, John W., P. W. Evans, A. J. Isacks, Jr., and C. P. Neiswender, Jr., to Monsanto Co. Process for catalytic hydrogenation of adiponitrile. 3,272,866, 9–13–66, Cl. 260—583.
Conner, John W., P. W. Evans, A. J. Isacks, Jr., and C. P. Neiswender, Jr., to Monsanto Co. Process for catalytic hydrogenation of adiponitrile. 3,272,867, 9–13–66, Cl. 260—583.
Connolly, Lewis T., and T. C. Montrois, to Eastman Kodak Co. "Lith" developers containing water soluble block polymers of polyoxypropylene and polyoxyethylene. 3,272,628, 9–13–66, Cl. 96—66.
Connoy, Eugene N., R. W. Hoffmann, J. W. Parkin, and C. H. Whitmore, to Continental Machines, Inc. Variable volume pump with protection against overheating. 3,272,138, 9–13–66, Cl. 103—120.
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Continental Can Co., Inc.: *See*—
Bozek, John S. 3,272,381.
Flynn, George M. 3,271,984.
Henchert, John. 3,272,166.
Long, Florren E. 3,272,367.
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Continental Oil Co.: *See*—
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Hutchinson, Merle, and Banks. 3,272,731.
Kapur, Brij L., and Kerfoot. 3,272,881.
Lerwill, William E., and Anstey. 3,273,113.
Queen, John A. 3,272,937.
Riggs, Olen L., Jr. 3,272,861.
Shadan, Anna M. 3,272,690.
Continental Rubber Works: *See*—
Haytock, Benjamin, III, and Stowell. 3,272,235.
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Controls Co. of America: *See*—
Beller, Wilbert E., and Ostrowski. 3,272,935.
Winestock, Bernard J., and Shnable. 3,273,037.
Cook, Forrest W., J. T. Bickhaus, and R. J. Smith, to ACF Industries, Inc. Carburetor. 3,272,487, 9–13–66, Cl. 261—39.
Cook, Robert W., to C. W. Fuelling, Inc. Pipe joint locator comprising mobile transformer utilizing the pipe as low reluctance path between a primary and secondary. 3,273,054, 9–13–66, Cl. 324—37.
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Cookson, William. 3,272,045.
Cookson, William, to Cookson Sheet Metal Developments Ltd. Flying shear. 3,272,045, 9–13–66, Cl. 83—308.
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Corbin, Ralph L., R. Kruger, and D. V. Badgley, to General Motors Corp. Battery separator. 3,272,656, 9–13–66, Cl. 136—145.
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Covey, Rupert A., A. E. Smith, and W. L. Hubbard, to United States Rubber Co. Cycloaliphatic sulfite esters. 3,272,854, 9–13–66, Cl. 260—456.
Cqamenzind, Hans R., to P. R. Mallory & Co., Inc. SCR sine wave generator. 3,273,077, 9–13–66, Cl. 331—116.
Grafts, Walter, and P. F. Wieser, to Union Carbide Corp. Inoculating alloys consisting of Si-Al-Ca-Ba-Mn-Zr-Fe. 3,272,623, 9–13–66, Cl. 75—134.
Craig, Bryant F., to Amalaa Corp. Conelrad warning device. 3,273,069, 9–13–66, Cl. 325—466.
Craig, Burnie M., to Avery Products Corp. Embossing tool having removable die units to accommodate various width tapes. 3,272,301, 9–13–66, Cl. 197—6.7.
Craighead, Merle E., and T. C. Sheet holder for stenographer's papers. 3,272,183, 9–13–66, Cl. 120—28.
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Craighead, Merle E., and T. C. 3,272,183.
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Cretors, Charles J. Corn popper. 3,272,111, 9–13–66, Cl. 99—238.7.
Crimmins, David J., and R. W. Croghan, to The Thomas & Betts Co., Inc. Two-wire insulator. 3,272,913, 9–13–66, Cl. 174—138.
Criterion Metal Fabricators, Inc.: *See*—
Egbert, John P. 3,272,194.
Croghan, Robert W.: *See*—
Crimmins, David J., and Croghan. 3,272,913.
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Von Esch, Anne M., and Crovetti. 3,272,833.
Crowell, Richard S., and T. A. Cuscino, to United States Steel Corp. Stopper rod actuating device. 3,271,827, 9–13–66, Cl. 22—85.
Crowley, William G., to Barrows Industries, Inc. Writing instrument of the retractable type. 3,272,184, 9–13–66, Cl. 120—42.03.
Crown Zellerbach Canada Ltd.: *See*—
Burton, John A., and Follett. 3,272,351.
Herschler, Robert J., and Shilling. 3,272,614.
Cyrogenic Engineering Co.: *See*—
Leonard, Kenneth R. 3,272,579.
Csech, Joseph, to Compagnie Generale d'Automatisme. Automatic machine-tool control system for truing mechanical parts. 3,272,975, 9–13–66, Cl. 235—151.11.
Csicsatka, Antal, to General Electric Co. Receiver circuit for stereo separation. 3,272,923, 9–13–66, Cl. 179—15.
Csicsatka, Antal: *See*—
Linz, Robert M., and Csicsatka. 3,272,922.
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Culver, Perrin C., to Compressed Air Service Co. Force multiplying and safety power cylinder. 3,272,087, 9–13–66, Cl. 92—24.
Curry, Philip E., and P. P. Demopoulos, to Monsanto Chemical Co. Metering pump. 3,272,140, 9–13–66, Cl. 103—126.
Curry, Philip E., and P. P. Demopoulos, to Monsanto Chemical Co. Metering pump. 3,272,140, 9–13–66, Cl. 103—126.
Curry, Philip E., and P. P. Demopoulos, to Monsanto Co. Metering pump. 3,272,141, 9–13–66, Cl. 103—126.
Curtis, John P., to Adams-Russell Co., Inc. Hybrid circuit having separate coupling transformer at the sum port and difference port and having tuning means to improve operation. 3,273,079, 9–13–66, Cl. 333—11.
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Crowell, Richard S., and Cuscino. 3,271,827.
Cutala, Alfred, to International Business Machines Corp. Digital pulse generator with compensation for document velocity variations. 3,272,969, 9–13–66, Cl. 235—61.11.
Cutler, Cassius C., R. Kompfner, and L. C. Tillotson, to Bell Telephone Laboratories, Inc. Antenna system. 3,273,151, 9–13–66, Cl. 343—100.
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Cutler, Leonard S., to Hewlett-Packard Co. Frequency synthesizer. 3,273,073, 9–13–66, Cl. 331—38.
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Cutler, Royal A., and S. Schalit, to Sterling Drug Inc. 1,1'-(alkylene)bis(5-arylbiguanides). 3,272,863, 9–13–66, Cl. 260—565.
Czekalla, Roland, to Agfa Aktiengesellschaft. Optical copying machine. 3,272,106, 9–13–66, Cl. 95—58.
Dalbo, Cesar M. Friction-decimal calculator. 3,272,431, 9–13–66, Cl. 235—69.
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Cato, Carl P. 3,272,298.

Dadura, James G., N. R. Odell, and P. A. Cantor, to Texaco Inc. Grease composition. 3,272,745, 9–13–66, Cl. 252—33.6.
Dahms, James B., and B. P. Edmonds, to Pittsburgh Plate Glass Co. Mining process. 3,271,962, 9–13–66, Cl. 61—36.
D'Amico, John J., to Monsanto Co. 4-nitroso 1-piperazinethiocarboxylates. 3,272,820, 9–13–66, Cl. 260—268.
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Dauge, Pierre, to Les Ateliers de Construction Ventola, Societe Anonyme. Apparatus for collecting automatically fibrous materials suspended in air. 3,271,936, 9–13–66, Cl. 55—302.
Davidson, Karl A.: *See*—
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Davidson, Thomas J., to Honeywell Inc. Control system for water heaters. 3,272,432, 9–13–66, Cl. 236—21.
Davis, Harold G. Fish hook baiting device. 3,271,890, 9–13–66, Cl. 43—4.
Davis, Joseph W., to General Atronics Corp. Mechanical spring finger data storage system. 3,273,132, 9–13–66, Cl. 340—173.
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Davis, Orvis A., Sr., and B. R. Walsh, to Gulf Research & Development Co. Aspirating spray nozzle. 3,272,441, 9–13–66, Cl. 239—403.
Davison, Joseph W., to Phillips Petroleum Co. Separation of ethylene from acetylene. 3,272,885, 9–13–66, Cl. 260—677.
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Clark, Patrick A., Alsop, and Ogle. 3,272,312.
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Day, William R.: *See*—
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Dean, Herman R. Glockenspiel and support therefor. 3,272,056, 9–13–66, Cl. 84—403.
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Haulik, Greer, and Decker. 3,272,542.
De Jean, Edgar K. Tie locating device. 3,271,780, 9–13–66, Cl. 2—146.
De Jong, Cornelis L.: *See*—
Van Dalen, Christiaan J., and de Jong. 3,272,500.
De Lew, Earl R., and A. Lazar, to Yosemite Chemical Co. Emulsion forming composition, and method of making and utilizing same. 3,272,758, 9–13–66, Cl. 252—354.
De Monfreid, Daniel. Sailing-boat. 3,272,167, 9–13–66, Cl. 114—39.
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Dempster, James W., and S. C. Voorhees, to Dempster Bros., Inc. Freight transportation system. 3,272,150, 9–13–66, Cl. 105—366.
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Alexander, David C., and Dennard. 3,272,995.
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Couture, Paul H. 3,272,068.
Nelson, George R. 3,272,644.
White, Kenneth J. 3,272,067.
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Desmazes, Andre P., and R. H. Tissier, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Accelerating arrangement for gas-turbine jet engines. 3,271,946, 9–13–66, Cl. 60—35.6.
De Staat der Nederlanden, ten Dese Vertegenwoordigd door directeur-Generaal der Posterjen: *See*—
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Taylor, Frank L. 3,271,931.
Deuffel & Esser Co.: *See*—
Rauhut, Herbert, and Sus. 3,272,630.
Deutsche Edelstahlwerke Aktiengesellschaft: *See*—
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De Vries, Adrian J., G. V. Morris, and E. M. Roschke, to Zenith Radio Corp. Audio reproduction system. 3,272,906, 9–13–66, Cl. 84—1.25.
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Dieter, Donald P., and H. P. Moyer, to Unarco Industries, Inc. Dockboard. 3,271,801, 9–13–66, Cl. 14—71.
Dietrich, Walter, to W. C. Heraeus G.m.b.H. Supporting members for a hot cathode block. 3,273,003, 9–13–66, Cl. 313—82.
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Dight, Walter E., to Machine Made Sales Pty. Ltd. Dispenser for fluent materials. 3,272,399, 9–13–66, Cl. 222—232.
DiGiorgio, Rocco F., to Keller Industries, Inc. Fuel economizer and exhaust gas purifier device. 3,273,161, 9–13–66, Cl. 123—119.
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Dim-O-Matic, Inc.: *See*—
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Dirks, Richard D.: *See*—
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Divoky, Alvin L. Material holding bracket platform and method for utilizing the same in roofing constructions. 3,271,921, 9–13–66, Cl. 52—747.
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Comrie, Alan A., and Dixon. 3,272,718.
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Donohue, William J., and H. E. Vander Linde, to Continental Oil Co. Marine drive system. 3,272,168, 9–13–66, Cl. 114—74.
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Dow Chemical Co., The: *See*—
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Hansen Robert D., and Wheaton. 3,272,737.
Houvener, Irving S., and Palfey. 3,273,444.
Rodkey, Edward G. 3,272,424.
Russell, Joseph L. 3,272,772.
Downing, Lucien R., Jr., to Donn Products, Inc. Wall-supporting structural beam. 3,271,920, 9–13–66, Cl. 52—735.
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Dowty Technical Developments Ltd.: *See*—
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Lambeth, Dennis. 3,271,957.
Doyle, Frank B. Tobacco moistening. 3,272,207, 9–13–66, Cl. 131—133.

Drabowitch, Serge V., to Compagnie Francaise Thomson-Houston. Radar systems using second-and higher-order response signals. 3,273,149, 9–13–66, Cl. 343—16.

Drake, Frank M. Stringline attachment for paving machine. 3,272,099, 9–13–66, Cl. 94—46.

Dransfield, Philip B., and M. H. Watson, to Imperial Chemical Industries Ltd. Process for the manufacture of bipyridyls. 3,272,835, 9–13–66, Cl. 260—296.

Draper Corp.: *See*—
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Draper, Marshall D., and F. Keller, to Rexall Drug and Chemical Co. Substituted tetrahydropyridines. 3,272,838, 9–13–66, Cl. 260—297.

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Drosman, Richard W. Coffee dispenser. 3,272,398, 9–13–66, Cl. 222—210.

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Du Bose, Robert F. Convertible wheel chair and commode. 3,271,785, 9–13–66, Cl. 4—134.

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Erner, William E., A. Faarkas, and H. Graboyes, to Air Products and Chemicals, Inc. Polymerization catalysis. 3,272,763, 9–13–66, Cl. 260—2.5.

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Ferguson, James and C. M. Power-driven apparatus for oppositely reciprocating a pair of spaced members. 3,272,023, 9–13–66, Cl. 74—55.

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Franck, Pierre. Electromagnetic device, more particularly for use with contactors, relays and telebreakers. 3,272,940, 9–13–66, Cl. 200—105.
Frangos, John, to Revlon, Inc. Aerosol dispenser for plural fluids. 3,272,389, 9–13–66, Cl. 222—136.
Frangos, John, to Revlon, Inc. Aerosol dispensing apparatus. 3,272,402, 9–13–66, Cl. 222—394.
Frania, Josef, and F. Scheele, to Westinghouse Bremsen-Gesellschaft, m.b.H. Hydraulic pressure regulating valve. 3,272,220, 9–13–66, Cl. 137—116.5.
Frank, Robert K., to Holley Carburetor Co. Magnetic pulse generator ignition distributor. 3,272,930, 9–13–66, Cl. 200—19.
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Freni, Letterio, to Atlas Copco Aktiebolag. Loading and transportation equipment. 3,272,357, 9–13–66, Cl. 214—41.
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Frisch, Franz, to Sandoz Ltd. Mixtures of phenyl sulfonamido-halo-benzene azo amino-naphthol sulfonic acids. 3,272,586, 9–13–66, Cl. 8—26.
Frohberg, Paul-Ernst, H. Schlor, R. Kress, and R. Heiss, to Farbenfabriken Bayer Aktiengesellschaft. Vinyl-sulphonic acid ester fungicides. 3,272,695, 9–13–66, Cl. 167—30.
Fuchs, Robert J., to FMC Corp. Method of inhibiting corrosion with slowly soluble phosphate glasses. 3,272,588, 9–13–66, Cl. 21—2.7.
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Fuller, John R. D., to Bristol Siddeley Engines Ltd. Variable area nozzles. 3,271,948, 9–13–66, Cl. 60—35.55.
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Hansen, Robert D., and R. M. Wheaton, to The Dow Chemical Co. Separation of acids by dialysis with anion-exchange membranes. 3,272,737, 9–13–66, Cl. 210—22.

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Hayes, Millard F. and R. M. 3,272,692.

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Heesemann, Karl. Grinding machine. 3,271,907, 9–13–66, Cl. 51—141.

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Henkle, Theodore. Bow stop for stringed instruments. 3,272,055, 9–13–66, Cl. 84—283.

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Herzog, Richard F., G. O. Sauermann, and W. J. McMahon, to GCA Corp. Electron multiplier for measuring the flow of positively charged particles. 3,272,984, 9–13–66, Cl. 250—83.

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MacCready, Paul B., Jr., to Meterology Research, Inc. Universal turbulence indicator. 3,272,574, 9–13–66, Cl. 235—151.3.

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Burdge, Sam W., and Carter. 3,273,101.
Conner, John W., Evans, Isacks, and Neiswender. 3,272,866.
Conner, John W., Evans, Isacks, and Neiswender. 3,272,867.
Curry, Philip E., and Demopoulos. 3,272,140.
Curry, Philip E., and Demopoulos. 3,272,141.
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Sims, James G. 3,272,901.
Symes, William F. 3,272,813.
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Montandon, Louis, to Boillat S.A. Process and apparatus for detachably fixing a device on a machine and installation for putting this process into practice. 3,271,848, 9–13–66, Cl. 29—407.
Moore, George W.: *See*—
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Moore, Howard N. and G. W., administrator of the estate of H. N., deceased, to Lamont & Riley, Inc. Expansion joint. 3,272,684, 9–13–66, Cl. 161—37.
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Moraczewski, Arthur, to Ferro Mfg. Corp. Automobile door lock. 3,272,544, 9–13–66, Cl. 292—216.
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Morin, Louis H. Plastic blind rivet. 3,272,060, 9–13–66, Cl. 85—77.
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Morse, Richard A., to Gulf Research & Development Co. Process for recovery of oil. 3,272,261, 9–13–66, Cl. 166—11.
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Hays, Robert G. 3,271,851.
Kennedy, Howard L. 3,273,075.
Rose, Gus C. 3,273,083.
Shano, Charles L. 3,273,049.

Mottin, Ralph E., to Parke, Davis & Co. Mechanical loader and conveyor mechanism for handling relatively small and breakable articles. 3,272,308, 9–13–66, Cl. 198—19.

Moulin, Norbert L., to Hughes Aircraft Co. Electrical connector. 3,273,109, 9–13–66, Cl. 339—217.

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Müller, Paul: *See*—
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Muller-Girard, Otto, to Taylor Instrument Companies. Plural movable core transformer assembly with escapement means. 3,273,100, 9–13–66, Cl. 336—131.

Mullery, Alvin P., and R. F. Schauer, to International Business Machines Corp. Computer data storage and handling system having means for linking discontinuous data. 3,273,-129, 9–13–66, Cl. 340—172.5.

Mullins, William D., Jr., to North American Aviation, Inc. Three-axis accelerometer. 3,272,016, 9–13–66, Cl. 73—517.

Murphey, Lloyd H., to Essex Wire Corp. Control apparatus. 3,273,020, 9–13–66, Cl. 317—99.

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Nakano, Seizo and H., to Hitachi, Ltd. Control valve means for air operating electric switch. 3,272,938, 9–13–66, Cl. 200—82.

Nalco Chemical Co.: *See*—
Kirkpatrick, Willard H., and Seale. 3,272,757.

Nashua Corp.: *See*—
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Nathan, Charles C.: *See*—
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National Broach & Machine Co.: *See*—
Anthony, Russel W. 3,272,041.
Gates, Thomas S., Davis, and Bassoff. 3,272,075.

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Conner, Evans, Isacks, and Neiswender. 3,272,866.
Evans, Isacks, and Neiswender. 3,272,867.

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Nelson, George R., to Dennison Mfg. Co. Development of latent electrostatic images with crystallinetoners. 3,272,-644, 9–13–66, Cl. 117—17.5.

Nelson, Hugh J., to The Kaiser-Nelson Corp. Apparatus for reclaiming metal values from slag. 3,272,330, 9–13–66, Cl. 209—38.

Nelson, Joseph F., to Esso Research and Engineering Co. Coating process and compositions containing metal alcoholates and alkyl esters. 3,272,642, 9–13–66, Cl. 106—285.

Nemec, Joseph, 50% to N. Monastyrsky. Dovetailing machine. 3,272,244, 9–13–66, Cl. 144—87.

Nettel, Frederick. Gas turbines using solid fuels. 3,271,951, 9–13–66, Cl. 60—39.46.

Nettel, Frederick. Process and apparatus for moving solid pellets in a closed circuit. 3,272,335, 9–13–66, Cl. 210—68.

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Newell, Robert W., to General Electric Co. Electrostatic precipitator. 3,271,932, 9–13–66, Cl. 55—132.

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Archer, Anthony H. 3,272,048.

Newsted, David R.: *See*—
Rest, Frederick G., and Newsted. 3,271,938.

Neya, Juzo: *See*—
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Nordberg Mfg. Co.: *See*—
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Nordquist, Clarence E., to Coors Porcelain Co. Snow tire and insert therefor. 3,272,252, 9–13–66, Cl. 152—211.

Norman, George R., and W. M. Le Suer, to The Lubrizol Corp. Lubricants containing metal-free dispersants and metallic dispersants. 3,272,743, 9–13–66, Cl. 252—32.5.

Norman, George R.: *See*—
Le Suer, William M., and Norman. 3,272,746.

North American Aviation, Inc.: *See*—
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Flint, Edward F. 3,272,910.
Hoff, Rodney G., Clark, Jr., and Weeks. 3,273,048.
Kirstein, Thomas C. 3,273,157.
Mullins, William D., Jr. 3,272,016.

North American Philips Co., Inc.: *See*—
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Koster, Johannes A. 3,273,097.
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Mahn, Herbert. 3,272,052.
Petuely, Friedrich. 3,272,705.
Poletiek, Johannes H. 3,271,857.
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Norton Co.: *See*—
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Ebetino, Frank F., and Wright. 3,272,824.
Winterstein, Alexander. 3,272,806.

Nuclear Corp. of America: *See*—
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Nuclear Materials and Equipment Corp.: *See*—
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Nufer, Hans L., to Monsanto Co. Preparation of methionine analogues. 3,272,860, 9–13–66, Cl. 260—535.

Oakite Products Inc.: *See*—
Kronstein, Max. 3,272,663.

Obenshain, David N., to West Virginia Pulp and Paper Co. Single web sheet cutting mechanism. 3,272,044, 9–13–66, Cl. 83—79.

O'Brien, Harold G., to Sperry Rand Corp. Switch indicator device for printed circuit. 3,272,951, 9–13–66, Cl. 200—167.

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O'Connell, Paul W.: *See*—
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Lemin, Alan J., and O'Connell. 3,272,698.

O'Connell, Paul W., to The Upjohn Co. Porfiromycin insecticide. 3,272,696, 9–13–66, Cl. 167—30.

O'Connor, Alton J.: *See*—
Eberline, William C., and O'Connor. 3,273,086.

Odell, Norman R.: *See*—
Dadura, James G., Odell, and Cantor. 3,272,745.

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Oestreich, William J.: *See*—
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O'Farrell, Frank J. Closure for flexible receptacles. 3,272,-248, 9–13–66, Cl. 150—10.

Offer, Robert J.: *See*—
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Ogle, Joseph E.: *See*—
Clark, Patrick, A., Alsop, and Ogle. 3,272,312.

Ogle, Robert W., to Syn-Pak Corp. Syringe package. 3,272,-322, 9–13–66, Cl. 206—43.

Ohlsson & Rice, Inc.: *See*—
Rice, Henry T. M. 3,272,143.

Ohlund, John A. I., and K. R. Andersson, to Saab Aktiebolag. Generator of simulated smoke signals for gunnery target practice. 3,272,510, 9–13–66, Cl. 273—102.2.

Ohnacker, Gerhard, and E. Woitun, to Boehringer Ingelheim G.m.b.H. Dihydrothieno-[3,4-d]-pyrimidines. 3,272,811, 9–13–66, Cl. 260—247.1.

O'Leary, John M., Jr., to Container Corp. of America. Compatible polyolefin and polyurethane composition. 3,273,-890, 9–13–66, Cl. 260—859.

Olecko, Ray. Crotch-type catapult frame. 3,272,193, 9–13–66, Cl. 124—20.

Olson, Earl H.: *See*—
Au, Tin Y., and Olson. 3,271,837.

Olson, Melford E. Beeswax capping melter. 3,272,339, 9–13–66, Cl. 210—182.

Olton, Robert N. Door edge protector. 3,271,919, 9–13–66, Cl. 52—624.

Olympic Stranding Machinery Ltd.: *See*—
Griffin, Vincent P. 3,271,942.

Omholt, Ray E., to Powerlock Floors, Inc. Uniformly resilient flooring systems. 3,271,916, 9–13–66, Cl. 52—393.

O'Neill, Charles E.: *See*—
Queneau, Paul E., Brubaker, and O'Neill. 3,272,616.

Oppenheimer, Franz, deceased, by S. B. Oppenheimer, executrix. Infra-red sublimation method and apparatus for freeze-drying techniques. 3,271,874, 9–13–66, Cl. 34—5.

Oppenheimer, Suzanne B.: *See*—
Oppenheimer, Franz and S. B. 3,271,874.

Oregon Metallurgical Corp.: *See*—
Shelton, Stephen M., Poole, and Wagy. 3,271,828.

Ortopedia Gesellschaft mit beschrankter Haftung: *See*—
Kuntscher, Gerhard, and Lotz. 3,271,868.

Osepchuk, John M., to Raytheon Co. Traveling wave tube having a contoured anode collecting surface. 3,273,006, 9–13–66, Cl. 315—3.5.

O'Shea, Francis X., to United States Rubber Co. Organic sulfide and sulfoxide antioxidants and method for their preparation. 3,272,869, 9–13–66, Cl. 260—607.

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Belier, Wilbert E., and Ostrowski. 3,272,935.

Ott, William J., to Sperry Rand Corp. Bearing assembly. 3,272,571, 9–13–66, Cl. 308—26.

Otters, Erich: *See*—
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Ottestad, Jack B. Flexible snap-on spout for curved rim containers. 3,272,407, 9–13–66, Cl. 222—569.

Otto, Howard K., to Signode Corp. Power strapping machine and the like and adjustable feeding and tensioning means therefor. 3,272,113, 9–13–66, Cl. 100—26.

Otto, Julian A.: *See*—
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Oversewing Machine Co. of America: *See*—
Atkins, John H., and Wood. 3,272,160.

Owen, Charles E., A. Peacock, and D. M. Taub, to International Business Machines Corp. Computer control system. 3,273,126, 9–13–66, Cl. 340—172.5.

Owen, Robert W., to Midwest Chemical Corp. Multi-leaf tag. 3,272,532, 9–13–66, Cl. 282—22.

Owens-Corning Fiberglas Corp.: *See*—
Benton, Kenneth R. 3,272,609.

Owens-Illinois, Inc.: *See*—
Lenz, Bernard L. 3,272,689.
Perry, Gerald E. 3,272,421.

Owens, William H., to Pittsburgh Plate Glass Co. Separation of Hf and Zr valves by solvent extraction. 3,272,590, 9–13–66, Cl. 23—22.

Oxy-Dry Sprayer Corp.: *See*—
Buhler, Warren G. 3,273,016.

Ozaki, Hideo: *See*—
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Paasche, Fritz, to Franz Clouth Rheinische Gummiwarenfabrik Aktiengesellschaft. Apparatus for making reinforced rubber belting. 3,272,680, 9–13–66, Cl. 156—494.

Pacific Scientific Co.: *See*—
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Paciorek, Kazimiera J. L., and R. H. Kratzer, to American Potash & Chemical Corp. Process for producing phosphinyl azides. 3,272,846, 9–13–66, Cl. 260—349.

Paddock, Raymond E., to Ekco Products Co. Method of and apparatus for producing kitchen tool stalks. 3,271,989, 9–13–66, Cl. 72—356.

Page, Paul F., to Royal Typewriter Co., Inc. Ribbon lift mechanism. 3,272,305, 9–13–66, Cl. 197—159.

Paivanas, John A.: *See*—
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Palmatier, Everett P., to Carrier Corp. Absorption refrigeration. 3,271,976, 9–13–66, Cl. 62—487.

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Garst, Arthur W. 3,272,725.
Howard, George C., and Bearden. 3,272,517.
Hujsak, Karol L. 3,272,262.
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Pan, Wen Y., to Radio Corp. of America. Signal limiter. 3,272,996, 9–13–66, Cl. 307—88.5.

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Papesch, Viktor, to G. D. Searle & Co. 7-amino-2,4-dioxo-1,2,3,4 - tetrahydropyrido[2,3-d]pyrimidines. 3,272,816, 9–13–66, Cl. 260—256.4.

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Miller, Harmon B. 3,272,422.

Parenti, William C., to American Bosch Arma Corp. Apparatus for measuring the velocity of acoustical waves. 3,273,-111, 9–13–66, Cl. 340—5.

Park, Davis & Co.: *See*—
De Wald, Horace A. 3,272,841.

Parke, Davis & Co.: *See*—
Mottin, Ralph E. 3,272,308.

Park, Glenn S., to The Heil Co. Latch and tailgate operating mechanism for truck bodies. 3,272,552, 9–13–66, Cl. 296—56.

Parker, George E., to Woodward Governor Co. Magnetically controlled valve. 3,272,234, 9–13–66, Cl. 137—625.65.

Parker, Sidney A., to Lennox Industries Inc. Refrigerant compressor control. 3,272,426, 9–13–66, Cl. 230—31.

Parker-Hannifin Corp.: *See*—
Hajma, Louis G. 3,272,085.

Parkin, James W.: *See*—
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Pasek, George J., and K. E. Sager, to Kimberly-Clark Corp. Process for making cockled paper. 3,272,643, 9–13–66, Cl. 117—11.

Patinkin, Seymour H.: *See*—
Case, Everett N., Patinkin, and Young. 3,272,607.

Patrick, Theodore: *See*—
Pfaumer, Peter E., Patrick, and Philbrick. 3,272,350.

Patterson, Woodrow W. Device for dispensing straight pins. 3,272,577, 9–13–66, Cl. 312—42.

Paulik, Ferenc and J., and L. Erdey. Apparatus for thermal analysis. 3,271,996, 9–13–66, Cl. 73—15.

Paulik, Jenõ: *See*—
Paulik, Ferenc and J., and Erdey. 3,271,996.

Paulin, John E.: *See*—
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Pavelle Corp., The: *See*—
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Pawling, Frank: *See*—
Bolton, Douglas H. H., Pawling, and Potts. 3,272,084.

Peacock, Anthony: *See*—
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Peacock, Henry S., and C. P. Durham, to Swain & Myers, Inc. Clamp structures and display units embodying same. 3,272,157, 9–13–66, Cl. 108—28.

Pearch, Lovell E. and P. P. Surckis, to Rex-Radiant, Inc. Gas burner. 3,272,440, 9–13–66, Cl. 239—426.

Peck, Albert B.: *See*—
Sontag, Sheldon, and Peck. 3,271,781.

Peck Mfg. Co., Inc.: *See*—
Sontag, Sheldon, and Peck. 3,271,781.

Peebles, John C. Telephone sterilizing attachment. 3,272,-927, 9–13–66, Cl. 179—185.

Peet, Nick P., to Esso Research and Engineering Co. Coking process. 3,272,720, 9–13–66, Cl. 201—5.

Peffley, Geneat M. H. Convertible commode chair. 3,271,-784, 9–13–66, Cl. 4—134.

Pendleton, Robert A., to Honeywell Inc. Reel support. 3,272,-450, 9–13–66, Cl. 242—68.3.

Pendleton, Robert A., to Honeywell Inc. Reel support. 3,272,-451, 9–13–66, Cl. 242—68.3.

Peninsular Paper Co.: *See*—
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Penn Controls, Inc.: *See*—
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Pennsylvania WMB, Inc.: *See*—
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Perkins, George W.: *See*—
Boodman, Norman S., Masciantonio, and Perkins. 3,272,-884.

Perrier, Louis E.: *See*—
Joyner, Richard S., and Perrier. 3,272,789.

Perronnet, Jacques: *See*—
Bertin, Daniel, Nedelec, and Perronnet. 3,272,708.

Perry, Ell, to Monsanto Co. Polymerization process using chain-transfer agents. 3,272,786, 9–13–66, Cl. 260—88.7.

Perry, Gerald E., to Owens-Illinois, Inc. Self-locking carton. 3,272,421, 9–13–66, Cl. 229—39.

Pesson, Marcel, to Societe anonyme dite: Laboratoire Roger Bellon. α-phenyl-β-(2-furyl) propionitrile compounds and a process of making same. 3,272,827, 9–13–66, Cl. 260—294.

Peters, Vincent J., to The Upjohn Co. Crystallization of actinospectacin sulfate with methanol. 3,272,706, 9–13–66, Cl. 167—65.

Petersen, Anita E.: *See*—
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Peterson, Henry J., to Sun Oil Co. Preparation of hydroxynitrobenzoic acids. 3,272,859, 9–13–66, Cl. 260—52.1.

Peterson, Richard C., and J. M. Seacord, to Sprague Electric Co. Apparatus for continuous voltage application in testing. 3,273,057, 9–13–66, Cl. 324—60.

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Peterson, William H., to Pullman Inc. Wheel for railroad. 3,272,550, 9–13–66, Cl. 295—31.

Petro, Anthony J., and P. E. Krystow, to Esso Research and Engineering Co. Method of preventing corrosion. 3,272,736, 9–13–66, Cl. 208—348.

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Pfaumer, Peter E., T. Patrick, and J. W. Philbrick, to Westinghouse Electric Corp. Method and apparatus for semiconductor wafer handling. 3,272,350, 9–13–66, Cl. 214—1.

Pfeifer, Ronald E. Carrier device for skiers. 3,272,413, 9–13–66, Cl. 224—45.

Pfister, Stanley A., to The Cincinnati Milling Machine Co. Automatic tool changing mechanism for machine tool. 3,271,853, 9–13–66, Cl. 29—568.

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Davison, Joseph W. 3,272,885.
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Pickles, Joseph, to Ferro Mfg. Corp. Automobile door lock. 3,272,545, 9–13–66, Cl. 292—216.

Pietrucci, Andre, to Service D'Exploitation Industrielle des Tabacs et des Allumettes. Feed distributor for cigarette-making machines. 3,272,333, 9–13–66, Cl. 209—85.

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Pisani, Luigi, and G. Spaltini, to Virginio & C. Rimoldi S.p.A., and Officina Maccanica Pisani & Spaltini. Machine for cutting tubular fabric. 3,271,838, 9–13–66, Cl. 29—2.16.

Pitkethly, Robert C., J. F. Ford, and A. Fisher, to The British Petroleum Co. Ltd. Isomerization of olefins using sepiolite catalyst. 3,272,887, 9–13–66, Cl. 260—683.2.

Pittsburgh Plate Glass Co.: *See*—
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Pitzer, Edgar C., G. R. Fountain, and J. R. Ciaranello, to United States of America, Atomic Energy Commission. Process for the removal of metal corrosion products from a solution of hydrazine and ethylenediaminetetraacetic acid. 3,272,738, 9–13–66, Cl. 210—51.

Plagenberg, Walter A., to Star Coffee Co. Combination pouring lip and collar construction for liquid vessels. 3,272,370, 9–13–66, Cl. 215—100.

Plastic Coating Corp., The: *See*—
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Pollet, Georges, to Compagnie des Ateliers et Forges de La Loire. Shear-blade control mechanism. 3,272,053, 9–13–66, Cl. 83—617.

Pons, Henry W.: *See*—
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Gazis, Denos C., and Potts. 3,272,097.

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Poundstone, William N., to Consolidation Coal Co. Sheave and roller assemblies. 3,272,543, 9–13–66, Cl. 287—52.07.

Povey, Edmund H., and C. L. Dawes, to Doble Engineering Co. Apparatus for deriving low voltages from a high voltage electrical system. 3,273,051, 9–13–66, Cl. 323—45.

Pratt, Aloysius W., to American Machine & Foundry Co. Power switching and regulating circuits. 3,273,050, 9–13–66, Cl. 322—28.

Prellwitz, Samuel B., to United States Steel Corp. Elongated relatively thin metal capacitor probe in combination with a conveying means for determining the dielectric properties of bulk material. 3,273,058, 9–13–66, Cl. 324—61.

Pribonic, John F., to General Motors Corp. Remote level indication. 3,272,174, 9–13–66, Cl. 116—118.

Price, Edward G., to The International Nickel Co., Inc. Iridium-sheathed wire for electron tubes. 3,271,849, 9–13–66, Cl. 29—420.5.

Price, Lowell T.: *See*—
Scoggin, Jack S., and Price. 3,272,787.

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Promin, Robert M., and W. F. Bankauf, to Litton Industries, Inc. Extensible belt conveyor. 3,272,315, 9–13–66, Cl. 198—204.

Pryce, Vaughn K. Detachable handles. 3,272,547, 9–13–66, Cl. 294—31.

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Purtell, Rufus J., to The J. B. Knight Co. Irrigation system. 3,272,438, 9–13–66, Cl. 239—212.

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Queen, John A., to Continental Oil Co. Automatic shutdown device for pumping units. 3,272,937, 9–13–66, Cl. 200—81.

Queneau, Paul E., P. E. Brubaker, and C. E. O'Neill, to The International Nickel Co., Inc. Method for recovering nickel from oxide ores. 3,272,616, 9–13–66, Cl. 75—21.

Quirk, Harrison P., 10% to Peninsular Paper Co.; Paper cutting dust collector system and method. 3,272,651, 9–13–66, Cl. 134—21.

Quiros, Alejandro M., and R. M. Adzerias; said Quiros assor. to A. J. Gijon and A. M. Fornaguera. Safety system for hydraulic brakes. 3,273,116, 9–13–66, Cl. 340—60.

Quittner, George F., to API Instruments Co. Constant impedance dual circuits for sample material flaw detection. 3,273,055, 9–13–66, Cl. 324—37.

Raabe, Herbert P., to Litton Systems, Inc. System of propagating radio energy by means of artificial scatterers. 3,273,062, 9–13–66, Cl. 325—14.

Rachman, Isadore B., to Metal Dynamics, Inc. Safety clamp handle convertible to a wheel assembly. 3,272,529, 9–13–66, Cl. 280—47.13.

Racine Hydraulics & Machinery, Inc.: *See*—
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Raden, Daniel S., to Velsicol Chemical Corp. Halogenated 1,4:5,8-dimethanoanthrahydroquinones. 3,272,872, 9–13–66, Cl. 260—617.

Radford, David L., to McGraw-Edison Co. Cycle timer with adjustable arcuate cams. 3,272,932, 9–13–66, Cl. 200—38.

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Sekely, Michael E. 3,272,989.
Stark, John, Jr., Denton, and McLeod. 3,273,021.
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Radocy, Ernest, to Burndy Corp. Impact socket connector. 3,273,108, 9–13–66, Cl. 339—210.

Raffe, Joseph P., to Reckitt & Colman (Overseas) Ltd. Dispensers for liquid, powder or the like materials. 3,271,810, 9–13–66, Cl. 15—539.

Rafferty, John W., and G. T. Hodgson, Jr., to Arthur D. Little, Inc. Method of marking animal skins and resulting product. 3,272,585, 9–13–66, Cl. 8—10.

Rakel, James A., to The National Marking Machine Co. Heat-sealing apparatus. 3,272,114, 9–13–66, Cl. 100—53.

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Schrader, Charles L., and Ramstrom. 3,272,265.

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Ratliff, Harvey L., Jr., to Jetru Inc. Apparatus for viewing wide-angle stereoscopic pictures. 3,272,069, 9–13–66, Cl. 88—29.

Ratner, Nathaniel C. Precision spacing dividers. 3,271,869, 9–13–66, Cl. 33—151.

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Rauhut, Herbert, and O. Sus, to Deuffel & Esser Co. Light-sensitive reproduction material containing unilaterally diazotized *p*-phenylene-diamine derivatives as the light sensitive substance. 3,272,630, 9–13–66, Cl. 96—75.

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Reich, Simon, to General Signal Corp. Decoding apparatus for continuous inductive transmission system. 3,272,979, 9–13–66, Cl. 246—63.

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Reichelt, Walter, to W. C. Heraeus, G.m.b.H. Vacuum diffusion pump. 3,272,965, 9–13–66, Cl. 219—275.

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Reisman, Emeric. Key-belt. 3,272,410, 9–13–66, Cl. 224—5.

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Taber, David, Renfrew, and Pons. 3,272,793.
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Rest, Frederick G., and D. R. Newsted, to Allen Electric and Equipment Co. Breather cap and dipstick combination for an oil filler pipe. 3,271,938, 9–13–66, Cl. 55—385.

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Draper, Marshall D., and Keller. 3,272,838.

Rey, Louis, to L'Air Liquide. Method for stabilizing unstable substances. 3,271,875, 9–13–66, Cl. 34—5.

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Rezin, Leonard A., to Borg-Warner Corp. Absorption refrigeration apparatus with purging means. 3,271,975, 9–13–66, Cl. 62—476.

Rhino, Del H., to United-Greenfield Corp. Carbide facing for extrusion dies. 3,271,822, 9–13–66, Cl. 18—12.

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Jensen, Erik H., and Rhodes. 3,271,971.

Rhodes, Roland N.: *See*—
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Rice, Henry T. M., to Ohlsson & Rice, Inc. Demand fuel regulator and priming pump. 3,272,143, 9–13–66, Cl. 103—150.

Rice, Richard E., to Comstock & Wescott, Inc. Copying apparatus. 3,272,066, 9–13–66, Cl. 88—24.

Rich, Edward A. E., and J. J. Brockman, to General Electric Co. Gearless rotary mill. 3,272,444, 9–13–66, Cl. 241—176.

Richey, Thomas B., Jr., and C. J. Sunde, to Malmstrom Chemical Corp. Deodorization of lanolin and lanolin derivatives. 3,272,850, 9–13–66, Cl. 260—428.

Richey, Thomas B., Jr.: *See*—
Sunde, Conrad J., and Richey. 3,272,851.

Ricke, Maurine E. Clipboard. 3,272,206, 9–13–66, Cl. 129—37.

Ricker, William C., and G. H. Simpson, to Sylvania Electric Products Inc. Encapsulated thermostatic switch having a heater disposed in the stem. 3,272,944, 9–13–66, Cl. 200—122.

Riedl, Kurt: *See*—
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Rietdijk, Johan A., to North American Philips Co., Inc. Device for compressing or expanding a medium. 3,272,089, 9–13–66, Cl. 92—83.

Rigby, George W., to E. I. du Pont de Nemours and Co. Process for the recovery of hexahydroazepine. 3,272,724, 9–13–66, Cl. 203—81.

Riggs, Olen L., Jr., to Continental Oil Co. Polyalkylene polyamine derivatives of hydroxybenzoic acid. 3,272,861, 9–13–66, Cl. 260—559.

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Roach, Robert L., to West Chester Chemical Co., a partnership consisting of W. L. Williams, H. A. Bogle, and E. O. Hilbush. Method of sealing vessels and joints thereof. 3,272,894, 9–13–66, Cl. 264—36.

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Rocha, John G., to United States of America, Navy. Azimuth adjustment device with lock for firearm sights. 3,271,864, 9–13–66, Cl. 33—56.

Rocker, Elmer. Adjustable baby seat. 3,272,556, 9–13–66, Cl. 297—310

Rocks, Hugh N., to Landis Tool Co. Dresser control for abrasive wheels. 3,272,908, 9–13–66, Cl. 51—165.

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Rodis, Franz: *See*—
Beltz, Klaus, Rodis, and Panter. 3,272,597.

Rodis, Hildegard: *See*—
Beltz, Klaus, Rodis, and Panter. 3,272,597.

Rodkey, Edward G., to The Dow Chemical Co. Flexible container. 3,272,424, 9–13–66, Cl. 229—66.

Roeser, John O. Apparatus and method for precision metering and deposit of viscous materials. 3,272,393, 9–13–66, Cl. 222—179.

Rogers, William J. Combined roll-over target and automatic ring-tossing amusement device. 3,272,509, 9–13–66, Cl. 273—102.1.

Rohe, Frederick W., and C. S. Phelan, said Phelan assor. to said Rohe. Tool for broaching spline notches into bolt or shaft threads. 3,271,841, 9–13–66, Cl. 29—95.1.

Rohm & Haas Co.: *See*—
Lewis, Sheldon N., and Mercurio. 3,272,785.

Rokhsar, Amanollah E.: *See*—
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Rollins, Gordon C., and W. A. Fallon, to The Ansonia Wire & Cable Co. Shielded cable construction. 3,272,911, 9–13–66, Cl. 174—106.

Romanini, Romeo, to Lancia & C. Fabbric Automobili-Tarino S.p.A. Air brake valve. 3,272,564, 9–13–66, Cl. 303—7.

Romans, Harmon B., to Reynolds Metal Co. Molybdate coatings on aluminum particles. 3,272,665, 9–13–66, Cl. 148—6.27.

Roper Industries, Inc.: *See*—
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Rosaen, Oscar E. Pumps. 3,272,139, 9–13–66, Cl. 103—120.

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Rosan, Jose, to Rosan Engineering Corp. Tool for locking threaded inserts in threaded bores. 3,272,034, 9–13–66, Cl. 81—3.

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Rose, Gus C., to Motorola, Inc. Frequency responsive device. 3,273,083, 9–13–66, Cl. 333—73.

Rosenblum, Irving, to Dim-O-Matic, Inc. Automatic headlight control system. 3,273,012, 9-13-66, Cl. 315—82.

Rosenstein, Nathan, to Spunize Co. of America, Inc. Method of making distorted crimped yarn. 3,271,836, 9-13-66, Cl. 28—72.

Rosenstock, Bernard: *See*—
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Rosentrater, Fred W. Steering and reversing assembly for water jet boats. 3,272,439, 9-13-66, Cl. 239—265.25.

Ross, Bernd, to Hoffman Electronics Corp. Method of attaching leads to a semiconductor body and the article formed thereby. 3,273,029, 9-13-66, Cl. 317—234.

Ross, Robert P., to Carhart Refractories Co. Steelmaking furnace. 3,272,490, 9-13-66, Cl. 266—35.

Rossenbeck, Heinz, to Concordia Maschinen- und Elektrizitats G.m.b.H. Electromagnetic control mechanism, especially for regulating valves. 3,273,095, 9-13-66, Cl. 335—239.

Rossmeisl, Richard A., to Litton Systems, Inc. Multidielectric thin film capacitors. 3,273,033, 9-13-66, Cl. 317—258.

Roth, Wilfred. Container filling transfer mechanism. 3,272,240, 9-13-66, Cl. 141—176.

Roussel-UCLAF: *See*—
Bertin, Daniel, Nedelec, and Perronnet. 3,272,708.

Rowley, Charles A. Kitchen implement handle. 3,271,856, 9-13-66, Cl. 30—343.

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Page, Paul F. 3,272,305.
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Royer, Wayne H., to Read Corp. Oven heating system. 3,272,155, 9-13-66, Cl. 107—55.

Royer, Wayne H.: *See*—
Gilgore, William H., and Royer. 3,272,156.

Rubenstein, David. Reinforced plastic constructions. 3,271,917, 9-13-66, Cl. 52—309.

Rubino, Andrew M., J. J. Martin, Jr., and J. E. Garizio, to Armour Pharmaceutical Co. Antacid composition and process of making the same. 3,272,703, 9-13-66, Cl. 167—55.

Rudness, Robert G., and R. W. Kebler, to Union Carbide Corp. Production of single crystals from incongruently melting material. 3,272,591, 9-13-66, Cl. 23—50.

Rudolph, Rome R., C. Struts, Jr., and F. C. Struts, to Carl Struts & Co., Inc. Article transferring apparatus. 3,272,349, 9-13-66, Cl. 214—1.

Ruhnke, Lothar H. Apparatus for detecting changes in the atmospheric electric field. 3,273,066, 9-13-66, Cl. 325—113.

Rulseh, Roger D., to American Machine & Foundry Co. Timer mechanism having cam-solenoid actuator and common coil for solenoid and motor. 3,272,931, 9-13-66, Cl. 200—35.

Rumaner, Merwin B. Ski locking means. 3,272,526, 9-13-66, Cl. 280—11.37.

Rümpelein, Fritz, and P. Kopf, to Agfa Aktiengesellschaft. Galvanometer coil assembly having a plastic coil frame. 3,273,061, 9-13-66, Cl. 324—151.

Runge, Walter J., to The Regents of the University of Minnesota. Actinic radiation protection by compositions comprising quinones and carbonyl containing compounds. 3,272,713, 9-13-66, Cl. 167—90.

Rush Metal Products, Inc.: *See*—
Avery, Hazelton H. 3,272,080.

Rush, Robert E., to United States of America, Atomic Energy Commission. Radioisotope heated thermoelectric generator power flattening system. 3,272,658, 9-13-66, Cl. 136—201.

Ruska Instrument Corp.: *See*—
Miks, Claude E., Linton, and Wilson. 3,272,014.

Russ, John: *See*—
Fehr, Isaac N., and Russ. 3,272,636.

Russell, Joseph L., to The Dow Chemical Co. Filled polymer compositions. 3,272,772, 9-13-66, Cl. 260—41.

Russell, Kenneth F., to Brogdex Co. Adjustable track means for sizer apparatus. 3,272,334, 9-13-66, Cl. 209—106.

Ruthazer, Leonard B., to Honeywell Inc. Frequency multiplexing circuit. 3,273,128, 9-13-66, Cl. 340—172.5.

Rutter, Harvey M. Transducer. 3,272,281, 9-13-66, Cl. 181—31.

Ryan, Danahey, to E. I. du Pont de Nemours and Co. Method and apparatus for severing a moving web. 3,272,043, 9-13-66, Cl. 83—24.

Ryan, Joseph D., and P. T. Mattimoe, to Libbey-Owens-Ford Glass Co. Method of fabrication of laminated structures. 3,272,900, 9-13-66, Cl. 264—135.

SKF Industries, Inc.: *See*—
Tassone, Bruno A., and Blake. 3,272,574.

S.S.S. Patents Ltd.: *See*—
Clements, Herbert A. 3,272,295.

Saab Aktiebolag: *See*—
Ohlund, John A. I., and Andersson. 3,272,510.

Sabat, Arthur G., to Eaton Mfg. Co. Combination fan and water pump drive. 3,272,185, 9-13-66, Cl. 123—41.11.

Sabrsula, Louis A. Sinker for fishing lines. 3,271,892, 9-13-66, Cl. 43—42.03.

Sacer, Jose, to Brown, Boveri & Cie, Aktiengesellschaft. Arc arresting spark gap assembly for lightning arresters. 3,273,010, 9-13-66, Cl. 315—36.

Sachs, John P., H. E. Kasting, and A. E. Ericson, to Union Carbide Corp. Plastic film welding process and apparatus. 3,272,674, 9-13-66, Cl. 156—282.

Sackett, A. J., & Sons Co.: *See*—
Sackett, Walter J., Sr. 3,272,596.

Sackett, Walter J., Sr., to A. J. Sackett & Sons Co. Apparatus for manufacturing fertilizer. 3,272,596, 9-13-66, Cl. 23—259.1.

Sackler, Arthur M. Brain and nervous system model. 3,271,879, 9-13-66, Cl. 35—17.

Sackler, Arthur M. Model of life form. 3,271,880, 9-13-66, Cl. 35—17.

Sagarin, Philip H., to Valve Corp. of America. Actuator cap for small fluid dispensers. 3,272,394, 9-13-66, Cl. 222—182.

Sager, Karl E.: *See*—
Pasek, George J., and Sager. 3,272,643.

Saito, Goichi. High frequency matching transformer. 3,273,098, 9-13-66, Cl. 336—69.

Saito, Yukio. Drum head and method of its manufacture. 3,272,057, 9-13-66, Cl. 84—414.

Sanders, Beston J.: *See*—
Sanders, Shelby W. 3,272,282.

Sanders, Shelby W., 5% each to W. A. Lee, L. S. and B. B. Bonner, and B. J. Sanders. 3,272,282, 9-13-66, Cl. 182—63.

Sanderson, Martin I. Farm implement for seeding. 3,272,159, 9-13-66, Cl. 111—71.

Sanderson, Robert A. Capacitive guiding apparatus for record elements. 3,272,505, 9-13-66, Cl. 271—71.

Sandoz A.G.: *See*—
Jucker, Ernst, Ebnother, Stoll, Bastian, and Rissi. 3,272,826.

Sandoz Ltd.: *See*—
Frisch, Franz. 3,272,586.
Jaccard, Gaston. 3,272,754.

Sandos Ltd. (aka Sandoz A.G.): *See*—
Jucker, Ernst, Ebnöther, Stoll, Bastian, and Rissi. 3,272,826.

Sankyo Co. Ltd.: *See*—
Tanabe, Katsumi, Takasaki, Hayashi, Morisawa, Hashimoto, and Okada. 3,272,800.

Sardee Corp., The: *See*—
Sarovich, Steve. 3,273,313.

Sarff, Forest M. Bathtub elevating seat. 3,271,791, 9-13-66, Cl. 4—185.

Sarovich, Steve, to The Sardee Corp. Upward magnetic can conveyor. 3,272,313, 9-13-66, Cl. 198—41.

Sartomer Resins, Inc.: *See*—
Gowman, Daniel J. 3,272,766.

Sass, Hans G., to Industrie-Companie Kleinewefers Konstrucktions-und Handelsgesellschaft, m.b.H., Firma. Rotatable shutter valve. 3,272,223, 9-13-66, Cl. 137—340.

Sauermann, Gerhard O.: *See*—
Hersog, Richard F., Sauermann, and McMahon. 3,272,984.

Saussele, Charles W.: *See*—
Lucas, Alvin S., and Saussele. 3,272,486.

Sawyer, Leslie F., to Colonial Silver Co., Inc. Toothbrush having a removable brush head. 3,271,805, 9-13-66, Cl. 15—176.

Saxman, Theodore E., to The B. F. Goodrich Co. Lining for acid tanks and method of use. 3,272,318, 9-13-66, Cl. 206—2.

Saydlowski, Bernard K., to E. I. du Pont de Nemours and Co. Air knife. 3,272,176, 9-13-66, Cl. 118—63.

Schaevitz Engineering: *See*—
Lipshutz, Joseph. 3,273,096.

Schafer, Heins: *See*—
Sus, Oskar, Rauhut, and Schafer. 3,272,627.

Schalit, Samuel: *See*—
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Cutler, Royal A., and Schalit. 3,272,863.

Schallenberg, Elmer E., R. G. Lacoste, and H. D. Kluge, deceased by H. E. Kluge, administratrix, to Texaco Inc. Lubricant containing alkylene oxide reaction products. 3,272,744, 9-13-66, Cl. 252—32.7.

Scharff, Lynton L.: *See*—
Gruber, Leslie G., and Scharff. 3,271,866.

Schauer, Ralph F.: *See*—
Mullery, Alvin P., and Schauer. 3,273,129.

Scheele, Fritz: *See*—
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Schefer, Eli I., and A. E. Rokhsar, to Revlon, Inc. Dispenser for strip material. 3,272,414, 9-13-66, Cl. 225—45.

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Schlage, Ernest L., to Schlage Lock Co. Magnetic locking device and method of combinating the same. 3,271,983, 9-13-66, Cl. 70—276.

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Schlage, Ernest L. 3,271,983.

Schlör, Hansheimut: *See*—
Frohberger, Paul-Ernst, Schlör, Kress, and Heiss. 3,272,695.

Schlossberg, Louis, E. E. Logue, and P. J. Carrier, to Detrex Chemical Industries, Inc. Composition and method for coating metal surfaces. 3,272 664, 9-13-66, Cl. 148—6.17.

Schmeckenbecher, Arnold F., to International Business Machines Corp. Process for electroplating magnetic alloy onto a platinized chromium substrate. 3,272,727, 9-13-66, Cl. 204—29.

Schmeider, William S., and A. P. Corella, 10% to V. M. Rodgers. Multiple compartment package. 3,272,324, 9-13-66, Cl. 206—47.

Schmidt, Fred J., to Ellicott Machine Corp. Hydraulic spud lifting arrangement for dredges. 3,272,477, 9-13-66, Cl. 254—93.

Schmidt, Roger N., to Honeywell Inc. Solar heat absorbers comprising alternate layers of metal and dielectric material. 3,272,986, 9-13-66, Cl. 250—86.

Schmitter, Lonise A.: *See*—
Schmitter, Walter P., and Bernard. 3,273,000.

Schmitter, Walter P., deceased (by L. A. Schmitter, and R. V. Abendroth, co-executors), and D. G. Bernard, to The Falk Corp. Variable speed thru-motor drive. 3,273,000, 9-13-66, Cl. 310—98.

Schneider, Hans-Dieter, to Fernseh G.m.b.H. Circuit arrangement for producing a sawtooth waveform of high linearity. 3,273,007, 9-13-66, Cl. 315—27.

Schneider, Jack M., to Calmec (Manufacturing) Ltd. Apparatus for moulding articles from plastic materials. 3,271,816, 9-13-66, Cl. 18—4.

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Klemt, Gunter, and Macher. 3,272,073.

Schneider, Julius E., to Phillips Petroleum Co. Oil removal from liquid refrigerant. 3,272,735, 9-13-66, Cl. 208—341.

Schneider, Kurt H., to Expando Meter Co. Expanded scale ammeter including a bridge biased transistor differential amplifier. 3,273,060, 9-13-66, Cl. 324—131.

Schneider, Richard C., and D. C. Stelts. Therapeutic bath fluid circulating apparatus. 3,271,790, 9-13-66, Cl. 4—180.

Schnoebelen, Carl V. Delivery device for a duplicating machine or the like. 3,272,504, 9-13-66, Cl. 271—68.

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Earle, John S., Schoeffel, and Zimmermann. 3,272,739.
Gitchel, Wayne B., Hoffman, and Schoeffel. 3,272,740.

Schoenmakers, Johannes J. M., to North America Philips Co., Inc. Storage case for a tape cartridge. 3,272,325, 9-13-66, Cl. 206—52.

Schommer, Jule P., to H. D. Hudson Mfg. Co. Animal feed proportioning and mixing apparatus. 3,272,180, 9-13-66, Cl. 119—52.

Schooley, Maurice A., and B. M. Shinn, to Armour and Co. Growth promotant process. 3,272,702, 9-13-66, Cl. 167—53.

Schrader, Charles L., and L. W. Ramstrom, to Ingersoll-Rand Co. Rotary impact tool. 3,272,265, 9-13-66, Cl. 173—93.

Schray, Walter H., to United Steel & Wire Co. Stacking and nesting case. 3,272,377, 9-13-66, Cl. 220—19.

Schuetz, John R., to Drott Mfg. Corp. Transmission and steering control mechanism for material handling vehicle. 3,272,280, 9-13-66, Cl. 180—77.

Schulze, Erwin F. C., to Addressograph Multigraph Corp. Intermittent drive for card feed devices or the like. 3,272,498, 9-13-66, Cl. 271—8.

Schuster, Donald H. Regulated conversion system. 3,273,040, 9-13-66, Cl. 321—2.

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Schwarts, Norman J., N. E. Taylor, and H. H. Bakes, to Heinemann Electric Co. Circuit breaker unit for abnormally high inrush currents and/or inrush currents of long duration. 3,272,934, 9-13-66, Cl. 200—50.

Schwartz, Sol. Device for packing fabric. 3,272,449, 9-13-66, 242—62.

Schweizer, Hans R., to Eastman Kodak Co. Delta form of quinacridone. 3,272,821, 9-13-66, Cl. 260—279.

Scoggin, Jack S., and L. T. Price, to Phillips Petroleum Co. Extraction of soluble matter from polymer solids. 3,272,787, 9-13-66, Cl. 260—93.7.

Scott, Jerald J.: *See*—
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Scoville, Andrew E.: *See*—
Yamron, Joseph, and Scoville. 3,272,972.

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Kirkpatrick, Willard H., and Seale. 3,272,757.

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Lowrie, Harman S. 3,272,818.
Papesch, Viktor. 3,272,816.

Seckerson, Clifford A., to United-Carr Inc. Fasteners. 3,272,061, 9-13-66, Cl. 85—82.

Sefcik, Robert, to J. Chun & Co. Musical top. 3,272,054, 9-13-66, Cl. 84—83.

Sefton, Robert C., to Koppers Co., Inc. Lightweight concrete. 3,272,765, 9-13-66, Cl. 260—2.5.

Segawa, Kaoru, and H. Osaki, to Nippon Electric Co., Ltd. Printing mechanism for typewriters having plural type-wheels. 3,272,302, 9-13-66, Cl. 197—50.

Seiz, Richard: *See*—
Lorenz, Albert, Muller, Reinchelt, Rosenstock, and Seiz. 3,272,175.

Sekely, Michael E., to Radio Corp. of America. Integrated electrical circuit. 3,272,989, 9-13-66, Cl. 307—88.5.

Sell, Eric A. F.: *See*—
Ash, Eric A., Sell, Jackson, and Vinton. 3,273,085.

Seney, John S., to E. I. du Pont de Nemours and Co. High speed scanning system. 3,272,012, 9-13-66, Cl. 73—341.

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Thylefors, Henric W. 3,272,430.

Service D'Exploitation Industrielle des Tabacs et des Allumettes: *See*—
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Seulen, Gerhard, and H. Kuhlkars, to Deutsche Edelstahlwerke Aktiengesellschaft, and Allgemeine Elektricitats-Gesellschaft. Method of heating by induction. 3,272,954, 9-13-66, Cl. 219—10.43.

Shadan, Anna M., to Continental Oil Co. Method of improving the wet strength of paper by addition of ethylene-vinyl acetate copolymer thereto. 3,272,690, 9-13-66, Cl. 162—169.

Shano, Charles L., to Motorola Inc. Voltage regulator. 3,273,049, 9-13-66, Cl. 322—28.

Shapiro, Gustave, and R. O. Stone, to United States of America, Commerce. Indenting recorder with illumination means. 3,273,160, 9-13-66, Cl. 346—77.

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Sharpe, Frederick P., to Kelsey-Hayes Co. Adjustable stroke intermittent sheet feeder having plural shuttle means. 3,272,501, 9-13-66, Cl. 271—55.

Shelton, Stephen M., H. G. Poole, and F. R. Wagy, to Oregon Metallurgical Corp. Consumable electrode production of metal ingots. 3,271,828, 9-13-66, Cl. 22—200.

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Shepard, Francis H., Jr. Electric switch arrangement. 3,273,013, 9-13-66, Cl. 315—168.

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Solski, Frank A., and Shepard. 3,271,840.

Shepherd, William T., to Texaco Inc. Fire resistant hydraulic fluid. 3,272,747, 9-13-66, Cl. 252—78.

Shera, Brian L., to Pennsalt Chemicals Corp. Apparatus for continuously chlorinating pulp including automatic control of the degree of chlorination. 3,272,691, 9-13-66, Cl. 162—252.

Sherman, Charles A., to Weyerhaeuser Co. Impulse relay. 3,273,024, 9-13-66, Cl. 317—157.

Sherman, David A. Litter barrel mount. 3,272,466, 9-13-66, Cl. 248—146.

Shibe, William J., Jr., and M. Sittenfield, to Hollichem Corp. Cleaning agents containing cyclic imide addition products. 3,272,751, 9-13-66, Cl. 252—106.

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Shields, James R., to Carrier Corp. Heat transfer apparatus having means to separate condensed liquid from the system fluid. 3,271,934, 9-13-66, Cl. 55—269.

Shields, James R., to Carrier Corp. Heat transfer apparatus. 3,272,259, 9-13-66, Cl. 165—158.

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Shimizu, Akira, K. Igarashi, J. Hashimoto, deceased (by S. Hashimoto, executor), to Koei Chemical Co., Ltd. Method of producing pyridine. 3,272,825, 9-13-66, Cl. 260—290.

Shinn, Byron M.: *See*—
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Shiraeff, Dimitry A., to General Aniline & Film Corp. Compositions of polymeric N-vinyl-organic compounds and perchloric acid. 3,272,755, 9-13-66, Cl. 252—187.

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Shupe, Irwin S., to Sterling Drug Inc. Stabilized aqueous solution of tetracaine salt. 3,272,700, 9-13-66, Cl. 167—52.

Siegle, John C., and J. Teti, Jr., to E. I. du Pont de Nemours and Co. Submerged arc welding process and flux composition utilising fluorocarbon. 3,272,667, 9-13-66, Cl. 148—23.

Siemens, Halske Akteingesellschaft: *See*—
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Silvern, David H., and K. E. Nichols, to Sundstrand Corp. Turbine cooling device. 3,271,952, 9-13-66, Cl. 60—39.66.

Simmons, Joe J., to Ideal Development Co. Removable dental appliances and methods of making same. 3,271,858, 9-13-Cl. 32—5.

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Sims, James G., to Monsanto Co. Textile filament having apparent variable denier. 3,272,901, 9-13-66, Cl. 264—177.

Sims, Leslie L., to Ethyl Corp. Polish emulsions of symmetrical wax esters of acetylenedicarboxylic acid and saturated alcohols. 3,272,637, 9-13-66, Cl. 106—10.

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Singer, Joseph, Jr., to Chicago Aerial Industries, Inc. Composite supported fiber optic strip. 3,272,063, 9-13-66, Cl. 88—1.

Sittenfield, Marcus: *See*—
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Skipworth, Richard T.: *See*—
Westbrook, Michael H., and Skipworth. 3,272,187.

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Skolnik, Phil. Window sash balances. 3,271,812, 9-13-66, Cl. 16—197.

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Slocum, Donald H., to The Procter & Gamble Co. Treatment of proteinaceous materials with peroxydisulfate salts. 3,272,639, 9-13-66, Cl. 106—125.

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Granger, Fred L., Jr., Potter, and Smith. 3,271,939.

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Smith, Edward P., E. J. Hasten, Jr., and D. S. Neuhart. Journal box construction for railway cars. 3,272,573, 9-13-66, Cl. 308—38.

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Caldwell, Thomas. 3,272,343.
Smith, Gail P., and G. E. Stong, to Corning Glass Works. Structural ceramic bodies and method of making same. 3,272,686, 9–13–66, Cl. 161—68.
Smith, James L.: *See*—
Harrington, Robert C., Jr., Smith, and Bond. 3,272,687.
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Holden, Kenneth G., and Kerwin. 3,272,799.
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Blakewell, Roland F., Smith, and Loveland. 3,272,311.
Smith, Lloyd B.: *See*—
Lemaire, Henry P., and Smith. 3,273,134.
Smith, Melvin H., to Bourns, Inc. Welding apparatus and method. 3,272,960, 9–13–66, Cl. 219—91.
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Marcus, Natalie S., Holmstrom, and Smith. 3,272,683.
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Smith, Robert J.: *See*—
Cook, Bickhaus, and Smith. 3,272,487.
Smith, Robert W., to General Motors Corp. Domestic appliance. 3,271,844, 9–13–66, Cl. 29—155.63.
Smith, Telford L. Flexible band coupling with tapped insert. 3,272,534, 9–13–66, Cl. 285—47.
Smith, Verity C., to Barnstead Still and Sterilizer Co. Condenser for removing volatile matter from distillate. 3,271,-935, 9–13–66, Cl. 55—269.
Smith, Vincent K.: *See*—
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Sobotka, Walter. Electronically tunable magnetron-type microwave generator. 3,273,074, 9–13–66, Cl. 331—50.
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Arcamone, Federico, and Ferretti. 3,272,823.
Bernardi, Luigi, Bosisio, Chillemi, and Goffredo. 3,272,-790.
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Lafon, Paul. 3,273,115.
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Marsee, Frederick J., Soeters, and Karasinski. 3,271,-954.
Soeters, Raymond A., to Holley Carburetor Co. Reversible self-locking hydraulic system. 3,272,086, 9–13–66, Cl. 91—420.
Sokoloff, Alexis N., and F. E. Clark, to Mueller Brass Co. Apparatus and method for straightening extruded bar stock. 3,271,985, 1–13–66, Cl. 72—256.
Solidstate Controls, Inc.: *See*—
Jackson, Stuart P 3,273,071.
Sollenberger, Lester D., to Duncan Parking Meter Corp. Token dispensing apparatus for parking meters. 3,272,-299, 9–13–66, Cl. 194—2.
Solomon, Frank, and A. Himy, to Yardney International Corp. Electrode assembly. 3,272,653, 9–13–66, Cl. 136—6.
Solski, Frank A., and L. K. Shepard, to Standard Tool & Mfg. Co. Automatic machining device. 3,271,840, 9–13–66, Cl. 29—33.
Somlyody, Arpad, to Burroughs Corp. Semiconductor gating circuit for counter employing single signal source and diode matrix for effecting sequencing. 3,272,993, 9–13–66, Cl. 307—88.5.
Sontag, Sheldon, and A. B. Peck, to Peck Mfg. Co., Inc. Cap construction. 3,271,781, 9–13–66, Cl. 2—202.
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Kawamoto, Takuya, and Tomita. 3,272,990.
Sorensen, Jens O. Construction toy comprising panels in plate form connectable by elastic bands. 3,271,895, 9–13–66, Cl. 46—31.
Sorenson, Wayne P., R. H. Shugarts, and J. H. Riihl, to Beloit Corp. Edge controls for flooded nip coaters. 3,272,-178, 9–13–66, Cl. 118—249.
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Sowden, Ronald G., and N. Hodge, to United Kingdom Atomic Energy Authority. Method of producing nuclear fuel monocarbides from higher carbides. 3,272,600, 9–13–66, Cl. 23—344.
Spaltini, Giuseppe: *See*—
Pisani, Luigi, and Spaltini. 3,271,838.
Sparkes, Julian G., to P. R. Mallory & Co., Inc. Hermetically sealed electrolytic capacitor. 3,273,028, 9–13–66, Cl. 317—230.
Spatz, Sydney M., and R. I. Steiner, to Allied Chemical Corp. Phenylene-bis-(butane-1 1,2-dicarboxylic anhydrides). 3,272,843, 9–13–66, Cl. 260—347.3.
Specialties Development Corp.: *See*—
Jamison, Will B. 3,272,263.
Wendroff, Benjamin. 3,271,833.
Speed Feed Machine Co.: *See*—
Leslie, Charles D. 3,272,297.
Speer, Paul. Process for converting offal and feathers. 3,272,632, 9–13–66, Cl. 99—2.
Sperry Gyroscope Co. Ltd., The: *See*—
Bertram, Benjamin Q., and Walters. 3,272,082.
Sperry Rand Corp.: *See*—
Bloomquist, James V. 3,272,135.
Bruna, Henry E., and Stryker. 3,273,068.
Corey, Joseph T. 3,271,829.
Dean, Lawrence R., and Gunn. 3,272,580.
Hale, John K. 3,272,026.
Henderson, Billy J. 3,272,933.
Holzbock, Werner G., and Mall. 3,271,955.
Itzkan, Irving. 3,273,081.
O'Brien, Harold G. 3,272,951.
Ott, William J. 3,272,571.
Watt, Gordon J. 3,272,018.
Young, Robert G. 3,272,288.
Spigner, Philip: *See*—
Horowitz, Norman, and Spigner. 3,271,859.
Spinner, Adolf. Slide actuating mechanism for a machine tool. 3,272,022, 9–13–66, Cl. 74—53.
Spohr, Albert R., to Sunbeam Corp. Vibrator motor for electric shaver. 3,272,998, 9–13–66, Cl. 310—22.
Spra-Con Co., The: *See*—
Harrison, Walter G., Gary, and Audet. 3,272,354.
Sprague Electric Co.: *See*—
Peterson, Richard C., and Seacord. 3,273,057.
Sprague, Robert H., J. A. Stewart, and J. M. Lewis, to Horizons Inc. Compositions containing leuco xanthene dyes and suitable activators. 3,272,635, 9–13–66, Cl. 96—90.
Spunize Co. of America, Inc.: *See*—
Rosenstein, Nathan. 3,271,836.
Squibb, E. R., & Sons, Inc.: *See*—
Lerner, Leonard J., and Weisenborn. 3,272,710.
Staesche, Maria: *See*—
Berghaus, Bernhard, and Staesche. 3,272,730.
Stahly, Eldon E., to Sinclair Research, Inc. High energy fuels and methods. 3,272,879, 9–13–66, Cl. 260—668.
Standard Oil Co. (Indiana): *See*—
Elwell, Howard A. 3,272,337.
Standard Pneumatic Motor Co.: *See*—
Bent, John H. 3,272,079.
Standard Tool & Mfg. Co.: *See*—
Solski, Frank A., and Shepard. 3,271,840.
Stanford Research Institute: *See*—
Myers, Robert E. 3,272,670.
Star Coffee Co.: *See*—
Plagenberg, Walter A. 3,272,370.
Stark, John, Jr. B. E. Denton, and J. W. McLeod, Jr., to Radio Corp. of America. Enclosure for high voltage apparatus. 3,273,021, 9–31–66, Cl. 317—100.
Starkpole Carbon Co.: *See*—
Sullivan, James F. 3,272,941.
Starre, Gerrit, to North American Philips Co. Inc. Reciprocating dry shaver with movable shear plate and additional cutting means. 3,271,854, 9–13–66, Cl. 30—34.1.
Stauffer Chemical Co.: *See*—
Szabo, Karoly. 3,272,892.
Staunt, Martin, to American Hospital Supply Corp. Control unit for air driven dental handpieces. 3,272,229, 9–13–66, Cl. 137—544.
Stebbins, Larry O., to Automation Industries, Inc. Apparatus useful in ultrasonic inspection of pipes. 3,272,000, 9–13–66, Cl. 73—71.5.
Stec, Frederick J., to Continental Can Co., Inc. Easy opening container. 3,272,382, 9–13–66, Cl. 220—54.
Stecker, Earl M.: *See*—
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Steer, Robert W., Jr., to Massachusetts Institute of Technology, Phase repeater servo. 3,273,136, 9–13–66, Cl. 340—198.
Stein, Charles H., and W. Krause, to Keuffel & Esser Co. Scribing instruments. 3,271,862, 9–13–66, Cl. 33—18.
Steiner, Russell I.: *See*—
Spatz, Sydney M., and Steiner. 3,272,843.
Steltz, Douglas C.: *See*—
Schneider, Richard C., and Steltz. 3,271,790.
Stephenson, Lee P., and W. W. Klein, to Chevron Research Co. Ergodic signal picking. 3,273,114, 9–13–66, Cl. 340—15.5.
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Archer, Sydney, Koelsch, Lorenz, and Tullar. 3,272,804.
Cutler, Royal A., and Schallt. 3,272,814.
Cutler, Royal A., and Schallt. 3,272,863.
Earle, John S., Schoeffel, and Zimmermann. 3,272,739.
Gitchel, Wayne B., Hoffman, and Schoeffel. 3,272,740.
Shupe, Irwin S. 3,272,700.
Stevens, Daryl W., to Clark Equipment Co. Industrial lift truck. 3,272,365, 9–13–66, Cl. 214—671.
Stevens, Roger W., to United States Steel Corp. Stranded wire structures. 3,271,944, 9–13–66, Cl. 57—145.
Stewart, John A.: *See*—
Sprague, Robert H., Stewart, and Lewis. 3,272,635.

Stewart, John K. Infra red remote controller. 3,272,982, 9–13–66, Cl. 246—187.
Stewart, Orald L., to The Cleveland Metal Abrasive Co. Metal shot producing apparatus. 3,271,992, 9–13–66, Cl. 72—476.
Stieber, Ortwin. Infinitely variable speed power transmission, especially ball friction transmission. 3,272,025, 9–13–66, Cl. 74—198.
Stiehl, Roy T., to E. I. du Pont de Nemours and Co. Method of finishing textile fabric prepared from polyester blend yarns, and resulting fabric. 3,272,587, 9–13–66, Cl. 8—115.7.
Stiles, Alvin B., to E. I. du Pont de Nemours and Co. Catalyst composition comprising mangano-chromia-manganite and a chromate. 3,272,759, 9–13–66, Cl. 252—465.
Stiles, Alvin B., to E. I. du Pont de Nemours and Co. Intermittent water vapor addition during formaldehyde synthesis. 3,272,868, 9–13–66, Cl. 260—603.
Stock, Arthur J., to Stock Equipment Co. Under-bunker conveyor. 3,272,314, 9–13–66, Cl. 198—150.
Stock Equipment Co.: *See*—
Stock, Arthur J. 3,272,314.
Stoelting Bros. Co.: *See*—
Stoelting, Carl R., and Stecker. 3,272,132.
Stoelting, Carl R., and E. M. Stecker, to Stoelting Bros. Co. Pump. 3,272,132, 9–13–66, Cl. 103—9.
Stolbach, Henry J. Slicing knife. 3,271,855, 9–13–66, Cl. 30—283.
Stoll, Kurt. Speed regulating valve. 3,272,083, 9–13–66, Cl. 91—405.
Stone, Richard L., and R. J. Bellatorre, to Wallace-Murray Corp. Double-walled vent pipe coupling. 3,272,537, 9–13–66, Cl. 285—187.
Stone, Robert O.: *See*—
Shapiro, Gustave, and Stone. 3,273,160.
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Smith, Gail P., and Stong. 3,272,686.
Stover, Harris A., to Collins Radio Co. Means for measuring signal intensity without interrupting the received signal. 3,273,065, 9–13–66, Cl. 325—67.
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Haytock, Benjamin, III, and Stowell. 3,272,235.
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Stransky, Gustave, to MacGregor & Co. (Naval Architects) Ltd. Power operating means for opening and closing hatch covers. 3,272,255, 9–13–66, Cl. 160—188.
Street, Louis F. to Frank W. Egan & Co. Underwater pelletizer. 3,271,821, 9–13–66, Cl. 18—12.
Stripp, Peter W., to Tecalemit (Engineering) Ltd. Fluid filters for internal combustion engines. 3,271,937, 9–13–66, Cl. 55—307.
Strobel, Albert F., and S. C. Catino, to General Aniline & Film Corp. α-cyano-β,β-diphenylacrylamide compounds. 3,272,-810, 9–13–66, Cl. 260—247.1.
Strobel, Albert F., and S. C. Catino, to General Aniline & Film Corp. Bis-α-cyano-β-substituted cinnamic acid amides and esters. 3,272,855, 9–13–66, Cl. 260—465.
Strohm, William G., and E. F. Yhap, to International Business Machines Corp. Queue reducing memory. 3,273,131, 9–13–66, Cl. 340—172.5.
Strohmeier, Walter, J. G. Bernaldo de Quiros, and W. Ullmann, to Agie A.G. fur Industrielle Elektronik. Circuit with controlled rectifiers and improved ignition thereof. 3,273,041, 9–13–66, Cl. 321—4.
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Tomaszewski, Carlos A. 3,273,009.
Strutz, Carl, & Co., Inc.: *See*—
Rudolph, Rome R., C. Strutz, Jr., and F. C. Strutz. 3,272,349.
Strutz, Carl, Jr.: *See*—
Rudolph, Rome R., C. Strutz, Jr., and F. C. Strutz. 3,272,349.
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Rudolph, Rome R., C. Strutz, Jr., and F. C. Strutz. 3,272,349.
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Bruns, Henry E., and Stryker. 3,273,068.
Stubbe, Friedrich: *See*—
Breher, Rudolf. 3,271,845.
Stucki, Jakob. Storage rack. 3,272,581, 9–13–66, Cl. 312—234.4.
Stulen, Walter H., to Baldwin-Lima-Hamilton Corp. Extrusion apparatus and method. 3,271,986, 9–13–66, Cl. 72—267.
Sturnich, Angelo. Kinematographic projecting apparatus incorporating a screen. 3,272,584, 9–13–66, Cl. 352—123.
Suehiro, Yoshiyuki, A. Takashima, T. Suzuki, and H. Doi. Method of producing uranium dioxide powder. 3,272,602, 9–13–66, Cl. 23—354.
Sugden, John W. Merchandising display rack. 3,272,344, 9–13–66, Cl. 211—1.
Sukup, Eugene G., to Sukup Mfg. Co. Method and apparatus for aerating stored grain. 3,272,480, 9–13–66, Cl. 259—111.
Sukup Mfg. Co.: *See*—
Sukup, Eugene G. 3,272,480.
Sullivan, James F., to Starkpole Carbon Co. Overload protected electric switch. 3,272,941, 9–13–66, Cl. 200—116.
Sulzer Bros. Ltd.: *See*—
Brunner, Alfred. 3,271,960.
Sun Oil Co.: *See*—
Bennett, John D., and Peret. 3,272,146.
Hansel, William B. 3,272,598.
McNelis, Edward J. 3,272,775.
Peterson, Henry J. 3,272,859.
Polishuk, Arthur T. 3,272,742.
Young, Elnar T. 3,272,217.
Sunbeam Corp.: *See*—
Spohr, Albert R. 3,272,998.
Sunde, Conrad J.: *See*—
Richey, Thomas B., Jr., and Sunde. 3,272,850.
Sunde, Conrad J., and T. B. Richey, Jr., to Malmstrom Chemical Corp. Purification of acylated lanolin products. 3,272,-851, 9–13–66, Cl. 260—428.
Sundstrand Corp.: *See*—
Silvern, David H., and Nichols. 3,271,952.
Durdin, Augustus C., Kittle, Baits, and Swenski. 3,272,-476.
Surckla, Peter P.: *See*—
Pearch, Lovell E., and Surckla. 3,272,440.
Sus, Oskar, H. Rauhut, and H. Schafer, to Keuffel & Esser Co. Photo thermographic diazo material and its method of use for photocopying. 3,272,627, 9–13–66, Cl. 96—49.
Sus, Oskar: *See*—
Rauhut, Herbert, and Sus. 3,272,630.
Sutaruk, Alex, to Eaton Yale & Towne Inc. Viscous fluid clutch having heat dissipation means. 3,272,292, 9–13–66, Cl. 192—58.
Sutherland, John D., Jr., K. Ganslaa, and R. A. Gerlicher, to Copolymer Rubber and Chemical Corp. Method of coagulating rubbery polymer latices. 3,272,768, 9–13–66, Cl. 260—27.
Sutton, Blaine M.: *See*—
Gordon, Maxwell, and Sutton. 3,272,817.
Sutton, Earl E., to Dominion Electric Corp. Device for drying hair and fingernails. 3,272,966, 9–13–66, Cl. 219—370.
Suzuki, Takashi: *See*—
Suehiro, Yoshiyuki, Takashima, Suzuki, and Doi. 3,272,-602.
Suzumura, Hideo, and H. Miyahara, to Kurashiki Rayon Co., Ltd. Water-resistant adhesives. 3,272,675, 9–13–66, Cl. 156—292.
Swain & Myers, Inc.: *See*—
Peacock, Henry S., and Durham. 3,272,157.
Swan, Alfred H., to Reduction Co., Inc. Apparatus for the manufacture of hose by helically winding an elongated strip of plastic material. 3,272,678, 9–13–66, Cl. 156—429.
Swanson, Ralph G., and A. N. Walus, to E. I. du Pont de Nemours and Co. Epoxy terminated polyester complexes, coating compositions containing same and metal substrates coated therewith. 3,272,647, 9–13–66, Cl. 117—75.
Swedlow, Inc.: *See*—
Lampman, James A., Young, and Hardesty. 3,272,672.
Sweeney, Victor D., and W. U. Kaji, to Metal Pumping Services, Inc. Apparatus and process for adding solids to a liquid. 3,272,619, 9–13–66, Cl. 75—65.
Sweet, Ronald L., to E. I. du Pont de Nemours and Co. Polychloroquinacridone pigments. 3,272,822, 9–13–66, Cl. 260—279.
Swift Mfg. Co.: *See*—
South, Elmer D. 3,271,824.
Sylvania Electric Products Inc.: *See*—
Jackson, Donald L. 3,272,978.
Ricker, William C., and Simpson. 3,272,944.
Symes, William F., to Monsanto Co. Potassium dichloro- and trichloro-isocyanurate complexes. 3,272,813, 9–13–66, Cl. 260—248.
Symonds, John, to E. I. du Pont de Nemours and Co. Method of heat treating nickel base alloy articles up to 20 mils in thickness. 3,272,666, 9–13–66, Cl. 148—13.
Syn-Pak Corp.: *See*—
Ogle, Robert W. 3,272,322.
Knox, Lawrence H. 3,272,802.
Szabo, Karoly, to Stauffer Chemical Co. Method of preparing organic phosphonates by transesterification. 3,272,892, 9–13–66, Cl. 260—982.
Szkudlapski, Alfons H., to Western Electric Co., Inc. Etching of silicon and germanium. 3,272,748, 9–13–66, Cl. 252—79.3.
T.M.M. (Research) Ltd.: *See*—
Archer, Anthony H. 3,272,048.
Taber, David, E. E. Renfrew, and H. W. Pons, to American Aniline Products, Inc. Quaternary ammonium salts of amino halohydrin dyestuffs. 3,272,792, 9–13–66, Cl. 260—155.
Taber, David, E. E. Renfrew, and H. W. Pons, to American Aniline Products, Inc. Quaternary ammonium salts of halohydrin ether dyestuffs. 3,272,793, 9–13–66, Cl. 260—156.
Taber, David, E. E. Renfrew, and H. W. Pons, to American Aniline Products, Inc. Isothiuronium salts of amino bromohydrin dyestuffs. 3,272,794, 9–13–66, Cl. 260—157.
Takafuji, Tsuyoshi, to Kabushikikaisha Yokogawa Denki Seisakusho (Yokojawa Electric Works Ltd.). Electrical signal switching device. 3,273,047, 9–13–66, Cl. 321—48.
Takasaki, Rinji: *See*—
Tanabe, Katsumi, Takasaki, Hayashi, Morisawa, Hashimoto, and Okada. 3,272,800.
Takashima, Akio: *See*—
Suehiro, Yoshiyuki, Takashima, Suzuki, and Doi. 3,272,-602.
Tamarin, Bernard J., to Pull Packaging, Inc. Packaging of cigars or the like. 3,272,321, 9–13–66, Cl. 206—41.2.
Tanabe, Katsumi, R. Takasaki, R. Hayashi, Y. Morisawa, T. Hashimoto, and Y. Okada, to Sankyo Co. Ltd. Process for preparing Δ^4-3-ketosteroids. 3,272,800, 9–13–66, Cl. 260—239.55.
Tanner, Robert L., to Control Data Corp. Lens feed system. 3,273,154, 9–13–66, Cl. 343—753.
Tassone, Bruno A., and J. L. Blake, Jr., to Skf Industries, Inc. Seal for bearings. 3,272,574, 9–13–66, Cl. 308—187.2.
Taub, Daniel M.: *See*—
Owen, Charles E., Peacock, and Taub. 3,273,126.
Taub, David: *See*—
Hoffsommer, Robert D., Jr., Taub, and Wendler. 3,272,-864.
Wendler, Norman L., and Taub. 3,272,880.

Taylor, Frank F., to Bell Telephone Laboratories, Inc. Flagging of selected groups of code signals. 3,273,121, 9–13–66, Cl. 340—146.1.

Taylor, Frank L., to The Detroit Edison Co. Automatic control for fly ash precipitators. 3,271,931, 9–13–66, Cl. 55—105.

Taylor Instrument Companies: *See*—
Muller-Girard, Otto. 3,273,100.

Taylor, John W. Weeding tool. 3,272,548, 9–13–66, Cl. 294—50.9.

Taylor, Norman E.: *See*—
Schwartz, Norman J., Taylor, and Bakes. 3,272,934.

Tazewell Machine Works, Inc.: *See*—
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Tecalemit (Engineering) Ltd.: *See*—
Stripp, Peter W. 3,271,937.

Techs Inc.: *See*—
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Tedeschi, David H., to Smith, Kline & French Laboratories. Pharmaceutical compositions and methods for their use. 3,272,707, 9–13–66, Cl. 167—65.

Teikoku Jinzo Kenshi Kabushiki Kaisha: *See*—
Kigane, Koji, Yamada, and Isozaki. 3,272,676.

Temple, W. Leroy: *See*—
Dowd, Barrows, Landry, and Temple. 3,272,508.

Tetart, Emile: *See*—
Lucien, Rene, and Tetart. 3,272,494.

Teti, John, Sr.: *See*—
Siegle, John C., and Teti. 3,272,667.

Teutsch, Marvin W., to Nuclear Corp. of America. Electrostatic copier. 3,272,100, 9–13–66, Cl. 95—1.7.

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Brown, William F. 3,272,994.
Brukner, John S., and Nathan. 3,272,741.
Dadura, James G., Odell, and Cantor. 3,272,745.
McCoy, Frederic C., and Knowles. 3,272,852.
Schallenberg, Elmer E., Lacoste, and Kluge. 3,272,744.
Shepherd, William T. 3,272,747.

Textile Machine Works: *See*—
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Textron, Inc., and American Optical Co.: *See*—
Buckminster, Lloyd A. 3,271,912.

Textron Inc.: *See*—
Greby, Daniel F. 3,272,576.

Theriault, Gerald E., to Radio Corp. of America. Color television receiver including transistorized color killer. 3,272,-915, 9–13–66, Cl. 178—5.4.

Thermal Dynamics Corp.: *See*—
Browning, James A. 3,272,959.

Thermo Electric Co., Inc.: *See*—
Klassen, Stephen L. 3,273,105.

Thiele, Edward G., and R. D. Burgess, to Champion Papers, Inc. Wiener orienter. 3,272,331, 9–13–66, Cl. 209—74.

Thomas & Betts Co., Inc., The: *See*—
Crimmins, David J., and Croghan. 3,272,913.

Thomas, James H., and R. V. Burt, to The Procter & Gamble Co. Method for materials handling. 3,272,359, 9–13–66, Cl. 214—152.

Thomas, Thomas R., to Auto Research Corp. Pump unit for a central lubricating installation. 3,272,285, 9–13–66, Cl. 184—27.

Thomlinson, John, to Her Majesty's Government of the United Kingdom, Minister of Aviation, of Great Britain and Northern Ireland. Arrester gear for aircraft. 3,272,460, 9–13–66, Cl. 244—110.

Thompson, Fred, ½ to D. J. Vierstra. Truck unloading structure. 3,272,358, 9–13–66, Cl. 214—83.2.

Thompson, Gordon B., to Northern Electric Co. Ltd. Television fader amplifier. 3,272,919, 9–13–66, Cl. 178—7.1.

Thompson, Le Roy J.: *See*—
Foster, Jacques Y., and Thompson. 3,273,140.

Thompson Ramo Wooldridge Inc.: *See*—
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Thompson, Woodrow F. Golf ball washer. 3,271,802, 9–13–66, Cl. 15—21.

Thomson, Richard N., to Dunlop Rubber Co. Ltd. Load or vehicle supporting devices. 3,272,172, 9–13–66, Cl. 115—1.

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Tierney, John L. and A. L. Insect container. 3,272,376, 9–13–66, Cl. 220—19.

Tigrett, John B., and V. F. Wigal, said Wigal assor., to said Tigrett. Re-ignitable match. 3,272,604, 9–13–66, Cl. 44—42.

Tillinghast, Raymond C., to Gem, Inc. Sponge mop and wringer. 3,271,804, 9–13–66, Cl. 15—119.

Tillotson, Le Roy C.: *See*—
Cutler, Cassius C., Kompfner, and Tillotson. 3,273,151.

Tillson, Robert S., to General Electric Co. External actuator handle mechanism for enclosed circuit breaker. 3,272,953, 9–13–66, Cl. 200—172.

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Desmazes, Andre P., and Tissler. 3,271,946.

Todd, George W., and E. B. Edwards, to Techs Inc. Closure for container. 3,272,405, 9–13–66, Cl. 222—525.

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Tomaszewski, Carlos A., to Stromberg-Carlson Corp. Yoke driving circuit which reduces transients. 3,273,009, 9–13–66, Cl. 315—27.

Tomita, Shinji: *See*—
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Tomono, Masami, H. Kodera, and H. Ueda, to Hitachi, Ltd. Manufacturing method of a semi-conductor device by controlling the recombination velocity. 3,272,661, 9–13–66, Cl. 148—1.5.

Topol, George J., to Bowser, Inc. Device for improving detection of contaminants. 3,271,998, 9–13–66, Cl. 73—53.

Touey, George P., and J. E. Kiefer, to Eastman Kodak Co. Method for increasing the spinning rate of cellulose organic acid ester filaments. 3,272,638, 9–13–66, Cl. 106—176.

Towne, Edmund B.: *See*—
Moore, William H., Towne, and Dickey. 3,272,791.

Towner, Gresley L. Bore pumps. 3,272,145, 9–13–66, Cl. 103—224.

Trianco Ltd.: *See*—
Luchford, Laurence R., and Babbage. 3,272,185.

Tri-City Industrial Services, Inc.: *See*—
Cooley, Charles R. 3,272,546.

Tricon, Alfred J., and F. V. Porter, to Dresser Industries, Inc. Sidewall sampling apparatus. 3,272,268, 9–13–66, Cl. 175—4.

Troberg, Bengt E. M., to Alfa-Laval AB. Self-fitting teat cup liner. 3,272,179, 9–13–66, Cl. 119—14.49.

Tromp, Gerardus Marinus. Sanitary toilet seat. 3,271,792, 9–13–66, Cl. 4—289.

Trouilhet, Maurice M. A., to Calor Appareils Electro-Domestiques. Electric shaver control assembly. 3,272,943, 9–13–66, Cl. 200—122.

True, Thomas T.: *See*—
Good, William E., True, and Vanderlaan. 3,272,917.

True-Trace Corp.: *See*—
Weaver, Paul J. 3,272,039.

Truffitt, Alton D., to Diamond International Corp. Taper flow inlet. 3,272,233, 9–13–66, Cl. 137—599.

Trul, Josef: *See*—
Vielmo, Oskar, and Trul. 3,272,092.

Tsuchiya, Takuso, to General Mills, Inc. Discharge device. 3,272,110, 9–13–66, Cl. 99—238.

Tubbs, Howard A. Well system. 3,272,131, 9–13–66, Cl. 103—6.

Tucker, George G.: *See*—
Lane, Harrison R., and Tucker. 3,272,454.

Tung-Sol Electric Inc.: *See*—
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Merkl, George G. 3,273,137.

Turk, James R., to V. K. Smith. Air bearings for dynamoelectric machine. 3,272,999, 9–13–66, Cl. 310—90.

Turkish, Michael C., to Eaton Yale & Towne Inc. Camshaft for internal combustion engine valve gear. 3,272,189, 9–13–66, Cl. 123—90.

Tuszynski, Alfons A., to Esterline-Angus Instrument Co., Inc. Dual output power supply for transistor circuits. 3,273,-042, 9–13–66, Cl. 321—16.

Uber, Jay J., S. Hsia, to The Plastic Coating Corp. Lithographic printing plate prepared by photoelectrostatic reproduction, a method for its production and a method for lithographic printing. 3,272,121, 9–13–66, Cl. 101—149.2.

Ueda, Hiroshi: *See*—
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Ullmann, Werner: *See*—
Strohmeier, Walter, Bernaldo de Quiros, and Ullmann. 3,273,041.

Unarco Industries, Inc.: *See*—
Dieter, Donald P., and Moyer. 3,271,801.
Young, Fred W., and Hummer. 3,272,528.

Unger, Gilbert G.: *See*—
Dustin, McFadden, Rauf, and Unger. 3,273,120.

Union Carbide Corp.: *See*—
Allenbach, Charles R., Bradfield, Cunning, and Rink. 3,272,442.
Bergstrom, Myron F. 3,272,538.
Crafts Walter, and Wieser. 3,272,623.
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493	:	3,272,228
544	:	3,272,229
557	:	3,272,230
561	:	3,272,231
596.12:		3,272,232
599	:	3,272,233
625.65:		3,272,234
138–107	:	3,272,235

139–122	3,272,236	179– 15	3,272,922	206– 41	3,272,320	222–232	3,272,399	252– 32.7	3,272,744	260–326.5	3,272,841
	3,272,237		3,272,923	41.2	3,272,321	318	3,272,400	33.6	3,272,745		3,272,842
141– 5	3,272,238	18	3,272,924	43	3,272,322	326	3,272,401	47.5	3,272,746	347.3	3,272,843
168	3,272,239	90	3,272,925	47	3,272,323	394	3,272,402	78	3,272,747		3,272,844
176	3,272,240	182	3,272,926		3,272,324		3,272,403	79.3	3,272,748	347.8	3,272,845
388	3,272,241	185	3,272,927	52	3,272,325	396	3,272,404	99	3,272,750	349	3,272,846
143– 48	3,272,242	180– 7	3,272,270		3,272,326	525	3,272,405	106	3,272,751	397.3	3,272,847
144– 20	3,272,243		3,272,271	56	3,272,327	531	3,272,406	135	3,272,752		3,272,848
87	3,272,244		3,272,272	65	3,272,328	569	3,272,407	137	3,272,753	397.5	3,272,849
208	3,272,245		3,272,273		3,272,329	223– 73	3,272,408	161	3,272,754	428	3,272,850
145– 76	3,272,246		3,272,275	208–110	3,272,734	84	3,272,409	187	3,272,755		3,272,851
146– 81	3,272,247	44	3,272,276	341	3,272,735	224– 5	3,272,410	301.1	3,272,756	429.5	3,272,852
148– 1.5	3,272,661		3,272,277	348	3,272,736	15	3,272,411	344	3,272,757	438.1	3,272,853
6.15:	3,272,662		3,272,278	209– 38	3,272,330	26	3,272,412	354	3,272,758	456	3,272,854
6.16:	3,272,663		3,272,279	74	3,272,331	45	3,272,413	465	3,272,759	465	3,272,855
6.17:	3,272,664	77	3,272,280	75	3,272,332	225– 45	3,272,414		3,272,760	488	3,272,856
6.27:	3,272,665	79.4	3,272,274	85	3,272,333	226– 97	3,272,415	253– 59	3,272,476	516	3,272,857
13	3,272,666	181– 31	3,272,281	106	3,272,334		3,272,416	254– 93	3,272,477	518	3,272,858
23	3,272,667	182– 63	3,272,282	210– 22	3,272,737	227–123	3,272,417	186	3,272,478	521	3,272,859
177	3,272,668	141	3,272,283	51	3,272,738	229– 1.5	3,272,418	259– 73	3,272,479	535	3,272,860
179	3,272,669	224	3,272,284	63	3,272,739	17	3,272,425	111	3,272,480	559	3,272,861
150– 10	3,272,248	184– 27	3,272,285		3,272,740	23	3,272,419		3,272,481		3,272,862
151– 6	3,272,249	187– 2	3,272,286	68	3,272,335	27	3,272,420	260– 2.3	3,272,761	565	3,272,863
21	3,272,250	9	3,272,287	132	3,272,336	39	3,272,421	2.5	3,272,762	570.8	3,272,864
152–188	3,272,251	188– 67	3,272,288	136	3,272,337	43	3,272,422		3,272,763	581	3,272,865
211	3,272,252	90	3,272,289	177	3,272,338	55	3,272,423		3,272,764	583	3,272,866
370	3,272,253	191– 1	3,272,928	182	3,272,339	66	3,272,424		3,272,765		3,272,867
156– 13	3,272,670	192– 18	3,272,290	232	3,272,340	230– 31	3,272,426	17	3,272,766	603	3,272,868
86	3,272,671	53	3,272,291	322	3,272,341	47	3,272,427	23.7	3,272,767	607	3,272,869
189	3,272,672	58	3,272,292	440	3,272,342	128	3,272,428	27	3,272,768	611	3,272,870
260	3,272,673		3,272,293	521	3,272,343	134	3,272,429		3,272,769	615	3,272,871
282	3,272,674	66	3,272,294	211– 1	3,272,344	233– 20	3,272,430	41	3,272,771	617	3,272,872
292	3,272,675	67	3,272,295	44	3,272,345	235– 61.11:	3,272,969		3,272,772	638	3,272,873
315	3,272,676	136	3,272,296	118	3,272,346	69	3,272,431	45.75:	3,272,773	644	3,272,874
401	3,272,677	139	3,272,297	214– 1	3,272,347	92	3,272,970	47	3,272,774	646	3,272,875
429	3,272,678	193– 36	3,272,298		3,272,348		3,272,971		3,272,775	666	3,272,876
440	3,272,679	194– 2	3,272,299		3,272,349	150.25:	3,272,972		3,272,776		3,272,877
494	3,272,680		3,272,300		3,272,350	151.11:	3,272,975	67	3,272,777		3,272,878
518	3,272,681	195– 28	3,272,714	6	3,272,351	151.3 :	3,272,973		3,272,778	668	3,272,879
580	3,272,682	36	3,272,715	7	3,272,352		3,272,974		3,272,779		3,272,880
158–125	3,272,254	51	3,272,716	11	3,272,353	236– 21	3,272,432	73	3,272,780		3,272,881
160–188	3,272,255	68	3,272,717		3,272,354	99	3,272,433	77.5	3,272,781		3,272,882
220	3,272,256	70	3,272,718	17	3,272,355	239– 2	3,272,434	79.3	3,272,782		3,272,883
354	3,272,257	103.5	3,272,719	23	3,272,356	14	3,272,435		3,272,783	675	3,272,884
161– 5	3,272,683	197– 6.7	3,272,301	41	3,272,357	204	3,272,436		3,272,784	677	3,272,885
37	3,272,684	50	3,272,302	83.2	3,272,358	206	3,272,437	80.5	3,272,785		3,272,886
49	3,272,685	114	3,272,303	152	3,272,359	212	3,272,438	88.7	3,272,786	683.2	3,272,887
68	3,272,686	151	3,272,304	309	3,272,360	265.25:	3,272,439	93.7	3,272,787	683.43:	3,272,888
143	3,272,687	159	3,272,305	310	3,272,361	403	3,272,441		3,272,788	823	3,272,889
161	3,272,688	187	3,272,306	396	3,272,362	426	3,272,440		3,272,789	859	3,272,890
162– 72	3,272,689	198– 1	3,272,307	505	3,272,363	579	3,272,442	112.5	3,272,790	895	3,272,891
169	3,272,690	19	3,272,308	654	3,272,364	240– 10	3,272,976	155	3,272,791	982	3,272,892
252	3,272,691	25	3,272,309	671	3,272,365	11.2	3,272,977		3,272,792	261– 23	3,272,482
317	3,272,692	33	3,272,310	215– 2	3,272,366	78	3,272,978	156	3,272,793		3,272,483
165– 26	3,272,258		3,272,311	38	3,272,367	241–153	3,272,443	157	3,272,794	24	3,272,484
158	3,272,259	34	3,272,312	41	3,272,368	176	3,272,444	211	3,272,795	35	3,272,485
164	3,272,260	41	3,272,313	43	3,272,369	197	3,272,445	236	3,272,796	39	3,272,486
166– 11	3,272,261	159	3,272,314	100	3,272,370	215	3,272,446	239.55:	3,272,797		3,272,487
38	3,272,262	204	3,272,315	217– 26.5	3,272,371	242– 46.5	3,272,447		3,272,798		3,272,488
167– 22	3,272,693	213	3,272,316	219– 10.43:	3,272,954	55.2	3,272,448		3,272,799	264– 8	3,272,893
30	3,272,694		3,272,317	10.53:	3,272,955	62	3,272,449		3,272,800	36	3,272,894
	3,272,695	200– 1	3,272,929	10.61:	3,272,956	68.3	3,272,450		3,272,801	62	3,272,895
	3,272,696	19	3,272,930	10.69:	3,272,957		3,272,451		3,272,802	98	3,272,896
	3,272,697	35	3,272,931	75	3,272,958	72	3,272,452		3,272,803	109	3,272,897
	3,272,698	38	3,272,932		3,272,959	86	3,272,453	240	3,272,804	119	3,272,898
	3,272,699	46	3,272,933	91	3,272,960	117	3,272,454		3,272,805	126	3,272,899
52	3,272,700	50	3,272,934	125	3,272,961	171	3,272,455		3,272,806	135	3,272,900
53	3,272,701	61.7	3,272,935	137	3,272,962	243– 29	3,272,456	243	3,272,807	177	3,272,901
	3,272,702	67	3,272,936	146	3,272,963	244– 17.11:	3,272,457		3,272,808	244	3,272,902
55	3,272,703	81	3,272,937	271	3,272,964	42	3,272,458		3,272,809		3,272,903
	3,272,704	82	3,272,938	275	3,272,965	77	3,272,459	247.1	3,272,810	275	3,272,904
56	3,272,705		3,272,939	370	3,272,966	110	3,272,460		3,272,811	266– 4	3,272,489
65	3,272,706	116	3,272,941	471	3,272,967	246– 63	3,272,979	248	3,272,812	35	3,272,490
	3,272,707	122	3,272,942	535	3,272,968		3,272,980		3,272,813	267– 1	3,272,491
	3,272,708		3,272,943	220– 3.9	3,272,372		3,272,981	249.9	3,272,814		3,272,492
	3,272,709		3,272,944	9	3,272,373	187	3,272,982	250	3,272,815	8	3,272,493
74	3,272,710	138	3,272,945	14	3,272,374	248– 27	3,272,461	256.4	3,272,816	64	3,272,494
86	3,272,711		3,272,946	15	3,272,375	44	3,272,462	268	3,272,817		3,272,495
87	3,272,712	163	3,272,947	19	3,272,376	65	3,272,463		3,272,818	74	3,272,496
90	3,272,713	166	3,272,948		3,272,377	125	3,272,464		3,272,819	110	3,272,497
169– 15	3,272,263		3,272,949	21	3,272,378	145	3,272,465		3,272,820	271– 8	3,272,498
172–273	3,272,264		3,272,950	31	3,272,379	146	3,272,466	279	3,272,821	10	3,272,499
173– 93	3,272,265	167	3,272,951	39	3,272,380	211	3,272,467		3,272,822	34	3,272,500
164	3,272,266	168	3,272,952	54	3,272,381	225	3,272,468	285.5	3,272,823	55	3,272,501
170	3,272,267	172	3,272,953		3,272,382	309	3,272,469	288	3,272,824	62	3,272,502
174– 52	3,272,908	201– 5	3,272,720	66	3,272,383	250– 41.9	3,272,983	290	3,272,825		3,272,503
68.5	3,272,909	36	3,272,721	221– 1	3,272,384	83	3,272,984	293.4	3,272,826	68	3,272,504
101.5	3,272,910	203– 2	3,272,722	48	3,272,385	83.3	3,272,985	294	3,272,827	71	3,272,505
106	3,272,911	51	3,272,723	254	3,272,386	86	3,272,986	295	3,272,828	272– 8	3,272,506
107	3,272,912	81	3,272,724	222– 48	3,272,387	106	3,272,987		3,272,829	31	3,272,507
138	3,272,913	204– 1	3,272,725	129.1	3,272,388	199	3,272,988		3,272,830	273– 43	3,272,508
175– 4	3,272,268	1.5	3,272,726	136	3,272,389	251– 61	3,272,470		3,272,831	102.1	3,272,509
177–126	3,272,269	29	3,272,727	153	3,272,390	146	3,272,471	295.5	3,272,832	102.2	3,272,510
178– 5.4	3,272,914	35	3,272,728	162	3,272,391	172	3,272,472		3,272,833	141	3,272,511
	3,272,915	140.5	3,272,729		3,272,392	174	3,272,473		3,272,834	274– 1	3,272,512
	3,272,916	177	3,272,730	179	3,272,393	175	3,272,474	296	3,272,835	13	3,272,513
	3,272,917	195	3,272,731	182	3,272,394	203	3,272,475		3,272,836	24	3,272,514
6.6	3,272,918	297	3,272,732	189	3,272,395	252– 8.5	3,272,749	297	3,272,837	275– 3	3,272,515
7.1	3,272,919		3,272,733	194	3,272,396	8.55:	3,272,741		3,272,838	277– 4	3,272,516
7.9	3,272,920	206– 2	3,272,318	200	3,272,397	28	3,272,742	304	3,272,839	26	3,272,517
69	3,272,921	12	3,272,319	210	3,272,398	32.5	3,272,743	308	3,272,840	30	3,272,518

277– 92	3,272,519	299– 37	3,272,559	313–310	3,273,004	321– 18	3,273,044	333– 81	3,273,084	340–146.3	3,273,123
165	3,272,520	39	3,272,560	346	3,273,005	43	3,273,045	83	3,273,085		3,273,124
205	3,272,521	302– 38	3,272,561	315– 3.5	3,273,006	45	3,273,046	335– 87	3,273,086	172.5	3,273,125
280– 11.13:	3,272,522	55	3,272,562	27	3,273,007	48	3,273,047	122	3,272,940		3,273,126
11.35:	3,272,523	303– 4	3,272,563		3,273,008	322– 2	3,273,048	128	3,273,087		3,273,127
	3,272,524	7	3,272,564		3,273,009	28	3,273,049	153	3,273,088		3,273,128
11.36:	3,272,525	8	3,272,565	36	3,273,010		3,273,050	166	3,273,089		3,273,129
11.37:	3,272,526	13	3,272,566	39	3,273,011	323– 45	3,273,051	203	3,273,093		3,273,130
33.99:	3,272,527	29	3,272,567	82	3,273,012	48	3,273,052	205	3,273,090		3,273,131
	3,272,528	307– 88.5	3,272,989	168	3,273,013		3,273,053	207	3,273,091	173	3,273,132
47.13:	3,272,529		3,272,990	212	3,273,014	324– 37	3,273,054	216	3,273,092	174	3,273,133
79.2 :	3,272,530		3,272,991	317– 3	3,273,015		3,273,055		3,273,094		3,273,134
281– 15	3,272,531		3,272,992		3,273,016	48	3,273,056	239	3,273,095		3,273,135
282– 22	3,272,532		3,272,993	18	3,273,017	60	3,273,057	336– 30	3,273,096	198	3,273,136
283– 7	3,272,533		3,272,994	20	3,273,018	61	3,273,058	65	3,273,097	261	3,273,138
285– 47	3,272,534		3,272,995	86	3,273,019	106	3,273,059	69	3,273,098	310	3,273,137
114	3,272,535		3,272,996	99	3,273,020	131	3,273,060	83	3,273,099	334	3,273,139
	3,272,536		3,272,997	100	3,273,021	151	3,273,061	131	3,273,100		3,273,140
187	3,272,537	308– 5	3,272,568	116	3,273,022	325– 14	3,273,062	338–316	3,273,101	347	3,273,141
189	3,272,542	6	3,272,569	134	3,273,023	41	3,273,063	339– 18	3,273,102		3,273,142
231	3,272,538		3,272,570	157	3,273,024	55	3,273,064	22	3,273,103		3,273,143
332.4 :	3,272,539	26	3,272,571	230	3,273,025	67	3,273,065	128	3,273,104	343– 5	3,273,144
287– 52.07:	3,272,543	36.1 :	3,272,572		3,273,026	113	3,273,066	176	3,273,105	6	3,273,145
54	3,272,540	38	3,272,573		3,273,027	129	3,273,067	188	3,273,106	6.8	3,273,146
90	3,272,541	187.2 :	3,272,574		3,273,028	174	3,273,068	198	3,273,107	7.7	3,273,147
292–216	3,272,544	195	3,272,575	234	3,273,029	466	3,273,069	210	3,273,108	11	3,273,148
	3,272,545	233	3,272,576	235	3,273,030	328– 84	3,273,070	217	3,273,109	16	3,273,149
294– 2	3,272,546	310– 22	3,272,998	249	3,273,031	330– 4.3	3,273,072	340– 4	3,273,110	18	3,273,150
31	3,272,547	90	3,272,999	258	3,273,032	8	3,273,071	5	3,273,111	100	3,273,151
50.9 :	3,272,548	98	3,273,000		3,273,033	331– 38	3,273,073	15	3,273,112	108	3,273,152
64	3,272,549	152	3,273,001	260	3,273,034	50	3,273,074	15.5 :	3,273,113	706	3,273,153
295– 31	3,272,550	191	3,273,002	318– 18	3,273,035	87	3,273,075		3,273,114	753	3,273,154
296– 37	3,272,551	312– 42	3,272,577	31	3,273,036	113	3,273,076	41	3,273,115		3,273,155
56	3,272,552	198	3,272,578	467	3,273,037	116	3,273,077	60	3,273,116	765	3,273,156
297–254	3,272,553	214	3,272,579	320– 2	3,273,038	332– 43	3,273,078	81	3,273,117	781	3,273,157
256	3,272,554		3,272,580	26	3,273,039	333– 11	3,273,079	89	3,273,118	792	3,273,158
310	3,272,556	234.4 :	3,272,581	321– 2	3,273,040	26	3,273,080	146.1 :	3,273,119	792.5 :	3,273,159
369	3,272,555	257	3,272,582	4	3,273,041	31	3,273,081		3,273,120	346– 77	3,273,160
388	3,272,557	343	3,272,583	16	3,273,042		3,273,082		3,273,121	352–123	3,272,584
298– 22	3,272,558	313– 82	3,273,003	18	3,273,043	73	3,273,083	146.2 :	3,273,122		

CLASSIFICATION OF DESIGNS

D 2– 3	205,702	D29– 1	205,710	D47– 7	205,718	D56– 4	205,726	D58– 8	205,734	D64– 11	205,742
D 3– 25	205,703	D30– 1	205,711	D48– 31	205,719		205,727	13	205,735	D71– 1	205,743
D 7– 7	205,704		205,712		205,720		205,728	17	205,736	D74– 1	205,744
D12– 2	205,705	D34– 2	205,713	D52– 2	205,721	D57– 1	205,729		205,737	D80– 9	205,745
D13– 7	205,706	15	205,714	6	205,722	D58– 5	205,730	26	205,738	D83– 1	205,746
D15– 1	205,707	D44– 29	205,715	D56– 1	205,723	6	205,731		205,739		205,747
D26– 1	205,708		205,716	4	205,724	8	205,732		205,740	D86– 10	205,748
5	205,709	D45– 4	205,717		205,725		205,733	D62– 4	205,741	D88– 3	205,749

CLASSIFICATION OF PLANTS

P. – 42	2,671				

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

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Alaska	53	Maine	18	Puerto Rico	51
Arizona	2	Maryland	19	Rhode Island	38
Arkansas	3	Massachusetts	20	South Carolina	39
California	4	Michigan	21	South Dakota	40
Canal Zone	57	Minnesota	22	Tennessee	41
Colorado	5	Mississippi	23	Texas	42
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Delaware	7	Montana	25	U.S. Air Force	54
District of Columbia	8	Nebraska	26	U.S. Navy	56
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(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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	3,272,766										

Design Patents

4	205,708	12	205,722	12	205,747	21	205,745	31	205,735	37	205,702
	205,732		205,723	19	205,711		205,749		205,738		205,706
	205,733		205,724		205,712	22	205,744		205,739		205,718
	205,746		205,725	20	205,717	31	205,709		205,740		205,720
6	205,715		205,726	21	205,703		205,713	32	205,719		205,721
	205,716		205,727		205,730		205,729	34	205,710	41	205,704
12	205,707		205,728		205,741		205,731		205,748	46	205,705
	205,714		205,737		205,742		205,734	35	205,743	48	205,736

Plant Patents

4	2,671

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 13, 1966 Volume 830 Number 2

TRADEMARKS

NOTICES

United States Adopted Names

List No. 14

March 1, 1966 to June 30, 1966

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Assistant Director, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

allobarbital: central nervous system depressant
betamethasone acetate: corticosteroid
betamethasone disodium phosphate: corticosteroid
cloperidone hydrochloride: sedative; tranquilizer
descinolone acetonide: glucocorticoid
gamfexine: antidepressant
guanethidine monosulfate: hypotensive
hycanthone: schistosomacide
isosorbide: oral osmotic diuretic
lidoflazine: cardiovascular agent
mesterolone: oral androgenic hormone
metyrapone tartrate: diagnostic test of pituitary function
niclosamide: anthelmintic
nitarsone: veterinary histomonastat
nonoxynol: spermatocide
prednival: topical anti-inflammatory
prilocaine hydrochloride: local anesthetic
propiram fumarate: analgesic
pyrantel tartrate: anthelmintic
rifamide: antibacterial
roxarsone: veterinary growth stimulant
sodium ampicillin: antibiotic
sodium edetate: chelating agent
tetroquinone: treatment of keloids
trimoxamine hydrochloride: antihypertensive
trisodium edetate: chelating agent
viridofulvin: antifungal antibiotic

United States Adopted Names (USAN) and United States Adopted Names (Proposed) (USAN)

QUARTERLY CUMULATIVE LIST

January 1, 1966–June 30, 1966

This is a revised alphabetical listing of the nonproprietary names *proposed for adoption* by the USAN Council which were published in the Trademark Bureau Bulletin during the

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	28,840
Date of oldest new application	July 15, 1965
Date of oldest amended application (filing date)	July 6, 1962

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF (Acting), Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	7-15-65	2-24-64
(II) F. H. WETHERBEE (Acting), Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	9-25-65	7-6-62
Renewals (All Classes)	6-29-66	
Sec. 12(c) Publications (All Classes)	7-7-66	

Applications filed during the month of July—2,057

Registrations Issued—498—No. 814,753 to No. 815,250
Renewals Issued—70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

period indicated. The listing also incorporates the revised lists of *adopted* nonproprietary names issued by the USAN Council, but not published in the Bulletin.

The Quarterly Cumulative List is intended to supplement USAN Cumulative List 4, 1961–1965, published annually for the Council by the United States Pharmacopeia; it is distributed with an issue of the Trademark Bureau Bulletin.

An asterisk (*) before a name indicates an *adopted name;* all other names on the list are *proposed for adoption.*

Since Q.C.L. is cumulative, only the latest issue need be consulted. All preceding lists may be discarded.

Any comments or protests regarding proposed names should be brought promptly to the attention of the USAN Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

*allobarbital: central nervous system depressant
asperlin: antibacterial; antineoplastic
*betamethasone acetate: corticosteroid
*betamethasone disodium phosphate: corticosteroid
*cloperidone hydrochloride: sedative; tranquilizer
*cyheptamide: anticonvulsant
*descinolone acetonide: glucocorticoid
*gamfexine: antidepressant
*guanethidine monosulfate: hypotensive
*hycanthone: schistosomacide
*ibufenac: analgesic; anti-inflammatory
*isosorbide: oral osmotic diuretic
*lidoflazine: cardiovascular agent
*mefruside: diuretic
*mesterolone: oral androgenic hormone
*metyrapone tartrate: diagnostic test of pituitary function
*niclosamide: anthelmintic
*nifuraldezone: antibacterial
*nitarsone: veterinary histomonastat
*nitrazepam: hypnotic; anticonvulsant
*nitromide: veterinary coccidiostat and antibacterial
*nonoxynol: spermatocide
*norgestrel: progestin
*pemoline: central nervous system stimulant
phenobarb: proposed abbreviation for phenobarbital
phthalofyne: veterinary anthelmintic
*prednival: topical anti-inflammatory
*prilocaine hydrochloride: local anesthetic
*propiram fumarate: analgesic
*pyrantel tartrate: anthelmintic
quilaxine maleate: oxytocic
*rifamide: antibacterial
*roxarsone: veterinary growth simulant
seperidol hydrochloride: neuroleptic
*sodium ampicillin: antibiotic
*sodium edetate: chelating agent
*sodium ethacrynate: diuretic
sulfabenz: veterinary antibacterial and anticoccidial
sulfafen: antibacterial; anticoccidial agent
*tetramisole hydrochloride: anthelmintic
*tetroquinone: treatment of keloids
thyroglobulin: thyroid preparation
*trimoxamine hydrochloride: antihypertensive
*trisodium edetate: chelating agent
*viridofulvin: antifungal antibiotic
zolertine hydrochloride: vasodilator; anti-adrenergic; antihypertensive

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 167,769 (AMOCO), The American Oil Company, Gasoline, motor fuels, and lubricating oils; **Reg. No. 335,766,** same, Naphtha; **Reg. No. 657,012,** same, Gasoline, motor fuel, naphtha, lubricating oil and grease, flushing oil, and heating oil; **Reg. No. 704,187,** same, Additives for lubricating oils and greases; **Reg. No. 722,940,** same, Plasticizers to impart flexibility or elasticity to plastics, resins, rubber elastomers, etc.; **Reg. No. 730,612,** same, Synthetic resins for general use in the industrial arts; **Reg. No. 736,984,** same, Agricultural chemicals to control the growth of weeds and noxious plants and promote the growth of agricultural products, herbicides and insecticides, **filed** Apr. 15, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–644–PH, *The American Oil Company* v. *Ogden B. Armour et al.* Final consent judgment in favor of plaintiff; defendants enjoined June 13, 1966.

Reg. No. 335,766. (See Reg. No. 167,769.)

Reg. No. 425,005 (SLITTERS'), Michael J. Schlitters, doing business as Screw Machine Tool Company, Screw machine and turret lathe tool holders and parts—namely, cut-off slides, form slides, form tool holders, etc., **filed** July 12, 1966, D.C., E.D. Mich. (Detroit), Doc. 28664, *Screw Machine Tool Company* v. *Slater Tool and Engineering Corporation et al.*

Reg. No. 426,781 (AEROJET), Aerojet Engineering Corporation, Thrust motors whose general purpose is to provide thrust by means of a combustion process, and includes all the component parts of such motors; **Reg. No. 633,546** (AEROJET-GENERAL), Aerojet-General Corporation, Rockets, rocket motors, and jet assist take-off units; **Reg. No. 633,548** (AEROJET), same, Internal combustion engines, marine engines, components thereof, and components associated therewith; **Reg. No. 746,156** (AEROJET-GENERAL), same, Aircraft and component parts thereof, **filed** Nov. 15, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–1640–IH, *Aerojet-General Corp.* v. *Marquette Corporation.* Order of dismissal without prejudice Mar. 18, 1966.

Reg. No. 514,366 (NAKEN'S TARNISH PROOF SILVERWARE CHEST AND DESIGN), M. I. Naken Co., Chests for receiving and storing table flatware, **filed** July 19, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1180–PH, *M. I. Naken Co.* v. *William Naken.*

Reg. No. 575,391 (THE RED BOOK), The Reuben H. Donnelley Corporation, Classified telephone directories; **Reg. No. 588,850** (RED BOOK BUYERS' SERVICE), same, Providing buying information as to sellers of all kinds of merchandise and services and who advertise in the telephone directories known as "The Red Book," **filed** Jan. 27, 1966, D.C., S.D.N.Y., Doc. 66/266, *The Reuben H. Donnelley Corp.* v. *Directory Advertising Counselors, Inc. et al.* Consent judgment—defendants enjoined July 7, 1966.

Reg. No. 588,850. (See Reg. No. 575,391.)

Reg. No. 593,368 (AQUA NET in script), Rayette, Inc., Water soluble freon dispensed hair dressing, **filed** July 14, 1966, D.C., S.D.N.Y., Doc. 66/2133, *Rayette-Faberge, Inc.* v. *Riverton Laboratories, Inc.*

Reg. No. 602,098 (OTOSONE), Broemmel Pharmaceuticals, Sterile solution containing cortisone for topical use only—namely, as an ear drop and for skin infections and irritations, **filed** July 12, 1966, D.C., N.D. Calif. (San Francisco), Doc. 45405, *Broemmel Pharmaceuticals* v. *Evsco Pharmaceutical Co. et al.*

Reg. No. 627,996 (UNITED AIR LINES AND DESIGN), United Air Lines, Inc., Transportation of persons, mail, and property by air; **Reg. No. 676,462** (UNITED), same, **filed** July 12, 1966, D.C., S.D.N.Y., Doc. 66/2066, *United Air Lines, Inc. et ano.* v. *Dan Brechner & Co., Inc.*

Reg. No. 633,546. (See Reg. No. 426,781.)

Reg. No. 633,548. (See Reg. No. 426,781.)

Reg. No. 657,012. (See Reg. No. 167,769.)

Reg. No. 676,462. (See Reg. No. 627,996.)

Reg. No. 704,187. (See Reg. No. 167,769.)

Reg. No. 722,940. (See Reg. No. 167,769.)

Reg. No. 730,612. (See Reg. No. 167,769.)

Reg. No. 736,984. (See Reg. No. 167,769.)

Reg. No. 746,156. (See Reg. No. 426,781.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 200,217. Weyerhaeuser Company, Tacoma, Wash. Filed Aug. 19, 1964.

SILVAPLEX

Class 2—Receptacles

For Molded Wood Trays.

Class 12—Construction Materials

For Doors.

Class 32—Furniture and Upholstery

For Counter Tops, Table Parts, and Phonograph Cabinets.

First use Mar. 13, 1964.

SN 200,903. Bond Street Ltd., New York, N.Y. Filed Aug. 31, 1964.



The mark consists of a bud-shaped ornamental tab of metallic composition.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Handbags, Purses, Wallets, Cosmetic Purses, Passport Cases, Key Cases, and Eyeglass Cases.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Cigarette Cases.

First use at least as early as 1948.

SN 202,611. Morton Manufacturing Company, Chicago, Ill. Filed Sept. 24, 1964.

MODU-LINE

Class 12—Construction Materials

For Construction Walls With Base Assemblies.

Class 32—Furniture and Upholstery

For Display and Partitioning Systems Including Gondolas, Drawer Stack-On Units, Promotional Ends, Display Walls With Base Assemblies, and Box Base Series.

First use July 6, 1964.

SN 213,510. Alken-Murray Corporation, New York, N.Y. Filed Mar. 8, 1965.



Class 6—Chemicals and Chemical Compositions

For Boiler Compounds, Rust and Corrosion Inhibitors.

Class 15—Oils and Greases

For Fuel Oil Additives.

Class 52—Detergents and Soaps

For Sludge, Rust, Scale and Corrosion Cleaning and Removing Preparations.

First use June 15, 1964.

SN 232,046. Morton International, Inc., Chicago, Ill. Filed Nov. 3, 1965.

ADCOTE

Owner of Reg. Nos. 749,280, 795,832, and 796,595.

Class 5—Adhesives

For Adhesives for Industrial Use—Namely, Primers, Extrusion Primers, Heat Seal Adhesives, and Joining or Laminating Adhesives All for Use With Paper, Films, and Foils; Adhesives reactivated by Solvents, Water or Heat and Pressure Sensitive Adhesives.

First use June 9, 1959.

Class 6—Chemicals and Chemical Compositions

For Chemicals for Industrial Use—Namely, Organosols and Plastisols.

First use June 25, 1959.

Class 16—Protective and Decorative Coatings

For Protective and Decorative Coatings for Industrial Use—Namely, Lacquers, Primers and Paints, Both Organic Solvent Base and Water Base; Underprint and Overprint Coatings, Gloss Coatings, Heat Resistant Gloss Coatings, Heat Seal Moisture and Vapor Resistant Coatings, All for Use With Paper, Films and Foils; Paper Plate Coatings, Slip Coatings; Functional and Barrier Coatings for Metal, Plastic Films, Plastics, Cloth, Paper, Wood, and Foamed Plastics.

First use July 31, 1959.

SN 232,969. Morrie Chaitlen, d.b.a. C. & E. Marshall Co., Chicago, Ill. Filed Nov. 19, 1965.

MOSELEY

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Watchmakers' Tools, Machines and Supplies Including Balance Screw Holders, Gravers, Crystal Grinders, Lathes, Lathe Chucks, Pivot Polishers, Adjustable Roller Removers, Sleeve Wrenches, Staking Tools, and Screw Driver Sharpeners.

Class 26—Measuring and Scientific Appliances

For Main Spring Gauges.

Class 37—Paper and Stationery

For Watch Record Books.

First use as early as 1915.

SN 237,637. Woodford Manufacturing Co., Des Moines, Iowa. Filed Feb. 1, 1966.

WOODFORD

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Water Hydrants.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Dock Plates.

First use Nov. 29, 1962; 1929 as to "Woodford."

SN 240,491. Hedwin Corporation, New York, N.Y. Filed Mar. 9, 1966.

Talk O' the Table

Owner of Reg. No. 803,200.

Class 2—Receptacles

For Coasters, Trays, Napkin Rings, and Lazy Susans.
First use Apr. 19, 1965.

Class 50—Merchandise Not Otherwise Classified

For Table Placemats and Doilies.
First use Sept. 23, 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 235,716. Reliable Luggage, Inc., West Pittsburg, Pa. Filed Jan. 3, 1966.

Shu-Pak

Owner of Reg. No. 656,237.

For Flexible Elastic Shoe Retainers Disposed in the Lids or Covers of Traveling Bags and Suitcases.

First use June 20, 1955.

Class 4—Abrasives and Polishing Materials

SN 224,515. The Cleanola Company, Glenshaw, Pa. Filed July 29, 1965.

CLEANOLA

For Preparations for Cleaning and Polishing Wood, Glass, Metal, and Other Surfaces.

First use Jan. 24, 1900.

Class 5—Adhesives

SN 220,919. The Delta Company, Wheeling, Ill. Filed June 11, 1965.

3D

For Spray-On Solvent Based Adhesives.
First use Apr. 12, 1965.

Class 6—Chemicals and Chemical Compositions

SN 204,477. Johnson Nurseries (Kingston) Limited, Kingston, Ontario, Canada. Filed Oct. 21, 1964.

SCENT-OFF

Priority claimed under Sec. 44(d) on Canadian application filed Apr. 24, 1964; Reg. No. 143,537, dated Jan. 21, 1966.

For Evaporative Dog and Cat Repellent—Namely Wax Impregnated With Repellent Odoriferous Chemicals, Coated on Elongated Flexible Wire-Like Twist-Ties, Sticks, and Spatulas and in the Form of Rigid Pencils, Crayons, and Push-Up Dispensers.

SN 212,809. Private Brands, Inc., Kansas City, Mo. Filed Feb. 25, 1965.

STOPIT

For Herbicide.
First use Feb. 15, 1965.

SN 214,856. FMC Corporation, New York, N.Y. Filed Mar. 24, 1965.

DURAPHOS

For Phosphates for Use in Preventing Scale, Corrosion and "Red" Water in the Treatment of Water Systems.
First use Feb. 11, 1965.

SN 230,908. The Sherwin-Williams Company, Cleveland, Ohio. Filed Oct. 21, 1965.

PERMACHLOR

For Pigments.
First use Oct. 28, 1955.

SN 231,774. Sandoz, Inc., Hanover, N.J. Filed Oct. 28, 1965.

S

Owner of Reg. Nos. 300,570, 315,685, and 796,648.

For Fiber, Textile, Paper, Leather, Plastic, and Paint Processing Chemicals; Dishwashing, Laundering, and Cosmetic Additives and Dyestuffs.

First use 1890.

SN 233,771. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Dec. 2, 1965.

SWAN COTE

Applicant disclaims the exclusive use of the word "Cote" apart from the mark as shown.

For Stain, Soil, and Water Repellent for Fabrics.
First use Sept. 28, 1962.

SN 236,021. Standard Oil Company of California, San Francisco, Calif. Filed Jan. 7, 1966.

CHEVRON

For Chemical Ingredients Used in the Manufacture of Synthetic Detergents.
First use July 1, 1965.

SN 236,364. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

GESABAL

Owner of Reg. Nos. 719,834, 736,644, and others.

For Chemical Ingredient Used in the Manufacture of Herbicides.

First use Dec. 21, 1965.

SN 236,365. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

GARDOTOP

Owner of Reg. No. 719,834.

For Chemical Ingredient Used in the Manufacture of Herbicides.

First use Dec. 23, 1965.

SN 236,366. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

ANOFEX

For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Dec. 21, 1965.

SN 236,367. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

AROPENE

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Dec. 21, 1965.

SN 236,368. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

GESATAMIN

Owner of Reg. Nos. 406,217, 780,822, and others.

For Chemical Ingredient Used in the Manufacture of Herbicides.

First use Dec. 21, 1965.

SN 236,369. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

STENTAN

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Dec. 23, 1965.

SN 236,370. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

GESADOM

Owner of Reg. Nos. 406,217, 780,823, and others.

For Chemical Ingredient Used in the Manufacture of Insecticides.

First use Dec. 21, 1965.

SN 236,371. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

GENALON

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Dec. 21, 1965.

SN 236,373. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

CARDOPRIM

Owner of Reg. Nos. 720,195 and 790,904.

For Chemical Ingredient Used in the Manufacture of Herbicides.

First use Dec. 23, 1965.

SN 236,374. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

CAMPAGARD

Owner of Reg. Nos. 688,968, 727,860, and 790,906.
For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Dec. 21, 1965.

SN 236,375. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

CAMPAPRIM

Owner of Reg. Nos. 790,904, 790,906, and others.
For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Dec. 21, 1965.

SN 236,376. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

MURAL

For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Dec. 21, 1965.

SN 236,377. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

SALITAL

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Dec. 23, 1965.

SN 236,378. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

MILOGARD

Owner of Reg. No. 727,860.
For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Dec. 21, 1965.

SN 236,379. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

GESAFRAM

Owner of Reg. Nos. 406,217, 780,822, and others.
For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Dec. 21, 1965.

SN 236,380. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

TOPAZOL

Owner of Reg. No. 790,904.
For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Dec. 21, 1965.

SN 236,725. The Euclid Chemical Company, Cleveland, Ohio. Filed Jan. 18, 1966.

SURFHARD

For Concrete Floor Hardening and Dustproofing Composition, Consisting of a Magnesium-Zinc Silicofluoride Solution Combined With Oxalin.
First use on or about Feb. 1, 1955.

SN 236,730. The Euclid Chemical Company, Cleveland, Ohio. Filed Jan. 18, 1966.

EUCON WR

For Water Reducing Additive for Concrete Mixes, Comprising a Sodium Lignin Sulfonate Formulation.
First use on or about Mar. 1, 1955.

SN 236,750. Hess Oil & Chemical Corporation, Perth Amboy, N.J. Filed Jan. 18, 1966.

HEXSOL

For Solvents for Use in Industry, Science, Agriculture, and Horticulture.
First use Apr. 1, 1946.

SN 236,751. Hess Oil & Chemical Corporation, Perth Amboy, N.J. Filed Jan. 18, 1966.

AGSOL

For Solvents for Use in Industry, Science, Agriculture, and Horticulture.
First use Oct. 1, 1963.

SN 236,756. Hess Oil & Chemical Corporation, Perth Amboy, N.Y. Filed Jan. 18, 1966.

LACASOL

For Diluent for Use in Industry, Science, Agriculture, and Horticulture.
First use Apr. 1, 1946.

SN 237,196. Biological Research, Inc., Bridgeton, Mo. Filed Jan. 25, 1966.

FORMAFIX

For Tissue Penetrating Fixative for Preservation of Biological and Surgical Specimens, and Other Tissues.
First use Aug. 31, 1965.

SN 237,197. Biological Research, Inc., Bridgeton, Mo. Filed Jan. 25, 1966.

TISSUEFIX

For Tissue Penetrating Fixative for Preservation of Biological and Surgical Specimens, and Other Tissues.
First use Aug. 31, 1965.

SN 238,325. Zevel Corporation, La Mirada, Calif. Filed Feb. 7, 1966.

KN-48

For Chemical Toilet and Holding Tank Deodorant.
First use on or about Jan. 15, 1964.

SN 238,839. Corn Products Company, New York, N.Y. Filed Feb. 15, 1966.

TANZOSE

For Corn Molasses, Corn Hydrol, and Other Preparations for Use in the Tanning and Leather Industries and for Manufacturing Purposes.
First use at least as early as Dec. 29, 1964.

Class 7—Cordage

SN 237,363. Mantaline Corporation, Mantua, Ohio. Filed Jan. 26, 1966.

MANTA-LINE

For Tie-Down Lines Formed of Synthetic Rope and Connectors Therefor, Including Plastic Hooks, Plastic Eyes, and Metal Hooks.
First use June 29, 1964.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 228,962. Adolf Waldmann, Pforzhei, Germany. Filed Sept. 29, 1965.

USUS

The English translation of the word "Usus" is "custom." Owner of German Reg. No. 783,499, dated Feb. 2, 1963.
For Cigar and Cigarette Holders Made of Metal and Synthetic Plastic, and Cigar and Cigarette Cases Made of Metal.

Class 10—Fertilizers

SN 236,381. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 13, 1966.

BINUTRIN

For Fertilizer.
First use Dec. 21, 1965.

SN 236,887. Glenn J. Elliott, d.b.a. Clarel Laboratory, McHenry, Ill. Filed Jan. 20, 1966.

NU-BUD

For Plant Fertilizer.
First use Mar. 25, 1958.

Class 11—Inks and Inking Materials

SN 228,848. Sun Chemical Corporation, New York, N.Y. Filed Sept. 28, 1965.

HYDROJET

Owner of Reg. No. 765,327.
For Printing Inks.
First use Aug. 30, 1965.

SN 235,187. J. M. Huber Corporation, Borger, Tex. Filed Dec. 23, 1965.

HUBERFLEX

For Printing Inks.
First use June 3, 1965.

SN 235,785. A. P. Little, Inc., Rochester, N.Y. Filed Jan. 4, 1966.

EXECUTIVE

Owner of Reg. No. 254,133.
For Typewriter Ribbons, Carbon Paper, and Infra-Red Copy Paper.
First use July 31, 1928.

SN 236,902. A. P. Little, Inc., Rochester, N.Y. Filed Jan. 19, 1966.

SILON

For Ribbons for Typewriters and for Data Processing Machines.
First use April 1963.

Class 12—Construction Materials

SN 210,271. Chemically Prestressed Concrete Corporation, Van Nuys, Calif. Filed Jan. 21, 1965.

CHEMSTRESS

For Construction Materials—Namely, a Portland Type of Cement Which Produces Expansive Concrete.
First use Jan. 5, 1965.

SN 226,275. The O'Malley Lumber Company, Phoenix, Ariz. Filed Aug. 23, 1965.



For Prefabricated Roof Trusses.
First use Aug. 2, 1965.

SN 226,661. Howmet Corporation, New York, N.Y., by change of name from Howe Sound Company, Dallas, Tex. Filed Aug. 27, 1965.

DECOR-WALL

For Panels for Use as Facing of Commercial and Industrial Buildings.
First use Apr. 28, 1965.

SN 227,955. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Sept. 16, 1965.

Spandreline

Owner of Reg. No. 613,161.
For Structural Glass Panels.
First use at least as early as May 26, 1965.

SN 228,145. Florida Tile Industries, Inc., Lakeland, Fla. Filed Sept. 20, 1965.

florida tile

No exclusive claim is made to the word "Tile" apart from the mark as shown. Owner of Reg. No. 685,378.
For Ceramic Tiles.
First use Mar. 1, 1960.

SN 231,938. Readco Industries Inc., Reading, Mass. Filed Nov. 1, 1965.

Glaze-cote

For Polyurethane Component for Making Seamless Flooring Which Is Incorporated Into the Seamless Flooring During In-Situ Fabrication Thereof.
First use June 1965.

SN 231,940. Readco Industries Inc., Reading, Mass. Filed Nov. 1, 1965.

READCO

For Materials Used for Making Seamless Flooring and Counters—Namely, Polyurethane Coatings, Thinners, Catalysts, Liquid Pigments, Color-Retaining Liquids, and Multicomposition Elastomeric Plastic Floor Underlayments.
First use June 1965.

SN 234,859. Swedlow Inc., Garden Grove, Calif. Filed Nov. 26, 1965.

SWEDCAST 300

Owner of Reg. No. 705,423.
For Cast Acrylic Sheets.
First use Aug. 16, 1965.

SN 234,940. Shur-Line Manufacturing Co., Inc., Lancaster, N.Y. Filed Dec. 20, 1965.

SHUR-WEDGE

Owner of Reg. No. 659,814.
For Wedges Adapted To Be Driven Between Clapboards To Vent Moisture and Reduce Paint Peeling.
First use on or about May 19, 1961.

SN 234,975. United States Steel Corporation (Delaware corporation), Pittsburgh, Pa., by merger and change of name from United States Steel Corporation (New Jersey corporation), Pittsburgh, Pa. Filed Dec. 20, 1965.

AIR-DEK

For Steel Mats for Forming Aircraft Landing Strip.
First use Feb. 19, 1965.

SN 235,186. Holmes Company, Inc., Lakeland, Fla. Filed Dec. 23, 1965.

Insultherm

For Blended Glass Fiber Insulating Material.
First use Oct. 1, 1964.

SN 237,215. General Refractories Company, Philadelphia, Pa. Filed Jan. 25, 1966.

PERAMAX

For Refractory Brick.
First use Mar. 5, 1965.

SN 237,332. General Refractories Company, Philadelphia, Pa. Filed Jan. 26, 1966.

FLEXLOK

Owner of Reg. No. 788,380.
For Refractory Tile.
First use March 1934.

SN 237,334. General Refractories Company, Philadelphia, Pa. Filed Jan. 26, 1966.

RIDGE

For Refractory Brick.
First 1878.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 233,151. United-Carr Incorporated, Boston, Mass. Filed Nov. 22, 1965.



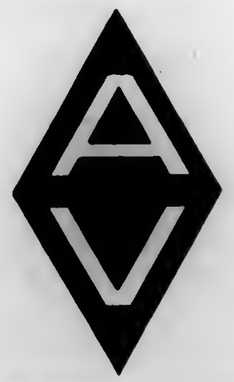
For Fasteners, Connectors, and Attaching Devices of Various Types Used in Household Construction and Industrial Arts for Mounting and Connecting Various Parts, Whether of Plastic, Wood, Metal, Fabric or Fiberboard—Namely, Separable Snap Fasteners and Component Parts Thereof, Screw Thread Fasteners and Component Parts Thereof, Rotary Stud Fasteners, Molding Fasteners and Component Parts Thereof, Rivets, Threaded Nuts, Tubing, and Wiring Fasteners and Component Parts Thereof; Yieldable Studs, Plug Buttons, Furniture Glides and Component Parts Thereof, Quick Attachable and Detachable Fasteners and Component Parts Thereof, Tape End and Swing Clips and Component Parts Thereof, Grommets, Metallic Washers, Retaining Fasteners for Construction Panels and Retaining Fasteners for Tubing and Wiring.
First use Aug. 10, 1964.

SN 234,856. United States Steel Corporation (Delaware corporation), Pittsburgh, Pa., by merger and change of name from United States Steel Corporation (New Jersey corporation), Pittsburgh, Pa. Filed Dec. 17, 1965.



The drawing is lined for red.
For Steel Tubular Products.
First use Dec. 1, 1965.

SN 235,143. Albert Voigt Industries, Inc., Hicksville, N.Y. Filed Dec. 22, 1965.



For Metal Mounting Members for Furniture Wall Systems; Wood, Glass, and Plastic Shelves, and Cabinet Units and Case Goods Associated With Such Metal Members.
First use September 1959.

SN 235,305. Hydrotherm, Inc., Northvale, N.J. Filed Dec. 27, 1965.

HYDROTHERM

For Devices for Separating Air From Water.
First use January 1946.

SN 237,536. Charter Resign and Manufacturing Corporation, Minneapolis, Minn. Filed Jan. 28, 1966.

CHARTER MATIC

For Coffee Making Apparatus.
First use June 2, 1964.

SN 247,243. Molded Specialties, Inc., Cleveland, Ohio. Filed June 3, 1966.

TRI-CON

For Hose Nozzles.
First use first half of 1934.

Class 16—Protective and Decorative Coatings

SN 228,606. Philip W. Bailey, Seattle, Wash. Filed Sept. 27, 1965.

OLYMPIC

Owner of Reg. Nos. 426,174 and 548,666.
For Wood Stains.
First use Apr. 1, 1938.

SN 228,678. Griffiths Bros. & Co., London, Limited, Wednesfield, Wolverhampton, England. Filed Sept. 27, 1965.

FERRODOR

Owner of British Reg. No. 222,325, dated Apr. 19, 1899.
For Anti-Corrosive Paints for Metal.

SN 230,963. Turco Paint & Varnish Co., Inc., Philadelphia, Pa. Filed Oct. 21, 1965.

COLOUR CUPBOARD

For Oil or Water Base Semi-Gloss, Low Sheen, All-Purpose Indoor and Outdoor Paints.
First use Aug. 18, 1965.

SN 231,076. Electro-Coatings, Inc., Oakland, Calif. Filed Oct. 22, 1965.

NYE-KOTE

For Electroless Metallic Alloy Sold for Use as and in the Form of a Coating.
First use Nov. 3, 1964.

SN 231,941. Readco Industries Inc., Reading, Mass. Filed Nov. 1, 1965.



For Coating Materials Used in In Situ Fabrication of Plastic Surfaces, Principally Floors and Counters—Namely, Polyurethane Coatings, Thinners, Catalysts, Liquid Pigments, Color Retaining Liquids, and Multicomposition Elastomeric Plastic Floor Underlayments.
First use June 1965.

SN 233,387. Poraflor, Inc., Woodside, N.Y. Filed Nov. 26, 1965.

PORAFLOR

For Seamless Polymeric Resin Coatings Applied by Pouring, Troweling or Spraying Over Existing Floorings.
First use May 1964.

SN 235,449. American Lacquer Solvents Co., Phoenixville, Pa. Filed Dec. 28, 1965.

AMER-FLINT

For Catalyzed Synthetic Resin Base Enamel.
First use Dec. 9, 1962.

SN 239,395. T. C. Esser Company, Milwaukee, Wis. Filed Feb. 23, 1966.

POLY-LUSTRE

For Acrylic Latex Finishes for Use on Walls and Woodwork.
First use Jan. 3, 1966.

Class 17—Tobacco Products

SN 228,355. Wally Frank, Ltd., New York, N.Y. Filed Sept. 22, 1965.

JOBEY

For Tobacco Products—Namely, Pipe Tobacco.
First use Aug. 3, 1965.

SN 228,357. Wally Frank, Ltd., d.b.a. Hollco, New York, N.Y. Filed Sept. 22, 1965.

GOLDEN HORN

For Tobacco—Namely, Pipe Tobacco.
First use June 1963.

SN 234,179. Consolidated Cigar Corporation, New York, N.Y. Filed Dec. 8, 1965.

PLEBES

For Cigars.
First use Nov. 23, 1965.

SN 234,889. Erik Edinger, Copenhagen, Denmark. Filed Dec. 20, 1965.



Owner of Danish Reg. No. 2,592, dated Oct. 2, 1965.
For Smoking Tobacco.

SN 234,958. Turmac Tobacco Company N.V., Frederiksplein, Netherlands. Filed Dec. 20, 1965.

JOHANNES CULEMBORG

The name "Johannes Culemborg" is fictitious. Owner of Dutch Reg. No. 151,847, dated Apr. 23, 1964.
For Cigarettes.

SN 237,461. P. Lorillard Company, New York, N.Y. Filed Jan. 27, 1966.

TRUE

For Cigarettes.
First use Jan. 20, 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 234,559. Geigy Chemical Corporation, Ardsley, N.Y. Filed Dec. 14, 1965.

ORTEM

For Hematinic Preparation.
First use Nov. 30, 1965.

SN 236,427. Tamara Royal Jelly Products, Ltd., d.b.a. Tamara Products, New York, N.Y. Filed Jan. 13, 1966.

GINROY

For Food Supplements Containing Vitamins.
First use July 1965.

SN 239,010. C-B Drug Company, Charlotte, N.C. Filed Feb. 17, 1966.

C-B-O

For Medicated Ointment.
First use on or about Sept. 1, 1939.

SN 239,114. Black Rock Pharmaceuticals, Inc., West Memphis, Ark. Filed Feb. 18, 1966.

GENETTE

For Vaginal Suppository.
First use Jan. 14, 1966.

Class 19—Vehicles

SN 220,621. The Kraus Accessories Company, d.b.a. California Custom Accessories Mfg. Company, Gardena, Calif. Filed June 7, 1965.



Applicant disclaims the word "Custom" apart from the mark as shown.
For Automobile Accessories—Namely, Scoops, Radiator Caps, Oil Caps, Hub Caps, Interior Knobs, Gear Shift Balls, Grills, and Pedals.
First use Oct. 10, 1964.

SN 224,056. Adventure Line Manufacturing Co., Inc., Parsons, Kans. Filed July 23, 1965.

ADVENTURE WAGON

The word "Wagon" is disclaimed except as a part of the mark as shown. Owner of Reg. No. 749,322.
For Camper Vehicles, in the Nature of Motor Homes, and Parts and Components Thereof.
First use July 9, 1965.

SN 224,714. The Buehler Corporation, Indianapolis, Ind. Filed Aug. 2, 1965.

THUNDERBALL

For Jet Boats.
First use June 30, 1965.

SN 229,814. Jeffboat, Incorporated, Jeffersonville, Ind. Filed Oct. 11, 1965.

Sunliner

For Houseboats.
First use Aug. 27, 1965.

SN 229,865. Outboard Marine Corporation, Waukegan, Ill. Filed Oct. 11, 1965.

SPORTSMAN

Owner of Reg. No. 549,756.
For Boats.
First use during April 1964.

SN 229,874. Rockwell-Standard Corporation, Pittsburgh, Pa. Filed Oct. 11, 1965.

PAYMASTER

For Components for Vehicles—Namely, Trailer Axles and Leaf Springs.
First use June 16, 1965.

SN 230,176. Mair & Son, Inc., Union Gap, Wash. Filed Oct. 14, 1965.

CHINOOK

For Pick-Up Truck Campers, House Trailers, and Self-Propelled Mobile Homes.
First use on or about Sept. 20, 1956, on pick-up truck campers and house trailers.

SN 230,346. American Metal Products, Inc., Auburn, Mass. Filed Oct. 18, 1965.

CHECK-A-MATIC

For Grocery Carts, Including Means for Mechanical Ejection of Merchandise Therein.
First use Aug. 2, 1965.

SN 230,347. American Metal Products, Inc., Auburn, Mass. Filed Oct. 18, 1965.

CART-A-MATIC

For Grocery Carts, Including Means for Mechanical Ejection of Merchandise Therein.
First use Aug. 2, 1965.

SN 230,417. Moulton Bicycles Limited, Bradford-on-Avon, England. Filed Oct. 18, 1965.

MM

For Bicycles and Parts Thereof.
First use Nov. 10, 1962; in commerce Nov. 30, 1963.

SN 230,983. Westinghouse Electric Corporation, Baltimore, Md. Filed Oct. 21, 1965.

DEEPSTAR

For Manned Submersible Vehicles Used for Underseas Exploration and Study.
First use in or about February 1964.

SN 236,807. Ronald Larry Davis, d.b.a. Torrentair, Arlington, Va. Filed Jan. 19, 1966.

TORRENTAIR

For Heating System for Automobiles With Air-Cooled Engine.
First use Aug. 19, 1965.

SN 245,167. Dayco Corporation, Dayton, Ohio. Filed May 9, 1966.

COLOR MATE

For Automobile Floor Mats.
First use on or about Jan. 19, 1966.

Class 20—Linoleum and Oiled Cloth

SN 228,938. The Ruberoid Co., Jenkintown, Pa. Filed Sept. 29, 1965.

SOFTRED

Owner of Reg. Nos. 626,450 and 805,042.
For Flexible Waterproof Wall, Floor, and Table Top Covering Materials Consisting in Whole or in Part of Organic Plastic.
First use Aug. 23, 1965.

SN 237,540. Congoleum-Nairn Inc., Kearny, N.J. Filed Jan. 28, 1966.

HIGHLIGHT

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Jan. 10, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 208,876. Advance Transformer Co., Chicago, Ill. Filed Dec. 28, 1964.

FUSE LINK

For Fluorescent Lamp Ballast Having a Temperature Sensitive, Non-Resetting Protector Built Therein.
First use on or about May 1, 1962.

SN 215,526. MIAL S.p.A., Milan, Italy. Filed Apr. 1, 1965.

MIAL

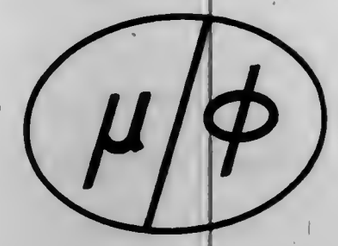
Owner of Italian Reg. No. 143,762, dated June 16, 1958.
For Electrical Components—Namely, Capacitors, Resistor-Type Potentiometers, Metal Film Resistors, Carbon Film Resistors, and Parts Therefor.

SN 215,527. MIAL S.p.A., Milan, Italy. Filed Apr. 1, 1965.

MIAL

Owner of Italian Reg. No. 112,330, dated May 3, 1952.
For Electrical Components—Namely, Capacitors, Resistor-Type Potentiometers, Metal Film Resistors, Carbon Film Resistors, and Parts Therefor.

SN 220,868. Microphase Corporation, Cos Cob, Conn. Filed June 10, 1965.



The symbol "μ" is the Greek letter mu and the symbol "φ" is the Greek letter phi.

For Electronic and Microwave Components and Solid State Devices—Namely, Electrical Filters of Low Pass, High Pass, Band Pass, and Band Elimination Types in the High Frequency, Very High Frequency, Ultra High Frequency and Microwave Ranges, Including Waveguide and Coaxial Types; Channel Filters; Multiplexers; Preselectors; Equalizers; Mixers; Hybrids; Power Dividers; Frequency Modulators; Harmonic Generators; Converters; Frequency Multipliers; Detectors; Amplifiers; Pre-Amplifiers; Antenna Feeders and Couplers; Diode Switches; Stable Transistor Power Supplies; Phase Shifters; Variable Attenuators; Telemetry Converters; and Microwave Receivers.

First use on or about Nov. 23, 1954.

SN 223,275. Audiophonics Corporation, Beverly, Mass. Filed July 14, 1965.

CERRA-DYNAMIC

For Microphones.
First use May 7, 1965.

SN 223,359. Self-Organizing Systems, Inc., Garland, Tex. Filed July 14, 1965.

CHEMTRON

For Magnetically Actuated Reed Relays and Electrochemical Devices of the Solion Type—Namely, Solion Tetrodes and Solion Diodes.
First use on or before Dec. 17, 1964.

SN 223,787. The Gutan Company, North Hill, Pa. Filed July 20, 1965.

B-A-P

For Selenium Rectifier With Resistor, for Attachment to an Induction Coil in an Ignition System for Internal Combustion Engines.
First use Mar. 25, 1965.

SN 223,976. Delta Electronics, Alexandria, Va. Filed July 22, 1965.



Applicant disclaims the word "Electronics" apart from the mark as a whole.

For Electronic Equipment—Namely, Tuning Network, Antenna Switching Equipment, Impedance Bridges, Antenna Systems, Tunable Filters, Monitor Amplifiers, Antenna Multicouplers, Folding Antennas, and Power Inverters.

First use Jan. 28, 1963.

SN 224,006. John D. McDonald, d.b.a. Figuremagic, Dallas, Tex. Filed July 22, 1965.



For Electronic Exercise Machines for Muscle Toning and Temporarily Increased Calorie Consumption in Humans.
First use Apr. 10, 1961.

SN 224,551. Pinkerton Security, Inc., Detroit, Mich. Filed July 29, 1965.



For Electronic Security Equipment for Fire and Burglary Protection, and Automatic Telephone Dialing Alarm Systems.
First use June 23, 1964.

SN 225,745. Electronic Engineering Company of California, Santa Ana, Calif. Filed Aug. 16, 1965.

STAKSWITCH

Applicant disclaims the word "Switch" apart from the mark as shown.

For Electric Switches, Including Multiple Switch Assemblies.
First use June 18, 1965.

SN 227,895. The Verplex Company, Essex, Conn. Filed Sept. 15, 1965.

PORT-A-LIER

For Lamps and Lighting Fixtures.
First use March 1965.

SN 228,222. Vapor Corporation, Chicago, Ill. Filed Sept. 20, 1965.



The drawing is lined for red.

For Static Inverter for Converting Direct Current to Alternating Current.
First use Mar. 31, 1965.

SN 229,264. Merkle-Korff Gear Co., Chicago, Ill. Filed Oct. 4, 1965.

MK

Owner of Reg. No. 686,628.
For Fractional Horsepower Electric Motors.
First use November 1964.

SN 229,332. Atlas Supply Company, Springfield, N.J. Filed Oct. 5, 1965.

ATLAS

Owner of Reg. Nos. 298,350, 598,695, and others.
For Signal Flasher for Use on Automobiles.
First use Aug. 13, 1965.

SN 231,818. Emerson Electric Co., St. Louis, Mo. Filed Oct. 29, 1965.

NU/RATE

For Electrical Motors.
First use Sept. 27, 1965.

SN 240,601. Electronized Chemicals Corporation, Burlington, Mass. Filed Mar. 10, 1966.

INSULTITE

For Heat-Shrinkable Insulation, Such as Tubing and Tape.
First use Mar. 23, 1965.

SN 240,703. Bivar Company, Palo Alto, Calif. Filed Mar. 11, 1966.



For Dissolvable Spacer Rings for Circuit Board Components.
First use Oct. 15, 1965.

Class 22—Games, Toys, and Sporting Goods

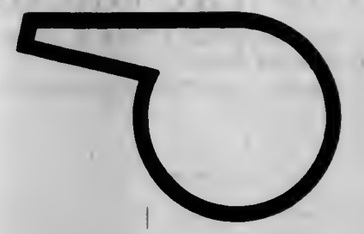
SN 216,704. Kohner Bros., Inc., New York, N.Y. Filed Apr. 16, 1965.



Owner of Reg. No. 676,923.

For Construction Toys, Educational Toy Blocks, Toy Hobby Craft Kits, Action Toys, and Component Parts, for Playing Skill and Spelling Games.
First use Mar. 31, 1965.

SN 229,140. Shakespeare Company, Kalamazoo, Mich. Filed Oct. 1, 1965.



For Golf Balls.
First use Aug. 23, 1965.

SN 233,731. Northwestern Golf Company, Chicago, Ill. Filed Dec. 1, 1965.

MUSCLE BACK

For Golf Clubs.
First use on or about Aug. 1, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 199,788. Canadian Allis-Chalmers Limited, Lachine, Quebec, Canada. Filed Aug. 13, 1964.

FLEX-TEX

Priority claimed under Sec. 44(d) on Canadian application filed Apr. 22, 1964; Reg. No. 141,363, dated Aug. 20, 1965.

For Couplings of the Type Utilized To Transmit Torque Between Driving and Driven Shafts.
First use June 22, 1964; in commerce June 22, 1964.

SN 201,301. Pemco, Inc., Roselle, Ill., by change of name from Pavement Equipment Mfg. Co., Roselle, Ill. Filed Sept. 4, 1964.

PEMCO

For Oil Tight Casings for Protection of Chains, Belts, and Gears, Chain and Belt Guards, and Motor Reducer Covers.
First use December 1958.

SN 219,904. James C. Price, d.b.a. The Hi-Fog Company, Montebello, Calif. Filed May 27, 1965.



For Liquid Insecticide Spray Equipment.
First use Oct. 16, 1961.

SN 221,881. American Chain & Cable Company, Inc., New York, N.Y. Filed June 24, 1965.

CONTROLMASTER

For Throttle and Shift Control Mechanisms for Marine Use.
First use Mar. 15, 1965.

SN 222,382. Koehler-Dayton, Inc., Dayton, Ohio. Filed June 30, 1965.

ATLAS VAC-MACHINE

No claim is made to exclusive rights in the word "Machine" apart from the mark as shown.

For Plastic Forming and Packaging Machinery, and Parts Therefor.

First use June 1958.

SN 223,857. Gebrüder Busatis, Remscheid-Lennep, Germany. Filed July 16, 1965.

BUSATIS

Priority claimed under Sec. 44(d) on German application filed Feb. 3, 1965; Reg. No. 805,846, dated June 24, 1965.

For Agricultural Reapers and Parts Therefor—Namely, Drive and Transmission Chains, Pivot Pins, Reaper Bars, Knife-Grinding Machines, Drive Rods, Shoe Plates, Cleaning Plates, Knife Holders, Fingers, Finger Plates, Knife Heads and Knife Head Plates; and Commercial Machine Knives—Namely, Reaper Blades, Special Cutter Knives, and Twine Knives.

SN 224,516. The Cleanola Company, Glenshaw, Pa. Filed July 29, 1965.

CLEANOLA

For Manually and Mechanically Operated Spray Guns and Industrial Spraying Equipment for Applying Paint and Other Protective and Decorative Coatings.

First use Jan. 24, 1900.

SN 228,262. Landbouwwerktuigen- en Machinefabriek H. Vissers N.V., Nieuw Vennep, Netherlands. Filed Sept. 21, 1965.

PENTON

Owner of Dutch Reg. No. 153,073, dated July 8, 1964.

For Fertilizer Spreaders.

SN 228,543. Ladish Co., Cudahy, Wis. Filed Sept. 24, 1965.

LAD-ALLOY

For Saw Blades.

First use May 13, 1965.

SN 228,544. Ladish Co., Cudahy, Wis. Filed Sept. 24, 1965.

LAD-CUT

For Saw Blades.

First use May 13, 1965.

SN 228,659. Delta Manufacturing and Engineering Corp., Dallas, Tex. Filed Sept. 27, 1965.

HWB

For Hot Water Blast Apparatus, Industrial Cleaning Apparatus, and Vehicle Washing Apparatus.

First use on or about Aug. 1, 1962.

SN 228,820. Graphic Engineers, Inc., San Bernardino, Calif. Filed Sept. 28, 1965.

Count-o-veyor

For Machines for Conveying, Counting and Stacking Newspapers or Other Printed Material Delivered by Printing Presses.

First use Apr. 26, 1963.

SN 228,825. Kaspar Wire Works, Incorporated, Shiner, Tex. Filed Sept. 28, 1965.

"K-MECH"

For Coin Responsive Mechanism for Use With Article Dispensing Apparatus.

First use Jan. 11, 1965.

SN 228,986. Black, Sivalls & Bryson, Inc., Kansas City, Mo. Filed Sept. 30, 1965.

PINEHURST

For Lawn Mowers.

First use July 1, 1964.

SN 229,021. Miniature Precision Bearings, Inc., d.b.a. Split Ballbearing, Keene, N.H. Filed Sept. 30, 1965.

SBB

For Ballbearings.

First use April 1957.

SN 229,399. Applied Power Industries, Inc., Milwaukee, Wis. Filed Oct. 6, 1965.

DYNAWINCH

For Hydraulic Winches for Mobile and Construction Equipment.

First use July 27, 1965.

SN 230,685. Walter Peters, Solingen-Wald, Germany. Filed Oct. 20, 1965.

Laurus

For Scissors and Shears for Household and Garden Use; Carving Sets; Tool Sets for Home Use and Consisting of Pocket-Knife, Pliers, Hammer, Screwdriver, Awl, Drill, Tape Measure, Corkscrew, Tin Opener, Chisel, File, Wrench, Saw; Fondue and Cocktail Forks, Nutcrackers, Bottle Openers, Can Openers, Nut Pickers, and All Kinds of Forks, Spoons, and Knives.

First use 1936; in commerce January 1960.

SN 231,077. Eltra Corporation, Brooklyn, N.Y. Filed Oct. 22, 1965.

LINOFILM

For Phototypesetting Machines, and Parts and Supplies for Such Machines, Including Particularly Typographical Font Plates, and Auxiliary Equipment for Such Machines Such as Tape Reading Devices; and Keyboard Operated Machines for Producing Control Tapes for Phototypesetting Machines, and Parts and Supplies for Such Machines, Including Particularly Typographical Character Width Coding Elements, and Auxiliary Equipment for Such Machines Such as Tape Reading Devices and a Control Setting and Selecting Device; Photocomposing Machines; and Storage Racks and Magazines for the Aforesaid Width Coding Elements and Font Plates, Respectively; and Tape Splicing Apparatus; and Machines for Reading Tapes Simultaneously To Provide a Composite Tape; and Tape Converters for Reading Tapes of One Format and Producing Tapes of a Different Format; and Apparatus for Processing Photosensitive Papers and Films That Have Been Exposed in Phototypesetting and Photocomposing Machines.

First use 1950 on phototypesetting machines.

SN 231,609. Ronald J. Vlasin, d.b.a. V & V Manufacturing Company, Crete, Nebr. Filed Oct. 24, 1965.

SCOTCH VALVE SAVER

The words "Valve Saver" are disclaimed apart from the mark as shown.

For Valve Resurfacing Tools.

First use May 17, 1965.

SN 232,614. The Torrington Company, Torrington, Conn. Filed Nov. 12, 1965.

PROGRESS THROUGH PRECISION

The drawing is lined for the color green, but the color forms no part of the mark. Owner of Reg. Nos. 202,735, 793,288, and others.

For Anti-Friction Bearings Including Straight Roller, Tapered Roller, Spherical Roller, Needle and Ball Bearings; Ball Slide Bearings; Ball, Roller and Needle Thrust Bearings; Needle and Bearing Races; Also Self-Aligning Ball Bushings; Cage and Roller Assemblies; and Small Machine Parts Made to Customers' Specifications.

First use Mar. 1, 1965.

SN 232,840. Howell Macduff, d.b.a. Edward D. Strand Company, West Boylston, Mass. Filed Nov. 17, 1965.

BLACK STRAND

For Metal Cutting Tools.

First use on or about May 22, 1950.

SN 234,337. Crown Controls Corporation, New Bremen, Ohio. Filed Dec. 10, 1965.

HANDLE WITH CROWN

Owner of Reg. No. 701,748.

For Materials Handling Equipment Including Hand Propelled Hand Lift Trucks, Power Propelled Hand Lift Trucks, Hand Propelled Power Lift Trucks, Lift Trucks, Power and Hand Propelled Pallet Trucks, Power Tugs, Fork Lift Trucks, Platform Lift Trucks, Drum and Carton Handlers, Special Application Lift Trucks, Power Propelled Power Lift Trucks, Power Propelled Power Lift Pallet Trucks, and Accessories and Parts Therefor.

First use Nov. 26, 1965.

SN 235,636. Draper Corporation, Hopedale, Mass. Filed Jan. 3, 1966.

TRU-LOC

For Shuttle Spring Assemblies.

First use Aug. 5, 1963.

SN 236,715. Herbert C. Brauchla, Fremont, Ohio. Filed Jan. 18, 1966.

BRAUCHLASIZER

For Riffle Screen Sizing Units.

First use during September 1965.

SN 237,580. Morton International, Inc., Chicago, Ill. Filed Jan. 28, 1966.

For Seed Treating Equipment, Equipment for Dispensing Salt and Brine, Brine Spraying Equipment, and Topping Equipment.

First use on or about Oct. 7, 1965.

SN 237,606. Washington Forge, Incorporated, Englishtown, N.J. Filed Jan. 28, 1966.

For Stainless Steel Flatware.

CLASSIC STAR

First use on or about Jan. 15, 1958.

SN 237,607. Washington Forge, Incorporated, Englishtown, N.J. Filed Jan. 28, 1966.

TROPIC STAR

For Table and Kitchen Cutlery—Namely, Table Knives, Forks and Spoons, Spatulas, Cleavers, Carving Sets, Steak Sets, and Paring and Bread Knives.

First use on or about June 1, 1959.

SN 237,609. Washington Forge, Incorporated, Englishtown, N.J. Filed Jan. 28, 1966.

MIRILUIM

For Carving Knives, Kitchen Knives, and Steak Knives.
First use on or about Nov. 1, 1956.

SN 244,551. Guhl & Scheibler A.G., Basel, Switzerland. Filed Apr. 29, 1966.

COLLAMAT

Owner of Swiss Reg. No. 197,508, dated Apr. 2, 1963.
For Equipment for the Automatic Adherence and Detachment of Self-Adhesive Labels.

SN 247,550. Brown & Sharpe Manufacturing Company, North Kingstown, R.I. Filed June 8, 1966.

FLICR

For Pneumatic Relay Valve.
First use Nov. 12, 1965.

Class 24 — Laundry Appliances and Machines

SN 228,347. Eastern Cyclone Industries, Inc., Clifton, N.J. Filed Sept. 22, 1965.



The mark consists of the letters "ECI."
For Machinery Particularly Adaptable for the Laundry and Textile Fields, Including, but Not Limited to, Lint Collectors, Washer and Dry Tumblers, Loading Hoppers, Air Head Washer and Tumbler Loading Hoppers, Pneumatic Classifying Systems, Belt Conveyors, Sour, Blue and Bleach Tanks, Soap Supply System, Small Piece Counters, and Other Related Material Handling Equipment Such as Rail Systems, Sling Loaded Bag Systems, and Roller and Skate Conveyors.
First use approximately November 1963.

Class 26 — Measuring and Scientific Appliances

SN 206,917. CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France. Filed Nov. 25, 1964.

OSCILLOPERTURBOGRAPHE MASSON-CARPENTIER

For Electromechanical Recorder, With Memory, for Recording Disturbances.
First use January 1958; in commerce January 1958.

SN 213,769. Engineering Model Associates, Los Angeles, Calif. Filed Mar. 10, 1965.



For Model Parts for Engineering and Structural Designs.
First use Jan. 11, 1956.

SN 217,512. Safety-Sight, Inc., Baltimore, Md. Filed Apr. 27, 1965.

"SAFETY SIGHT"

For Indicator and Sight Glasses for Use in Vehicle Radiators.
First use Feb. 10, 1965.

SN 218,328. The Sheffield Corporation, Dayton, Ohio. Filed May 7, 1965.

CORDAX

For Position Monitoring Device for Taking Measurements.
First use on or about Feb. 17, 1965.

SN 224,621. Ingenjorsfirma A. Alfredéen AB, Bandhagen, Sweden. Filed July 30, 1965.

COMBIMETER

For Pneumatic Measuring Apparatus for Making Multiple Measurements.
First use on or about Nov. 1, 1958; in commerce on or about Apr. 1, 1964.

SN 225,100. B-D Laboratories, Inc., East Rutherford, N.J. Filed Aug. 6, 1965.



For Laboratory Ware—Namely, Petri Dishes, Culture Tubes, Slide Plates, Filtering Funnels, Fluid Containers, Swab in Container, and Similar Products.
First use on or about Apr. 11, 1960.

SN 230,657. Latronics Corporation, Latrobe, Pa. Filed Oct. 20, 1965.

INFRATIO

For Pyrometers.
First use Sept. 15, 1965.

SN 230,659. Latronics Corporation, Latrobe, Pa. Filed Oct. 20, 1965.

RECORDETTE-4 STRIPCORDER

For Temperature Recording Instruments.
First use Aug. 23, 1965.

Class 31 — Filters and Refrigerators

SN 218,686. Pall Corporation, Glen Cove, N.Y. Filed May 12, 1965.

TRI-DOT

The drawing is lined for red, but color is not claimed as a part of the mark.
For Filter Fittings.
First use Aug. 25, 1964.

SN 221,223. Technical Development Company, Glenolden, Pa. Filed June 15, 1965.

TURBOMAG

For Combination Oil Filter and Detection Unit for Turbine Engines.
First use July 23, 1964.

Class 32 — Furniture and Upholstery

SN 222,910. Beco Products Corporation, Chicago, Ill. Filed July 8, 1965.



For Frames for Pictures and Photos.
First use June 23, 1965.

SN 224,721. Cleveland Chair Company, Inc., Cleveland, Tenn. Filed Aug. 2, 1965.

Leisure King...

For Upholstered Reclining Chairs.
First use Apr. 19, 1965.

SN 235,398. Eclipse Sleep Products, Inc., Brooklyn, N.Y. Filed Dec. 28, 1965.

RESILON

For Mattresses and Bedding Items—Namely, Cushions.
First use Dec. 1, 1965.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 225,006. Cardinal Products Company, Saginaw, Mich. Filed Aug. 5, 1965.

Cardinal

Owner of Reg. No. 757,348.
For Gas-Fired, Make-Up Air Heating Systems, Louvres, Dampers, Roof Hoods, Confessional Fans, and Louvred Penthouses.
First use Sept. 4, 1958.

SN 230,174. Lucky Furniture Manufacturing Company, Inc., Etowah, Tenn. Filed Oct. 14, 1965.

CHILLER-DILLER

For Cooling or Warming Food Storage Unit for Installation in Motor Vehicles.
First use Oct. 5, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 245,168. Dayco Corporation, Dayton, Ohio. Filed May 9, 1966.

FABRIFLEX

For Fluid Conveying Hose.
First use on or about Feb. 17, 1966.

Class 36 — Musical Instruments and Supplies

SN 197,747. Monumental Films and Recordings Inc., Baltimore, Md. Filed July 13, 1964.

MONUMENTAL

Owner of Reg. No. 651,490.
For Commercial Recordings and Commercial Tapes.
First use Dec. 15, 1953.

SN 223,457. Rheem Manufacturing Company, New York, N.Y. Filed July 15, 1965.

Owner of Reg. Nos. 530,594, 731,608, and others.
For Sound Recording and Sound Reproducing Apparatus—Namely, Tape Recorders and Tape Sound Reproducers, Parts and Accessories Therefor Including Tapes, and Guitar Amplifiers.
First use June 10, 1965.

SN 223,458. Rheem Manufacturing Company, New York, N.Y. Filed July 15, 1965.

ROBERTS

Owner of Reg. Nos. 717,601, 723,043, and 731,608.
For Sound Recording and Sound Reproducing Apparatus—Namely, Tape Recorders and Tape Sound Reproducers, Parts and Accessories Therefor, Unrecorded and Pre-Recorded Tapes, Phonographs, and Guitar Amplifiers.
First use May 1958.

SN 244,949. Soundex Radio Corp., Brockton, Mass. Filed May 5, 1966.

SOUNDEX STEREO 8

The term "Stereo 8" is disclaimed apart from the mark as shown.
For Stereo Tape Sound Reproducing Systems for Automobiles.
First use Apr. 29, 1966.

Class 37 — Paper and Stationery

SN 222,195. The Parker Pen Company, Janesville, Wis. Filed June 28, 1965.

TOUCHÉ

For Writing and Marking Pens, Mechanical Pencils, and Pen Nibs.
First use Feb. 5, 1965.

SN 223,723. Reynolds Metals Company, Richmond, Va. Filed July 19, 1965.

SHRINKASE

For Plastic Film for Packaging.
First use on or about June 29, 1965.

SN 225,410. Edmund Scientific Co., Barrington, N.J. Filed Aug. 10, 1965.

PIKKER-UPPERS

For Adhesive Devices, Such as Pencil Tops and Finger Rings, for Lifting Papers and Small Objects.
First use July 1, 1965.

SN 225,888. Norcross, Inc., New York, N.Y. Filed Aug. 17, 1965.

PASTEL POODLES

For Wrapping Paper.
First use May 12, 1965.

SN 227,608. Nationwide Papers Incorporated, Chicago, Ill. Filed Sept. 10, 1965.

Pen-Ease

Owner of Reg. No. 361,523.
For Printing Papers, Bond Paper, Duplicator Paper, and Mimeograph Paper.
First use during July 1955.

SN 228,573. Standard International Corporation, Holyoke, Mass. Filed Sept. 24, 1965.

TIDY WRAP

Applicant disclaims any exclusive rights in the word "Wrap" apart from the mark as shown. Owner of Reg. Nos. 578,572, 771,733, and others.
For Wrapping Paper Used for Foods.
First use Aug. 19, 1965.

SN 229,316. Venus Pen & Pencil Corporation, New York, N.Y. Filed Oct. 4, 1965.

FLAG

For Pencils.
First use Aug. 31, 1965.

SN 229,739. Arvey Corporation, Chicago, Ill. Filed Oct. 11, 1965.

SANI-SEAL

For Envelopes.
First use on or about June 22, 1965.

SN 230,222. The Albrecht Company, Baltimore, Md. Filed Oct. 15, 1965.

ATTACH-O-STRIP

For Self-Adhesive Strips Attached to Loose Leaf Sheets To Fit in a Ring Binder Without the Need for Punching Holes.
First use Sept. 23, 1965.

SN 235,297. Hammermill Paper Company, Erie, Pa. Filed Dec. 27, 1965.

BonDuGraph

For Paper for Writing, Printing, Duplicating, and General Office Use.
First use Oct. 6, 1965.

SN 236,532. Weyerhaeuser Company, Tacoma, Wash. Filed Jan. 14, 1966.

TORINO

For Text and Cover Paper.
First use Sept. 30, 1965.

SN 236,990. Gulf Oil Corporation, Pittsburgh, Pa. Filed Jan. 21, 1966.

SPENSEAL

For Heat Laminated Cellophane for Packaging Materials.
First use at least as early as Dec. 6, 1965.

SN 237,356. Kimberly-Clark Corporation, Neenah, Wis. Filed Jan. 26, 1966.

DELICARE

For Lotion Treated Bathroom Tissue Especially for Hemorrhoid Sufferers.
First use July 15, 1964.

SN 237,740. The Procter & Gamble Company, Cincinnati, Ohio. Filed Feb. 1, 1966.

ZEPHYR

For Toilet Tissue, Facial Tissue, Paper Towels, and Paper Napkins.
First use Oct. 21, 1965.

SN 237,862. Med-Dent Publishing Co., San Francisco, Calif. Filed Feb. 2, 1966.

STAT-REM

For Photocopy Paper.
First use Oct. 15, 1965.

SN 237,863. Med-Dent Publishing Co., San Francisco, Calif. Filed Feb. 2, 1966.

CLINI-REC

For Photocopy Paper.
First use Oct. 15, 1965.

SN 238,185. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Feb. 7, 1966.

HEADSTART

For Lead Pencils.
First use Dec. 2, 1965.

SN 242,370. Marcal Paper Mills, Inc., East Paterson, N.J. Filed Mar. 31, 1966.

CAMELLIA

Owner of Reg. No. 706,678.
For Facial Tissues.
First use on or about Mar. 1, 1966.

Class 38 — Prints and Publications

SN 228,914. Dorothy E. Johnson, Evanston, Ill. Filed Sept. 29, 1965.

SELF-EXPRESSO

For Pre-Drawn Canvases for Oil Paintings.
First use Sept. 11, 1965.

SN 230,234. The Christian Science Publishing Society, Boston, Mass. Filed Oct. 15, 1965.

CUADERNO TRIMESTRAL DE LA CIENCIA CRISTIANA

The English translation of the mark is "Quarterly Booklet of Christian Science." Owner of Reg. Nos. 413,114 and 664,442.
For Periodical Published in the Spanish Language.
First use June 1, 1963.

SN 230,505. Walter J. Black, Inc., Roslyn, N.Y. Filed Oct. 19, 1965.

ESG

For Books and Series of Books.
First use Aug. 2, 1964.

SN 233,671. D. H. Baldwin Company, Cincinnati, Ohio. Filed Dec. 1, 1965.

COUPLER

For Magazine for Members of Organ Club.
First use March 1960.

SN 233,764. One-Design Yachtsman, Inc., Chicago, Ill. Filed Dec. 1, 1965.

ONE-DESIGN & OFFSHORE YACHTSMAN

Owner of Reg. No. 799,126.
For Monthly Magazine.
First use October 1965.

SN 233,788. Fawcett Publications, Inc., New York, N.Y. Filed Dec. 2, 1965.



For Paperback Books.
First use May 1950.

SN 233,789. Fawcett Publications, Inc., New York, N.Y. Filed Dec. 2, 1965.



No claim is made to the word "Book" apart from the mark as shown.
For Paperback Books.
First use September 1955.

Class 39—Clothing

SN 200,399. Jacquelin D. Woolfolk, d.b.a. Beagle House, Pittsburgh, Pa. Filed Aug. 21, 1964.



For Linen and Flannel Jumpers for Girls, and Linen and Flannel Button-Up Suits for Boys.
First use June 30, 1964.

SN 221,578. Cooper's Incorporated, Kenosha, Wis. Filed June 21, 1965.

SUPLON

For Underwear, Hosiery, Sweaters, and Sports Shirts for Men and Boys.
First use May 11, 1965.

SN 224,247. Salem Shoe Manufacturing Company, Salem, Mass. Filed July 26, 1965.



For Men's Shoes.
First use on or about July 12, 1965.

SN 225,305. Golden International, Stamford, Conn. Filed Aug. 9, 1965.

DURAGLUV

For Golf Gloves.
First use May 1965.

SN 226,130. Danny Dare, Inc., Kansas City, Mo., assignee of Debby Dare, Inc., Kansas City, Mo. Filed Aug. 20, 1965.

debby dare

The name "Debby Dare" is fictitious and is not that of any particular living person. Owner of Reg. Nos. 591,702 and 739,783.
For Girls' Snap-Crotch Overalls, Slacks, Outer Shorts, Jeans, Jackets, Outer Shirts, Bib Pants, Caps, Hats, Skirts, Blouses, Jumpers, Carcoats, Dress Coats, Sport Coats, and Diaper Sets.
First use Mar. 10, 1965.

SN 226,843. R. P. Hazzard Co., Augusta, Maine. Filed Aug. 31, 1965.

Miss E

For Women's Shoes.
First use Feb. 19, 1965.

SN 227,462. Work Wear Corporation, Cleveland, Ohio. Filed Sept. 8, 1965.

WORK WEAR

Applicant makes no claim to the term "Work Wear" apart from the mark as shown. Owner of Reg. No. 742,019.
For Cotton Work Clothing—Namely, Pants, Shirts, Coveralls, and Coats.
First use June 1, 1961.

SN 227,580. HK Corporation, Atlanta, Ga. Filed Sept. 10, 1965.

FeMale

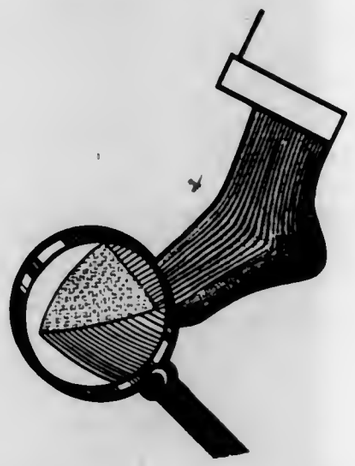
For Women's Trousers and Bermuda Shorts.
First use on or about Aug. 25, 1965.

SN 227,632. Wembley, Inc., New Orleans, La. Filed Sept. 10, 1965.

LADY WEMBLEY

Owner of Reg. Nos. 291,959, 777,913, and others.
For Women's Clothing and Accessories—Namely, Lounge Suits, Jackets, Vests, Slacks, Trousers, Pants, Raincoats, Topcoats, Overcoats, Uniforms, Dress Shirts, Sport Shirts, Blouses, Negligees, Pajamas, Dresses, Jumpers, Skirts, Cardigans, Aprons, Bathing Suits, Sweaters, Stockings, Socks, Gloves, Mittens, Gauntlets, Slips, Petticoats, Panties, Brassieres, Corsets, Shorts, Bloomers, Chemises, Scarves, Shawls, Mufflers, Shoes, Capes, Handkerchiefs, Neckties, Collars, Cuffs, Belts, Hats, Bathing Caps, and Caps.
First use Aug. 1, 1965.

SN 229,650. Great American Knitting Mills, Inc., New York, N.Y. Filed Oct. 8, 1965.



The toe portion of the drawing is lined for the color gold. The representation of the sock is disclaimed apart from the mark as shown. Owner of Reg. No. 770,388.
For Men's Socks.
First use January 1936.

SN 229,780. William Fayer, d.b.a. Snapak Raincoat Co., New York, N.Y. Filed Oct. 11, 1965.

Snapak

Owner of Reg. No. 395,777.
For Men's, Women's and Children's Sport Jackets and Raincoats.
First use December 1941.

SN 230,543. International Shoe Company, St. Louis, Mo. Filed Oct. 19, 1965.

VITALITY
SUBURBANS

Owner of Reg. Nos. 273,668, 556,611, and 787,604.
For Women's Shoes.
First use Sept. 7, 1965.

SN 230,555. Murray Undergarment Co., Inc., New York, N.Y. Filed Oct. 19, 1965.

Golden Beauty

For Ladies' Undergarments, Specifically Slips, Gowns, Pajamas, Panties, and Bloomers.
First use May 22, 1940.

SN 231,317. Virginia Maid Hosiery Mills, Inc., Pulaski, Va. Filed Oct. 22, 1965.

VM

For Women's Hosiery.
First use July 23, 1965.

SN 232,468. The Londontown Manufacturing Company, Baltimore, Md. Filed Nov. 10, 1965.

CLOISTER

Owner of Reg. No. 707,054.
For Fabric Made Up Into Rain Wear Garments for Men, Women, and Children.
First use Apr. 29, 1959.

SN 234,592. Catalina, Inc., Los Angeles, Calif. Filed Dec. 13, 1965.

CATALINA

Owner of Reg. Nos. 254,957, 591,246, and others.
For Men's, Women's, and Children's Swimsuits, Shorts, Slacks, Shirts, Jackets, Sweaters, Beach Robes, Pullovers; Women's and Girls' Sunsuits, Playsuits, Halters, Skirts, Bathing Caps, Shifts and Dresses, Briefs, Contour Pads, Socks, and Blouses.
First use Oct. 4, 1926.

SN 234,979. Wembley, Inc., New Orleans, La. Filed Dec. 20, 1965.

WEMFLEX

For Men's Neckwear.
First use Dec. 1, 1965.

SN 235,089. A. S. Beck Shoe Corporation, New York, N.Y. Filed Dec. 22, 1965.

PEP STEP
MOCCASINS

The term "Moccasins" is disclaimed apart from the mark as shown. Owner of Reg. No. 362,254.
For Moccasins.
First use Oct. 4, 1965.

SN 235,195. Kan-Teens Knitwear, Inc., New York, N.Y. Filed Dec. 23, 1965.

PEPPERMILL

For Ladies' Wear—Namely, Sweaters, Knitted Dresses, Skirts, Slacks, Blouses, and Stockings.
First use on or about Nov. 15, 1965.

SN 235,244. White Swan Uniforms, Inc., New York, N.Y. Filed Dec. 23, 1965.

BRISTOL

For Uniforms of All Kinds.
First use Sept. 7, 1965.

SN 235,334. The Puritan Sportswear Corp., Altoona, Pa. Filed Dec. 27, 1965.

BIG SOUND

For Knit Shirts, Sweaters, Sweater Shirts, Walk Shorts, and Swim Trunks.
First use Dec. 7, 1965.

SN 235,377. Ely & Walker, Inc., Nashville, Tenn. Filed Dec. 22, 1965.

PEA PICKER'S

For Men's and Boys' Jeans.
First use Sept. 24, 1965.

SN 235,408. The Kaynee Company, Greenville, S.C. Filed Dec. 28, 1965.

SKEGS

For Boys' Shirts, Swimwear, Jackets, and Slacks.
First use Oct. 15, 1965.

SN 235,498. Drummond Knitwear Co., Ltd., Maspeth, N.Y. Filed Dec. 29, 1965.

DRUMMOND

Owner of Reg. Nos. 394,645 and 544,544.
For Men's, Women's, Boys', Girls', and Children's Knitwear—Namely, Sweaters, Dresses, and Jackets.
First use May 1, 1963; Feb. 13, 1941, as to "Drummond."

SN 235,548. Imperial Reading Corporation, New York, N.Y. Filed Dec. 30, 1965.

BUMBEL-BEEZ



For Jeans, Shorts, and Jackets for Children.
First use Dec. 1, 1965.

SN 235,748. West Brothers of De Ridder, Louisiana Inc., De Ridder, La. Filed Jan. 3, 1966.

WEST MAID

For Ladies' Hosiery.
First use on or about Jan. 1, 1962.

SN 235,787. McGregor-Doniger Inc., New York, N.Y. Filed Jan. 4, 1966.

MIRACLE KNIT

The word "Knit" is disclaimed apart from the mark as shown.
For Men's Knit Shirts.
First use Sept. 7, 1965.

SN 235,837. Maidenform, Inc., New York, N.Y. Filed Jan. 5, 1966.

DREAM SHAPER

Owner of Reg. Nos. 569,154, 769,991, and others.
For Foundation Garments.
First use Dec. 3, 1965.

SN 235,838. Maidenform, Inc., New York, N.Y. Filed Jan. 5, 1966.

STITCH-IN-TAME

Owner of Reg. No. 687,997.
For Foundation Garments.
First use Dec. 3, 1965.

SN 235,839. Maidenform, Inc., New York, N.Y. Filed Jan. 5, 1966.

FLUTTER-FLIRT

For Foundation Garments.
First use Dec. 3, 1965.

SN 235,840. Maidenform, Inc., New York, N.Y. Filed Jan. 5, 1966.

BRIEFLING

For Foundation Garments.
First use Dec. 3, 1965.

SN 235,841. Maidenform, Inc., New York, N.Y. Filed Jan. 5, 1966.

DREAM SPUN

Owner of Reg. Nos. 705,284, 769,991, and others.
For Foundation Garments.
First use Dec. 3, 1965.

SN 236,236. The Commercial Shirt Corp., New York, N.Y. Filed Jan. 12, 1966.

SANDHURST

Owner of Reg. No. 420,654.
For Men's Outer Shirts and Sport Shirts.
First use Feb. 15, 1944.

SN 236,422. Splendor Form Brassiere Co., Inc., New York, N.Y. Filed Jan. 13, 1966.

Precious Form

For Brassieres.
First use Jan. 5, 1956.

SN 236,611. Kenrich Shoe Corporation, Maysville, Ky. Filed Jan. 17, 1966.

HUCKSTER

For Shoes.
First use Oct. 1, 1965.

SN 236,894. Kayser-Roth Corporation, New York, N.Y. Filed Jan. 20, 1966.

IMPETUOUS

For Ladies' Hosiery.
First use Dec. 29, 1965.

SN 243,861. Genesco Inc., Nashville, Tenn. Filed Apr. 20, 1966.

ROGUE

Owner of Reg. Nos. 688,354 and 803,967.
For Suits, Topcoats, Overcoats, Raincoats, Jackets, Sport Coats, and Slacks for Men and Boys.
First use Apr. 6, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 218,775. Johnson & Johnson, d.b.a. Permacel, New Brunswick, N.J. Filed May 18, 1965.



Applicant disclaims the representation of the goods apart from the mark as shown.
For Heat-Sealing Fabric Patches for Mending of Material.
First use May 4, 1959.

SN 236,800. C. & C. Button & Trimming Company, Inc., New York, N.Y. Filed Jan. 19, 1966.

CAN'T-A-PART

For Buttons and Button Backs.
First use on or about Nov. 15, 1965.

SN 238,652. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 11, 1966.

3M

Owner of Reg. No. 752,348.
For Pins for Use in Making Decorative Bows.
First use at least as early as Dec. 31, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 226,227. Eastman Kodak Company, Rochester, N.Y. Filed Aug. 23, 1965.

ESTREL

Owner of Reg. Nos. 682,348 and 683,346.
For Fabrics To Be Used in the Manufacture of Household Furnishings, Clothing, Industrial Items, and the Like.
First use June 27, 1951.

SN 228,870. Allied Chemical Corporation, New York, N.Y. Filed Sept. 29, 1965.

FOAM-TAILORED

For Fabrics Used in Making Wearing Apparel Such as Dresses, Suits, Shorts, Slacks, and the Like.
First use Sept. 13, 1965.

SN 236,588. Gilford, Inc., New York, N.Y. Filed Jan. 17, 1966.

GILCOLAR

For Vinyl Fabrics.
First use in or about April 1964.

SN 237,761. Thomas Pride Mills, Inc., Atlanta, Ga. Filed Feb. 1, 1966.

SPLANKET

For Bedspread Blanket.
First use on or about Oct. 8, 1965.

SN 237,784. Amphenol Corporation, Broadview, Ill. Filed Feb. 2, 1966.

BORGLEAM

Owner of Reg. Nos. 618,314 and 630,125.
For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Mar. 1, 1965.

SN 237,787. Amphenol Corporation, Broadview, Ill. Filed Feb. 2, 1966.

BORGEASE

Owner of Reg. Nos. 618,314 and 630,125.
For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Mar. 1, 1965.

SN 237,788. Amphenol Corporation, Broadview, Ill. Filed Feb. 2, 1966.

BORGLUX

Owner of Reg. Nos. 618,314 and 630,125.
For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Mar. 1, 1965.

SN 237,789. Amphenol Corporation, Broadview, Ill. Filed Feb. 2, 1966.

BORGLO

Owner of Reg. Nos. 618,314 and 630,125.
For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Mar. 1, 1965.

SN 237,790. Amphenol Corporation, Broadview, Ill. Filed Feb. 2, 1966.

BORGALA

Owner of Reg. Nos. 618,314 and 630,125.
For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Mar. 1, 1965.

SN 237,791. Amphenol Corporation, Broadview, Ill. Filed Feb. 2, 1966.

BORGUARD

Owner of Reg. Nos. 618,314 and 630,125.
For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Mar. 1, 1965.

SN 237,792. Amphenol Corporation, Broadview, Ill. Filed Feb. 2, 1966.

SUPER-BORGLURA

Owner of Reg. Nos. 618,314 and 630,125.
For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Mar. 1, 1965.

SN 237,793. Amphenol Corporation, Broadview, Ill. Filed Feb. 2, 1966.

TOASTMASTER

For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Mar. 1, 1965.

SN 238,067. Fieldcrest Mills, Inc., Spray, N.C. Filed Feb. 4, 1966.

Valereau

For Textile Rugs and Carpeting.
First use Dec. 14, 1965.

SN 240,292. General Felt Industries, Inc., Chicago, Ill. Filed Mar. 7, 1966.

FOUR SEASONS

For Rugs and Carpets.
First use on or about Oct. 1, 1965.

Class 43 — Thread and Yarn

SN 236,782. Roselon Yarns, Inc., Philadelphia, Pa. Filed Jan. 18, 1966.

SPINDYE

For Yarns.
First use Dec. 30, 1965.

SN 237,561. Indian Head Mills, Inc., New York, N.Y. Filed Jan. 28, 1966.

WINSOM

For Hand Knitting Yarns.
First use July 12, 1965.

SN 237,562. Indian Head Mills, Inc., New York, N.Y. Filed Jan. 28, 1966.

WIN-KNIT

For Hand Knitting Yarns.
First use Oct. 28, 1965.

SN 237,563. Indian Head Mills, Inc., New York, N.Y. Filed Jan. 28, 1966.

WINFANT

For Hand Knitting Yarns.
First use July 21, 1965.

SN 237,643. American Enka Corporation, Enka, N.C. Filed Feb. 1, 1966.

ENKASHEER

Owner of Reg. Nos. 409,392, 748,541, and others.
For Synthetic Yarns.
First use Dec. 20, 1965.

SN 238,410. Dixie Yarns, Inc., Chattanooga, Tenn. Filed Feb. 9, 1966.

dy

For Yarn and Thread.
First use Mar. 1, 1963.

Class 44 — Dental, Medical, and Surgical Appliances

SN 225,533. Richard-Allan Company, Inc., Evanston, Ill. Filed Aug. 12, 1965.

MICROHONE

For Surgeons' Blades and Blade Handles.
First use on or about Jan. 10, 1964.

SN 234,613. Youngs Drug Products Corporation, New York, N.Y. Filed Dec. 13, 1965.

Youngs

Owner of Reg. No. 797,070.
For Prophylactic Rubber and Membranous Articles for the Prevention of Veneral Disease.
First use on or about Feb. 16, 1965.

SN 234,648. Ipco Hospital Supply Corporation, New York, N.Y. Filed Dec. 15, 1965.

Z-PAD

For Hospital Bed Pads for the Prevention and Healing of Bedsores.
First use April 1965.

SN 235,517. The Martin Brothers Electric Company, Cleveland, Ohio. Filed Dec. 29, 1965.

SWIFT

Owner of Reg. No. 805,815.
For Electric Hair Dryers.
First use during September 1947.

SN 235,707. Otarion Electronics, Inc., Ossining, N.Y. Filed Jan. 3, 1966.

Ear-Mate

For Hearing Aids.
First use Nov. 11, 1965.

SN 245,135. Parke, Davis & Company, Detroit, Mich. Filed May 9, 1966.

DURASORB

For Pads for Use Under Patients, Especially Incontiment Patients, for Protection of Bed Linen.
First use on or before Apr. 15, 1966.

SN 245,136. Parke, Davis & Company, Detroit, Mich. Filed May 9, 1966.

DERMATEC

For Bedpads for the Comfort of Bedridden and Convalescent Persons, and for the Prevention of Decubitus Ulcers.
First use on or before Apr. 15, 1966.

Class 46 — Foods and Ingredients of Foods

SN 206,901. Wayne Candies, Inc., Fort Wayne, Ind. Filed Nov. 24, 1964.

ANTHONY WAYNE

"Anthony Wayne" is the name of an early American military hero. Owner of Reg. No. 779,562.
For Candy.
First use on or before Feb. 27, 1926.

SN 211,040. The Dow Chemical Company, Midland, Mich. Filed Feb. 1, 1965.

DOW

Owner of Reg. Nos. 140,558, 778,057, and others.
For Foods and Ingredients of Foods—Namely, Dietary Substitutes in the Nature of Cellulose Gums Used in Reducing Diets; Vegetable Shortenings; Vehicles for Food Ingredients and Food Additives—Namely, Propylene Glycol and Cellulose Gums; Chemical Food Preservatives; Chemical Food Flavorings; Chemical Food Additives—Namely, Humectants, Plasticizers, Maturing Agents, and Stabilizers and Neutralizers To Prevent Unwanted Precipitates and To Retard Unwanted Reactions; Animal Feeds for Poultry and Livestock; Vehicles for Animal Feed Ingredients and Feed Additives—Namely, Propylene Glycol, and Soybean Oil Meal.
First use 1917; prior to 1895 as to "Dow."

SN 213,367. Albert W. Sisk & Son, Preston, Md. Filed Mar. 4, 1965.

PINE CONE

Owner of Reg. No. 200,845.
For Canned Vegetables, i.e., Ceci-Garbanzos (Chick Peas), Collard Greens, Kale, Mustard Greens, Turnip Greens, Whole White Potatoes, Black-Eyed Peas, Red Kidney Beans, White Kidney Beans, Great Northern Beans, Early June Peas, and Sweet Peas.
First use Jan. 20, 1925.

SN 215,610. Robert I. Garver, d.b.a. Garver Products, Wilton, Conn. Filed Apr. 2, 1965.

EGG MATE

For Seasoned and Spiced Tomato Mix for Use in Making Spanish Omelets and Scrambled Eggs by the Addition of Eggs Thereto.
First use Mar. 30, 1965.

SN 215,792. Standard Brands Incorporated, New York, N.Y. Filed Apr. 5, 1965.

CANDY BREAK

No claim is made to the word "Candy" apart from the mark as shown.
For Candy.
First use Mar. 10, 1965.

SN 233,230. Peavey Company, Minneapolis, Minn. Filed Nov. 22, 1965.

MERCURY

For Prepared Raised Doughnut Mix.
First use October 1962.

SN 233,232. Peavey Company, Minneapolis, Minn. Filed Nov. 22, 1965.

ECLIPSE

For Prepared Sweet Dough Mix.
First use October 1962.

SN 233,236. Peavey Company, Minneapolis, Minn. Filed Nov. 22, 1965.

PANDO

For Prepared Sweet Dough Base.
First use October 1963.

SN 233,237. Peavey Company, Minneapolis, Minn. Filed Nov. 22, 1965.

SATURN

For Prepared Raised Doughnut Base.
First use October 1962.

SN 234,214. Knud W. Larsen, d.b.a. Sweetheart Candy Co., Gary, Ind. Filed Dec. 8, 1965.

Sweetheart

For Candy.
First use May 10, 1947.
Subj. to Intf. with SN 184,589 and SN 180,539.

SN 235,772. Fred Mushroom Products Co., South Lebanon, Ohio. Filed Jan. 4, 1966.



Owner of Reg. No. 647,176.
For Mushrooms and Mushroom Products in Cans—Namely, Whole Mushrooms, Sliced Whole Mushrooms, Fancy Button Mushrooms, Fancy Sliced Mushrooms, Pieces and Stems of Mushrooms, Mushrooms in Brown Gravy, Sliced Mushrooms With Butter and Sherry; and Mushroom Sauce With Sherry and Steak Sauce With Mushrooms.
First use at least as early as May 17, 1962; at least as early as Aug. 22, 1953, as to "Fred's."

SN 235,828. General Mills, Inc., Minneapolis, Minn. Filed Jan. 4, 1966.

THAT TOUCH

For Protein Bits Having a Flavor Like Smoke-Cured Bacon.
First use Sept. 10, 1965.

Class 47 — Wines

SN 207,797. Delaforce Sons & Ca. Limitada, d.b.a. Delaforce & Sons Co., Villa Nova de Gaya, Portugal. Filed Dec. 9, 1964.

PARAMOUNT

For Wines.
First use 1924; in commerce May 29, 1952.

Class 50 — Merchandise Not Otherwise Classified

SN 229,204. Coggins Granite Industries, Inc., Elberton, Ga. Filed Oct. 4, 1965.



For Stone Monuments, Memorials, and Tombstones.
First use July 2, 1965.

SN 240,925. Harold Leonard & Co., Inc., New York, N.Y. Filed Mar. 14, 1966.

FRILL-ETTES

For Sandwich and Cocktail Picks.
First use Feb. 18, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 137,891. John H. Breck, Inc. (Delaware corporation), Wilmington, Del., assignee of John H. Breck, Inc. (Massachusetts corporation), Springfield, Mass. Filed Feb. 14, 1962.

Tint Tone

For Hair Coloring.
First use Jan. 2, 1962.

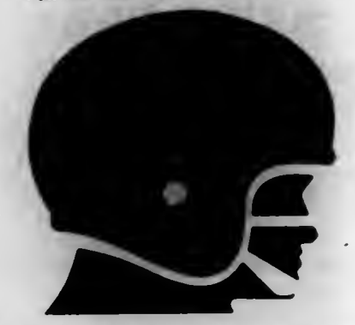
SN 231,132. Hoyu Kabushiki Kaisha, d.b.a. Hoyu Co., Ltd., Higashi-ku, Nagoya-shi, Japan. Filed Oct. 22, 1965.

HAAREL

Owner of Japanese Reg. No. 618,298, dated June 22, 1963.
For Hair Dyeing Preparations, and Hair Dressing Preparations.

SN 231,592. Quarterback Sports Federation Inc., Minneapolis, Minn. Filed Oct. 24, 1965.

FOR THE MAN WHO CALLS THE PLAYS



For Men's Toiletries and Cosmetics—Namely, Shaving Cream, Deodorants, Skin Lotions, Hair Dressings, Bath Powder, and Hair and Skin Cremes.
First use July 5, 1965.

SN 237,533. Chanel Industries, Inc., New York, N.Y. Filed Jan. 28, 1966.

COCO CHANEL

Owner of Reg. Nos. 195,360, 510,992, and others.
For Perfume and Cologne.
First use Dec. 28, 1965.

SN 237,535. Chanel Industries, Inc., New York, N.Y. Filed Jan. 28, 1966.

MADEMOISELLE COCO

For Perfume and Cologne.
First use Mar. 3, 1954.

SN 238,508. Eversharp, Inc., Milford, Conn. Filed Feb. 10, 1966.

LATHER MASTER

Applicant disclaims the term "Lather" apart from the mark as shown.
For Shaving Cream.
First use Jan. 21, 1966.

SN 239,152. The Andrew Jergens Company, Cincinnati, Ohio. Filed Feb. 18, 1966.

GOING STEADY

For Medicated Pressed Powder and Liquid Make-Up.
First use Jan. 14, 1966.

SN 239,312. Charles Pyron Ponton, d.b.a. Spray-Tex Company, Corpus Christi, Tex. Filed Feb. 21, 1966.

Spray-Tex

For Hair Spray (Aerosol).
First use Oct. 6, 1963.

SN 239,313. I. Posner, Inc., Corona, N.Y. Filed Feb. 21, 1966.

PREEGEL

For Hair Conditioner.
First use Aug. 24, 1965.

SN 239,441. The Procter & Gamble Company, Cincinnati, Ohio. Filed Feb. 23, 1966.

BRIGHT NEW DAY

For Facial Cleansing Cream.
First use Aug. 3, 1965.

SN 239,505. Frances Denney, Inc., Philadelphia, Pa. Filed Feb. 24, 1966.

PLAY-OF-LIGHT

For Cosmetic Auxiliary Makeup Cream.
First use Feb. 8, 1966.

SN 239,579. Armour and Company, Chicago, Ill. Filed Feb. 25, 1966.

dial

For Shave Cream.
First use on or prior to Jan. 3, 1966.

SN 239,580. Armour and Company, Chicago, Ill. Filed Feb. 25, 1966.

DIAL

For Shave Cream.
First use on or prior to Jan. 3, 1966.

SN 239,707. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Feb. 28, 1966.

HAND-LO

For Hand Lotion.
First use January 1949.

SN 239,708. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Feb. 28, 1966.

BODY-LO

For Body Lotion.
First use February 1954.

SN 239,912. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Mar. 1, 1966.

MISS RITZ

Owner of Reg. Nos. 270,173, 803,949, and others.
For Facial Treatment.
First use July 23, 1962.

Class 52 — Detergents and Soaps

SN 240,157. Cowles Chemical Company, Cleveland, Ohio. Filed Mar. 4, 1966.

BOUNCE

For Dry Cleaning Detergent.
First use Jan. 6, 1966.

SN 240,236. American Chemco, Inc., Decatur, Ga. Filed Mar. 7, 1966.

CARPET LIFE

For Liquid Cleaning Compositions for Cleaning Carpets and Upholstering Fabrics.
First use in or about September 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 231,167. Mercury International Hotel Co., Ltd., Los Angeles, Calif. Filed Oct. 22, 1965.

AIR-O-TEL

For Hotel Services.
First use Dec. 15, 1964.

Class 102 — Insurance and Financial

SN 226,166. Scantlin Electronics, Inc., Los Angeles, Calif. Filed Aug. 20, 1965.

ORTRON

For Stock Market Quotation Services.
First use Aug. 2, 1965.

Class 103 — Construction and Repair

SN 206,994. Air Reduction Company, Incorporated, New York, N.Y. Filed Nov. 27, 1964.

AIRCOWELL

For Oil and Gas Well Treating Services.
First use on or about Apr. 11, 1964.

SN 223,974. William R. Crawford III, d.b.a. Scuba Duba, Long Beach, Calif. Filed July 22, 1965.

SCUBA DUBA

For Yacht Hull Cleaning Service.
First use March 1961.

Class 106 — Material Treatment

SN 231,164. Mail Enterprises, Incorporated, Richmond, Va. Filed Oct. 22, 1965.

VIRGINIA PHOTO



Owner of Reg. No. 699,197.
For Photo Finishing.
First use September 1958.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 214,805. United Republicans of America, Washington, D.C. Filed Mar. 23, 1965.



For Indicating Membership in the Association.
First use Mar. 1, 1965.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

814,753. THE PLASTIC FOUNDRY AND DESIGN. Allied Resinous Products, Inc. SN 171,067. Pub. 6–28–66. Filed 6–17–63.

814,754. LX. The Neville Chemical Company. MULTIPLE CLASS (Classes 1 and 6). SN 196,702. Pub. 6–28–66. Filed 6–29–64.

814,755. RESINAIR. Textile By-Products Corp. SN 201,062. Pub. 6–28–66. Filed 9–1–64.

814,756. DIASEAL M. Drilling Specialties Company. SN 202,422. Pub. 6–28–66. Filed 9–23–64.

814,757. MIGRO SEED CORN AND DESIGN. Midwest Seed Growers Association, Inc. SN 222,179. Pub. 6–28–66. Filed 6–28–65.

814,758. NIREZ. Tenneco Chemicals, Inc. SN 222,312. Pub. 6–28–66. Filed 6–29–65.

814,759. HCR. Crown Zellerbach Corporation. SN 228,013. Pub. 6–28–66. Filed 9–17–65.

814,760. ELVACITE. E. I. du Pont de Nemours and Company. SN 228,020. Pub. 6–28–66. Filed 9–17–65.

814,761. ELVAMIDE. E. I. du Pont de Nemours and Company. SN 228,895. Pub. 6–28–66. Filed 9–29–65.

814,762. ROLLO. Atlanta Sand & Supply Company. SN 232,181. Pub. 6–28–66. Filed 11–5–65.

814,763. X–25. Fields Plastics & Chemicals, Inc. SN 234,555. Pub. 6–28–66. Filed 12–14–65.

814,764. WELLAMID. Nichols & Company, Inc. SN 234,574. Pub. 6–28–66. Filed 12–14–65.

Class 2 — Receptades

814,765. DRIPAD. John A. Haslett, d.b.a. John A. Haslett Company. SN 188,234. Pub. 6–28–66. Filed 3–9–64.

814,766. JEANNETTE. Arnoldware-Rogers, Inc. SN 203,721. Pub. 6–28–66. Filed 10–12–64.

814,767. GEMCO GEM WELD AND DESIGN. Gemco Manufacturing Corporation. SN 212,405. Pub. 6–28–66. Filed 2–19–65.

814,768. VEND PAK. Scott Paper Company. SN 213,892. Pub. 6–28–66. Filed 3–11–65.

814,769. JOHN WOOD QUALITY PRODUCTS STA-CHARGE ETC. AND DESIGN. John Wood Company. SN 215,305. Pub. 6–28–66. Filed 3–29–65.

814,770. JOHN WOOD QUALITY PRODUCTS JOWOCO-LINED ETC. AND DESIGN. John Wood Company. SN 215,306. Pub. 6–28–66. Filed 3–29–65.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

814,771. MELL-O-HAND. Atlantic Products Corporation. SN 215,164. Pub. 6–28–66. Filed 3–29–65.

814,772. PERM-I-DENT. Travel Products, Inc. SN 216,750. Pub. 6–28–66. Filed 4–16–65.

814,773. CLIBO. Anstalt Kebo Technik. SN 220,731. Pub. 6–28–66. Filed 6–9–65.

Class 4 — Abrasives and Polishing Materials

814,774. AUTO-MAGIC. Auto Wax Company, Inc. MULTIPLE CLASS (Classes 4, 6, 16, and 52). SN 178,579. Pub. 6–28–66. Filed 10–9–63.

814,775. METALBLAST. Metal Blast, Inc. SN 204,807. Pub. 6–28–66. Filed 10–26–64.

814,776. SHINEZE AND DESIGN. Chemical Associates, Inc. SN 222,119. Pub. 6–28–66. Filed 6–28–65.

814,777. SUPER BLUE. Simoniz Company. SN 224,347. Pub. 6–28–66. Filed 7–27–65.

Class 5 — Adhesives

814,778. SNAP-ON. Snap-On Tools Corporation. SN 200,499. Pub. 6–28–66. Filed 8–24–64.

814,779. PANYLEZE. Panyl Corporation. SN 208,767. Pub. 6–28–66. Filed 12–23–64.

814,780. WITE-RITE. A. E. Staley Manufacturing Company. SN 209,957. Pub. 6–28–66. Filed 1–14–65.

Class 6 — Chemicals and Chemical Compositions

814,754. (See Class 1 for this trademark.)

814,774. (See Class 4 for this trademark.)

814,781. AMERICAN. American Chemical Corporation. SN 191,341. Pub. 6–28–66. Filed 3–16–64.

814,782. COROSEX-C. Clack Corporation. SN 201,379. Pub. 6–28–66. Filed 9–8–64.

814,783. FLOSAL. Drilling Specialties Company. SN 202,424. Pub. 6–28–66. Filed 9–23–64.

814,784. SIGN OF DEPENDABILITY. B. T. Babbitt, Inc. MULTIPLE CLASS (Classes 6 and 52). SN 207,355. Pub. 6–28–66. Filed 12–3–64.

814,785. DHC. Universal Oil Products Company. SN 215,463. Pub. 6–28–66. Filed 3–31–65.

814,786. H–3. Universal Oil Products Company. SN 215,464. Pub. 6–28–66. Filed 3–31–65.

814,787. H–4. Universal Oil Products Company. SN 215,465. Pub. 6–28–66. Filed 3–31–65.

814,788. HOLLAND SUCO ETC. AND DESIGN. Holland-Suco Color Company. MULTIPLE CLASS (Classes 6 and 11). SN 216,553. Pub. 6–28–66. Filed 4–15–65.

814,789. LIGHT TOUCH. Alberto-Culver Company. SN 218,249. Pub. 6–28–66. Filed 5–7–65.

814,790. CRYSTALAB. Crystal Research Laboratories, Inc. SN 219,687. Pub. 6–28–66. Filed 5–25–65.

814,791. TEMPARUS. Union Starch & Refining Co., Inc. SN 220,886. Pub. 6–28–66. Filed 6–10–65.

814,792. STOCKAID. The Commercial Products Company, Inc. SN 227,482. Pub. 6–28–66. Filed 9–9–65.

814,793. BANSTAT. The Commercial Products Company, Inc. SN 227,483. Pub. 6–28–66. Filed 9–9–65.

814,794. SWIM GEM. Michigan Tool Company. SN 227,600. Pub. 6–28–66. Filed 9–10–65.

814,795. GLYCLORAL. Waverly Chemical Co., Inc. SN 228,093. Pub. 6–28–66. Filed 9–17–65.

814,796. EMULSAVERT. Amchem Products, Inc. SN 228,595. Pub. 6–28–66. Filed 9–27–65.

814,797. MILEZYME 10–S. Miles Laboratories, Inc. SN 228,737. Pub. 6–28–66. Filed 9–27–65.

814,798. DELVET. Diamond Alkali Company. SN 231,067. Pub. 6–28–66. Filed 10–22–65.

814,799. ZIP-TITE. Moser Paper Company. SN 231,176. Pub. 6–28–66. Filed 10–22–65.

814,800. SOYALENE. Archer-Daniels-Midland Company. SN 231,530. Pub. 6–28–66. Filed 10–24–65.

814,801. DEFINDOL. Böhme Fettchemie, G.m.b.H. SN 231,664. Pub. 6–28–66. Filed 10–27–65.

814,802. FLORANIT. Böhme Fettchemie, G.m.b.H. SN 231,665. Pub. 6–28–66. Filed 10–27–65.

814,803. DEBONAIRE. Foretell, Inc. SN 231,679. Pub. 6–28–66. Filed 10–27–65.

814,804. KROMYL. Mallinckrodt Chemical Works. SN 231,834. Pub. 6–28–66. Filed 10–29–65.

814,805. GARDEN-TOX. Geigy Chemical Corporation. SN 231,869. Pub. 6–28–66. Filed 10–18–65.

814,806. VOGUE. Geigy Chemical Corporation. SN 231,870. Pub. 6–28–66. Filed 10–18–65.

814,807. RACASAN. Racasan Limited. SN 232,234. Pub. 6–28–66. Filed 11–5–65.

814,808. MOGUL AND DESIGN. The North American Mogul Products Company. MULTIPLE CLASS (Classes 6 and 52). SN 233,275. Pub. 6–28–66. Filed 11–24–65.

814,809. MOGUL. The North American Mogul Products Company. MULTIPLE CLASS (Classes 6 and 52). SN 233,276. Pub. 6–28–66. Filed 11–24–65.

Class 7—Cordage

814,810. LOAD-ROTOR. Owatonna Tool Company. SN 218,895. Pub. 6–28–66. Filed 5–14–65.

814,811. GREEN-DEE. H. Paul Dee, d.b.a. Paul Dee Co. SN 226,729. Pub. 6–28–66. Filed 8–30–65.

Class 9—Explosives, Firearms, Equipments, and Projectiles

814,812. UTC. United Aircraft Corporation. SN 207,171. Pub. 6–28–66. Filed 11–30–64.

814,813. UTC AND DESIGN. United Aircraft Corporation. SN 207,172. Pub. 6–28–66. Filed 11–30–64.

Class 10—Fertilizers

814,814. BABY BIO AND DESIGN. Finch & Knight Limited. SN 214,970. Pub. 6–28–66. Filed 3–25–65.

814,815. ALAR. United States Rubber Company. SN 216,368. Pub. 6–28–66. Filed 4–12–65.

814,816. SEALIFE. Sealife Products Company, Inc. SN 217,404. Pub. 6–28–66. Filed 4–26–65.

814,817. PLANT (DESIGN). Humble Oil & Refining Company. SN 229,353. Pub. 6–28–66. Filed 10–5–65.

Class 11—Inks and Inking Materials

814,788. (See Class 6 for this trademark.)

814,818. VORTHENE. The Vorac Company. SN 217,426. Pub. 6–28–66. Filed 4–26–65.

Class 12—Construction Materials

814,819. FENOLITE. Riva & Mariani S.A.S. SN 219,357. Pub. 6–28–66. Filed 5–20–65.

814,820. ADLERITE. Adler Silhouette Letter Co. SN 224,362. Pub. 6–28–66. Filed 7–28–65.

814,821. ATLAS. The Flintkote Company. SN 229,506. Pub. 6–28–66. Filed 10–7–65.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

814,822. TRIUMPH. Karl Breuer Limited and Hilde Breuer Limited, d.b.a. Lilo-Rail of Canada. SN 214,322. Pub. 6–28–66. Filed 3–17–65.

814,823. STANG. John W. Stang Corporation. MULTIPLE CLASS (Classes 13, 14, and 23). SN 214,576. Pub. 6–28–66. Filed 3–19–65.

814,824. DUCTROLENE. Clarence L. Sipler, d.b.a. Sipler Plastics Co. SN 216,206. Pub. 6–28–66. Filed 4–9–65.

814,825. DUCTRONETTE. Clarence L. Sipler, d.b.a. Sipler Plastics Co. SN 216,207. Pub. 6–28–66. Filed 4–9–65.

814,826. REPRESENTATION OF THREE DOTS. Continental Screw Company. SN 222,345. Pub. 6–28–66. Filed 6–30–65.

814,827. TWIN SPIN. General Bearing Co., Inc. SN 226,908. Pub. 6–28–66. Filed 9–1–65.

814,828. RACASAN. Racasan Limited. SN 232,235. Pub. 6–28–66. Filed 11–5–65.

814,829. SHUR-TORQ. Shur-Lok Corporation. SN 232,355. Pub. 6–28–66. Filed 11–8–65.

814,830. ORALOCK. Halkey-Roberts Corporation. SN 232,460. Pub. 6–28–66. Filed 11–10–65.

814,831. SMIDRO. Societa Metallurgica Italiana. SN 232,602. Pub. 6–28–66. Filed 11–12–65.

814,832. SMIBRAM. Societa Metallurgica Italiana. SN 232,603. Pub. 6–28–66. Filed 11–12–65.

814,833. SMINIC. Societa Metallurgica Italiana. SN 232,604. Pub. 6–28–66. Filed 11–12–65.

814,834. SMINIF. Societa Metallurgica Italiana. SN 232,605. Pub. 6–28–66. Filed 11–12–65.

814,835. SMISOL. Societa Metallurgica Italiana. SN 232,606. Pub. 6–28–66. Filed 11–12–65.

814,836. SMIFRIGO. Societa Metallurgica Italiana. SN 232,607. Pub. 6–28–66. Filed 11–12–65.

Class 14—Metals and Metal Castings and Forgings

814,823. (See Class 13 for this trademark.)

814,837. REYNOCOLOR. Reynolds Metals Company. SN 222,512. Pub. 6–28–66. Filed 7–1–65.

Class 15—Oils and Greases

814,838. FLUOROJEL. Dilectrix Corporation. SN 229,641. Pub. 6–28–66. Filed 10–8–65.

814,839. FORTRESS. Southwest Grease & Oil Co. (Kansas City), Inc. SN 231,950. Pub. 6–28–66. Filed 11–1–65.

Class 16—Protective and Decorative Coatings

814,774. (See Class 4 for this trademark.)

814,840. PAVISEAL. Koppers Company, Inc., assignee of Byerlyte Corporation. SN 127,196. Pub. 6–28–66. Filed 9–5–61.

814,841. CCC. Conchemco Incorporated. SN 169,219. Pub. 5–10–66. Filed 5–20–63.

814,842. DURER. Nobema Products Corporation. MULTIPLE CLASS (Classes 16, 26, 29, and 37). SN 201,456. Pub. 6–28–66. Filed 9–8–64.

Class 17—Tobacco Products

814,843. NELSON. Bayuk Cigars Incorporated, assignee of E. Regensburg & Sons. SN 140,383. Pub. 6–28–66. Filed 3–21–62.

814,844. CCC AND DESIGN. Consolidated Cigar Corporation. SN 221,799. Pub. 6–28–66. Filed 6–23–65.

814,845. TOM COLLINS. Martin Brinkmann A.G. SN 223,962. Pub. 6–28–66. Filed 7–22–65.

814,846. SWEET BIRCH SOUTHERN. Larus & Brother Company. SN 227,847. Pub. 6–28–66. Filed 9–15–65.

814,847. MAPLETON AND DESIGN. United States Tobacco Company. SN 231,510. Pub. 6–28–66. Filed 10–23–65.

Class 18—Medicines and Pharmaceutical Preparations

814,848. ISO-TAB 60. Rowell Laboratories, Inc. SN 191,720. Pub. 6–28–66. Filed 4–21–64.

814,849. GUARDEX. The Archer-Taylor Drug Co. SN 211,977. Pub. 6–28–66. Filed 2–15–65.

814,850. CLOMID. Richardson-Merrell, Inc. SN 219,911. Pub. 6–28–66. Filed 5–27–65.

814,851. SANI-PURE. Thomson Research Associates Limited. SN 220,802. Pub. 6–28–66. Filed 6–9–65.

814,852. STERI-CHEM. Thomson Research Associates Limited. SN 220,803. Pub. 6–28–66. Filed 6–9–65.

814,853. SANI-DURE. Thomson Research Associates Limited. SN 220,804. Pub. 6–28–66. Filed 6–9–65.

814,854. FERROMYCIN. Philips Roxane, Inc. SN 223,040. Pub. 6–28–66. Filed 7–9–65.

814,855. 'SOCIABLES.' Marion Laboratories, Inc. SN 227,696. Pub. 6–28–66. Filed 9–13–65.

814,856. LOCADYNE. Syntex Laboratories, Inc. SN 232,033. Pub. 6–28–66. Filed 11–2–65.

814,857. CIGROL. Blair Laboratories, Inc. SN 232,519. Pub. 6–28–66. Filed 11–12–65.

814,858. GLOMA. Unimed, Inc. SN 232,618. Pub. 6–28–66. Filed 11–12–65.

814,859. SWISHER. Canada Packers Limited. MULTIPLE CLASS (Classes 18 and 46). SN 232,640. Pub. 6–28–66. Filed 11–12–65.

814,860. P1E1. Person & Covey, Inc. SN 233,526. Pub. 6–28–66. Filed 11–29–65.

814,861. MYODIGIN. The Kendall Company. SN 238,538. Pub. 6–28–66. Filed 2–10–66.

Class 19—Vehicles

814,862. FLEXITAINER. ICB Internationale Container Bau G.m.b.H. & Co. SN 199,201. Pub. 6–28–66. Filed 8–4–64.

814,863. RAND MAJESTIC. Larry Goldmeier Associates, Inc. SN 199,737. Pub. 6–28–66. Filed 8–12–64.

814,864. MISCELLANEOUS DESIGN. Libbey-Owens-Ford Glass Company. SN 214,128. Pub. 6–28–66. Filed 3–15–65.

814,865. YELLOWSTONE CAPRI. Yellowstone, Inc. SN 222,530. Pub. 6–28–66. Filed 7–1–65.

814,866. LEV-R-VENT. Stant Manufacturing Company, Inc. SN 223,465. Pub. 6–28–66. Filed 7–15–65.

Class 20—Linoleum and Oiled Cloth

814,867. FLEX-SLATE. The Flintkote Company. SN 199,552. Pub. 6–28–66. Filed 8–10–64.

Class 21—Electrical Apparatus, Machines, and Supplies

814,868. STAR. Pauline Zipperman, d.b.a. German American Trading Company. SN 205,054. Pub. 6–28–66. Filed 10–29–64.

814,869. DIAL-O-MAGIC. Electro-Mech Corporation. SN 206,356. Pub. 6–28–66. Filed 11–17–64.

814,870. SENSITAK AND DESIGN. Sensitak Instrument Corp. SN 211,106. Pub. 6–28–66. Filed 2–1–65.

814,871. Z AND DESIGN. Zonal Lighting Co., Inc. SN 211,689. Pub. 6–28–66. Filed 2–9–65.

814,872. SEQUE-NATOR. System Analyzer Corp. SN 212,709. Pub. 6–28–66. Filed 2–24–65.

814,873. SKY GLAZE. A. B. Chance Company. SN 217,302. Pub. 6–28–66. Filed 4–26–65.

814,874. UNIPAC. Wehr Corporation. SN 217,961. Pub. 6–28–66. Filed 5–3–65.

814,875. TURBINE-TWIN. Electric Cleaner Company, Inc. SN 218,405. Pub. 6–28–66. Filed 5–10–65.

814,876. CLIFTON. Bright Star Industries, Inc. SN 218,960. Pub. 6–28–66. Filed 5–17–65.

814,877. STYLIZED A (DESIGN). Adams Elevator Equipment Company. SN 219,498. Pub. 6–28–66. Filed 5–24–65.

814,878. MIR-O-LITE. Heritage Plastics Inc. SN 220,501. Pub. 6–28–66. Filed 6–7–65.

814,879. SIGNETICS. Signetics Corporation. SN 220,568. Pub. 6–28–66. Filed 6–7–65.

814,880. GENIE (DESIGN). Richdel, Inc. SN 221,103. Pub. 6–28–66. Filed 6–14–65.

814,881. DEXADE. Linear Alpha, Inc. SN 221,505. Pub. 6–28–66. Filed 6–18–65.

814,882. RADYNE AND DESIGN. Radyne Limited. SN 222,620. Pub. 6–28–66. Filed 7–2–65.

814,883. PWI AND DESIGN. The Eagle-Picher Company. SN 223,879. Pub. 6–28–66. Filed 7–21–65.

814,884. ROPER. Geo. D. Roper Corporation. SN 225,897. Pub. 6–28–66. Filed 8–17–65.

814,885. ROPER AND DESIGN. Geo. D. Roper Corporation. SN 225,898. Pub. 6–28–66. Filed 8–17–65.

814,886. S AND DESIGN. Superior Cable Corporation. SN 226,305. Pub. 6–28–66. Filed 8–23–65.

814,887. INTENSO QUARTZLITE 1500. Appleton Electric Company. SN 226,333. Pub. 6–28–66. Filed 8–24–65.

814,888. UNIVERSITY. LTV Ling Altec, Inc. SN 226,751. Pub. 6–28–66. Filed 8–30–65.

814,889. ORBIT AND DESIGN. Orbit Electronics, Inc. SN 228,178. Pub. 6–28–66. Filed 9–20–65.

814,890. VIDEO-EYE AND DESIGN. William B. Shane, d.b.a. Springdale Electronics Co. SN 228,198. Pub. 6–28–66. Filed 9–20–65.

814,891. FLEXEL. Imperial Chemical Industries Limited. SN 228,367. Pub. 6–28–66. Filed 9–22–65.

814,892. TRADEWINDS. Packard-Bell Electronics Corporation. SN 228,744. Pub. 6–28–66. Filed 9–27–65.

814,893. STANDARDIZATION PAYS. The Murray Company of Texas, Inc., d.b.a. Boston Gear Works. SN 233,372. Pub. 6–28–66. Filed 11–26–65.

814,894. BOSTON GEAR. The Murray Company of Texas, Inc., d.b.a. Boston Gear Works. SN 233,373. Pub. 6–28–66. Filed 11–26–65.

814,895. PATCH-OHM. Cambridge Thermionic Corporation. SN 237,425. Pub. 6–28–66. Filed 1–27–66.

Class 22 — Games, Toys, and Sporting Goods

814,896. DING BAT. The Creek Chub Bait Company. SN 187,480. Pub. 6-28-66. Filed 2-26-64.

814,897. AIRWAY. Brunswick Corporation. SN 203,736. Pub. 6-28-66. Filed 10-12-64.

814,898. RINKY-DINK SURF BOARD AND DESIGN. Boyle Manufacturing Company. SN 205,036. Pub. 6-28-66. Filed 10-29-64.

814,899. LITTLE-SPIN. Lascor, Incorporated. SN 217,352. Pub. 6-28-66. Filed 4-26-65.

814,900. HANDI-SPIN. Lascor, Incorporated. SN 217,353. Pub. 6-28-66. Filed 4-26-65.

814,901. BRAND X. Lisk Fly Manufacturing Co. SN 217,364. Pub. 6-28-66. Filed 4-26-65.

814,902. ICY PRO PUCK. Gotham Pressed Steel Corporation. SN 218,760. Pub. 6-28-66. Filed 5-13-65.

814,903. BOOM A RING AND DESIGN. Fred D. Newman, Jr. SN 218,891. Pub. 6-28-66. Filed 5-14-65.

814,904. POW-R-R-R. Structo Manufacturing Company. SN 219,075. Pub. 6-28-66. Filed 5-17-65.

814,905. ZZZOUND. Structo Manufacturing Company. SN 219,076. Pub. 6-28-66. Filed 5-17-65.

814,906. GOOFY KLOCK. Lindberg Products, Incorporated. SN 220,004. Pub. 6-28-66. Filed 5-28-65.

814,907. MISTIC HEART. Walter N. Thomas. SN 221,117. Pub. 6-28-66. Filed 6-14-65.

814,908. KLON-DYK. John Sarnowski. SN 221,955. Pub. 6-28-66. Filed 6-24-65.

814,909. CUE COUCH. Turpin, Inc. SN 222,525. Pub. 6-28-66. Filed 7-1-65.

814,910. CRAZY PUTTER. Fred K. Bossi and Donald Jones (joint venture), d.b.a. Athco Golf Mfg. Co. SN 223,007. Pub. 6-28-66. Filed 7-9-65.

814,911. BETSY BABY. Ideal Toy Corporation. SN 223,232. Pub. 6-28-66. Filed 7-13-65.

814,912. JUMPING WALLABY. Mattel, Inc. SN 226,260. Pub. 6-28-66. Filed 8-23-65.

814,913. TUTTI. Mattel, Inc. SN 228,713. Pub. 6-28-66. Filed 9-27-65.

814,914. TODD. Mattel, Inc. SN 228,717. Pub. 6-28-66. Filed 9-27-65.

814,915. POCKET-SHOT. Mattel, Inc. SN 228,720. Pub. 6-28-66. Filed 9-27-65.

814,916. MOVIE-SHOT. Mattel, Inc. SN 228,721. Pub. 6-28-66. Filed 9-27-65.

814,917. PUDDIN'. Mattel, Inc. SN 228,723. Pub. 6-28-66. Filed 9-27-65.

814,918. SWIRLYTUNE. Mattel, Inc. SN 228,724. Pub. 6-28-66. Filed 9-27-65.

814,919. TWIRLYTUNE. Mattel, Inc. SN 228,725. Pub. 6-28-66. Filed 9-27-65.

814,920. CRRACKFIRE. Mattel, Inc. SN 228,726. Pub. 6-28-66. Filed 9-27-65.

814,921. WHIRLYTUNE. Mattel, Inc. SN 228,729. Pub. 6-28-66. Filed 9-27-65.

814,922. DART. Anderson & Thompson Ski Co., Inc. SN 230,485. Pub. 6-28-66. Filed 10-19-65.

814,923. GRIP-CONTROL. J. Debeer & Son, Inc. SN 230,798. Pub. 6-28-66. Filed 10-21-65.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

814,823. (See Class 13 for this trademark.)

814,924. HVEC AND DESIGN. High Vacuum Equipment Corporation. SN 176,191. Pub. 6-28-66. Filed 9-3-63.

814,925. WEYERHAEUSER. Weyerhaeuser Company. SN 194,938-E. Pub. 6-28-66. Filed 6-4-64.

814,926. RACE-HORSE AND DESIGN. International Paper Company. SN 214,343. Pub. 6-28-66. Filed 3-17-65.

814,927. TEKS. Illinois Tool Works Inc. SN 215,219. Pub. 6-28-66. Filed 3-29-65.

814,928. DEPENDALOY. Track Products Co. SN 215,310. Pub. 6-28-66. Filed 3-29-65.

814,929. ASSEM-A-PAK. Coates Bros. Company Inc. SN 215,703. Pub. 6-28-66. Filed 4-5-65.

814,930. KITCHEN SENTINEL. Walter Kidde & Company, Inc. SN 216,412. Pub. 6-28-66. Filed 4-13-65.

814,931. VETCO. Ventura Tool Company. SN 216,544. Pub. 6-28-66. Filed 4-14-65.

814,932. WARE AND DESIGN. Ware Machine Works, Inc. SN 217,428. Pub. 6-28-66. Filed 4-26-65.

814,933. ECI AND DESIGN. E.C. Industries, Inc. SN 219,773. Pub. 6-28-66. Filed 5-26-65.

814,934. MATCO-BINKS. Binks Manufacturing Company. SN 220,269. Pub. 6-28-66. Filed 6-3-65.

814,935. ROTOSEAL. The Interstate Folding Box Company. SN 220,512. Pub. 6-28-66. Filed 6-7-65.

814,936. STYLUS. Sears, Roebuck and Co. SN 221,523. Pub. 6-28-66. Filed 6-18-65.

814,937. A.S.M.I. Accurate Shoe Machines, Inc. SN 222,241. Pub. 6-28-66. Filed 6-29-65.

814,938. MITRE-SNUG. Vogel Tool & Die Corporation. SN 222,632. Pub. 6-28-66. Filed 7-2-65.

814,939. CINCINNATI. The Cincinnati Shaper Co. SN 222,823. Pub. 6-28-66. Filed 7-7-65.

814,940. ROTOSPRAYER. Finish Engineering Company, Inc. SN 222,839. Pub. 6-28-66. Filed 7-7-65.

814,941. SPEE-D-FILLER. Simer Pump Company. SN 223,734. Pub. 6-28-66. Filed 7-19-65.

814,942. TWIST-RITE. Dan Polos Industries, Inc. SN 224,023. Pub. 6-28-66. Filed 7-22-65.

814,943. FISH-STAT. John Micklitsch. SN 225,983. Pub. 6-28-66. Filed 8-18-65.

814,944. RBA AND DESIGN. Roto-Broil Corporation of America. SN 226,288. Pub. 6-28-66. Filed 8-24-65.

814,945. HYPERCIRC. Ingersoll-Rand Company. SN 226,917. Pub. 6-28-66. Filed 9-1-65.

814,946. LOC-A-TOR. American Drill Bushing Co. SN 228,106. Pub. 6-28-66. Filed 9-20-65.

814,947. TWISTED TIE STRIP (DESIGN). Royal Industries, Inc. SN 228,195. Pub. 6-28-66. Filed 9-20-65.

814,948. MISCELLANEOUS DESIGN. The U.S. Grinding Co. Inc. SN 228,218. Pub. 6-28-66. Filed 9-20-65.

814,949. FEEDWEL SYSTEMS AND DESIGN. Multimation, Inc. SN 229,267. Pub. 6-28-66. Filed 10-4-65.

814,950. CARBASHER. Harris Press & Shear Corporation. SN 229,803. Pub. 6-28-66. Filed 10-11-65.

814,951. WOLCO AND DESIGN. Wolverine Corporation, by change of name from Wolverine Equipment Co. SN 232,104. Pub. 6-28-66. Filed 11-3-65.

814,952. EGG-VENT. Leonard I. Hall. SN 232,309. Pub. 6-28-66. Filed 11-8-65.

814,953. TAG TIE-MATIC. Royal Industries, Inc. SN 232,352. Pub. 6-28-66. Filed 11-8-65.

814,954. MISCELLANEOUS DESIGN. The Stieff Company. SN 232,871. Pub. 6-28-66. Filed 11-17-65.

814,955. ROADSTER. Hein-Werner Corporation. SN 237,343. Pub. 6-28-66. Filed 1-26-66.

814,956. ROTOGRADER. Hein-Werner Corporation. SN 238,219. Pub. 6-28-66. Filed 2-7-66.

Class 24 — Laundry Appliances and Machines

814,957. COV-A-PAD. Stadham Company, Inc. SN 230,199. Pub. 6-28-66. Filed 10-14-65.

Class 25 — Locks and Safes

814,958. TRAVEL SAFE. RPH Company, Inc. SN 221,847. Pub. 6-28-66. Filed 6-23-65.

814,959. EAGLE AND DESIGN. Eagle Lock Corporation. SN 230,341. Pub. 6-28-66. Filed 10-14-65.

Class 26 — Measuring and Scientific Appliances

814,842. (See Class 16 for this trademark.)

814,960. PERIPLAN. Ernst Leitz, G.m.b.H. SN 192,691. Pub. 6-28-66. Filed 5-5-64.

814,961. CONVELOADER. The Shore Instrument & Mfg. Co. SN 212,603. Pub. 6-28-66. Filed 2-23-65.

814,962. ULTRAPLY. Kinemotive Corporation. SN 212,886. Pub. 6-28-66. Filed 2-26-65.

814,963. MICROPLY. Kinemotive Corporation. SN 212,887. Pub. 6-28-66. Filed 2-26-65.

814,964. DENOYER-GEPPERT CARTOVUE METHOD AND DESIGN. Denoyer-Geppert Company. MULTIPLE CLASS (Classes 26 and 38). SN 215,823. Pub. 6-28-66. Filed 4-6-65.

814,965. SODA. UGC Instruments, Inc. MULTIPLE CLASS (Classes 26 and 36). SN 218,153. Pub. 6-28-66. Filed 5-5-65.

814,966. FIFE AND DESIGN. Fife Manufacturing Company. SN 219,545. Pub. 6-28-66. Filed 5-24-65.

814,967. MAGNACAMERA. Picker X-Ray Corporation. SN 222,061. Pub. 6-28-66. Filed 6-25-65.

814,968. ASTROLUX. Karl Heitz, d.b.a. K. Heitz Import Co. SN 222,374. Pub. 6-28-66. Filed 6-30-65.

814,969. BAILEY AND DESIGN. Bailey Meter Company. SN 226,032. Pub. 6-28-66. Filed 8-19-65.

814,970. MK. Metro/Kalvar, Inc. SN 226,263. Pub. 6-28-66. Filed 8-23-65.

814,971. TREVILLE. Treville Inc., d.b.a. Treville. SN 226,954. Pub. 6-28-66. Filed 9-1-65.

814,972. SPINBAR. LPF Plastics Corporation. SN 229,663. Pub. 6-28-66. Filed 10-8-65.

Class 27 — Horological Instruments

814,973. JENNY. Jenny & Cie SA Fabrique d'Horlogerie. SN 230,396. Pub. 6-28-66. Filed 10-18-65.

Class 28 — Jewelry and Precious-Metal Ware

814,974. RENAISSANCE. Botell Ring Co., Inc. SN 221,462. Pub. 6-28-66. Filed 6-18-65.

814,975. ZINI. Isaacson-Carrico Manufacturing Company. SN 230,252. Pub. 6-28-66. Filed 10-15-65.

Class 29 — Brooms, Brushes, and Dusters

814,842. (See Class 16 for this trademark.)

Class 30 — Crockery, Earthenware, and Porcelain

814,976. INARCO. International Artware Corporation. SN 226,745. Pub. 6-28-66. Filed 8-30-65.

Class 31 — Filters and Refrigerators

814,977. BRAZIER. American Dairy Queen Corporation. SN 230,995. Pub. 6-28-66. Filed 10-22-65.

Class 32 — Furniture and Upholstery

814,978. OXCELITE. Oxford Filing Supply Co., Inc. SN 197,755. Pub. 6-28-66. Filed 7-13-64.

814,979. PLYMTEK. Plymwood Furniture Corporation. SN 199,101. Pub. 6-28-66. Filed 8-3-64.

814,980. KING'S ARROW COLLECTION. Sprague & Carleton, Incorporated. SN 220,412. Pub. 6-28-66. Filed 6-4-65.

814,981. SURFLINE. Wall Tube and Metal Products Company. SN 221,970. Pub. 6-28-66. Filed 6-24-65.

814,982. SPEEDI-BILT. The Frick-Gallagher Manufacturing Company. SN 223,397. Pub. 6-28-66. Filed 7-15-65.

814,983. HIGH-STAK. Bankers Box Company. SN 229,182. Pub. 6-28-66. Filed 10-4-65.

814,984. ACTION OFFICE. Herman Miller, Inc. SN 231,766. Pub. 6-28-66. Filed 10-28-65.

Class 33 — Glassware

814,985. AMERICANA RAINBOW. Gemco-Ware, Inc. SN 213,771. Pub. 6-28-66. Filed 3-10-65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

814,986. MAGNE DRIVE. Autoclave Engineers, Inc. SN 211,979. Pub. 6-28-66. Filed 2-16-65.

814,987. ALLS WELL THAT ENDS WELDED. The Pandjiris Weldment Co. SN 217,489. Pub. 6-28-66. Filed 4-27-65.

814,988. SHORTY. Tifcon Company. SN 230,211. Pub. 6-28-66. Filed 10-14-65.

814,989. ECONOJET. Gulf Oil Corporation. SN 230,385. Pub. 6-28-66. Filed 10-18-65.

814,990. BRAZIER. American Dairy Queen Corporation. SN 230,996. Pub. 6-28-66. Filed 10-22-65.

814,991. REVENT. Ti-Pe Elmeko, Tillander & Persson. SN 231,292. Pub. 6-28-66. Filed 10-22-65.

814,992. LA-CO BRITE. Lake Chemical Co. SN 231,690. Pub. 6-28-66. Filed 10-27-65.

Class 36 — Musical Instruments and Supplies

814,965. (See Class 26 for this trademark.)

814,993. ZENITH AND DESIGN. Zenith Radio Corporation. SN 226,013. Pub. 6-28-66. Filed 8-18-65.

Class 37 — Paper and Stationery

814,842. (See Class 16 for this trademark.)

814,994. DALLY TALLY. The Dalcall Co. SN 209,338. Pub. 6-28-66. Filed 1-5-65.

814,995. BARBIE. Mattel, Inc. MULTIPLE CLASS (Classes 37 and 38). SN 209,525. Pub. 6-28-66. Filed 1-7-65.

814,996. CASTILIAN AND DESIGN. Kimberly-Clark Corporation. SN 224,213. Pub. 6-28-66. Filed 7-26-65.

814,997. DELBY. David Traum Company, Incorporated. SN 224,662. Pub. 6-28-66. Filed 7-30-65.

814,998. X-MARX. X-Marx Process Co., Inc. SN 226,108. Pub. 6-28-66. Filed 8-19-65.

814,999. MAR/PRUF. The Cromwell Paper Company. SN 227,012. Pub. 6-28-66. Filed 9-2-65.

815,000. OVERBROOK. Southworth Company. SN 228,754. Pub. 6-28-66. Filed 9-27-65.

Class 38 — Prints and Publications

814,964. (See Class 26 for this trademark.)

814,995. (See Class 37 for this trademark.)

815,001. TRAVELVENTURES. Cowles Communications, Inc., by assignment and change of name from Bernard E. Gobel. SN 176,187. Pub. 6-28-66. Filed 9-3-63.

815,002. LUSTRE-FOIL. Paramount Paper Products Co. SN 190,023. Pub. 5-10-66. Filed 3-31-64.

815,003. THE CLEVELAND KEGLER. Sam Levine, d.b.a. The Cleveland Kegler. SN 218,673. Pub. 6-28-66. Filed 5-12-65.

815,004. PERF-O-READER. Dayton Perforators Inc. SN 220,836. Pub. 6-28-66. Filed 6-10-65.

815,005. SOABAR. Soabar Company. SN 222,986. Pub. 6-28-66. Filed 7-8-65.

815,006. ORLANDO TRIBUNE. Correct Craft, Inc. SN 226,343. Pub. 6-28-66. Filed 8-24-65.

815,007. DIAGNOSTICA. Miles Laboratories, Inc., assignee of Ames Company, Inc. SN 227,224. Pub. 6-28-66. Filed 9-7-65.

815,008. THE COLONEL—. Herschel C. Logan. SN 227,303. Pub. 6-28-66. Filed 9-7-65.

815,009. SUNTAN. Outdoor American Corporation. SN 227,325. Pub. 6-28-66. Filed 9-7-65.

815,010. EEK & MEEK. Newspaper Enterprise Association, Inc. SN 229,857. Pub. 6-28-66. Filed 10-11-65.

815,011. GOOD OLD DAYS. Tower Press, Inc. SN 231,294. Pub. 6-28-66. Filed 10-22-65.

Class 39 — Clothing

815,012. "MODELS COAT." Swirl, Inc. SN 171,500. Pub. 6-28-66. Filed 6-20-63.

815,013. DAINTY LADY. Samuel R. Planer. MULTIPLE CLASS (Classes 39 and 52). SN 200,594. Pub. 6-28-66. Filed 8-25-64.

815,014. GIGETTE. Elias Sayour Co., Inc. SN 208,180. Pub. 5-25-66. Filed 12-15-64.

815,015. FASHION LIGHTS. Vanity Fair Mills, Inc. SN 211,770. Pub. 6-28-66. Filed 2-10-65.

815,016. BABYGRO BY KAPART. Lisle Mills Company. SN 216,842. Pub. 6-28-66. Filed 4-19-65.

815,017. APPLETREE AND DESIGN. Phyllis Mandell. SN 217,125. Pub. 6-28-66. Filed 4-22-65.

815,018. FALLBROOK OF CALIFORNIA FB AND DESIGN. Fallbrook of California. SN 217,875. Pub. 6-28-66. Filed 5-3-65.

815,019. SHIFT SHAPER. Genesco Inc. SN 218,105. Pub. 6-28-66. Filed 5-5-65.

815,020. SHORT SHAPER. Genesco Inc. SN 218,107. Pub. 6-28-66. Filed 5-5-65.

815,021. SWIM SHAPER. Genesco Inc. SN 218,110. Pub. 6-28-66. Filed 5-5-65.

815,022. G AND DESIGN. Globe Superior, Inc. SN 225,413. Pub. 6-28-66. Filed 8-10-65.

815,023. BODYGARD AND DESIGN. Genesco Inc. SN 225,699. Pub. 6-28-66. Filed 8-13-65.

815,024. MASTER-CREASE. Master Trouser Corporation. SN 226,931. Pub. 6-28-66. Filed 9-1-65.

815,025. FRATELLI VALINOTI AND DESIGN. Joseph Kanner Hat Co., Inc. SN 229,927. Pub. 6-28-66. Filed 10-11-65.

Class 40 — Fancy Goods, Furnishings, and Notions

815,026. WRIGHT'S FLEXICLOTH. Wm. E. Wright & Sons Co. SN 191,003. Pub. 6-28-66. Filed 4-13-64.

815,027. GOLD-ZAG. The Staylastic Corporation. SN 206,769. Pub. 6-28-66. Filed 11-23-64.

815,028. OCEANS OF NOTIONS. Steven Merrill Distributors. SN 213,453. Pub. 6-28-66. Filed 3-5-65.

815,029. CLASSIC. General Wig Manufacturers, Inc. SN 216,816. Pub. 6-28-66. Filed 4-19-65.

815,030. TREVILLE. Treville Inc., d.b.a. Treville. SN 226,955. Pub. 6-28-66. Filed 9-1-65.

815,031. CLASSIC WIGS AND DESIGN. General Wig Manufacturers, Inc. SN 228,030. Pub. 6-28-66. Filed 9-17-65.

815,032. THE IDEAL TOPPER. Donald W. Ostrom. SN 229,447. Pub. 6-28-66. Filed 10-6-65.

815,033. SOLO AND DESIGN. Solo Products Corporation. SN 229,884. Pub. 6-28-66. Filed 10-11-65.

815,034. LULU BROWN. Kleer-Vu Industries, Inc. SN 230,547. Pub. 6-28-66. Filed 10-19-65.

815,035. W'EYES GUISE THE EYELASHES THAT AREN'T AFRAID TO GO OUTDOORS. Kleer-Vu Industries, Inc. SN 233,184. Pub. 6-28-66. Filed 11-23-65.

815,036. CLASSIQUE. General Wig Manufacturers, Inc. SN 235,066. Pub. 6-28-66. Filed 12-20-65.

Class 44 — Dental, Medical, and Surgical Appliances

815,037. PATHCO AND DESIGN. Pathco. SN 209,721. Pub. 6-28-66. Filed 1-11-65.

815,038. AUTOMAGIC. The Telex Corporation. SN 219,477. Pub. 6-28-66. Filed 5-21-65.

815,039. EDWARDS. United States Catheter & Instrument Corporation. SN 220,607. Pub. 6-28-66. Filed 6-7-65.

815,040. DACOL HYDROFLASK. Denis Corrin Davis and Raymond Colbeck (joint owners), d.b.a. Davis & Colbeck. SN 221,800. Pub. 6-28-66. Filed 6-23-65.

815,041. ROTO-WRENCH. Baxter Laboratories, Inc. SN 225,861. Pub. 6-28-66. Filed 8-17-65.

815,042. AEROMATIC AND DESIGN. Aero Home Products Mfg., Inc. SN 231,360. Pub. 6-28-66. Filed 10-23-65.

Class 45 — Soft Drinks and Carbonated Waters

815,043. TRITON. Triton Water Company. SN 218,815. Pub. 6-28-66. Filed 5-18-65.

815,044. TRAVELPOP. White Rock Bottling Company of Tacoma, Inc. SN 220,613. Pub. 6-28-66. Filed 6-7-65.

Class 46 — Foods and Ingredients of Foods

814,859. (See Class 18 for this trademark.)

815,045. APOLLO. Paul A. Korody, d.b.a. Apollo Freese Dried Products. SN 181,368. Pub. 6-28-66. Filed 11-18-63.

815,046. MOM'S. Nicholas Castellucci, d.b.a. Mom's Pizza. SN 192,471. Pub. 6-28-66. Filed 5-1-64.

815,047. INSTA-RICH. Insta Incorporated, assignee of Abele-Brodbeck Company, Inc. SN 192,967. Pub. 6-28-66. Filed 5-8-64.

815,048. SPEED-EGG. Schneider Bros. Inc. SN 197,334. Pub. 6-28-66. Filed 7-7-64.

815,049. REPRESENTATION OF A BUILDING (DESIGN). Franksville, Inc. SN 197,554. Pub. 6-28-66. Filed 7-10-64.

815,050. TINI OLLI AND DESIGN. Tre-Jay Products Co. SN 200,879. Pub. 6-28-66. Filed 8-28-64.

815,051. UTOTE'M. U-Tote'm, Inc. SN 202,112. Pub. 6-28-66. Filed 9-17-64.

815,052. PIXY-PAK. Charles Scott Kelly and David Kelly (joint owners), d.b.a. Pixy Farm. SN 204,073. Pub. 6-28-66. Filed 10-15-64.

815,053. CHEF BILL AND DESIGN. Family Foods, Inc. SN 204,896. Pub. 6-28-66. Filed 10-27-64.

815,054. UTC. United Aircraft Corporation. SN 205,878. Pub. 6-28-66. Filed 11-9-64.

815,055. UTC AND DESIGN. United Aircraft Corporation. SN 205,884. Pub. 6-28-66. Filed 11-9-64.

815,056. PERRYMEAD. Harry and David. SN 207,961. Pub. 6-28-66. Filed 12-11-64.

815,057. COFFEE TREE AND DESIGN. Nut Tree. SN 210,036. Pub. 6-28-66. Filed 1-15-65.

815,058. DAN DEE. The Dan Dee Pretzel and Potato Chip Company. SN 212,290. Pub. 6-28-66. Filed 2-18-65.

815,059. MOHAWK. Wards Cove Packing Co., Inc. SN 213,176. Pub. 6-28-66. Filed 3-2-65.

815,060. MR. PUMPERNICKEL. Iversen Baking Company. SN 213,322. Pub. 6-28-66. Filed 3-4-65.

815,061. CHI-CHI DIP. G & M Foods Corp. SN 213,429. Pub. 6-28-66. Filed 3-5-65.

815,062. N AND REPRESENTATION OF A BOY. Ben Hill Griffin, Inc. SN 215,210. Pub. 6-28-66. Filed 3-29-65.

815,063. FARMER'S PRIDE. Scot Lad Foods, Inc. SN 215,444. Pub. 6-28-66. Filed 3-31-65.

815,064. BFM AND GLOBE DESIGN. Basic Food Materials, Inc. SN 216,460. Pub. 6-28-66. Filed 4-13-65.

815,065. VIANDORESIN. Fritzsche Brothers, Inc. SN 218,001. Pub. 6-28-66. Filed 5-4-65.

815,066. GOOD AND PLENTY ETC. AND DESIGN. Quaker City Chocolate & Confectionery Co., Inc. SN 218,318. Pub. 6-28-66. Filed 5-7-65.

815,067. HI-VI SAVOR. Hi-Vi Dog Food Company. SN 218,552. Pub. 6-28-66. Filed 5-11-65.

815,068. WESTERN RANCH. Armour and Company, d.b.a. Collier Industries. SN 219,174. Pub. 6-28-66. Filed 5-19-65.

815,069. Q AND DESIGN. Oscar Mayer & Co. Inc. SN 219,595. Pub. 6-28-66. Filed 5-24-65.

815,070. BROIL 'N GRILL. The Frank Tea & Spice Company. SN 221,036. Pub. 6-28-66. Filed 6-14-65.

815,071. HAVAPAK. Havapak Corp. SN 221,049. Pub. 6-28-66. Filed 6-14-65.

815,072. STRIKE IT RICH. William Henry Foreman, d.b.a. Henry Foreman. SN 221,165. Pub. 6-28-66. Filed 6-15-65.

815,073. DOXSEE BLUEPOINT. HCA Food Corporation, by merger of Fred Fear & Co. SN 221,488. Pub. 4-19-66. Filed 6-18-65.

815,074. SAY SI! SI! Wileman Bros. & Elliott, Inc. SN 221,673. Pub. 6-28-66. Filed 6-21-65.

815,075. BALMORAL. United States Baking Company, Inc. SN 222,085. Pub. 6-28-66. Filed 6-25-65.

815,076. CHURCH'S. Church's Fried Chicken, Inc. SN 222,471. Pub. 6-28-66. Filed 7-1-65.

815,077. PANTRY HOUSE HOT SHOPPES AND DESIGN. Marriott-Hot Shoppes, Inc. SN 226,258. Pub. 6-28-66. Filed 8-23-65.

815,078. BIG SKY. Needham Packing Corporation of Montana. SN 226,272. Pub. 6-28-66. Filed 8-23-65.

815,079. FLEX-A-BEADS. Drew Chemical Corporation, d.b.a. Drew Foods. SN 226,347. Pub. 6-28-66. Filed 8-24-65.

815,080. KLOVERGOLD. Dean Foods Company. SN 226,629. Pub. 6-28-66. Filed 8-27-65.

815,081. MR. POP WRITER. E. Rosen Company. SN 226,790. Pub. 6-29-66. Filed 8-30-65.

815,082. TRY-O-GURT. Lillian T. Hale, d.b.a. Hale Products Company. SN 226,910. Pub. 6-28-66. Filed 9-1-65.

815,083. PA-MA-KIN. Food Corporation of America, Inc., d.b.a. Plymouth Rock Provision Co. SN 227,023. Pub. 6-28-66. Filed 9-2-65.

815,084. GWALTNEY AND DESIGN. Gwaltney Incorporated. SN 227,030. Pub. 6-28-66. Filed 9-2-65.

815,085. SKY. National Biscuit Company. SN 227,173. Pub. 6-28-66. Filed 9-3-65.

815,086. RAISIN-OLA. Raisin-Ola Corp. SN 227,519. Pub. 6-28-66. Filed 9-9-65.

815,087. CHEVALLIER-APPERT. William Underwood Company, d.b.a. Wm. Underwood Co. SN 227,781. Pub. 6-28-66. Filed 9-14-65.

815,088. APPERT ETC. AND DESIGN. William Underwood Company, d.b.a. Wm. Underwood Co. SN 227,782. Pub. 6-28-66. Filed 9-14-65.

815,089. DEE DIP. George Dermaris. SN 227,783. Pub. 6-28-66. Filed 9-14-65.

815,090. SLICE QUILT. Fairmont Foods Company. SN 227,835. Pub. 6-28-66. Filed 9-15-65.

815,091. HIPROMIN. Sternco Industries, Inc. SN 227,885. Pub. 6-28-66. Filed 9-15-65.

815,092. MISTY VALE. National Fruit Canning Company, d.b.a. Chehalis Packing Company. SN 228,067. Pub. 6-28-66. Filed 9-17-65.

815,093. "MR. LEAN." The Sigman Meat Company, Inc. SN 228,276. Pub. 6-28-66. Filed 9-21-65.

815,094. EUPHRATES JR. Euphrates Bakery, Inc. SN 228,447. Pub. 6-28-66. Filed 9-23-65.

815,095. KNOTT'S BERRY FARM. Knott's Berry Farm. SN 228,826. Pub. 6-28-66. Filed 9-28-65.

815,096. THRIFTY LAD. Benham & Co., Inc. SN 229,185. Pub. 6-28-66. Filed 10-4-65.

815,097. FAIR LADY. Blanco Fruit Corporation. SN 229,189. Pub. 6-28-66. Filed 10-4-65.

815,098. SPOR-NO. Breddo-Food Products Corporation, Inc. SN 229,194. Pub. 6-28-66. Filed 10-4-65.

815,099. PUPPY PAK. Fairmont Foods Company. SN 229,215. Pub. 6-28-66. Filed 10-4-65.

815,100. SPREET. Grober Products Corporation. SN 229,239. Pub. 6-28-66. Filed 10-4-65.

815,101. CHICKEN LA SCALA. Thomas J. Lipton, Inc. SN 229,438. Pub. 6-28-66. Filed 10-6-65.

815,102. DON L AND DESIGN. Harold Fish Co., Inc. SN 229,524. Pub. 6-28-66. Filed 10-7-65.

815,103. RICE A-LA ROMA. Roma Macaroni Factory, d.b.a. Roma Macaroni Company. SN 229,551. Pub. 6-28-66. Filed 10-7-65.

815,104. COUNTRY SKILLET. Nebraska Consolidated Mills Company, d.b.a. Red Hat Poultry. SN 229,917. Pub. 6-28-66. Filed 10-7-65.

815,105. FRY-RITE. Interstate Potato Packers Corp., d.b.a. Fry-Rite Distributors. SN 230,158. Pub. 6-28-66. Filed 10-14-65.

815,106. TRIPLE A FEED AND DESIGN. Burks Bag Co., Inc., d.b.a. Triple A Feed Co. SN 230,229. Pub. 6-28-66. Filed 10-15-65.

815,107. GOLDEN FRUIT. Sunshine Biscuits, Inc. SN 230,339. Pub. 6-28-66. Filed 10-4-65.

Class 47 — Wines

815,108. MEIER'S ISLE ST. GEORGE AND DESIGN. Meier's Wine Cellars, Inc. SN 195,129. Pub. 6-28-66. Filed 6-8-64.

Class 48 — Malt Beverages and Liquors

815,109. VAN LAUTER. Carling Brewing Company Incorporated. SN 214,749. Pub. 6-28-66. Filed 3-23-65.

815,110. NATIONAL BOHEMIAN ETC. AND DESIGN. The National Brewing Company. SN 217,377. Pub. 6-28-66. Filed 4-26-65.

815,111. PRIPPS AND DESIGN. Pripp-Bryggerierna Aktiebolag. SN 218,477. Pub. 6-28-66. Filed 5-10-65.

Class 49 — Distilled Alcoholic Liquors

815,112. CHERRY HEERING AND BLUE LABEL DESIGN. Peter Frederik Suhm Heering, d.b.a. Peter F. Heering. SN 209,345. Pub. 6-28-66. Filed 1-5-65.

815,113. TROPICO. M. S. Walker, Inc., d.b.a. Allen's Ltd. SN 211,219. Pub. 6-28-66. Filed 2-2-65.

815,114. BOLS. Erven Lucas Bols Incorporated. SN 213,751. Pub. 6-28-66. Filed 3-10-65.

815,115. SIR SCOTT. Popper Morson Corp. SN 214,461. Pub. 6-28-66. Filed 3-18-65.

815,116. GOLD KEY. Gene Curion. SN 216,573. Pub. 6-28-66. Filed 4-15-65.

815,117. KNUCKLE HEAD. The Drambuie Liqueur Co., Ltd. SN 218,848. Pub. 6-28-66. Filed 5-14-65.

Class 50 — Merchandise Not Otherwise Classified

815,118. P AND DESIGN. The Mennonite Publishing House, Inc., d.b.a. Provident Bookstore. MULTIPLE CLASS (Classes 50 and 101). SN 200,582. Pub. 6-28-66. Filed 8-25-64.

815,119. POLAR-POP. Marlan Company. SN 201,849. Pub. 6-28-66. Filed 9-14-64.

815,120. TRAVLPAK. Fieldson Associates, Inc. SN 221,032. Pub. 6-28-66. Filed 6-14-65.

815,121. EASY-LOK. Adler Silhouette Letter Co. SN 226,968. Pub. 6-28-66. Filed 9-2-65.

815,122. GLITTER-ETCH. International Assemblix Corporation. SN 228,686. Pub. 6-28-66. Filed 9-27-65.

815,123. SMART STEP. The Standard Products Company. SN 233,409. Pub. 6-28-66. Filed 11-26-65.

Class 51 — Cosmetics and Toilet Preparations

815,124. LOLLY PUFFS. Maradel Products, Inc. SN 205,832. Pub. 6-28-66. Filed 11-9-64.

815,125. UTC AND DESIGN. United Aircraft Corporation. SN 205,885. Pub. 6-28-66. Filed 11-9-64.

815,126. ARGENE. Vienna Beauty Products Company. SN 209,559. Pub. 6-28-66. Filed 1-7-65.

815,127. CORT MATTE FINISH AND DESIGN. Chas. Pfizer & Co., Inc. SN 215,258. Pub. 6-28-66. Filed 3-29-65.

815,128. STALLION. Richard Hudnut. SN 215,742. Pub. 6-28-66. Filed 4-5-65.

815,129. LENA GHIDAT. Slade di Angelo Callegari & C. Soc. Acc. Semplice. SN 217,285. Pub. 6-28-66. Filed 4-26-65.

815,130. SUDEL. Sudel, Inc., by change of name from Discovery Cosmetics, Inc. SN 217,311. Pub. 6-28-66. Filed 4-26-65.

815,131. PROTEIN-36. The Mennen Company. SN 220,777. Pub. 6-28-66. Filed 6-9-65.

815,132. SUDDEN BEAUTY. American Home Products Corporation. SN 222,245. Pub. 6-28-66. Filed 6-29-65.

815,133. TERTIO. Les Parfums Sterlé. MULTIPLE CLASS (Classes 51 and 52). SN 226,494. Pub. 6-28-66. Filed 8-25-65.

815,134. COMPARE. Affiliated Laboratories, Inc. SN 228,102. Pub. 6-28-66. Filed 9-20-65.

815,135. SYBARIS AND DESIGN. Sybaris, Inc. SN 230,099. Pub. 6-28-66. Filed 10-13-65.

815,136. 12 GAUGE. Sterling Pharmaceuticals Pty. Limited. SN 230,583. Pub. 6-28-66. Filed 10-19-65.

815,137. MOIRIL. L'Oreal, Societe Anonyme. SN 233,613. Pub. 6-28-66. Filed 11-30-65.

815,138. MIDJET. Societe Cadoricin. SN 234,250. Pub. 6-28-66. Filed 12-8-65.

815,139. ULTRA-BRIGHT. Colgate-Palmolive Company. SN 234,270. Pub. 6-28-66. Filed 12-9-65.

815,140. GUEST ARTIST. Maradel Products, Inc. SN 234,447. Pub. 6-28-66. Filed 12-13-65.

815,141. MESSINA. Cosmetics Manufacturing Company, d.b.a. Legacy. SN 234,595. Pub. 6-28-66. Filed 12-13-65.

815,142. WANDA. The Procter & Gamble Company. SN 234,767. Pub. 6-28-66. Filed 12-16-65.

815,143. LIPSTICK-IN-THE-ROUND. Estee Lauder, Incorporated. SN 234,997. Pub. 6-28-66. Filed 12-21-65.

815,144. CELEBRITY. Invincible Products Corporation. SN 235,106. Pub. 6-28-66. Filed 12-22-65.

815,145. FANCIFUL DESIGN. Sales Affiliates, Inc. SN 237,747. Pub. 6-28-66. Filed 2-1-66.

Class 52 — Detergents and Soaps

814,774. (See Class 4 for this trademark.)

814,784. (See Class 6 for this trademark.)

814,808. (See Class 6 for this trademark.)

814,809. (See Class 6 for this trademark.)

815,013. (See Class 39 for this trademark.)

815,133. (See Class 51 for this trademark.)

815,146. GLAMOUR PUSS. Edward M. Spitz. SN 140,770. Pub. 6-28-66. Filed 3-26-62.

815,147. NO-RINSE. James S. Staten, d.b.a. No-Rinse Laboratories. SN 203,837. Pub. 6-28-66. Filed 10-12-64.

815,148. WHISK-AWAY. MSL Industries, Inc. SN 207,565. Pub. 6-28-66. Filed 12-7-64.

815,149. PHASE III. Lever Brothers Company. SN 228,049. Pub. 6-28-66. Filed 9-17-65.

815,150. SWINGING CLEAR. American Home Products Corporation. SN 230,225. Pub. 6-28-66. Filed 10-15-65.

815,151. REGALE. Churchill Chemical Company. SN 230,781. Pub. 6-28-66. Filed 10-21-65.

815,152. PERMALITE. Diamond Alkali Company. SN 232,679. Pub. 6-28-66. Filed 11-15-65.

815,153. XD-7. Clairol Incorporated. SN 232,768. Pub. 6-28-66. Filed 11-16-65.

815,154. DRIAK. Wyandotte Chemicals Corporation. SN 233,033. Pub. 6-28-66. Filed 11-19-65.

815,155. CHEM-CLEAN. Philip A. Hunt Chemical Corporation. SN 233,504. Pub. 6-28-66. Filed 11-29-65.

815,156. GENTLE GIANT. Armour and Company. SN 233,861. Pub. 6-28-66. Filed 12-3-65.

Service Marks

Class 100 — Miscellaneous

815,157. EDGAR ACHIEVEMENT AWARDS AND DESIGN. Ed Gibbs, Inc. SN 151,584. Pub. 6-28-66. Filed 8-21-62.

815,158. LET AND DESIGN. Law Engineering Testing Company. SN 168,746. Pub. 6-28-66. Filed 5-13-63.

815,159. KENNY R AND DESIGN. American Rehabilitation Foundation, Inc. by change of name from Sister Elizabeth Kenny Foundation, Inc., d.b.a. Sister Elizabeth Kenny Foundation. SN 185,297. Pub. 5-31-66. Filed 1-24-64.

815,160. REPRESENTATION OF A PIRATE. Arthur L. Salisbury. SN 196,811. Pub. 6-28-66. Filed 6-30-64.

815,161. REPRESENTATION OF A PIRATE SHIP. Arthur L. Salisbury. SN 196,812. Pub. 6-28-66. Filed 6-30-64.

815,162. DUBROW'S. Dubrows Seventh Company. SN 199,039. Pub. 6-28-66. Filed 8-3-64.

815,163. JOHNNY GARNEAU'S GOLDEN SPIKE. John P. Garneau. SN 206,618. Pub. 6-28-66. Filed 11-20-64.

815,164. MISCELLANEOUS DESIGN. The General Synod of the United Church of Christ. SN 207,384. Pub. 6-28-66. Filed 12-3-64.

815,165. IMPACTOLOGY. Walter Van Ness Pruyn, d.b.a. Associated Technical Consultants. SN 208,107. Pub. 6-28-66. Filed 12-14-64.

815,166. JOHNNY GARNEAU'S GOLDEN SPIKE AND DESIGN. John P. Garneau. SN 208,359. Pub. 6-28-66. Filed 12-17-64.

815,167. KENTUCKY FRIED CHICKEN. Kentucky Fried Chicken Corporation. SN 209,170. Pub. 6-28-66. Filed 12-31-64.

815,168. BELL MOTEL SYSTEM AND DESIGN. Bell Motel System, Inc. SN 226,507. Pub. 6-28-66. Filed 8-26-65.

Class 101 — Advertising and Business

815,118. (See Class 50 for this trademark.)

815,169. PARADE ANSERCARD. Parade Publications, Inc. SN 159,848. Pub. 6-28-66. Filed 12-27-62.

815,170. DISCOUNT GIFT AND DESIGN. D.G.S., Inc. SN 178,891. Pub. 6-28-66. Filed 10-14-63.

815,171. GP GENERAL PRESS. General Press Corporation. SN 190,801. Pub. 6-28-66. Filed 4-10-64.

815,172. T AND DESIGN. Triangle Blue Print & Supply Company. SN 195,468. Pub. 6-28-66. Filed 6-11-64.

815,173. RINK'S. Rink's Department Stores, Inc. SN 205,098. Pub. 6-28-66. Filed 10-29-64.

815,174. MISS TAN AMERICA AND DESIGN. Lewis W. Williams, d.b.a. Lew Williams. SN 208,154. Pub. 4-19-66. Filed 12-14-64.

815,175. EXHIBIDOME. Atomic Energy Commission. SN 216,381. Pub. 6-28-66. Filed 4-13-65.

815,176. MISS ITALIAN-AMERICA. Palisades Pageants, Inc. SN 216,726. Pub. 6-28-66. Filed 4-16-65.

815,177. MISS AMERICAN STARLET. Palisades Pageants, Inc. SN 216,727. Pub. 6-28-66. Filed 4-16-65.

815,178. MAX THE PRINTER AND DESIGN. Max The Printer, Inc., assignee of Joseph Max Smith, d.b.a. Max The Printer. SN 220,793. Pub. 6-28-66. Filed 6-9-65.

815,179. EASI. Electronic Administrative Services, Inc. SN 222,263. Pub. 6-28-66. Filed 6-29-65.

815,180. EASI AND DESIGN. Electronic Administrative Services, Inc. SN 222,264. Pub. 6-28-66. Filed 6-29-65.

815,181. WC AND DESIGN. The Wingate Corporation. SN 231,330. Pub. 6-28-66. Filed 10-22-65.

815,182. MR. MAGIC'S. Automatic Car Wash Systems, Inc. SN 232,381. Pub. 6-28-66. Filed 11-9-65.

Class 102 — Insurance and Financial

815,183. ABSTAINER ESTATEMASTER. Mercantile Security Life Insurance Company. SN 211,912. Pub. 6-28-66. Filed 2-12-65.

815,184. HIS 'N HERS. Alexander Hamilton Life Insurance Company. SN 215,156. Pub. 6-28-66. Filed 3-29-65.

Class 103 — Construction and Repair

815,185. MANY HANDS TO SERVE YOU. University Car Wash, Inc. SN 184,768. Pub. 6-28-66. Filed 1-16-64.

815,186. OCTOPUS CAR WASHES. University Car Wash, Inc. SN 184,769. Pub. 6-28-66. Filed 1-16-64.

815,187. OCTOPUS (DESIGN). University Car Wash, Inc. SN 188,309. Pub. 6-28-66. Filed 3-9-64.

815,188. AIRCOUSTIC. Aircoustic Co., Inc. SN 208,165. Pub. 6-28-66. Filed 12-15-64.

815,189. SPTS AND DESIGN. Southern Photo-Technical Service, Inc. SN 223,170. Pub. 6-28-66. Filed 7-12-65.

Class 105 — Transportation and Storage

815,190. YELLOW PARALLELOGRAM (DESIGN). Herts System, Inc. SN 193,672. Pub. 6-28-66. Filed 5-18-64.

815,191. UNITED PARCEL SERVICE. United Parcel Service of America, Inc. SN 210,176. Pub. 6-28-66. Filed 1-18-65.

815,192. CONSOLIDATED FREIGHTWAYS. Consolidated Freightways Corporation of Delaware. SN 220,833. Pub. 6-28-66. Filed 6-10-65.

815,193. INLAND EXPRESS IE AND DESIGN. Inland Express, Inc. SN 220,855. Pub. 6-28-66. Filed 6-10-65.

815,194. LONG SERVICE AND DESIGN. S. N. Long Warehouses, Inc. SN 223,134. Pub. 6-28-66. Filed 7-12-65.

815,195. UB AND DESIGN. United-Buckingham Freight Lines. SN 230,966. Pub. 6-28-66. Filed 10-21-65.

815,196. WELLS FARGO. Wells Fargo & Company Express, S.A., S.M. SN 231,791. Pub. 6-28-66. Filed 10-28-65.

Class 106 — Material Treatment

815,197. FIBERDYNAMICS. Weyerhaeuser Company. SN 206,490. Pub. 6-28-66. Filed 11-18-64.

815,198. BUTARP. Champion Textile Finishing Co. SN 207,864. Pub. 6-28-66. Filed 12-10-64.

815,199. BUTENT. Champion Textile Finishing Co. SN 207,865. Pub. 6-28-66. Filed 12-10-64.

Class 107 — Education and Entertainment

815,200. PROGRAM-MATIC ETC. AND DESIGN. Colortone Inc. SN 148,796. Pub. 6-28-66. Filed 7-11-62.

815,201. THE VISTAS. Robert J. Roy, d.b.a. Robert J. Roy Agency. SN 207,156. Pub. 6-28-66. Filed 11-30-64.

815,202. SMI AND DESIGN. SMI. SN 226,475. Pub. 6-28-66. Filed 8-25-65.

815,203. SOME PLACE ELSE. Some Place Else. SN 232,610. Pub. 6-28-66. Filed 11-12-65.

Certification Mark

Class A — Goods

815,204. LPIU LITHOGRAPHERS & PHOTOENGRAVERS INTERNATIONAL UNION AND DESIGN. Lithographers and Photoengravers International Union. SN 214,662. Pub. 6-28-66. Filed 3-22-65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2—Receptacles

815,205. Euclid Spiral Paper Tube Corp., Cleveland, Ohio. SN 188,220. Filed P.R. 3–9–64; Am. S.R. 7–6–66.

BEND-EZ

For Paper Tubes and Laminated Paper Tubes Adapted for Use as Article-Enclosing Packages or Sheaths.
First use Aug. 1, 1963.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

815,206. Buxton, Incorporated, Agawam, Mass. SN 220,201. Filed P.R. 6–2–65; Am. S.R. 6–28–66.

PURSEFOLD

For Ladies' Billfold and Purse Combinations.
First use June 1962.

Class 12—Construction Materials

815,207. Smith Products, Inc., d.b.a. Childers Products Co., Cleveland, Ohio. SN 232,940. Filed P.R. 11–18–65; Am. S.R. 7–25–66.

SLIP-ON

For Prefabricated Insulation Jacketing.
First use Apr. 16, 1965.

815,208. International Window Corporation, Monterey Park, Calif. SN 234,123. Filed P.R. 12–7–65; Am. S.R. 7–8–66.



For Aluminum Sashes and Window Frames for Louvre Windows.
First use Feb. 1, 1964.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

815,209. Textron Industries, Inc., d.b.a. Indiana Metal Products Company, Rochester, Ind. SN 165,863. Filed P.R. 4–1–63; Am. S.R. 7–21–66.

SCREWSTICK

For Screws.
First use 1943.

Class 19—Vehicles

815,210. Whattoff Motor Co., Ames, Iowa. SN 220,809. Filed P.R. 6–9–65; Am. S.R. 6–27–66.

TRAILER TOTER

For Tractor Vehicles.
First use on or about Dec. 20, 1952.

Class 20—Linoleum and Oiled Cloth

815,211. Congoleum-Nairn Inc., Kearny, N.J. SN 222,670. Filed P.R. 7–6–65; Am. S.R. 7–7–66.

ESPANA

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use June 29, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

815,212. Unit Service Exchange Company, Atlanta, Ga. SN 154,649. Filed P.R. 10–5–62; Am. S.R. 1–8–65.



The drawing is lined for the colors blue and yellow.
For Rebuilt Automotive Parts—Namely, Pressure Clutch Plate Assemblies, Clutch Sets, and Clutch Plates.
First use Sept. 21, 1962.

815,213. Link-Belt Company, Chicago, Ill. SN 212,330. Filed P.R. 2–18–65; Am. S.R. 7–18–66.

FLEX-JOINT

For Roller Chain.
First use Dec. 23, 1964.

815,214. Richard E. Rhodes, Phoenix, Ariz. SN 212,817. Filed P.R. 2–25–65; Am. S.R. 7–18–66.

HYDRO-HUB

For Fluid Pressure Motor Wheel for Vehicles.
First use Feb. 13, 1965.

Class 26—Measuring and Scientific Appliances

815,215. Owatonna Tool Company, Owatonna, Minn. SN 205,606. Filed P.R. 11–5–64; Am. S.R. 3–11–66.

FLO-DIVIDER

For Capacity Increasing Devices for Attachment to Hydraulic Line Testing Equipment.
First use Jan. 15, 1964.

Class 32—Furniture and Upholstery

815,216. Lambert Frame and Picture Company, Inc., Brooklyn, N.Y. SN 205,517. Filed P.R. 11–4–64; Am. S.R. 3–3–66.



For Photo Frames.
First use Aug. 19, 1964.

815,217. Tomlinson of High Point, High Point, N.C. SN 232,946. Filed P.R. 11–18–65; Am. S.R. 7–7–66.

GROSVENOR

For Furniture—Namely, Chairs, Tables, Sideboards, Cabinets, Sofas, Love Seats, Benches, Beds, Dressers, Mirrors, Vanities, Chests, Commodes, Desks, Cupboards, Couches, and Bookcases.
First use Apr. 22, 1965.

Class 34—Heating, Lighting, and Ventilating Apparatus

815,218. The Edwin L. Wiegand Company, Pittsburgh, Pa. SN 186,586. Filed P.R. 2–12–64; Am. S.R. 7–15–66.

cool::air

The drawing is lined for red but the mark is not limited to color.
For Air Conditioning Apparatus—Namely, Air Cooling Apparatus.
First use in or about September 1962.

Class 36—Musical Instruments and Supplies

815,219. The Seeburg Corporation, Chicago, Ill. SN 190,290. Filed P.R. 4–3–64; Am. S.R. 7–14–66.

SELECT-A-RHYTHM

For Beat or Rhythm Generators, Separately or Incorporated as a Part of Organs.
First use Nov. 21, 1963.

Class 38—Prints and Publications

815,220. Verne A. Engblom, d.b.a. Chordcraft Publishing Co., Skokie, Ill. SN 223,639. Filed P.R. 7–19–65; Am. S.R. 7–6–66.

MUSICARD

For Movable Printed Chart for Teaching Musical Notes, Chords, and Other Miscellaneous Musical Information.
First use July 1, 1965.

Class 39—Clothing

815,221. Glamorise Foundations, Inc., New York, N.Y. SN 191,280. Filed P.R. 4–16–64; Am. S.R. 7–20–66.

WEIGHTLESS

For Girdles and Brassieres.
First use Mar. 31, 1964.

815,222. P. W. Minor & Son, Inc., Batavia, N.Y. SN 219,041. Filed P.R. 5–17–65; Am. S.R. 7–20–66.

GORE BACK

For Shoes.
First use Feb. 10, 1965.

815,223. Sidney L. Pincus, d.b.a. Modern Products Company, Brooklyn, N.Y. SN 221,404. Filed P.R. 6–17–65; Am. S.R. 7–14–66.



The English translation of the mark is "very chic from Paris."
For Hosiery.
First use June 1, 1965.

815,224. Sarco, Inc., Atlanta, Ga. SN 221,640. Filed P.R. 6–21–65; Am. S.R. 7–12–66.

Mr-Tie

For Neckties.
First use on or about June 1, 1965.

Class 40—Fancy Goods, Furnishings, and Notions

815,225. (See Class 50 for this trademark.)

815,226. Eastern Handicraft Supply Co., Inc., d.b.a. Totem Slides, New York, N.Y. SN 218,538. Filed P.R. 5–11–65; Am. S.R. 6–17–66.

TOTEM SLIDES

For Slides for Holding Neckerchiefs, Bandanas and the Like, Bolo-Type Slides, Belt-Buckle Type Slides for Holding Belts, and Tie Slides.
First use Feb. 5, 1965.

Class 43—Thread and Yarn

815,227. Sellers Manufacturing Company, Inc., Saxapahaw, N.C. SN 219,360. Filed P.R. 5–20–65; Am. S.R. 7–18–66.

TWISTCORE

For Elastic Yarns.
First use May 6, 1964.

Class 44—Dental, Medical, and Surgical Appliances

815,228. Mennen-Greatbatch Electronics, Inc., Clarence, N.Y., assignee of Wilson Greatbatch, Inc., Clarence, N.Y. SN 206,034. Filed P.R. 11–12–64; Am. S.R. 7–7–66.

CHARDACK-GREATBATCH

For Electro-Physiological Device for Generating and Applying Electrical Impulses to a Muscle or Muscles Through Electrodes.
First use Nov. 5, 1960.

815,229. Mennen-Greatbatch Electronics, Inc., Clarence, N.Y. SN 207,409. Filed P.R. 12–3–64; Am. S.R. 7–7–66.

CHARDACK

For Electrodes To Apply Electrical Impulses From Electro-Physiological Devices to a Cardiac Muscle or Muscles.
First use June 15, 1964.

815,230. Acme Cotton Products Co., Inc., Valley Stream, N.Y. SN 235,611. Filed 1–3–66.

STRETCH

For Gauze Bandages.
First use not later than November 1962.

Class 45—Soft Drinks and Carbonated Waters

815,231. The Grapette Company, Inc., Camden, Ark. SN 206,033. Filed P.R. 11–12–64; Am. S.R. 7–15–66.

OLD RED EYE

For Soft Drink Beverages.
First use Oct. 26, 1964.

Class 46—Foods and Ingredients of Foods

815,232. Continental Baking Company, Rye, N.Y. SN 221,024. Filed 6–14–65.

DONETTES

For Doughnuts.
First use June 2, 1960.

815,233. Knott's Berry Farm, Buena Park, Calif. SN 230,655. Filed P.R. 10–20–65; Am. S.R. 7–15–66.



The drawing is lined for gold.
For Marmalades; Fruit Preserves; Berry Preserves; Tomato Preserves; Jellies; Peanut Butter; Cashew Butter; Spiced Peaches; Spiced Figs; Spiced Pickled Watermelon Rind; Spiced Green Olives; Pickles and Pickled Onions; Table Syrups; Meat Sauce (Meatless); Barbecue Sauce; Thousand Island Dressing; French Dressing; Creamy French Dressing.
First use Nov. 1, 1964; Nov. 1, 1928, in a different form.

Class 48—Malt Beverages and Liquors

815,234. Miller Brewing Company, Milwaukee, Wis. SN 213,341. Filed P.R. 3–4–65; Am. S.R. 6–22–66.

DRAFTAP

For Beer.
First use Feb. 5, 1965.

Class 50—Merchandise Not Otherwise Classified

815,225. Contour Beauty Aids, Ltd., New York, N.Y. SN 184,215. Filed P.R. 1–8–64; Am. S.R. 6–16–66.

CONTOUR

For Combs.
First use on or about Sept. 17, 1963.

815,235. R. D. Werner Co., Inc., Greenville, Pa. SN 172,122. Filed P.R. 6–28–63; Am. S.R. 11–29–65.

TWIST-PROOF

For Extension Ladders, Stepladders, Stages, and Platform Ladders.
First use July 1961.

815,236. Continental Can Company, Inc., New York, N.Y. SN 239,594. Filed 2–25–66.

POP LID

For Container Closures.
First use Feb. 14, 1964.

Class 51—Cosmetics and Toilet Preparations

815,237. Curacao Laboratories, Ltd., Curacao, Netherlands Antilles. SN 196,025. Filed P.R. 6–19–64; Am. S.R. 6–20–66.



The mark consists of the conformation of the container for the goods together with the wording and picture thereon. Owner of Netherlands Antilles Reg. No. 3,821, dated June 23, 1959.
For Mentholated Skin Lotion.

815,238. Lamour Hair Products, Inc., Bronx, N.Y. SN 208,465. Filed P.R. 12–18–64; Am. S.R. 7–12–66.

COLOR COMB

For Comb That Runs Color Into the Hair.
First use Aug. 10, 1950.

815,239. Pharmaceutical Laboratories, Inc., Plainfield, N.J. SN 211,464. Filed P.R. 2–5–65; Am. S.R. 7–15–66.

LADY PAGET

The trademark "Lady Paget" is not the name of any particular living individual.
For Hair Preparations, Bath Preparations, Deodorants, and Creams.
First use on or about Dec. 10, 1964, on hair spray.

815,240. Pharmaceutical Laboratories, Inc., Plainfield, N.J. SN 212,040. Filed P.R. 2–15–65; Am. S.R. 7–15–66.

LORD PAGET

"Lord Paget" is not the name of any particular living individual.
For Men's Shaving Preparations.
First use on or about Dec. 10, 1964, on shave cream.

815,241. Pharmaceutical Laboratories, Inc., Plainfield, N.J. SN 220,875. Filed P.R. 6–10–65; Am. S.R. 6–24–66.

CARSON

For Deodorants, Skin Powders, and Oral Antiseptics and Mouth Washes Singly and in Combination.
First use on or about Sept. 15, 1964.

815,242. Revlon, Inc., New York, N.Y. SN 220,963. Filed P.R. 6–11–65; Am. S.R. 7–5–66.

SOFTSILVER RED

For Lipsticks and Nail Enamels.
First use May 10, 1965.

815,243. Revlon, Inc., New York, N.Y. SN 220,964. Filed P.R. 6–11–65; Am. S.R. 7–5–66.

SOFTSILVER CORAL

For Lipsticks and Nail Enamels.
First use May 10, 1965.

815,244. Revlon, Inc., New York, N.Y. SN 220,965. Filed P.R. 6–11–65; Am. S.R. 7–5–66.

SOFTSILVER PINK

For Lipsticks and Nail Enamels.
First use May 10, 1965.

815,245. Revlon, Inc., New York, N.Y. SN 220,966. Filed P.R. 6–11–65; Am. S.R. 7–5–66.

FROSTED MALT

For Lipsticks and Nail Enamels.
First use May 10, 1965.

815,246. Revlon, Inc., New York, N.Y. SN 220,967. Filed P.R. 6–11–65; Am. S.R. 7–5–66.

SOFTSILVER ROSE

For Lipsticks and Nail Enamels.
First use May 10, 1965.

815,247. Revlon, Inc., New York, N.Y. SN 220,968. Filed P.R. 6–11–65; Am. S.R. 7–5–66.

SOFTSILVER BEIGE

For Lipsticks and Nail Enamels.
First use May 10, 1965.

815,248. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. SN 232,648. Filed P.R. 11-15-65; Am. S.R. 7-11-66.

ALO-COSMETICS

For Face Cream.
First use Aug. 8, 1964.

Service Marks

Class 101 — Advertising and Business

815,249. James Pair Personnel Service, Inc., Atlanta, Ga. SN 209,718. Filed P.R. 1-11-65; Am. S.R. 7-12-66.

TRY BEFORE YOU HIRE

For Personnel Procurement.
First use Jan. 5, 1965.

Class 103 — Construction and Repair

815,250. Joe Plaja, d.b.a. Guncraft, Garfield, N.J. SN 216,118. Filed P.R. 4-5-65; Am. S.R. 6-28-66.

Guncraft
by
Joe Plaja

For Services Rendered in the Modification, Restoration, and Repair of Firearms.
First use Dec. 3, 1963.

TRADEMARK REGISTRATIONS RENEWED

50,291. RED CROSS BRAND AND DESIGN. Cl. 46. 3-6-06.
51,506. SPIRITTINE. Cl. 6. 4-17-06.
52,153. LIBERTY. Cl. 42. 5-1-06.
52,183. DESIGN OF MAN. Cl. 49. 5-1-06.
54,082. A. DE LUZE & FILS BORDEAUX AND DESIGN. Cl. 47. 6-19-06.
55,908. HAND (DESIGN). Cl. 16. 8-21-06.
56,651. REWCO. Cl. 49. 10-16-06.
57,208. WILLIAM S. BROWN (DRAWING AND SIGNATURE). Cl. 18. 11-6-06.
57,458. HOLMES & EDWARDS. Cl. 28. 11-13-06.
57,566. TANGLEFOOT. Cl. 6. 11-13-06.
57,777. BAR IN CIRCLE (DESIGN). Cl. 43. 11-27-06.
57,902. TEXACO. Cl. 15. 12-4-06.
57,904. MULTIGRAPH. Cl. 11. 12-4-06.
58,380. REGAL. Cl. 22. 12-11-06.
58,433. ARCO. Cl. 34. 12-18-06.
58,502. RUSSWIN. Cl. 23. 12-18-06.
58,506. "STANDARD." Cl. 13. 12-18-06.
58,642. AYRSHIRE CREAMERY BUTTER AND DESIGN. Cl. 46. 12-18-06.
59,100. HARRINGTON. Cl. 36. 1-1-07.
59,163. HARDMAN. Cl. 36. 1-1-07.
59,231. MONARCH. Cl. 39. 1-1-07.
205,276. BESTMAID AND DESIGN. Cl. 29. 11-3-25.
210,182. VINELAND. Cl. 42. 3-9-26.
212,163. ZERODOR. Cl. 51. 4-27-26.
215,434. MYLES PREFERRED SALT AND DESIGN. Cl. 46. 7-20-26.
215,759. SHIELD (DESIGN). Cl. 6. 7-27-26.
216,077. AMERICAN BEAUTY. Cl. 46. 8-3-26.
217,013. DON. Cl. 35. 8-24-26.
217,032. BAG (DESIGN). Cl. 46. 8-24-26.
218,495. ABBA-ZABA AND DESIGN. Cl. 46. 9-28-26.
218,801. BENEX. Cl. 51. 10-5-26.
218,867. UNITPAK. Cl. 2. 10-5-26.
219,741. GOLDEN CIRCLE. Cl. 46. 10-26-26.
219,747. HOVIS. Cl. 46. 10-26-26.
221,915. BLUE STREAK. Cl. 23. 12-14-26.
221,982. ROYAL KNIGHT. Cl. 46. 12-21-26.
222,004. WORTHMORE BRAND. Cl. 46. 12-21-26.
222,658. LAVACOL. Cl. 18. 1-4-27.
419,747. FREZ-O-MAT. Cl. 31. 3-5-46.
420,479. CHIPLETS. Cl. 23. 4-16-46.
421,163. PERRAUX. Cl. 27. 5-21-46.
421,186. SPIFFY. Cl. 46. 5-21-46.
422,024. LE CLOU. Cl. 51. 6-25-46.
422,307. UNICHROME. Cl. 6. 7-16-46.
422,372. LANCELOT. Cl. 51. 7-16-46.
422,373. CHEZ NOUS. Cl. 51. 7-16-46.
422,475. STANDARD TOOL CO. AND DESIGN. Cl. 23. 7-23-46.
422,579. BILITIS. Cl. 51. 7-30-46.
422,593. ASTRACEL. Cl. 6. 7-30-46.
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422,625. HENROSE. Cl. 42. 8-6-46.
423,036. SERAPHIQUE DE SCHIAPARELLI. Cl. 51. 8-20-46.
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424,178. STARTEX. Cl. 42. 9-24-46.
424,864. CCC. Cl. 23. 10-29-46.
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425,299. HIL-WAL. Cl. 16. 11-12-46.
425,548. CORIOLAN. Cl. 51. 11-26-46.
425,560. TEMPOMATIC. Cl. 27. 11-26-46.
425,686. STRATOSPHERE. Cl, 51. 11-26-46.
425,734. OSAGE BY REEVES. Cl. 39. 12-3-46.
425,781. PLYPAK. Cl. 37. 12-3-46.
425,945. HEARTS-DESIRE. Cl. 28. 12-10-46.
426,028. CALENDOMATIC. Cl. 27. 12-10-46.
426,110. SIMPLEX. Cl. 35. 12-17-46.
426,186. PACORD. Cl. 7. 12-17-46.
426,405. SERAPHIQUE. Cl. 51. 12-24-46.
426,568. BLONDIE. Cl. 46. 12-31-46.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

682,613. OVEN FRESH. Cl. 46. 4-12-66.
807,080. LOC-BLOC. Cl. 22. 4-12-66.

Section 8

The following registrations issued July 26, 1960

701,552. CABRITE. Cl. 1.
701,560. BARE FACTS AND DESIGN. Cl. 1.
701,561. NAKED TRUTH AND DESIGN. Cl. 1.
701,568. ORCHAWAII. Cl. 1.
701,574. STEROLITE. Cl. 1.
701,580. SORB-X. Cl. 1.
701,582. MONFUR. Cl. 1.
701,598. EXEC. Cl. 5.
701,602. ENDIT-76. Cl. 6.
701,612. MOARK. Cl. 7.
701,623. ALUMERAMIC. Cl. 12.

701,625. GYP-SEAL. Cl. 12.
701,630. FOAM CLAVED. Cl. 12.
701,635. H-W ALKAMORTAR. Cl. 12.
701,642. SILENCIA. Cl. 13.
701,653. VODIUM. Cl. 13.
701,657. VISCOTHERM. Cl. 14.
701,664. PENTA-COAT. Cl. 16.
701,668. QUI-ETT. Cl. 16.
701,674. NATURE-TONE N-T AND DESIGN. Cl. 18.
701,679. DYMENZYME. Cl. 18.
701,683. THIOGUAN. Cl. 18.
701,685. NEOACTASAL. Cl. 18.
701,687. PORTA-FOLD. Cl. 19.
701,688. RADIOPLANE AND DESIGN. Cl. 19.
701,692. CATA-CRUISER AND DESIGN. Cl. 19.
701,693. COASTLINE. Cl. 19.
701,694. REPRESENTATION OF BIRD IN FLIGHT. Cl. 19.
701,695. MODERNTONES. Cl. 20.
701,701. MUSIC MASTER. Cl. 21.
701,702. THERMAL-RAYE. Cl. 21.
701,706. DKW-JUNIOR. Cl. 21.
701,707. PHOTOMATION AND DESIGN. Cl. 21.
701,709. INTERELECTRONICS. Cl. 21.
701,710. SPEAKEASY. Cl. 21.
701,711. THE SCAN-A-GRAPH 500 AND DESIGN. Cl. 21.
701,719. NASSAU. Cl. 21.
701,720. BAY SHORE. Cl. 21.
701,722. SPORTSMAN. Cl. 22.
701,723. SPUNKY. Cl. 22.
701,724. TIP-TOP. Cl. 22.
701,767. MANHATTAN MFS AND DESIGN. Cl. 23.
701,784. POWER-CHEK. Cl. 26.
701,804. SLIP-O-MATIC. Cl. 29.
701,805. SELF-MOISTENING SPEED SWEEP. Cl. 29.
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701,813. KLING MEANS SOLID MAHOGANY-MAPLE CHERRY AND DESIGN. Cl. 32.
701,814. REPRESENTATION OF A LION. Cl. 32.
701,815. F-FLORENCE. Cl. 32.
701,819. KEE LITE. Cl. 34.
701,820. TURBOPLATE. Cl. 34.
701,824. CONTENDER. Cl. 35.
701,828. WEBCOR B.F.D. Cl. 36.
701,830. MADISON FIELDING. Cl. 36.
701,831. KAHALA. Cl. 36.
701,832. MF (DESIGN). Cl. 36.
701,833. RHYTHA-CORD. Cl. 36.
701,834. PEEK-O-LOPE. Cl. 37.
701,838. BALLARINA. Cl. 37.
701,841. PHOTO VAULT ALBUM AND DESIGN. Cl. 37.
701,845. WILLIE LUMPKIN. Cl. 38.
701,849. DAYSTROM DATA. Cl. 38.
701,851. DIAMOND NATIONAL DIGEST AND DESIGN. Cl. 38.
701,852. SATELLITE. Cl. 39.
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701,860. BILLIE OF CALIFORNIA. Cl. 39.
701,865. JODI. Cl. 39.
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701,868. LUSTRE STITCH. Cl. 39.
701,871. PALA. Cl. 39.
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701,875. RICHCREST. Cl. 39.
701,880. AJUSTO-FIT. Cl. 39.
701,883. FIGURE GLAMOR. Cl. 39.
701,893. STALLION BRAND AND DESIGN. Cl. 39.
701,894. BACHELOR HALL. Cl. 39.
701,896. ISLANDSTATE ETC. AND DESIGN. Cl. 39.
701,898. MR. BILL. Cl. 39.
701,900. FRAPPE. Cl. 39.
701,901. MINIFORM. Cl. 39.
701,907. RESERVE NEATNESS. Cl. 39.
701,924. INSTEMP. Cl. 44.
701,925. VITA-SSAGE. Cl. 44.
701,926. GEYSIR. Cl. 44.
701,927. PLATIL. Cl. 44.
701,937. RONI-DINNER. Cl. 46.
701,941. CHEF'S TREASURE. Cl. 46.
701,945. CHEF MARCO AND REPRESENTATIVE OF A CHEF. Cl. 46.
701,960. POLENE. Cl. 50.
701,965. MANI-DERM. Cl. 51.
701,967. LIQUA-LINER. Cl. 51.
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701,979. LSM. Cl. 51.
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701,988. TIFIT. Cl. 52.
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701,992. DEMOCRATIC MIDWEST CONFERENCE. Cl. 100.
701,993. DRI-BILT WITH PLYWOOD AND DESIGN. Cl. 101.
701,997. ULTRAMAR WW AND DESIGN. Cl. 102.
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701,732. TURBO-MITE. Cl. 23.
701,740. SNO-BERRY. Cl. 23.
701,745. GOLDEN GLORY. Cl. 23.
701,755. H AND DESIGN. Cl. 23.
701,756. RUBBA-FLEX. Cl. 23.
701,758. PORT-AIR ETC. AND DESIGN. Cl. 23.
701,764. K. Cl. 23.

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Insta Inc.
Accurate Shoe Machines, Inc., North Woburn, Mass. 814,937, pub. 6–28–66. Cl. 28.
Acme Cotton Products Co., Inc., Valley Stream, N.Y. 815,280. Cl. 44.
Adams Elevator Equipment Co., Chicago, Ill. 814,877, pub. 6–28–66. Cl. 21.
Addressograph-Multigraph Corp. : *See*—
American Multigraph Co., The.
Adell Chemical Co., Holyoke, Mass. 702,036, canc. Cl. 52.
Adler Silhouette Letter Co., Los Angeles, Calif. 814,820, pub. 6–28–66. Cl. 12.
Adler Silhouette Letter Co., Los Angeles, Calif. 815,121, pub. 6–28–66. Cl. 50.
Aero Home Products Mfg., Inc., Chicago, Ill. 815,042, pub. 6–28–66. Cl. 44.
Affiliated Laboratories, Inc., Kansas City, Mo. 815,134, pub. 6–28–66. Cl. 51.
Aida, Inc., Palm Beach, Fla. 701,979, canc. Cl. 51.
Aircoustic Co., Inc., San Francisco, Calif. 185,188, pub. 6–28–66. Cl. 108.
Alberto-Culver Co., Melrose Park, Ill. 814,789, pub. 6–28–66. Cl. 6.
Allen's Ltd. : *See*—
Walker, M. S., Inc.
Allied Chemical Corp. : *See*—
General Chemical Co.
Allied Resinous Products, Inc., Conneaut, Ohio. 814,753, pub. 6–28–66. Cl. 1.
Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. 815,248. Cl. 51.
Altantic Sportswear Inc., Rio Piedras, Puerto Rico. 701,893, canc. Cl. 39.
Amchem Products, Inc., Ambler, Pa. 814,796, pub. 6–28–66. Cl. 6.
American Beauty Macaroni Co., The: *See*—
American Beauty Macaroni Co.
American Beauty Macaroni Co., d.b.a. The American Beauty Macaroni Co., Kansas City, Kans. 701,937, canc. Cl. 46.
American Chemical Corp., Long Beach, Calif. 814,781, pub. 6–28–66. Cl. 6.
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American Diary Queen Corp., Minneapolis, Minn. 814,990, pub. 6–28–66. Cl. 34.
American Drill Bushing Co., Los Angeles, Calif. 814,946, pub. 6–28–66. Cl. 23.
American Home Products Corp., New York, N.Y. 815,182, pub. 6–28–66. Cl. 51.
American Home Products Corp., New York, N.Y. 815,150, pub. 6–28–66. Cl. 52.
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American Multigraph Co., The, to Addressograph-Multigraph Corp., Cleveland, Ohio. 57,904, ren. 9–13–66. Cl. 11.
American Radiator Co., East Orange, N.J., Chicago, Ill., New York, N.Y., Philadelphia, Pa., Boston, Mass., London, England, Paris, France, and Berlin, Germany, to American Radiator & Standard Sanitary Corp., New York, N.Y. 58,433, ren. 9–13–66. Cl. 34.
American Radiator & Standard Sanitary Corp. : *See*—
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American Rehabilitation Foundation, Inc., from Sister Elizabeth Kenny Foundation, Inc., d.b.a. Sister Elizabeth Kenny Foundation, Minneapolis, Minn. 815,159, pub. 6–28–66. Cl. 100.
American Vita-Ssage Products, Inc., Media, Pa. 701,925, canc. Cl. 44.
Ames Co., Inc. : *See*—
Miles Laboratories, Inc.
Anchor Industries, Inc., Cleveland, Ohio. 701,960, Canc. Cl. 50.
Anderson & Thompson Ski Co., Inc., Seattle, Wash. 814,922, pub. 6–28–66. Cl. 22.
Anstalt Kebo Technik, Schaan, Liechtenstein. 814,773, pub. 6–28–66. Cl. 3.
Apollo Freeze Dried : *See*—
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Appleton Electric Co., Chicago, Ill. 814,887, pub. 6–28–66. Cl. 21.
Archer-Daniels-Midland Co., Minneapolis, Minn. 814,800, pub. 6–28–66. Cl. 6.
Archer-Taylor Drug Co., The, Wichita, Kans. 814,849, pub. 6–28–66. Cl. 18.
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Athco Golf Mfg. Co. : *See*—
Bossi, Fred K., and Donald Jones.
Atlanta Sand & Supply Co., Atlanta, Ga. 814,762, pub. 6–28–66. Cl. 1.
Atlantic Products Corp., Trenton, N.J. 814,771, pub. 6–28–66. Cl. 3.
Atomic Energy Commission, Germantown, Md. 815,175, pub. 6–28–66. Cl. 101.
Audiger, Inc., Paterson, N.J. 701,727, canc. Cl. 22.
Auto Union G.m.b.H., Ingolstadt/Donau, Germany. 701,706, canc. Cl. 21.
Auto Wax Co., Inc., Dallas, Tex. 814,774, pub. 6–28–66. Multiple Class (Classes 4, 6, 16, and 52).
Autoclave Engineers, Inc., Erie, Pa. 814,986, pub. 6–28–66. Cl. 34.
Automatic Car Wash Systems, Inc., Youngstown, Ohio. 815,182, pub. 6–28–66. Cl. 101.
B & N Importers, Inc., New York, N.Y. 701,865, canc. Cl. 39.
Babbitt, B. T., Inc., New York, N.Y. 814,784, pub. 6–28–66. Multiple Class (Classes 6 and 52).
Bailey Meter Co., Wickliffe, Ohio. 814,969, pub. 6–28–66. Cl. 26.
Bankers Box Co., Franklin Park, Ill. 814,983, pub. 6–28–66. Cl. 32.
Basic Food Materials, Inc., Vermilion, Ohio. 815,064, pub. 6–28–66. Cl. 46.
Baxter Laboratories, Inc., Morton Grove, Ill. 815,041, pub. 6–28–66. Cl. 44.
Bayuk Cigars Inc., Philadelphia, Pa., from E. Regensburg & Sons, New York, N.Y. 814,843, pub. 6–28–66. Cl. 17.
Becton, Dickinson and Co., East Rutherford, N.J. 424,957, ren. 9–13–66. Cl. 44.
Bell Motel System, Inc., Lebanon, Mo. 815,168, pub. 6–28–66. Cl. 100.
Benham & Co., Inc., Mineola, Tex. 815,096, pub. 6–28–66. Cl. 46.
Bianco Fruit Corp., Fresno, Calif. 815,097, pub. 6–28–66. Cl. 46.
Billy Boy Co., The, New York, N.Y. 701,898, canc. Cl. 39.
Binks Mfg. Co., Chicago, Ill. 814,934, pub. 6–28–66. Cl. 23.
Blair Laboratories, Inc., Yonkers, N.Y. 814,857, pub. 6–28–66. Cl. 18.
Bohme Fettchemie, G.m.b.H., Dusseldorf-Holthausen, Germany. 814,801, pub. 6–28–66. Cl. 6.
Bohme Fettchemie, G.m.b.H., Dusseldorf-Holthausen, Germany. 814,802, pub. 6–28–66. Cl. 6.
Bossi, Fred K., and Donald Jones, d.b.a. Athco Golf Mfg. Co., Monticello, Ind. 814,910, pub. 6–28–66. Cl. 22.
Boston Gear Works : *See*—
Murray Co. of Texas, Inc., The.
Botell Ring Co., Inc., New York, N.Y. 814,974, pub. 6–28–66. Cl. 28.
Boyle Mfg. Co., Detroit, Mich. 814,896, pub. 6–28–66. Cl. 22.
Breddo-Food Products Corp., Inc., Kansas City, Kans. 815,098, pub. 6–28–66. Cl. 46.
Breuer, Karl, Ltd., and Hilde Breuer Ltd., d.b.a. Lilo-Rail of Canada, Toronto, Ontario, Canada. 814,822, pub. 6–28–66. Cl. 13.
Bright Star Industries, Inc., Clifton, N.J. 814,876, pub. 6–28–66. Cl. 21.
Brinkmann, Martin, A.G., Bremen, Germany. 814,845, pub. 6–28–66. Cl. 17.
Bristol-Myers Co., to Bristol-Myers Co., New York, N.Y. 218,801, ren. 9–13–66. Cl. 51.
Brown Medicine Co. : *See*—
Brown, William S.
Brown, William S., Rogersville, to O. L. Wall, Jr., d.b.a. Brown Medicine Co., Knoxville, Tenn. 57,208, ren. 9–13–66. Cl. 18.
Brunswick Corp., Chicago, Ill. 814,897, pub. 6–28–66. Cl. 22.
Buegeleisen & Jacobson, Inc., New York, N.Y. 702,010, canc. Cl. 36.
Buitoni Foods Corp., South Hackensack, N.J. 701,945, canc. Cl. 46.
Burks Bag Co., Inc., d.b.a. Triple A Feed Co., Springfield, Mo. 815,106, pub. 6–28–66. Cl. 46.
Burroughs Wellcome & Co (U.S.A.) Inc., Tuckahoe, N.Y. 701,683, canc. Cl. 18.
Buxton, Inc., Agawam, Mass. 815,206. Cl. 3.
Byerlyte Corp. : *See*—
Koppers Co., Inc.
C & M Garment Inc., Keshena, Wis. 701,871, canc. Cl. 39.
Cabot, Godfrey L., Inc., Boston, Mass. 701,552, canc. Cl. 1.
Cambridge Thermionic Corp., Cambridge, Mass. 814,895, pub. 6–28–66. Cl. 21.
Canada Packers Ltd., Toronto, Ontario, Canada. 814,859, pub. 6–28–66. Multiple Class (Classes 18 and 46).
Canfield Oil Co., Cleveland, Ohio. 701,580, canc. Cl. 1.
Carling Brewing Co. Inc., Cleveland, Ohio. 815,109, pub. 6–28–66. Cl. 48.
Castellucci, Nicholas, d.b.a. Mom's Pizza, Philadelphia, Pa. 815,046, pub. 6–28–66. Cl. 46.
Champion Textile Finishing Co., Chicago, Ill. 815,198, pub. 6–28–66. Cl. 106.
Champion Textile Finishing Co., Chicago, Ill. 815,199, pub. 6–28–66. Cl. 106.
Chance, A. B., Co., Centralia, Mo. 814,873, pub. 6–28–66. Cl. 21.
Chance Vought Aircraft, Inc., Dallas, Tex. 701,710, canc. Cl. 21.

Chautauqua Cabinet Co., d.b.a. Kling Factories, Mayville, N.Y. 701,813, canc. Cl. 32.
Chehalis Packing Co.: *See*—
National Fruit Canning Co.
Chem-Flow Corp., Lodi, N.J. 701,807, canc. Cl. 31.
Chemical Associates, Inc., Houston, Tex. 814,776, pub. 6–28–66. Cl. 4.
Chesebrough-Pond's Inc.: *See*—
Prince Matchabelli, Inc.
Childers Products Co.: *See*—
Smith Products, Inc.
Chiplets, Inc., New York, N.Y. 420,479, ren. 9–13–66. Cl. 23.
Chordcraft Publishing Co.: *See*—
Engblom, Verne A.
Christians, H. C., Co., Chicago, Ill. 58,642, ren. 9–13–66. Cl. 46.
Churchill Chemical Co., Galesburg, Ill. 815,151, pub. 6–28–66. Cl. 52.
Church's Fried Chicken, Inc., San Antonio, Tex. 815,076, pub. 6–28–66. Cl. 46.
Cincinnati Shaper Co., The, Cincinnati, Ohio. 814,939, pub. 6–28–66. Cl. 23.
Clack Corp., Madison, Wis. 814,782, pub. 6–28–66. Cl. 6.
Clairol Inc., New York, N.Y. 815,153, pub. 6–28–66. Cl. 52.
Clark Thread Co., The, Newark, N.J., to Coats & Clark Inc., New York, N.Y. 57,777, ren. 9–13–66. Cl. 43.
Cleveland Kegler, The: *See*—
Levine, Sam.
Coastline Trailers Inc., El Monte, Calif. 701,693, canc. Cl. 19.
Coates Bros. Co. Inc., Garfield, N.J. 814,929, pub. 6–28–66. Cl. 23.
Coats & Clark Inc.: *See*—
Clark Thread Co., The.
Colbeck, Raymond: *See*—
Davis, Denis Corrin, and Raymond Colbeck.
Colby, Elinor A.: *See*—
Colby & McDermott.
Colby, John P.: *See*—
Colby & McDermott.
Colby & McDermott, to Joseph McDermott and Edna McDermott, and John P. Colby and Elinor A. Colby, Los Angeles, Calif. 218,495, ren. 9–13–66. Cl. 46.
Cole, Ruth, Inc., Arlington, Vt. 702,033, canc. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 815,139, pub. 6–28–66. Cl. 51.
Collier Industries: *See*—
Armour & Co.
Colortone Inc., Washington, D.C. 815,200, pub. 6–28–66. Cl. 107.
Commercial Products Co., Inc., The, Benson East, Jenkintown, Pa. 814,792, pub. 6–28–66. Cl. 6.
Commercial Products Co., Inc., The, Jenkintown, Pa. 814,793, pub. 6–28–66. Cl. 6.
Conchemco Inc., Kansas City, Mo. 814,841, pub. 5–10–66. Cl. 16.
Congoleum-Nairn Inc., Kearny, N.J. 815,211. Cl. 20.
Consolidated Cigar Corp., New York, N.Y. 814,844, pub. 6–28–66. Cl. 17.
Consolidated Freightways Corp. of Delaware, Menlo Park, Calif. 815,192, pub. 6–28–66. Cl. 105.
Continental Baking Co., Rye, N.Y. 815,232. Cl. 46.
Continental Can Co., Inc., New York, N.Y. 424,864, ren. 9–13–66. Cl. 23.
Continental Can Co., Inc., New York, N.Y. 815,236. Cl. 50.
Continental Drug Co., from Norman Sober, d.b.a. Ennis Drug Co., Baltimore, Md. 701,674, canc. Cl. 18.
Continental Screw Co., New Bedford, Mass. 814,826, pub. 6–28–66. Cl. 13.
Contour Beauty Aids, Ltd., New York, N.Y. 815,225. Cl. 50.
Correct Craft, Inc., Orlando, Fla. 815,006, pub. 6–28–66. Cl. 38.
Cosmetics Mfg. Co., d.b.a. Legacy, Long Beach, Calif. 815,141, pub. 6–28–66. Cl. 51.
Coty, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 422,024, ren. 9–13–66. Cl. 51.
Coty, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 422,579, ren. 9–13–66. Cl. 51.
Coty, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 423,781, ren. 9–13–66. Cl. 51.
Coty, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 425,548, ren. 9–13–66. Cl. 51.
Cowles Communications, Inc., New York, N.Y., from Bernard E. Gobel, San Carlos, Calif. 815,001, pub. 6–28–66. Cl. 38.
Craig Instrument Corp., Long Branch, N.J. 701,924, canc. Cl. 44.
Creative Toys: *See*—
Crowder, William E.
Creek Chub Bait Co., The, Garrett, Ind. 814,896, pub. 6–28–66. Cl. 22.
Cromwell Paper Co., The, Chicago, Ill. 814,999, pub. 6–28–66. Cl. 37.
Crosby Electronics, Inc., Syosset, N.Y. 701,830, canc. Cl. 36.
Crosby Electronics, Inc., Syosset, N.Y. 701,832, canc. Cl. 36.
Crowder, William E., d.b.a. Creative Toys, Mount Wolf, Pa. 807,080, canc. Cl. 22.
Crown Zellerbach Corp., San Francisco, Calif. 814,759, pub. 6–28–66. Cl. 1.
Crystal Research Laboratories, Inc., Hartford, Conn. 814,790, pub. 6–28–66. Cl. 6.
Curacao Laboratories, Ltd., Curacao, Netherlands Antilles. 815,237. Cl. 51.
Curlon, Gene, Silver Spring, Md. 815,116, pub. 6–28–66. Cl. 49.
Curtiss-Wright Corp., Santa Barbara, Calif. 701,732, canc. Cl. 23.
D.G.S., Inc., Chicago, Ill. 815,170, pub. 6–28–66. Cl. 101.
Dainippon Bicycle Mfg. Co., Ltd., Taito-ku, Tokyo, Japan. 701,687, canc. Cl. 19.
Dalcali Co., The, Verona, N.J. 814,994, pub. 6–28–66. Cl. 37.
Dan Dee Pretzel & Potato Chip Co., The, Cleveland, Ohio. 815,058, pub. 6–28–66. Cl. 46.
Davis & Colbeck: *See*—
Davis, Denis Corrin, and Raymond Colbeck.
Davis, Denis Corrin, and Raymond Colbeck, d.b.a. Davis & Colbeck, Eckington, Pershore, England. 815,040, pub. 6–28–66. Cl. 44.
Dawe's Laboratories, Inc.: *See*—
Frez-O-Mat Co.
Daystrom, Inc., Murray Hill, N.J. 701,849, canc. Cl. 38.
Dayton Perforators Inc., Dayton, Ohio. 815,004, pub. 6–28–66. Cl. 38.
Dean Foods Co., Franklin Park, Ill. 815,080, pub. 6–28–66. Cl. 46.
Debeer, J., & Son, Inc., Albany, N.Y. 814,923, pub. 6–28–66. Cl. 22.
Dee, H. Paul, d.b.a. Paul Dee Co., Marshalltown, Iowa. 814,811, pub. 6–28–66. Cl. 7.
Dee, Paul, Co.: *See*—
Dee, H. Paul.
Deering Milliken, Inc.: *See*—
Pacolet Mfg. Co.
Defilibbis, Anthony C., d.b.a. Mani-Derm Co., Stamford, Conn. 701,965, canc. Cl. 51.
De Luze, A., & Fils, Societe Anonyme: *See*—
De Luze, A., & Fils.
De Luze, A., & Fils, to A. De Luze & Fils, Societe Anonyme, Bordeaux, France. 54,082, ren. 9–13–66. Cl. 47.
De Markus, Louis, Corp., Buffalo, N.Y. 701,820, canc. Cl. 34.
Demert & Dougherty, Inc., Chicago, Ill. 701,664, canc. Cl. 16.
Democratic Midwest Conference, Des Moines, Iowa. 701,992, canc. Cl. 100.
Denoyer-Geppert Co., Chicago, Ill. 814,964, pub. 6–28–66. Multiple Class (Classes 26 and 38).
Demaris, George, Pittsburgh, Pa. 815,089, pub. 6–28–66. Cl. 46.
Diamond Alkali Co., Cleveland, Ohio. 814,798, pub. 6–28–66. Cl. 6.
Diamond Alkali Co., Cleveland, Ohio. 815,152, pub. 6–28–66. Cl. 52.
Diamond National Corp., New York, N.Y. 701,851, canc. Cl. 38.
Diedre Products, Inc., Forest Hills, N.Y. 701,967, canc. Cl. 51.
Dilectrix Corp., Farmingdale, N.Y. 814,838, pub. 6–28–66. Cl. 15.
Discovery Cosmetics, Inc.: *See*—
Sudel, Inc.
Distributors East, Inc., New York, N.Y. 701,598, canc. Cl. 5.
Dr. Plate, G.m.b.H., Bonn, Germany. 701,927, canc. Cl. 44.
Douglas Fir Plywood Association, Tacoma, Wash. 701,993, canc. Cl. 101.
Douglas Recordings Co.: *See*—
Rice, Douglas G.
Drambuie Liqueur Co., Ltd., The, Edinburgh, Scotland. 815,117, pub. 6–28–66. Cl. 49.
Drilling Specialties Co., Bartlesville, Okla. 814,756, pub. 6–28–66. Cl. 1.
Drilling Specialties Co., Bartlesville, Okla. 814,783, pub. 6–28–66. Cl. 6.
Drew Chemical Corp., New York, N.Y. 815,079, pub. 6–28–66. Cl. 46.
Dubrows Seventh Co., New York, N.Y. 815,162, pub. 6–28–66. Cl. 100.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 814,760, pub. 6–28–66. Cl. 1.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 814,761, pub. 6–28–66. Cl. 1.
Dur-E-Con Co.: *See*—
Kerr Chemicals, Inc.
E.C. Industries, Inc., Vernon, N.Y. 814,933, pub. 6–28–66. Cl. 23.
Eagle Bros., Inc., New York, N.Y. 701,894, canc. Cl. 39.
Eagle Lock Corp., Terryville, Conn. 814,959, pub. 6–28–66. Cl. 25.
Eagle-Picher Co., The, Cincinnati, Ohio. 814,883, pub. 6–28–66. Cl. 21.
Eastern Handicraft Supply Co., Inc., d.b.a. Totem Slides, New York, N.Y. 815,226. Cl. 40.
Edlin, A. J., Mfg. Co., Inc., St. Louis, Mo. 701,860, canc. Cl. 39.
Elder & Jenks, Inc., Philadelphia, Pa. 701,804, canc. Cl. 29.
Electric Cleaner Co., Inc., Osseo, Wis. 814,875, pub. 6–28–66. Cl. 21.
Electro-Mech Corp., Wrightsville, Ga. 814,869, pub. 6–28–66. Cl. 21.
Electronic Administrative Services, Inc., San Jose, Calif. 815,179, pub. 6–28–66. Cl. 101.
Electronic Administrative Services, Inc., San Jose, Calif. 815,180, pub. 6–28–66. Cl. 101.
Emhart Corp.: *See*—
Russell & Erwin Mfg. Co.
Engblom, Verne A., d.b.a. Chordcraft Publishing Co., Skokie, Ill. 815,220. Cl. 38.
Ennis Drug Co.: *See*—
Continental Drug Co.
Eriez Mfg. Co., Erie, Pa. 701,991, canc. Cl. 100.
Euclid Spiral Paper Tube Corp., Cleveland, Ohio. 815,205. Cl. 2.

Euphrates Bakery, Inc., Watertown, Mass. 815,094, pub. 6–28–66. Cl. 46.
Exprinter Travel Service, Inc., New York, N.Y. 702,037, canc. Cl. 100.
Fairmont Foods Co., Omaha, Nebr. 815,090, pub. 6–28–66. Cl. 46.
Fairmont Foods Co., Omaha, Nebr. 815,099, pub. 6–28–66. Cl. 46.
Fairy Mills, Inc., from Fairy Silk Mills Inc., Shillington, Pa. 701,853, canc. Cl. 39.
Fairy Silk Mills Inc.: *See*—
Fairy Mills Inc.
Fallbrook of California, Glendora, Calif. 815,018, pub. 6–28–66. Cl. 39.
Family Foods, Inc., Greensboro, N.C. 815,053, pub. 6–28–66. Cl. 46.
Fear, Fred, & Co.: *See*—
HCA Food Corp.
Fields Plastics & Chemicals, Inc., New York, N.Y. 814,763, pub. 6–28–66. Cl. 1.
Fieldson Associates, Inc., Deerfield, Ill. 815,120, pub. 6–28–66. Cl. 51.
Fife Mfg. Co., Oklahoma City, Okla. 814,966, pub. 6–28–66. Cl. 26.
Finch & Knight Ltd., Moorgate, London, England. 814,814, pub. 6–28–66. Cl. 10.
Finish Engineering Co., Inc., Erie, Pa. 814,940, pub. 6–28–66. Cl. 23.
Fletcher, Dennis H., d.b.a. Sno-Berry Products & Equipment Co., Sacramento, Calif. 701,740, canc. Cl. 23.
Flintkote Co., The, New York, N.Y. 814,821, pub. 6–28–66. Cl. 12.
Flintkote Co., The, New York, N.Y. 814,867, pub. 6–28–66. Cl. 20.
Foley-Irish Corp., The, Brooklyn, N.Y. 702,003, canc. Cl. 2.
Food Corp. of America, Inc., d.b.a. Plymouth Rock Provision Co., New York, N.Y. 815,083, pub. 6–28–66. Cl. 46.
Ford Motor Co., Dearborn, Mich. 701,694, canc. Cl. 19.
Foreman, Henry: *See*—
Foreman, William H.
Foreman, William H., d.b.a. Henry Foreman, Fresno, Calif. 815,072, pub. 6–28–66. Cl. 46.
Foretell, Inc., Houston, Tex. 814,803, pub. 6–28–66. Cl. 6.
Frank Tea & Spice Co., The, Cincinnati, Ohio. 815,070, pub. 6–28–66. Cl. 46.
Franksville, Inc., Chicago, Ill. 815,049, pub. 6–28–66. Cl. 46.
Frez-O-Mat Co., to Dawe's Laboratories, Inc., Chicago, Ill. 419,747, ren. 9–13–66. Cl. 31.
Frick-Gallagher Mfg. Co., The, Wellston, Ohio. 814,982, pub. 6–28–66. Cl. 32.
Friedman, Abe A., Augusta, Ga. 425,945, ren. 9–13–66. Cl. 28.
Frink, Raymond M., d.b.a. Frink Sales Co., Honolulu, Hawaii. 701,831, canc. Cl. 36.
Fritzsche Bros., Inc., New York, N.Y. 815,065, pub. 6–28–66. Cl. 46.
Fry-Rite Distributors: *See*—
Interstate Potato Packers Corp.
Fun in the Sun of Florida, Inc., Coral Gables, Fla. 701,723, canc. Cl. 22.
G & M Foods Corp., Quincy, Mass. 815,061, pub. 6–28–66. Cl. 46.
Garneau, John P., Clarion, Pa. 815,163, pub. 6–28–66. Cl. 100.
Garneau, John P., Clarion, Pa. 815,166, pub. 6–28–66. Cl. 100.
Gaumond, Joannes, Paris, France. 701,642, canc. Cl. 13.
Geigy Chemical Corp., Ardsley, N.Y. 814,805, pub. 6–28–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 814,806, pub. 6–28–66. Cl. 6.
Gemco Mfg. Corp., Indianapolis, Ind. 814,767, pub. 6–28–66. Cl. 2.
Gemco-Ware, Inc., Jamaica, N.Y. 814,985, pub. 6–28–66. Cl. 33.
General Aniline & Film Corp.: *See*—
General Dyestuff Corp.
General Bearing Co., Inc., West Nyack, N.Y. 814,827, pub. 6–28–66. Cl. 13.
General Chemical Co., to Allied Chemical Corp., New York, N.Y. 215,759, ren. 9–13–66. Cl. 6.
General Dyestuff Corp., to General Aniline & Film Corp., New York, N.Y. 422,593, ren. 9–13–66. Cl. 6.
General Refractories Co., Philadelphia, Pa. 422,618, ren. 9–13–66. Cl. 12.
General Press Corp., Tarentum, Pa. 815,171, pub. 6–28–66. Cl. 101.
General Synod of the United Church of Christ, The, New York, N.Y. 815,164, pub. 6–28–66. Cl. 100.
General Wig Manufacturers, Inc., Miami, Fla. 815,029, pub. 6–28–66. Cl. 40.
General Wig Manufacturers, Inc., Miami, Fla. 815,031, pub. 6–28–66. Cl. 40.
General Wig Manufacturers, Inc., Miami, Fla. 815,036, pub. 6–28–66. Cl. 40.
Genesco Inc., Nashville, Tenn. 815,019, pub. 6–28–66. Cl. 39.
Genesco Inc., Nashville, Tenn. 815,020, pub. 6–28–66. Cl. 39.
Genesco Inc., Nashville, Tenn. 815,021, pub. 6–28–66. Cl. 39.
Genesco Inc., Nashville, Tenn. 815,023, pub. 6–28–66. Cl. 39.
German American Trading Co.: *See*—
Zipperman, Pauline.
Gibbs, Ed, Inc., New York, N.Y. 815,157, pub. 6–28–66. Cl. 100.
Girard Perregaux & Cie, S.A.: *See*—
Sussman & Medney.
Glamorise Foundations, Inc., New York, N.Y. 815,221. Cl. 39.
Globe Superior, Inc., Greensboro, N.C. 815,022, pub. 6–28–66. Cl. 39.
Goldmeier, Larry, Associates, Inc., New York, N.Y. 814,863, pub. 6–28–66. Cl. 19.
Goldstein, Morris L., d.b.a. Grzebin, Los Angeles, Calif. 701,883, canc. Cl. 39.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 701,824, canc. Cl. 35.
Gotham Pressed Steel Corp., New York, N.Y. 814,902, pub. 6–28–66. Cl. 22.
Grapette Co., Inc., The, Camden, Ark. 815,231. Cl. 45.
Griffin, Ben Hill, Inc., Frostproof, Fla. 815,062, pub. 6–28–66. Cl. 46.
Grober Products Corp., New York, N.Y. 815,100, pub. 6–28–66. Cl. 46.
Grzebin: *See*—
Goldstein, Morris L.
Gulf Oil Corp., Pittsburgh, Pa. 814,989, pub. 6–28–66. Cl. 34.
Guncraft: *See*—
Plaja, Joe.
Gwaltney Inc., Smithfield, Va. 815,084, pub. 6–28–66. Cl. 46.
HCA Food Corp., Baltimore, Md., from Fred Fear & Co., Brooklyn, N.Y. 815,073, pub. 4–19–66. Cl. 46.
H & M Sportswear, Inc., New Bedford, Mass. 701,873, canc. Cl. 39.
Hale, Lillian T., d.b.a. Hale Products Co., Brookline Village, Mass. 815,082, pub. 6–28–66. Cl. 46.
Hale Products Co.: *See*—
Hale, Lillian T.
Halkey-Roberts Corp., Paramus, N.J. 814,830, pub. 6–28–66. Cl. 13.
Hall, Leonard I., Rochester, N.Y. 814,952, pub. 6–28–66. Cl. 23.
Hamilton, A. C., Jr., Dallas, Tex. 701,625, canc. Cl. 12.
Hamilton, Alexander, Life Insurance Co., Denver, Colo. 815,184, pub. 6–28–66. Cl. 102.
Hannum, R. M., & Co.: *See*—
Hannum, R. M.
Hannum, R. M., d.b.a. R. M. Hannum & Co., Cleveland, Ohio. 701,755, canc. Cl. 23.
Harbison-Walker Refractories Co., Pittsburgh, Pa. 701,635, canc. Cl. 12.
Hardman, Peck & Co.: *See*—
Harrington, E. G., Co.
Hardman, Peck & Co., New York, N.Y. 59,163, ren. 9–13–66. Cl. 36.
Harold Fish Co., Inc., New York, N.Y. 815,102, pub. 6–28–66. Cl. 46.
Harrington, E. G., Co., to Hardman, Peck & Co., New York, N.Y. 59,100, ren. 9–13–66. Cl. 36.
Harris Press & Shear Corp., Cordele, Ga. 814,950, pub. 6–28–66. Cl. 23.
Harry & David, Medford, Oreg. 815,056, pub. 6–28–66. Cl. 46.
Haslett, John A., d.b.a. John A. Haslett, Los Angeles, Calif. 814,765, pub. 6–28–66. Cl. 2.
Havapak Corp., Brooklyn, N.Y. 815,071, pub. 6–28–66. Cl. 46.
Heering, Peter F.: *See*—
Heering, Peter F. S.
Heering, Peter F. S., d.b.a. Peter F. Heering, Copenhagen, Denmark. 815,112, pub. 6–28–66. Cl. 49.
Hein-Werner Corp., Waukesha, Wis. 814,955, pub. 6–28–66. Cl. 23.
Hein-Werner Corp., Waukesha, Wis. 814,956, pub. 6–28–66. Cl. 23.
Heitz, K., Import Co.: *See*—
Heitz, Karl.
Heitz, Karl, d.b.a. K. Heitz Import Co., New York, N.Y. 814,968, pub. 6–28–66. Cl. 26.
Henrose Co., Inc., The, New York, N.Y. 422,625, ren. 9–13–66. Cl. 42.
Heritage Plastics Inc., Inwood, N.Y. 814,878, pub. 6–28–66. Cl. 21.
Herrington, Wayne R., Wichita, Kans. 701,990, canc. Cl. 100.
Hertz System, Inc., New York, N.Y. 815,190, pub. 6–28–66. Cl. 105.
Heyer Industries Inc., Belleville, N.J. 701,784, canc. Cl. 26.
High Vacuum Equipment Corp., Hingham, Mass. 814,924, pub. 6–28–66. Cl. 23.
Hillyard Chemical Co., to Hillyard Enterprises, Inc., St. Joseph, Mo. 425,299, ren. 9–13–66. Cl. 16.
Hillyard Enterprises, Inc.: *See*—
Hillyard Chemical Co.
Hinde & Dauch Paper Co., The, Sandusky, Ohio, to West Virginia Pulp and Paper Co., New York, N.Y. 425,781, ren. 9–13–66. Cl. 37.
Hi-Vi Dog Food Co., Rush Springs, Okla. 815,067, pub. 6–28–66. Cl. 46.
Hoak, D. R., d.b.a. West Coast Growers & Packers, Fresno, to West Coast Growers & Packers, Inc., Selma, Calif. 426,568, ren. 9–13–66. Cl. 46.
Hock, Howard P.: *See*—
Hock, Phil J.
Hock, Phil J., & Co.: *See*—
Hock, Phil J.
Hock, Phil J., Jr.: *See*—
Hock, Phil J.
Hock, Phil J., d.b.a. Phil. J. Hock & Co., to Phil J. Hock, Jr. and Howard P. Hock, d.b.a. Phil J. Hock & Co., Cincinnati, Ohio. 222,004, ren. 9–13–66. Cl. 46.

Holliday Line, Inc., The, New York, N.Y. 701,810, canc. Cl. 32.
Holland-Suco Color Co., Holland, Mich. 814,788, pub. 6-28-66. Multiple Class (Classes 6 and 11).
Hovis Ltd., London, England. 219,747, ren. 9-13-66. Cl. 46.
Hudnut, Richard: *See*—
Associated Products, Inc.
Hudnut, Richard, Morris Plains, N.Y. 815,128, pub. 6-28-66. Cl. 51.
Humble Oil & Refining Co., Houston, Tex. 814,817, pub. 6-28-66. Cl. 10.
Hunt, Philip A., Chemical Corp., Palisades Park, N.J. 815,156, pub. 6-28-66. Cl. 52.
ICB Internationale Container Bau G.m.b.H. & Co., Glashuette, near Hamburg, Germany. 814,862, pub. 6-28-66. Cl. 19.
Ideal Toy Corp., Hollis, N.Y. 814,911, pub. 6-28-66. Cl. 22.
Illinois Tool Works Inc., Chicago, Ill. 814,927, pub. 6-28-66. Cl. 23.
Imperial Chemical Industries Ltd., London, England. 814,891, pub. 6-28-66. Cl. 21.
Indiana Metal Products Co.: *See*—
Textron Industries, Inc.
Ingersoll-Rand Co., New York, N.Y. 814,945, pub. 6-28-66. Cl. 23.
Inland Express, Inc., Marlborough, Mass. 815,193, pub. 6-28-66. Cl. 105.
Insta Inc., from Abele-Brodbeck Co., Inc., Seattle, Wash. 815,047, pub. 6-27-66. Cl. 46.
Interelectronics Corp., New York, N.Y. 701,709, canc. Cl. 21.
International Silver Co., The: *See*—
International Silver Co.
International Silver Co., to The International Silver Co., Meriden, Conn. 57,458, ren. 9-13-66. Cl. 28.
International Artware Corp., Cleveland, Ohio. 814,976, pub. 6-28-66. Cl. 30.
International Assemblix Corp., Toledo, Ohio. 815,122, pub. 6-28-66. Cl. 50.
International Paper Co., New York, N.Y. 814,926, pub. 6-28-66. Cl. 23.
International Window Corp., Monterey Park, Calif. 815,208. Cl. 12.
Interstate Folding Box Co., The, Middletown, Ohio. 814,935, pub. 6-28-66. Cl. 23.
Interstate Potato Packers Corp., d.b.a. Fry-Rite Distributors, Boise, Idaho. 815,105, pub. 6-28-66. Cl. 46.
Invincible Products Corp., Chicago, Ill. 815,144, pub. 6-28-66. Cl. 51.
Isaacson-Carrico Mfg. Co., El Campo, Tex. 814,975, pub. 6-28-66. Cl. 28.
Iversen Baking Co., Chicago, Ill. 815,060, pub. 6-28-66. Cl. 46.
Jauco Industries, Inc., Clayton, Mo. 701,728, canc. Cl. 22.
Jenny & Cie SA Fabrique d'Horlogerie, Lengnau, Bern, Switzerland. 814,973, pub. 6-28-66. Cl. 27.
Jordan Builders, Inc., d.b.a. Jordan, Inc., Austin, Minn. 701,692, canc. Cl. 19.
Jordan, Inc.: *See*—
Jordan Builders, Inc.
Joslyn Mfg. Co., Inc., The, Macedonia, Ohio. 701,756, canc. Cl. 23.
Kahn's, E., Sons Co., The, Cincinnati, Ohio. 216,077, ren. 9-13-66. Cl. 46.
Kaltman, Samuel, d.b.a. Mutual Spice Co., North Bergen, N.J. 701,841, canc. Cl. 46.
Kanner, Joseph, Hat Co., Inc., South Norwalk, Conn. 701,880, canc. Cl. 39.
Kanner, Joseph, Hat Co., Inc., South Norwalk, Conn. 815,025, pub. 6-28-66. Cl. 39.
Kelly, Charles Scott, and David Kelly, d.b.a. Pixy Farm, Hudson, Wis. 815,052, pub. 6-28-66. Cl. 46.
Kelly, David: *See*—
Kelly, Charles Scott, and David Kelly.
Kelsey-Hayes Co., Detroit, Mich. 701,657, canc. Cl. 14.
Kendall Co., The, Walpole, Mass. 814,861, pub. 6-28-66. Cl. 18.
Kentucky Fried Chicken Corp., Shelbyville, Ky. 815,167, pub. 6-28-66. Cl. 100.
Kerr Chemicals, Inc., d.b.a. The Dur-E-Con Co., Des Plaines, Ill. 701,668, canc. Cl. 16.
Kidde, Walter, & Co., Inc., Belleville, N.J. 814,930, pub. 6-28-66. Cl. 23.
Kimberly-Clark Corp., Neenah, Wis. 814,996, pub. 6-28-66. Cl. 37.
Kinemotive Corp., Farmingdale, N.Y. 814,962, pub. 6-28-66. Cl. 26.
Kinemotive Corp., Farmingdale, N.Y. 814,963, pub. 6-28-66. Cl. 26.
Kleer-vu Industries, Inc., New York, N.Y. 815,034, pub. 6-28-66. Cl. 40.
Kleer-vu Industries, Inc., New York, N.Y. 815,035, pub. 6-28-66. Cl. 40.
Kling Factories: *See*—
Chautauqua Cabinet Co.
Knott's Berry Farm, Buena Park, Calif. 815,095, pub. 6-28-66. Cl. 46.
Knott's Berry Farm, Buena Park, Calif. 815,233. Cl. 46.
Koppers Co., Inc., Pittsburgh, Pa., from Byerlyte Corp., Cleveland, Ohio. 814,840, pub. 6-28-66. Cl. 16.
Korody, Paul A., d.b.a. Apollo Freeze Dried, Hawthorne, Calif. 815,045, pub. 6-28-66. Cl. 46.
Kresge, S. S., Co., Detroit, Mich. 702,011, canc. Cl. 38.
Kress, S. H., and Co., New York, N.Y. 701,764, canc. Cl. 23.
LPF Plastics Corp., Kansas City, Mo. 814,972, pub. 6-28-66. Cl. 26.
Ltv Ling Altec, Inc., Anaheim, Calif. 814,888, pub. 6-28-66. Cl. 21.
Lake Chemical Co., Chicago, Ill. 814,992, pub. 6-28-66. Cl. 34.
Lambert Frame and Picture Co., Inc., Brooklyn, N.Y. 815,216. Cl. 32.
Lamour Hair Products, Inc., Bronx, N.Y. 815,238. Cl. 51.
La Resista Corset Co., The, Bridgeport, Conn. 701,852, canc. Cl. 39.
Larus & Brother Co., Richmond, Va. 814,846, pub. 6-28-66. Cl. 17.
Lascor, Inc., Bethesda, Md. 814,899, pub. 6-28-66. Cl. 22.
Lascor, Inc., Bethesda, Md. 814,900, pub. 6-28-66. Cl. 22.
Lauder, Estee, Inc., New York, N.Y. 815,143, pub. 6-28-66. Cl. 51.
Law Engineering Testing Co., Atlanta, Ga. 815,158, pub. 6-28-66. Cl. 100.
Lawn Products Corp. of America, Chicago, Ill. 701,602, canc. Cl. 6.
Le-Co-Therm: *See*—
Lefmann, Emma.
Lefmann, Emma, d.b.a. Le-Co-Therm, Erlangen, Germany. 701,926, canc. Cl. 44.
Legacy: *See*—
Cosmetics Mfg. Co.
Lehrman, Louis, & Son, Inc.: *See*—
Lehrman, Louis, & Son.
Lehrman, Louis, & Son, Harrisburg, Pa., to Louis Lehrman & Son, Inc., Shiremanstown, Pa. 421,186, ren. 9-13-66. Cl. 46.
Leitz, Ernst, G.m.b.H., Wetzlar/Lahn, Germany. 814,960, pub. 6-28-66. Cl. 26.
Les Parfums Sterle, Paris, France. 815,133, pub. 6-28-66. Multiple Class (Classes 51 and 52).
Lever Brothers Co., New York, N.Y. 815,149, pub. 6-28-66. Cl. 52.
Levine, Sam, d.b.a. The Cleveland Kegler, Cleveland, Ohio. 815,003, pub. 6-28-66. Cl. 38.
Libbey-Owens-Ford Glass Co., Toledo, Ohio. 814,864, pub. 6-28-66. Cl. 19.
Liberty & Co. Ltd.: *See*—
Liberty Silk Co.
Liberty Silk Co., New York, N.Y., to Liberty & Co. Ltd., London, England. 32,153, ren. 9-13-66. Cl. 42.
Lilo-Rail of Canada: *See*—
Breuer, Karl, Ltd., and Hilde Breuer Ltd.
Lindberg Products, Inc., Skokie, Ill. 814,906, pub. 6-28-66. Cl. 22.
Linear Alpha, Inc., Evanston, Ill. 814,881, pub. 6-28-66. Cl. 21.
Link-Belt Co., Chicago, Ill. 815,213. Cl. 23.
Lipton, Thomas J., Inc., Englewood Cliffs, N.J. 815,101, pub. 6-28-66. Cl. 46.
Lisk Fly Mfg. Co., Greensboro, N.C. 814,901, pub. 6-28-66. Cl. 22.
Lisle Mills Co., Allentown, Pa. 815,016, pub. 6-28-66. Cl. 39.
Lithographers and Photoengravers International Union, New York, N.Y. 815,204, pub. 6-28-66. Cl. A.
Logan, Herschel C., Salina, Kans. 815,008, pub. 6-28-66. Cl. 38.
Long, S. N., Warehouses, Inc., St. Louis, Mo. 815,194, pub. 6-28-66. Cl. 105.
Loomis, George, & Sons: *See*—
Loomis, George E., & Sons.
Loomis, George E., & Sons, d.b.a. George Loomis & Sons, Hemet, Calif. 701,560-1, canc. Cl. 1.
L'Oreal, Societe Anonyme, Paris, France. 815,137, pub. 6-28-66. Cl. 51.
Lucas, Erven, Bols Inc., Fair Lawn, N.J. 815,114, pub. 6-28-66. Cl. 49.
MSL Industries, Inc., Chicago, Ill. 815,148, pub. 6-28-66. Cl. 52.
M & T Chemical Inc.: *See*—
United Chromium, Inc.
Maiden Form Brassiere Co., Inc., New York, N.Y. 701,900-1, canc. Cl. 39.
Mallinckrodt Chemical Works, St. Louis, Mo. 814,804, pub. 6-28-66. Cl. 6.
Mandell, Phyllis, Williamsville, Vt. 815,017, pub. 6-28-66. Cl. 39.
Manhattan Floor Supplies: *See*—
Wirsing, Arthur O.
Manhattan Shirt Co., The, New York, N.Y. 701,907, canc. Cl. 39.
Mani-Derm Co.: *See*—
Defibbis, Anthony C.
Maradel Products, Inc., New York, N.Y. 815,124, pub. 6-28-66. Cl. 51.
Maradel Products, Inc., Farmingdale, N.Y. 815,140, pub. 6-28-66. Cl. 51.
Marion Laboratories, Inc., Kansas City, Mo. 814,855, pub. 6-28-66. Cl. 18.
Marlan Co., Chicago, Ill. 815,119, pub. 6-28-66. Cl. 50.
Marriott-Hot Shoppes, Inc., Washington, D.C. 815,077, pub. 6-28-66. Cl. 46.
Master Trouser Corp., New York, N.Y. 815,024, pub. 6-28-66. Cl. 39.
Mattel, Inc., Hawthorne, Calif. 814,912, pub. 6-28-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,913, pub. 6-28-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,914, pub. 6-28-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,915, pub. 6-28-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,916, pub. 6-28-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,917, pub. 6-28-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,918, pub. 6-28-66. Cl. 22.

Mattel, Inc., Hawthorne, Calif. 814,919, pub. 6-28-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,920, pub. 6-28-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,921, pub. 6-28-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 814,995, pub. 6-28-66. Cl. 37.
Max The Printer: *See*—
Max The Printer, Inc.
Max The Printer, Inc., from J. M. Smith, d.b.a. Max The Printer, Indianapolis, Ind. 815,178, pub. 6-28-66. Cl. 101.
Mayer, Oscar, & Co., Inc., Chicago, Ill. 815,069, pub. 6-28-66. Cl. 46.
McDermott, Edna: *See*—
Colby & McDermott.
McDermott, Joseph: *See*—
Colby & McDermott.
Meier's Wine Cellars, Inc., Silverton, Ohio. 815,108, pub. 6-28-66. Cl. 47.
Meinecke & Co., Inc.: *See*—
Seneca, Stephen J.
Mennen Co., The, Morristown, N.J. 815,131, pub. 6-28-66. Cl. 51.
Mennen-Greatbatch, from Wilson Greatbatch, Inc., Clarence, N.Y. 815,228. Cl. 44.
Mennen-Greatbatch Electronics, Inc., Clarence, N.Y. 815,229. Cl. 44.
Mennonite Publishing House, Inc., The, d.b.a. Provident Bookstore, Scottdale, Pa. 815,118, pub. 6-28-66. Multiple Class (Classes 50 and 101).
Mercantile Security Life Insurance Co., Dallas, Tex. 815,183, pub. 6-28-66. Cl. 102.
Merrill, Steve, Distributors, Miami, Fla. 815,028, pub. 6-28-66. Cl. 40.
Metal Blast, Inc., Cleveland, Ohio. 814,775, pub. 6-28-66. Cl. 4.
Metro/Kalvar, Inc., New York, N.Y. 814,970, pub. 6-28-66. Cl. 26.
Michigan Tool Co., Detroit, Mich. 814,794, pub. 6-28-66. Cl. 6.
Micklitsch, John, Bluffton, Ind. 814,943, pub. 6-28-66. Cl. 23.
Midwest Seed Growers Association, Inc., Lafayette, Ind. 814,757, pub. 6-28-66. Cl. 1.
Miles Laboratories, Inc., Elkhart, Ind. 814,797, pub. 6-28-66. Cl. 6.
Miles Laboratories, Inc., from Ames Co., Inc., Elkhart, Ind. 815,007, pub. 6-28-66. Cl. 38.
Miller Brewing Co., Milwaukee, Wis. 815,234. Cl. 48.
Miller, Herman, Inc., Zeeland, Mich. 814,984, pub. 6-28-66 Cl. 32.
Milwaukee Dustless Brush Co., Milwaukee, Wis. 701,805, canc. Cl. 29.
Minor, P. W., & Son, Inc., Batavia, N.Y. 815,222. Cl. 39.
Miraplas Tile Co., Columbus, Ohio. 701,695, canc. Cl. 20.
Modern Products Co.: *See*—
Pincus, Sidney L.
Mom's Pizza: *See*—
Castellucci, Nicholas.
Morton International, Inc.: *See*—
Myles Salt Co., Ltd.
Morton Paper Co., Brooklyn, N.Y. 701,838, canc. Cl. 37.
Moser Paper Co., Chicago, Ill. 814,799, pub. 6-28-66. Cl. 6.
Movado Watch Agency, Inc., New York, N.Y. 425,560, ren. 9-13-66. Cl. 27.
Movado Watch Agency, Inc., New York, N.Y. 426,028, ren. 9-13-66. Cl. 27.
Munston Mfg. and Service, Inc., Islip, N.Y. 701,719-20, canc. Cl. 21.
Murray Co. of Texas, Inc., The, d.b.a. Boston Gear Works, North Quincy, Mass. 814,893, pub. 6-28-66. Cl. 21.
Murray Co. of Texas, Inc., The, d.b.a. Boston Gear Works, North Quincy, Mass. 814,894, pub. 6-28-66. Cl. 21.
Mutual Spice Co.: *See*—
Kaltman, Samuel.
Myles Salt Co., Ltd., New Orleans, La., to Morton International, Inc., Chicago, Ill. 215,434, ren. 9-13-66. Cl. 46.
National Biscuit Co., New York, N.Y. 815,085, pub. 6-28-66. Cl. 46.
National Brewing Co., The, Baltimore, Md. 815,110, pub. 6-28-66. Cl. 48.
National Distillers and Chemical Corp.: *See*—
Overholt, A., & Co.
Wathen, R. E., & Co.
National Distillers Products Co.: *See*—
Overholt, A., & Co.
Wathen, R. E., & Co.
National Fruit Canning Co., d.b.a. Chehalis Packing Co., Seattle, Wash. 815,092, pub. 6-28-66. Cl. 46.
Nebraska Consolidated Mills Co., d.b.a. Red Hat Poultry, Omaha, Nebr. 815,104, pub. 6-28-66. Cl. 46.
Needham Packing Corp. of Montana, Great Falls, Mont. 815,078, pub. 6-28-66. Cl. 46.
Neville Chemical Co., The, Pittsburgh, Pa. 814,754, pub. 6-28-66. Multiple Class (Classes 1 and 6).
Newman, Fred D., Jr., St. Louis, Mo. 814,903, pub. 6-28-66. Cl. 22.
Newspaper Enterprise Association, Inc., Cleveland, Ohio. 815,010, pub. 6-28-66. Cl. 38.
New York Merchandise Co., Inc.: *See*—
New York Merchandise Co.
New York Merchandise Co., to New York Merchandise Co., Inc., New York, N.Y. 205,276, ren. 9-13-66. Cl. 29.
Nichols & Co., Inc., Boston, Mass. 814,764, pub. 6-28-66. Cl. 1.
Nobema Products Corp., New York, N.Y. 814,842, pub. 6-28-66. Multiple Class (Classes 16, 26, 29, and 37).
No-Rinse Laboratories: *See*—
Staten, James S.
North American Mogul Products Co., The, Cleveland, Ohio. 814,808, pub. 6-28-66. Multiple Class (Classes 6 and 52).
North American Mogul Products Co., The, Cleveland, Ohio. 814,809, pub. 6-28-66. Multiple Class (Classes 6 and 52).
Northrop Corp., Beverly Hills, Calif. 701,688, canc. Cl. 19.
Nut Tree, Nut Tree, Calif. 815,057, pub. 6-28-66. Cl. 46.
Olga Co., Van Nuys, Calif. 701,866, canc. Cl. 39.
Orbit Electronics, Inc., Garden Grove, Calif. 814,889, pub. 6-28-66. Cl. 21.
Orchids of Hawaii, Inc., New York, N.Y. 701,568, canc. Cl. 1.
Ostrom, Donald W., Detroit, Mich. 815,032, pub. 6-28-66. Cl. 40.
Outdoor American Corp., Spokane, Wash. 815,009, pub. 6-28-66. Cl. 39.
Overholt, A., & Co., Pittsburgh, Pa., to National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 52,183, ren. 9-13-66. Cl. 49.
Owatonna Tool Co., Owatonna, Minn. 814,810, pub. 6-28-66. Cl. 7.
Owatonna Tool Co., Owatonna, Minn. 815,215. Cl. 26.
Owens-Illinois Glass Co., Toledo, Ohio. 701,630, canc. Cl. 12.
Oxford Filing Supply Co., Inc., Garden City, N.Y. 814,978, pub. 6-28-66. Cl. 32.
Pacific Exporting Co., New York, N.Y. 701,896, canc. Cl. 39.
Packard-Bell Electronics Corp., Los Angeles, Calif. 814,892, pub. 6-28-66. Cl. 21.
Pacolet Mfg. Co., Pacolet, and Spartanburg, S.C., New Holland, Ga., to Deering Milliken, Inc., New York, N.Y. 210,183, ren. 9-13-66. Cl. 42.
Pair, James, Personnel Service, Inc., Atlanta, Ga. 815,249. Cl. 101.
Palisades Pageants, Inc., Palisade, N.J. 815,176, pub. 6-28-66. Cl. 101.
Palisades Pageants, Inc., Palisade, N.J. 815,177, pub. 6-28-66. Cl. 101.
Pandjiris Weldment Co., The, St. Louis, Mo. 814,987, pub. 6-28-66. Cl. 34.
Panyl Corp., Elkhart, Ind. 814,779, pub. 6-28-66. Cl. 5.
Parade Publications, Inc., New York, N.Y. 815,169, pub. 6-28-66. Cl. 101.
Paramount Paper Products Co., Omaha, Nebr. 815,002, pub. 5-10-66. Cl. 38.
Parfums Schiaparelli, Inc., New York, N.Y. 423,036, ren. 9-13-66. Cl. 51.
Parfums Schiaparelli, Inc., New York, N.Y. 425,686, ren. 9-13-66. Cl. 51.
Parfums Schiaparelli, Inc., New York, N.Y. 426,405, ren. 9-13-66. Cl. 51.
Parke, Davis & Co., Detroit, Mich. 222,658, ren. 9-13-66. Cl. 18.
Pathco, Los Gatos, Calif. 815,037, pub. 6-28-66. Cl. 44.
Person & Covey, Inc., Glendale, Calif. 814,860, pub. 6-28-66. Cl. 18.
Pfizer, Chas., & Co., Inc.: *See*—
Coty, Inc.
Schele, Arnold J.
Pfizer, Chas., & Co., Inc., New York, N.Y. 815,127, pub. 6-28-66. Cl. 51.
Pharmaceutical Laboratories, Inc., Plainfield, N.J. 815,239. Cl. 51.
Pharmaceutical Laboratories, Inc., Plainfield, N.J. 815,240. Cl. 51.
Pharmaceutical Laboratories, Inc., Plainfield, N.J. 815,241. Cl. 51.
Philips Roxane, Inc., New York, N.Y. 814,854, pub. 6-28-66. Cl. 18.
Phillips Petroleum Co., Bartlesville, Okla. 423,213, ren. 9-13-66. Cl. 6.
Photomation Inc., Bergenfield, N.J. 701,707, canc. Cl. 21.
Plaja, Joe, d.b.a. Guncraft, Garfield, N.J. 815,250. Cl. 103.
Picker X-Ray Corp., White Plains, N.Y. 814,967, pub. 6-28-66. Cl. 26.
Pincus, Sidney L., d.b.a. Modern Products Co., Brooklyn, N.Y. 815,223. Cl. 39.
Pittenger, Charles J., d.b.a. Port-Air Conveyor Co., York, Pa. 701,758, canc. Cl. 23.
Pixy Farm: *See*—
Kelly, Charles Scott, and David Kelly.
Planer, Samuel R., Gastonia, N.C. 815,013, pub. 6-28-66. Multiple Class (Classes 39 and 52).
Plymouth Rock Provision Co.: *See*—
Food Corp. of America, Inc.
Plymwood Furniture Corp., Lisbon, N.H. 814,979, pub. 6-28-66. Cl. 32.
Polos, Dan, Industries, Inc., Addison, Ill. 814,942, pub. 6-28-66. Cl. 23.
Ponper Morson Corp., New York, N.Y. 815,115, pub. 6-28-66. Cl. 49.
Port-Air Conveyor Co.: *See*—
Pittenger, Charles J.
Prater Pulverizer Co., Chicago, Ill. 221,915, ren. 9-13-66. Cl. 23.
Prince Matchabelli, Inc., to Chesebrough-Pond's Inc., New York, N.Y. 423,291, ren. 9-13-66. Cl. 51.
Pripp-Bryggerierna Aktiebolag, Stockholm, Sweden. 815,111, pub. 6-28-66. Cl. 48.
Procter & Gamble Co., The, Cincinnati, Ohio. 815,142, pub. 6-28-66. Cl. 51.
Provident Bookstore: *See*—
Mennonite Publishing House, Inc., The.
Pruyn, Walter V., d.b.a. Associated Technical Consultants, Jenkintown, Pa. 815,165, pub. 6-28-66. Cl. 100.
Publishers Syndicate, Chicago, Ill. 701,845, canc. Cl. 38.
Purdue Frederick Co., The, New York, N.Y. 701,685, canc. Cl. 18.

Quaker City Chocolate & Confectionery Co., Inc., Philadelphia, Pa. 815,066, pub. 6–28–66. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 217,032, ren. 9–13–66. Cl. 46.
RPH Co., Inc., Villanova, Pa. 814,958, pub. 6–28–66. Cl. 25.
Racasan Ltd., Ellesmere Port, England. 814,807, pub. 6–28–66. Cl. 6.
Racasan Ltd., Ellesmere Port, England. 814,828, pub. 6–28–66. Cl. 13.
Radyne Ltd., Wokingham, England. 814,882, pub. 6–28–66. Cl. 21.
Rahtjen's American Composition Co., to Red Hand Compositions Co. Inc., New York, N.Y. 56,908, ren. 9–13–66. Cl. 16.
Raisin-Ola Corp., Orange, N.J. 815,086, pub. 6–28–66. Cl. 46.
Ravan Products, Inc., Edgewater, N.J. 701,582, canc. Cl. 1.
Red Hand Compositions Co. Inc.: *See*—
Rahtjen's American Composition Co.
Red Hat Poultry: *See*—
Nebraska Consolidated Mills Co.
Redlands Cooperative Fruit Association: *See*—
Redlands Co-Operative Fruit Association.
Redlands Co-Operative Fruit Association, to Redlands Cooperative Fruit Association, Redlands, Calif. 219,741, ren. 9–13–66. Cl. 46.
Redlands Co-Operative Fruit Association, to Redlands Cooperative Fruit Association, Redlands, Calif. 221,982, ren. 9–13–66. Cl. 46.
Reeves Bros., Inc., New York, N.Y. 425,734, ren. 9–13–66. Cl. 39.
Regensburg, E., & Sons: *See*—
Bayuk Cigars Inc.
Revlon, Inc., New York, N.Y. 815,242. Cl. 51.
Revlon, Inc., New York, N.Y. 815,243. Cl. 51.
Revlon, Inc., New York, N.Y. 815,244. Cl. 51.
Revlon, Inc., New York, N.Y. 815,245. Cl. 51.
Revlon, Inc., New York, N.Y. 815,246. Cl. 51.
Revlon, Inc., New York, N.Y. 815,247. Cl. 51.
Reynolds Metals Co., Richmond, Va. 814,837, pub. 6–28–66. Cl. 14.
Rhodes, Richard E., Phoenix, Ariz. 815,214. Cl. 23.
Rice, Douglas G., d.b.a. Douglas Recordings Co., Springfield, Mass. 701,833, canc. Cl. 36.
Rice, Stix Dry Goods Co., St. Louis, Mo., to Dwight S. Williams Co. Inc., New York, N.Y. 59,231, ren. 9–13–66. Cl. 39.
Richardson-Merrell, Inc., New York, N.Y. 814,850, pub. 6–28–66. Cl. 18.
Richdel, Inc., Los Angeles, Calif. 814,880, pub. 6–28–66. Cl. 21.
Richman Bros. Co., The, Cleveland, Ohio. 701,875–5, canc. Cl. 39.
Rink's Department Stores, Inc., Cleveland, Ohio. 815,173, pub. 6–28–66. Cl. 101.
Risney, Dale R., Utica, N.Y. 701,726, canc. Cl. 22.
Riva & Mariani S.A.S., Milan, Italy. 814,819, pub. 6–28–66. Cl. 12.
Roma Macaroni Co.: *See*—
Roma Macaroni Factory.
Roma Macaroni Factory, d.b.a. Roma Macaroni Co., San Francisco, Calif. 815,103, pub. 6–28–66. Cl. 46.
Ronlynn Products: *See*—
Vodian, George.
Roper, Geo. D., Corp., Kankakee, Ill. 814,884, pub. 6–28–66. Cl. 21.
Roper, Geo. D., Corp., Kankake, Ill. 814,885, pub. 6–28–66. Cl. 21.
Rosen, E., Co., Pawtucket, R.I. 815,081, pub. 6–28–66. Cl. 46.
Roto-Broil Corp. of America, Long Island City, N.Y. 814,944, pub. 6–28–66. Cl. 23.
Rowell Laboratories, Inc., Baudette, Minn. 814,848, pub. 6–28–66. Cl. 18.
Roy, Robert J., d.b.a. Robert J. Roy Agency, Winooski, Vt. 815,201. Cl. 107.
Roy, Robert J., Agency: *See*—
Roy, Robert J.
Royal Industries, Inc., Pasadena, Calif. 814,947, pub. 6–28–66. Cl. 23.
Royal Industries, Inc., Pasadena, Calif. 814,953, pub. 6–28–66. Cl. 23.
Russell & Erwin Mfg. Co., New Britain, Conn., to Emhart Corp., Hartford, Conn. 58,502, ren. 9–13–66. Cl. 23.
SMI, Columbus, Ohio. 815,202. Cl. 107.
Saks & Co., New York, N.Y. 701,987, canc. Cl. 52.
Sales Affiliates, Inc., New York, N.Y. 815,145, pub. 6–28–66. Cl. 51.
Salisbury, Arthur L., Costa Mesa, Calif. 815,160, pub. 6–28–66. Cl. 100.
Salisbury, Arthur L., Costa Mesa, Calif. 815,161, pub. 6–28–66. Cl. 100.
Sandler, A., Co., Needham Heights, Mass. 701,856, canc. Cl. 39.
Sarco, Inc., Atlanta, Ga. 815,224. Cl. 39.
Sarnowski, John, Detroit, Mich. 814,908, pub. 6–28–66. Cl. 22.
Sayour, Elias Co., Inc., New York, N.Y. 815,014, pub. 6–28–66. Cl. 39.
Schachter Enterprises, Inc., Brooklyn, N.Y. 701,841, canc. Cl. 37.
Schele, Arnold J., Cle Elum, Wash., to Chas. Pfizer & Co., Inc., New York, N.Y. 212,163, ren. 9–13–66. Cl. 51.
Schneider Bros. Inc., Chicago, Ill. 815,048, pub. 6–28–66. Cl. 46.
Scott Lad Foods, Inc., Chicago, Ill. 815,063, pub. 6–28–66. Cl. 46.
Scott Paper Co., Philadelphia, Pa. 814,768, pub. 6–28–66. Cl. 2.
Sealife Products Co., Inc., Amagansett, N.Y. 814,816, pub. 6–28–66. Cl. 10.
Sears, Roebuck and Co., Chicago, Ill. 701,867–8, canc. Cl. 39.
Sears, Roebuck and Co., Chicago, Ill. 814,936, pub. 6–28–66. Cl. 23.
Seeburg Corp., The, Chicago, Ill. 815,219. Cl. 36.
Sellers Mfg. Co., Inc., Saxapahaw, N.C. 815,227. Cl. 43.
Seneca, Stephen J., Havre De Grace, Md., to Meinecke & Co., Inc., Baltimore, Md. 50,291, ren. 9–13–66. Cl. 46.
Sensitak Instrument Corp., Manchester, N.H. 814,870, pub. 6–28–66. Cl. 21.
Shane, William B., d.b.a. Springdale, Cincinnati, Ohio. 814,890, pub. 6–28–66. Cl. 21.
Shore Instrument & Mfg. Co., The, Jamaica, N.Y. 814,961, pub. 6–28–66. Cl. 26.
Shur-Lok Corp., Santa Ana, Calif. 814,829, pub. 6–28–66. Cl. 13.
Slade Di Angelo Callegari & C. Soc. Acc. Semplice, Monza, Milan, Italy. 815,129, pub. 6–28–66. Cl. 51.
Sidetex Co., Inc., Rockville Centre, N.Y. 701,623, canc. Cl. 12.
Sigman Meat Co., Inc., The, Denver, Colo. 815,093, pub. 6–28–66. Cl. 46.
Signetics Corp., Sunnyvale, Calif. 814,879, pub. 6–28–66. Cl. 21.
Silhouette Products Ltd., Toronto, Ontario, Canada. 701,968, canc. Cl. 51.
Simer Pump Co., Minneapolis, Minn. 814,941, pub. 6–28–66. Cl. 23.
Simonis Co., Chicago, Ill. 814,777, pub. 6–28–66. Cl. 4.
Simplex Piston Ring Mfg. Co.: *See*—
Simplex Products Corp.
Simplex Products Corp., Cleveland, Ohio, to Simplex Piston Ring Mfg. Co., Miami, Fla. 426,110, ren. 9–13–66. Cl. 35.
Sipler, Clarence L., d.b.a. Sipler Plastics Co., Doylestown, Pa. 814,824, pub. 6–28–66. Cl. 13.
Sipler, Clarence L., d.b.a. Sipler Plastics Co., Doylestown, Pa. 814,825, pub. 6–28–66. Cl. 13.
Sipler Plastics Co.: *See*—
Sipler, Clarence L.
Sister Elisabeth Kenny Foundation: *See*—
American Rehabilitation Foundation, Inc.
Sister Elizabeth Kenny Foundation, Inc.: *See*—
American Rehabilitation Foundation, Inc.
Small & Parkes Ltd., Manchester, England. 217,013, ren. 9–13–66. Cl. 35.
Smith, H. P., Co., Inc., Rogers, Ark. 701,612, canc. Cl. 7.
Smith, Joseph M.: *See*—
Max The Printer, Inc.
Smith Products, Inc., d.b.a. Childers Products Co., Cleveland, Ohio. 815,207. Cl. 12.
Snap-On Tools Corp., Kenosha, Wis. 814,778, pub. 6–28–66. Cl. 5.
Sno-Berry Products & Equipment Co.: *See*—
Fletcher, Dennis H.
Soabar Co., Philadelphia, Pa. 815,005, pub. 6–28–66. Cl. 38.
Sober, Norman: *See*—
Continental Drug Co.
Societa Metallurgica Italiana, Florence, Italy. 814,831, pub. 6–28–66. Cl. 13.
Societa Metallurgica Italiana, Florence, Italy. 814,832, pub. 6–28–66. Cl. 13.
Societa Metallurgica Italiana, Florence, Italy. 814,833, pub. 6–28–66. Cl. 13.
Societa Metallurgica Italiana, Florence, Italy. 814,834, pub. 6–28–66. Cl. 13.
Societa Metallurgica Italiana, Florence, Italy. 814,835, pub. 6–28–66. Cl. 13.
Societa Metallurgica Italiana, Florence, Italy. 814,836, pub. 6–28–66. Cl. 13.
Societe Cadoricin, Bobigny, Seine, France. 815,138, pub. 6–28–66. Cl. 51.
Solo Products Corp., New York, N.Y. 815,033, pub. 6–28–66. Cl. 40.
Some Place Else, Washington, D.C. 815,203, pub. 6–28–66. Cl. 107.
Sonic Industries, Inc., Lynbrook, N.Y. 701,701, canc. Cl. 21.
Southern Photo-Technical Service, Inc., Washington, D.C. 815,189, pub. 6–28–66. Cl. 103.
Southwest Grease & Oil Co. (Kansas City), Inc., Kansas City, Mo. 814,839, pub. 6–28–66. Cl. 15.
Southworth Co., West Springfield, Mass. 815,000, pub. 6–28–66. Cl. 37.
Spartan Mills: *See*—
Startex Mills.
Spirittine Chemical Co., Wilmington, N.C. 51,506, ren. 9–13–66. Cl. 6.
Spitz, Edward M., Los Angeles, Calif. 815,146, pub. 6–28–66. Cl. 51.
Sportsman's Golf Corp., Melrose Park, Ill. 701,722, canc. Cl. 22.
Sprague & Carleton, Inc., Reene, N.H. 814,980, pub. 6–28–66. Cl. 32.
Springdale: *See*—
Shane, William B.
Stadham Co., Inc., Philadelphia, Pa. 814,957, pub. 6–28–66. Cl. 24.
Staley, A. E., Mfg. Co., Decatur, Ill. 814,780, pub. 6–28–66. Cl. 5.
Standard Products Co., The, Cleveland, Ohio. 815,123, pub. 6–28–66. Cl. 50.
Standard Sanitary Mfg. Co., Pittsburgh, Pa., to American Radiator & Standard Sanitary Corp., New York, N.Y. 58,506, ren. 9–13–66. Cl. 13.

Standard Tool Co., The, to Standard Tool Co., Cleveland, Ohio. 422,475, ren. 9–13–66. Cl. 23.
Stang, John W., Corp., Orange, Calif. 814,823, pub. 6–28–66. Mutiple Class (Classes 13, 14, and 23).
Stant Mfg. Co., Inc., Connersville, Ind. 814,866, pub. 6–28–66. Cl. 19.
Startex Mills, Tucapau, S.C., to Spartan Mills, Spartansburg, S.C. 424,178, ren. 9–13–66. Cl. 42.
Staten, James S., d.b.a. No-Rinse Laboratories, Dayton, Ohio. 815,147, pub. 6–28–66. Cl. 52.
Staylastic Corp., The, New Bedford, Mass. 815,027, pub. 6–28–66. Cl. 40.
Sterling Pharmaceuticals Pty. Ltd., Ermington, New South Wales, Australia. 815,136, pub. 6–28–66. Cl. 51.
Sterneo Industries, Inc., Allendale, N.J. 815,091, pub. 6–28–66. Cl. 46.
Stieff Co., The, Baltimore, Md. 814,954, pub. 6–28–66. Cl. 23.
Straus-Duparquet Inc., New York, N.Y. 701,814, canc. Cl. 32.
Strohmeyer & Arpe Co., New York, N.Y. 218,867, ren. 9–13–66. Cl. 2.
Structo Mfg. Co., Freeport, Ill. 814,904, pub. 6–28–66. Cl. 22.
Structo Mfg. Co., Freeport, Ill. 814,905, pub. 6–28–66. Cl. 22.
Sudel, Inc., from Discovery Cosmetics, Inc., San Dimas, Calif. 815,130, pub. 6–28–66. Cl. 51.
Sunshine Biscuits, Inc., Long Island City, N.Y. 815,107, pub. 6–28–66. Cl. 46.
Superior Biscuit Co.: *See*—
Weston Biscuit Co. Inc.
Superior Cable Corp., Hickory, N.C. 814,886, pub. 6–28–66. Cl. 21.
Sussman & Medney, New York, N.Y., to Girard Perregaux & Cie, S.A., La Chaux-de-Fonds, Switzerland. 421,163, ren. 9–13–66. Cl. 27.
Swirl, Inc., Easley, S.C. 815,012, pub. 6–28–66. Cl. 39.
Sybaris, Inc., New York, N.Y. 815,135, pub. 6–28–66. Cl. 51.
Syntex Laboratories, Inc., Palo Alto, Calif. 814,856, pub. 6–28–66. Cl. 18.
System Analyzer Corp., Nokomis, Ill. 814,872, pub. 6–28–66. Cl. 21.
Tanglefoot Co., The: *See*—
Thum, O. & W., Co., The.
Telex Corp., The, Tulsa, Okla. 815,038, pub. 6–28–66. Cl. 44.
Tenneco Chemicals, Inc., New York, N.Y. 814,758, pub. 6–28–66. Cl. 1.
Texaco Inc.: *See*—
Texas Co., The.
Texas Co., The, Beaumont, Tex., to Texaco Inc., New York, N.Y. 57,902, ren. 9–13–66. Cl. 15.
Textile By-Products Corp., Hudson, N.Y. 814,755, pub. 6–28–66. Cl. 1.
Textron Industries, Inc., d.b.a. Indiana Metal Products Co., Rochester, Ind. 815,209. Cl. 13.
Thatcher Glass Mfg. Co. Inc., New York, N.Y. 701,819, canc. Cl. 34.
Thermal-Aire, Inc., Allston, Mass. 701,702, canc. Cl. 21.
Thomas, Walter N., Chicago, Ill. 814,907, pub. 6–28–66. Cl. 22.
Thomson Research Associates Ltd., Toronto, Ontario, Canada. 814,851, pub. 6–28–66. Cl. 18.
Thomson Research Associates Ltd., Toronto, Ontario, Canada. 814,852, pub. 6–28–66. Cl. 18.
Thomson Research Associates Ltd., Toronto, Ontario, Canada. 814,853, pub. 6–28–66. Cl. 18.
Thum, O. & W., Co., The, to The Tanglefoot Co., Grand Rapids, Mich. 57,566, ren. 9–13–66. Cl. 6.
Television Utilities Corp., Corona, N.Y. 701,711, canc. Cl. 21.
Tifcon Co., Jacksonville, Fla. 814,988, pub. 6–28–66. Cl. 34.
Ti-Pe Elmeko, Tillander & Persson, Stockholm, Sweden. 814,991, pub. 6–28–66. Cl. 34.
Tip-Top Products Co., Omaha, Nebr. 701,724, canc. Cl. 22.
Tomlinson of High Point, High Point, N.C. 815,217. Cl. 32.
Totem Slides: *See*—
Eastern Handicraft Supply Co., Inc.
Tower Press, Inc., Lynn, Mass. 815,011, pub. 6–28–66. Cl. 38.
Track Products Co., San Jose, Calif. 814,928, pub. 6–28–66. Cl. 23.
Traum, David, Co., Inc., New York, N.Y. 814,997, pub. 6–28–66. Cl. 37.
Travel Products, Inc., West Pittsburgh, Pa. 814,772, pub. 6–28–66. Cl. 3.
Travenol Laboratories, Inc., Morton Grove, Ill. 701,679, canc. Cl. 18.
Tre-Jay Products Co., Saratoga, Calif. 815,050, pub. 6–28–66. Cl. 46.
Treville: *See*—
Treville Inc.
Treville Inc., d.b.a. Treville, Clifton, N.J. 814,971, pub. 6–28–66. Cl. 26.
Treville Inc., d.b.a. Treville, Clifton, N.J. 815,030, pub. 6–28–66. Cl. 40.
Triangle Blue Print & Supply Co., Tulsa, Okla. 815,172, pub. 6–28–66. Cl. 101.
Triple A Feed Co.: *See*—
Burks Bag Co., Inc.
Triton Water Co., Greensboro, N.C. 815,043, pub. 6–28–66. Cl. 45.
Trostel, Albert, & Sons Co., Milwaukee, Wis. 701,574, canc. Cl. 1.
Tubbs Cordage Co., San Francisco, Calif. 426,186, ren. 9–13–66. Cl. 7.
Turpin, Inc., Charlotte, N.C. 814,909, pub. 6–28–66. Cl. 22.
UGC Instruments, Inc., Houston, Tex. 814,965, pub. 6–28–66. Multiple Class (Classes 26 and 36).
Ultramar Western World Corp., New York, N.Y. 701,907, canc. Cl. 102.
Underwood, William, Co., d.b.a. Wm. Underwood Co., Watertown, Mass. 815,087, pub. 6–28–66. Cl. 46.
Underwood, William, Co., d.b.a. Wm. Underwood Co., Watertown, Mass. 815,088, pub. 6–28–66. Cl. 46.
Underwood, Wm. Co.: *See*—
Underwood, William, Co.
Unimed, Inc., Morristown, N.J. 814,858, pub. 6–28–66. Cl. 18.
Union Starch & Refining Co., Inc., Columbus, Ind. 814,791, pub. 6–28–66. Cl. 6.
Unit Service Exchange Co., Atlanta, Ga. 815,212. Cl. 23.
United Aircraft Corp., Sunnyvale, Calif. 814,812, pub. 6–28–66. Cl. 9.
United Aircraft Corp., Sunnyvale, Calif. 814,813, pub. 6–28–66. Cl. 9.
United Aircraft Corp., Sunnyvale, Calif. 815,054, pub. 6–28–66. Cl. 46.
United Aircraft Corp., Sunnyvale, Calif. 815,055, pub. 6–28–66. Cl. 46.
United Aircraft Corp., Sunnyvale, Calif. 815,125, pub. 6–28–66. Cl. 51.
United-Buckingham Freight Lines, Rapid City, S. Dak. 815,195, pub. 6–28–66. Cl. 105.
United Chromium, Inc., to M & T Chemicals Inc., New York, N.Y. 422,307, ren. 9–13–66. Cl. 6.
United National Trading Co., Inc., New York, N.Y. 701,745, canc. Cl. 23.
United Parcel Service of America, Inc., New York, N.Y. 815,191, pub. 6–28–66. Cl. 105.
United States Baking Co., Inc., Terre Haute, Ind. 815,075, pub. 6–28–66. Cl. 46.
United States Catheter & Instrument Corp., Glens Falls, N.Y. 815,039, pub. 6–28–66. Cl. 44.
U.S. Grinding Co. Inc., The, Cincinnati, Ohio. 814,948, pub. 6–28–66. Cl. 23.
United States Playing Card Co., The, East Norwood, Ohio, to The United States Playing Card Co., Cincinnati, Ohio. 58,380, ren. 9–13–66. Cl. 22.
United States Rubber Co., New York, N.Y. 814,815, pub. 6–28–66. Cl. 10.
United States Tobacco Co., New York, N.Y. 814,847, pub. 6–28–66. Cl. 17.
Universal Oil Products Co., Des Plaines, Ill. 814,785, pub. 6–28–66. Cl. 6.
Universal Oil Products Co., Des Plaines, Ill. 814,786, pub. 6–28–66. Cl. 6.
Universal Oil Products Co., Des Plaines, Ill. 814,787, pub. 6–28–66. Cl. 6.
Universal Spray Can Corp., New York, N.Y. 702,004–5, canc. Cl. 4.
University Car Wash, Inc., Madison, Wis. 815,185, pub. 6–28–66. Cl. 103.
University Car Wash, Inc., Madison, Wis. 815,186, pub. 6–28–66. Cl. 103.
University Car Wash, Inc., Madison, Wis. 815,187, pub. 6–28–66. Cl. 103.
U-Tote'M, Inc., Houston, Tex. 815,051, pub. 6–28–66. Cl. 46.
Vanity Fair Mills, Inc., Reading, Pa. 815,015, pub. 6–28–66. Cl. 39.
Ventura Tool Co., Ventura, Calif. 814,931, pub. 6–28–66. Cl. 23.
Vienna Beauty Products Co., Dayton, Ohio. 815,126, pub. 6–28–66. Cl. 51.
Vodian, George, d.b.a. Ronlynn Products, Pueblo, Colo. 701,653, canc. Cl. 13.
Vogel Tool & Die Corp., Stone Park, Ill. 814,938, pub. 6–28–66. Cl. 23.
Vorac Co., The, Rutherford, N.J. 814,818, pub. 6–28–66. Cl. 11.
Walker, M. S., Inc., d.b.a. Allen's Ltd., Boston, Mass. 815,113, pub. 6–28–66. Cl. 49.
Wall, O. L., Jr.: *See*—
Brown, William S.
Wall Tube and Metal Products Co., Beverly, N.J. 814,981, pub. 6–28–66. Cl. 32.
Wards Cove Packing Co., Inc., Seattle, Wash. 815,059, pub. 6–28–66. Cl. 46.
Ware Machine Works, Inc., Ware, Mass. 814,932, pub. 6–28–66. Cl. 23.
Wathen, R. E., & Co., Louisville, Ky., to National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 56,651, ren. 9–13–66. Cl. 49.
Waverly Chemical Co., Inc., Mamaroneck, N.Y. 814,795, pub. 6–28–66. Cl. 6.
Webcor, Inc., Chicago, Ill. 701,828, canc. Cl. 36.
Wehr Corp., West Allis, Wis. 814,874, pub. 6–28–66. Cl. 21.
Wells Fargo & Co. Express, S.A., S.M., Mexico City, Mexico. 815,196, pub. 6–28–66. Cl. 105.
Werner, R. D., Co., Inc., Greenville, Pa. 815,235. Cl. 50.
West Coast Growers & Packers: *See*—
Hoak, D. R.
West Coast Growers & Packers, Inc.: *See*—
Hoak, D. R.
West Virginia Pulp and Paper Co.: *See*—
Hinde & Dauch Paper Co., The.
Weston Biscuit Co., Inc., Passaic, N.J., from Superior Biscuit Co., Seattle, Wash. 682,613, canc. Cl. 46.
Weyerhaeuser Co., Tacoma, Wash. 814,925, pub. 6–28–66. Cl. 23.
Weyerhaeuser Co., Tacoma, Wash. 815,197, pub. 6–28–66. Cl. 106.
Whattoff Motor Co., Ames, Iowa. 815,210. Cl. 19.

White Rock Bottling Co. of Tacoma, Inc., Tacoma, Wash. 815,044, pub. 6–28–66. Cl. 45.
Wiegand, Edwin L., Co., The, Pittsburgh, Pa. 815,218. Cl. 34.
Williams, Dwight S., Co., Inc.: *See*— Rice, Stix Dry Goods Co.
Williams, Lew: *See*— Williams, Lewis W.
Williams, Lewis W., d.b.a. Lew Williams, Dallas, Tex. 815,174, pub. 4–19–66. Cl. 101.
Wilson Greatbatch, Inc.: *See*— Mennen-Greatbatch.
Wingate Corp., The, Providence, R.I. 815,181, pub. 6–28–66. Cl. 101.
Wirsing, Arthur O., d.b.a. Manhattan Floor Supplies, New York, N.Y. 701,787, canc. Cl. 23.
Wolverine Corp., from Wolverine Equipment Co., Cambridge, Mass. 814,951, pub. 6–28–66. Cl. 23.
Wolverine Equipment Co.: *See*— Wolverine Corp.
Wood, Florence, Working Co., Chicago, Ill. 701,815, canc. Cl. 32.
Wood, John, Co., East Orange, N.J. 814,769, pub. 6–28–66. Cl. 2.
Wood, John, Co., East Orange, N.J. 814,770, pub. 6–28–66. Cl. 2.
Woodward, Murray F., Greenville, S.C. 701,988, canc. Cl. 52.
Wright, Wm. E., & Sons Co., West Warren, Mass. 815,026, pub. 6–28–66. Cl. 40.
Wyandotte Chemicals Corp., Wyandotte, Mich. 815,154, pub. 6–28–66. Cl. 52.
X-Marx Process Co., Inc., Plainfield, N.J. 814,998, pub. 6–28–66. Cl. 37.
Yellowstone, Inc., Elkhart, Ind. 814,865, pub. 6–28–66. Cl. 19.
Zenith Radio Corp., Chicago, Ill. 814,993, pub. 6–28–66. Cl. 36.
Zipperman, Pauline, d.b.a. German American Trading Co., New York, N.Y. 814,868, pub. 6–28–66. Cl. 21.
Zonal Lighting Co., Brooklyn, N.Y. 814,871, pub. 6–28–66. Cl. 21.

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OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 20, 1966 Volume 830 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of August 1966

Examiner affirmed	78
Examiner affirmed in part	12
Examiner reversed	22
Total	112

United States Adopted Names

List No. 14

March 1, 1966 to June 30, 1966

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Assistant Director, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

allobarbital: central nervous system depressant
betamethasone acetate: corticosteroid
betamethasone disodium phosphate: corticosteroid
cloperidone hydrochloride: sedative; tranquilizer
descinolone acetonide: glucocorticoid
gamfexine: antidepressant
guanethidine monosulfate: hypotensive
hycanthone: schistosomacide
isosorbide: oral osmotic diuretic
lidoflazine: cardiovascular agent
mesterolone: oral androgenic hormone
metyrapone tartrate: diagnostic test of pituitary function
niclosamide: anthelmintic
nitarsone: veterinary histomonastat
nonoxynol: spermatocide
prednival: topical anti-inflammatory
prilocaine hydrochloride: local anesthetic
propiram fumarate: analgesic
pyrantel tartrate: anthelmintic
rifamide: antibacterial
roxarsone: veterinary growth stimulant
sodium ampicillin: antibiotic
sodium edetate: chelating agent
tetroquinone: treatment of keloids
trimoxamine hydrochloride: antihypertensive
trisodium edetate: chelating agent
viridofulvin: antifungal antibiotic

United States Adopted Names (USAN) and United States Adopted Names (Proposed) (USAN)

QUARTERLY CUMULATIVE LIST

January 1, 1966–June 30, 1966

This is a revised alphabetical listing of the nonproprietary names *proposed for adoption* by the USAN Council which were published in the Trademark Bureau Bulletin during the period indicated. The listing also incorporates the revised lists of *adopted* nonproprietary names issued by the USAN Council, but not published in the Bulletin.

The Quarterly Cumulative List is intended to supplement USAN Cumulative List 4, 1961–1965, published annually for the Council by the United States Pharmacopeia; it is distributed with an issue of the Trademark Bureau Bulletin.

An asterisk (*) before a name indicates an *adopted name;* all other names on the list are *proposed for adoption.*

Since Q.C.L. is cumulative, only the latest issue need be consulted. All preceding lists may be discarded.

Any comments or protests regarding proposed names should be brought promptly to the attention of the USAN Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

*allobarbital: central nervous system depressant
asperlin: antibacterial; antineoplastic
*betamethasone acetate: corticosteroid
*betamethasone disodium phosphate: corticosteroid
*cloperidone hydrochloride: sedative; tranquilizer
*cyheptamide: anticonvulsant
*descinolone acetonide: glucocorticoid
*gamfexine: antidepressant
*guanethidine monosulfate: hypotensive
*hycanthone: schistosomacide
*ibufenac: analgesic; anti-inflammatory
*isosorbide: oral osmotic diuretic
*lidoflazine: cardiovascular agent
*mefruside: diuretic
*mesterolone: oral androgenic hormone
*metyrapone tartrate: diagnostic test of pituitary function
*niclosamide: anthelmintic
*nifuraldesone: antibacterial
*nitarsone: veterinary histomonastat
*nitrazepam: hypnotic; anticonvulsant
*nitromide: veterinary coccidiostat and antibacterial
*nonoxynol: spermatocide
*norgestrel: progestin
*pemoline: central nervous system stimulant
phenobarb: proposed abbreviation for phenobarbital
phthalofyne: veterinary anthelmintic

New Applications Received During July 1966

Patents	6925
Designs	380
Plant Patents	2
Reissues	14
Total	7321

Issue—September 20, 1966

Patents	1,450	No. 3,273,162 to No.	3,274,611, incl.
Designs	74	No. 205,750 to No.	205,823, incl.
Reissue	15	No. 26,078 to No.	26,092, incl.
Total	1,539		

•prednival: topical anti-inflammatory
•prilocaine hydrochloride: local anesthetic
•propiram fumarate: analgesic
•pyrantel tartrate: anthelmintic
quilaxine maleate: oxytocic
•rifamide: antibacterial
•roxarsone: veterinary growth simulant
seperidol hydrochloride: neuroleptic
•sodium ampicillin: antibiotic
•sodium edetate: chelating agent
•sodium ethacrynate: diuretic
sulfabenz: veterinary antibacterial and anticoccidial
sulfafen: antibacterial; anticoccidial agent
•tetramisole hydrochloride: anthelmintic
•tetroquinone: treatment of keloids
thyroglobulin: thyroid preparation
•trimoxamine hydrochloride: antihypertensive
•trisodium edetate: chelating agent
•viridofulvin: antifungal antibiotic
zolertine hydrochloride: vasodilator; anti-adrenergic; anti-hypertensive

Disclaimer

3,019,211.—*Harry E. Albert*, Lafayette Hill, Pa. USE OF PHENYLENE DI-TERTIARY AMINES IN RUBBER. Patent dated Jan. 30, 1962. Disclaimer filed May 11, 1966, by the assignee, *The Firestone Tire & Rubber Company*.

Hereby enters this disclaimer to claims 1, 2, 4 and 5 of said patent.

Adjudicated Patents

(C.A. Minn.) Schwank Patent No. 2,775,294 (158—116), for RADIANT BURNER, *Held* invalid. *American Infra-Red Radiant Co.* v. *Lambert Industries, Inc.*, 360 F.2d 977; 149 USPQ 722.

(C.A. Mo.) Graves Patent No. 2,842,072 (107—14), for FOOD PROCESSING MACHINE. Claims 1 to 3 *Held* invalid. *Kell-Dot Industries, Inc.* v. *Graves*, 261 F.2d 25; 149 USPQ 717.

(C.A. Minn.) Schwank Patent No. 2,870,830 (239—590), for GAS BURNER, *Held* invalid and not infringed. *American Infra-Red Radiant Co.* v. *Lambert Industries*, 360 F.2d 977; 149 USPQ 722.

(C.A. Tex.) Levey and Harvey Patent No. 3,000,576 (172—760), for SPRAY GUN. Claims 1 to 6 and 8 *Held* valid and infringed. *Gray Co.* v. *Speed-Flo Mfg. Corp.*, 361 F.2d 489; 149 USPQ 801.

(C.A. Ill.) Skirow Patent No. 3,064,872 (229—15), for CUP CONTAINER. Claims 6 and 7 *Held* invalid and not infringed. *Skirow* v. *Roberts Colonial House, Inc.*, 361 F.2d 388; 149 USPQ 882.

(C.A. Calif.) Page Reissue Patent No. 25,122 (128—142), for SAFETY-FIRST UNDERWATER BREATHING APPARATUS. Claims 1 to 18 *Held* invalid. *Page* v. *U.S. Divers Co.*, 361 F.2d 478; 149 USPQ 805.

Notification Re Conflict in Assignment in Certain Applications

Effective September 12, 1966, Assignment Branch will discontinue mailing notification in cases where there is a conflict in assignment between an original application and its divisional, continuation, substitute, or continuation-in-part application.

Assignments from original applications are applied without charge ONLY to divisional, continuation, or substitute applications where the date of the assignment is prior to the filing date of the later-filed application. (Continuation-in-part applications require separate assignments if they are to be issued to the assignee.)

Practitioners are reminded of the provisions of Rule 334. Unless an assignment is filed at or prior to the date of payment of the issue fee, the patent will normally be issued in the name of the inventor.

Section 306 of the Manual of Patent Examining Procedures will be amended appropriately.

W. R. ARMSTRONG,
Director, Office of Patent Services.

Concurred:
(Signed) R. A. WAHL,
Assistant Commissioner.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JULY 1, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-1-63	11-14-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	1-29-63	2-20-61
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-1-63	4-13-62
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	7-1-63	7-11-60
COMPOSITIONS AND MOLDING, GROUP 150—M. STERMAN, Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	7-23-63	2-26-60
COATING AND LAMINATING, GROUP 160—J. R. LIBERMAN, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	6-4-63	12-4-61
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	11-16-62	10-11-61
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-11-63	12-18-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER AND ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	12-31-62	10-19-61
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	8-26-63	1-16-62
INFORMATION TRANSMISSION, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	4-4-63	12-22-61
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—E. J. SAX, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	12-28-62	2-6-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	12-17-62	7-31-61
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	1-8-63	8-8-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	9-18-63	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	5-17-65	9-21-64

Total number of pending applications (excluding Designs)	196,314
Total number of Design applications pending	4,534
Total number of applications awaiting action (excluding Designs)	145,101
Total number of Design applications awaiting action	2,563
Date of oldest new application awaiting action	Nov. 16, 1962
Date of oldest amended application awaiting action	Feb. 26, 1960

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during August 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents..... Numbers 2,477,558 to 2,490,820, inclusive
Plant Patents..... Numbers 858 to 869, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	10-5-64	2-19-64
MANUFACTURING; METAL, PLASTICS WORKING; MACHINE TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders.	3-3-64	3-6-62
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	7-7-64	4-30-63
FLUID HANDLING, GROUP 360—T. J. HICKEY, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	5-18-64	11-7-62
HEAT AND POWER ENGINEERING, GROUP 370—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration, Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	8-17-64	11-14-63
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	10-14-63	1-3-62
CIVIL ENGINEERING, GROUP 420—T. J. HICKEY, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	7-1-64	6-25-62
TEXTILES AND APPAREL, GROUP 440—W. S. COLE, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	7-1-64	6-21-62
TRANSPORTATION, GROUP 450—A. BERLIN, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	7-16-64	7-22-63
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	7-1-64	1-24-63
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—A. RUEGG, Manager Printing; Typewriters; Stationery; Material Treatment.	7-1-64	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE PHILIP M. CARABATEAS

No. 7476. Decided March 24, 1966. Petition for rehearing denied May 5, 1966

[53 CCPA —; 357 F.2d 998; 149 USPQ 44]

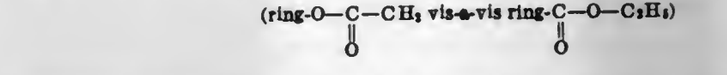
1. PATENTABILITY—COMPOUND—"REVERSE ESTERS"—OBVIOUSNESS—IMPROVEMENT IN ACTIVITY—*In re Carabateas* (52 CCPA 1386) REVIEWED.

"We have re-examined the Elpern references on which heavy reliance was placed in our original Carabateas opinion [52 CCPA 1386]. While we are of the view that those references, together with Cutler, collectively establish obviousness of the structural formula and analgesic activity both of appellant's compounds claimed there and in the present compound, we think we erroneously concluded in Carabateas that the Elpern patents would suggest to one of ordinary skill that *any improvement* in analgesic activity would necessarily inhere in compounds derived from piperidinol,

when compared to otherwise identical compounds of the carboxylate structure,

2. SAME—SAME—SAME—SAME—*In re Carabateas* (52 CCPA 1386) REVIEWED.

"* * * we assumed [in *In re Carabateas*, 52 CCPA 1386] that the '4-acetoxy' compound of Elpern II was identical to (e.g. the exact 'reverse ester') the *ethyl*-4-carboxylate compound of Elpern I but for reversal of the ester linkage. In fact it is not, as comparison of the respective structures



demonstrates. We think such a comparison of ester homologues to be too tenuous to suggest that any improvement would be obtained solely because of reversal of the ester linkage. That comparison being the controlling evidence in Carabateas, we think the decision there rendered necessarily is incorrect."

3. SAME—SAME—OBVIOUSNESS—GREATER EFFECTIVENESS.

"In the absence of a suggestion in the present record that the nature of appellant's improvement would be expected, we think appellant has presented clear and convincing evidence of the greater effectiveness of the claimed compound over the prior art, sufficient here to establish patentability of the compound. *In re Lohr*, 50 CCPA 1274, 317 F.2d 338, 137 USPQ 548. Under the circumstances, we think the record fails to support a finding that the subject matter as a whole would be obvious to one of ordinary skill in the art."

4. SAME—PARTICULAR SUBJECT MATTER—1-(3-HYDROXY-3-PHENYLPROPYL)-4-PHENYL-4-PROPIONOXY-PIPERIDINE.

The decision of the Board of Appeals, refusing a claim to 1-(3-hydroxy-3-phenylpropyl)-4-phenyl-4-propionoxy-piperidine as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 85,195.

REVERSED.

Laurence and Laurence (*Dean Laurence*, *Herbert I. Sherman* of counsel) for appellant.

Clarence W. Moore (*Jack E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

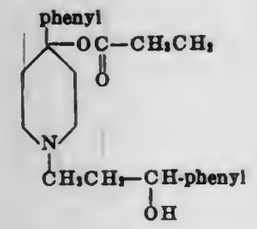
WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of claims 1 and 2 in appellant's patent application [1] for "4-aryl-4-(lower acyloxy)-1-(3-aryl-3-hydroxypropyl)-piperidines and their preparation." Appellant has withdrawn appeal of claim 2.

The appealed subject matter is represented by the chemical compound of claim 1:

1. 1-(3-hydroxy-3-phenylpropyl)-4-phenyl-4-propionoxy-piperidine.

That compound has the structural formula

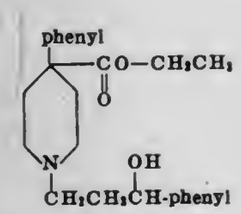


and is useful as an analgesic.

The references are:

Elpern II, 2,846,437, August 5, 1958.
Elpern I, 2,850,500, September 2, 1958.
Pohland II, 2,904,550, September 15, 1959.
Pohland I, 2,951,080, August 30, 1960.
Cutler et al., 2,962,501, November 29, 1960.

The disclosure of those references was reviewed by this court in *In re Carabateas*, 52 CCPA 1386, 345 F.2d 1013, 145 USPQ 549, 551–3, and need not be further detailed here beyond noting that Cutler and Pohland I disclose an analgesic of the structural formula



The Examiner found appellant's piperidinol ester obvious from a consideration of the Cutler, Elpern and Pohland patents, employing reasoning similar to that used by the Examiner in Carabateas.

Appellant contends that an affidavit showing the compound of claim 1 to be nineteen times more active as an analgesic than the "reverse ester" compound of Cutler and Pohland I when administered subcutaneously is persuasive evidence of unobviousness and patentability of the compound.[2] As reference to our decision in Carabateas will establish, we thought the Elpern patents collectively suggested that *piperidinol* esters having the structure of appellant's compounds there claimed would possess greater analgesic activity, perhaps twice as great, than the "reverse esters" which Cutler obtained from the requisite piperidine *carboxylic acid*. We also referred to a Braenden publication in that record, not relied on by the Examiner in his rejection,

[1] Serial No. 85,195, filed January 27, 1961.

[2] That figure was established by a finding that appellant's compound and that of Cutler were 3220 times and 173 times, respectively, more potent than meperidine, a well known analgesic, on a molar basis.

which showed that in changing from the carboxylate structure of meperidine



to the "reverse" structure

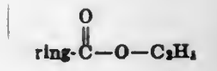


the substituent being in the 4-position of the ring, and the remainder of the molecule being kept the same, a five to ten-fold increase in analgesic activity is observed.[3]

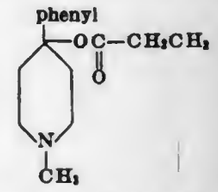
[1] We have re-examined the Elpern references on which heavy reliance was placed in our original Carabateas opinion. While we are of the view that those references, together with Cutler, collectively establish obviousness of the structural formula and analgesic activity both of appellant's compounds claimed there and the present compound, we think we erroneously concluded in Carabateas that the Elpern patents would suggest to one of ordinary skill that *any improvement* in analgesic activity would necessarily inhere in compounds derived from piperidinol,



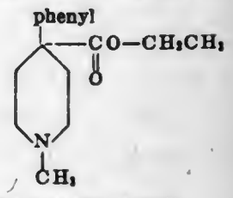
when compared to otherwise identical compounds of the carboxylate structure,[4]



[3] That appears consistent with the discussion in *In re Lunsford*, 51 CCPA 1000, 327 F.2d 526, 140 USPQ 425, wherein it was observed that the analgesic prodine, having the formula



is more potent than the analgesic meperidine, having the formula

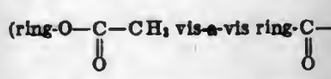


The Braenden reference is not in the present record.

[4] We said in Carabateas:

> Referring to the Elpern patents, it will be seen that the Elpern II "1-(3-phenoxypropyl)-4-acetoxy" compound, which has the same sort of ester structure as appellant's compounds, possesses *twice* the analgesic activity of the Elpern I ethyl (3-phenoxypropyl)piperidine-4-carboxylate. Compared with the Elpern I ethyl (2-phenoxy*ethyl*)piperidine-4-carboxylate and ethyl (4-phenoxy*butyl*)piperidine-4-carboxylate esters, this same Elpern II compound, albeit not the exact "reverse ester" but instead a homolog thereof, is, respectively, *four* and *eight times* more effective as an analgesic. We believe this amply suggests that esters having the structure of appellant's compounds will posses greater analgesic activity than their "reverse esters."

[2] In drawing that conclusion, we assumed that the "4-acetoxy" compound of Elpern II was identical to (e.g. the exact "reverse ester") the *ethyl*-4-carboxylate compound of Elpern I but for reversal of the ester linkage. In fact it is not, as comparison of the respective structures



demonstrates. We think such a comparison of ester homologues to be too tenuous to suggest that any improvement would be obtained solely because of reversal of the ester linkage. That comparison being the controlling evidence in Carabateas, we think the decision there rendered necessarily is incorrect.

[3] In the absence of a suggestion in the present record that the nature of appellant's improvement would be expected, we think appellant has presented clear and convincing evidence of the greater effectiveness of the claimed compound over the prior art, sufficient here to establish patentability of the compound. *In re Lohr*, 50 CCPA 1274, 317 F.2d 338, 137 USPQ 548. Under the circumstances, we think the record fails to support a finding that the subject matter as a whole would be obvious to one of ordinary skill in the art.

[4] The decision of the Board is reversed.

REVERSED.

RICH, *J.*, concurring.

I am satisfied this is a clear case for reversal, but for reasons other than those stated by the majority.

While I agree that the art of record collectively establishes obviousness of the structural formula and analgesic activity of the compound defined by the claim on appeal, I am unable to agree that a finding of *an* improvement in activity in esters of the type here involved, obtained from piperidinols, compared to those obtained from piperidine carboxylic acids, would be wholly *unexpected* to one of ordinary skill in the art with those references before him. To conclude otherwise, it seems to me, is to deny the realities of the situation; for the plain fact is that, without exception, the Elpern II compounds demonstrate potency greater than that possessed by the Elpern I compounds. While those compounds differ structurally in two respects, there is no reason to believe that either is *not* responsible, at least in part, for that increase in activity.

I would therefore reverse on what to me is a much sounder basis, both in law and on the facts presented, namely that the art makes no suggestion whatever that a reversal of the ester linkage would result in an increased activity *approximating the nineteen-fold increase found by appellant*. At the very best, the art suggests an increase of the order of four to eight times. This is a far cry from what appellant found.

The question is not, it seems to me, whether the art suggests *an* improvement, but rather whether it reasonably suggests *the particular* improvement relied upon for patentability in both its qualitative and quantitative sense. See *In re Lunsford* (P.A. 7478), decided March 17, 1966, 53 CCPA —, —F.2d —, — USPQ —. As in all section 103 cases, the important consideration is: does the prior art make obvious to those of ordinary skill what appellant has found?

U.S. Court of Customs and Patent Appeals

EUGENE F. SCHWARZENBEK AND JOHN TURKEVICH *v.* BERNARD L. EVERING, JOHN R. COLEY, AND WILLIAM A. WILSON

No. 7490. Decided April 7, 1966

[53 CCPA —; 357 F.2d 1018; 149 USPQ 213]

1. INTERFERENCE—PRIORITY—THIRD PARTY INVENTORSHIP.

"An attempt to establish third party inventorship could avail Schwarzenbek et al. nothing in this proceeding since, as they concede in their brief, 'a party to an interference who is otherwise entitled to priority may not be defeated by his adversary on the basis of proof that the invention was in fact made by a third party, a stranger to the interference * * *.'"

2. SAME—DISCLAIMER.

"It is clear that neither Evering nor his co-inventors stated or intended to state that they did not invent the subject matter defined by the count. Rather, they and their assignee have continuously prosecuted the interference with the obvious goal of prevailing on priority and ultimately obtaining a claim corresponding to the count in a patent issuing on their application. Schwarzenbek et al., not having overcome the record date of Evering et al., cannot be adjudged prior inventors on the basis of actions or statements of the senior party which are neither a deliberate disclaimer of the entire subject matter defined by the count nor a clear averment that they are not the inventors of the subject matter so defined."

APPEAL from the Patent Office. Interference No. 89,674.

AFFIRMED.

John C. Quinlan, Arnold G. Gulko (*James W. Clement, Marylin Klosty, Max Dressler* of counsel) for appellants.

Arthur G. Gilkes, Edward B. Beale (*Malvin R. Mandelbaum, James H. Callahan, Douglas G. Brace* of counsel) for appellees.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Patent Interferences awarding priority of invention in Interference No. 89,674 to Evering, Coley and Wilson, hereinafter Evering et al.

The interference involves an application of Evering et al., entitled "Oxidative Reactivation of Platinum Hydroforming Catalysts," Serial No. 601,073, filed July 30, 1956, as a continuation-in-part of application Serial No. 292,294, filed June 7, 1952. Schwarzenbek and Turkevich, hereinafter Schwarzenbek et al., are involved on their application for "Reaction of Platinum and/or Palladium Catalysts," Serial No. 294,707, filed June 20, 1952. Evering et al. are senior party as the result of the Examiner having granted a motion to shift the burden of proof on the basis of the filing date of their parent application. The Evering et al. applications are assigned to Standard Oil Company (Indiana), hereinafter Standard, and the Schwarzenbek application to M. W. Kellogg Company,[1] hereinafter Kellogg.

The invention in issue relates to hydroforming, the process of converting petroleum naphthas, in a stream of added hydrogen in the presence of a catalyst at elevated temperature, to high octane gasoline or aromatic hydrocarbons through dehydrogenation and aromatization of the naphthas. One catalyst used in hydroforming comprises small amounts of platinum on alumina. Although such platinum-alumina catalysts tend to become temporarily deactivated by the deposition of carbonaceous material thereon during hydroforming, it has been found that the catalyst can be regenerated to restore its activity by oxidation with a diluted air stream at an elevated temperature to remove the carbonaceous material. In certain cases, as stated in the Schwarzenbek et al. application, the platinum-alumina catalysts "can be used for prolonged periods of time, including many regenerations with a diluted air stream and at an elevated temperature, before the activity of the catalyst for a specific reaction or process declines permanently." By the process of the invention, one reactivates a platinum-alumina catalyst whose activity has so declined by subjecting it

[1] On January 1, 1963, this company became, by merger, a division of Pullman Incorporated.

to a first oxidative treatment for a period under a first set of conditions and then subjecting it to a second oxidative treatment under more severe oxidizing conditions.

The single count in issue, separated into numbered parts and with added emphasis for convenience in making future reference thereto, is reproduced below:

(1) A method of treating a deactivated, carbon-containing, platinum-alumina, hydroforming catalyst which has been subjected to *many* regenerations with a dilute air stream and has gradually accumulated residual carbon whereby its activity is impaired,

(2) which method comprises subjecting said deactivated catalyst to a first oxidative treatment at a temperature in the range of about 750 to 900° F. with a gas mixture containing more than about 0.5 and less than about 10 percent of oxygen for a period of time sufficient to remove readily combustible carbon, and then subjecting the catalyst to a second oxidative treatment with a gas mixture containing free oxygen under more severe oxidizing conditions than are employed in the first oxidative treatment, said second oxidative treatment being at a carbon-burning temperature not substantially higher than 925° F.

(3) for a period of time of at least about 15 minutes and sufficient to remove substantially all residual carbon and thereby to restore substantially the catalytic properties of the catalyst.

Neither party took priority testimony. However, Schwarzenbek et al. offered evidence including depositions of the applicants Evering, Coley and Wilson and certain other Standard employees and also exhibits from the records of Standard and its employees. The evidence relates to activities at Standard in connection with reactivation of platinum-alumina hydroforming catalysts, including the prosecution of certain patent applications.

Before the Board, Schwarzenbek et al. apparently questioned the finding of support for the count in the Evering et al. parent application which resulted in the granting of the motion to shift the burden of proof. They were not successful on that issue, however, and now expressly state that they do not argue it before this court.

The sole issue that remains is whether Evering et al. have "disclaimed" the invention in issue and as a consequence are not entitled to prevail in the interference, as they have. In their brief, Schwarzenbek et al. summarize their position as follows:

• • • because of *disclaimers* made by appellees in their sworn oral testimony in the proceeding below, appellees do not belong in this interference at all, and are thus not entitled to prevail here on the basis of the filing date of *either* their parent or their continuation-in-part application.

In particular, Schwarzenbek et al. rely on oral testimony of Evering et al. as constituting a disclaimer. They point out that their counsel read the portion of the count beginning with "subjecting said deactivated catalyst to a first oxidative treatment" and extending to the end (see parts (2) and (3) above) and then elicited the following testimony.

Q922. Dr. Evering, did you and Coley and Wilson discover the method described by the words which I have just read? A. No.

Schwarzenbek et al. also urge that Evering "deliberately and expressly disclaimed the *entire preamble of the count apart from the single word 'many,'*" relying on the following testimony elicited by their counsel:

Q925. Dr. Evering, in your view, did you and Coley and Wilson invent: "A method of treating a deactivated carbon-containing platinum-alumina, hydroforming catalyst which has been subjected to regeneration with a dilute air stream and has gradually accumulated residual carbon whereby its activity is impaired ... ."?

To help you in answering that question I call your attention to the fact that I read it largely from the first five lines of Schwarzenbek Deposition Exhibit 3 and omitted to read the word "many." A. Will you read me the question again, please.

Q925. (Read by the reporter.)

By the WITNESS:

A. No, but if there are not "many" regenerations, it is hard for me to say how a gradually accumulated residual carbon can be built up on the catalyst.

Topping that testimony of Evering with the contention that the preamble, including particularly the word "many," has no effect on the method of the count, Schwarzenbek et al. reach the conclusion that Evering's testimony constitutes a disclaimer of the entire count.

In their brief, Schwarzenbek et al. discuss at length the evidence of activities of other Standard workers, including particularly Schmitkons and Shields, who worked on reactivation of platinum-alumina catalysts during approximately the same period as Evering et al. and filed a patent application on that subject on the same date the parent Evering et al. application was filed. They also discuss the file histories of the concurrently filed applications, including action and comments before the Patent Office in response to a Patent Office requirement that a line of division be maintained between the subject matter claimed in the two applications.[2] Schwarzenbek et al. seem to imply that the aforementioned evidence leaves a question whether Schmitkons and Shields were not the inventors of the subject matter in issue instead of Evering et al. However, they state that third party inventorship is not being raised [3] and that reference has been made to the work of Schmitkons and Shields merely to help refresh the recollection of Evering et al. as to what they considered the gist of their invention and to "help show that Dr. Evering's sworn disclaimer in his oral testimony was *no precipitate, poorly thought out or inadvertent statement*, but an act as deliberate and knowing as it could possibly be."

The Board found there was neither an implied nor an express disclaimer of the count, resulting in Evering et al. being adjudged prior inventors on the basis of the filing date of their parent application. After discussing the evidence relating to the activities and application of Schmitkons and Shields, to statements made by counsel which emphasized the significance of carbon contents of the catalyst not set out in the count in distinguishing the invention of the parent Evering et al. application from that claimed by Schmitkons and Shields, and to testimony of Evering and his co-applicant Coley confirming some of counsel's statements, the Board stated:

It is our opinion that a disclaimer cannot be inferred from statements or testimony with respect to some different process or about some other matter. In other words, a disclaimer of the process of the count cannot, in our view, be made inadvertently. We believe that a disclaimer on the part of Evering et al. would require a clear statement or averment by them or on their behalf which relates directly to the count of this interference. It is our opinion that this is

[2] One point of Schwarzenbek et al. is that particular carbon contents of the catalyst disclosed in the Evering et al. application, but not set out in the present count, were relied on as distinguishing the invention thereof from that of Schmitkons and Shields.

[3] An attempt to establish third party inventorship could avail Schwarzenbek et al. nothing in this proceeding since, as they concede in their brief, "a party to an interference who is otherwise entitled to priority may not be defeated by his adversary on the basis of proof that the invention was in fact made by a third party, a stranger to the interference • • •." Also see *Foster* v. *Antisdel*, 14 App. D.C. 552, *Mortsell* v. *Laurila*, 49 CCPA 1028, 301 F.2d 947, 133 USPQ 380.

the minimum that would be required in order that the holdings in *Oliver* v. *Felbel* [20 App. D.C. 255, 1902 C.D. 565] and *Townsend* v. *Corey* [1905 C.D. 548] be applied here. In the absence of any direct statement about the process *as fully defined in the count* we find no basis in the evidence of a disclaimer of the count by Evering et al. In the old classical theory of a patentable combination, all of the elements, alone or separately, were presumed to be old. Obviously, an inventor could disclaim each element separately, while still asserting his right to claim the combination.

With respect to the charge that there has been an express disclaimer, the Board further commented:

The record indicates that Evering et al. contemplate that their invention includes subjecting a deactivated carbon-containing catalyst to the recited two stage oxidation only after the catalyst has undergone a number of cycles of hydroforming and mild oxidative treatment so that some refractory, hard to remove carbon has accumulated thereon. It is clear from the answers given by Evering to questions 923 to 926 * * * that subjecting the catalyst first to a number of cycles of hydroforming and mild regeneration is essential to the Evering et al. invention and that Evering et al. consider such a process distinctly different from a process which involves merely subjecting a deactivated hydroforming catalyst to simple two stage oxidation. It is quite evident to us that Evering, when he denied that Evering et al. had invented the broad two step oxidative catalyst reactivation method, had no intention of disclaiming the method of the count of interference. In this respect the situation here is similar to that in *Fishburn et al.* v. *Vincent*, 24 CCPA 1079, 33 USPQ 156, 88 F.2d 711, cited by Evering et al., where the court held that the appellee (Vincent) had no intention of disclaiming the count and that the situation there differed from situations "which involved an unqualified disclaimer of the invention set forth in the counts."

We have carefully considered the testimony and exhibits offered in evidence and we fail to find therein any deliberate and unequivocal disclaimer of the *method of the count of interference*. The testimony alleged by Schwarzenbek et al. to constitute the disclaimer by Evering et al., does not relate directly to the method as defined in the count, but to a method which is substantially different therefrom. As we pointed out above, we are of the opinion that a disclaimer of the subject matter of the count cannot be inferred by statements made with respect to other and different methods, particularly where it is evident that no such disclaimer was intended.

We find no error in the Board's position. While the argument of Schwarzenbek et al. here emphasizes the testimony of Evering as constituting a disclaimer, with the other evidence relating to prosecution history of the patent applications and the activities of Schmitkons and Shields as supporting circumstances, the reasoning of the Board clearly demonstrates the invalidity of that argument. [2] It is clear that neither Evering nor his co-inventors stated or intended to state that they did not invent the subject matter defined by the count. Rather, they and their assignee have continuously prosecuted the interference with the obvious goal of prevailing on priority and ultimately obtaining a claim corresponding to the count in a patent issuing on their application. Schwarzenbek et al., not having overcome the record date of Evering et al., cannot be adjudged prior inventors on the basis of actions or statements of the senior party which are neither a deliberate disclaimer of the entire subject matter defined by the count nor a clear averment that they are not the inventors of the subject matter so defined.

The cases of *Oliver* v. *Felbel* (C.A., D.C. 1902), 20 App. D.C. 255, 1902 C.D. 565, and *Townsend* v. *Corey* (Comm'r. Pat. 1905), 1905 C.D. 548, are relied on by Schwarzenbek et al. here as they were before the Board. Those cases may be precedent for awarding priority of

invention, in appropriate circumstances, to the opponent of a party who does actually disclaim the subject matter of an interference.[1] However, they so differ factually from the present case that they furnish no reason for finding that there has been a disclaimer of the count in issue here. Thus, the basis for the court's finding of a disclaimer in the *Oliver* case was a deliberate negative answer by Oliver to the following question deliberately propounded to him by his own counsel during the taking of testimony:

Do you claim to be the inventor of a device or mechanism embracing the particular combination of parts or elements specified in the issue of interference, as you understand them?

In *Townsend*, the Commissioner of Patents ruled that judgment was properly awarded to the opponent of a party who stated in a signed stipulation that he "does not claim to be the inventor of the subject matter of the interference issue." Moreover, it seems clear that in both of the cited cases the interest of the party making the disclaimer was in preventing his opponent from obtaining the subject matter in issue rather than in getting it himself.

The Board additionally considered the question of the weight to be given the word "many" in the introductory part of the count. Citing *Kropa* v. *Robie*, 38 CCPA 858, 187 F.2d 150, 88 USPQ 478, it concluded that the introductory phrase of the count including "many" is necessary to the definition of the process of the count. While we find no error in that conclusion, we think a separate ruling on the significance of the word "many" is unnecessary to the determination of the present controversy. Our finding that Evering et al. did not intend to disclaim *the subject matter defined in the count* and did not make a clear statement of disclaimer of *that subject matter* is enough to compel affirmance of the award of priority to them.

The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE BURTON B. SANDIFORD

No. 7628. Decided April 14, 1966

[53 CCPA —; 358 F.2d 756; 149 USPQ 301]

1. PATENTABILITY—OBVIOUSNESS—RELATIVE STABILITY OF NON-IONIC AND IONIC SUBSTANCES.

"Appellant asserts discovery of the unexpected superiority of HEC for water flooding by reason of its stability in oil field brines. The Solicitor counters, effectively we think, that the art knew that solutions of HEC, being non-ionic, were generally more stable in the presence of salts and acids than those utilizing CMC, the latter being an anionic thickener."

2. SAME—PARTICULAR SUBJECT MATTER—"WATER FLOODING."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Water Flooding" as unpatentable over the prior art, is affirmed as to some of the claims and reversed as to the others.

APPEAL from the Patent Office. Serial No. 32,550.

MODIFIED.

Sol Shappirio, *Robert E. Strauss* for appellant.

Joseph Schimmel (*L. F. Parker* of counsel) for the Commissioner of Patents.

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[1] It is noted that Rule 262 of the Rules of Practice of the Patent Office provides for judgment against a party to an interference who files a written disclaimer of the invention in issue "with the written consent of the assignee when there has been an assignment."

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

ALMOND, *J.*, delivered the opinion of the court.

Burton B. Sandiford appeals from the decision of the Board of Appeals affirming the rejection of method claims 1 to 6, inclusive, of appellant's application,[1] entitled "Water Flooding," as unpatentable over the prior art under 35 U.S.C. 103. No claims have been allowed.

The claimed invention relates to an improvement in the viscous water flooding method for displacing oil from a subterranean oil-bearing reservoir in the process of secondary petroleum recovery. It appears that reliance cannot be had on natural forces and pumping to induce the residual oil to the withdrawal well but resort must be had to other means to accomplish this desired end. A conventional method is to inject water or brine into the reservoir to force the oil contained therein towards a production well. This method, it seems, does not obviate the difficulty which is experienced in bringing about a complete areal sweep of the water which has a natural inclination to penetrate directly toward the withdrawal well in a narrow channel. It was found expedient, therefore, to increase the viscosity of the water or brine by adding certain materials thereto designed to reduce the tendency of the water to channel in the reservoir and thereby improve the displacement process and the ultimate recovery of the oil. The claims on appeal cover the use of, allegedly, a new additive for this purpose, namely, hydroxyethyl cellulose (HEC), as well as a new modification of the method of using it.

In addition to the viscous nature of HEC in aqueous solutions, the application states that it exhibits other characteristics which make it valuable in reservoir flood waters. Among these are: (1) inertness to sands and non-adsorption thereon; (2) does not cause plugging of sands; (3) relative stability in oil field substances containing detrimental chemical reacting agents; (4) stability under turbulence and agitation, and (5) a beneficial viscosity-shear relationship, namely, "high viscosities under low shear rates such as are encountered at the oil-water interface in a flooding process, and * * * lower viscosities under high shear rates * * * at the injection sites."

Claim 1 is reproduced as representative:

1. In the method of recovering oil from a subterranean oil bearing reservoir wherein an aqueous fluid is injected into said reservoir through at least one injection well and displaced oil is withdrawn from said reservoir through at least one production well spaced therefrom, the improvement which comprises employing as said aqueous fluid a viscous aqueous solution of hydroxyethyl cellulose having a viscosity at 75° F. between about 10 and 1000 centipoises.

The references are:

Binder et al. (Binder), 2,731,414, January 17, 1956.
Cardwell et al. (Cardwell), 2,778,427, January 22, 1957.
Sandiford et al. (Sandiford), 2,827,964, March 25, 1958.
Park, 2,961,400, November 22, 1960.

Binder discloses the basic concept of using viscosity increasing agents as thickeners for the same purpose disclosed by appellant. The agent is added to a portion of the flood water and the resulting solution (having a volume of about 0.05 to 0.3 times the pore volume of the reservoir to be flooded) is injected into the reservoir, and thereafter the unthickened, relatively nonviscous flood water is injected into the well whereby the oil in the formation is displaced by the viscous aqueous solution which in turn is displaced by the unthickened water.

Binder does not mention HEC as such. Among the thickening agents disclosed is carboxy methyl cellulose (CMC), 1 to 2 percent of which will serve to increase viscosity to about 1000 centipoises. The amount of viscous solution used should be about 0.05 to 0.30 of the volume of hydrocarbon pore space in the reservoir.

Cardwell relates to a method of acidizing an earth formation penetrated by the bore of the well to increase the output of oil and gas therefrom. The patent teaches the use of water-soluble cellulose ethers as viscosity increasing agents for dilute aqueous solutions used in oil well acidization and fracturing. Cellulose ethers disclosed for this purpose are, inter alia, CMC and HEC. The patentee states that by including in the hydrochloric acid solution the cellulose ethers in a stated percentage range by weight, they "at least temporarily thicken or increase the viscosity of the acid solution and deposit a water absorbent gel-like film or coating on the surface of the earth formation to be acidized."

Sandiford relates to the use of thickening agents in water flooding processes. It is disclosed that brines are conventionally used as the aqueous flooding medium in such processes and the use of a surface active agent is also a conventional practice.

Park discloses the use of water-soluble cellulose ethers and esters for controlling clay swelling in water flooding and other well treating processes. This patent also teaches the use of brine as the flooding medium in a water flooding process. According to Park, swelling of the silicates in the reservoir can be inhibited by the addition of slight amounts (less than 0.1 weight percent) of a cellulose derivative to the water. Fourteen such derivatives are disclosed including both HEC and CMC. Relative to these derivatives as viscosity increasing agents for water, the patentee states that the operability of his process "is independent of the viscosity grade of the cellulose derivative employed. So long as the viscosity is not so great that the cellulose cannot be dispersed in the treating liquid, it may be used in the invention."

The Examiner rejected the claims as "lacking invention" over Binder in view of the Cardwell and Park patents. He pointed out that Binder disclosed the basic concept of utilizing viscosity increasing agents in water flooding processes, for which purpose CMC is specifically disclosed. He further noted that both Cardwell and Park teach the similarity and equivalence of HEC and CMC and that these cellulosic ether derivatives are viscosity increasing agents, concluding that it would be an obvious expedient to one skilled in the art with the teachings of these references before him to substitute HEC for the CMC thickener in water flooding processes such as disclosed by Binder. With reference to the limitation in claim 3 reciting "oil field brine" as the flooding medium, the Examiner regarded such use of this substance as a conventional practice in the art as taught by both Sandiford and Park. As to claim 6 which broadly calls for "a surface active agent," included in the flooding medium, the Examiner observed that this is a common practice in the art as shown by Sandiford.

[1] Serial No. 32,550, filed May 31, 1960.

In its affirmance of the Examiner's decision, the Board stated:

> We agree with the Examiner that the secondary references would suggest the use of hydroxyethyl cellulose in place of the carboxymethyl cellulose employed in the process of Binder et al. * * *

It is apparent that both the method claimed by appellant and that disclosed by Binder relate directly to improved secondary methods of recovering oil from a subterranean reservoir. Both employ the steps of injecting a viscous aqueous cellulosic solution (appellant about 10 to 1000 centipoises, Binder 100 to 1000 centipoises) into the oil bearing reservoir through injection wells until about .001 to 0.30 (Binder .05 to 0.30) times the pore volume to be flooded is injected.

It may be said, therefore, that appealed claims 1 and 2 distinguish over Binder only in that they call for the use of HEC instead of CMC as an aqueous solution viscous additive. We think that the record amply sustains the holdings below that this difference would be obvious from the prior art. Cardwell teaches the use of HEC and CMC to increase the viscosity of the acid solution employed in his secondary oil recovery technique. Park, which relates to the control of swelling of silicates in secondary oil recovery, discloses the use of CMC and HEC as viscosity increasing agents for water. Park refers to the High Polymers Text,[2] which reads:

> Sodium carboxymethyl cellulose thickens water solutions without precipitation over a pH range of 4 to 12 and does not gel from water solutions upon heating. It is not precipitated from solution by dilute solutions of salts of alkali or alkaline earth metals; it is precipitated from solution by strong acids, by salts of amphoteric multivalent metals, and by salts of heavy metals.

Under the caption "Hydroxyethyl Cellulose," it is further stated:

> The use of hydroxymethyl cellulose result[s] from its solubility in cold and hot water, its salt and solvent compatibility, and its effectiveness as a protective colloid. Hydroxyethyl cellulose thickens solutions over a wide range of pH without precipitation.

It seems apparent therefore that those skilled in the subject art were fully apprised that both HEC and CMC could be used as solution thickeners over a wide range of pH values without precipitation.

Of equal obviousness is the use of brine (claim 3) as an aqueous liquid in water flooding, taught by Park. The same conclusion follows that a surface active agent (claim 6) as an additive to an aqueous solution could be used, as taught by Cardwell.

[1] Appellant asserts discovery of the unexpected superiority of HEC for water flooding by reason of its stability in oil field brines. The Solicitor counters, effectively we think, that the art knew that solutions of HEC, being non-ionic, were generally more stable in the presence of salts and acids than those utilizing CMC, the latter being an anionic thickener.

With regard to the use of HEC, the main thrust of appellant's argument is that although HEC and CMC are chemical derivatives of cellulose, they are not obvious equivalents as viscous additives in water flooding because of chemical differences which make HEC a superior additive. Appellant seeks to support these contentions by reliance upon several tests and affidavits purporting to establish lack of equivalency between the two derivatives and the superiority of HEC over CMC.

The Examiner pointed out that an affidavit in order to prove inoperativeness of a patented invention must make a strong and conclusive showing and deemed the limited showing made by appellant insufficient to establish that CMC, claimed as being useful in water flooding in Binder, is inoperative for this purpose. The record supports the observation of the Solicitor that the core used by appellant was saturated with brine prior to the introduction of the oil, a condition not called for by the claims. There is no test establishing that sand cores not so saturated would be plugged when flooded by a viscous aqueous solution of CMC. The disclosures of the prior art clearly indicate that they would not be.

We have heretofore noted the prior art's recognition of the non-ionic nature of solutions of HEC and their superior characteristic of stability in the presence of salts and acids over CMC. This, we think, would clearly suggest to one skilled in the art to use HEC in place of CMC in a core such as used by appellant in his tests.

Claims 4 and 5 specify that one or more thickened HEC solutions having successively decreasing viscosities are injected after the injection of the first thickened HEC solution. The purpose of this gradual viscosity decrease is stated in the specification:

> To avoid any sharp demarcations in viscosity which could adversely affect the relative mobilities and cause channelling, the addition of hydroxyethyl cellulose can gradually be lessened through a series of incremental decreases rather than discontinuing the addition abruptly. In this manner, water present in the flooded interval is always adjacent water of approximately equal viscosity and the tendency of the less viscous water to channel into through [sic] more viscous water is substantially eliminated. * * *

With regard to the above limitation in claims 4 and 5, the Examiner remarked:

> If this gradual lowering of viscosity were considered to be an advantage, it would be obvious to one skilled in the art to gradually lessen the quantity of the HEC in this manner. Appellant has not shown that there is in fact any actual advantage in following the flood-front with aqueous media of gradually reduced viscosity (as set forth in claims 4 and 5) as opposed to the follow-up with flood water containing no thickener as shown by Binder et al. Appellant has not even alleged that the particular procedure of claims 4 and 5 produces any unobvious advantages.

We cannot agree with the Examiner. First, we believe the rejection is based upon faulty reasoning. The prior art neither teaches nor suggests gradually decreasing the viscosity of the following liquid. Binder merely discloses following the initial viscous injection with unthickened water. Any suggestion for the gradual decrease must have originated with appellant's specification, not the prior art. It is, of course, improper to utilize appellant's own teachings to reject claims under the guise of 35 U.S.C. 103. Second, appellant does disclose an advantage to be gained by the gradual decrease—the inhibition or elimination of channeling. We see no reason to doubt this allegation.

[2] For the reasons above stated, we affirm the Board's decision as to claims 1–3, and 6, and reverse the Board's decision as to claims 4 and 5.

MODIFIED.

[2] 2nd edition, vol. V, part II, by Ott, Spurlin and Grafflin (1954), published by Interscience Publishers Inc., New York, N.Y.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,650,344, D. Lloyd, MAGNETIC TESTING APPARATUS; **2,685,672**, Price and Wood, APPARATUS FOR MAGNETIC DETECTION OF FLAWS IN FERROMAGNETIC PIPE; **2,746,012**, B. G. Price, INDUCTIVE ELECTROMAGNETIC INSPECTION, filed Oct. 15, 1962, D.C., W.D. Okla. (Oklahoma City), Doc. 9892, *AMF Tuboscope Co. et al.* v. *Joe H. Cunningham et al.* On remand from Court of Appeals; consent decree; patents held valid and infringed June 15, 1966.

2,685,672. (See 2,650,344.)

2,715,968, W. E. Davis et al., TOBACCO HARVESTER; **2,786,585**, same, TOBACCO HARVESTERS, filed May 1, 1964, D.C., E.D.N.C. (New Bern), Doc. 607, *Davis Harvester Company, Inc.* v. *Long Manufacturing Company.* Patent No. 2,715,968 and Patent No. 2,786,585 held invalid. Defendant's Patent No. 2,704,158 (included by counterclaim July 7, 1964) held valid Apr. 7, 1966. Appealed, May 25, 1966, C.C.A., 4th Cir., Doc. 10,662, *Davis Harvester Company, Inc.* v. *Long Manufacturing Company.*

2,746,012. (See 2,650,344.)

2,775,294, G. Schwank, RADIATION BURNERS; **2,870,830**, same, GAS BURNERS, filed July 21, 1961, D.C. Minn. (Duluth), Doc. 5–61/51, *American Infra-Red Radiant Co., Inc. et al.* v. *Lambert Industries, Inc. et al.* Claims 1 to 5 of Patent No. 2,775,294 held valid but not infringed; claims 1 to 4 of Patent No. 2,870,830 held valid but not infringed; complaint dismissed Jan. 20, 1965. Appealed, June 24, 1965, C.C.A., 8th Cir., Doc. 18054, *American Infra-Red Radiant Co., Inc. et al.* v. *Lambert Industries, Inc. et al.* Same, appealed, June 24, 1965, C.C. A., 8th Cir., Doc. 18055, *Lambert Industries, Inc. et al.* v. *American Infra-Red Radiant Co., Inc. et al.* Opinion of C.C.A.—(Docs. 18054 and 18055 consolidated) judgment of District Court affirmed in part and reversed in part. In Doc. 18054, the awarding of judgment to defendants on the patent infringement action is affirmed; and, in Doc. 18055, the District Court's determination of validity is reversed and denial of relief on counterclaim is affirmed May 20, 1966.

2,786,585. (See 2,715,968.)

2,870,830. (See 2,775,294.)

Des. 192,610, J. Berghoff, STRAW DISPENSER, filed Dec. 3, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 64–1457–EC, *Duplex Straw Dispenser Co.* v. *Harold Leonard & Co., Inc. et al.* Judgment holding Des. Patent No. 192,610 invalid; complaint dismissed with prejudice May 1, 1964.

REISSUES

SEPTEMBER 20, 1966

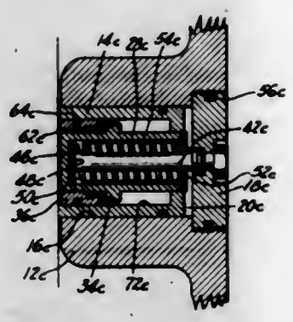
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,078
COMBINATION ADJUSTER AND RESET MECHANISM

James A. Tankersley and Paul A. Driscoll, South Bend, Ind.; said Tankersley assignor to The Bendix Corporation, a corporation of Delaware

Original No. 3,095,064, dated June 25, 1963, Ser. No. 572,855, Mar. 21, 1956. Application for reissue June 26, 1964, Ser. No. 390,254

14 Claims. (Cl. 188—72)



10. In a brake or the like: a cylinder housing having a bore therein; a piston, reciprocably slidable in a forward actuating direction and a rearward retraction direction, located in said bore; said piston having a rear face, an opening in said rear face, and a bore terminating at said opening in said rear face; an element gripping the wall of said piston bore; a member fixedly secured to said housing at a location opposite said piston bore and extending in a forward direction from said housing; said element being slidable relative to said member; a lost motion stop connection between said member and said element when said element is moved forwardly; whereby upon movement of said piston in a forward direction, said piston and element will move as a unit until said element is stopped by said lost motion stop connection and upon further forward movement of said piston, said gripping connection between said element and piston will be overcome and said piston will move forwardly relative to said element and be gripped thereby at a new position thereon; and resilient means operatively connected to said element and said member reacting on said member to provide a retraction force on said element and piston as a unit after actuation of said piston.

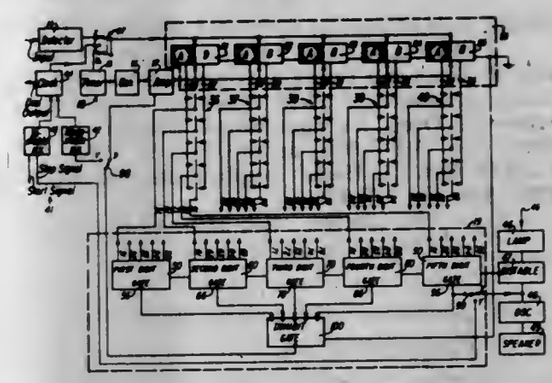
26,079
SELECTIVE CALLING APPARATUS

Martin Cooper, Skokie, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Original No. 3,080,547, dated Mar. 5, 1963, Ser. No. 771,641, Nov. 3, 1958. Application for reissue May 5, 1964, Ser. No. 375,688

12 Claims. (Cl. 340—164)

1. An electronic selector device for providing selective response to a call signal which includes pulse information representing the digits of a code call associated with the device, and for generating such call signal for transmission, said selector device including in combination, a binary counter circuit for counting the pulse information of the call signal, a plurality of gates selectively connected to said counter circuit, said counter circuit actuating said gates in sequential order when the output therefrom corresponds to the count of the first digit and then to the sum of the first digit and the succeeding digits of the call signal in order, decoding control circuit means for controlling said counter circuit and said gates in a decoding mode to provide selective response to the call signal, encoding control circuit means for operating said



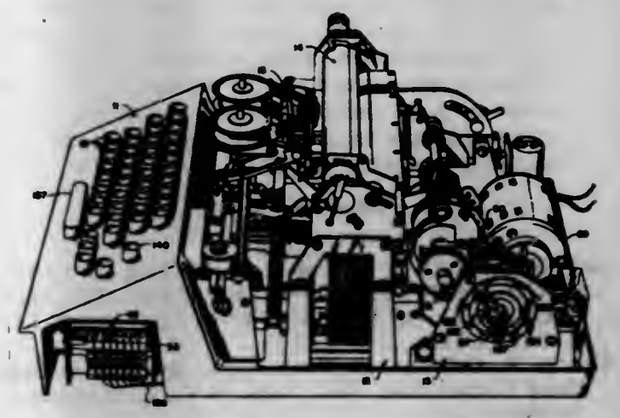
counter circuit and said gates in an encoding mode for generating the call signal for transmission, and means for selectively conditioning said decoding control circuit means and said encoding control circuit means.

26,080
TELEGRAPH TRANSMITTER DISTRIBUTOR STARTING MECHANISM

Arthur A. Hagstrom, Roselle, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Original No. 3,133,988, dated May 19, 1964, Ser. No. 159,240, Dec. 14, 1961. Application for reissue Feb. 3, 1966, Ser. No. 532,506

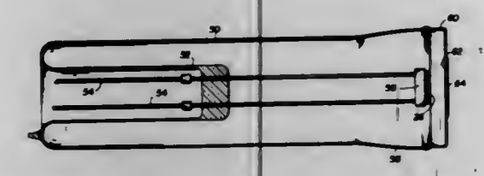
9 Claims. (Cl. 178—17)



9. In a key controlled telegraph transmitter having a plurality of permutatively settable members, keys for actuating said members and contacts controlled by said members, a cyclically operable distributor having serializing elements connected to said contacts, a universal control member operated by said keys each time any one of them is operated, and means actuated by said universal control member for initiating a single cycle of operation of said distributor each time a key is operated comprising a pivot rod, a trip lever oscillatable on said pivot rod by said universal control member, an intermediate lever oscillatably, and slidably mounted on said pivot rod for oscillation by said trip lever, a blocking lever oscillatable about said pivot rod from a blocking position to a non-blocking position by said intermediate lever, a distributor-

start lever normally blocked by said blocking lever and operable to initiate a cycle of operation of said distributor when the blocking lever is moved to the non-blocking position, means on said intermediate lever for engagement by said trip lever to oscillate the intermediate lever and for engagement by the distributor-start lever to slide the intermediate lever out of position to be oscillated, and spring means to oscillate the intermediate lever to position to release said blocking lever for movement back to blocking position.

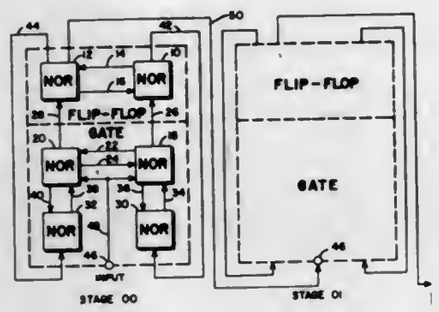
26,081
SHORT PULSE-HIGH ENERGY FIELD EMISSION TYPE ELECTRON RADIATION TUBE
Walter P. Dyke and Frank J. Grundhauser, McMinnville, Oreg., assignors to Field Emission Corporation, McMinnville, Oreg., a corporation of Oregon
Original No. 3,173,006, dated Mar. 9, 1965, Ser. No. 232,021, Oct. 22, 1962. Application for reissue July 2, 1965, Ser. No. 472,078
20 Claims. (Cl. 250—49.5)



1. An electron radiation device comprising envelope means having a vacuum therein,
an anode structure forming part of said envelope means, said anode structure having a thin metallic wall portion capable of being penetrated by high speed electrons,
electron emitting means supported in said envelope means including a field emission cathode for directing electrons toward said wall portion when a high voltage pulse is applied between said anode and said cathode,
means for supporting material to be subjected to electron radiation adjacent and on the other side of said wall portion from said electron emitting means,
an electrical connecting means for said electron emitting means and said anode structure to enable high voltage, high current electric discharges to be produced between said electron emitting means and said anode structure to cause electrons to penetrate said wall and into said material.

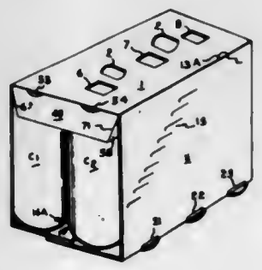
26,082
ASYNCHRONOUS BINARY COUNTER REGISTER STAGE WITH FLIP-FLOP AND GATE UTILIZING PLURALITY OF INTERCONNECTED (NOR) LOGIC CIRCUITS
George T. Osborne, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Original No. 3,139,540, dated June 30, 1964, Ser. No. 226,524, Sept. 27, 1962. Application for reissue June 4, 1965, Ser. No. 462,787
11 Claims. (Cl. 307—88.5)

5. A bistable register stage comprising:
a bistable flip-flop circuit alternatively switchable to a set and clear operating condition, said flip-flop including a first pair of cross-coupled logic circuits, a set input circuit, a clear input circuit, a set output circuit, and a clear output circuit;
a gating circuit for controlling the switching of said flip-flop, said gating circuit including a second pair of cross-coupled logic circuits, an output circuit of one of said second pair coupled to said clear input circuit and an output circuit of the other of said second pair coupled to said set input circuit;
a third pair of logic circuits, each circuit of said third pair having input and output circuits, one of said third pair cross-coupled with one of said second pair and the other of said third pair cross-coupled with the other of the second pair;



means coupling said clear output circuit to an input circuit of the one of said third pair;
means coupling said set output circuit to an input circuit of the other of said third pair; and
means for receiving input signals coupled to an input circuit of each of said second pair.

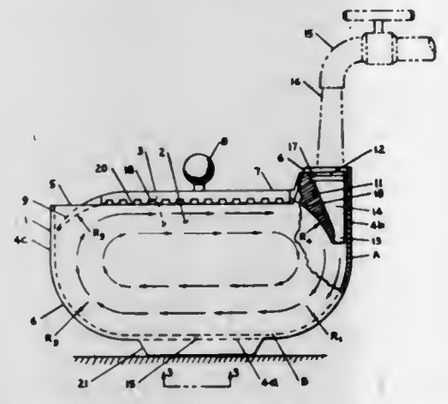
26,083
ARTICLE CARRIER
Homer W. Forrer, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Original No. 3,203,584, dated Aug. 31, 1965, Ser. No. 221,565, Sept. 5, 1962. Application for reissue Jan. 24, 1966, Ser. No. 526,952
2 Claims. (Cl. 220—115)



1. A package comprising two rows of cylindrical objects arranged in close parallel relation to each other, the objects having chimed ends, a rectangular main wall disposed in flat parallel relation to the ends of the objects, said main wall being slightly wider than twice the diameter of the objects including their chimes, a pair of [rectangular] side walls foldably joined respectively along opposite side edges of said main wall and adjacent the sides of the objects, a pair of lap panels having their side edges foldably joined respectively to the edges of said side walls remote from said main wall and extending in flat parallel relation to the ends of the objects remote from said main wall, means securing said lap panels together to form a composite wall of a width slightly less than said main wall, an anchor panel foldably joined to each end edge of each side wall, said anchor panels being at least as wide as the radii of the objects and being folded flat against the inside of said side walls, an end panel foldably joined to each end of said main panel and disposed in normal relation to said main panel and adjacent the sides of the objects, a pair of slots formed in the fold line between each end panel and said main panel, each slot corresponding to one row of objects and being arranged to receive the chime of the end can in one row of objects, a generally

triangular web panel foldably joined to each end of each end panel and to the adjacent end of the adjacent anchor panel and with the vertex of said web panel at the adjacent corner of said main panel, the anchoring angle (A) defined by the fold line between each anchor panel and the adjacent web panel and by the fold line between each anchor panel and the adjacent side wall being substantially greater than forty-five (45) degrees and the web angle (W) defined by the fold line between each web and the adjacent anchor panel and by each web and the adjacent end panel being slightly greater than said anchoring angle, and a plurality of chime receiving slots formed along the fold lines between each lap panel and the associated side wall.

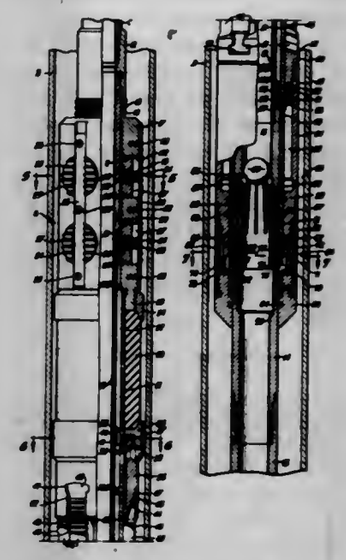
26,084
FRUIT AND VEGETABLE WASHING DEVICE WITH VERTICAL CIRCULATIVE FLOW AND RIBBED COVER
Charles W. Ranson, 7906 Agnew Ave., Los Angeles, Calif. 90045
Original No. 3,207,482, dated Sept. 21, 1965, Ser. No. 249,894, Jan. 7, 1963. Application for reissue Nov. 29, 1965, Ser. No. 514,760
11 Claims. (Cl. 259—4)



1. A washing device including two side walls extending longitudinally and vertically and spaced apart, a lateral wall extending between said side walls to provide a bottom wall and two opposite end walls and connecting with said side walls in unitary relation, and the inner surface of said bottom wall and the inner surface of at least one of said end walls substantially faired to provide a substantially curved inner surface at the region of juncture, and said walls *substantially* terminating upwardly to provide an upper opening, and a cover member adapted for said opening, and a plurality of channels in said cover member from the inner surface thereof, and with said cover member in normal installed position said channels *substantially* traversing container wall edges *to provide for liquid exhaust flow while preventing the egress of small wash units.*

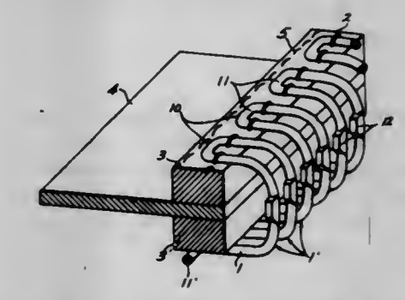
26,085
HYDRAULICALLY ACTUATED WELL PACKERS
William D. Myers, Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Original No. 3,112,796, dated Dec. 3, 1963, Ser. No. 99,598, Mar. 30, 1961. Application for reissue Aug. 20, 1965, Ser. No. 482,660
22 Claims. (Cl. 166—120)

1. In apparatus adapted to be set in a well bore: a body; normally retracted means disposed about said body and adapted to be expanded outwardly into engagement with the wall of the well bore; upper actuating means engaging an upper portion of said normally retracted means and comprising an upper setting sleeve surrounding said body; lower actuating means engaging a lower portion of said normally retracted means and comprising a lower setting sleeve; hydraulically operable means on said sleeves *movable toward each other* for shifting said upper and



lower actuating means relative to each other to expand said normally retracted means, said hydraulically operable means on each sleeve being slidable along the other sleeve; and means for enabling fluid pressure to act on said hydraulically operable means.

26,086
SLIDE FASTENERS
Josef Ruhrmann, Stuttgart-Vaihingen, Kurt Streicher, Echterdingen, near Stuttgart, and Ernst Popovitsch, Echterdingen, near Stuttgart-Bussnau, Germany, by Talon, Inc., Meadville, Pa., a corporation of Pennsylvania
Original No. 3,149,387, dated Sept. 22, 1964, Ser. No. 174,815, Feb. 21, 1962, which is a continuation of Ser. No. 714,801, Feb. 12, 1958, which in turn is a division of Ser. No. 617,336, Oct. 22, 1956. Application for reissue Oct. 22, 1965, Ser. No. 505,140
21 Claims. (Cl. 24—205.1)



1. A stringer for a slide fastener comprising a filamentary structure having a series of substantially U-shaped scoop portions arranged one behind the other substantially in parallel relation so as to provide two series of transverse portions disposed in juxtaposition with the transverse portions in each series being substantially parallel to one another,
the inner end of each of said transverse portions in each of said series being connected only to the inner end of a preceding transverse portion and, the inner end of each of the opposed transverse portions in the other series being connected only to a succeeding transverse portion so as to provide a series of substantially U-shaped [heel] portions,
each of said U-shaped portions having a substantially longitudinally extending base portion

an elongated tape arranged along one side of said transverse portions so that the scoop portions extend outwardly from the marginal edge of the tape,

the transverse portions of each series being located substantially in a common longitudinally extending plane *substantially parallel to said tape*, and with said [heel] base portions also being located substantially in a common longitudinally extending plane *located substantially perpendicular both to the plane of the tape and to the transverse portions*, and

means independent of said transverse portions for attaching the same solely in cooperation therewith to the marginal edge portion of the tape between said scoop portions and said heel portions of said filament so as to bind the filament and tape securely together at said transverse portions whereby the heel portions are exposed.

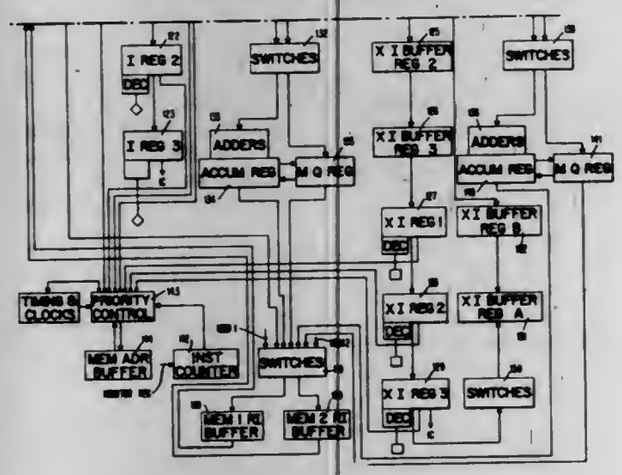
26,087

MULTI-COMPUTER SYSTEM INCLUDING MULTIPLEXED MEMORIES, LOOKAHEAD, AND ADDRESS INTERLEAVING FEATURES

Stephen W. Dunwell and Clarence Ernest Stephens, Poughkeepsie, William R. Stringfellow, Wappingers Falls, and Vaughn D. Winkler, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Original No. 3,202,969, dated Aug. 24, 1965, Ser. No. 862,967, Dec. 30, 1959. Application for reissue Nov. 26, 1965, Ser. No. 526,638

29 Claims. (Cl. 340—172.5)



19. A data word storage arrangement for an electronic digital computer machine, said data word storage arrangement comprising first and second separate multiple-word storage devices, both of said devices including a plurality of separate data word storage locations, common signal input/output connections for each of said storage devices, signal-controlled address selection means for rendering any chosen one of said word storage locations accessible through said input/output connections, address selection control means having an address signal input for receiving a digital form address number signal defining any chosen one of said data word storage locations in said storage arrangement and control signal outputs selectively energizable in accordance with the address number defined by the address signal applied to said address signal input, and circuit means interconnecting said control signal outputs of said address selection control means with said address selection means of said word storage devices to render a word storage location in said first multiple word storage device accessible through said input/output connections in response to a first address number signal to render a word location in said second multiple word storage device accessible through said input/output connection in response to a second address signal having an address number consecutive to the address number of said first address signal and to render a word storage location in said first multiple word storage device accessible through said input/output connection in response to a third address signal having an address number consecutive to the address number of said second address signal, said circuit means operative to render a multiple word storage device accessible before the completion of an access operation at a previously addressed multiple word storage device.

26,088

BEARING COMPOSITION

Robert Rulon-Miller and Saul Ricklin, Bristol, R.I., assignors to Dixon Corporation, a corporation of Rhode Island

No Drawing. Original No. 3,122,505, dated Feb. 25, 1964, Ser. No. 102,104, Apr. 11, 1961. Application for reissue Feb. 24, 1965, Ser. No. 452,039

46 Claims. (Cl. 252—12)

24. A composition of matter consisting essentially of a homogeneous mixture of the three components polytetrafluoroethylene present by volume of 50% to 80%, a silicate selected from the group consisting of glass, talc, mica and aluminum silicate and a third material selected from the group consisting of aluminum, molybdenum, silver, copper, lead, lead oxide and copper oxide, the silicate being present by volume in from equal parts to twice the third material, whereby the presence of the third material imparts increased wear resistance as compared with a two part mixture of polytetrafluoroethylene wherein the silicate or third material would be present in amount equal to the sum of the silicate and the third material in the three part mixture.

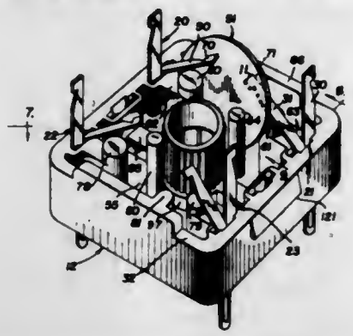
26,089

COUPLING DEVICE

John J. Antalek, Glenview, Ill., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Euclid, Ohio, a corporation of Ohio

Original No. 3,130,350, dated Apr. 21, 1964, Ser. No. 821,802, June 22, 1959. Application for reissue July 19, 1965, Ser. No. 478,014

6 Claims. (Cl. 317—101)



4. In combination, a base member of insulating material, a pair of slots extending through said base member, terminal members positioned in each of said slots, each of said terminal members having a bifurcated upper portion above said base member, one bifurcation of each of said terminal members extending inwardly towards the other terminal member, *means defining spaced apart positioning means on said base member*, and a disc capacitor having opposed electrodes separated by a layer of dielectric, *the end portions of* said extending [bifurcation] *bifurcations* being conductively bonded to opposite sides of said disc capacitor at points which are spaced apart laterally to exert a force couple on said disc capacitor [and resiliently urge the sides of said capacitor against said positioning members] *and resiliently urge said capacitor against said positioning means* so that said capacitor is held in a generally vertical plane.

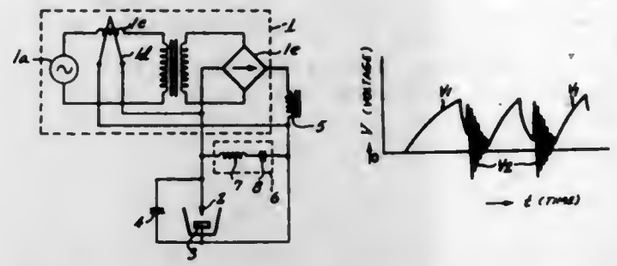
26,090

[ELECTRIC POWER SUPPLY APPARATUS FOR ELECTRIC] *METHOD OF ELECTRICAL* DISCHARGE MACHINING

Kiyoshi Inoue, 182 3-chome Setagaya-ku, Tamagawayoga-machi, Tokyo-to, Japan

Original No. 3,087,044, dated Apr. 23, 1963, Ser. No. 52,395, Aug. 29, 1960. Application for reissue Apr. 23, 1965, Ser. No. 450,579

12 Claims. (Cl. 219—69)



11. The process of electrical discharge machining of a conductive workpiece across a dielectric filled gap by an electrode tool comprising the steps of passing a series of machining pulses of relatively low frequency and long duration across the gap, impressing a series of relatively high frequency, short duration pulses of successively diminishing amplitude across the gap prior to the normal completion of each machining pulse and terminating said higher frequency pulses prior to the initiation of the next following machining pulse, the time duration of each short duration pulses being a small fraction of that of said machining pulses.

26,091

ULTRASONIC AMPLIFIERS, OSCILLATORS, CIRCULATORS, ISOLATORS AND SWITCHES

Donald L. White, Mendham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Original No. 3,173,100, dated Mar. 9, 1965, Ser. No. 105,700, Apr. 26, 1961. Application for reissue Oct. 23, 1965, Ser. No. 505,145

13 Claims. (Cl. 331—96)

14. An oscillator comprising a unitary body having both piezoelectric and semiconductor properties, said body enclosed within a cavity adapted to support high frequency electromagnetic waves, means including a D.C. bias source for establishing a D.C. field in said body and for simultaneously generating an acoustic wave signal in said body with an accompanying significant piezoelectric field, said D.C. field having a magnitude and direction such that the drift velocity of the carriers responsive to said field has a velocity component along the axis defined by the direction of acoustic wave propagation whereby the carriers of said D.C. field interact with the said acoustic wave in a manner so as to modify the amplitude of the acoustic wave, and electrical output means for coupling electromagnetic energy from the said cavity.



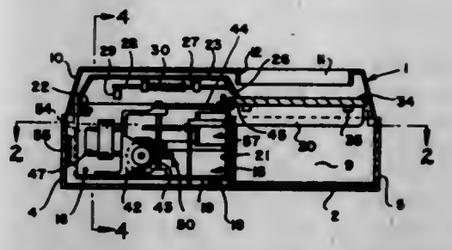
26,092

SELF-CLEANING ASH TRAY

Archibald M. McKenzie, West Vancouver, British Columbia, Canada, assignor to Sherman Development Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia

Original No. 3,095,108, dated June 25, 1963, Ser. No. 135,917, Sept. 5, 1961. Application for reissue June 4, 1965, Ser. No. 461,569

12 Claims. (Cl. 220—20.5)



10. A self-cleaning ash tray comprising a casing having an opening, a plate associated with said casing for reciprocatory movement from an original position adjacent to and blocking said opening, to an open position unblocking said opening, a flexible wiper blade engaging the top surface of the plate adjacent a side edge thereof when said plate is in said original position and cleaning said plate when said plate moves from said original position to said open position, wiper blade cleaning means for causing the flexible wiper blade to vibrate and thereby clear the same of accumulated debris and actuator means operatively associated with the plate and the wiper blade cleaning means to actuate said wiper blade cleaning means at a predetermined position of the plate within the span of said reciprocatory movement.

PATENTS

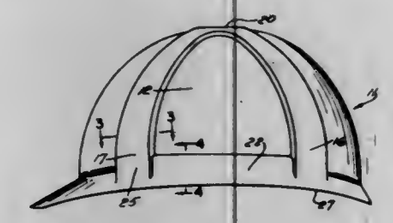
GRANTED SEPTEMBER 20, 1966

GENERAL AND MECHANICAL

3,273,162
HARD HAT WITH REINFORCING RIBS

John R. Andrews III, North Uxbridge, Mass., assignor to Welsh Manufacturing Company, a corporation of Rhode Island

Filed Dec. 3, 1964, Ser. No. 415,653
3 Claims. (Cl. 2—3)

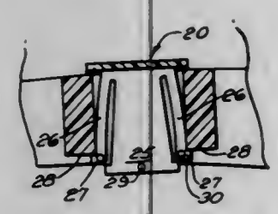


1. A molded hard hat having an arcuate crown portion and a outwardly flaring generally horizontal marginal lower edge, the thickness of the lower marginal edge being greater than the wall of the crown portion, said wall being outwardly deflected to provide ribs radiating from the mid top portion downwardly along the arcuate wall and extending into and across said marginal edge which is also outwardly deflected at the location of said ribs, said thicker lower edge extending from rib to rib providing a support against compression of adjacent ribs.

3,273,163
ACCESSORY ATTACHMENT TO A HARD HAT

John R. Andrews III, North Uxbridge, Mass., assignor to Welsh Manufacturing Company, a corporation of Rhode Island

Filed Dec. 18, 1964, Ser. No. 419,498
1 Claim. (Cl. 2—3)

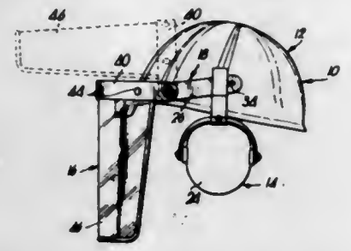


In combination with a hard hat, a member for attaching accessories thereto, means for detachably securing said member to said hat comprising two cooperating parts, one part on said hat and the other part on said member, said part on the hat being a socket having a through opening with outwardly extending abutments formed at its lower edges, and the part on said member being a tongue with resilient arms at either side having lugs extending outwardly a distance to engage the abutments of said socket and prevent withdrawal of said tongue, said arms and tongue being relatively spaced sufficiently to permit movement of the arms toward each other and toward said tongue to free said lugs from said abutments for withdrawal of the tongue from said socket.

3,273,164
FACE SHIELD ASSEMBLY FOR A HARD HAT

Robert R. Thomas, Kansas City, Mo., assignor to Parmelee Plastics Company, Kansas City, Mo., a corporation of Missouri

Filed Sept. 9, 1964, Ser. No. 395,197
7 Claims. (Cl. 2—10)



1. In a safety headgear comprising a hard hat having a visor, a pair of sound attenuators, means mounting an attenuator on each side of the hat, and a face shield, the combination with said headgear of:

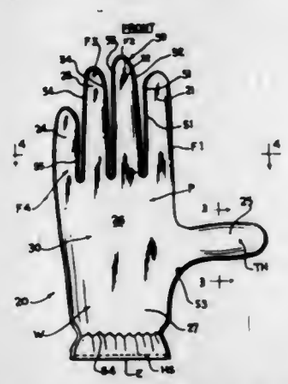
bracket means secured to the attenuator mounting means and extending forwardly therefrom said bracket means including a U-shaped band comprising a pair of legs and a bight section integral with the legs and having an elongated slot therein, a leg extending on each side of the hat with the visor being received through said slot; and

means pivotally mounting the shield on the bracket forwardly of the attenuator mounting means for swinging movement through an arc in front of said visor.

3,273,165
GLOVES FOR PLAYING SPORTS

Frank Sperandeo, 882 3rd Ave., Brooklyn, N.Y.

Filed Dec. 9, 1963, Ser. No. 329,167
1 Claim. (Cl. 2—169)



In a sports glove having the palm including the index finger portion, thumb portion and area therebetween completely free of seams, a combination of a front part and a back part secured together to form the completed glove,

(a) said back part having a back of the hand section, a wrist section and, in the area of said thumb and index finger, a thumb section only, said thumb section extending from said back of the hand section and away from said wrist section at an oblique angle with respect to the normal longitudinal axis of said back part,

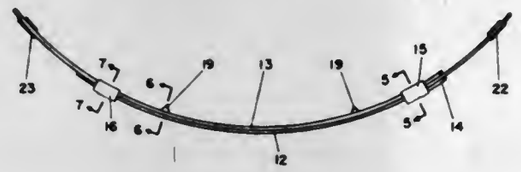
(b) said front part having a palm section, a wrist section and, in the area of said thumb and index finger, an index finger section of sufficient width to extend around the front, back and thumb-facing side areas of an index finger, and a thumb section extending from said palm section and generally toward said wrist section at an angle approaching the perpendicular with respect to the normal longitudinal axis of said front part, said index finger section extending at said full width from the tip thereof to the joint with said thumb section, whereby a portion of the back of the hand and the back of the index finger will be covered by said index finger section,

the width of said front part thumb section being greater than the width of said back part thumb section, whereby the joining seams will be remote from the glove palm, said front and back part being seamed at the edges to form said completed glove.

3,273,166
ORNAMENTAL VISOR STRAP FOR A UNIFORM CAP

Patrick J. Connolly, Medfield, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed Apr. 30, 1964, Ser. No. 364,042
10 Claims. (Cl. 2—185)



1. An ornamental visor strap for a uniform headpiece comprising:

(a) an outer strap,

(b) an inner strap,

(c) means carried by said inner strap and adapted to engage said headpiece to prevent vertical movement of said visor strap in relation to said headpiece,

(d) a tab,

(e) a tab retainer fixed to the front face of said tab and the rear face of said inner strap near one end thereof and defining a passageway between said tab and said inner strap for slideably receiving said outer strap,

(f) a strap guide fixed to the front face of said outer strap near one end thereof and having portions extending over the top and bottom edges and at least a part of the rear face of said outer strap, said portions and the rear face of said outer strap defining a passageway for slideably receiving said inner strap, and

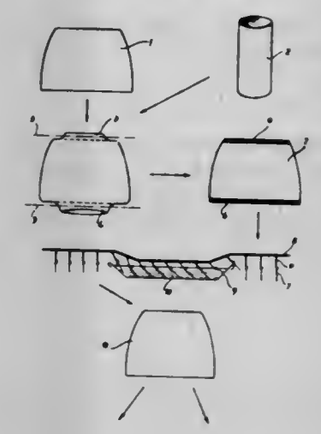
(g) means for attaching said ornamental visor strap to said headpiece, said outer strap, inner strap, tab, tab retainer and strap guide being formed from anodized and dyed metal having an ornamental design embossed thereon.

3,273,167
PROCESS FOR THE MANUFACTURE OF MIXED FABRIC AND LATEX GARMENTS

Jose Maria Massó Remiro, 3 Consejo de Ciento St., Barcelona, Spain

Filed Jan. 24, 1964, Ser. No. 340,017
Claims priority, application Spain, Feb. 2, 1963, 285,019
2 Claims. (Cl. 2—243)

1. A process for making garments of fabric and latex, comprising the steps of providing a flat mold of a material having a lower specific gravity than water, preferably carton wood whose density is 0.6 to the sillouette desired for the garment with the dimensions being somewhat greater than the dimensions of the garment, providing a fabric having elastic characteristics and of tubular form with the transverse dimension thereof being slightly less than the narrowest part of the mold, placing said fabric on said mold cutting the tubular fabric on the mold thereby leaving an excess of fabric projecting at each end of the mold, closing the ends of the tubular fabric immediately over the ends of the mold, removing the excess of fabric projecting at each end of the mold,

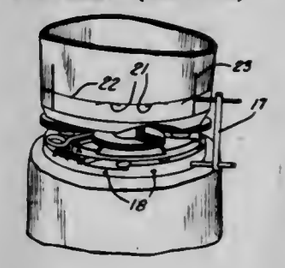


moving the fabric covered mold tangentially into a latex bath having a depth not greater than 15 cm., moving the fabric covered mold through the latex bath along a course approximately parallel to the surface of the bath, withdrawing the covered mold tangentially from the bath, drying the latex fabric covered mold under temperature and humidity conditions not exceeding 55° C. and 80% respectively, removing the excess of latex and fabric extending beyond the ends of the mold, imparting to the extremities of the tubular fabric the form of garment desired, and removing the garment from the mold for its final finish.

3,273,168
ADJUSTABLE ALIGNMENT COUPLING FOR LOWER EXTREMITY PROSTHESES

Henry F. Gardner, New York, and Anthony Staros, Northport, N.Y., assignors to the United States of America as represented by the Secretary of the Army or the Administrator of Veteran Affairs

Filed June 21, 1963, Ser. No. 289,764
8 Claims. (Cl. 3—1)



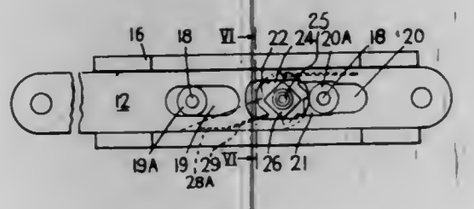
1. A prosthesis alignment coupling comprising an upper plate fastenable to an upper portion of a prosthetic limb, an intermediate plate, a lower plate fastenable to a lower portion of a prosthetic limb, means adjustably connecting said upper plate and said intermediate plate to allow relative movement between said upper and intermediate plates in a first lateral direction, means rotatably and adjustably connecting said intermediate plate and said lower plate to allow rotative movement between said intermediate and lower plates about their vertical axes and relative

movement between said intermediate and lower plates in a second lateral direction transverse to said first lateral direction, means connected to said intermediate plate for tilting said intermediate and lower plates relative to said upper plate, and transfer compass means removably and rotatably attached to a plate of said coupling to mark the alignment of said coupling on the prosthetic limb.

3,273,169
REMOTE ALTERNATOR FOR SELECTIVE ACTUATION OF PROSTHETIC LIMBS AND SURGICAL APPLIANCES

Alfred Henry Taylor, East Horndon, Brentwood, Essex, Alfred Charles William Ford, London, and Charles Philip Steeper, Tadsworth, Surrey, England, assignors to Hugh Steeper Limited, London, England, a British company

Filed Aug. 6, 1963, Ser. No. 300,214
Claims priority, application Great Britain, Aug. 9, 1962, 30,597/62
10 Claims. (Cl. 3—12.3)

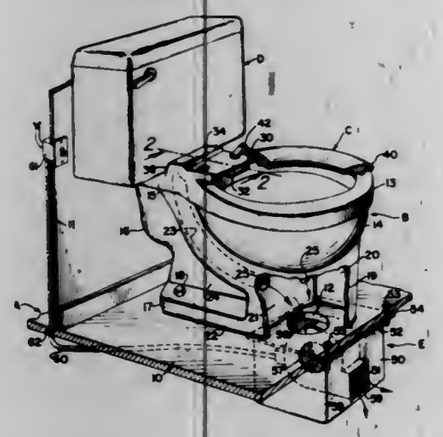


10. For use in a prosthetic device, mechanism for actuation of alternate functions at a location remote from the said mechanism comprising: a first member, a second member movable to and fro on said first member, a ratchet wheel rotatably mounted on said first member, driving means on said second member for rotating the ratchet wheel, an abutment member rotatable by the ratchet wheel, and means on said second member selectively engageable with the rotatable abutment member according to the rotative position thereof, the said means on said second member permitting different amounts of to and fro movement of the second member, thus permitting different amounts of movement to be transmitted to a remote location.

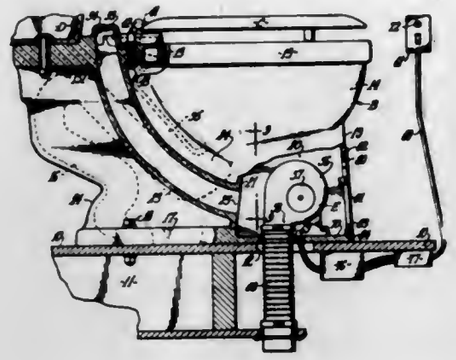
3,273,170
TOILET VENTILATING APPARATUS

Robert I. Wheeler, 5626 Imperial Highway, Southgate, Calif.

Filed Oct. 20, 1965, Ser. No. 505,586
15 Claims. (Cl. 4—72)



1. In combination: a toilet bowl comprising a bowl body; a base beneath the rearward portion of said body and integral therewith; an integral skirt beneath the forward portion of said body, defining a suction chamber beneath said bowl and having a bottom adapted to be mounted to a floor for supporting said base and skirt; a ventilating duct extending forwardly along the side of said bowl and communicating with said suction chamber at its forward end; a suction mouth integral with the rearward portion of said bowl and providing communi-

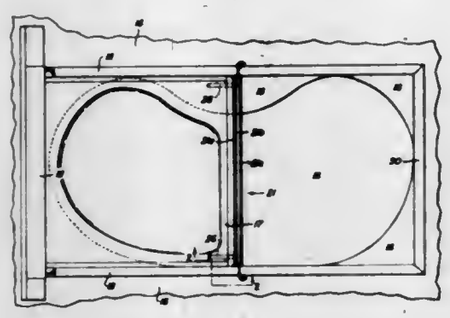


cation between the rearward end of said ventilating duct and a rearward area within said bowl for withdrawing odorous vapors therefrom; whereby suction applied to said chamber will be effective to develop a ventilating flow of air laden with said vapors, from within said bowl into said suction chamber for discharge through said port.

3,273,171
CARRIER FOR FORWARD EDGE OF EXTENDIBLE AND RETRACTABLE FLEXIBLE SHEET

Joe H. Lamb, Salt Lake City, Utah, assignor, by mesne assignments, to Cover-Pools Incorporated, Salt Lake City, Utah, a corporation of Utah

Filed Aug. 7, 1961, Ser. No. 131,049
18 Claims. (Cl. 4—172)

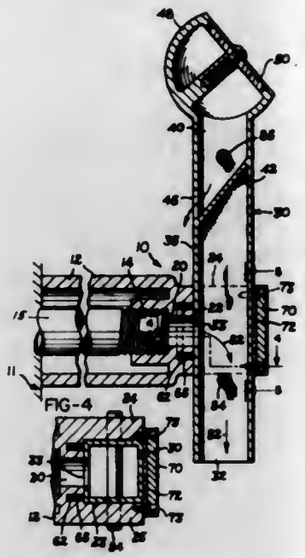


1. In combination, a horizontally disposed sheet of flexible material; stationary means at one end of said sheet for extending and retracting the sheet relative to a horizontal area to be protectively covered thereby; a relatively rigid, traveling strip at the other end of said sheet extending along and secured to the sheet as a forward margin thereof; a pair of offset axles, the individual axles of which are journaled in opposite ends of the strip, respectively, and have respective offset portions extending outwardly therefrom, with respective spindle ends offset from but parallel with the journaled portions of said axles, so that said strip can be raised for travel; a pair of wheels, the individual wheels of which are journaled on said spindle ends, respectively, and are adapted to ride adjacent said area to be covered during travel of said strip; and means for retaining said strip in raised position during extending and retracting movement of strip and sheet following raising said strip with respect to said wheels.

3,273,172
BATHROOM FIXTURE

Karl W. Wilks, Jr., P.O. Box 146, Vandalia, Ohio; Jeannette D. Wilks, executrix of said Karl W. Wilks, Jr., deceased

Filed Aug. 26, 1963, Ser. No. 304,511
9 Claims. (Cl. 4—192)

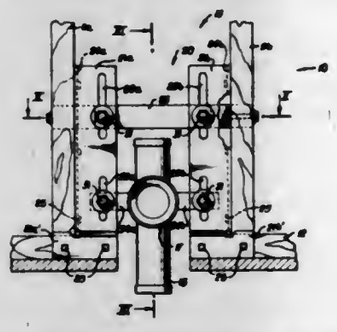


1. A tub mounted spraying device comprising a spout adapted to extend inwardly into a bath tub, means in said spout defining a water passageway therethrough opening at a wall thereof, a diverter member mounted for relatively sliding movement on said spout, means in said member forming a cooperating wall portion adjacent said spout wall and having a passage therein opening at said wall portion and communicating with said passageway of said spout in one selectable position of said member, means forming a spray head on said member communicating with said passage and positioned by said member when said member is in said one position to direct a spray therefrom upwardly and outwardly into said tub, and low friction seal and bearing means in said spout wall surrounding said opening having a portion in sealing engagement with the adjacent said wall portion throughout the sliding movement thereof.

3,273,173
WALL CLOSET CARRIER

Earl L. Morris, Whittier, and George Lee Curtice, Downey, Calif., assignors to Acorn Engineering Company, Los Angeles, Calif., a corporation of California

Filed Apr. 22, 1963, Ser. No. 274,469
5 Claims. (Cl. 4—252)



1. A carrier device for hanging and supporting a wall hung water closet for installation behind the finished surfaces of a wall of the type constructed with spaced vertical studs and horizontal sill forming a space for a soil drain fitting, comprising:

a pair of upstanding laterally spaced, elongated closet hanger plates, each having a front portion parallel to the plane of the wall and a rearwardly extending side portion perpendicular to the front portion, said side portions being securable to opposing surfaces of spaced vertical studs defining the space for a soil drain fitting;

each of said hanger plates having a lower end having a laterally extending toe portion lying in a plane parallel to but offset forwardly of the front portion, said lower ends and toe portions being securable to wall surfaces of a horizontal sill adjacent said space;

an elongated upper and lower vertical slot in the front portion of each hanger plate;

vertically adjustable securing means for cooperation with said lower slots to secure and position a soil drain;

and vertically adjustable closet support means including a horizontal member of U-shaped configuration, said member having a bottom provided with spaced ports and rearwardly extending end sections,

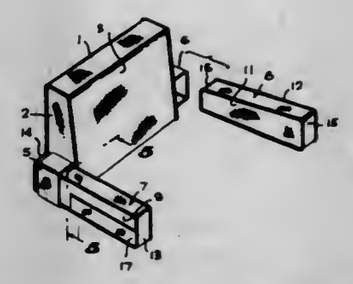
a stud-like member extending forwardly through each of said ports and an upper slot in the front portion of a hanger plate and connecting said horizontal member and plate to support a wall hung water closet;

said rearwardly extending end sections of said horizontal member including means for connecting the ends directly to vertical studs defining said space.

3,273,174
BED REST PILLOW

Genaro Cassini, Los Angeles, Calif., assignor to A & D Associates, Los Angeles, Calif., a corporation of California

Filed Oct. 20, 1964, Ser. No. 405,213
5 Claims. (Cl. 5—327)



1. A bed rest pillow comprising: a backrest having top, bottom, front and rear surfaces, said backrest also having two side surfaces extending upwardly from said bottom surface to said top surface and forwardly from said rear surface to said front surface; a first loop of material attached to one of said side surfaces near said bottom surface; a second loop of material attached to the other of said side surfaces near said bottom surface; a first armrest having one end removably mounted in said first loop; and a second armrest having one end removably mounted in said second loop.

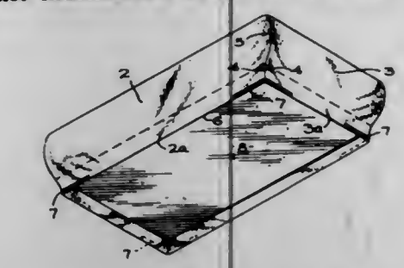
3,273,175
SELF-TUCKING FITTED SHEET

Martin Anderson and Hattie T. Anderson, both of 1-H Gardenway, Greenbelt, Md.

Filed Feb. 7, 1964, Ser. No. 343,296
7 Claims. (Cl. 5—334)

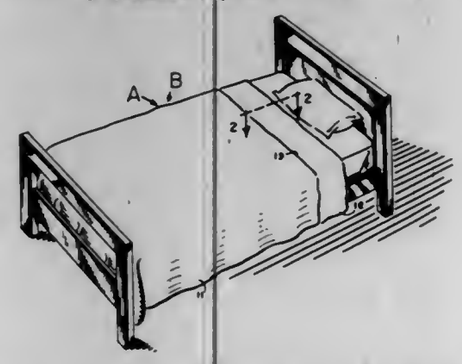
1. A self-tucking cover for a mattress, or the like, substantially conforming to the top, side, and end contours thereof comprising: an endless flap portion adapted to depend below said mattress; an endless free edge of said flap portion; corner segments of said free edge; tensioned linear corner elastic means in cooperation with said cor-

ner segments whereby said endless flap portion is self-tucking in cooperation with said elastic means; and concave corner indentations of said endless flap portion, said



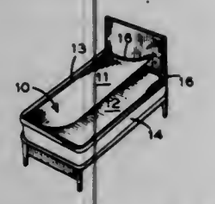
indentations, independently of said elastic means, being adapted to inwardly underlie the corners of said mattress and position said flap portion beneath said corners and said cover upon said mattress.

3,273,176
SANITARY BLANKET
Rutherford Y. Millar, 1596 Greenwood Drive, Calistoga, Calif.
Filed June 15, 1964, Ser. No. 375,046
5 Claims. (Cl. 5—334)



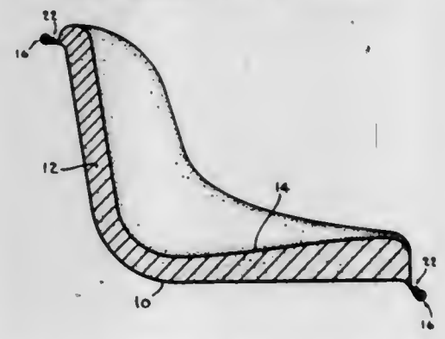
1. A bed covering comprising: a blanket body formed of relatively lasting material; an extension flap of generally the same width and of substantially shorter length than said blanket body; means secured to one end of said blanket body to attach removably one end of the flap to said end of the blanket, and wherein said means comprises: a first zipper strip attached along one edge of said blanket body; a second zipper strip attached along one edge of said flap, said second zipper strip designed to join said first zipper strip; joining means attached to said zipper strips to join said second zipper to said first zipper.

3,273,177
FIREPROOF MATTRESS COVER AND PROTECTIVE SHIELD
Leroy C. Newton, 1343 Fairfield Ave., Bridgeport, Conn.
Filed May 17, 1965, Ser. No. 456,171
3 Claims. (Cl. 5—335)



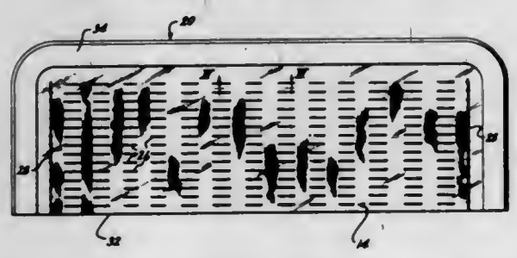
1. A fireproof pad comprising a first panel and a second panel, each of said panels being flat and sized to cover a given area of a piece of upholstered fruniture, and each of said flat panels being formed of a single layer of soft tightly woven fireproof fabric, and means for securing said panels together along common edge thereof so as to permit folding of said panels between a coincident overlying position thereof to form a double ply covering pad for said furniture piece and a spread open position to define an extended single ply pad adapted for use on a fire shield to crash through a wall of flames, and hand straps connected to one side of each of said panels to define a hand hold whereby the same may be held in a spread position to define a fire shield, said hand straps being connected to the inside surface of the respective panels when said panels are disposed in their folded overlying position.

3,273,178
METHOD AND MEANS FOR SECURING SEAT COVERS TO THE BASE STRUCTURE OF A SEAT
Elmore J. Baruth and William C. Oswald, Milwaukee, Wis., assignors to Bostrom Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 22, 1964, Ser. No. 376,974
8 Claims. (Cl. 5—353.2)



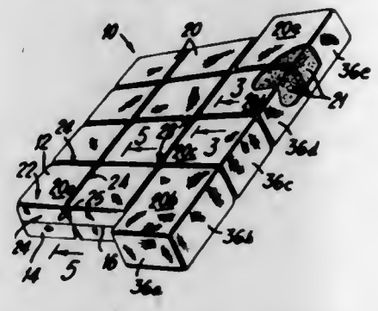
1. Means for securing a seat cover to the base structure of a seat comprising, a C-shaped member formed on the periphery of the base structure and receiving a terminal cover portion of the cover and a welt which is of larger cross-section than the distance between the edge of one jaw of said C-shaped member and said cover portion, said cover portion and said welt being bonded to each other, said welt being bonded to the upper inside portion of said C-shaped member by a bonding material, said terminal portion being bonded to the lower inside surface of said C-shaped member, said bonding material, after being hardened in assembly of the combination, forming a firm and relatively thick layer between said welt and the inside surface of said C-shaped member when compared to the layer between said terminal portion and said inside surface, to thereby proivde firm material in addition to said welt which will resist a force tending to pull the welt and cover from the engaged position within said C-shaped member.

3,273,179
INSULATOR FOR FOAM PADS AND METHOD OF MAKING THE SAME
Willard L. Ridenour, Ann Arbor, Mich., assignor, by mesne assignments, to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Mar. 19, 1963, Ser. No. 266,347
3 Claims. (Cl. 5—354)



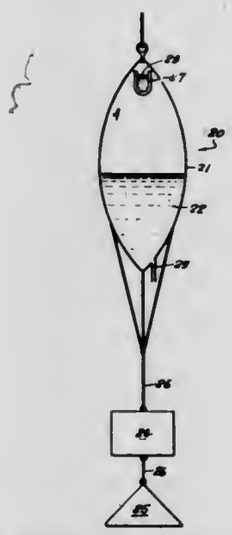
1. In combination, a foam pad having a spring-supported surface, a spring insulator molded to said pad upon said surface, said insulator including a flexible foam-pervious sheet disposed adjacent the foam defining said surface, a flexible, lightweight, foam-impervious sheet superimposed upon the side of said pervious sheet remote from the pad foam, and means affixing said sheets together at spaced locations permitting limited separations of said sheets intermediate said spaced locations, whereby said sheets will be maintained adjacent said pad surface during foaming of said pad and foam, and a portion of the foam adjacent said surface will completely penetrate said pervious sheet intermediate said spaced locations.

3,273,180
UPHOLSTERY PANEL
Jack Feinerman, 28 Chapel St., New London, Conn.
Filed Oct. 8, 1964, Ser. No. 402,520
5 Claims. (Cl. 5—355)



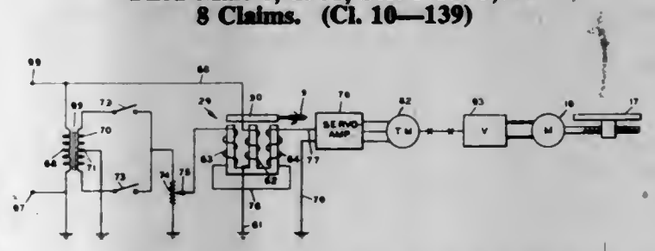
1. A stuffed upholstery panel comprising a pair of preformed top and bottom panel covers, each of which is preformed with a plurality of adjacently located, interconnected shaped individual pillows; means along the marginal edges joining said panel covers in facing relationship to each other so as to enclose shaped volumes therebetween, and means throughout the body of the panel connecting said covers to each other only at aligning corners of the individual pillows of each; and resilient means contained within each panel pillow formed by the facing pillows of the interconnected panel covers.

3,273,181
SELF-PRESSURIZED DEEP OCEAN BUOY
Earl J. Beck, Jr., 1323 W. Fir Ave., Oxnard, Calif.
Filed May 26, 1964, Ser. No. 370,383
6 Claims. (Cl. 9—8)



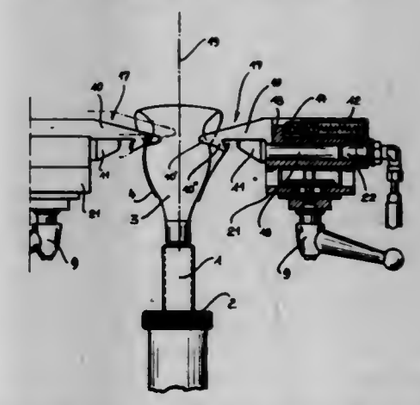
1. A self-pressurized lightweight deep ocean buoy comprising, in combination:
a lightweight metal hollow shell having an upper nose portion and a lower tail portion, said shell being of greater length than its major cross-sectional diameter;
a single vent formed in said shell, said vent being located in the lower tail portion of said shell for admitting ambient water under pressure to the interior of said hollow shell;
oceanographic instrument means attached to the lower portion of said shell;
a quantity of highly vaporizable substance carried interiorly of the nose portion of said hollow shell adapted to release a volume of high pressure gas sufficient to establish a positive buoyancy of said deep ocean buoy enabling it to return the said instruments to the surface; and
said quantity of highly vaporizable substance being contained in an insulated open container which is mounted in the nose portion of said shell.

3,273,182
FEED CONTROL DEVICE TO FEED TOOL SPINDLE AT RATE OF TOOL ADVANCE
David I. McDonald, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 6, 1961, Ser. No. 93,798
8 Claims. (Cl. 10—139)



1. A device for automatically synchronizing the feeding movement of a tap with its speed of rotation comprising a work support for holding a workpiece to be tapped, a power operated spindle disposed adjacent said work support, a tap holder supported in said spindle for limited axial movement relative thereto, a differential transformer, means operatively connecting said transformer with said holder so as to cause a signal to be produced by said transformer upon axial displacement of said holder in said spindle, and a servomechanism controlled by the signal from said transformer for feeding said spindle relative to said work support at a rate equal to the rate at which the tap threads its way into the workpiece upon rotation of the spindle.

3,273,183
GRIPPERS FOR A HEEL LASTING MACHINE
Herbert Schindler, Wagenstrasse 38, Pirmasens, Germany
Filed Aug. 16, 1965, Ser. No. 479,941
Claims priority, application Germany, Aug. 17, 1964, Sch 35,634
10 Claims. (Cl. 12—11.3)



1. Apparatus comprising means for supporting a last having an upper surface adapted to support an insole and having sides along which extends uppers constituting,

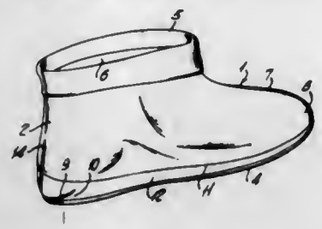
with said insole, part of a shoe, said means having a center plane, gripping means on opposite sides of the last and including relatively movable members adapted to clamp the uppers on opposite sides of the last and generally at the level of said upper surface, means to actuate the gripping means to engage the uppers between said members and to move the gripping means towards said center plane to wipe said uppers over said last, a thrust device for holding the insole against said last, means coupling said device and said gripping means for cooperative movement, said means for actuating the gripping means including a shaft supporting said gripping means, an angle arm coupled to said shaft to rotate the same and change the position of the gripping means relative to the upper surface of the last, and piston and cylinder elements coupled to one of the members of each gripping means to control the clamping of the uppers, said thrust device being mounted on said angle arm, arms mounted on said shaft and supporting said gripping means, and lost motion connection means between said arms and shaft whereby the thrust device is moved by said angle arm before the gripping means is moved, each said gripping means including a spring between said members and against which the associated piston and cylinder elements operate, at least one member of each gripping means having an inclined surface adapted to ride up over the last.

3,273,184
AUTOMATIC MACHINE FOR THE ASSEMBLY OF HEELS TO THE SOLES OF SHOES
Alberto Bruggi, % Dr. Cicogna Franco & Co., Via Visconti di Modrone 14a, Milan, Italy
Filed Apr. 13, 1964, Ser. No. 359,170
13 Claims. (Cl. 12—16.4)



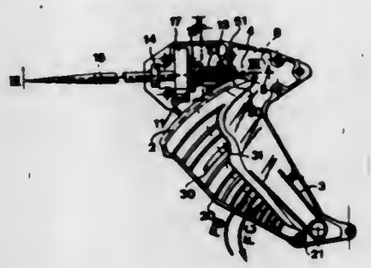
1. In a machine for securing a breast flap portion of a loose outsole to a loose heel at least one of the latter being applied with an adhesive, first support means for supporting a portion of an outsole having a breast flap portion freely extending therefrom; second support means for supporting a heel to be assembled with the outsole, at least one of said means being movable with respect to the other of said means between a first position in which the heel and the outsole are spaced from each other and a second position in which the heel and the breast flap portion of the outsole are adjacent to each other; turning means carried by said first support means, said turning means including a portion adapted to engage the free breast flap portion of the outsole supported by said first support means and movable with respect to said first support means, when said one means is in said first position thereof, for bending the breast flap portion of the outsole with respect to the supported portion thereof to a position where the former portion is located in a plane transverse to the plane of the latter portion; and pressing means operative to press said breast flap portion of the outsole to the portion of the heel adjacent thereto when said one means is in said second position thereof to cause the breast flap portion to be adhesively applied to the heel.

3,273,185
METHOD OF MAKING AN ELECTRONICALLY HEAT SEALED FOOT COVERING
Myron Winson, 15 S. Gate Drive, Spring Valley, N.Y., and Jonathan Winson, 793 East Drive, Oradell, N.J.
Original application July 26, 1963, Ser. No. 297,896. Divided and this application Feb. 1, 1966, Ser. No. 524,271
6 Claims. (Cl. 12—142)



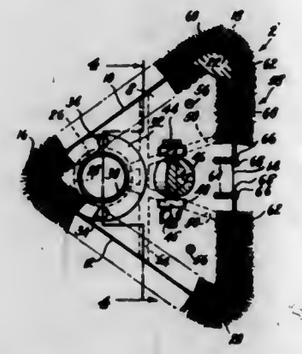
1. The method of making an electronically heat sealed foot covering of a desired width which comprises providing upper and lower blanks of thermoplastic sheeting, the upper blank being open along its counter portion, maintaining the lower blank in a substantially flat plane, positioning the upper blank in contact with the lower blank, heat sealing the upper to the lower using a flat die electrode of generally U-shape so as to make a heat seal which is spaced from the periphery of the sole at least in the region rearwardly of the shank, thereby providing a heat seal along the sides and toe portions of the periphery of the foot covering, positioning the ends of the upper together in its counter portion with the lower folded on itself in the heel region, heat sealing the contiguous parts of the counter and heel using a flat die electrode thereby forming a counter seal closing the back of the foot covering, placing the sealed assembly with its lower blank substantially flat, and making a heel seal using a flat die electrode across the lower blank in a direction generally perpendicular to the counter seal so as to pinch off excess material in the heel.

3,273,186
PORTABLE CLEARING DEVICE FOR FIBRE ENDS, BROKEN THREADS AND THE LIKE
Angelo Pagani and Mario Vezzoli, both of San Pancrazio, Brescia, Italy (both % Dr. Ing. Misitano A.G., Via Padova 217, Milan, Italy)
Filed May 27, 1964, Ser. No. 370,424
Claims priority, application Italy, June 20, 1963, 12,580/63
1 Claim. (Cl. 15—1.5)



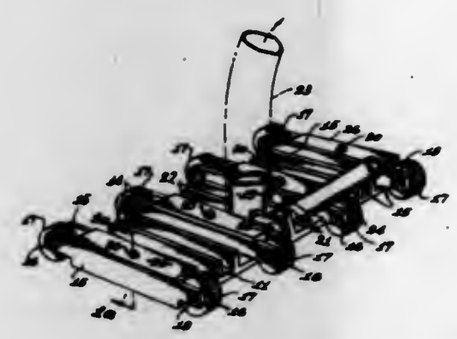
A device for clearing fibre ends, broken threads and like flying bodies produced in the operation of textile machinery, characterized in that it comprises a portable support frame made of plastic material, a manually actuated control member, an overdrive gearing of the motion derived from the control member, a spindle actuated by the said overdrive gearing, a tip to be removably fixed to the said spindle and made of plastic material for attracting by electrostatic effect the fibre ends, a flywheel for storing the kinematic energy, and a ratchet wheel device permitting a unidirectional and rapid revolution of the spindle during the actuation of the control member, the said ratchet wheel device consisting of a half moon shaped spring to be fixed at its ends to the said flywheel and made of plastic material, a clip integral with that said spring, a ratchet wheel cooperating with the said clip, and mounted coaxially to the said spindle.

3,273,187
VACUUM CLEANER HEAD
Adonis D. Williams, 1009 Krumroy Road, Akron 6, Ohio
Filed Jan. 14, 1965, Ser. No. 425,492
10 Claims. (Cl. 15—1.7)



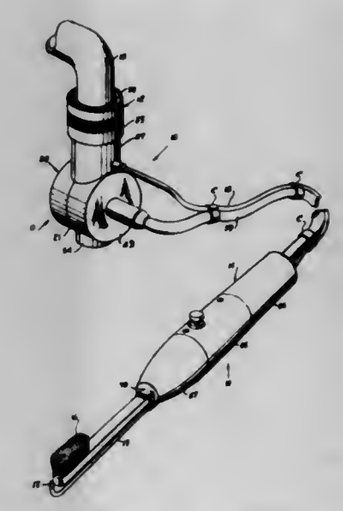
1. A vacuum cleaner head for cleaning swimming pools, especially pools lined with sheet plastic or the like, comprising: a generally triangular base plate having a bore therethrough, the undersurface of said plate having a plurality of intersecting grooves therein, arranged to communicate with the lower end of said bore; means carried by said base plate for connecting a vacuum hose to the upper end of said bore; and a brush secured to said base plate to extend around at least a major portion of the periphery thereof, said brush extending around the corners of said plate, and the bristles of said brush extending downwardly and outwardly from the periphery of said plate a distance sufficient to provide a large brushing area and to provide a buffer for preventing said plate from striking and damaging the wall surfaces on which said cleaner head is used.

3,273,188
VACUUM HEAD FOR SWEEPING SWIMMING POOLS
Walter R. Levack, 258 Avalonia St., Playa del Rey, Calif.
Filed July 23, 1965, Ser. No. 474,270
8 Claims. (Cl. 15—1.7)



1. A vacuum head for cleaning swimming pool bottoms comprising: a platform of relatively flexible plastic material having transverse ribs extending upwardly from its upper surface to rigidify the platform in a transverse direction while permitting longitudinal flexing thereof; a downwardly directed flange around the edge of said platform to form a shallow chamber at the under surface thereof; rollers supporting said platform with its edge flange spaced above the surface on which the rollers move; means providing a suction opening through the platform into said shallow chamber for connection to a suction line; and means for moving said vacuum head over a pool bottom to be cleaned.

3,273,189
CLEANING APPARATUS
Louis E. Levinson, Dallas, and Ernest J. Worley, Garland, Tex., assignors to General Business Corporation, Dallas, Tex., a corporation of Texas
Filed June 22, 1965, Ser. No. 465,992
15 Claims. Cl. 15—22)



9. A hand unit including: a hollow elongate handle, a motion translating device having an input shaft and an output shaft, said input shaft being rotatable by a flexible shaft adapted to be connected to said input shaft, said motion translating device translating rotary motion of said input shaft into oscillatory motion of said output shaft through a predetermined angle about the longitudinal axis of said output shaft; a tooth brush shaft rotatably mounted in said housing and extending forwardly therefrom, said brush shaft having means exteriorly of said housing for connecting a tooth brush thereto; and clutch means for selectively connecting said tooth brush shaft to said output shaft.

3,273,190
WIRE POLISHER
Samuel W. McClemens, Holsopple, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware
Filed Oct. 23, 1962, Ser. No. 232,486
3 Claims. (Cl. 15—104.04)

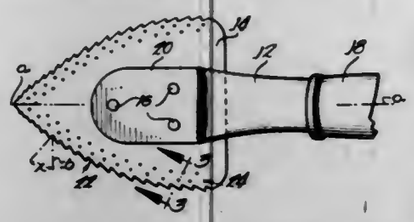


1. An apparatus for polishing wire continuously moving in a longitudinal direction, said apparatus comprising:

(a) a pair of supports, spaced longitudinally along and offset from the axis of said wire,

(b) a coil spring, the unstressed length of which is less than the distance between said supports, said spring being stretched and held in tension between said supports and helically wrapped at least once completely around said wire, the outside of said spring being in contact with said wire.

3,273,191
KNIFE IMPLEMENT
William H. Chambers, 5457 N. Artesian, Chicago, Ill.
Filed May 21, 1964, Ser. No. 369,077
9 Claims. (Cl. 15—105)



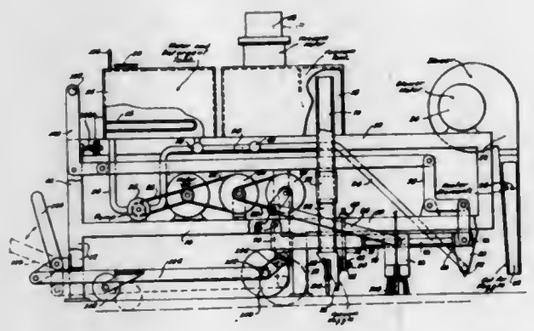
1. A blade for a knife implement having a pointed tip and at least two edges which taper outwardly in opposite directions from said tip; a plurality of teeth on each of said edges, said teeth progressively increasing in size as the edges of said blade are rearwardly traversed from said tip and angularly disposed with respect to a plane perpedicular to the axis of said blade, with the angle being progressively decreased as the edge of said blade is rearwardly traversed from said tip; and a plurality of perforations providing uprising tips on one side of said blade formed in said blade along said edges adjacent to said teeth.

3,273,192
PAINT ROLLER DEVICE HAVING A PIVOTALLY ADJUSTABLE HANDLE
Louis Mazzella, 2888 Morris Park Ave., Bronx, N.Y.
Filed Apr. 26, 1965, Ser. No. 450,684
1 Claim. (Cl. 15—230.11)



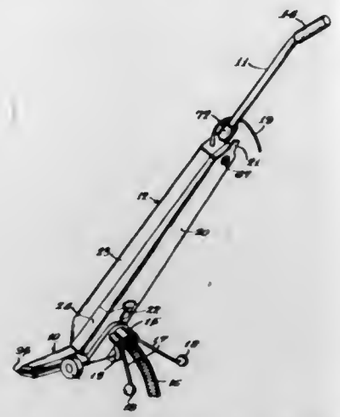
A paint roller device comprising:
(a) a paint roller cover having an axial bore;
(b) a one-piece support structure for said roller cover formed of a rod shaped to provide a shaft section, a carrier portion connected at one end to one end of said shaft section and at right angles thereto, an arm portion parallel to said shaft section connected at one end to the other end of said carrier portion and a shank portion connected at one end to the other end of said arm portion and at right angles thereto, said support structure lying in a plane,
(c) said shank portion being disposed substantially at the center of said roller cover and normal thereto,
(d) spaced collars rotatable on said shaft section, each positioned at an end thereof corresponding to the ends of said roller cover,
(e) circumferentially spaced rods equally radially spaced from said shaft sections, having their ends respectively fixedly secured to said spaced collars, whereby to provide a rotating axial cage on said shaft section,
(f) said axial cage fitting within the axial bore of said roller cover in fixed relation thereto to provide for rotation of said roller cover on said shaft section,
(g) a handle including a rod extension at one end thereof,
(h) a pair of discs fixedly secured respectively to the free end of said rod extension and to the free end of said shank portion and lying in planes parallel to the plane of the support structure,
(i) a central opening in one disc and a threaded stud projecting from the center of the other disc through said central opening,
(j) radial ribs and grooves on the opposed faces of said discs for interlocking adjustable engagement therebetween,
(k) a winged nut on said stud for clamping said discs together in selected angularly related positions,
(l) there being a threaded axial bore in the other end of said handle, and
(m) a handle extension having a threaded projection engageable in the threaded bore of said handle.

3,273,193
CLEANING APPARATUS
Alexius Soderholm and Stig A. Soderholm, Palos Verdes, Calif., assignors to Concept Development Corporation, Beverly Hills, Calif., a corporation of California
Filed Mar. 22, 1965, Ser. No. 444,920
13 Claims. (Cl. 15—320)



6. In an apparatus of the character described for cleaning the moving steps of an escalator as the steps travel relative to a sill platform at one end of the escalator, the combination of:
a body structure for positioning on the sill platform with a forward portion of the body structure overhanging the approaching steps;
wheel means mounted on the body structure to make the body structure mobile for transportation from one escalator to another;
means operable in one respect to immobilize the body structure on a sill platform for a cleaning operation in substantially a horizontal position, and operable in an opposite respect to free the body structure for transportation while retaining the horizontal position of the body;
scrubbing means for scrubbing the surfaces of the approaching steps; and
means for mounting said scrubbing means to the forward portion of the body structure, to render the scrubbing means responsive to immobilization and freeing of the body structure for positioning said scrubbing means in a first, relatively low level in relation to the approaching steps and in response to immobilization of the body structure, and in a second, higher level above the surface of the approaching steps in response to freeing of the body structure for transportation.

3,273,194
VACUUM CLEANER
Ivar Jepson and Julius P. Wied, Oak Park, and Gilbert R. Wolter, Elmhurst, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed May 31, 1963, Ser. No. 284,441
3 Claims. (Cl. 15—323)



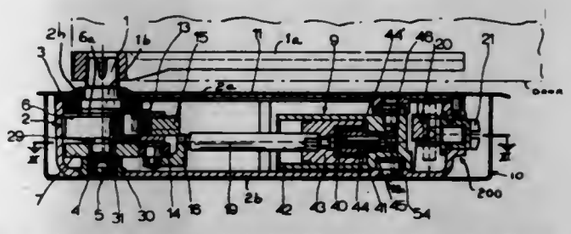
1. An upright vacuum cleaner comprising a floor engaging suction nozzle, a stick-like handle, an elongated generally rectangular box-like rigid casing pivotally interconnecting the nozzle and handle, the forward end of said casing being divided into superposed air impeller and motor chambers and the remainder of said casing comprising a dust collecting chamber, each of said chambers being shallow relative to their other dimensions and said impeller and motor chambers having a vertically superposed relationship with respect to each other when said casing is horizontally disposed, the bottom back side of said dust collecting chamber being removable to provide a removable panel on said casing to afford access to said dust collecting chamber, a dust collecting bag in said dust collecting chamber, said bag being elongated and being removably connected at one end thereof with said impeller chamber, said handle being removably connected to the upper end of said casing solely by disconnecting means disposed inside said casing, said panel affording access to said disconnecting means, and an electric control circuit for said cleaner comprising an electric extension cord and a control switch, said switch being disposed inside the upper end of said casing, and the upper end of said casing having an entrance aperture formed therein for reception of said extension cord whereby removal of said handle from the upper end of said casing leaves the electric control circuit of said cleaner intact.

3,273,195
PUSH-BROOM-TYPE VACUUM CLEANER
Ivar Jepson, Sister Bay, Wis., and Julius P. Wied, Oak Park, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 10, 1964, Ser. No. 374,029
6 Claims. (Cl. 15—344)

1. A push-broom-type vacuum cleaner, comprising an elongated upwardly projecting main housing and support member constructed from molded plastic material, an integral suction nozzle portion formed at the lower end of said main member, an integral fan scroll chamber formed on the bottom of said main member behind said nozzle portion, an integral motor chamber formed on the top of said main member above said scroll chamber, the bottom of said motor chamber being open, a motor mounting plate closing the bottom of said motor chamber, a motor mounted on the top of said plate, said motor being insertable into said motor chamber through its bottom opening, an elongated one piece bottom cover member for said scroll chamber and the bottom of said main member, an integral elongated exhaust passageway formed between said main and cover members, said passageway extending from said scroll chamber to the upper end of said members, an aperture formed in said plate, said motor having a depending motor shaft, said shaft extending through said aperture into said scroll chamber, a fan on said shaft in said scroll chamber, an elongated dust chamber formed on top of and integrally with said main member behind said motor chamber, an elongated top cover member for said dust collecting chamber, an opening formed in the upper end of said main member between said passageway and dust collecting chamber, and a stick type handle rigidly connected to the upper end of said main member.



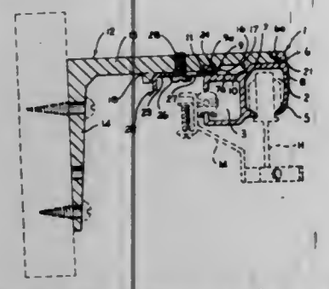
3,273,196
DOOR CHECK
Reinhold Vöster, Stuttgart-Degerloch, and Wolfgang Schmid, Stuttgart-Feuerbach, Germany, assignors to Vereinigte Baubeschlagfabriken Gretsch & Co. G.m.b.H., Leonberg, Wurttemberg, Germany
Filed Dec. 23, 1964, Ser. No. 420,592
Claims priority, application Germany, Dec. 24, 1963, V 25,084
19 Claims. (Cl. 16—82)



1. In a door check, a housing containing a supply of hydraulic fluid; a spindle rotatably mounted in and having an end extending from said housing; a control cam mounted on the spindle in said housing; a spring-biased follower for tracking and for normally holding said control cam in an angular position in which a swinging door connected to the end of said spindle is closed; a check cam angularly movably mounted on the spindle in said housing, said spindle and said check cam having cooperating portions for determining the extent of relative angular movement therebetween; a second follower for tracking said check cam; and a damper mechanism provided in said housing and operative to bias said second follower against said check cam, said damper mechanism comprising a cylinder member and a piston member one of which is operatively connected with said second follower and the other of which is secured to said housing, said piston member being reciprocable in said cylinder member to respectively expel and draw fluid from said housing, and relief valve means provided in said cylinder member and arranged to open shortly

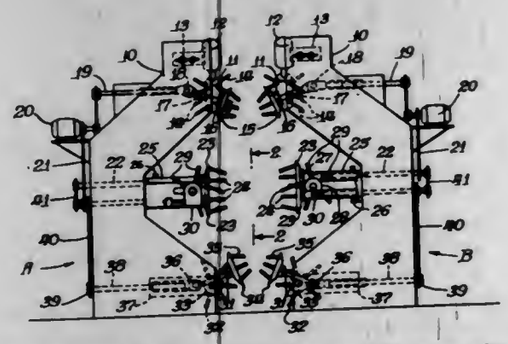
before said check cam reaches a dead center position with reference to said second follower while said piston member moves in a direction to expel fluid from said cylinder member.

3,273,197
STRUCTURAL DEVICE
James A. Ford, Sturgis, Mich., assignor to Kirsch Company, Sturgis, Mich., a corporation of Michigan
Filed Feb. 8, 1965, Ser. No. 433,539
23 Claims. (Cl. 16—94)



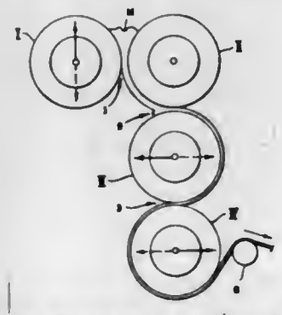
1. A traverse rod and support bracket, comprising:
an elongated hollow traverse rod having front, top and rear walls, said top wall having means defining groove means which is open along one lateral side thereof, said rod having upstanding surface means extending from one end to the other end of said rod and disposed in front of and extending above said groove means whereby said groove means is concealed from view from in front of said rod by said surface means;
a bracket having a mounting portion located rearwardly of said rear wall of said rod and having a horizontal rod-engaging portion extending frontwardly from said mounting portion over said top wall of said rod, said mounting portion being fastenable to a supporting surface, projection means on said rod-engaging portion, said projection means extending into said groove means and supportingly engaging said means defining said groove means, said surface means extending at least as high as said bracket whereby said bracket is concealed from view from in front of said rod by said surface means;
securing means supported on said bracket and located readwardly of said rod and releasably supportingly engaging said rod at a position laterally spaced from said groove means whereby said projection means and said securing means support said rod on said bracket.

3,273,198
APPARATUS FOR REMOVING FEATHERS FROM POULTRY
Kent Tomlinson, 13145 Coronado Drive, North Miami, Fla.
Filed May 28, 1964, Ser. No. 370,813
14 Claims. (Cl. 17—11.1)



1. A machine for removing feathers from poultry consisting of two oppositely-disposed metal frames having the same construction and parts, said frames facing each other but separated enough to allow a fowl suspended by its legs to hang head down and pass between said frames, each frame containing a series of horizontal drums with rubber-like fingers extending radially from the surfaces of said drums, and a series of rotating discs alternately intervening between said horizontal drums with rubber-like fingers extending perpendicularly from said discs, and said horizontal drums being parallel to the passage of the suspended fowl, while said rotary discs face towards the same passage and are alternately above and below the center lines of said horizontal drums.

3,273,199
CALENDER FOR DRAWING FOILS AND THE LIKE OF SYNTHETIC MATERIAL
Jan Kleinewefers, Krefeld, Germany, assignor to Joh. Kleinewefers Söhne, Krefeld, Germany
Filed May 4, 1964, Ser. No. 364,853
Claims priority, application Germany, May 7, 1963, K 49,675
5 Claims. (Cl. 18—2)



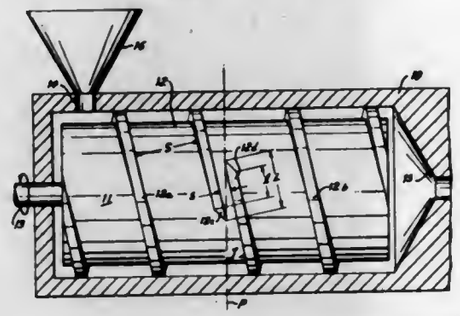
1. In a calender having a train of at least three rollers for drawing synthetic foils, in which material fed between the first two rollers in said train passes successively between said rollers until it leaves the last roller; means for supporting the last three rollers with their axes in parallel planes, and including means for angularly adjusting each of the last two rollers with their axes maintained in parallel planes, the means for supporting the roller next preceding the last two rollers maintaining its axis in a plane perpendicular to said parallel planes.

3,273,200
DISTRIBUTOR PLATE
Julius Shrensel, Richmond, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Apr. 15, 1964, Ser. No. 359,869
2 Claims. (Cl. 18—8)



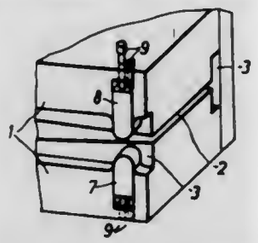
1. In melt spinning apparatus, a distributor plate with a plurality of passageways, and a multihole spinneret next downstream from said distributor plate; and in said distributor plate the walls of the passageways describe a rotation of about 90° from the entrance end to the exit end of each passageway, all the rotations being in the same sense; the longitudinal axis of each passageway is straight and perpendicular to the faces of the plate, the passageways are equi-spaced in cylindrical arrangement concentric with the center of the plate, and the passageways are uniform and are of rectangular cross section, with the long dimension of the rectangular entrances tangent to the circle in which the entrances lie at the top face of the distributor plate, and with the walls rotating to bring the long dimension of the rectangular exits to a position along the radius of the circle in which the exits lie at the bottom face of the distributor plate.

3,273,201
FEED SCREW FOR EXTRUSION PRESS
Fritz Reifenhäuser, Troisdorf, Bezirk Cologne, Germany, assignor to Firma Reifenhäuser K.G., Troisdorf, Bezirk Cologne, Germany, a corporation of Germany
Filed June 28, 1965, Ser. No. 467,439
Claims priority, application Germany, Mar. 18, 1965, R 40,142
6 Claims. (Cl. 18—12)



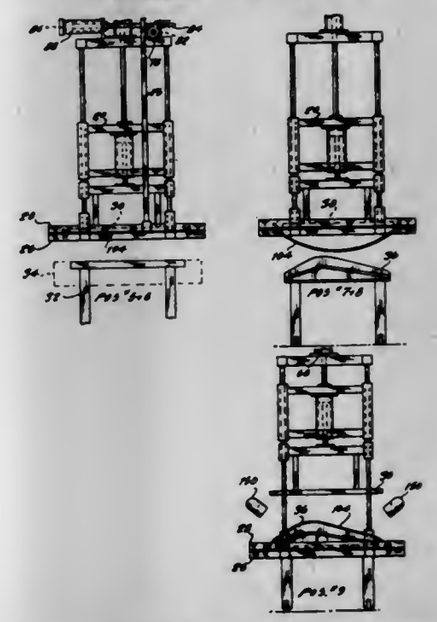
1. A feed screw for delivering plastified resinous material to the nozzle of an extrusion press, comprising a substantially cylindrical body provided with at least one external helicoidal thread, said thread being split longitudinally into a plurality of peripherally offset sections with spacedly overlapping ends, said overlapping ends extending at least to a common plane transverse to the axis of said body.

3,273,202
APPARATUS FOR MANUFACTURING THERMOPLASTIC FOILS WITH BEADED EDGES
Hieronymus Zygan, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
Filed July 2, 1963, Ser. No. 292,363
Claims priority, application Germany, July 9, 1962, F 37,267
2 Claims. (Cl. 18—12)



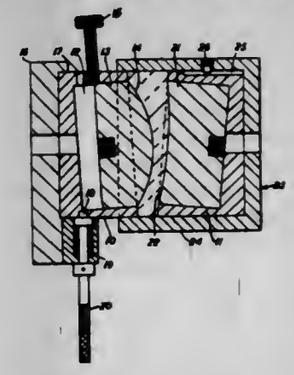
1. An apparatus for the manufacture of foils of thermoplastic material with beaded edges, which comprises a die for extruding a foil having a central web portion and a pair of oppositely disposed beaded edge portions, said die having a slot passage for extruding said web portion and a pair of marginal groove passages adjoining said slot passage and disposed in communication therewith for extruding said beaded edge portions, and a pair of oppositely disposed flow restricting members for regulating the outflow velocity of thermoplastic material extruded through each groove passage, each flow restricting member in each pair thereof having a smooth contoured bulbous portion disposed for extension into its associated groove passage to maintain the outflow velocities of thermoplastic material extruded through the outlets of each of said groove passages equal to each other and to the outflow velocity of thermoplastic material extruded through the outlet of said slot passage whereby the beaded edge portions and the web portion of said foil are extruded at a uniform rate, and the dimensions of said extruded web and beaded edge foil portions are established independently of extrusion outflow velocity by the outlet dimensions of said slot and groove passages.

3,273,203
APPARATUS FOR FORMING PLASTIC SHEET MATERIAL
Frank A. Ross, Birmingham, Mich., assignor, by mesne assignments, to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 12, 1962, Ser. No. 178,978
6 Claims. (Cl. 18—19)



1. Apparatus for depositing a softened sheet over a mold form comprising support structure comprising a body having a porous generally horizontal under surface and peripheral clamping means, means for selectively applying suction throughout said porous surface, means for selectively actuating said clamping means, and means for raising and lowering said clamping means and for raising and lowering said body independently of said clamping means.

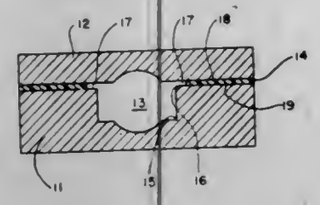
3,273,204
MOLD FOR THE MANUFACTURE OF LENSES
Charles Henry Craddock, Wexham, Slough, England, assignor to Combined Optical Industries Limited
Filed Nov. 18, 1963, Ser. No. 324,535
Claims priority, application Great Britain, Nov. 19, 1962, 43,621/62
4 Claims. (Cl. 18—34)



1. A lens molding device which comprises two die housings which during molding are brought together along a common axis, each housing having a bore for the reception of a lens molding die, the axis of which bore is

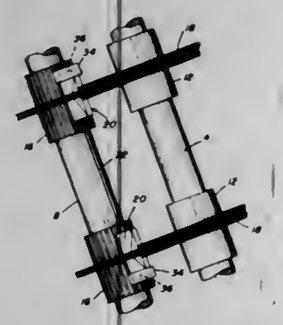
offset in relation to said common axis, and one of the housings being mounted in a frame for rotation about said common axis whereby the angle between the axes of the bores in the die housings, and hence between the axes of dies positioned therein, can be varied by rotation of said housing in the frame.

3,273,205
CASTING DEVICE INCLUDING A FLASH CAVITY DEFINED IN PART BY A GASKET ELEMENT
Michael A. Hanley, Shillington, Pa., assignor, by mesne assignments, to The Polymer Corporation, a corporation of Pennsylvania
Filed Oct. 18, 1962, Ser. No. 231,515
8 Claims. (Cl. 18—39)



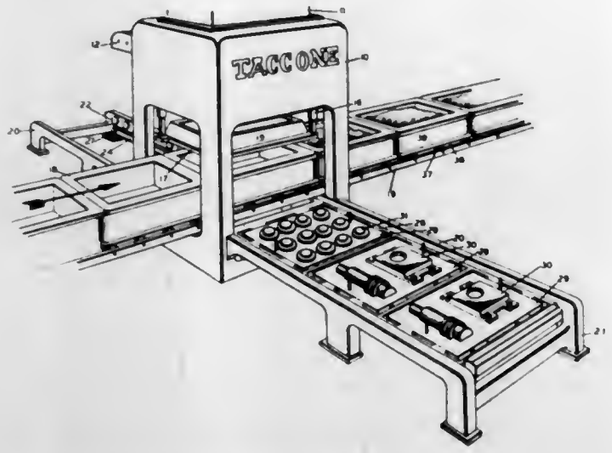
1. In a device for casting plastic material comprising a mold having at least two separable parts, the improvement which comprises a gasket element positioned between the parting surfaces of said separable mold parts so as to define a flash cavity contiguous with the mold cavity defined by the separable mold parts.

3,273,206
YARN CONDENSER FOR TEXTILE MACHINES
Robert L. Carroll, 401 McIver St., Greenville, S.C.
Filed Mar. 9, 1964, Ser. No. 350,451
4 Claims. (Cl. 19—288)



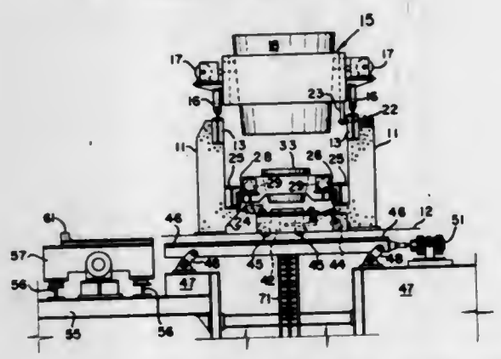
1. In a roving frame assembly for textile machines having a plurality of pairs of feed rolls for gripping and feeding a strand of yarn fibers therebetween during rotation of said rolls, the last pair of said feed rolls having a fluted roll cooperating with a rubber covered roll, and a yarn condenser positioned in advance of said last pair of feed rolls for bearing engagement with the surfaces of said last pair of rolls, the combination of a condenser body member formed with a yarn passage having a large open front end and tapering to a small open rear end for receiving a wide relatively loose strand of yarn and reducing the width of said strand of yarn for compacting the fibers in said strand as it passes through said yarn passage for subsequent feeding engagement between said fluted and rubber covered rolls, and bearing means mounted on said body member offset from said yarn passage having portions projecting beyond the surface of said body member for engaging the surface of said fluted roll to support said body member in spaced relation from said fluted roll and for reducing friction and wear on the surface portions of said fluted roll.

3,273,207
MACHINE FOR HANDLING PATTERNS
Russell W. Taccone, Erie, Pa., assignor to Taccone Corporation, North East, Pa., a corporation of Pennsylvania
Filed Mar. 26, 1964, Ser. No. 354,916
16 Claims. (Cl. 22—20)



1. A molding machine having a frame,
a pattern plate conveyor attached to said frame and extending on each side thereof,
a flask conveyor supported on said machine above said pattern plate conveyor and disposed generally at right angles to said pattern plate conveyor and extending on both sides thereof and having means to support a pattern plate both on each side of said flask conveyor,
a molding head on said machine supported above said flask conveyor and above said pattern plate conveyor,
a pattern plate carrier on said pattern plate conveyor,
at least two pattern plates on said pattern plate carrier,
means to index flasks on said flask conveyor to selectively stop individual flasks below said molding head,
means to move said pattern plates to bring them under said flasks at predetermined times,
and means to lift said pattern plates into engagement with said flasks and then to lift said pattern plates and said flasks into engagement with said molding head whereby sand in said flasks will be compressed.

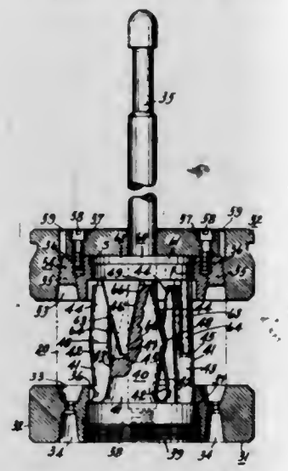
3,273,208
INTERCHANGEABLE CONTINUOUS CASTING APPARATUS
Joseph I. Greenberger, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 19, 1963, Ser. No. 310,019
13 Claims. (Cl. 22—57.2)



1. In combination with a continuous casting machine employing a ladle and a mold, said mold being vertically movable relative to said ladle during operation of said machine,

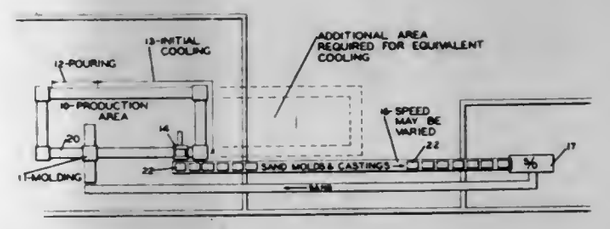
a first means for supporting the mold in a pouring position,
a second means for supporting two molds in such a manner that the molds can be selectively positioned in said pouring position when said vertical movement of said mold is interrupted, and
means for bringing at least a part of the second supporting means into a supporting position with one of the molds when in the pouring position when said vertical movement of said mold is interrupted, thereby to allow the transfer of a mold from a supporting position with said first supporting means to a supporting position with said second supporting means.

3,273,209
ROTOR CONDUCTOR CASTING APPARATUS
Ellwood P. Herzog, Raymond C. Hoefling, and Albert B. Mewhinney, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 22, 1963, Ser. No. 282,416
3 Claims. (Cl. 22—58)



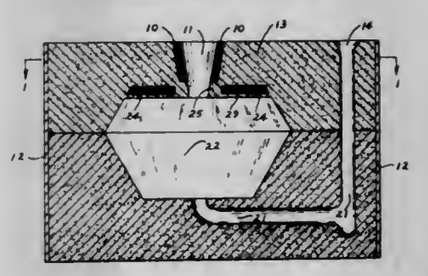
1. A casting die means for achieving a herringbone skew rotor lamination arrangement, comprising: a first moveable die casting die portion, having an annular end-ring-forming recess therein as well as carrying a plurality of fixed spaced axial projections adapted to receive slotted laminations and align a portion of said laminations, each said projection is located radially inward of said end-ring-forming recess and arranged concentric thereto, and each said projection has a leading edging defining one surface of said projection in a predetermined angular herringbone configuration, and each said projection has a second edging defining an opposite surface to that of said one surface, whereby said opposite surface is continuous along a plane and is substantially parallel to said one surface at a point from the die extending outwardly to substantially opposite the vertex of said herringbone configuration to align said portion of said laminations, said one surface and said opposite surface relatively converge into a taper form from a point opposite the vertex to the projection end; and a second moveable die casting die portion having an opposite annular end-ring-forming recess and a plurality of axial tapered probe means, located concentrically and inwardly thereof to complement said taper form at said second edging of said axial projections, respectively, whereby, when brought into operating engagement with said first die the probe means are adapted to simultaneously align the other portion of said laminations into said skew configuration by way of the slots when the relative coaction of the die portions result in each tapered probe means and the respective projection taper form completing said second edging into a trailing edging substantially parallel to the herringbone configuration of the respective leading edgings, and whereby the engagements of same are adapted to hold the laminations during a squirrel cage winding casting operation.

3,273,210
MACHINE FOR REMOVING MOLDS FROM FLASKS
Russell W. Taccone, Erie, Pa., assignor to Taccone Corporation, North East, Pa., a corporation of Pennsylvania
Filed Nov. 7, 1963, Ser. No. 322,104
10 Claims. (Cl. 22—95.5)



4. In a combination of machines,
a pouring station,
a cooling conveyor,
a punch out station,
said pouring station having means to receive flasks having sand molds formed therein and to pour molten metal thereinto,
platen means on one of said machines adapted to engage the sand in said flasks at the bottom thereof and to force it from said flasks after metal has been poured into said molds,
said cooling conveyor having an upper mold receiving surface substantially on a level with the bottoms of said sand molds when forced from said flasks,
and means to force said sand molds from said platen means to said cooling conveyor.

3,273,211
PROCESS OF MOLDING EXOTHERMIC COMPOSITIONS
Nick L. Miraldi, Bay Village, Ohio, assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,992
5 Claims. (Cl. 22—193)



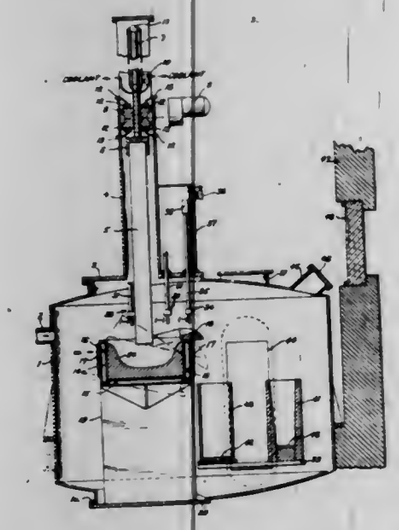
4. A process for the production of foundry molds equipped with exothermic riser sleeves which are formed in situ, said process comprising
(1) inserting a slightly-tapered, cylindrical plug into the top portion of the mold to form an annular space between the plug and the mold, said plug being supported on the pattern;
(2) filling and ramming the annular space with molding sand;
(3) withdrawing the plug and inserting a smaller, slightly-tapered, cylindrical plug into the cavity from which the larger plug was withdrawn to form an annular space between the plug and the wall of the cavity, said plug being supported on the pattern;

(4) forming an insulating shoulder by ramming the lower portion of the annular space with molding sand;
(5) filling and ramming the remainder of the annular space with green exothermic composition; and
(6) withdrawing the plug to complete the mold.

3,273,212
METHOD OF OPERATING AN ELECTRIC FURNACE

Robert J. Garmy, Canton, and Thomas E. Perry, North Canton, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Original application Jan. 16, 1959, Ser. No. 787,266, now Patent No. 3,108,151, dated Oct. 22, 1963. Divided and this application Aug. 1, 1963, Ser. No. 299,306
3 Claims. (Cl. 22—200)



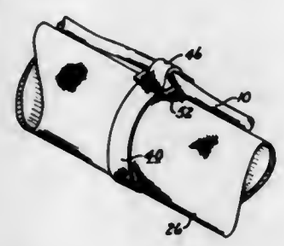
1. The method of forming an ingot of meltable charge material comprising:
(a) melting the charge material in a crucible by supplying electric current to the charge material through a consumable electrode of the meltable material;
(b) withdrawing the consumable electrode;
(c) advancing a non-consumable electrode;
(d) thereafter superheating the molten charge material substantially above its melting point by supplying electric current to the charge by means of the non-consumable electrode without adding further meltable charge material;
(e) withdrawing the non-consumable electrode; and
(f) pouring the superheated material into a mold.

3,273,213
REPLACEMENT OR REPAIR STRAP FOR EXTENSION CORD AND HARNESS ASSEMBLY

Edward W. Zurkowski, Stamford, Conn., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Filed Apr. 13, 1964, Ser. No. 359,060
1 Claim. (Cl. 24—73)

A strap of elastic material adapted for supporting a length of an electric extension cord along the outer surface of a hose, said strap having inner and outer oppositely disposed surfaces arranged in back-to-back relation, said inner surface of the strap being adapted to contact the outer surface of the hose when said strap encompasses the hose, said strap having an enlarged portion intermediate its opposite ends, said enlarged portion having an aperture passing therethrough in a direction cross wise of the length of the strap, said strap having a slit therein which defines a narrow opening extending crosswise of the length of the strap and also extending from the inner surface of the strap into the aperture in said enlarged portion, said strap being temporarily deformable at said enlarged portion to cause said narrow opening to widen so that the cord may be passed through the widened narrow opening into said aperture and encompassed by said enlarged portion with said cord extending crosswise of the length of the strap, and an aper-

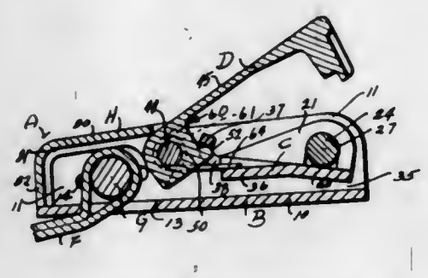


tured retaining member for maintaining said cord encompassed by said enlarged portion, said enlarged portion of the strap protruding through the aperture in the retaining member with said retaining member contacting the outer surface of the strap on opposite sides of said enlarged portion as well as contacting the side of the electric cord which is closest to the inner surface of the strap, said strap including means for fastening it in encompassing relation with the outer surface of the hose.

3,273,214
SAFETY BELT BUCKLE

Fred David Keeling, Cincinnati, Ohio, assignor to Irving Air Chute Company, Inc., Lexington, Ky., a corporation of New York

Filed Sept. 14, 1964, Ser. No. 396,051
4 Claims. (Cl. 24—230)

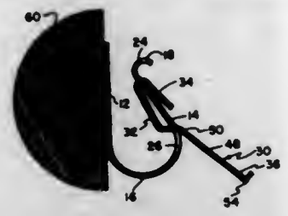


1. In a safety belt buckle construction the combination of a base portion, including a bottom wall and upstanding side walls, means at the forward end of the base portion for adjustable attachment of a safety belt thereto, a latching dog pivoted on the side walls adjacent the other end of the base, said dog comprising a plate portion positioned between the side walls, said plate portion at its forward end having a downwardly inclined dog-type ramp thereon, said latching dog being pivoted so that the plate thereof at its bottom surface is spaced a short distance from the top surface of the bottom wall, a flat belt attaching tongue having an opening therein, said tongue being of such thickness as to enable it to be slipped through said space between the latching dog plate and base bottom wall and when further inserted to ride beneath the ramp and lift the latching dog until the ramp-type dog drops into the opening of the tongue plate, lid means pivoted on said base side walls forwardly of said latching dog, means on the lid adjacent its pivot comprising a cam extension, and means on the latching dog against which the cam extension engages as the lid is raised to lift the latching dog and its ramp out of engagement in the opening of the tongue plate.

3,273,215
CLAMP FOR EAR ORNAMENTS

John C. Whitfield, Rte. 8, Topeka, Kans.

Filed July 14, 1964, Ser. No. 382,556
11 Claims. (Cl. 24—263)

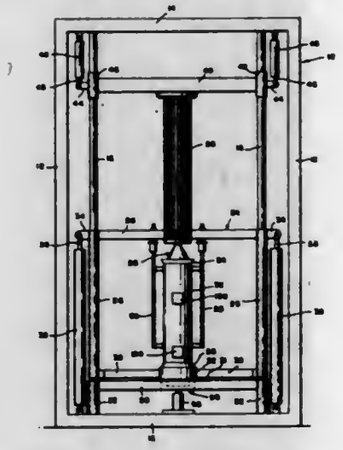


1. For use in a clamp, structure comprising an elongated member of generally rectangular transverse section, said member having a free end and being curved for a first portion of its length in one direction about its major transverse dimension adjacent its free end and being curved for a second portion of its length in the opposite direction about its major transverse dimension at a position remote from the free end thereof, said member being provided with longitudinally extending first and second slots through the minor transverse dimension thereof, said slots being longitudinally aligned and spaced from each other to define a web portion of the member therebetween, and with the remote ends of the slots being closed, said first and second slots respectively coinciding at least in part with the first and second curved portions of the member, and a clamping means carried by the member, said clamping means including a clamping foot disposed on one side of the member with respect to which the first and second curved portions of the member respectively curve away from and toward, first and second arms each having an end fixed to the clamp foot slidably extending respectively through the first and second slots, means at the end of the first arm for preventing displacement of the same from the first slot and for engagement against the outer concave side of the first curved portion to limit movement of the clamp foot in one direction, said second arm being engageable with the web on said one side of the member and having a length at least sufficiently great to extend through the second slot when the means at the end of the first arm is engaged to limit movement of the clamp foot in said one direction.

3,273,216
AUTOMATIC PIPE MAKING MACHINE

Larry C. Gourlie, Everett, Wash., assignor, by mesne assignments, to Graystone Corporation, Seattle, Wash., a corporation of Washington

Filed Dec. 10, 1963, Ser. No. 329,592
11 Claims. (Cl. 25—30)

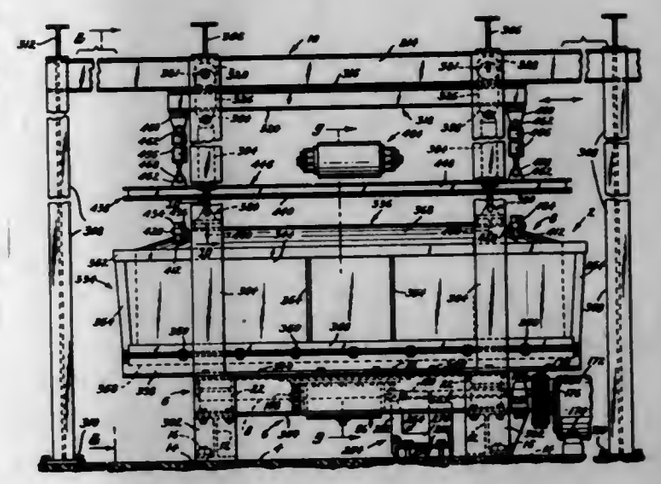


1. An apparatus for forming concrete pipe, comprising: (a) a supporting frame structure having a pallet station therein for receiving pallets to support a mold assembly, (b) a mold assembly including an outer mold casing and an inner mold core, said casing and said core defining a pipe molding cavity and said casing and said core being dependingly supported from a crosshead member, said crosshead member in turn being slidably connected to said frame for up and down movement thereon above said pallet station, said mold assembly also including a socket forming mold member located below said pallet station, said socket forming mold member being upwardly movable from below to above a pallet to a position concentrically within the lower end of said outer mold casing, said socket forming member having a rotatable upper portion for trowelling the socket section of concrete pipe in said mold, said rotatable portion also having a clutch means engaging the lower end of said core for imparting rotation to said mold core, (c) a hold-down tube member of a diameter larger than said mold core yet smaller than said mold casing, said tube member being capable of limited up and down movement and of being locked in contact position on the top end of a completed pipe in said mold assembly, (d) mold lift means attached to said crosshead member for upwardly withdrawing said mold casing and core while the completed pipe is held in place by said tube member, (e) compacting means attached to said mold assembly for facilitating settling of concrete mix introduced to said mold assembly, and (f) concrete supply means for delivering mix to said cavity in said mold assembly.

3,273,217
MOLDING APPARATUS INCLUDING A VIBRATION TABLE WITH SELECTIVE HORIZONTAL AND VERTICAL MOTION

Carl Wilmer Chanlund, Nampa, Idaho, assignor to Idaho Concrete Pipe Co., Nampa, Idaho, a corporation of Idaho

Filed June 11, 1965, Ser. No. 463,202
16 Claims. (Cl. 25—41)

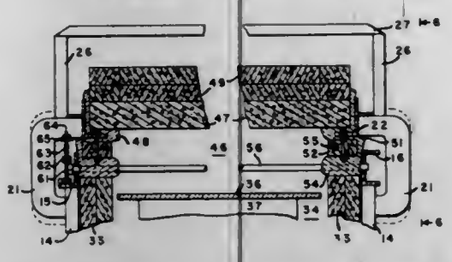


1. Apparatus for producing a molded product, comprising: a base; a vibration table for supporting a mold; means mounting said vibration table on said base, and arranged so that said table can vibrate in substantially any direction relative to said base; vibrator means secured to said vibration table and being operable in any selected one of a plurality of modes of vibration to vibrate said table, each operating mode of said vibrator means producing a direction of vibration different from that produced by the remainder of said plurality of modes; and control means arranged to coact with said vibrator means, and operable to change the mode of vibration of said vibrator means while the same is operating to vibrate said table.

3,273,218
KILN FOR RAPID FIRING SINGLE LAYERS OF CERAMIC ARTICLES

Ralph L. Byington, San Jose, Calif., assignor to Armrock Products, Inc., a corporation of California

Filed May 4, 1965, Ser. No. 453,121
7 Claims. (Cl. 25—142)

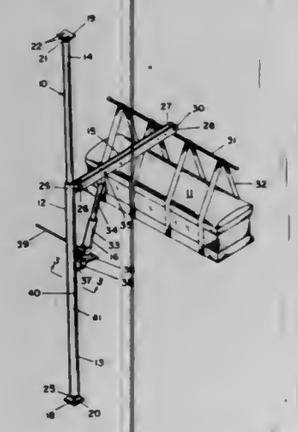


1. In a kiln for rapid firing of a single layer of ceramic articles such as glazed ceramic tile, an elongated firing oven comprising an upper fire brick construction and a lower fire brick construction, means separating said upper and lower fire brick constructions including a pair of journaling structures extending along each side of said oven, said structures being formed of a material having a different heat expansion characteristic than fire brick, heat insulating means for protecting each of said journaling structures from the heat of the oven, a series of journal means in each of said journaling structures, a series of parallel horizontal rollers journaled in said journal means of said structures, and extending through said oven and said insulating means, said rollers being in an intermediate position in said oven to provide a portion of said oven above said rollers and a portion of said oven below said rollers for direct heating of a ceramic article supported on the rollers and conveyed thereby through the oven, and means for driving said rollers to convey the ceramic articles through the oven.

3,273,219
PIVOTABLE POLE-TYPE LOAD LIFTING APPARATUS

Theodore W. Tuschen, Sun Prairie, Wis.

Filed Jan. 15, 1965, Ser. No. 425,889
3 Claims. (Cl. 27—27)

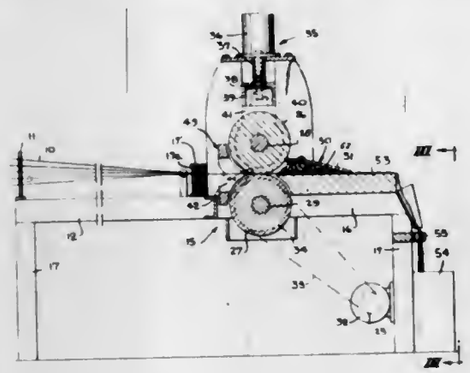


1. Body and casket lifting apparatus comprising:
(a) an adjustable upright floor-to-ceiling standard having axially aligned telescoping upper and lower tubular sections,
(b) said lower tubular section having a downwardly disposed smooth swivel pin mounted at its lower end and said upper section having an upwardly disposed smooth swivel pin mounted at its upper end,
(c) an upper member adapted to be secured to an upper supporting surface and having a downwardly opening recess therein for receiving said upwardly disposed swivel pin,
(d) a base member adapted to be located on a lower supporting surface and having an upwardly opening recess therein for receiving said downwardly disposed swivel pin,
(e) said upright standard being adapted to rotate 360° on said swivel pins,
(f) a lifting boom pivotably mounted on the lower section of said standard for movement about a horizontal axis,
(g) means for raising and lowering said boom.

3,273,220
APPARATUS FOR THE CRIMPING OF NATURAL AND SYNTHETIC TEXTILE MATERIALS

Nathan Rosenstein, West Hartford, Conn., and Abraham J. Rosenstein, New Marlboro, Mass., assignors to Spunize Company of America, Inc., Unionville, Conn., a corporation of Connecticut

Original application Sept. 19, 1960, Ser. No. 57,070, now Patent No. 3,164,882, dated Jan. 12, 1965. Divided and this application Nov. 9, 1964, Ser. No. 409,633
5 Claims. (Cl. 28—1)

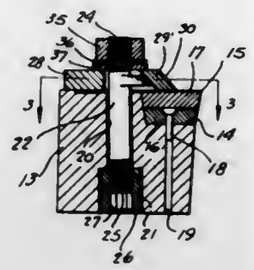


1. Apparatus for crimping a plurality of individual filament yarns and the like to form bulky crimped yarns therefrom comprising
(1) a pair of counter-rotary rollers located adjacent each other and having a common line of tangency forming a nip, the length of said rollers being at least sufficient to accommodate a plurality of yarns in a spaced apart web-like relationship,
(2) yarn guide means extending substantially throughout the length of said rollers, said guide means having spaced apart openings located adjacent the nip of said rollers and said openings being adapted to receive said plurality of individual filament yarns and to direct said yarns in web form in a spaced apart relationship between said rolers at the nip thereof,
(3) housing means adjacent the nip exit of said rollers forming a common crimping chamber for said web of yarns, said housing means having one dimension thereof sufficient that said web of yarns crimps therein while still in substantially said spaced apart relationship, whereby the individual yarns of said web crimp in multi-planar fashion with respect to the longitudinal axis thereof,
(4) pressure exerting means associated with said housing means substantially laterally coextensive therewith said one dimension, said pressure means and said housing means in combination being adapted to release said yarns from said housing means in response to the pressure of said yarns contained therein, and being adapted to release said yarns in the form of a web of crimped and bulked yarns arranged substantially according to the yarn spacing at the nip of the rollers, said released yarns being in an easily separable condition.

3,273,221
ADJUSTABLE CHIP-BREAKER

Harry R. Ewing, Rte. 1, Pleasantville, Pa. 16341

Filed Jan. 22, 1965, Ser. No. 427,441
7 Claims. (Cl. 29—96)

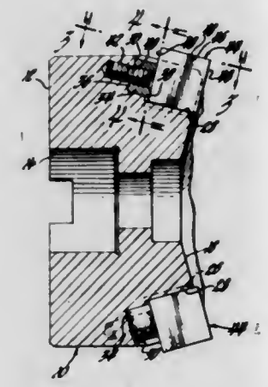


1. In combination, a tool holder provided with a cutter recess, a cutter disposed in said recess, said tool holder being formed with a vertical aperture adjacent said recess, a stud in said aperture, means to clampingly secure the stud in a vertically adjusted position in said aperture, a chip-breaker mounted on the tool holder and overlying the cutter, said chip-breaker comprising a plate-like main body formed with a longitudinal slot receiving said stud, one end of said slot having an inclined wall surface, and a lug on said stud received in said slot and cammingly engaging said inclined wall surface, whereby the chip-breaker is horizontally adjusted responsive to vertical adjustment of said stud.

3,273,222
CUTTING TOOL AND METHOD

John H. Begle, Northville, Mich., assignor to Futurmill, Incorporated, Southfield, Mich., a corporation of Michigan

Filed Mar. 6, 1963, Ser. No. 263,274
11 Claims. (Cl. 29—105)

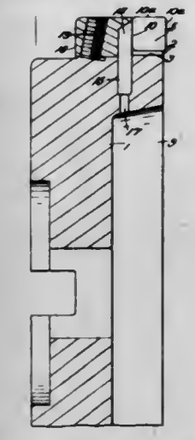


1. A cutting tool comprising a rotatable cutter body, means defining a plurality of cutter-blade receiving slots spaced about said cutter body and each including a seating surface, a plurality of locating members respectively mountable within said slots and each including a pair of spaced locating surfaces, one of said locating surfaces of each of said locating members being mountable in engagement with the seating surface of a respective slot and the other locating surface thereof being adapted to seat and locate a surface of a respective cutter blade, and mounting means rotatably adjustably mounting said respective locating members in said respective slots whereby, in the event of damage to a portion of a locating surface of a given locating member seating a cutter blade, said locating member may be rotatably indexed to a different rotary position to present an undamaged portion of said last-named locating surface to the cutter blade.

3,273,223
CUTTING TOOLS

Walter Henry Wright, Sheffield, England, assignor to Firth Brown Tools Limited, Yorkshire, England, a British company

Filed Feb. 19, 1964, Ser. No. 346,033
Claims priority, application Great Britain, Feb. 19, 1964, 6,708/63
2 Claims. (Cl. 29—105)

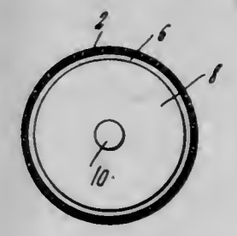


1. A milling cutter comprising in combination a rotatable body, a peripheral rib around said body, a plurality of separately constructed cutting blades held respectively in a like number of longitudinal slots each passing completely through said rib, each of said blades having along at least one side thereof a cutting edge projecting from one side of the rib and each blade being positioned, as to its cutting edge, by a separately constructed pin of circular cross-section, a portion of the longitudinal surface of each of said pins positioning and supporting a side of the associated blade at the other side of the rib, said pins being inserted respectively within bores of corresponding diameter provided in the body and being disposed respectively adjacent and parallel to substantially the full length of the said blade sides and in line contact therewith, and a separately constructed ring shaped for releasable attachment to said body and disposed around the body adjacent said rim so as to lie in supporting engagement with said pins.

3,273,224
DAMPENING ROLL COVER

Ronald F. Spicer, Walpole, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Oct. 10, 1963, Ser. No. 315,328
2 Claims. (Cl. 29—120)

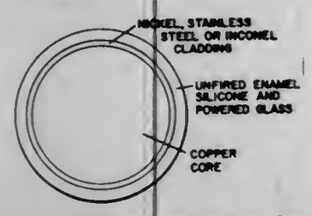


1. A tubular elastic dampening roll cover including elastic yarns held under tensioned radial extension by a dried impregnation with a substance which has a dry modulus of rigidity sufficient to counteract the retractive tendency of the tensioned elastic yarns in said cover, whereby said cover is maintained in an out-size condition while in the dry state, said substance being water-softenable but not readily water-soluble and having a modulus of rigidity when wet which is insufficient to counteract the retractive tendency of said elastic yarns in said dampening roll cover.

3,273,225
METHOD OF MAKING ELECTROMAGNETIC STRUCTURES FOR HIGH-TEMPERATURE SERVICE

Harry L. Saums, North Muskegon, and Wesley W. Pendleton, Muskegon, Mich., assignors, by mesne assignments, to Anaconda Wire & Cable Company, a corporation of Delaware

Filed Feb. 14, 1962, Ser. No. 173,115
26 Claims. (Cl. 29—155.57)



1. The method of manufacturing an insulated electromagnetic winding capable of operation at temperatures above 300° C. which comprises applying to a conductor a flexible abrasion-resistant insulation comprising a covering of inorganic dielectric material bonded in place by an organic varnish, forming the thus-insulated conductor into a winding, heating the winding to a temperature above the pyrolysis point of the organic varnish for a sufficient period of time to pyrolytically volatilize all organic matter from the covering and leave the formed winding insulated solely by the inorganic dielectric material.

3,273,226
METHOD FOR SECURING STRUCTURES IN PRECISE GEOMETRIC RELATIONSHIP

Jack Brous, Livingston, N.J., William A. Conrad, New York, N.Y., and William G. Poelstra, Paterson, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Feb. 19, 1965, Ser. No. 434,149
9 Claims. (Cl. 29—155.5)



1. The method for constructing a helix assembly comprising the steps of

winding a wire in a prescribed helical configuration on a support,

placing longitudinal masking details around the helix and the support and exposing longitudinal strips thereof,

coating said helix and support with a ceramic material to a thickness such that the helix and support are imbedded in said ceramic material, and removing said masking details and said support.

3,273,227
FABRICATION OF HEAT EXCHANGE DEVICES

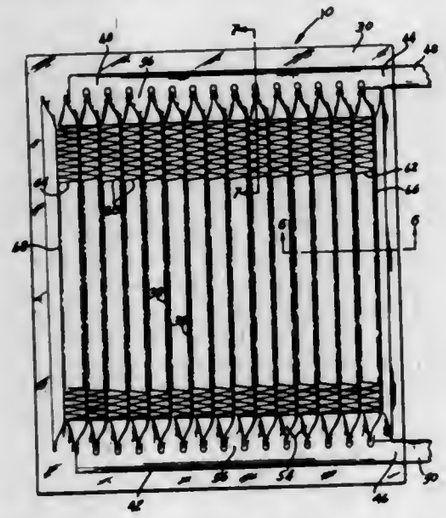
Theron F. Pauls, Madison, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed June 12, 1963, Ser. No. 287,240
3 Claims. (Cl. 29—157.3)

1. A method of fabricating a heat exchange device comprising the steps of

(A) providing a composite sheet formed of two superposed planar sheets having a pattern of weld preventing material interposed between said sheets, said composite sheet having opposed first edges and opposed second edges, said pattern including a pair of parallel spaced apart bands located adjacent said first edges and extending to one of said second edges and a plurality of closely spaced apart bands lying parallel to said second edge and joined at opposite ends with said pair of bands, said pair of bands and plurality of bands thereby defining islands free of said weld preventing material,

(B) pressure rolling said composite sheet in a direction parallel to said closely spaced apart bands to unify said composite sheet except in the areas of said pattern of weld-preventing material and to effect a differential in reduction of thickness of said composite sheet between the intermediate portion thereof defined by said plurality of bands of weld preventing material and material free islands, and the remaining outer portions of said composite sheet, with said intermediate portion being subjected to a greater reduction than said outer portions,



(C) slitting said composite sheet in said weld preventing material free islands over a major portion of the length thereof to provide a plurality of individual strips of said composite sheet,

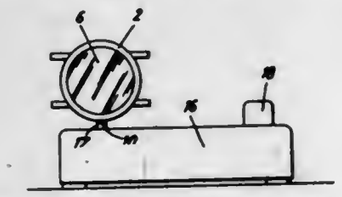
(D) bending said strips adjacent the opposite end portions thereof in a rotary direction relative to the longitudinal axis of said strips by approximately 90° to displace the elongate portion of said strips between said end portions out of the normal plane of said composite sheet, thereby forming elongate apertures between adjacent confronting surfaces of said strips, and

(E) forming a system of internal passageways within said composite sheet corresponding to said pattern of weld preventing material by applying thereto a fluid under pressure to expand the areas of said composite sheet covered with said weld preventing material.

3,273,228
METHOD FOR OPENING A WATCHCASE

Ernest Morf, Vaudijon, Colombier, Neuchatel, Switzerland

Filed July 1, 1963, Ser. No. 292,025
Claims priority, application Switzerland, July 4, 1962, 8,044/62
5 Claims. (Cl. 29—177)

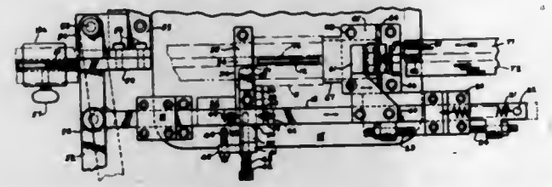


1. A method for opening a watchcase tightly closed by a cover member fitting a lodging of a watchcase body member, comprising the steps of connecting the watchcase cavity to an air chamber having a predetermined volume, and urging the air from said chamber to said cavity, the predetermined air volume of said chamber thereby producing inside the watchcase a pressure increase strong enough to cause the cover member thereof to jump out of its lodging.

3,273,229
REGISTERING DEVICE FOR GAP SPACING

Donald O. Taylor, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Dec. 4, 1964, Ser. No. 416,037
6 Claims. (Cl. 29—200)



1. In a machine for cutting gaps in continuous zipper chain having two interlocked plastic filament coils, the combination of

(a) coil cutting tools;

(b) means for guiding the zipper chain between said cutting tools;

(c) a stop against which the leading end of the zipper chain may be placed to locate the chain in approximately the desired cutting position;

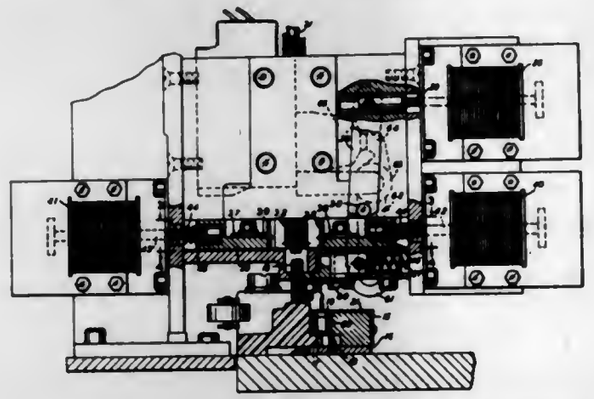
(d) a transverse slide mounted closely adjacent said cutting tools and having projecting means on its end adapted to move between a pair of adjacent coil convolutions for more precisely locating the chain in relation to the cutting tools; and

(e) means for operating said transverse slide into and out of engagement with one of the coils of said zipper chain.

3,273,230
APPARATUS FOR DISPENSING WASHERS

George P. Adams, Baltimore, Md., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 30, 1963, Ser. No. 305,738
12 Claims. (Cl. 29—211)



1. A device for dispensing predetermined numbers of substantially flat articles, comprising:

means for vertically stacking a plurality of substantially flat articles,

a slide mounted for displacement selectively in a plurality of directions below the vertical stack of the articles in the stacking means, said slide having a neutral nondispensing position in which position said slide retains the articles on the vertical stacking means,

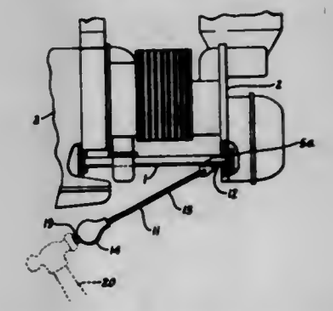
a plurality of elements associated with the slide and spaced different predetermined distances above the bottom of the stack of articles supported by the slide, and

means for displacing the slide selectively in any of a plurality of different directions from the neutral nondispensing position to insert selectively any of the elements above different predetermined numbers of articles in the stack of articles so as to support the articles above the element in the vertical stacking means while permitting selectively predetermined numbers of articles below the element to fall from the vertical stacking means.

3,273,231
TUBE REMOVAL TOOL

Walter J. Andrews, 250 Lincoln St., Apt. C, Redwood City, Calif.

Filed May 18, 1964, Ser. No. 367,965
1 Claim. (Cl. 29—275)



A tool comprising an elongated, semi-cylindrical, thin-walled sleeve portion having a square distal end, a clevis having a central portion and parallel arms normal to said central portion, said arms spaced apart a distance slightly less than the diameter of said sleeve, said central portion affixed to said sleeve portion adjacent the proximal end of said sleeve portion, a pin passing through said arms of said clevis, said pin laterally offset from said sleeve portion and normal to said arms of said clevis, and a tap rod having an aperture formed at one end, said pin passing through said aperture, said pin having a diameter substantially smaller than the diameter of said aperture, said tap rod longitudinally and transversely pivotally attached to said pin, whereby said rod is capable of assuming random askew angles relative to said pin and whereby tapping force applied to the end of said rod remote from said sleeve is transmitted to said distal end in a direction parallel to the axis of said sleeve with said rod pivoted at a variety of angular positions and askewed at a variety of angular positions relative to said sleeve.

3,273,232
METHOD FOR REPLACING WORN OR FRACTURED TEETH ON LARGE GEAR RINGS

Clady J. Royer, 2645 NW. 26th St., Oklahoma City, Okla.

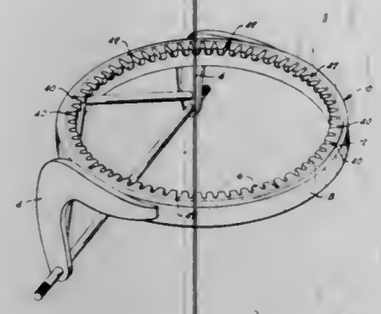
Filed Oct. 21, 1965, Ser. No. 499,200
11 Claims. (Cl. 29—401)

1. A method of replacing worn gear teeth on a gear circle of the type having an annular metallic member enclosing a free, unobstructed space, said annular metallic member having radially inwardly extending gear teeth at the inner periphery thereof, said method comprising:

forming a plurality of toothed, metallic arcuate segments each having an outer periphery having a radius of curvature greater than the radius of curvature of a circle drawn through the points of connection of the teeth of said gear circle to said annular metallic member, each of said segments having teeth of identical pitch to those carried by said gear circle, and

said segments collectively forming a circle when placed in substantially end-to-end relationship to each other;

cutting away all of the gear teeth from said gear circle by cutting through said gear circle along an annular reference line having a radius larger than the radius of curvature of the outer periphery of said arcuate segments;



positioning said arcuate segments in end-to-end circular array inside the outer peripheral portion of said gear circle in place of the removed inner peripheral portion thereof; and

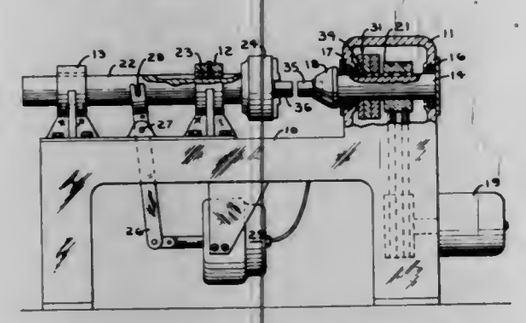
securing said arcuate segments to said outer peripheral portion of the gear circle while maintaining the circular array of said segments.

3,273,233

METHOD OF BONDING METAL WORKPIECES

Theodore Loring Oberle, Washington, Marion Roy Calton, East Peoria, Calvin David Loyd, Peoria, and Claude Foster White, Creve Coeur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Oct. 27, 1964, Ser. No. 407,955
20 Claims. (Cl. 29—470.3)



8. The method of bonding metal workpieces by using a flywheel to control the process and comprising, storing in a rotating flywheel coupled with and driving a first workpiece all of the energy required to bond the workpieces, applying pressure to force a surface of said first workpiece into rotational rubbing contact with a surface of a second workpiece, continuing said rotational rubbing contact to heat said surfaces to a plastic condition and a bondable temperature at the pressure applied until said surfaces bond and the stored energy of the flywheel is expended, and predetermining the duration of such rotational rubbing contact between said surfaces by the amount of energy stored in the flywheel.

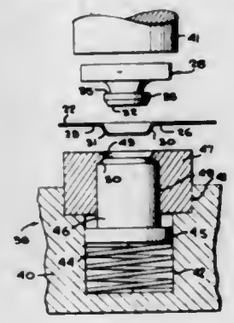
15. A method of bonding engaged surfaces of metal workpieces across a common interface including, engaging the surfaces in rotational rubbing contact under pressure and at a speed above a critical speed for a sufficient amount of time to heat the interface to a plastic condition and a bondable temperature, decreasing the speed below the critical speed to from the bond as the speed passes through the critical speed, and working the bond zone at a speed below the critical speed and while the material in the bond zone is plastic by turning the workpieces through more than about ¼ revolution of relative rotation to forge and to eject coherent flash from the bond zone.

3,273,234

APPARATUS FOR AND METHOD OF ASSEMBLING A PLASTIC PULL TAB WITH A METAL TEAR STRIP

John Henchert, Oak Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Original application Feb. 10, 1961, Ser. No. 88,473, now Patent No. 3,151,766, dated Oct. 6, 1964. Divided and this application June 19, 1963, Ser. No. 289,075
4 Claims. (Cl. 29—453)



1. An apparatus for assembling a pull tab having a resilient plug portion and a tear strip having a flanged opening therethrough, said apparatus comprising a die ring having an upper surface for supporting the tear strip and a recessed flange supporting seat, an opening in said die ring below said seat and a spring loaded ejector in the die ring opening, said die ring opening having an annular release portion beneath said seat to both form a stop for said ejector and provide an expansion area for a lower part of said pull tab plug portion projecting beneath said seat whereby the plug portion will necessarily be allowed to expand after it passes through and below the seat, and a punch aligned with said die ring and being movable towards and away from said die ring.

2. A method of assembling a pull tab having a resilient plug portion and a tear strip having a flange opening for receiving the plug portion, said method comprising the steps of supporting the tear strip including the supporting of the flange defining the flanged opening, snap-fitting the lower part of the plug portion through the flanged opening while continuing to support the flange, resiliently engaging the plug portion as it passes through the flange and then utilizing the resilient engagement with the plug portion to remove the assembled pull tab and tear strip from the support therefor.

3,273,235

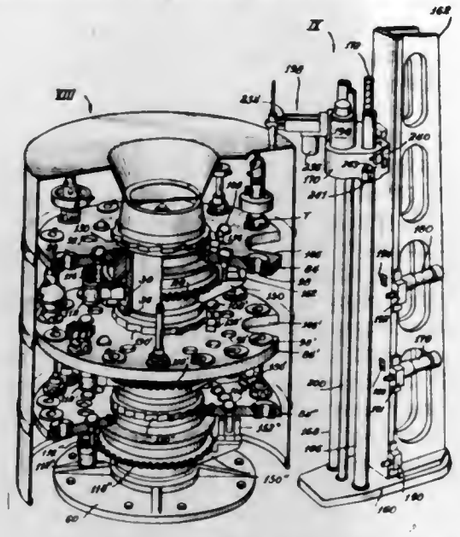
AUTOMATIC TOOL CHANGING APPARATUS

Harry R. Dziedzic, Glenview, Ill., and Richard A. Jerue, Birmingham, Mich., assignors to Scully-Anthony Corporation, a corporation of Illinois

Filed May 11, 1964, Ser. No. 366,443
12 Claims. (Cl. 29—568)

1. For use in an automatic tool changing system for a machine tool, in combination, a first tool storage tier member having a plurality of tool holding means thereon for holding a first group of tools in vertically disposed positions, a second tool storage tier member having a plurality of tool holding means thereon for holding a second group of tools in vertically disposed positions, said first and second tiers being mounted one above the other for rotation about a common vertical axis, means for rotating said tiers to bring a selected tool therein to a predetermined tool change position corresponding to the tier in which the selected tool is located, vertically movable

shuttle means common to said first and second tiers including gripping means for gripping a selected tool in a tool change position in one of said tiers and transferring the same therefrom, said gripping means being rotatable about a horizontal axis, means responsive to the location of a selected tool for moving said shuttle to an operative



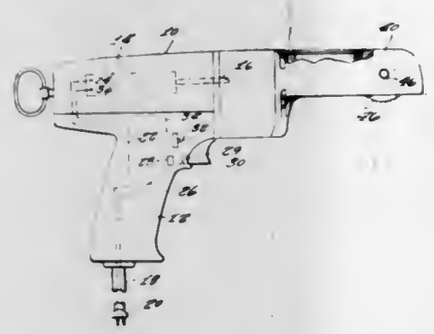
vertical position adjacent the particular tier in which a selected tool is located, and means operative after said selected tool has been moved away from said tier member by said shuttle for rotating said gripping means about said horizontal axis so as to dispose said selected tool in a horizontal position.

3,273,236

ELECTRICALLY OPERATED CUTTER FOR CUTTING THE ARMOR OF ARMORED CABLE

William A. McDowell, 266 Randolph Ave., Emerson, N.J.

Filed June 5, 1964, Ser. No. 372,767
1 Claim. (Cl. 30—90.5)



An electrically operated cutter for cutting the armor of armored cable comprising:

a first casing;

an electric motor in the first casing and having a drive shaft connected thereto;

a pistol griup depending downward from the first casing;

a trigger switch mounted in the pistol grip;

means for feeding electrical energy to the electric motor and the switch such that closing the switch energizes the electric motor and rotates the drive shaft;

a second casing attached to the first casing such that the drive shaft extends into the second casing;

there being positioned in the second casing:

a first bevel gear mounted on the drive shaft;

a shaft extending transversely of the drive shaft;

a second bevel gear mounted on the shaft and engaging the first bevel gear such that the shaft rotates when the electric motor is energized;

a circular cutting wheel secured at its center to one end of the shaft such that it rotates in a plane parallel to the axis of the drive shaft when the shaft rotates;

a plate having two ends and a slot therein, affixed at one end thereof to the bottom of the second casing;

a portion of the circular cutting wheel projecting downward through the slot;

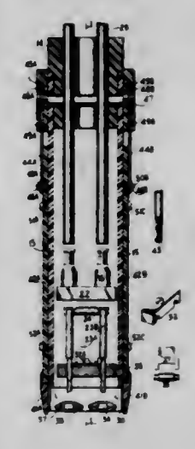
means for moving the other end of the plate toward and away from the second casing while the one end remains affixed to the casing such that the portion of the circular cutting wheel projecting downward through the slot varies to thereby vary the depth of cut of the circular cutting wheel in the armor of the armored cable.

3,273,237

VACUUM AIDED AND CABLE DRIVEN HAIR CLIPPER

Frank Lee Barcaskey, 948 1st Ave., Coraopolis, Pa.

Filed Apr. 24, 1964, Ser. No. 363,071
2 Claims. (Cl. 30—133)



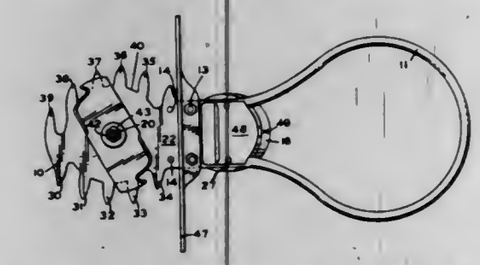
1. A clipping device comprising quadrangular portions of tubing joined to form an elongated housing having a base portion at one end defining an inlet, with two or more stationary shear plate blades disposed horizontally across said inlet, a slidably movable shear blade mounted against each of said stationary blades and cooperating therewith, spring elements exerting tension upon intermediums to thereby maintain suitable pressure upon each of said movable blades, a transmission assembly comprising two or more precisioned shafts rotably journalled to lie parallel to and within the central-most portion of housing, means connecting each said transmission assembly to each said movable blade, a plurality of flexible driving cables entering the uppermost end of said housing and drivingly engaging said shafts, an enterjoining portion of housing defining an exit, with said portion of housing acting as mounting means for vacuum escape tube plus said flexible cables, a sliding adjustable casing comprising two sheets of synthetic material, each of said sheets being bent approximately ninety degrees and fitted to encase the quadrangular tubing in which the shear blades and transmission assembly are disposed, resilient means securing the two sheets of said casing together, a shaft transfixed through said uppermost end of said housing and rotably mounting a pair of dial-like knobs, means connecting said dial-like knobs to said casing whereby rotation of said knobs causes sliding movement of said casing, a plurality of comb-like members formed at the inlet end of said casing and projecting beyond said shear blades positioned in said inlet.

3,273,238
PLIERS HAVING A CAMMING LEVER MEMBER TRAPPED BETWEEN JAW MEMBERS
Carl Kuhbier, 4 Bussardweg,
Munster-St. Mauritz, Germany
Filed Dec. 10, 1964, Ser. No. 417,303
5 Claims. (Cl. 30—189)



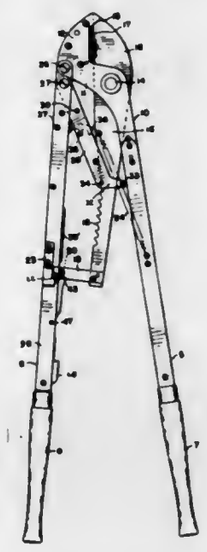
1. A pair of pliers comprising, in combination, two elongated jaw members each having a jaw portion at one end and a power arm at the other end, one of said jaw members having a handle portion forming a continuous of said power arm of said one jaw member and extending in a direction opposite to the jaw portion from said power arm of said one jaw member, said power arms overlapping each other at least in part and defining a free space between facing surfaces thereof; pivot pin means connecting said jaw members intermediate the ends thereof to each other; said jaw members being rotatable about the axis of said pivot pin means; a one-arm lever member having an end portion located in said space between said facing surfaces of said power arms; a first pivot pin projecting from the region of the free end of said lever member which is located between said power arms to one side of said lever member through an opening in said handle portion; a second pivot pin projecting to the other side of said lever member from a portion thereof located between said first pivot pin and the other end of said lever member through an opening in the power arm of the other jaw member, one of said openings being cylindrical and the other being in the form of an elongated slot, at least one of said pivot pins being in the form of a projection integral with said lever member, said pivot pin means forming the only means for securing said jaw members and therewith also holding said lever member captive in the space between said power arms of said jaw members.

3,273,239
MACHINE HAVING MULTIPLE CUTTING ACTION FOR CUTTING DIFFERENT TYPES OF PLANT STEMS AT THE SAME TIME
Rowland M. Hill, 1718 W. 12 Mile Road,
Royal Oak, Mich.
Filed Sept. 17, 1964, Ser. No. 397,161
5 Claims. (Cl. 30—206)



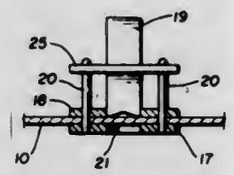
1. A machine for cutting stems of various size and toughness comprising,
a substantially annular plate having an axial aperture,
a shaft rotatably positioned in said plate aperture,
a relatively wide substantially rectangular blade on said shaft;
said shaft and said blade rotating relative to said plate;
said plate having a semicircular section;
spaced support teeth on said plate in said semicircular section lying parallel to one another in a curving conformation;
a cutting edge on said blade lying at a back angle to the radial extending beyond said plate into the location of said support teeth;
an outer curving end portion on said blade trailing said cutting edge,
an inner curving end portion on said blade in advance of said cutting edge, and
a nosetooth at a back angle to the radial on said blade at the juncture of said cutting edge and said outer curving end portion on said blade;
said device having a cutting feed direction parallel to said support teeth on said plate;
said nose tooth cutting a groove in large stems by rapidly removing small chips with said nose tooth back angle moving the stem into said tooth and said outer curving end portion, said blade abutting a large stem and permitting only small advances of the large stem into said nose tooth preventing over feeding;
said backed angle nose tooth and cutting edge on said blade moving medium size and small stems into the location of said cutting edge on said blade;
said cutting edge on said blade lopping-off medium size stems and small stems of average flexibility;
said cutting edge on said blade bending small stems of great flexibility against said support teeth;
said support teeth holding small stems of great flexibility against flexing movement;
said cutting edge on said blade cutting off small stems of great flexibility as positioned and supported by said support teeth.

3,273,240
CUTTING TOOL
Steuart R. Florian, 1551 Griffin Road, P.O. Box 682,
Dania, Fla.
Filed May 11, 1964, Ser. No. 366,564
4 Claims. (Cl. 30—251)



1. A cutting tool for cutting shrubbery and tree limbs that comprises first and second elongated handles, one handle at its upper end being acutely angled to form an offset head portion that terminates in a cutting jaw, the second handle being pivotally connected to the head, a fulcrum bar that is pivotally connected to the head at the point of offset from the first named handle, the said bar terminating upwardly from its pivot to define a cutting jaw, the bar projecting downwardly from its pivot and having one edge provided with ratchet teeth, spring means for biasing the bar in a direction toward the first named handle, a pawl pivotally connected to the second handle and having its lower end bifurcated to engage the fulcrum bar, the pawl being biased toward the bar, latch means carried by the second handle for maintaining the pawl in an inoperative position, a latch carried by the second handle and a yoke carried by the bar that is engageable with the latch whereby the handles are held in inoperative position, the said latch when released permitting the handles to be swung toward and from each other for actuating the jaws to cut relatively thin stock and roller means carried by the lower end of the pawl that rides upon a free edge of the bar when the pawl is in a latched position.

3,273,241
PORTABLE PANEL PUNCHING TOOLS
Townsend Annes, 1550 Detroit, Apt. 3E,
Denver, Colo.
Filed Sept. 16, 1965, Ser. No. 487,873
3 Claims. (Cl. 30—360)



1. A punching tool, for punching a rectangular opening between two screw holes in a panel, comprising:
(a) a die block having a shearing opening corresponding in shape to the desired rectangular opening and adapted to be positioned against one face of said panel;
(b) a guide pin fixed in said die block at each side of said shearing opening and adapted to be inserted through the screw holes in said panel so as to project perpendicularly from the other face of said panel in parallel relation;
(c) a punch-aligning plate having an aligning opening corresponding to said shearing opening and pin openings to receive said projecting pins and adapted to be positioned against the other face of said panel with said pins acting to maintain the aligning opening and the shearing opening in alignment with each other; and
(d) an elongated punch corresponding in cross-section to said aligning and shearing openings adapted to be inserted in said aligning opening and driven through said panel into said shearing opening.

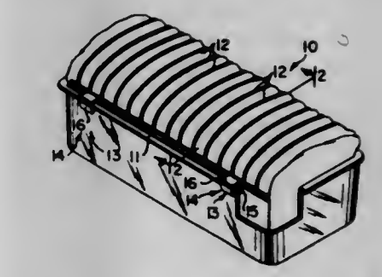
3,273,242
DENTAL CROWN AND METHOD OF PRODUCING THE SAME
Vladimir Andrew, 3 Bld. d'Anvers, Strasbourg, France
Filed Apr. 11, 1961, Ser. No. 115,585
Claims priority, application France, Apr. 13, 1960,
6,890, Patent 1,254,171
8 Claims. (Cl. 32—12)

1. An aesthetic dental crown for patient's tooth stumps, comprising an inner metal wall adapted to cap and to be sealed over the tooth stump to be crowned, an outer apparent wall secured over the inner wall, said outer wall including a metal section over the rear surface of the inner wall, a gap between the metal section and the inner wall, and a section of a material having the natural color



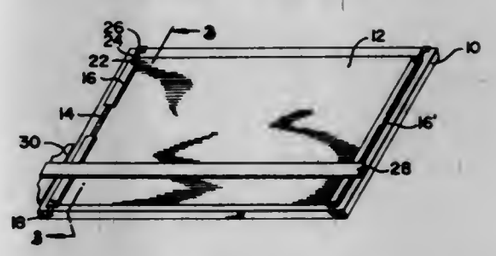
of the patient's teeth and extending over the front surface of the inner wall.

3,273,243
BREAD MARKING DEVICE
Joseph M. Lind, 400 N. Sycamore St.,
Los Angeles, Calif.
Filed Oct. 23, 1963, Ser. No. 318,245
8 Claims. (Cl. 33—1)



1. An inexpensive bread-marking device adapted to form shallow grooves in and conforming to the upper surface of a loaf of bread being formed by baking a mound of dough without substantially restricting the expansion of said dough mound or its contact with its environment, comprising a pair of spaced, parallel anchor rods, a series of spaced, parallel arches extending between said anchor rods, said arches being curved to conform to the upper surface of a loaf of bread being formed by baking a mound of dough, and a set of spring clamps adapted to attach said device to the top of a bread pan.

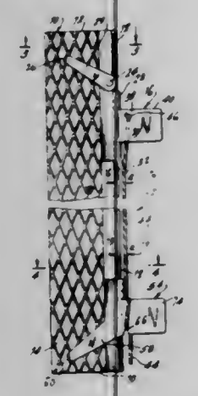
3,273,244
DRAWING PROTECTOR
Albert O. Goenner, 9300 Old Georgetown Road,
Bethesda, Md.
Filed July 15, 1965, Ser. No. 472,090
12 Claims. (Cl. 33—75)



1. A drawing protector adapted for use with a drafting board, comprising a thin, flexible member of predetermined length and attaching means disposed on opposite longitudinal ends thereof, said drawing protector having

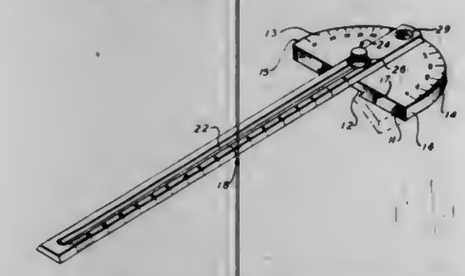
an arcuate cross-sectional configuration whereby a portion of the drawing protector may be readily flexed from an arcuate disposition to a flat disposition.

3,273,245
DEVICE FOR INSTALLING CORNER BEADS AND THE LIKE
Charles Brodsky, 2944 W. 5th St., Brooklyn, N.Y. 11224
Filed Sept. 18, 1964, Ser. No. 397,588
11 Claims. (Cl. 33—85)



1. A plumb line bracket for a lath corner bead, said bracket comprising an elongated body portion, guide locating means provided on said body portion for engagement with the corner bead portion of said lath corner bead, and a rooked arm pivotally mounted on one end of said body portion for engagement with the lath portion of said lath corner bead.

3,273,246
ADJUSTABLE T-SQUARE
Alfred W. Siberini, 221 Ivy St., Kearny, N.J.
Filed June 29, 1964, Ser. No. 378,699
10 Claims. (Cl. 33—101)



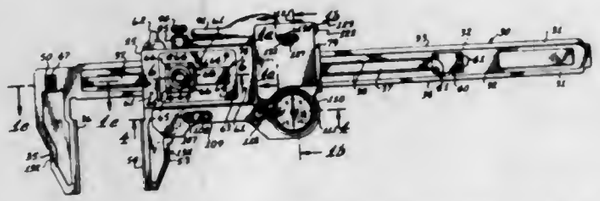
1. An adjustable T-square comprising a head flat on one side, with one edge straight, a blade associated with said head for completing the T-square, said head having a threaded aperture, extending from one face to the other, lying halfway between its ends, said blade having a slot closed at both ends and of width corresponding with the diameter of said aperture, a thumb screw with a threaded shank fitted through said slot and into said aperture for holding said blade in place with respect to said head, the other side of said head having a groove of section corresponding with that of said blade and into which the latter fits when removed from said screw, reversed and slid along the other side of said head, said groove being defined by side edges parallel to a plane through the axis of said aperture and perpendicular to said straight edge and said screw being removable and reinsertable in the head from the opposite face to hold the blade in place, so that said blade when so held in the groove will always be square with respect to the the groove therein and through the slot to hold the blade straight edge of the head.

3,273,247
MULTISCALE ENGINEERS SCALE
Ronald O. Bergerson, 2212 E. 86th St., Apt. 22, Minneapolis, Minn.
Filed Mar. 30, 1966, Ser. No. 538,805
4 Claims. (Cl. 33—107)



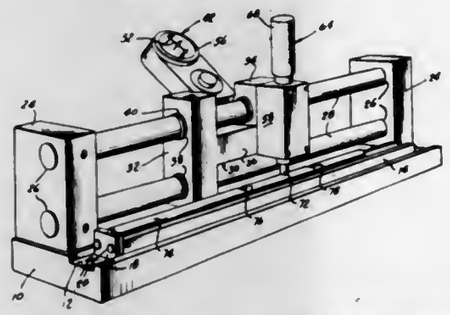
1. A multiscale engineers scale comprising, in combination, a substantially elongated housing member, said member having a transversely positioned slot therein, the bottom portion of said member assuming a concave form, an elongated metallic plate, a plurality of graduated markings on both sides of said plate, said plate being of a convex shape, an elongated bottom member, the top portion of said bottom member having a convex configuration and thereby providing means for sliding said plate on said bottom member, a plurality of graduated markings on both sides of said bottom member, a grasping member secured to said plate, said grasping member positioned within said slot of said housing member in such a manner that it provides means for laterally moving said plate to any side of said bottom member thus substituting said markings of said plate for said markings of said bottom member, and means for securing said housing member with said bottom member without interfering with the lateral movements of said elongated plate.

3,273,248
HIGH PRECISION CALIPER GAGE
Carl D. Halverstadt, Corona, Calif., assignor of fifty percent to Arthur L. Rothfeder, Scottsdale, Ariz.
Filed Sept. 14, 1964, Ser. No. 396,433
4 Claims. (Cl. 33—147)



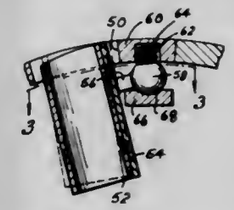
1. A high precision caliper gauge comprising in combination:
(A) a straight parallel sided body having an I-shaped cross section for maximum moment of inertia per unit mass in the direction of gauge loading,
(B) a jaw fixed to said body with a contacting face at right angles to said body with an I-shaped cross section bending into the body I-section for maximum moment of inertia per unit mass,
(C) a movable jaw having an integral portion movable on said body to relatively position said jaws to each other including a section for encompassing and engaging with two basic inner faces a side of said body and three other faces engaging an adjacent side with two opposing faces and a gib with two faces opposing the first two faces,
(D) a dial indicator carriage on said body and movable on said body relative to said movable jaw portion having two inner faces engaging with said body opposed by a spring force to enable movement maintaining constant contact with said body with adjacent internal side faces maintaining a lesser contact with said body,
(E) means for clamping and releasing said dial indicator carriage on said body comprising a carriage lock member having a toggle joint clamping action and a U-shaped member transmitting the force from a spring transmitted into a carriage lock member with two internal faces in the same plane transferring said force to one side of said parallel sided body with opposing force being transferred to the opposite side by a U-shaped member with an internal surface adjacent to the two sides so that the clamping force extends on the opposite side of the parallel sided body and is located between said other points,
(F) means providing limited positive movement between said dial indicator carriage and said movable jaw shank including thumb screw adjustment with a carriage lock member being connected to the dial indicator carriage and a threaded thumb screw providing positive adjustment between said dial indicator obscured in the dial indicator carriage and the movable jaw,
(G) a dial indicator fixed in said dial indicator carriage having an actuating plunger,
(H) and means connected between said movable jaw and said dial indicator actuating plunger so that relative movement of said movable jaw and said dial indicator carriage operates said dial gauge comprising a spring tube slidably mounted in a hole in said carriage and retained to said carriage with a thumb screw providing easy adjustment with two equal force compression spring retained with an internal snap ring at each end and a U-shaped member attached to said movable jaw and entering the tube through a slot lengthwise in the wall of the tube engaging the near end of each spring to enable force to be transferred without blocking the centermost portion of said tube.

3,273,249
LINEAR GAUGE
William P. Klaassen, Brooklyn, Mich., assignor to Teer Wickwire & Company, Jackson, Mich., a corporation of Michigan
Filed Sept. 22, 1964, Ser. No. 398,250
2 Claims. (Cl. 33—172)



1. A linear gauge for measuring the distance between shaped configurations defined on an elongated article comprising, in combination,
(a) a base,
(b) elongated article holding means mounted on said base, opposed supporting surfaces defined on said holding means defining an elongated groove adapted to support the article to be measured, said supporting surfaces defining the axis of said groove,
(c) a linear elongated track mounted on said base disposed parallel to said groove axis,
(d) a reference block having a reference surface mounted on said article holding means, said surface being transversely disposed to said groove axis and in alignment with said groove whereby an article to be measured disposed within said groove may abut against said surface and be related in a predetermined manner to said article holding means,
(e) a carriage supported on said track for slidable movement thereon in the longitudinal direction of said track, a cylindrical bore defined in said carriage having a vertically disposed axis intersecting the axis of said groove,
(f) an article engaging probe having a cylindrical body surface, a shaped article engaging end defined on one end of said probe having a configuration complementary to the configuration defined on the article to be measured and a handle defined on the other end of said probe, said probe being closely freely slidably received within said cylindrical bore for selective movement of said shaped article engaging end toward and away from said groove axis, and
(g) a direct reading dial indicator mounted upon said carriage, said dial indicator including a rolling drive wheel engaging said track for sensing movement of said carriage on said track, said movement being directly indicated on said dial indicator.

3,273,250
APPARATUS FOR MAKING BOWLING BALLS
Edwin F. Egger, 2519 N. Beach Drive, Seattle, Wash.
Filed July 27, 1961, Ser. No. 127,190
5 Claims. (Cl. 33—174)

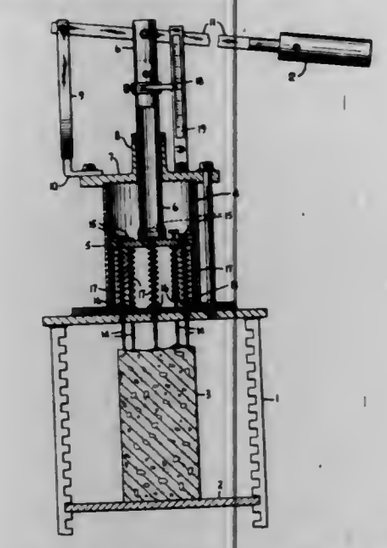


1. A mechanism for determining the position for fingers in a bowling ball, said mechanism having a first stall for receiving a thumb and a second stall for receiving a finger, said first and second stalls being spaced apart, a sleeve in said first stall, said sleeve being capable of moving so as to accommodate the thumb in different positions, a first means comprising a sphere integral with said sleeve, said mechanism having a shell in the configuration of a bowling ball, a plate, said plate being positioned inside of said shell and connected to said shell, a recess in that face of the plate which faces the shell adjacent said stall, said recess receiving said sphere, yieldable means bearing against the sphere and uring the sphere into the recess and against the plate, and means to move the plate with respect to the shell so as to restrict the movement of the sphere and the first sleeve.

3,273,251
DEVICE FOR MEASURING THE UNEVENNESS OF A SURFACE
Floyd S. Saizon, Baton Rouge, La., assignor to American Instruments Corporation, Baton Rouge, La.
Filed Nov. 2, 1964, Ser. No. 408,183
1 Claim. (Cl. 33—174)

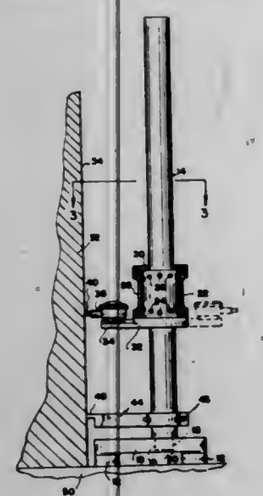
A mechanical measuring device for measuring the mean distance between a surface of an object and an opposite reference plane comprising in combination: a stand having a vertically adjustable base for supporting said object with said surface uppermost, and defining said reference plane, and having a top defining a plurality of vertically extending holes; a plurality of probes, each having oppositely disposed ends and an integral flange intermediate said ends, slidably mounted in said plurality of holes with said flanges above said top and adapted not to pass therethrough, said probes for contacting said surface with the lower of said oppositely disposed ends, said probes being displaced vertically by any unevenness of said surface; a plurality of helical springs, having similar coefficients of elasticity, mounted on the up-

per of said oppositely disposed ends of said probes and supported by said flanges; a horizontal member supported by said springs and adapted to freely move vertically, the vertical position of said horizontal member being a measure of the mean pressure of all said springs displaced with said probes by any unevenness of said surface; a horizontally extending indicator mounted on said



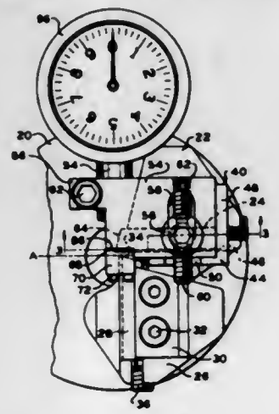
horizontal member for indicating said spring supported height thereof; and a scale vertically mounted on said base adjacent said indicator and vertically coordinated with respect to said reference plane and calibrated for the coefficient of elasticity of said springs and numbered to read the mean height of said object as indicated by said indicator.

3,273,252
SQUARENESS INDICATOR
Lothar P. Bunge, 3312 11 Mile Road, Warren, Mich.
Filed Dec. 4, 1964, Ser. No. 416,016
1 Claim. (Cl. 33—174)



A gauge of the type described, comprising: a planar base; a plurality of buttons fixed to one side of said base and having their surfaces which extend away from said base formed in a common plane so as to support said base with respect to a plane surface; a hole formed through the thickness of said base; a cylindrical column having a small diameter neck at one end disposed in said hole so as to support said column normally with respect to the base and said plane surface; a dial indicator support assembly consisting of a tubular ball retainer having a plurality of holes formed therein, an outer sleeve surrounding said retainer, a plurality of balls disposed within said retainer so as to contact the column and the outer sleeve, and a dial indicator support plate fixed to said outer sleeve and having a section extending radially with respect to said column; and a dial indicator fixed to said extending section so that its probe extends radially with respect to said column, the diameter of said column plus the diameter of two of the balls along the diameter of the column exceeds the inner diameter of the sleeve by not more than .002 inch, whereby a press fit is achieved between the sleeve, the balls, and the columns so that said sleeve may be rotated with respect to said column with a relatively small force relative to the force required to move said sleeve along the length of said column.

3,273,253
PRECISION GAGE FOR SETTING CHASERS
Edwin M. Eigenbrode, Waynesboro, Pa., assignor to Landis Machine Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Jan. 8, 1965, Ser. No. 424,379
6 Claims. (Cl. 33—185)

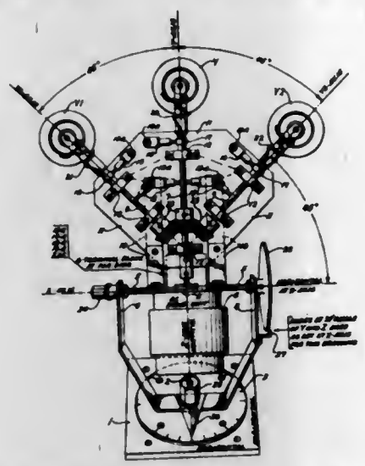


1. A device for setting one of a plurality of tangential thread cutting chasers with respect to a second chaser, each chaser having a multi-grooved side surface and a cutting edge on one end thereof and being adjustably mounted for movement parallel to its multi-grooved surface in a die head having a flat front surface, said device comprising support means having a locating surface engageable with said flat front surface, a datum surface carried by said support means and extending essentially perpendicular to said locating surface for engagement with the multi-grooved surface of said second chaser when said locating surface engages said flat front surface, a gaging arm, means mounting said gaging arm on said support means for limited swinging movement toward and away from said datum surface, said gaging arm havnig a gaging surface engageable with the cutting edge of said one chaser, and micrometric means carried by said support means for registering the location of said gaging arm.

3,273,254
ELECTROMAGNETIC MEANS OF GUIDANCE
Urho Leander Wertanen, 7281 Freda, Dearborn, Mich.
Filed Dec. 9, 1963, Ser. No. 331,078
4 Claims. (Cl. 33—222)

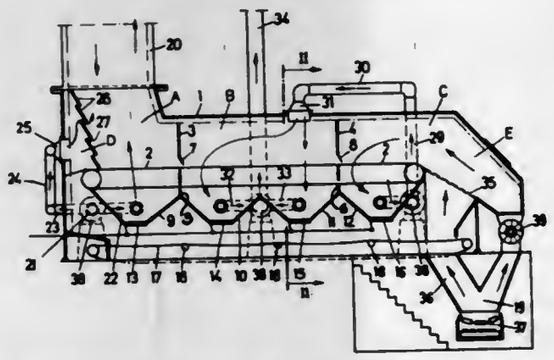
1. In a structure of the character described and comprising, in combination, a mounting base having a centrally vertical pivot member attached thereto and a calibrated dial on said base concentric relative to said pivot, a vertically positioned and centrally swivelled U-yoke member about said pivot and having an index in register with said dial, an adjustable locking means engaging said U-yoke to said pivot, a horizontally positioned cross-yoke member having its end shafts extending through journals at the side members of said U-yoke, another adjustable locking means engaging one end shaft of said cross-yoke to one side member of said U-yoke, another

calibrated dial at the other end shaft of said cross-yoke and said dial being in register with an index at the same side member of said U-yoke, a drive unit and brackets attached at opposite sides of said cross-yoke and having the drive shaft of said drive unit extending centrally through said cross-yoke, a group of three similar A.-C. sine wave signal generators having their rotation shafts at diverging coplanar angles and mounted with bearings and means of support attached to said brackets and wherein the rotation axis of the central coplanar generator shaft bisects the angle between the rotation axes of the remaining coplanar generator shafts at equal complementary angles, a bevel gear on each generator shaft,



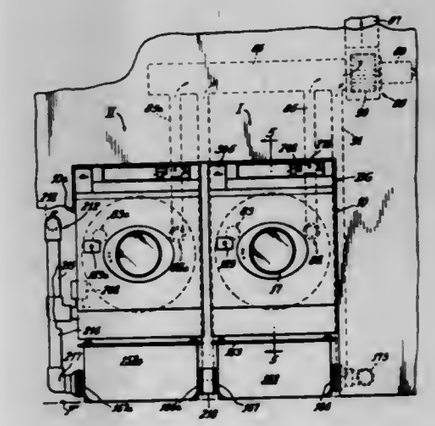
the gears on adjacent shafts being in mesh and the central generator shaft being directly coupled to the shaft of said drive, a current collector ring insulated on each generator shaft and each ring connected with a lead to one end of its respective generator winding, a brush operating means at each collector ring and each ring and brush having electrical means of connection to a respective terminal at a terminal block, a lead and means electrically connecting the remaining end of each generator winding to its respective shaft, a brush operating directly at the surface of each generator shaft and having electrical means of connections to a common electrical terminal at said block, and, two separate terminals at said block for leads of said drive.

3,273,255
METHOD AND APPARATUS FOR COOLING BURNED MATERIALS DISCHARGED BY A FURNACE FOR BURNING CEMENT, MAGNESITE, LIME OR THE LIKE
Walter Kramer, Hamburger Allee 62, Frankfurt am Main, Germany
Filed June 2, 1965, Ser. No. 460,676
Claims priority, application Germany, June 2, 1964, F 43,039
3 Claims. (Cl. 34—20)



3. Method for cooling the burned material discharged by a furnace, kiln or the like for burning such materials as cement, magnesite and lime, comprising the steps of feeding the burned material over a slotted slide into the first chamber of a cooler and onto a permeable conveyor, blowing fresh air upwardly through said slide and through said conveyor and through the material on said slide and on the conveyor, continuously moving said conveyor and the burned material thereon, conducting air from the discharge opening of the cooler into the third chamber of said cooler downwardly through the layer of material on the conveyor portion therein and through said conveyor portion, conducting said air from said third chamber to the second chamber of said cooler, downwardly onto the burned material on and through the conveyor portion therein and thence into and through an air discharge duct for use other than as secondary air in the burning or calcinating process.

3,273,256
DRY CLEANING MACHINE
Curtis E. Behrens, Effingham, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 142,606, Oct. 3, 1961. This application Nov. 2, 1964, Ser. No. 407,959
17 Claims. (Cl. 34—45)

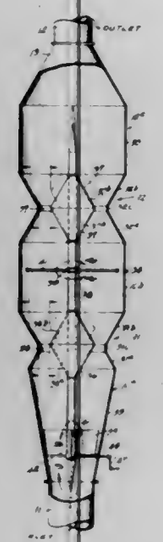


11. In a fabric drying machine, a container; a basket rotatably mounted in said container; an access door for said container; a latch for holding said door in closed position; means for operating said latch to release said latch; means for heating air and for circulating heated air in said container to vaporize liquid in the fabric; a condenser; means for supplying and circulating fluid to and through said condenser to cool and thereby condense the vapors into liquid form; and means controlling operation of said latch-releasing means and dependent on a predetermined condition of the fluid supplied to and circulated through said condenser by said fluid supply and circulating means.

3,273,257
AIR LIFT DRIER
Frank E. Johnson and Thomas E. Lewis, Anaheim, Calif., assignors to Rietz Manufacturing Co., Santa Rosa, Calif., a corporation of California
Filed July 9, 1963, Ser. No. 293,795
3 Claims. (Cl. 34—57)

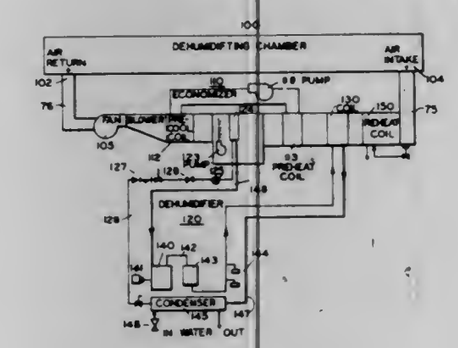
1. In a drier, an upright drying chamber or tower formed to provide at least two drying sections, one being disposed above the other, a throat section connecting the drying sections, the throat section being formed by oppositely sloped aligned frustoconical walls and a substantially cylindrical portion connecting said walls, the lower end of the lowermost section being adapted to receive material to be dried together with a stream of drying gas, a discharge conduit connected with the upper-

most end of the upper section for discharge of drying air and dried material, and means disposed within said throat section for adjusting the cross-sectional flow area through the same, said means comprising a body formed substantially of two connected frustoconical walls whereby said body is tapered toward both its ends, the greatest diam-



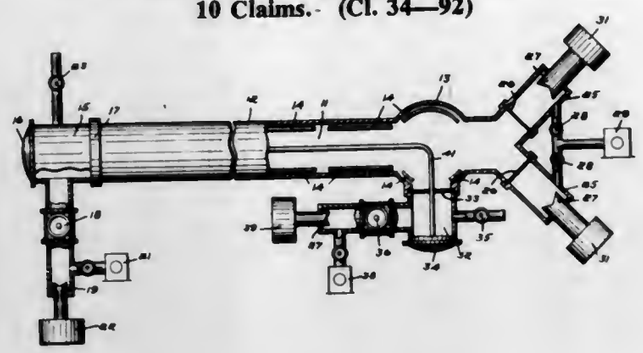
eter of said body being less than the diameter of the substantially cylindrical portion, said body being disposed axially within the substantially cylindrical portion of said throat section thereby providing together with said throat section an annular orifice through which the drying gas and material is caused to pass.

3,273,258
EGG DRYER
Ralph C. Liebert, 580 Keyes Lane, Worthington, Ohio
Filed Jan. 16, 1964, Ser. No. 338,154
16 Claims. (Cl. 34—62)



1. An industrial material dehumidifying system for the warm air drying of materials comprising, a closed chamber in which materials are to be dried and having a material entry and an exit, means for moving said material to be dried from said entry through said chamber and to said exit, an air intake and an air exhaust connecting to said chamber, means creating an air stream between said intake and said exhaust, said means for moving said material being intermediate said air streams; and an air conditioning unit for recycling the air between said air intake and said exhaust and including air heating means and air cooling means connected to a refrigeration cycle for maintaining said air stream at a constant warm temperature and low relative humidity being supplied from said air intake.

3,273,259
FREEZE DRYING APPARATUS
Ulrich Hackenberg, Alter Trassweg 9, Bensberg-Refrath, Germany
Filed May 29, 1964, Ser. No. 371,217
Claims priority, application Germany, June 6, 1963, L 45,038
10 Claims. (Cl. 34—92)

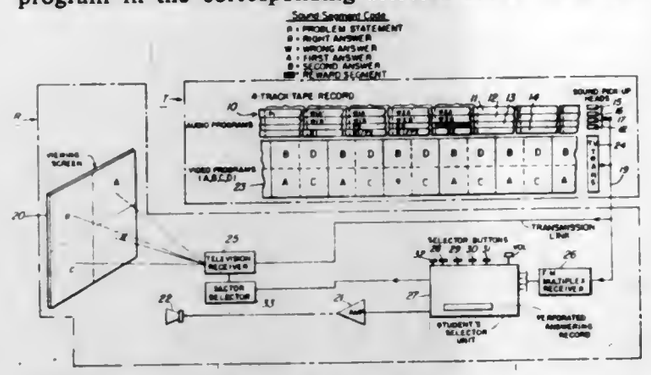


1. A freeze drying apparatus comprising;
(a) an elongated evacuable drying chamber having inlet, outlet and intermediate portions,
conveyor means adapted to transport a material to be dried through said drying chamber,
heating means positioned within said drying chamber and adapted to heat the material to be dried;
(b) an avacuable inlet lock chamber connected to said drying chamber inlet portion,
inlet lock valve means for isolating said inlet lock chamber from said drying chamber,
an inlet door means adapted to provide access into said inlet lock chamber,
inlet lock evacuation means adapted to provide evacation of said inlet lock chamber;
(c) an evacuable outlet lock chamber connected to said drying machine outlet portion,
outlet lock valve means for isolating said outlet lock chamber from said drying chamber,
an outlet door means adapted to provide access into said outlet lock chamber,
outlet lock evacuation means adapted to provide evacuation of said outlet lock chamber; and
(d) drying chamber evacuation means directly connected to and adapted to provide evacuation of the entire said drying chamber,
said drying chamber evacuation means being connected to the outlet end of said drying chamber thereby providing a gas evacuation path along the entire length of said drying chamber and wherein no additional evacuation devices are directly connected to either said drying chamber inlet or intermediate portions.

3,273,260
AUDIO-VISUAL COMMUNICATION SYSTEMS AND METHODS
Harold R. Walker, Metuchen, N.J., assignor to Tutortape Laboratories, Inc., New York, N.Y., a corporation of New York
Filed Oct. 6, 1964, Ser. No. 401,787
13 Claims. (Cl. 35—9)

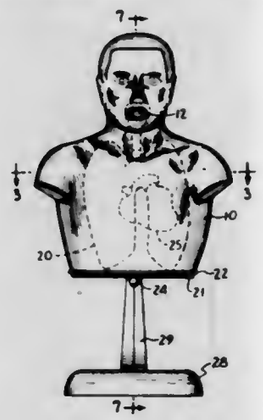
1. In a system for enabling a listener to receive and respond to transmitted programmed aural and visual programs, the combination of a plurality of sound program playback means each allotted to a corresponding recorded aural program, a plurality of manually operable members to select any playback means, a web carrying a series of sound tracks one for each of said aural programs, each of said tracks having a series of segments, with certain segments containing playback recordings for providing the listener with a choice of operation of one out of said plurality of manually operable members, said

web also including a series of motion picture frames with each frame divided into sectors so that the similar sectors in successive frames constitute a visual record of a visual program to accompany a corresponding aural program in a particular corresponding one of said sound tracks, control circuits responsive to the operation of any one of said members to automatically reproduce the aural program in the corresponding selected sound track and



simultaneously to select the proper sector in said motion picture frames to visually display the same on its allotted sector area of said screen, said control circuits further including means for blanking the other sector areas of said screen to which the remaining motion picture frame sectors are allotted, and means including other track segments having recorded information therein for confirming to the listener the correctness or incorrectness of the choice he has made.

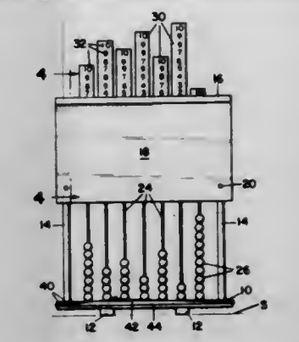
3,273,261
ANATOMICAL DEVICE
Corrie L. Lovercheck, Deaver Wyo., assignor, by mesne assignments, to Ideal School Supply Company, Oak Lawn, Ill., a corporation of Illinois
Filed Apr. 3, 1964, Ser. No. 357,032
5 Claims. (Cl. 35—17)



1. An anatomical device comprising a transparent shell-like simulated human head and integral downwardly open chest, a pair of flexible, transparent, inflatable simulated lungs disposed in the chest cavity, an aperture formed in the mouth of said head, a conduit leading from and connected to said mouth at one end and at its other to a tube disposed medially of said lungs, and a flexible resilient diaphragm extending across and closing said chest cavity.

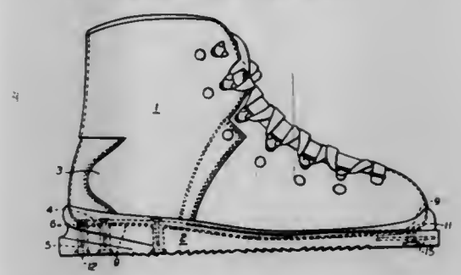
3,273,262
TEACHING DEVICE
Luke J. Smith, Jr., East Longmeadow, Mass., assignor to Milton Bradley Company, Springfield, Mass.
Filed July 27, 1964, Ser. No. 385,305
11 Claims. (Cl. 35—33)

1. A teaching device comprising in combination, a frame, a plurality of vertically-disposed denominationally-ordered flexible metal rods carried by said frame and forming spaced rows, a group of beads strung on each said rod for sliding movement relative thereto, a signal means slideably disposed on each said rod and resting on the uppermost bead of each group thereof, said signal means each carrying numerical indicia indicating the num-



ber of beads in each group, and a horizontal support on said frame intermediate the length thereof for supporting all bead groups in such manner that flexing of any said rod releases and drops a selected number of beads from said support to form a sequence supported by the bottom of said frame and corresponding to a selected number readable on said signal means.

3,273,263
SHOE, IN PARTICULAR, SKI-BOOT
Robert Klima, Linz (Danube), Austria, assignor to Firma Robert Klima, Lederbekleidung, Linz (Danube), Austria, a corporation of Austria
Filed Nov. 13, 1964, Ser. No. 410,944
Claims priority, application Austria, Nov. 15, 1963, A 9,148/63
17 Claims. (Cl. 36—2.5)

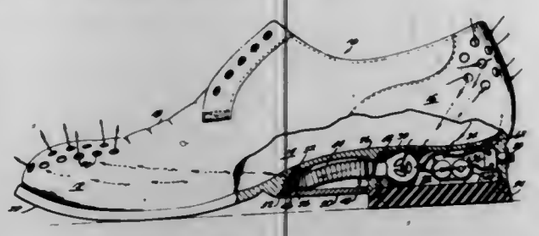


1. A shoe, in particular a ski-boot, comprising
an upper part and
a sole,
said upper part comprising a leg portion having a wedged-up fold and an inner sole in form of a wedged-up structure,
said sole consisting of homogenous flexible material, an adhesion connection and securing elemeans comprising two parts for connection of said sole with said upper part,
said two-part securing elements comprising a sleeve, and a pin-shaped part received by said sleeve and having a head portion disposed above said inner sole, as well as extending through said inner sole and said wedged-up fold, and
said sole having bores receiving said sleeves.

3,273,264
AIR CONDITIONED SHOE
Anthony S. Farinello, Jr., 2007 Ebbtide Lane, Dallas 24, Tex.
Filed Jan. 10, 1964, Ser. No. 336,994
9 Claims. (Cl. 36—3)

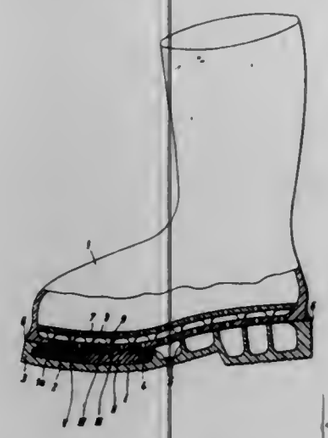
1. In a shoe including a heel, a shank, and a toe portion, an air conditioning mechanism comprising in

combination, a hollow chamber in the heel portion, a fan disposed in said chamber, means for motivation of said fan, means for controlling the motivation means of said fan disposed in said chamber, a second chamber connected by a flexible tube in series with said heel chamber



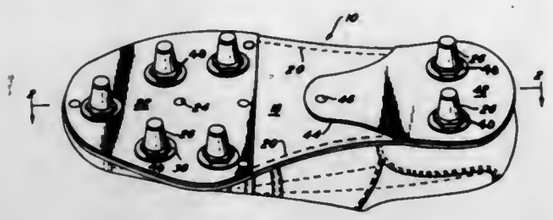
and disposed in the shank portion and in supporting relationship therewith, a tube connected to said fan and disposed in said second chamber, and a fluid path extending from the heel portion, through said fan and tube, to the toe portion.

3,273,265
WATER-TIGHT BOOTS
Ernst Reinert, Hannover, and Herbert Funck, Munich-Pasing, Germany, assignors to Dr. Ing. Funck K.G., Munich-Pasing, Germany
Filed Mar. 24, 1964, Ser. No. 354,286
Claims priority, application Germany, Mar. 27, 1963, R 34,801
1 Claim. (Cl. 36—3)



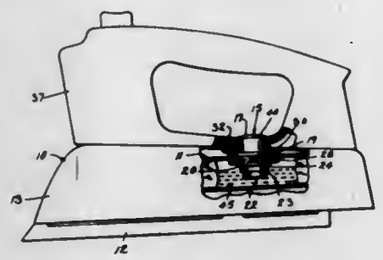
Water-tight boot of thermoplastic elastomer having a boot shaft and a boot base, the shaft comprising: an apertured insole formed integrally with the shaft, an apertured liner sole layer located above and distanced from the insole, projections attached to the liner sole and extending between it and the insole to define resiliently compressible chambers between adjacent projections, a walking sole layer located below and distanced from the insole, sponge rubber material positioned between the walking sole layer and the insole in the forward region of the boot base, projection located in the rearward region of the boot base and attached to the walking sole layer and extending between it and the insole so as to be in abutting contact with the insole, resiliently compressible chambers each formed between an adjacent pair of these projections; the arrangement being such that during walking air is forced from the second-mentioned chambers and the foam rubber material through the apertures in the insole and into the shaft of the boot by way of the first-mentioned chambers and the apertures in the liner sole layer, while fresh air from outside the boot shaft follows the reverse route into the second-mentioned chambers and the foam rubber material.

3,273,266
FOOTBALL SHOE
Michael Goldenberg, Hanover, Pa.
Continuation of application Ser. No. 265,977, Mar. 18, 1963. This application Sept. 10, 1965, Ser. No. 486,369
3 Claims. (Cl. 36—2.5)



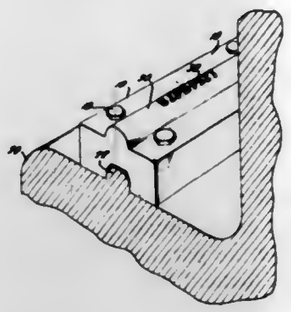
2. A football shoe comprising a shoe upper, an outsole, a pair of spaced, rigid, nylon, cleat-retaining plates positioned on the exterior surface of said outsole, with one of said plates being positioned in the tap area of said outsole and the other of said plates being positioned in the heel area of said outsole, means adhesively securing said plates to said outsole, rivets additionally securing said plates to said outsole, said plate in the heel area including an integral shank which extends into the arch area of said outsole and is positioned on the exterior of said outsole, whereby said shank serves as an arch support, and each of said plates having a plurality of cleats secured thereto.

3,273,267
WATER LEVEL INDICATOR FOR ELECTRIC IRON
Philip E. Willman, St. Charles, Ill., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,438
1 Claim. (Cl. 38—77)



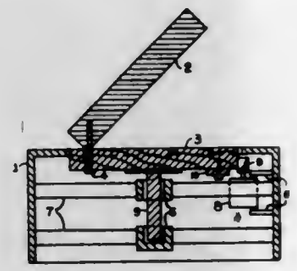
An electric iron comprising a liquid reservoir including top and bottom wall portions; a shell structure defining a housing for said reservoir concealing the reservoir from the user; an opening in said reservoir top wall; an opening in said housing substantially aligned with said reservoir top wall opening; a visual type liquid level indicator having a body member of solid transparent light transmitting material mounted at said reservoir opening and extending into said reservoir with a lower surface disposed in a lower portion of said reservoir, a plurality of ledge surfaces respectively vertically spaced intermediate said lower surface and said reservoir top wall; legends formed in relief on said lower surface and said ledge surfaces; a darkened surface on said reservoir bottom wall confronting said body member, and a convex upper surface on said body member through which said lower surface and said ledge surfaces are viewed enlarged, whereby each of said legends are readily visible through said body member upper surface and said housing opening when said liquid level is below the surface of said body with which each legend is respectively associated and said legends are respectively not readily visible when the respective surface with which each is associated is below the surface of the liquid in said reesrvoir.

3,273,268
TAMPERPROOF IDENTIFICATION DEVICE
Herbert Steen Blandford, Elmira, N.Y., assignor of one-half percent to Mordecai Casson, Elmira, N.Y.
Filed Apr. 1, 1964, Ser. No. 356,429
3 Claims. (Cl. 40—2.2)



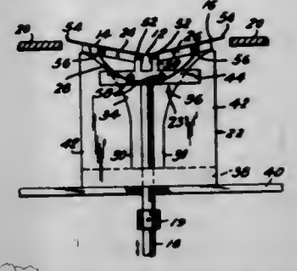
1. In combination, a machine having a longitudinal rib thereon with a convex surface, an identifying block having a groove in the bottom surface thereof fitting over and receiving said rib on the machine, said groove having a concave surface, indicia on said concave surface, a longitudinal rib on the top surface of said block and having a convex surface, indicia on the convex surface of the rib on said block thereby forming identifying indicia in triplicate, and means for securing said block to the machine.

3,273,269
ADVERTISING MECHANISM
Aubrey Braswell, Pensacola, Fla., assignor of twenty-five percent to Rex O. Williams, Lake Worth, Fla.
Filed Feb. 28, 1964, Ser. No. 348,111
5 Claims. (Cl. 40—34)



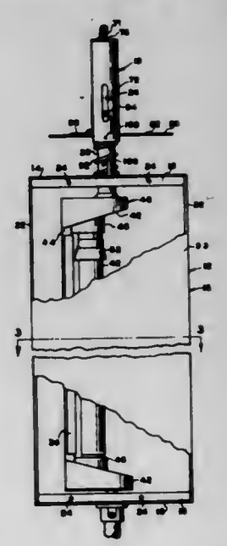
1. An advertising mechanism comprising a base, said base including a substantially flat top, said top defining an enlarged central aperture spaced inwardly from the periphery thereof, a member positioned within and generally filling said aperture, said member including a flat upper surface positioned coplanar with the flat top of the base, said member being rotatable within the aperture with the coplanar nature of the upper surface and flat top being maintained during the rotation of the member, means within said base for selectively effecting a continuous rotation of said member, and a display device, said display device having at least one circular portion, mounting means rigidly affixing a point on the circumference of the circular portion to the upper surface of the member adjacent the periphery thereof for rotation of the display device with the member, said point on the circumference of the circular portion constituting the only area of engagement of the display device, said display device projecting outwardly at an acute angle from the member at the point at which it is rigidly affixed to said member.

3,273,270
SEGMENTED EXHIBITOR
Alfred Skrobisch, Huntington Station, N.Y., assignor to Allard Instrument Corp., Westbury, N.Y., a corporation of New York
Filed Sept. 23, 1965, Ser. No. 493,613
21 Claims. (Cl. 40—52)



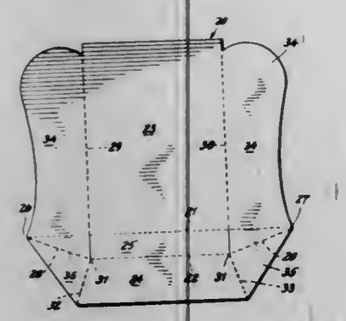
1. A segmented exhibitor comprising an extensive character display area having an array of elongated segment spaces and elongated segments for making up characters, each segment being longitudinally divided into two narrow vanes pivoted at their adjoining long edges to fold in face-to-face relation, an actuator operatively connected to the pivoted edges, a stationary guide block fixed behind the segment space and having spaced supports, and means so operatively connecting the vanes at points spaced outward from the inner edges of the vanes to the spaced supports of the block that retraction of the vanes by the actuator into the guide block folds the vanes in face-to-face relation between the spaced supports in order to conceal the faces of the vanes, and advance of the vanes out of the guide block by the actuator opens the vanes in edge-to-edge spread relation in order to expose their faces.

3,273,271
ILLUMINATED REVOLVING SIGN
Willy T. Werner, 12326 E. McNichols Road, Detroit, Mich.
Filed Apr. 22, 1964, Ser. No. 361,789
19 Claims. (Cl. 40—77)



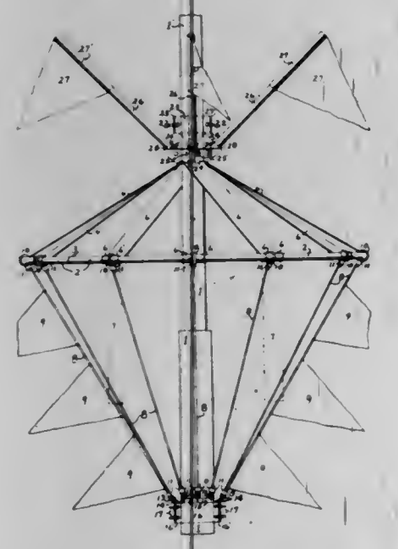
1. An illuminated display device comprising,
(a) a support structure,
(b) an illuminating assembly having one end pivotably suspended from said support structure,
(c) a display assembly enclosing and rotatable with respect to said illuminating assembly,
(d) said display assembly being rotatably carried by said support structure and said illuminating assembly.

3,273,272
ARTICLES SUCH AS DISPLAYS FORMED OF FLEXIBLE CREASABLE SHEETS
Richard E. Paige, New York, N.Y., assignor to Paper Products Development Corporation, New York, N.Y., a corporation of New Jersey
Filed July 15, 1964, Ser. No. 382,712
13 Claims. (Cl. 40—124.1)



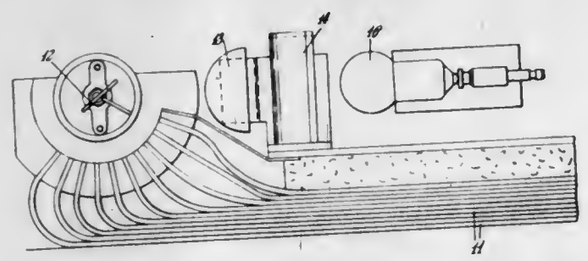
1. In a self-sustaining display made of a flexible creasable sheet, a pair of adjacent crease lines dividing the sheet into two main areas and an intermediate area between the crease lines, said crease lines converging to points of intersection at opposite ends of the intermediate area, said sheet being folded on one of said crease lines so that said intermediate area overlies the adjacent part of one of said main areas, said sheet being folded in the opposite direction along the other of said crease lines, the opposite end regions of said overlying parts being deflected into angular dispositions which bring their pointed ends nearer together, said deflection constraining said overlying parts to remain so and compelling said main areas to lie in transverse relationship to each other.

3,273,273
PENNANT AND STREAMER DISPLAY ASSEMBLIES
Frank W. McLarty, Tarrant County, Tex. (6767 Church St., Fort Worth 12, Tex.)
Filed May 29, 1961, Ser. No. 113,554
8 Claims. (Cl. 40—128)



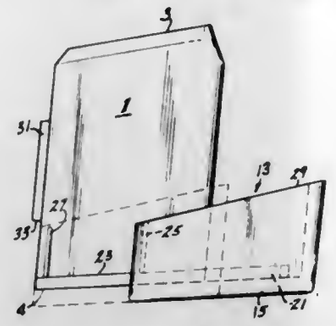
1. A vertical post standard, at least two bolts and corresponding threaded nuts wherewith are joined two bands around the post, and a complete pennant display assembly assembled and connected at the factory and subsequently installed on the post of a customer from the side thereof without disassembling the components of the said assembly comprising: a horizontally disposed parted band enveloping a high segment of the post; a second such band enveloping a much lower segment of the post; at least three pliant ropes having rather abruptly limited elasticity, such as those made of jute, each of which is connected at each end to the widely spaced bands at approximately equally spaced intervals around each of the bands, which conform to the dimensions of the post at their respective levels and therefore need not be of exactly the same length; a horizontally disposed and circular tubular hoop, cloven in at least one place and thereby permitting its placement around the post at a horizontal plane intermediate of the parallel bands, where it is disposed between the multiple pliant ropes, which it distends at considerable equal distances from the post, and to which it is attached by suitable means such as a loop in each rope intermediate between the parallel bands, a place of cleavage of the hoop being located between the same two ropes as is a place of parting of each of the two bands, each of which is provided with outward projecting integral flanges at the place of parting with a suitable hole in each of the flanges through which is passed one of the above mentioned bolts, whose respective nut is screwed on the bolt passing through its pair of flanges to contract and hold the proper dimension of each of the bands around the pole; means keeping the said ropes equally disposed relative to each other at points around the circumference of the circular tubular hoop and keeping the hoop horizontally disposed at a chosen level between the two bands, such as a strong cord of material like cotton fiber, sufficiently pliant to tie in hard immovable knots, tied in such an immovable knot forming a very tight loop in the cord around two strands of each rope loop immediately adjacent the tubular hoop, said knots in the cord being joined to each other by approximately equal segments thereof, which thus keep the ropes somewhat equally spaced around the tubular hoop; a dowel inserted and keyed in one of the cloven tips of the circular tubular hoop and thereafter inserted and keyed into the other tip, after disposition around the pole, thereby forming a splice and creating a complete circular rope-distending frame supported by the ropes attached to the upper band, which ropes also have pennants sewn to them in tandem at intervals, in a conventional manner, between the hoop and the bands at each end of the ropes.

3,273,274
SELECTIVELY ILLUMINATED INDICATING DEVICES
John Philip Pearce, Hillingdon, Middlesex, England, assignor to K.G.M. Electronics Limited, Richmond, Surrey, England
Filed June 3, 1964, Ser. No. 372,171
2 Claims. (Cl. 40—130)



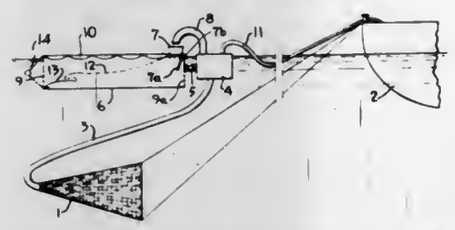
1. A selectively illuminated indicating device comprising a light source, at least two light transmitting plates with indicia on their faces and disposed in stacked relation, and an independently moveable mirror which reflects the light from the source onto the edge of the desired plate to illuminate the entire plate and make its indicia visible.

3,273,275
PLASTIC BOX MAGAZINE
Joseph A. Badali, Branford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Dec. 1, 1964, Ser. No. 415,034
3 Claims. (Cl. 42—50)



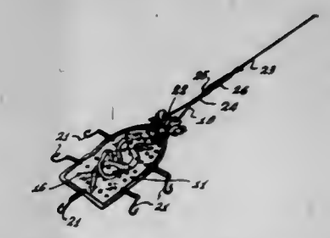
1. A plastic box magazine including a generally rectangular hollow body open at both ends, feed lips formed integral with one end of said body, an end cap closing the other end of said body, said end cap being slidably received on said other end, means on said end cap and said body to interlock said end cap and body, said means to interlock including a pair of laterally spaced longitudinal guide rails and corresponding longitudinal grooves in said body and said cap which are slidably engageable, at least one interlocking vertical ridge and groove on said body and end cap engageable when said end cap and body are in assembled condition, a follower slidably mounted in said body, spring means in said body normally urging said follower toward said feed lips, and cooperating guide means in said body and on said follower guiding the movement of said follower in said body.

3,273,276
LIVE FISH STORAGE AND TRANSPORT DEVICE
Sixten Englesson, Djursholm, Sweden, assignor of one-half to AB Flygts Pumpar, Solna, Sweden
Filed Jan. 14, 1965, Ser. No. 425,506
1 Claim. (Cl. 43—6.5)



A live fish storage and transport device, for use in connection with a fishing implement having means for catching fish and pumping them in a water stream to said device and adapted to be detachably connected to said device, said device comprising an elongated container including floating means and composed of flexible material and due said floating means floating at the sea surface and having an inlet adapted to receive the pumped stream of fish, and having front and rear walls defining restricted openings being sufficiently large to pass water and sufficiently narrow to block the passage of fish, enabling a restricted flow of sea water through said container, and valve means disposed adjacent said inlet opening and operable to restrain releasably the passage of fish into and out of said container, a flexible sheet disposed inside said container and having perforated portions adapted to pass water but to reject fish and near the rear wall a rear portion corresponding to the rear wall of the container and being substantially impervious to the passage of water, said sheet being connected to the interior of the container and disposed diagonally therein to the rear of said inlet, said sheet in the empty container normally remaining in an inactive slackened position and being operable to be moved upwardly and rearwardly into an active position by the fish entering into said container below said sheet, said rear portion in the active position lining the rear wall of the container, said sheet thereby substantially blocking the openings thereof to the passage of water, whereby the flow of sea water through the rear end of said container will be substantially prevented.

3,273,277
FISH LURE
Gustav E. Valentine, 2162 N. Holliston Ave., Altadena, Calif.
Filed Aug. 7, 1964, Ser. No. 388,141
8 Claims. (Cl. 43—41)



1. A fishing lure comprising: a transparent, water pervious bait bag having an open top for the reception of bait materials to be placed in the bag; a leader secured to said bag and extending around the side and bottom edges thereof, said leader being completely embedded in the side edges of said bag; means on said leader for attachment of a fish line; and means on at least one embedded leg of said leader for the securement of a fish hook to the leader whereby the strain of a fish caught on the hook is applied to the line through the leader without substantial strain on the bait bag.

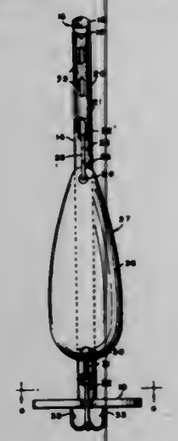
3,273,278
FISH LINE SINKERS AND FLOATS
Edward F. Lynch, 6429 Plunkett St., West Hollywood, Fla.
Filed Aug. 14, 1964, Ser. No. 389,754
3 Claims. (Cl. 43—44.87)



1. A fish line sinker comprising a sinker of ellipsoidal configuration and having a slot extending from a longitudinal axis thereof to a point on the surface of the sinker, a cylindrically disposed opening extending along the longitudinal axis and coaxial therewith, a hollow resilient plastic tube having an outside diameter substantially equal with the diameter of the cylindrical opening and having a head at one end thereof larger than the cylindrical open-

ing, said hollow plastic tube having a slot extending from end to end thereof and a length slightly greater than the length of the cylindrical opening along the longitudinal axis, and said hollow plastic tube being rotatably positioned within said cylindrical opening, a beveled surface at each polar zone of the sinker about the longitudinal axis at opposite ends of said cylindrical opening, each beveled surface being inclined with respect to the center of the sinker toward a common point, and end means on the free end of the hollow plastic tube together with said head at said one end being molded to conform to the inclined attitude of the beveled surface when the slots of the tube and the sinker are in alignment, and providing thereby means for substantially locking the tube and sinker when the slots are in maximum non-aligned position.

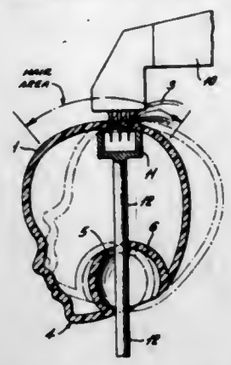
3,273,279
FISH LURE HOLDER
Desmond H. Norton, 1122 Patterson St., Ogden, Utah, and Martin A. Hardin, Ogden, Utah (1790 South 50 West, Bountiful, Utah)
Filed Dec. 3, 1964, Ser. No. 415,606
2 Claims. (Cl. 43—54.5)



1. A fish lure holder comprising a base having a slot extending inwardly from a peripheral edge thereof, through which slot the shank of a fish lure hook is passed to permit engagement of the hook barbs with the underface of the base, a supporting member extending upwardly from said base, and resilient means engaged with the upper extremity of said supporting member and depending downwardly for tensioned engagement with the upper end of the lure to maintain the lure hook in engagement with the underface of said base, wherein said resilient means includes an elastic member having a plurality of longitudinally spaced perforations, the perforations being adapted for selective engagement over the upper extremity of said supporting member to adapt the lure holder for use with lures of various sizes.

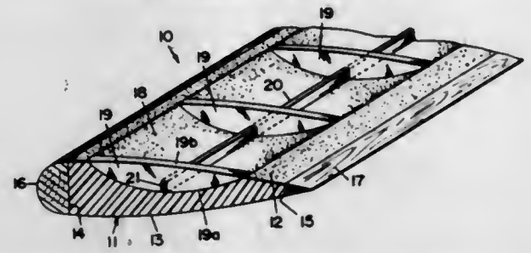
3,273,280
DOLL JOINT CONSTRUCTION FOR COOPERATION WITH HAIR ROOTING MACHINE
Joseph Karton, Newark, N.J., assignor to Deluxe Reading Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 27, 1964, Ser. No. 347,942
1 Claim. (Cl. 46—16)

A doll comprising a resilient head member having rooted hair secured therein, a torso member, and means securing said members together for universal movement, said means comprising a hollow ball element integral with one of said members, a hollow socket element receiving the ball element integral with the other of said members, and aperture means in the element integral with the head for allowing access of a support post for a hair rooting device into the head, the element integral with the head being of resilient material and the other element being of relatively rigid material, the ball fitting snugly into the



socket element to provide a rotatable locking fit of the head member on the torso member and the socket element being formed in the head.

3,273,281
MODEL AIRCRAFT WING CONSTRUCTION
Lawrence V. Harrison, Portage La Prairie, Manitoba, Canada (P.O. Box 1291, Sackville, New Brunswick, Canada)
Filed Oct. 4, 1965, Ser. No. 492,514
3 Claims. (Cl. 46—76)

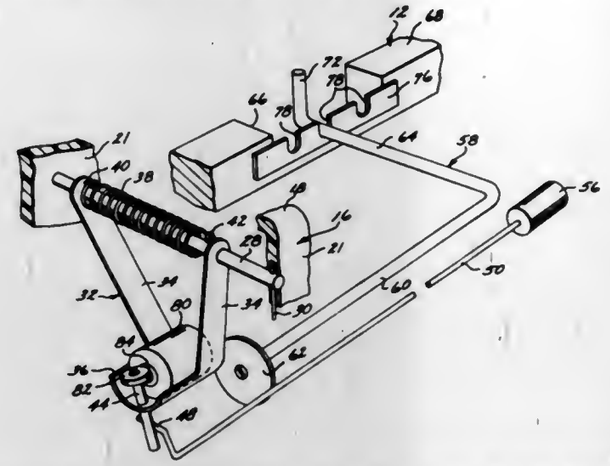


1. In a model aircraft wing, the combination of a wing body of low density homogeneous solidified plastic foam material, said wing body having an airfoil cross-section with upper and lower airfoil surfaces terminating at a flat vertical front edge and a flat vertical rear edge, a wooden leading edge member having a flat vertical rear edge contiguous with and secured to said flat vertical front edge of said wing body, a wooden trailing edge member having a flat vertical front edge contiguous with and secured to said flat vertical rear edge of said wing body, one of said airfoil surfaces of the wing body being provided with a concave longitudinally extending recess, and a set of wooden ribs complementally fitted in said recess, said ribs having convex edges in contact with and secured to the concavity of said recess and also having other convex edges flush with said one of said airfoil surfaces of the wing body.

3,273,282
FOOTBALL PASSING TOY
Harold F. Berry, 17448 Hemmingway St., Northridge, Calif.
Filed Aug. 17, 1964, Ser. No. 390,120
12 Claims. (Cl. 46—241)

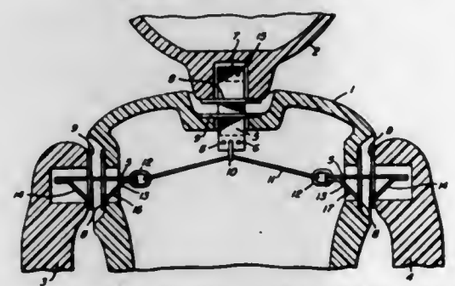
8. A toy comprising in combination:
a supporting base,
an action figure mounted on said base including a simulated human body with arm means mounted for movement in the fore and aft direction of the body, and a spring operatively connected between said body and arm means constantly operative to urge said arm means in one of said directions relative to the body,
actuating means on said base releasably engageable with said arm means both to move said arm means in the direction opposing the bias of said spring and to release said arm means to the bias of said spring for

propulsion thereof in said one direction by said spring,
stop means for abruptly arresting movement of said arm means in said one direction,
a member simulating a ball, and



means on said arm means for releasably holding said simulated ball member in such manner that the latter is hurled from said arm means when movement of the arm means in said one direction is arrested by said stop means, thereby to simulate a person throwing a ball.

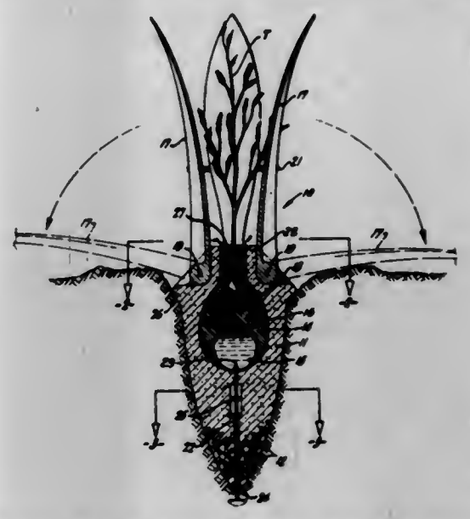
3,273,283
ARTICULATED HEAD AND LIMBS FOR DOLLS AND TOY ANIMALS
Tobin Wolf, 447 Essex Ave., Bloomfield, N.J.
Filed Dec. 20, 1963, Ser. No. 332,070
7 Claims. (Cl. 46—161)



6. A toy including a body member defining an aperture, tensioning means secured within said body member and an articulation comprising a first generally planar mounting plate defining a cut out opening therein, a cut out member integral with said mounting plate, a portion of said cut out member being substantially normal to the plane of said mounting plate and a leaf spring secured to said portion of said cut out member, said leaf spring extending through said cut out opening of said mounting plate, said articulation further including a second generally planar mounting plate defining a second cut out opening therein, a second cut out member integral with said second mounting plate, a portion of said second cut out member being substantially coplanar with said first mentioned cut out member portion, said leaf spring extending through said second cut out opening, said leaf spring being secured to said portion of said second cut out member.

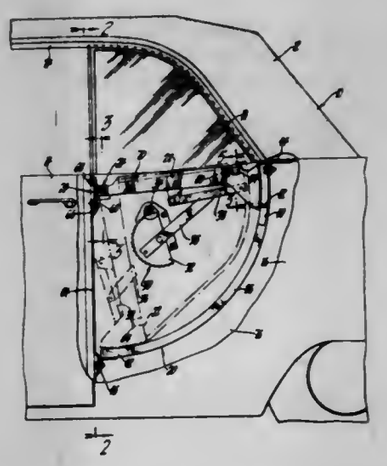
3,273,284
PLANTING CONTAINER
George N. Anagnostou, 203 Missouri St., San Francisco, Calif.
Filed Oct. 28, 1963, Ser. No. 319,345
12 Claims. (Cl. 47—34)

11. A planting container comprising an essentially enclosed receptacle having an elongated shape and a tapered lower end, said receptacle being formed with a riser defining an upper stem opening, said receptacle having an internal pocket filled with loam and being formed of material that disintegrates upon exposure to water, the lower end of said receptacle being weighted with metal embedded in said material, a set of protective



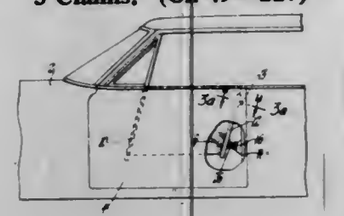
vanes spaced around said riser and pivotally mounted to said receptacle, and a frangible collar encircling said protective vanes to hold them in protective relationship to the limbs of a tree planted in said receptacle, said riser restricting movement of said vanes to prevent damage to the limbs of the tree.

3,273,285
WINDOW REGULATOR MECHANISM
Richard H. Champion, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 341,504
5 Claims. (Cl. 49—40)



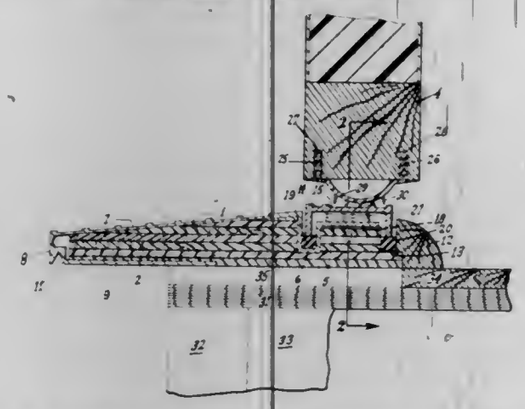
1. A window regulator mechanism for automotive vehicles, and comprising, a mounting frame receptive of the lower edge of a vertically curved and disposed window panel member, pivotal support means provided adjacent one end of said mounting frame and including means defining an axis extending transversely of said frame and supporting said frame for pivotal movement in the general plane of the window, guide track means formed and disposed for guiding engagement with said frame adjacent the other end thereof in the course of pivotal movement of said frame about said axis, and means shifting said frame axially along said axis in the course of pivotal movement of said frame about said axis.

3,273,286
VEHICLE BODY
Lawrence P. Brissette, Utica, and James D. Leslie, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 25, 1964, Ser. No. 354,655
3 Claims. (Cl. 49—227)



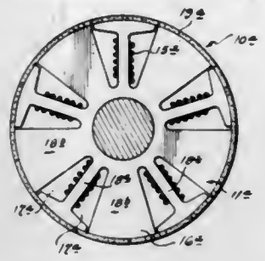
1. In a vehicle body having a window opening therein and a window for closing said opening, the combination comprising, guide means mounted on said body for guiding one edge portion of said window along a predetermined path upon movement of said window between open and closed positions, a guide member for guiding an opposite edge portion of the window, means pivotally mounting said guide member adjacent one end thereof on said body, said pivot means permitting said window, upon movement thereof, to move said guide member relative to said pivot means longitudinally of the path of movement of the window, laterally of the path of movement of the window, or both longitudinally and laterally of the path of movement of the window as required to align said guide member with said window during movement thereof, and resilient means interconnecting said guide member adjacent an opposite end thereof and said body and providing a floating connection therebetween, said resilient means locating said guide member in a predetermined position both laterally and longitudinally of the path of movement of the window and resisting movement of said guide member from said position by said window during movement thereof.

3,273,287
SILL AND THRESHOLD ASSEMBLY
David H. Pease, Jr., Cincinnati, Ohio, assignor to Pease Woodwork Company, Inc., Hamilton, Ohio, a corporation of Ohio
Filed June 29, 1964, Ser. No. 378,566
12 Claims. (Cl. 49—468)



1. A threshold and sill combination comprising a sill member and a threshold element affixed thereto, said sill member being elongated and having inner and outer edge portions, said sill member shaped to provide a surface sloping downwardly toward said outer edge and having at least one longitudinal groove positioned at said threshold on said sill, said threshold element having a horizontal body and a depending leg for entering said groove and for being sealed therein with a deformable substance, and means adjustable in height for affixing said threshold element to said sill member.

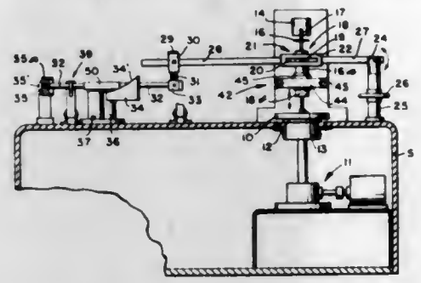
3,273,288
ULTRASONIC GRINDING AND HONING
Arthur Kuris, Bronx, and Lewis Balamuth, New York, N.Y., assignors to Cavitron Ultrasonics Inc., Long Island City, N.Y., a corporation of New York
Filed Apr. 25, 1962, Ser. No. 190,154
9 Claims. (Cl. 51—72)



1. An abrading device comprising
(A) at least one abrading element having an active surface adapted to be moved relative to a workpiece in contact with a surface of the latter for finishing the workpiece surface,
(1) said element having a relatively small thickness in the direction normal to said active surface; and
(B) means applying high frequency vibrations to said abrading element at the side of the latter opposed to said active surface and in said direction normal to the latter,
(1) said applying means including a generally circular, radially vibrated metal body having diametrically opposed sectors of relatively small mass and relatively large mass, respectively, so that the average radial velocity in each sector of relatively small mass is substantially greater than the average radial velocity in the diametrically opposed sector of relatively large mass, thereby to provide radial vibrations of magnified amplitude at the peripheries of said sectors of relatively small mass,
(2) said radially vibrated metal body being rotated with a peripheral speed equal to the speed of movement of said abrading element relative to the workpiece,
(3) said sectors of relatively small mass and of relatively large mass having abrading elements on the peripheries thereof which respectively include relatively fine and relatively course abrasive grains,
(4) said vibrations being applied to said abrading elements at least over the area of the latter in contact with the workpiece so that the vibrations are effectively transmitted through the thin abrading elements to act at said active surface for enhancing the abrading effect of the latter.

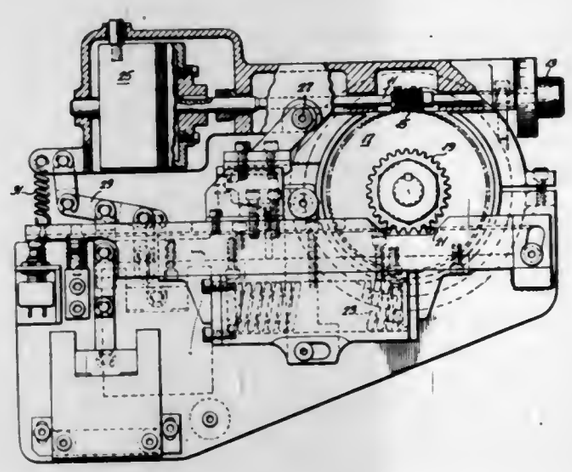
3,273,289
ASPHERIC SURFACE GENERATOR
Ralph W. Dietz, 106-B Bard, and Harold E. Bennett, 1501-B Smith Road, both of China Lake, Calif.
Filed Sept. 16, 1963, Ser. No. 309,356
5 Claims. (Cl. 51—127)

1. In a surface generator, the combination comprising:
a rotatable, horizontally disposed turntable for rotatably supporting a work blank;
a working bar transversely disposed above said turntable;
a fixed vertical pivot post for pivotally supporting a first end of said working bar in a manner such as to accommodate working bar pivotal displacement in both horizontal and vertical directions;
a vertically and horizontally movable working point;
means for operatively connecting said working point with said working bar in a manner such that the working bar serves to impart both a vertical and a horizontally transverse displacement to said working point relative to said turntable;
working point guide means for imposing a straight-line movement on said working point as it is caused to horizontally traverse said turntable;
a moveable pivot post for pivotally supporting a second end of said working bar in such a manner as to



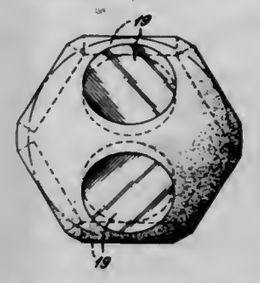
accommodate working bar pivotal movements in both vertical and horizontal directions;
means for imposing both a vertical and a straight-line horizontal displacement to said moveable pivot post for imparting movement to said working point through said working bar; and
means for establishing and maintaining a state of parallelism between the straight-line horizontal movements imparted to said working point and said moveable pivot post.

3,273,290
GRINDING
Richard J. Levi, 256 Irving Ave., Closter, N.J.
Filed Feb. 26, 1963, Ser. No. 261,026
5 Claims. (Cl. 51—165)



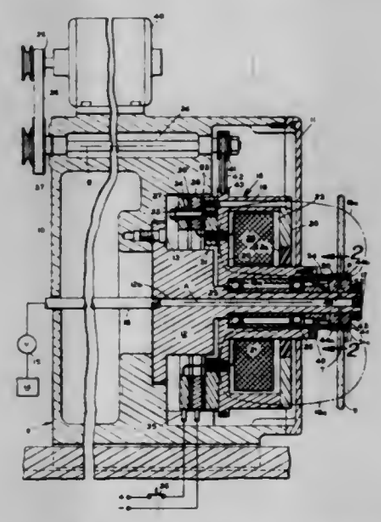
1. A mechanism for controlling relative motion between a machine tool and a workpiece comprising: a movable member for providing relative motion between a machine tool and a workpiece, a rotatable input shaft. drive means operable when engaged to drive said movable member from the rotation of said input shaft, biasing means to expose the motion of said movable member and bias said movable member back toward a starting position to thereby eliminate backlash from said driving means, means selectively operable to brake said input shaft, and means selectively operable to disengage said driving means so that said biasing means will drive said movable member back to said starting position moving the workpiece and the machine tool away from one another.

3,273,291
PITCH LENS BLOCKER BALL AND BLANKS
Patrick H. Reardon, Hagerstown, Md., assignor to The Lionel Corporation, a corporation of New York
Original application Dec. 7, 1960, Ser. No. 74,380, now Patent No. 3,114,992, dated Dec. 24, 1963. Divided and this application July 31, 1963, Ser. No. 304,712
2 Claims. (Cl. 51—216)



1. A spherical lens blocker ball consisting entirely of pitch, and a plurality of lens blanks inset radially therein with the outer face of each of said blanks being disposed at a depth to lie in a plane chordwise of the surface of said blocker ball whereby said blocker ball and said blanks may be ground as a unit to a smaller sphere with the convex outer faces of said blanks of the same curvature.

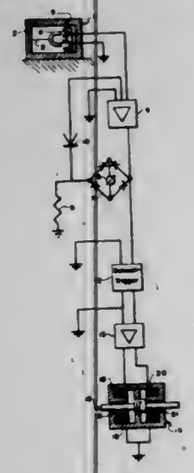
3,273,292
MACHINE TOOL HEADSTOCK
William B. Seidel, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 16, 1963, Ser. No. 316,643
4 Claims. (Cl. 51—237)



1. A headstock for a machine tool comprising:
(a) a housing,
(b) a fixed member tightly secured in said housing and having a fixed vent head positioned outside the housing on an axis to receive an annular workpiece, said vent head adapted for connection to a source of fluid under pressure and having a surface of circular cross section centric with respect to said axis for registration with the workpiece, said surface having a plurality of orifices equally angularly spaced around said axis and said vent head having a plurality of passages to connect said orifices to the source of fluid under pressure,
(c) a drive member surrounding said fixed member mounted in the housing for rotation on said axis, said drive member terminating in a magnetic annular end face outside the housing adjacent said vent head, said annular end face centric with respect to said axis and effective when magnetized to grip one end

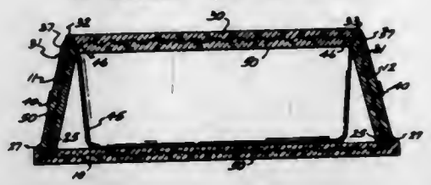
of the workpiece and rotate the workpiece relative to the vent head,
(d) means to magnetize said magnetic annular end face,
(e) and means to rotate said drive member.

3,273,293
DEVICE FOR BALANCING ROTATING BODIES DURING OPERATION
Hans Conrad Sonderegger, 26 Breitestrasse, and Hans U. Baumgartner, 90 Kurlstrasse, both of Winterthur, Switzerland
Filed June 13, 1963, Ser. No. 287,662
Claims priority, application Switzerland, June 18, 1962, 7,266/62; July 27, 1962, 9,076/62; Feb. 20, 1963, 2,232/63
15 Claims. (Cl. 51—262)



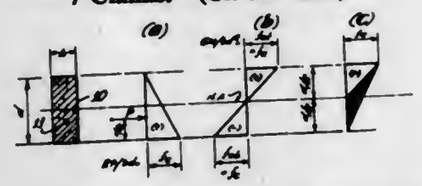
1. Device for dynamically balancing rotating bodies supported on a support structure, comprising:
sensing means responsive to imbalance of the rotating body and capable of generating electric impulses,
electromagnetic actuator means controlled by said electric impulses,
tool means actuated by said actuator means at a frequency proportional to the speed of said rotating body, said tool means being operable to remove material from a portion of the contour of said rotating body at each operating cycle of said actuator means,
said sensing means including a portable vibration feeler provided with adjustably tuned mechanical vibration means,
said feeler being removably mounted on said support structure in the vicinity of said rotating body,
said vibration means being tuned to the speed of said rotating body to produce by the imbalance a resonant condition and therewith generating said electric impulses as a periodic signal,
said electromagnetic actuator means including at least one solenoid coil, an armature substantially coaxial with said solenoid coil, and at least one stop means limiting the advance of said armature which is effected by said electromagnetic actuator means upon energization thereof,
and indicating and control means operatively connected with said feeler including recording means indicating said periodic signal with the amplitude thereof maximum upon tuning of said feeler, means for transforming said signal into a control signal of a substantially square wave characteristic, and means for adjusting the amplitude of said square wave signal to the operating characteristics of said solenoid coil and said armature in such a manner that said armature abuts against said stop means during the duration of said square wave signal.

3,273,294
BURIAL VAULT WITH SECTIONAL INCLINED SIDEWALLS
Joseph J. Trzesniewski, 1711 W. Lincoln Ave., Milwaukee, Wis.
Filed Sept. 17, 1963, Ser. No. 309,501
12 Claims. (Cl. 52—141)



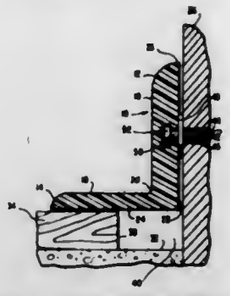
10. In a burial vault; a bottom plate having two ends and two sides; a pair of end pieces with one of said end pieces extending upwardly from the top surface at each end of said bottom plate; a pair of side pieces, one of said side pieces extending upwardly from the top surface at each side of said bottom plate with said side pieces in engagement with said end pieces to form an enclosure open at the top, the outer edges of said side and end pieces engaging the top surface of said bottom plate inside the perimeter of the top surface of said bottom plate to form a lip on said bottom plate about the perimeter of the enclosure, each of the junctures of said side pieces with said end pieces having adjacent surfaces of adjoining pieces tapered relative to each other so that they form a wedge shaped opening extending through the height of said side and end pieces and opening into the outer surface of the enclosure; means securing the bottom edges of said side and end pieces to said bottom plate; a strip of sealing material in each of the wedge shaped openings for sealing the joints; a strip of sealing material disposed on said lip and in contact with the adjacent surfaces of said side and end pieces to seal the juncture of said side and end pieces with said bottom plate; a V edge formed in the top edge of each of said side and end pieces; a cover plate having a V groove formed in its bottom surface and resting on the top edges of said side and end pieces with its V groove engaged by the V edges of said side and end pieces for closing the top of the enclosure and retaining said side and end pieces in position in the assembly; a liner located within the enclosure formed by said bottom plate with said side and end pieces, said liner being open at the top; and a flange extending outwardly from said liner about the periphery of the opening in said liner, said flange being clamped between the V groove of said cover plate and the V edges of said side and end pieces to secure the liner in position within the burial vault and seal its interior.

3,273,295
SPLIT-BEAM PRESTRESSING
Arsham Amirikian, 6526 Western Ave., Chevy Chase, Md.
Filed June 4, 1963, Ser. No. 285,535
7 Claims. (Cl. 52—223)



2. A composite structural concrete beam comprising:
a lower prestressed tension segment which includes all of the beam below its neutral axis;
an upper non-prestressed compression segment which includes all of the beam above its neutral axis; and
bonding means at the meeting interface of said segments to resist any shear forces developed during normal loading of said beam.

3,273,296
DETACHABLE BASEBOARD AND FLOORING TRIM ASSEMBLY
Glenn E. Soulon, New York, N.Y.
(43 Greenwich Ave., Greenwich, Conn.)
Filed June 17, 1963, Ser. No. 288,410
3 Claims. (Cl. 52—288)



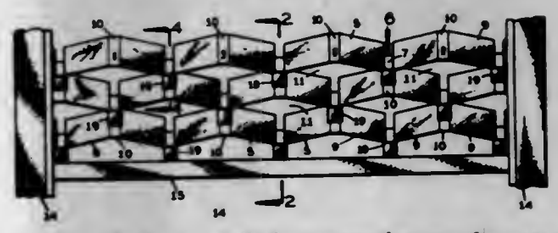
2. In flooring trim construction the combination including;
a sub-floor,
a vertical wall abutting the edge of said sub-floor,
surface flooring overlying said sub-floor having a marginal edge spaced from said wall to define an expansion void,
a number of anchor members mounted on said wall, each anchor member including a neck portion extending from the wall, an enlarged head portion formed at the outer end of the neck portion and a spacer flange formed on the opposite end of said neck portion and engaging, on one side, said vertical wall,
an elongate trim member bridging said expansion void having upper and lower edges, an inner face extending between said edges and engaging the other side of said spacer flange to define an air space between said inner face and vertical wall, and a horizontal leg projecting from said trim member in overlying and spaced relationship with the upper surface of said surface flooring adjacent said marginal edge, and
a longitudinal substantially T-shaped groove formed in said inner face of said trim member, said groove having a reduced portion extending to the surface of said inner face and receiving the neck portion of said anchor member, and an enlarged portion receiving the head portion of said anchor member, said groove being dimensioned such that said head portion engages a shoulder defined by said reduced portion to prevent relative displacement between the trim member and anchor member.

3,273,297
DOOR AND PANEL CONSTRUCTION
Herbert W. Wehe, Jr., Ligonier, Pa., assignor to Overly Manufacturing Company, Greensburg, Pa., a corporation of Pennsylvania
Filed June 7, 1963, Ser. No. 286,289
4 Claims. (Cl. 52—404)



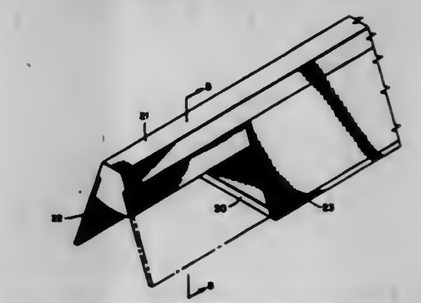
1. In a sound attenuating metal panel construction in combination,
(a) a pair of laterally spaced vertically disposed metal sheet members providing outer faces of the panel and having connected vertical margins at each side thereof forming an open ended envelope,
(b) a limp septum member comprising a sheet of lead vinyl provided on one face thereof with a foam type backing layer disposed intermediate the inner faces of said spaced sheets for substantially the vertical height thereof and connected with the adjacent inner faces of said envelope side edges,
(c) a plurality of vertically disposed transversely spaced stiffening members secured to the inner face of each said vertically disposed metal sheet members and extending therefrom towards an adjacent face of said septum,
(d) a porous non-continuous material filling the spaces between said metal sheets, stiffening members and septum member, and
(e) top and bottom closure members secured to the opposite ends of said envelope.

3,273,298
RETICULATED SUN SHADE OR GRILL
Robert L. Jordal, Fort Lauderdale, Fla., assignor to Al-Vent Inc., Fort Lauderdale, Fla., a corporation of Florida
Filed Apr. 2, 1964, Ser. No. 356,791
7 Claims. (Cl. 52—473)



1. A sun shade or grill for mounting to the exterior of a window or door comprising a multiplicity of elongated metallic strips having their ends anchored in a metallic frame, the several strips being shaped at equidistantly spaced points throughout their length to form channels and between each pair of channels the strip is inclined upwardly to form a flat apex that is intermediate each adjacent channel, each alternate strip being staggered whereby the flat apex underlies the bottom of a channel of the next adjacent strip, means in the bottoms of the channels and the apex to fixedly lock the strips together and to form transverse cells of like configuration that extend entirely through the grill, the channels being open throughout and ornamental cover plates for closing the ends of the channels, the several cells constituting air passages through the grills and to the window or door adjacent to the grill, the grill having a depth calculated to exclude the passage of sun light therethrough for the major number of hours of the day.

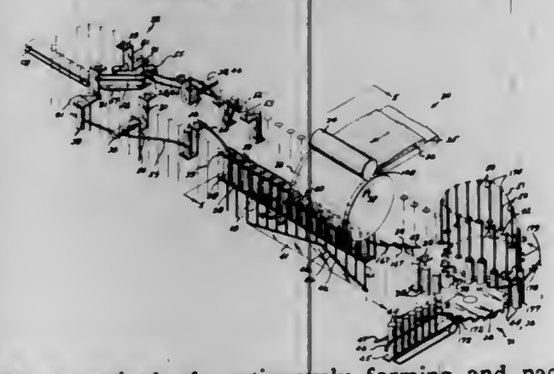
3,273,299
BIPOD COMPONENTS AND BUILDING UNITS CONTAINING SAME
Philip F. Hartung, Jr., 41 Fairfield Drive, New Shrewsbury, N.J.
Filed July 12, 1963, Ser. No. 294,473
6 Claims. (Cl. 52—648)



1. A triangular shaped beam comprising a trapezoidal timber base member having beveled edges, each of the edges having a recess at the upper portion thereof, said base member extending longitudinally of the beam, a

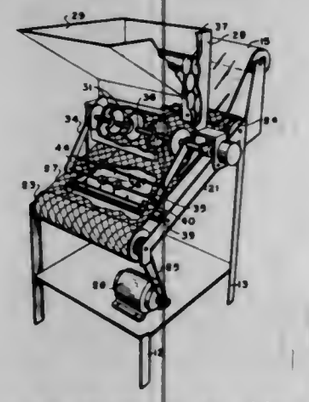
trapezoidal timber head member having beveled edges, each of the edges having a recess at the lower portion thereof, said head member being disposed in a plane spaced away from the base member and parallel to said base member, two plywood webs each being positioned between said base member and said head member, thus forming the opposite sides of the triangle circumscribing the configuration of said beam, and being disposed at angles corresponding to the angles of said beveled edges.

3,273,300
CONTINUOUS DOUGH CUTTING AND PACKAGING
Howard N. Watrous, Cincinnati, and Charles R. Hood, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 7, 1963, Ser. No. 300,431
22 Claims. (Cl. 53—23)



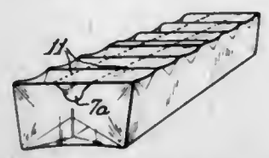
20. A method of continuously forming and packing blanks of dough comprising the steps of feeding a sheet of dough continuously to a rotating cutter head, cutting dough blanks continuously from said sheet of dough by pressing the dough sheet against the cutter head, depositing the dough blanks so cut into a series of continuously moving hollow intermediate containers moving beneath said cutter head until each intermediate container is filled with a plurality of dough blanks, and transferring the dough blanks by gravity from each intermediate container into a commercial container.

3,273,301
METHOD AND APPARATUS FOR WRAPPING AND PACKAGE PRODUCED
Kelvin G. Anderson, Greer, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed Aug. 28, 1963, Ser. No. 305,045
11 Claims. (Cl. 53—32)



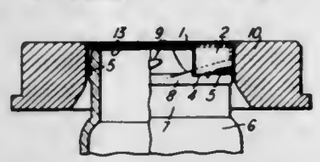
1. A method for wrapping an object in a sheet of organic thermoplastic film comprising:
(a) rotating the object between at least one pair of diametrically opposed electrodes,
(b) establishing a high voltage direct current potential between each of said electrode pairs,
(c) feeding the film sheet between the object and one of the electrodes, and
(d) continuing to rotate the object until the sheet is overlapped to form a tube around the object.

3,273,302
METHOD OF FORMING SHRINK FILM PACKAGE
Richard T. Walter, Norristown, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,680
3 Claims. (Cl. 53—39)



1. A method for forming a package comprising a filled carton encased in a thermoplastic film element, which comprises:
(a) enclosing the filled carton relatively loosely within a thermoplastic film element;
(b) shrinking such film element to tighten it around the filled carton; and
(c) perforating the film element to provide tear strip openings.

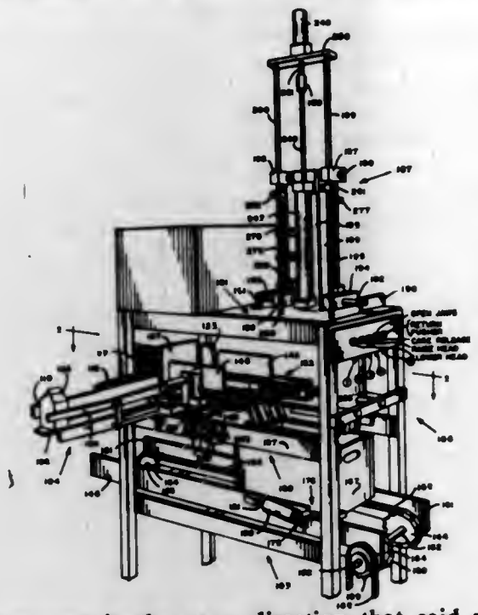
3,273,303
METHOD OF APPLYING CONTAINER CLOSURE
John Charles Hill, London, England, assignor to The Metal Box Company Limited, London, England, a British company
Original application May 6, 1959, Ser. No. 811,477, now Patent No. 3,086,672, dated Apr. 23, 1963. Divided and this application Oct. 1, 1962, Ser. No. 227,153
6 Claims. (Cl. 53—42)



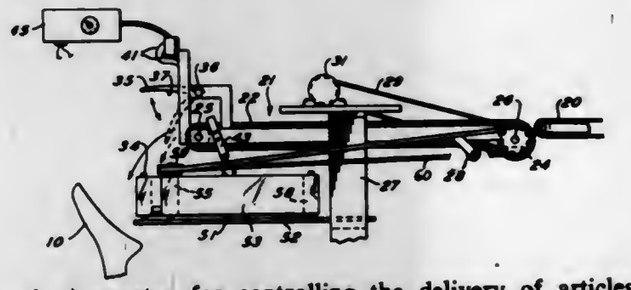
1. A method of securing a cap on a container having a neck provided with projecting multi-start screw-threads in a manner which permits removal and repositioning of the cap after securement thereof on the container, the method comprising the steps of providing a cap having a smooth skirt with a lower outwardly extending peripheral projection, telescoping the cap over the container neck, and then sliding a closing ring having a tapered opening over the cap to directly inwardly deform primarily the cap peripheral projection around the container neck and into meshing engagement with the screw-threads thereof.

3,273,304
CASING MACHINE
Alpheus Winter IV, Fairfield, Joseph F. Pane, Danbury, and Frederick R. Marindin, Woodbury, Conn., assignors to Windor, Incorporated, Danbury, Conn., a corporation of Connecticut
Filed Apr. 17, 1963, Ser. No. 273,595
31 Claims. (Cl. 53—61)

26. In apparatus for casing cartons within a case comprising in combination, a frame; a conveyor for feeding cartons into said frame; a first support within said frame for receiving cartons from said conveyor; a pusher mounted in said frame for successively pushing rows of a predetermined number of cartons from said first support in a direction angularly disposed relative to said conveyor; another support within said frame for receiving the cartons as they are pushed from said first support; transfer means at said another support activatable to move cartons in the same direction as they were pushed thereon by said pusher and independent thereof; and means responsive to a tier being formed on said other support of a predetermined number of rows of cartons for actuating said transfer means to cause said tier to be moved off said other support in the same direction that said rows are moved thereon by said pusher, while said conveyor is feeding the next tier of cartons, whereby said pusher can be continuously operated to reload said other support while a tier of cartons is being moved off said other support.



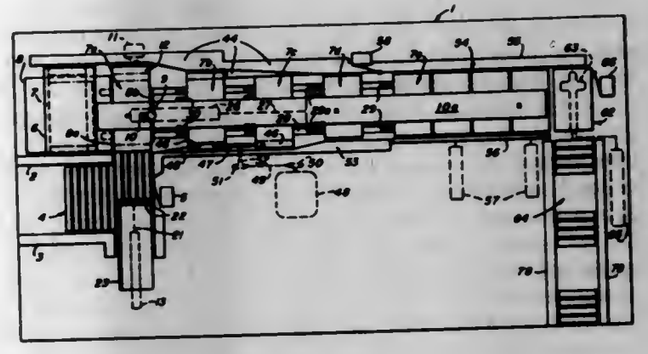
3,273,305
DELIVERY CONTROL APPARATUS
Jack Dreeben, Wyndmoor, Pa. (2601 N. Howard St., Philadelphia, Pa.)
Filed Oct. 9, 1963, Ser. No. 315,068
15 Claims. (Cl. 53—78)



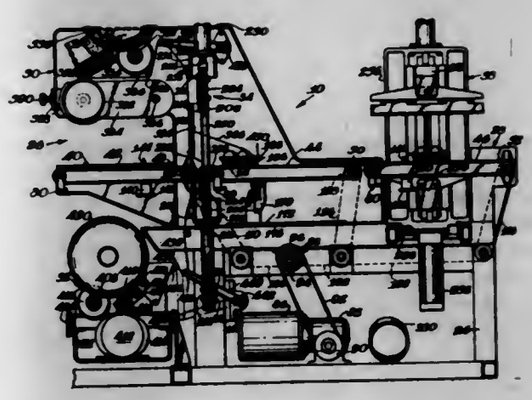
1. Apparatus for controlling the delivery of articles to a packaging machine having reciprocable jaws for advancing packaging material to form a package comprising a linearly advancing article carrying means having a discharge end, a movable gate at said discharge end and having a plurality of positions for article delivery control, a member for receiving articles for delivery to the packaging machine, and a member for temporary reception of articles, said gate positions determining the selective delivery of articles to said members.

3,273,306
CIGAR PACKAGING MACHINE
Norman D. Maclennan, Dorval, Quebec, Canada, assignor to Imperial Tobacco Company of Canada Limited, Montreal, Quebec, Canada
Filed June 17, 1963, Ser. No. 288,161
5 Claims. (Cl. 53—186)

1. An automatic cigar packaging machine comprising a magazine for a supply of collapsed cartons, carton feed and erection means for feeding collapsed cartons from said magazine and erecting them at a filling station, means for filling an erected carton with cigars at said filling station, and means for closing said carton after it is filled, said carton feed and erection means comprising a bed plate along which a collapsed carton is fed to said filling station, a carton feeder member, means for moving said carton feeder member along the upper surface of said bed plate to push the collapsed carton into said filling station with a longitudinal edge of the carton leading and the diametrally opposed longitudinal edge being engaged by said carton feeder member, said longitudinal edges constituting the eventual upper right-hand and lower left-hand corners of the transverse cross-section of the erected carton, assuming that the carton is fed into the filling station from left to right, stop means engageable by the leading edge of the collapsed carton being fed, a carton hold-down plate spaced above said bed plate a distance approximately equal to the depth of an erected carton, said stop means and said hold-down plate defining the upper-right hand corner of the filling station, and leaf-spring means extending upwardly from said bed plate at an acute angle towards said corner of the filling station to guide the leading edge of the carton to said corner, whereby the carton is automatically erected upon continued movement of said carton feeder member.



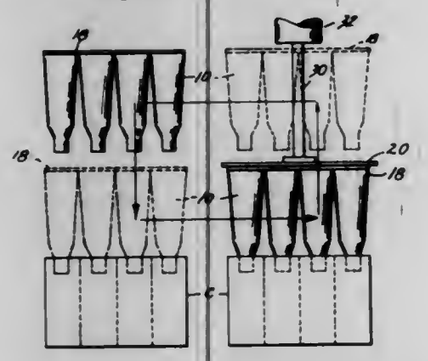
3,273,307
WRAPPING MACHINE
Donald E. Burt, Boston, Mass., assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine
Filed Aug. 3, 1964, Ser. No. 386,822
21 Claims. (Cl. 53—228)



1. A wrapping machine comprising in combination a wrapping station, conveyor means connected to transport articles to be wrapped along a predetermined longitudinal

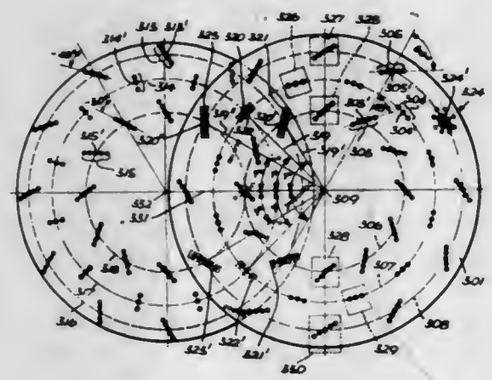
path past the wrapping station, the wrapping station including sheets of flexible wrapping material positioned transversely across the predetermined path whereby the mid-portions of the sheets will be engaged by articles transported by the conveyor means, the conveyor means including first and second longitudinally aligned belt conveyors arranged with their adjacent ends spaced sufficiently closely to transport articles thereacross in a continuous fashion but spaced sufficiently apart to permit transverse positioning of the sheets of flexible wrapping material therebetween, means connected to control the first and second belt conveyors for intermittent operation to transport articles to be wrapped with a step-by-step motion along the predetermined path, the control means including a stop bar mounted for shifting motion between operative and inoperative positions, the bar being extended in the operative position into the predetermined path to arrest motion of articles on the conveyors and the bar being retracted in the inoperative position from the predetermined path to permit passage of articles on the conveyors, power driven means at the wrapping station located on opposite sides of the predetermined path to feed wrapping material laterally toward articles to be wrapped at a predetermined rate coordinated with the rate of articles transported by the conveyor means whereby as articles engage the mid-portions of the transversely positioned sheets of wrapping material and move the mid-portions longitudinally the sheets are arranged in two layers on opposite sides of articles, and sealing means connected to attach the two layers of wrapping material together adjacent the articles to form packages which comprise articles wrapped in flexible material.

3,273,308
CASE PACKING MACHINE
Harald Hoette, West Hartford, Conn., assignor to Emhart Corporation, a corporation of Connecticut
Filed Aug. 14, 1963, Ser. No. 302,076
7 Claims. (Cl. 53—261)



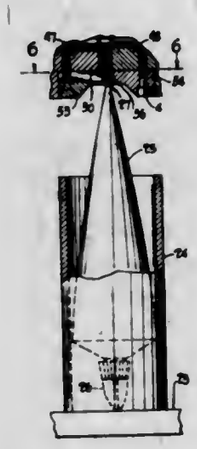
1. A machine for packing cases that are open at the top to receive articles, comprising a generally horizontal open grid frame located at an elevated initial position at a drop station, a plurality of sleeves hanging on the frame, there being one such sleeve in each open grid having an open top end to receive an article inserted through the frame, the sleeve being adapted to retain the article therein and having expansible means associated with its bottom end, means for assembling a pack of articles over the frame and for inserting them substantially simultaneously through the frame into the sleeves, means for locating an open case below the frame, means for lowering said frame toward said case, means for then moving the case and frame substantially horizontally to a release station, a pressure pad movable over said frame at the release station to substantially seal the open tops of the sleeves, means for introducing air under pressure simultaneously to said sleeves to force articles therein through the associated expansible means into said case, means for elevating said frame and said pressure pad at said release station, and means for returning said frame to its initial position.

3,273,309
APPARATUS FOR FILLING AND SEALING TWO-PIECE CAPSULES AND THE LIKE
Otto Wolf, Kirchheim, Teck, and Theo Moser, Waiblingen, Wurttemberg, Germany, assignors to Höfliger & Karg, Waiblingen, Germany, a firm of Germany
Filed Oct. 1, 1962, Ser. No. 227,479
Claims priority, application Germany, Jan. 5, 1962, H 44,537; Jan. 22, 1962, H 44,680
6 Claims. (Cl. 53—281)



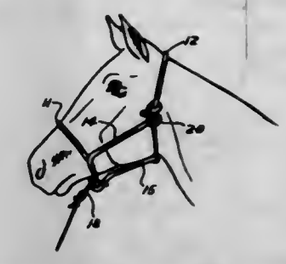
2. In an apparatus for filling and sealing two-part capsules, in combination, a pair of disks mounted for intermittent rotary movements at a certain step angle about spaced parallel axes at such a distance from each other that a portion of one disk overlaps a portion of the other disk, both of said disks having a plurality of apertures arranged in a plurality of groups forming several series radially spaced from each other, the apertures in one of said disks being adapted to receive the upper parts of said capsules and the apertures in the other disk being adapted to receive the lower parts of said capsules, the overlapping portions of said disks defining two spaced transfer stations for each series, all apertures of one group of one series of one disk being simultaneously in alignment at said stations with all apertures of one group of one corresponding series of the other disk during the intervals between the intermittent movements of said disks, all apertures and a central point of each of said aperture groups in each disk being located on at least one straight line, said central points of said groups of each series being located on one circle and being equally spaced from each other, the circles of different series having different diameters and being concentric to the axis of the respective disk, each aperture at one side of said central point on each straight line being associated with a corresponding aperture at the other side of and equally spaced from said central point, said circle of each series of one disk intersecting at said transfer stations at right angles with the circle of the corresponding series of the other disk, said straight lines of the aperture groups of at least some series of each disk forming equal angles other than 90° to the radii of the respective disk intersecting said central points, said angles of said straight lines of each group of each series of one disk differing by 90° from said angles of said straight lines of the groups of the corresponding series of the other disk, the size of the angle between two radii of each disk intersecting said centers of said two transfer stations of each of said series when divided by the size of the step angle of the respective disk resulting in an integral number and the angle of one complete revolution of each disk when divided by the half of said angle, between two radii of each disk intersecting said centers of said two transfer stations of at least one of said series resulting in an integral number.

3,273,310
COLLAPSIBLE-TUBE CLOSURE CRIMPING UNIT
Philip Freeman, 1391 E. 33rd St., Cleveland, Ohio
Filed Nov. 14, 1963, Ser. No. 323,759
1 Claim. (Cl. 53—371)



In a collapsible tube filling machine of the type having conveyor means for holding the tubes in a vertical, inverted, position and intermittently moving same along the base of the machine between tube filling and tube closing stations, a tube closure crimping unit, comprising in combination, an upright frame mounted on the mamounted on the frame, including means for moving the panel in a vertical plane between adjusted positions; a pneumatic cylinder mounted on the panel and extending laterally thereof in a horizontal plane, the cylinder having a stationary head at the free end thereof centered over the conveyor; a pair of spaced guide rails mounted on the end face of the stationary head, and extending therefrom over the conveyor and across its travel path; a movable head connected to the end of the pneumatic cylinder piston rod and slidably mounted on the guide rails for travel longitudinally thereof; a nylon spacer mounted on the guide rails between the stationary and movable heads; a toothed crimper jaw mounted on the bottom edge of the stationary head, said jaw having type slugs mounted therein with their impression faces extending beyond the plane of the forward edges of the jaw teeth; a second toothed crimper jaw mounted on the bottom edge of the movable head, with its teeth in opposition to the stationary crimper jaw teeth and movable toward and away from the first crimper jaw with its supporting movable head; the width of the nylon spacer being such that when it is contacted by both the stationary and movable heads, the teeth of the second crimper jaw will be spaced from the impression faces of the type slugs carried by the first crimper jaw; and cam means, activated by the cycling mechanism of the tube filling machine, for controlling the pneumatic cylinder, to move the cylinder piston rod between a first, extended, position wherein the movable head and its crimper jaw are made to travel away from the stationary head and its crimper jaw, and a second, retracted, position wherein the movable head and its crimper jaw are urged toward a position whereat the movable jaw acts to press the folded closed end of a filled tube, held by the conveyor between the two jaws, against the stationary crimper jaw to impress the crimp pattern, of the two jaw teeth and type indicia, on both faces of the so folded and sealed tube end.

3,273,311
ANIMAL HALTER
Gary G. Henry, 2119 S. Cleveland, Sioux City, Iowa
Filed Aug. 12, 1964, Ser. No. 389,059
3 Claims. (Cl. 54—24)

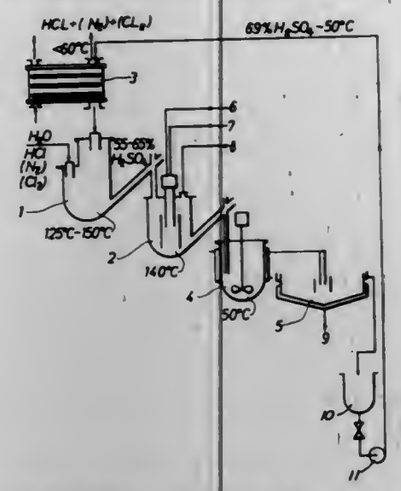


1. Halter means for livestock comprising a yoke, a nose loop portion, a head loop portion and a pair of side pieces connecting said nose loop portion to said head loop portion, said halter means being formed from a unitary and continuous length of hollow braided line having opposite respective terminal ends and adapted to receive and enclose another section of said line within itself, said nose loop portion being formed from a section of said line lying between a first point near one of the terminals ends of said line and a second point spaced from said first point by a distance equal to twice the length adequate to form said nose loop portion, said one terminal end of said line being inserted within said line at said second point and forced around within said line so that said nose loop portion is formed of a coaxial layer of said line, one of said side pieces being defined by a section of said line lying between said second point and a third point on said line, a loop and lock being formed in said line at said third point, said yoke being formed from a section of said line lying between said third point and a fourth point on said line, said yoke having a loop intermediately thereof, said loop being formed by insertion of the opposite free end of said line into the interior of said line near the midpoint of said yoke section forcing said opposite end back through said line a predetermined distance and withdrawing it from the interior of said line, said line being withdrawn until a relatively small loop remains at said midpoint, the other of said side pieces being formed from a section of said line lying between said fourth point and a fifth point on said line spaced from said fourth point by substantially twice the length of said other side piece, said other side piece being provided with a loop engaging said nose loop portion by threading the opposite free end of said line through said nose portion at a desired point thereon and thereafter threading said opposite free end of said line back into said line, passing it back to said fourth point and there withdrawing it and drawing said line through said other side piece until said loop is formed, the balance of said line forming said head loop portion and being secured to said loop at said third point to form the completed halter means.

3,273,312
PROCESS FOR DRYING GASES WHICH CONTAIN HYDROGEN CHLORIDE
Hans Zirngibl, Duisburg, and Jakob Rademachers, Krefeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
Filed May 18, 1964, Ser. No. 367,994
Claims priority, application Germany, May 28, 1963, F 39,857
6 Claims. (Cl. 55—31)

1. Process for drying gases containing hydrogen chloride by contact with semi-concentrated sulfuric acid, which comprises conducting the hydrogen chloride containing gas in counter-current contact with semi-concentrated sulfuric acid in an absorption stage, in which the concentration of the sulfuric acid entering such absorption stage is

about 65 to 70% by weight H_2SO_4 and the concentration of the sulfuric acid discharging from such absorption stage is about 55 to 65% by weight H_2SO_4, dissipating the heat evolved during the absorption stage contact so that the



temperature of the unabsorbed gas at the end of the absorption stage contact amounts to about 15 to 60° C. while the temperature of the discharging sulfuric acid from such absorption stage is about 115 to 150° C.

3,273,313

MEANS AND METHOD FOR SEPARATING GASES FROM LIQUIDS

Robert M. Livesey, Burbank, and Mark H. Ettinger, North Hollywood, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Feb. 13, 1963, Ser. No. 258,347
9 Claims. (Cl. 55—46)

1. A gas separator for removing gas from liquids comprising:

(a) means defining a gas extraction chamber;

(b) fluid inlet means and gas outlet means in said extraction chamber means spatially separated from one another for respectively admitting a fluid under a predetermined pressure and removing separated gas;

(c) depressurizing means in fluid communication with said extraction chamber for establishing a subatmospheric pressure therein;

(d) passage means in said extraction chamber means leading from said last-mentioned means through said depressurizing means and having a liquid outlet spatially separated from said gas outlet means; and

(e) a separator element mounted in said extraction chamber means, said element having an upstream side in fluid communication with said fluid inlet and a downstream side in fluid communication with said depressurizing means, said separator element being pervious to said fluid and impervious to gas bubbles entrained therein when said bubbles are expanded by being exposed to said subatmospheric pressure upon entering said extraction chamber.

3,273,314

REMOVAL OF ALKYNES FROM GASEOUS STREAMS WITH A SILVER CARBOXYLATE ION EXCHANGE RESIN

Harold W. Quinn, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 29, 1964, Ser. No. 378,957
7 Claims. (Cl. 55—63)

1. A process for removing an alkyne of the formula:

$$RC{\equiv}CH$$

wherein R is one from the group consisting of H, methyl and ethyl, from a gaseous mixture containing up to 5000 p.p.m. of the alkyne which comprises:

(A) Contacting the gaseous mixture at a temperature in the range from about 0° to 120° C. with a silver carboxylate ion exchange resin in which at least 40 mole percent of the exchangeable cations are silver ions, whereby the alkyne is adsorbed by the silver carboxylate resin, and

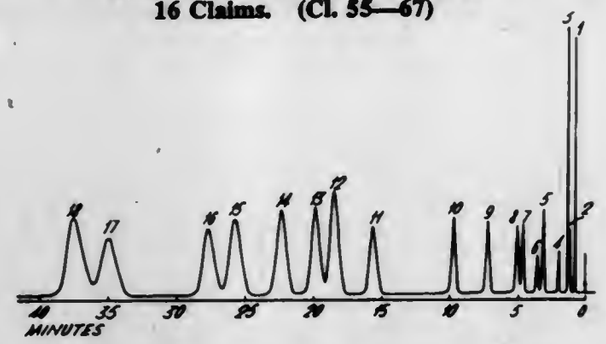
(B) Recovering therefrom a gas with a lower alkyne content.

3,273,315

SEPARATION OF ORGANIC COMPOUNDS

John Victor Mortimer, Sunbury-on-Thames, England, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation

Filed Sept. 12, 1963, Ser. No. 308,397
Claims priority, application Great Britain, Sept. 25, 1962, 36,388/62; Dec. 3, 1962, 45,480/62
16 Claims. (Cl. 55—67)



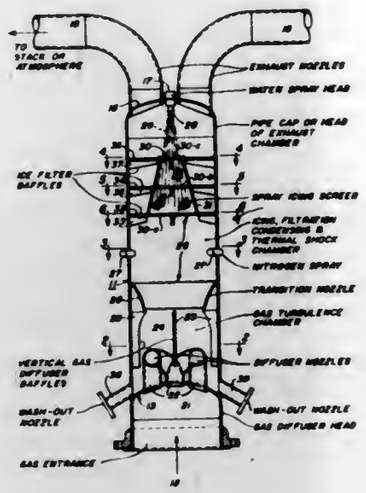
1. An active constituent for use in the resolution of a mixture of organic compounds by a gas chromatographic process, the constituent comprising a mixture supported on an inert solid, said mixture being (a) organo-clay compound in which at least some of the replaceable inorganic cations present in said clay compound capable of inter lamellar expansion are replaced by organic cations, the organo-clay compound being in particulate form, and (b) a modifying agent therefor, the modifying agent being a substance of low volatility which at process operating temperatures will be a liquid whereby no substantial amount of said liquid is volatilised in use at process operating temperatures, which is a solvent for at least one of the components of said mixture of organic compounds to be resolved and which does not react chemically with the organo-clay compound and with the components of the mixture to be resolved.

3,273,316

INDUSTRIAL WASTE GAS PURIFIER METHOD

Sigmund L. Ross, 2761 Sedgewick Ave., Bronx 68, N.Y.

Filed Feb. 3, 1964, Ser. No. 342,214
8 Claims. (Cl. 55—90)



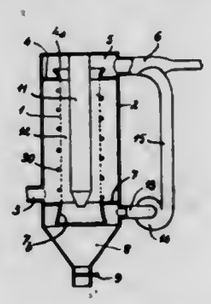
1. The method of purifying industrial waste gases which includes flowing such waste gases upwardly, spraying water downwardly, gasifying liquid nitrogen in contact with said water spray and expanding the so gasified nitrogen to form ice crystals from a portion of said water spray, separating said ice crystals from the ascending gases and moving the ascending gases in contact with masses of such separated ice crystals, draining and removing the melt from such ice crystals and the portion of said water spray which has not been converted into ice crystals, and exhausting the resultant gases.

3,273,317

SLEEVE FILTERS

Pierre Georges Vicard, 15 Cours Eugenie, Lyon, France

Filed Oct. 6, 1961, Ser. No. 143,408
Claims priority, application France, Oct. 12, 1960, 40,828, Patent 1,276,842
2 Claims. (Cl. 55—103)



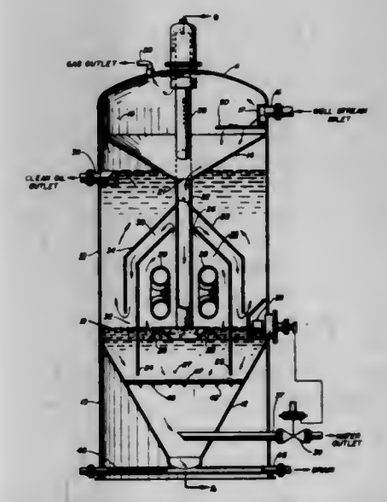
2. A filter for a fluid containing particles in suspension comprising tubular filtering elements in the form of substantially cylindrical sleeves each having a first end, a second end and a filtering wall made of a highly insulating textile material capable of developing electrostatic charges by frictional effect, with said filtering wall having an inner side and an outer side; an inner substantially cylindrical core disposed in each one of said sleeves, substantially coaxially thereto, to limit the fluid passage through the sleeve to an annular space of reduced cross-section; fluid inlet means to supply the fluid to be filtered to the first ends of said sleeves; a collecting chamber communicating with the second ends of said sleeves; means to recycle a portion of the fluid to be filtered from said collecting chamber into said inlet means; means to collect the fluid filtered through the filtering walls of said sleeves; and a helical grounded wire-like electrode disposed closely adjacent to the outer side of the filtering wall of each sleeve, to retain by electrostatic action against the adjacent portion of the inner side of the filtering wall of each sleeve the particles which have been retained by said filtering wall, which have been entrained by said fluid to be filtered and which have been electrostatically charged by friction against said filtering wall.

3,273,318

DE-SANDING EMULSION TREATER

Paul E. Meyer, Tulsa, Okla., assignor to National Tank Company, Tulsa, Okla., a corporation of Nevada

Filed Feb. 10, 1964, Ser. No. 343,587
3 Claims. (Cl. 55—175)



1. An emulsion treater for petroleum well streams containing foreign matter such as sand including,

an emulsion treating vessel having an inlet for well streams,

a compartment formed within the vessel by upright walls which provide openings at the top and bottom of the compartment, a conduit connected between the inlet and bottom of the compartment for direct conductance of the liquids of the well stream to horizontal distribution in the compartment,

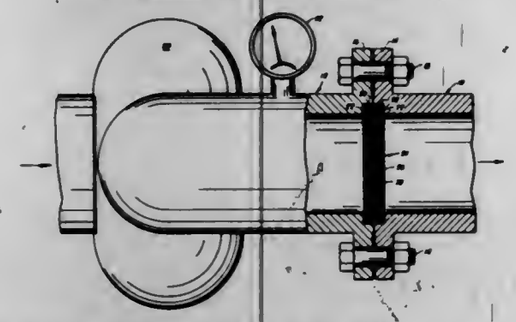
heating means mounted within the compartment for initially raising the temperature of emulsion of the distributed liquids flowing upward through the compartment substantially more slowly than the liquids are conducted to the compartment so the viscosity of the emulsion will be lowered enough to allow substantial amounts of foreign matter in the emulsion to fall from the compartment and into the lower part of the vessel,

means for maintaining an interface of water and oil and emulsion in the lower part of the vessel,

a passageway formed by baffles on the outside of the compartment and closed in its connection to the opening at the top of the compartment to receive the upwardly flowing emulsion from the compartment and flow the emulsion downwardly at a velocity greater than the upward velocity within the compartment and release the emulsion within the vessel toward the interface,

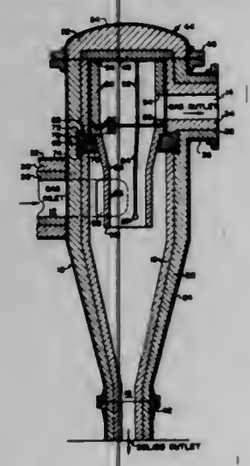
a coalescing section within the vessel above the discharge end of the passage and which is sized to receive the emulsion released toward the interface, and water and gas and clean oil outlets from the vessel.

3,273,319
DEVICE FOR REMOVING ENTRAINED GASES FROM VISCOUS LIQUIDS
Wray H. Jones, Orwin G. Maxson, and Billy W. Terry, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
Filed June 5, 1963, Ser. No. 285,718
3 Claims. (Cl. 55—199)



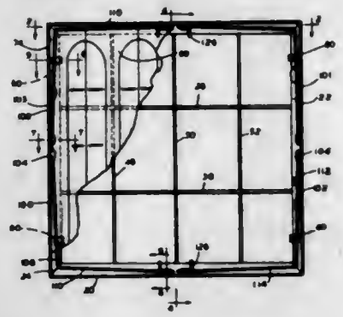
1. A device for removing entrained gases from a viscous fluid comprising:
(a) a first tubular member;
(b) a second tubular member connected to said first tubular member in coaxial alignment therewith and spaced therefrom to provide an unobstructed gap separating the adjacent ends of said first and second tubular members and
(c) a screen positioned between said members and extending substantially normal to the longitudinal axis of said members and entirely across the passage created by said tubular members for impeding fluid flow between said members, said screen terminating immediately adjacent said gap in the interior of said members whereby gas flows from said screen through said gap to the exterior of said tubular members.

3,273,320
CYCLONE SEPARATOR FOR HIGH TEMPERATURE OPERATIONS
Lawrence Joseph Delaune, Byron Victor Molstedt, and Robert Harry Waghorne, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed July 15, 1963, Ser. No. 294,987
11 Claims. (Cl. 55—267)



1. A cyclone separator particularly adapted for use in operations above 2000° F. which includes an enclosing metal wall with a tangential entry for solids-laden gases, separate outlets for gases and solids, refractory walls contiguous to and lining the metal wall, refractory linings for the said entry and outlets, a support shelf circumferentially mounted within and projecting inwardly from the side walls, a separate refractory cyclone tube located within the confines of the enclosing walls, said tube being provided with a plurality of longitudinal slits extending through the refractory wall, downwardly from the top and terminating short of the bottom of the tube, said tube having an outwardly projecting upper flange portion which provides a lip, the lower side of which impinges upon said shelf to position and space the tube away from the walls and within a space separating the entry and outlets, a refractory hold-down ring resting upon the top of the flange and located between the cyclone tube and the refractory lined metal wall enclosing the top of said cyclone separator by virtue of which arrangement excessive movement and vibrations of the cyclone tube by impingement thereupon of solids and gases is prevented.

3,273,321
AIR FILTER HAVING A REPLACEABLE CARTRIDGE
Carl J. Bauder, Charles G. Hart, and Douglas R. Cleminshaw, Syracuse, N.Y., assignors to Cambridge Filter Corporation, Syracuse, N.Y., a corporation of New York
Filed Aug. 26, 1963, Ser. No. 304,351
13 Claims. (Cl. 55—341)

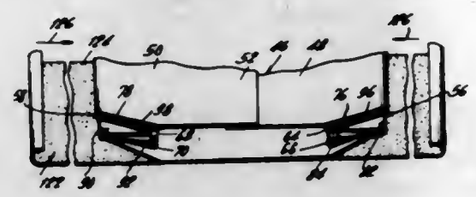


1. An air filter comprising a rectangular frame having an inwardly extending flange extending around the downstream side thereof, a pleat supporting wire grid secured to said flange, said grid having a rectangular wire frame affixed to the downstream side of said flange, and a plurality of wires lying in uniformly spaced vertical planes secured to the upper and lower sides of said wire frame, said wires having central portions thereof offset upstream into the frame, and pocket forming wires lying in generally horizontal planes affixed to the side portions of said wire frame, said pocket forming wires having downstream extending loop portions between the adjacent offset wires and the frame side portions, and upstream portions bent over the offset central portions of said offset wires, a filter cartridge having a plurality of pleats having folds disposed over the offset portions of said offset wires, and pocket forming portions extending into the loop portions of said pocket forming wires and a perimetral flange disposed downstream from the plane of said pleat folds and lying against the upstream side of said frame flange, and the inside faces of said frame, and displaceable resilient sealing rods bearing on said cartridge flange, and yieldingly sealing said cartridge flange against the upstream side of said frame flange and the inside faces of the frames.

3,273,322
DISPOSABLE VACUUM CLEANER BAG
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York
Filed Dec. 4, 1962, Ser. No. 242,164
1 Claim. (Cl. 55—376)

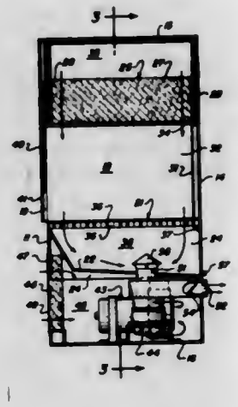
An expendable vacuum cleaner bag formed of a substantially rectangular blank of air pervious sheet material, said blank having portions which define the opposing side walls of said bag and axially pleated portions which define opposing pleated end walls of said bag, said blank having notches defined at the upper marginal end thereof

for projecting upper end portions of said pleated portions beyond adjacent marginal end portions of said side walls, an air impervious closure provided at the bottom of said bag, and a collar provided at the upper end of said bag, said collar being secured to said opposing side walls and to said projecting portions of said pleated portions, said notches being provided at the four junctures of said side and end walls, each end wall having a pair of inwardly directed pleats and each notch being defined between one pleat and the adjacent side wall, each pleat of said pair of inwardly directed pleats being defined by a first one of said axial pleat end wall portions and a



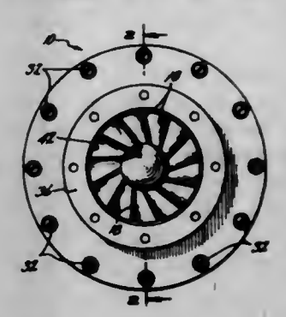
second one of said axial pleat end wall portions, each second axial pleat end wall portion being normally folded against an adjacent side wall portion, each notch being defined by an oblique cut at the upper marginal edge of each second axial pleat and its associated side wall portion so as to disclose at each said juncture above each side wall an upper end surface portion of each first one of said axial pleat end wall portions, and said collar encompassing the upper marginal end of said bag and being adhesively secured to each of said side walls and to said disclosed upper end surface portions of each first one of said axial pleat end wall portions.

3,273,323
LAMINAR FLOW AIR HOOD APPARATUS
Willis J. Whitfield, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 24, 1963, Ser. No. 333,235
5 Claims. (Cl. 55—385)



1. A laminar flow air hood apparatus comprising the combination of generally upright wall means substantially surrounding a space, a generally horizontally disposed submicron air filter substantially filling a cross-sectional space within confines of said wall means adjacent upper portions thereof, a top member spaced above the air filter and joined with said wall means forming with the latter and an uppermost surface of the air filter a plenum chamber, a platform below and spaced from the air filter, said wall means including portions forming an air inlet passageway communicating with the plenum chamber and portions spaced inwardly from and extending generally along outer portions and forming with the filter and platform a work chamber, at least part of the wall means below the air filter and adjacent the platform being displaceable to provide an opening for ingress and egress of the work chamber, a third chamber or compartment extending below said work chamber and platform, partition means forming a lower boundary of the third chamber extending generally between the wall means, a fourth chamber below said third chamber and partition, a lower end wall forming a bottom of the fourth chamber, a second air filter in the fourth chamber, first blower means in the fourth chamber for drawing air through the second air filter and discharging it to said inlet passageway and said plenum chamber to flow through said sub-micron air filter and downwardly as a body of air moving substantially parallel to said inwardly spaced portions of the wall means and with said body of air traversing the work chamber below the sub-micron filter in an essentially uniform manner and velocity throughout substantially all cross sections of the work chamber, passageway means providing communication between the work chamber and the third chamber, second blower means in the fourth chamber for drawing air through the passageway means and discharging it external of the assembly, means for selectively controlling the quantity of air discharged by the second blower means independently of the quantity of air supplied by the first blower means to provide a balanced air flow condition or an air inflow condition via said opening or an air outflow condition via said opening, and an outlet drain from said third chamber for discharging fluids from the third chamber.

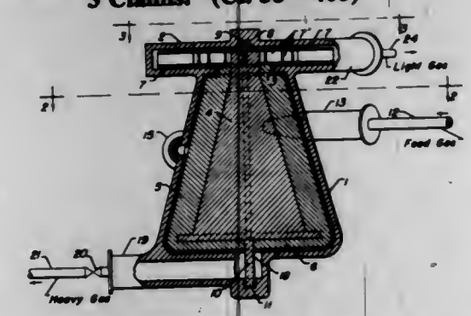
3,273,324
TURBINE DRIVEN ROTARY LIQUID-GAS SEPARATION SYSTEM
David C. Jennings, Windsor Locks, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 28, 1962, Ser. No. 198,364
1 Claim. (Cl. 55—404)



The combination of a duct having wall means defining an enlargement therein, said duct having a longitudinal axis, said enlargement containing a rotary centrifugal separator for removal of liquid entrained in gas flowing in said duct, said separator including an open ended hollow rotary frusto-conical element, said element being coaxially and rotatably mounted in said duct enlargement, an inwardly extending flange at the larger end of said element, said flange and said element defining an annular space within said element at the larger end of said element for the collection of liquid, a porous mass disposed within said element adjacent its smaller end, said mass peripherally engaging the interior surface of said element so that gas with entrained liquid flowing through said element must pass through said mass and so that the liquid in said gas is entrained in said mass to be carried by centrifugal force into the annular space as the element rotates, and means for removing liquid from the annular space including a fixed tube extending through said wall means defining an enlargement in said duct and terminating in an open end portion disposed in said annular space, said open end portion extending tangential to said annular

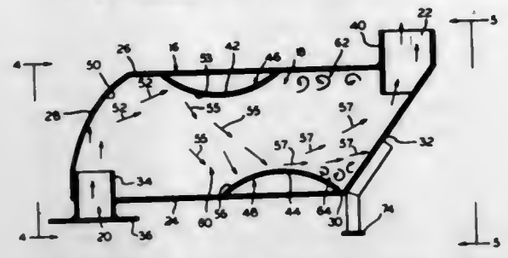
space and in a direction opposite to the direction of rotation of said frusto-conical element, and means to rotate said frusto-conical element comprising a hub rotatably mounted coaxial with said longitudinal axis and extending through said frusto-conical element and having an end adjacent the larger diameter end of said frusto-conical element, a plurality of radially extending turbine buckets extending from and attached to the end of the hub at the larger diameter end of said frusto-conical element, a core member coaxial with said longitudinal axis, said core member disposed adjacent to the end of said hub at the larger diameter end of said frusto-conical element, a plurality of whirl inducing vanes attached to and extending radially from said core members, the radial extremity of each of said whirl inducing vanes being attached to said duct, and means connecting said frusto-conical element to said hub for rotating said frusto-conical element.

3,273,325
ROTARY GAS SEPARATOR
Clarence G. Gerhold, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Jan. 9, 1963, Ser. No. 250,739
3 Claims. (Cl. 55—405)



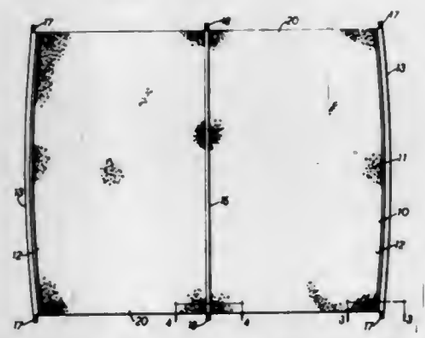
1. A rotary gas separator comprising:
(a) a chamber defined by a frustoconical casing having a first circular endwall of minimum diameter and a second circular endwall of maximum diameter, and a central aperture through each of said endwalls;
(b) a frustoconical rotor member rotatably mounted within said chamber and having its major base adjacent said second endwall and defining with the chamber an annular space of uniform radial width but of varying average diameter with respect to distance along the axis of rotation of the rotor member;
(c) a plurality of circumferentially spaced radial vanes attached to and extending radially outwardly from the rotor member, each radial vane extending substantially the full longitudinal length of the rotor member;
(d) a number of circumferentially spaced blades attached to and extending across the major base of said rotor member and projecting longitudinally into close proximity to said second endwall;
(e) an enclosed volute housing of larger diameter than and spaced beyond said first endwall and communicating with said chamber through the central aperture in said first endwall;
(f) an impeller member rotatably mounted within said volute housing;
(g) rotary shaft means connecting said rotor member with said impeller member;
(h) a number of convergent feed nozzles tangentially connected to said casing and communicating with said chamber at points which are spaced apart from one another both radially and also along the longitudinal length of the casing;
(i) a light gas withdrawal duct tangentially connecting with said volute housing; and
(j) a heavy gas withdrawal duct connecting with the central aperture in said second endwall.

3,273,326
SPARK ARRESTOR FOR DIESEL LOCOMOTIVE ENGINES
Merle L. Benzer, 559 S. Oak Park Court, Milwaukee 14, Wis.
Filed Oct. 26, 1964, Ser. No. 406,329
6 Claims. (Cl. 55—434)



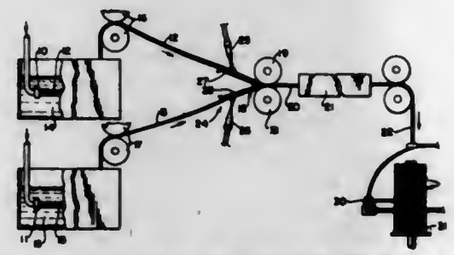
1. A spark arrestor for application to diesel engine exhaust stacks and the like comprising:
a chamber defining an open flow path for combustion exhaust gases,
said chamber including an inlet passage at one end of said chamber on one side thereof and an outlet passage at the other end of said chamber at the side of said chamber opposing said one side,
with said passages being directed substantially at right angles to said flow path,
said chamber defining a first deflecting surface in flow deflecting relation to said inlet passage and a second flow deflecting surface in flow deflecting relation to said outlet passage,
said second surface being oriented to deflect exhaust gases passing through said flow path into and out of said outlet passage,
said chamber defining a pair of turbulence inducing convexly curved protuberances extending into said flow path intermediate said passages,
one of said pair of protuberances being positioned at said one side of said chamber,
and the other of said protuberances being positioned at said opposing side of said chamber,
said first deflecting surface being oriented to deflect exhaust gases against said other protuberance,
and said other protuberance being positioned to deflect exhaust gases in the direction of said one protuberance.

3,273,327
PLASTIC AIR FILTERS
Donald E. Hoffman, West Seneca, N.Y., assignor to Fedders Corporation, Edison, N.J.
Filed June 18, 1964, Ser. No. 376,097
1 Claim. (Cl. 55—507)



The combination with a rectilinear duct having spaced opposed mounting holes in its upper and lower walls, of a filter unit for installation in the duct, said unit having parallel upper and lower margins adapted to contact the side walls of the duct, and outwardly curved side margins adapted to tangentially contact the side walls of the duct, said unit being of resilient plastic foam material and having solid marginal plastic reinforcements on its curved sides and intermediate solid plastic reinforcements extending between the parallel margins of said unit opposed pintles at the ends of the marginal plastic reinforcements, the curvature of said reinforced sides being such when said unit is mounted in said duct by stretching to engage the pintles thereof in the mounting holes of the duct, the shape of said unit becomes rectilinear to completely cover the cross section of said duct.

3,273,328
PROCESS AND APPARATUS FOR MAKING BULKED FILAMENT YARNS
Godfrey Bloch, 38 E. 75th St., New York, N.Y.
Filed Feb. 4, 1965, Ser. No. 430,310
18 Claims. (Cl. 57—34)



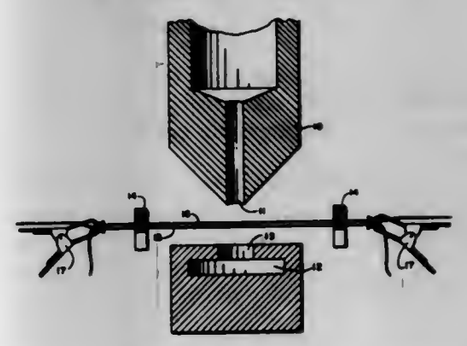
12. An apparatus for producing bulked filament yarns comprising means (1) for continuously advancing two groups of continuous synthetic filaments lengthwise towards a merging zone with the filaments in one group having the capability of being crimped to a substantially greater extent than are the filaments of another group, and (2) for causing said groups of filaments to form a bundle at said merging zone, means for causing the filaments in the two groups when combined into said bundle to be interleaved and intermixed sufficiently to cause the filaments from each group to be distributed substantially throughout the cross-section of the bundle and comprising means for subjecting the filaments from both groups to sufficient gas currents to open up the filaments from said groups, said advancing means being operable to advance the filaments from said groups with the filaments from each group sufficiently free from each other while being subjected to said gas currents to cause filaments from the two groups to open up and the filaments from the two groups to become interleaved and intermixed sufficiently when said opened filaments are in said bundle to cause the filaments from each group to be distributed substantially throughout the cross-section of the bundle, and means for forming said bundle into a singles yarn having the filaments still continuous and the filaments from said one group crimped to an extent substantially greater than are the filaments from the other group and having the filaments from each group distributed throughout substantially the cross-section of the yarn.

3,273,329
TEXTILE YARNS
Frederick Scragg, Mobberley, England, assignor to Ernest Scragg & Sons Limited, Macclesfield, England
Original application July 25, 1963, Ser. No. 297,510, now Patent No. 3,199,284, dated Aug. 10, 1965. Divided and this application Feb. 23, 1965, Ser. No. 434,257
Claims priority, application Great Britain, July 26, 1962, 28,710/62
5 Claims. (Cl. 57—140)



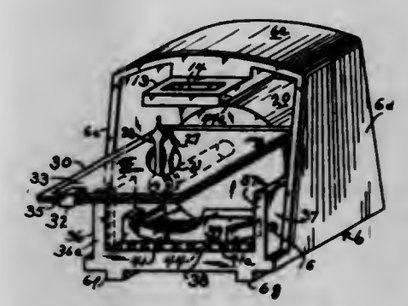
1. A textile yarn consisting of an elongated strip of plastic material which is twisted and formed with a plurality of relatively closely spaced elongated openings surrounded and defined by uniformly spaced narrow strip portions, said openings having adjacent opening portions at least some of which are connected by transverse slots so as to form between said adjacent openings portions a plurality of free projecting strip portions which are distributed along said strip in a regularly recurring pattern and at least some of which are located at the exterior of the yarn projecting from the surface thereof.

3,273,330
METHOD FOR FORMING A THREAD JOINT
Conrad J. Gonsalves, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,244
Claims priority, application Netherlands, Nov. 14, 1962, 285,518
5 Claims. (Cl. 57—159)



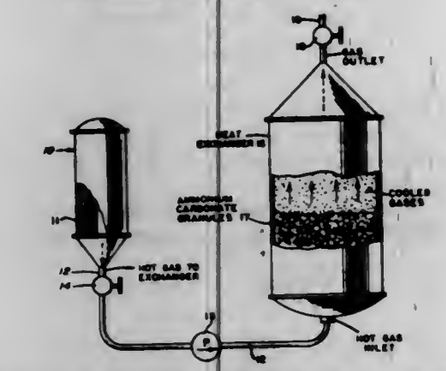
1. A method of uniting at least two ends of multifilament threads which comprises arranging at least two thread ends in substantially parallel overlapping relation, clamping the overlapped thread portions at at least two points, directing at least one jet of gas across the overlapped thread portion and between the clamped points while maintaining the overlapped thread portion under tension.

3,273,331
ELECTROLUMINESCENT DIAL CLOCK AND NIGHT LIGHT
Joseph G. Mosovsky, 249 E. 2nd St., New York, N.Y.
Filed Aug. 13, 1965, Ser. No. 479,479
11 Claims. (Cl. 58—50)



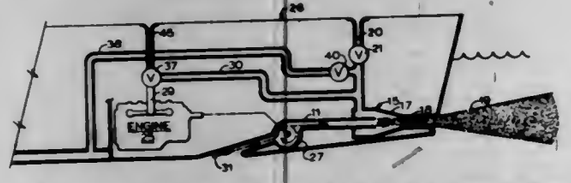
1. In a clock, a case comprising a housing and a cover having a transparent front part, a clock mechanism affixed in said housing, a minute and hour arbor extending from said clock mechanism, a pair of time indicating hands affixed at one end of said minute and hour arbors respectively, an electroluminescent cell having a central opening is affixed in said housing and being coaxially disposed on said minute and hour arbors between said clock mechanism and said time indicating hands, opaque time markers and said time indicating hands being disposed so as to be viewed against the background light of said electroluminescent cell, and electrical energizing means being provided.

3,273,332
PRODUCTION OF COOLED PROPELLANT GASES THROUGH ENDOTHERMIC REACTION
George L. Poudrier, Fredericksburg, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 3, 1963, Ser. No. 306,395
2 Claims. (Cl. 60—35.4)



1. A method of cooling gases through an endothermic decomposable reaction, comprising:
producing a gas through the combustion of a propellant;
passing said gas through a mass of solid granules of a decomposable material, said decomposable material cooling said gas and producing additional gas through process of decomposition, which additional gas is non-condensible under normal conditions.

3,273,333
WATER JET PROPULSION DEVICE
Poul B. Roulund, Redondo Beach, Calif., assignor of twenty percent to Edward A. Sokolski
Filed Sept. 12, 1963, Ser. No. 308,513
9 Claims. (Cl. 60—35.5)



1. A water jet propulsion device for propelling an aquatic vehicle comprising
a pump mounted in said vehicle,
means for feeding water from the ambient water supply to said pump, said pump impelling said water in the form of a water jet,
means for ventilating said water jet with air from the ambient supply thereof, and
means for emitting said ventilated water jet out from the hull of said vehicle below the water line thereof into the ambient water as a propulsive jet for said vehicle.

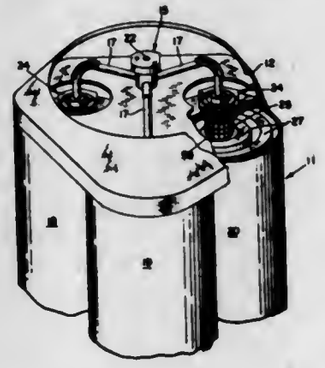
3,273,334
RAMJET MISSILE
Frank I. Tanczos, Washington, D.C., Thomas Davis and Edward H. Smith, Silver Spring, Md., and James W. Mullen II, Richmond, Va., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 10, 1959, Ser. No. 839,260
2 Claims. (Cl. 60—35.6)

1. A reactive propulsion engine comprising a body suitable for supersonic flight having an ogival nose section and a convergent sheltered rear section with the maximum cross-sectional area of the body disposed at the junction of said nose and rear sections and normal to the longitudinal axis of the body, said body being defined on the underside thereof by a plurality of intersecting concave surfaces of revolution and on the upper side thereof by a convex surface of revolution intersecting said concave surfaces, and means disposed within said sheltered rear section for supplying combustible fuel into the airstream downstream from said maximum cross-



sectional area and within said sheltered rear section to introduce heat into the airstream in an amount sufficient to breakdown the supersonic airstream by normal shock and allow continuous combustion of fuel within the sheltered rear section under subsonic conditions.

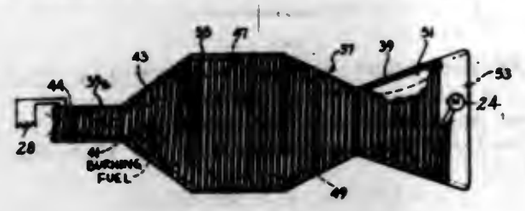
3,273,335
MANIFOLD IGNITION SYSTEM FOR SOLID PROPELLANT ROCKETS
Edward S. Gravlin and Frederick L. Haake, both of Oxnard, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 4, 1964, Ser. No. 364,866
9 Claims. (Cl. 60—35.6)



1. A manifold ignition system for igniting substantially simultaneously a cluster of rocket motors comprising:
a primary charge disposed in a central ignition chamber remotely positioned from said rocket motors for propagating high temperature combustion products to be communicated to each of the rocket motors;
a plurality of ignition means disposed one each adjacent to the propellant of each of the rocket motors;
conduit means for communicating said combustion products individually to each of the rocket motors; and
said means for communicating including a portion which has an area of diminished cross section at its end remote from said central ignition chamber so that said combustion products are communicated substantially simultaneously to the rocket motors by the delay occasioned by said area of diminished cross section in said conduit means.

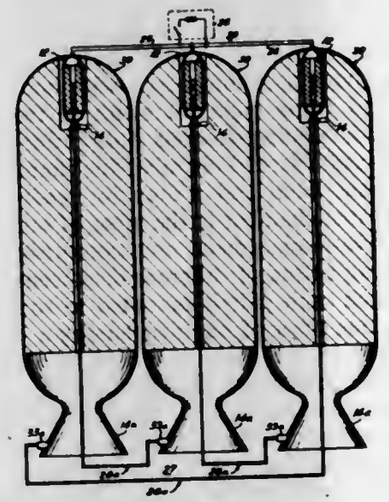
3,273,336
APPARATUS FOR CONTROLLING CONDUCTIVE FLUIDS
Robert P. Kidwell, 2213 Calle de Suenos, Las Cruces, N. Mex.
Filed May 29, 1961, Ser. No. 113,443
11 Claims. (Cl. 60—35.6)

10. In combination with a rocket motor having a combustion chamber in which fuel in burned, a rear gas discharge orifice and a passageway connecting said combustion chamber with said discharge orifice, means for confining the flow of gases along a given path between said combustion chamber and said discharge orifice comprising means for providing a magnetic field pattern along



said path which comprises successive magnetic field sections which alternate in direction along said path.

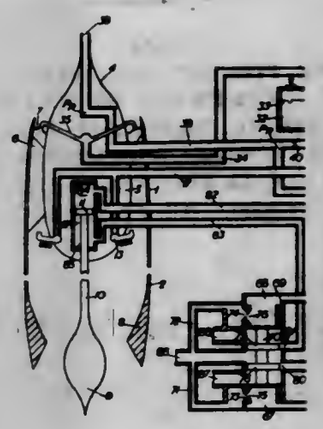
3,273,337
LINEAR EXPLOSIVE TYPE IGNITER TRAIN FOR ROCKET MOTOR
Christopher W. Bolleau, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,531
11 Claims. (Cl. 60—35.6)



1. An ignition system for a cluster of rocket motors of the type containing a solid propellant grain comprising a primary igniting means for igniting the propellant grains in the plurality of motors simultaneously in response to a command signal, said primary igniting means including an element in each rocket motor adjacent its propellant grain which contains a pyrotechnic material and an electric igniter connected to the plurality of elements, a secondary igniting means including linear explosive type igniter trains for igniting one or more motors which fail to become ignited by the primary igniting means, and each of said igniter trains including an igniting portion adjacent the propellant grain in one of said motors and a heat operated primer located to respond to heat from another motor to initiate operation of the train.

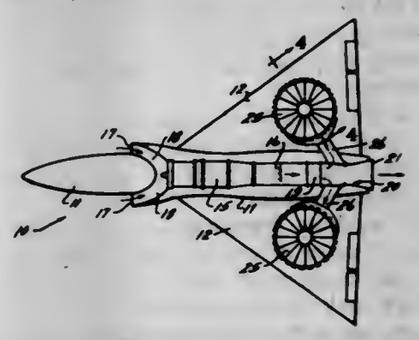
3,273,338
JET ENGINE SHOCK WAVE CONTROL SYSTEM INCLUDING FUEL SUPPLY AND EXHAUST NOZZLE REGULATION
Ronald Rimmer, Bristol, England, assignor to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed Feb. 13, 1964, Ser. No. 344,722
Claims priority, application Great Britain, Feb. 19, 1963, 6,680/63
6 Claims. (Cl. 60—35.6)

1. An aircraft engine for flight at supersonic speeds, comprising an air intake passage with a throat, a subsonic combustion zone, means for supplying fluid fuel to the combustion zone, and an exhaust nozzle with adjustable throat area; and including a control system comprising:
(a) fuel flow control means responsive to the position of a normal shock wave in the air intake so as to tend to return the shock wave to a predetermined position on departure therefrom,
(b) means for producing a first signal which is a function of the supply of fuel to the engine,



(c) means for producing a second signal which is a function of the mass flow of air through the engine,
(d) exhaust nozzle throat area varying means responsive to the ratio of the first and second signals to reduce nozzle throat area on increase of said ratio from a predetermined value, and vice versa, and
(e) means constituting a thrust selector, for modifying one or both of the said signals, or the response of the nozzle throat area varying means to their ratio.

3,273,339
PROPULSION SYSTEM FOR HIGH SPEED VTOL AIRCRAFT
Roman Borysthen-Tkacz, Beverly, Mass., assignor to General Electric Company, a corporation of New York
Filed July 1, 1964, Ser. No. 379,458
6 Claims. (Cl. 60—35.54)



4. A combination exhaust nozzle-diverter valve assembly for use in high speed VTOL aircraft, said assembly comprising:
(a) a housing having at least one port therein,
(b) a first wall downstream of said port with respect to the direction of fluid flow through said assembly, said first wall diverging outwardly in the downstream direction and defining a divergent passageway,
(c) a plurality of movable valve segments upstream of said first wall,
(d) and means to move said valve segments between first and second operative positions,

(e) said valve segments in said first position defining a second wall converging in the downstream direction to form with said first wall a converging-diverging nozzle, said port being formed in the convergent portion of said nozzle, said second wall blocking said port to prevent fluid flow therethrough,

(f) and said valve segments in said second position defining a third wall blocking the divergent passageway defined by said first wall to prevent flow therethrough and permitting fluid flow through said port.

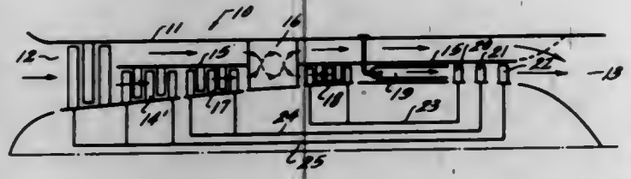
3,273,340

GAS TURBINE POWERPLANT HAVING AN EXTREMELY HIGH PRESSURE RATIO CYCLE

Thomas Nell Hull, Jr., Marblehead, Mass., assignor to General Electric Company, a corporation of New York

Filed Nov. 22, 1963, Ser. No. 325,587

1 Claim. (Cl. 60—39.16)



A gas turbine powerplant comprising, in combination:

(a) an inlet for admitting motive fluid into said powerplant and an axially spaced outlet for exhausting the motive fluid from said powerplant;

(b) a first axial flow compressor connected to said inlet for receiving motive fluid therefrom;

(c) first and second ducting means defining independent concentric annular axially extending flow passageways connecting the outlet of said first axial flow compressor to said powerplant outlet, each of said ducting means arranged to receive a portion of the total flow of motive fluid from said first compressor, the passageway defined by said first ducting means surrounding the passageway defined by said second ducting means;

(d) second and third axial flow compressors;

(e) a heat exchanger having first and second sets of independent passages therein, said first set of passages forming a portion of said first ducting means and said second set of passages forming a portion of said second ducting means, said first and second sets of pasages being disposed in heat exchange relationship;

(f) a combustor;

(g) first, second, and third axial flow turbines;

(h) an outer driveshaft, said first turbine and said third compressor mounted on said outer driveshaft for rotation therewith;

(i) an intermediate driveshaft concentrically mounted within said outer driveshaft, said second turbine and said second compressor mounted on said intermediate driveshaft for rotation therewith;

(j) an inner driveshaft concentrically mounted within said intermediate-driveshaft, said third turbine and said first compressor mounted on said inner driveshaft for rotation therewith;

(k) said first ducting means connecting said first compressor, said heat exchanger, and said powerplant outlet in serial flow arrangement, and said second ducting means connecting said first compressor, said second compressor, said heat exchanger, said third compressor, said combustor, said first turbine, said second turbine, said third turbine, and said powerplant outlet in serial flow arrangement;

(l) whereby the motive fluid in said first ducting means is heated and the motive fluid in said second ducting means is cooled as a result of heat transfer therebetween in the passages of said heat exchanger.

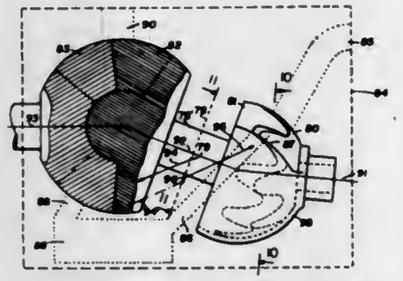
3,273,341

POSITIVE-DISPLACEMENT THERMAL UNIT

Ernest Wildhaber, 124 Summit Drive, Rochester, N.Y.

Original application Apr. 29, 1963, Ser. No. 276,285. Divided and this application Aug. 27, 1965, Ser. No. 483,121

6 Claims. (Cl. 60—39.61)



1. A positive-displacement unit comprising two pairs of intermeshing rotors, housing means in which each pair is mounted to rotate on intersecting axes, the number of teeth of the rotors of each pair differing by one, one rotor of one pair having a common axis with one rotor of the other pair and being rigid therewith, a thermal chamber, a duct for leading gaseous fluid from one of said rotor pairs to said thermal chamber for changing the temperature of said fluid, and a duct for leading said fluid from said thermal chamber to the other of said rotor pairs.

2. A positive-displacement unit comprising two pairs of intermeshing rotors of different displacement, housing means in which each pair is mounted to rotate on intersecting axes, one rotor of one pair having a common axis with one rotor of the other pair and being rigid therewith, a thermal chamber, a duct for leading gaseous fluid from one of said rotor pairs to the thermal chamber for changing the temperature of said fluid, a duct for leading said fluid from said thermal chamber to the other of said rotor pairs, the rotor pair of larger displacement having a larger angularity of the axes.

3,273,342

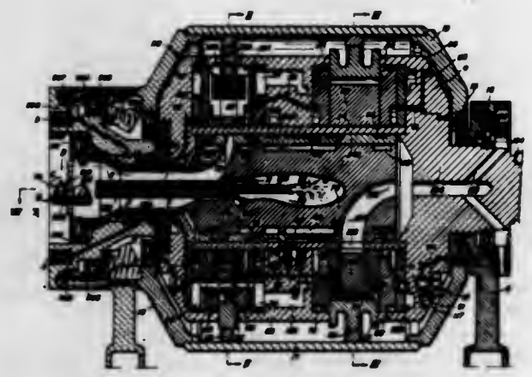
ROTARY VANE COMBUSTION ENGINE

Karl Eickmann, 2420 Isshiki Hayama-machi, Kanagawa-ken, Japan

Filed July 22, 1963, Ser. No. 296,583

Claims priority, application Germany, July 23, 1962, E 23,244

19 Claims. (Cl. 60—39.63)



1. A rotary combustion engine comprising housing means, a rotor rotatable about an axis and having means

for forming working chambers between said rotor and said housing means so that at each revolution of said rotor said working chambers periodically increase in volume between an inner dead center and an outer dead center, the position of said dead centers determining a plane of eccentricity, channels in said rotor leading to said working chambers, at least one of said channels being adapted to supply a pressure medium to said working chambers, and at least another of said channels being adapted to discharge said pressure medium from said working chambers, control body means, means for mounting said control body means so as to permit them to be turned and sealed relative to said rotor, control ports in said control body means operatively associated with said channels in said rotor so that at each revolution of said rotor relative to said control body means said control ports in said control body means and said channels in said rotor are moved alternately to and out of communication with each other, and setting means for adjusting said control body means relative to said plane of eccentricity in the direction of rotation of said rotor and in the opposite direction.

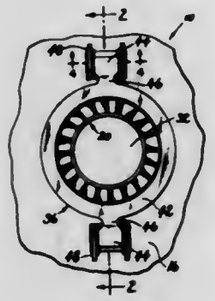
3,273,343

COMBUSTION CHAMBER CONSTRUCTION IN GAS TURBINE POWER PLANT

Salvatore J. Cretella, North Haven, Conn., assignor to Dickens Inc., New Haven, Conn., a corporation of Connecticut

Filed Mar. 8, 1965, Ser. No. 437,698

5 Claims. (Cl. 60—39.72)



5. A retaining ring for use with a swirl ring and a reinforcing ring assembly in a combustion chamber housing for a gas turbine power plant, said ring having a short annular flange which projects axially in one direction and a flat radially extending body portion, said body portion being at least twice as wide as it is thick and being provided at diametrically opposed locations with first and second similar ears, each of said ears extending angularly outwardly between radial and axial planes in a direction generally opposite said axial flange, and each of said ears being generally U-shaped in cross section when viewed along radii, the legs of the U-shaped ears extending from the ears in the general direction of said axial flange.

3,273,344

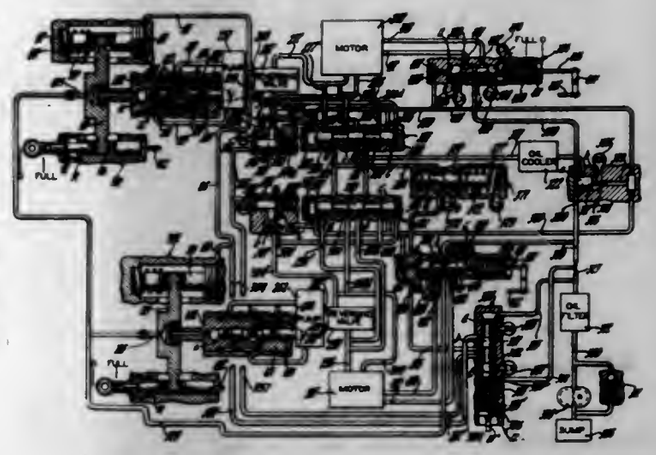
TRANSMISSION

Howard W. Christenson and James J. Mooney, Jr., Indianapolis, and Robert H. Schaefer, Westfield, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 10, 1963, Ser. No. 279,372

43 Claims. (Cl. 60—53)

1. In a hydraulic transmission, an input driven variable displacement pump having a fluid inlet and a fluid outlet and fluid actuated displacement control means, an output driving variable displacement motor having a fluid inlet and a fluid outlet and fluid operated displacement control means, a supply passage connecting said pump outlet to said motor inlet, a return passage connecting said motor outlet to said pump inlet, bypass valve means connecting said supply and return passage normally closed and oper-



ative in response to a predetermined maximum pressure in either one of said supply and return passages to connect said passages, and speed responsive means acting on said bypass valve means to vary said predetermined maximum pressure.

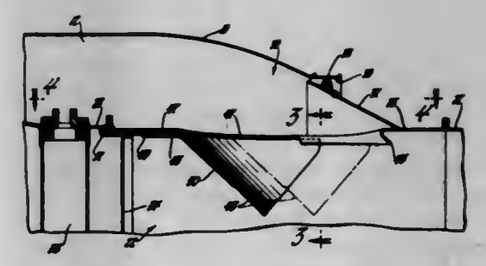
3,273,345

GAS TURBINE ENGINE

Esten W. Spears, Jr., Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 10, 1963, Ser. No. 307,904

4 Claims. (Cl. 60—35.6)



1. A by-pass gas turbine engine comprising, in combination, first and second compressors, combustion apparatus, and first and second turbines, each turbine being connected to drive one of the compressors, an exhaust pipe from the second turbine, a by-pass duct extending from the first compressor to the exhaust duct, the duct terminating in an annulus extending around the pipe,

and a variable mixer connecting the said duct to the said pipe including

means defining a plurality of openings from the annulus into the pipe,

a chute ring disposed around the pipe and having apertures registerable with the said openings,

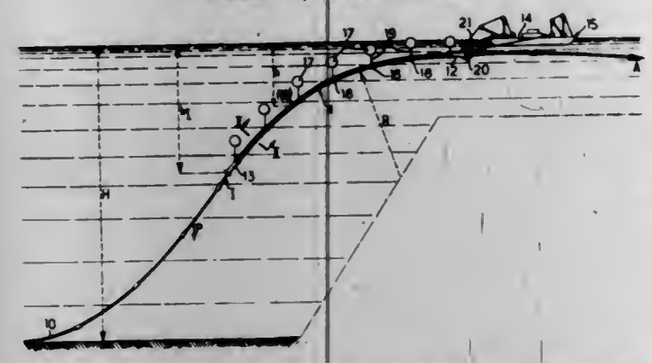
mixing chutes extending from the chute ring into the duct disposed so that the apertures are in the lee of the chutes,

and means to shift the chute ring so as to variably obstruct the passages defined by cooperation of the said openings and apertures and thus variably throttle the by-pass duct.

3,273,346
POSITIONING OF SUBMARINE TUBES

Jacques Delaruelle, Paris, and Léon Constantin, Villecresnes, France, assignors to Electricite de France (Service National), Paris, France, a French National Service and Gaz de France (Service National), Paris, France, a French National Service

Filed Dec. 18, 1961, Ser. No. 160,191
Claims priority, application France, Mar. 21, 1961, 856,278
1 Claim. (Cl. 61—72.3)



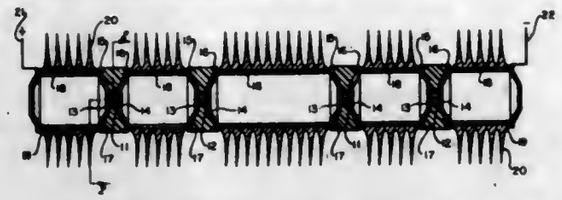
In a method for laying a hollow steel pipe to be used as a pipeline on an immersed bottom from one shore to another shore by imparting to said pipe a resilient deformation in an immersed section thereof that joins a pipe portion already laid to a pipe portion awaiting to be laid with the latter portion adjacent the vicinity of but below the surface of the water and in a position substantially parallel to the surface of the water, said deformation being such that said pipe section has a lower branch tangential to the bottom and in an upper branch having a horiozntal terminus and an S-curve between the bottom and said horizontal terminus, the S-curve having an inflection point between said branches, said section progressively sinking to the bottom during laying of the pipe so that the S-curve advances toward said another shore with said horizontal terminus moving above and in advance of said inflection point and said inflection point moving above and in advance of the point at which said lower branch is tangential to the bottom, with said horizontal terminus and said inflection point and said tangential point all advancing in that order lengthwise along the pipe, said pipe further having by itself when immersed a negative buoyancy; the improvement comprising imparting to said upper branch a positive buoyancy by supporting said upper branch on and for sliding movement relative to an elongated guide which extends from adjacent said inflection point to adjacent said horizontal terminus and which is flexible in all transverse directions while applying upward buoyant forces to said guide simultaneously at a plurality of points distributed lengthwise of the guide, the sum of said buoyant forces being greater than the sum of the submerged weights of said guide and said upper branch, moving said guide relative to said pipe while maintaining the positions of said forces fixed relative to each other along the length of the guide, in the direction of said another shore, at a speed equal to the speed of laying said pipe, while exerting on said pipe adjacent the surface of the water a horizontal traction in the direction of said another shore.

3,273,347
THERMOELECTRIC HEAT PUMP ASSEMBLY

Thore M. Elfving, 433 Fairfax Ave., San Mateo, Calif.

Filed June 14, 1965, Ser. No. 463,713
21 Claims. (Cl. 62—3)

1. In a thermoelectric assembly, pairs of semiconductive bodies of dissimilar type with similar ends contacting hot and cold junction bridges to form a linear array of thermocouples in series, at least one of said junction bridges being formed from a tubing section, metal disc elements in contact with the ends of said tubing section and joined to said semiconductive bodies, and fin means

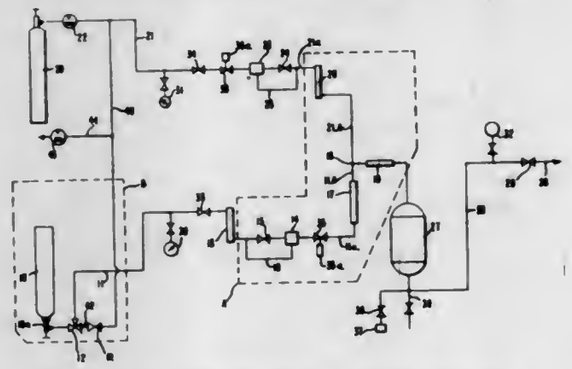


extending outwardly from said tubing section for heat exchange to air.

3,273,348
PROCESS AND APPARATUS FOR PREPARING GASEOUS MIXTURES

John W. De Hart, Jr., Salem, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 28, 1963, Ser. No. 268,788
5 Claims. (Cl. 62—49)



1. Apparatus for preparing a gaseous mixture of (1) a fluid having a normal boiling point in the range of —45° C. to +60° C. and a vapor pressure at 70° F. in the range of 4.4 to 140 p.s.i.a. and (2) a gas having a normal boiling point below —75° C. and a vapor pressure of at least about 200 p.s.i.a. at 70° F., in preselected proportions under a pressure in the range of 1 to about 2000 p.s.i.g., which apparatus comprises

(A) a fluid supply vessel in which said fluid is maintained in liquid state under a pressure which initially is in the range of 11 to 2200 p.s.i.g.,
- (a) said fluid supply vessel being connected in series, through fluid conducting conduits and valves carrying a stream of said fluid from said supply vessel, to
- (b) a liquid flow measuring means,
- (c) differential pressure flow control means for controlling the rate of flow of the liquid fluid and for decreasing the pressure on the fluid by a predetermined amount,
- (d) a vaporizer for completely vaporizing the fluid,
- (e) a mixer for intimately mixing the vaporized fluid with said gas, and
- (f) a reservoir for the product mixture; and

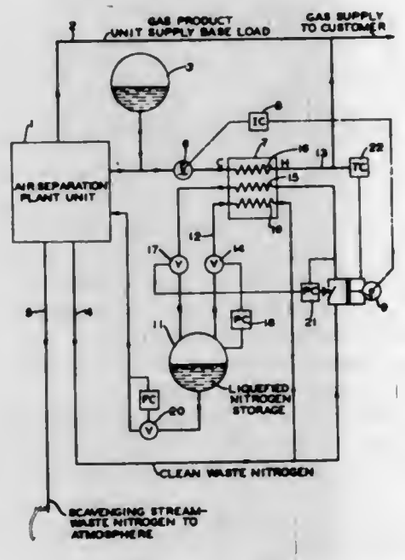
(B) a gas supply vessel in which said gas is maintained under a pressure of from about 200 to about 2400 p.s.i.g. which is at least as high as the initial pressure in the supply vessel for said fluid,
- (a) said gas supply vessel being connected in series, through gas conducting conduits and valves carrying a stream of said gas from said gas supply vessel, to
- (b) differential pressure gas flow control means for controlling the rate of flow of the gas and for decreasing the pressure on the gas by a predetermined amount,
- (c) a gas flow measuring means, and

- (d) a junction with a conduit for the completely vaporized fluid positioned between said vaporizer and said mixer.

3,273,349
VARIABLE DEMAND AIR RECTIFICATION PLANT WITH RECYCLE

Milton Litvin, New York, N.Y., and Allen V. Muska, Berkeley Heights, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 15, 1965, Ser. No. 432,722
3 Claims. (Cl. 62—50)



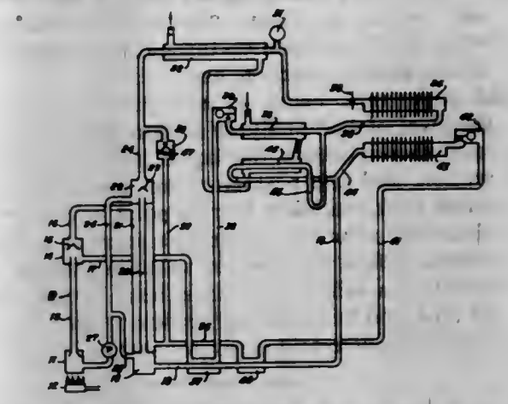
1. A process for supply of gaseous oxygen from an air separation plant so as to meet varying demands comprising the steps of passing gaseous oxygen product at a substantially steady state from the plant to a source of demand, storing liquid oxygen product from said plant, vaporizing said liquid product in a vaporizer in response to demand, compressing waste nitrogen from said plant, cooling substantially all of said compressed waste nitrogen by heat exchange with said liquid oxygen product being vaporized, throttling said compressed and cooled waste nitrogen to liquefy it, controllably applying said liquefied waste nitrogen to said plant to provide refrigeration therefor, and passing vapors from said liquified nitrogen in heat exchange with the compressed nitrogen stream and then into mixture with the waste nitrogen before said waste nitrogen is compressed.

3,273,350
REFRIGERATION SYSTEMS AND METHODS OF REFRIGERATION

Robert S. Taylor, 2906 Cedarview Drive, Austin, Tex.

Filed Sept. 14, 1964, Ser. No. 409,339
20 Claims. (Cl. 62—101)

1. A refrigeration system including,
- a generator for receiving a dilute solution of a refrigerant and an absorbent,
- means for heating the generator to drive off refrigerant from the dilute solution to form a concentrated absorption solution,
- means for condensing the driven off refrigerant,
- a low temperature evaporator,
- means for flowing the condensed refrigerant into the low temperature evaporator while restricting such flow,
- a low pressure absorber,
- means for flowing refrigerant vapor from the low temperature evaporator to the low pressure absorber,
- means for flowing the concentrated absorption solution from the generator to the low pressure absorber to absorb refrigerant vapor therein,
- a high temperature evaporator,
- means for flowing a condensed refrigerant from the generator to the high temperature evaporator,
- a high pressure absorber,
- means for flowing the refrigerant from the high temperature evaporator to the high pressure absorber,

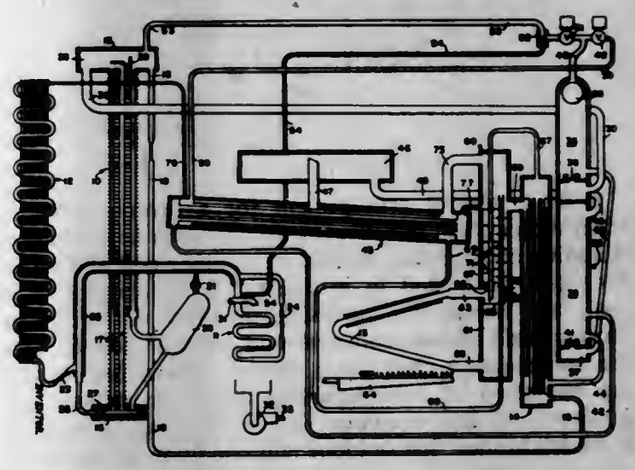


- means for flowing the absorption solution from the low pressure absorber to the high pressure absorber to absorb the refrigerant from the high temperature evaporator and reconstitute the dilute solution of the refrigerant and the absorbent,
- and means for flowing the reconstituted dilute solution from the high pressure absorber to the generator.

3,273,351
ABSORPTION REFRIGERATION

Richard H. Merrick, Indianapolis, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed May 20, 1964, Ser. No. 368,775
6 Claims. (Cl. 62—103)



2. An absorption refrigeration machine containing an absorbent solution, and arranged to provide refrigeration, said machine comprising:
- an absorber section for absorbing refrigerant vapor in said absorbent solution;
- a generator section for concentrating absorbent solution and forming vapor;
- an analyzer section comprising a vertically extending vessel for containing a quantity of absorbent solution in a vertically extending column above said generation section, and for increasing the refrigerant concentration of vapor passed thereto;
- means to pass vapor formed in said generator section upwardly through said vertically extending column of absorbent solution in said analyzer section;
- a heat exchanger section;
- passage means to pass strong solution from said gener-

ator section through said heat exchanger section, in heat exchange relation with weak solution, to said absorber section, said passage means being continuously open during operation of said machine for continuous transfer of strong solution from said generator to said absorber;

passage means to pass weak solution from said analyzer section to said generator section;

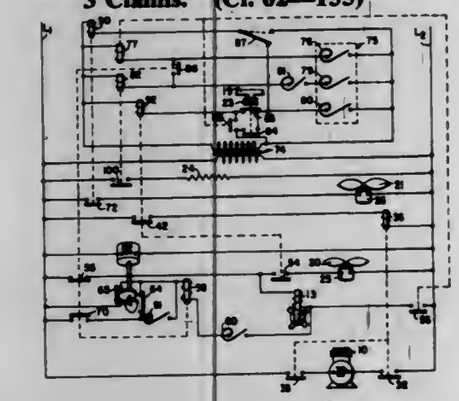
an outlet tank connected to receive only weak absorbent solution from said absorber section and having passage means associated therewith to discharge said weak absorbent solution through said heat exchanger to said analyzer section; and

said outlet tank being at least partly disposed above the level of said analyzer section and having a liquid level therein above the liquid level in said analyzer section, and said passage means associated with said outlet tank extending from a point below the level of absorbent solution therein to a point at said analyzer section below the level of solution therein, so as to maintain a sufficient solution head between said outlet tank and said analyzer section to provide a desired solution flow to said generator section.

3,273,352
REFRIGERATION SYSTEM DEFROST CONTROL

Raymond G. McCready, Marshalltown, Iowa, assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed June 14, 1965, Ser. No. 463,570
3 Claims. (Cl. 62—155)

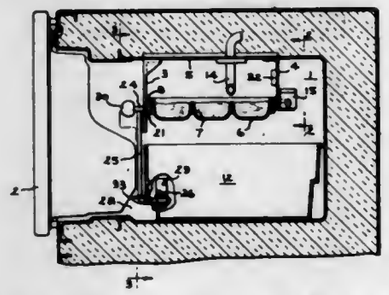


1. In a control arrangement for a reverse cycle refrigeration system selectively energizable to heat and cool including compression means, an outdoor coil and an indoor coil connected in refrigerant flow relationship to cool, and means for reversing the flow of refrigerant through said indoor coil and said outdoor coil to heat, the combination comprising control means for regulating operation of said reversing means to defrost said outdoor coil; first condition responsive means adapted at a predetermined first outdoor coil condition to ready said control means for energization; first timing means adapted periodically to ready said control means for energization, said control means being energized upon simultaneous actuation of said first condition responsive means and said first timing means to defrost said outdoor coil; and means for regulating the duration of said outdoor coil defrosting to insure restoration of said outdoor coil to at least a predetermined second condition including second condition responsive means adapted at said predetermined second outdoor coil condition to ready said control means for deenergization, and second timing means adapted upon the expiration of a predetermined timed interval to ready said control for deenergization, said control means being deenergized upon simultaneous actuation of said second condition responsive means and said second timing means, said first condition responsive means being effective at the occurrence of a predetermined third outdoor coil condition during said timed interval to intervene and deenergize said control means to terminate outdoor coil defrosting.

3,273,353
FLEXIBLE TRAY TYPE ICE MAKER

Julius B. Horvay and Bernard J. Grimm, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Mar. 4, 1965, Ser. No. 437,236
4 Claims. (Cl. 62—353)



1. An ice maker comprising a flexible ice tray, said tray including a front portion having a transverse slot therein, support means for supporting said tray for rotation from a normal position about its longitudinal axis to a partially inverted discharge position,

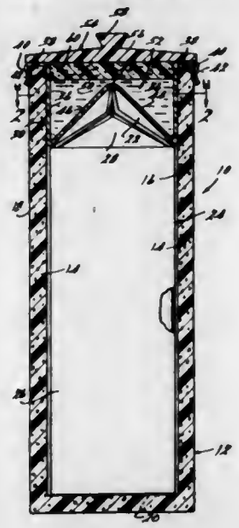
said support means having an arcuate slot therein registering with said transverse slot,

pivoted operating means for manually effecting rotation of said tray to its discharge position comprising a pivoted lever, including a movable portion extending through both of said slots whereby movement of said movable portion along said arcuate slot effects rotation of said tray.

3,273,354
THERMAL INSULATING AND COOLING RECEPTACLE FOR DISPOSABLE FLUID CONTAINERS

Bruce Wellington Gibson, 44904 Gratiot Ave., Mount Clemens, Mich.

Filed Aug. 10, 1965, Ser. No. 478,687
1 Claim. (Cl. 62—457)



In a combination thermal insulating and cooling receptacle for disposable fluid containers,

a substantially rectangular cross section housing comprising upwardly extending side wall sections which include inner surface portions defining a fluid container receiving cavity substantially co-extensive of said housing,

said housing also comprising a bottom section closing the lower end of said cavity,

said side wall sections and said bottom section being integral and constructed of a thermal insulating material,

a liner member disposed in the upper end of said cavity and having side wall portions contiguously engaged with the top of said inner surface portions,

the upper ends of said side wall portions terminating in outwardly and downwardly projecting flange sections adapted to nestingly receive the upper ends of said side wall sections,

the lower ends of said side wall portions terminating in a bottom portion of a complementary shape with respect to the upper end of the fluid container disposed within said cavity and together with said side wall portions defining a fluid reservoir within the upper end of said cavity above the container,

said reservoir containing a freezable substance which when frozen provides means for reducing the temperature of said cavity, whereby to cool the fluid container disposed therewithin, and

a cover member removably mounted on the top of said housing,

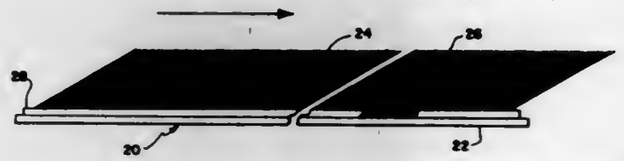
said cover member comprising an upper cover section secured to the top of said outwardly projecting flange portions of said lining member and having gripping handle means integrally formed thereon,

said cover member also comprising an insulating layer constructed of a thermal insulating material which is secured to the lower side of said upper cover section and is disposed within the upper end of said reservoir tightly engaging the inner surfaces of said side wall portions of said lining member.

3,273,355
HEAT PROTECTION APPARATUS

Paul R. Hill and Otto F. Trout, Jr., Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Dec. 19, 1962, Ser. No. 245,941
6 Claims. (Cl. 62—467)



1. A thermal protection device for cooling the external surfaces of hypersonic aircraft and other flight and re-entry vehicles during hypersonic flight comprising: a lower heat shield consisting of a supporting substructure element adaptable as an integral part of the external surfaces of hypersonic aircraft and other flight and re-entry vehicles; a plurality of low thermal conductive fibers cast within the upper surface of the substructure element at the inner, root ends thereof and at an angle thereto insuring orientation of the upper fiber ends thereof in the direction of the air-flow and constituting an upper heat shield; and root cooling means incorporated as an integral part of the lower heat shield to provide additional cooling thereto.

3,273,356
HEAT EXCHANGER-EXPANDER ADAPTED TO DELIVER REFRIGERATION

Thomas E. Hoffman, Marblehead, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Sept. 28, 1964, Ser. No. 399,530
7 Claims. (Cl. 62—514)

1. An apparatus suitable for providing refrigeration to a localized area, comprising in combination

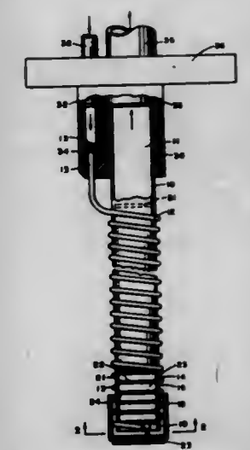
(a) a hollow cylinder defining a fluid channel therein;

(b) spaced foraminous discs within said channel affixed to the internal wall thereof and positioned normal to the direction of fluid flow;

(c) tubing helically wound around the external surface of said cylinder along substantially its entire length and permanently affixed thereto, the external surface of said tubing being in direct heat transfer contact with said external surface of said cylinder;

(d) means associated with one end of said tubing for introducing a fluid at pressure P_1 and temperature T_1 thereto;

(e) means associated with the other end of said tubing for conducting said fluid leaving said tubing into said channel to be returned in out-of-contact heat exchange with said fluid flowing through said tubing wherein the external path for said heat exchange comprises said foraminous discs, the wall of said hollow cylinder and the wall of said tubing; the hydraulic radius r_h and length L of said tubing being of such dimensions that said high-pressure fluid in its passage therethrough is expanded and cooled to a predetermined pressure P_2 and temperature T_2 whereby refrigeration is available; said hydraulic radius and said length being determinable from the relationship



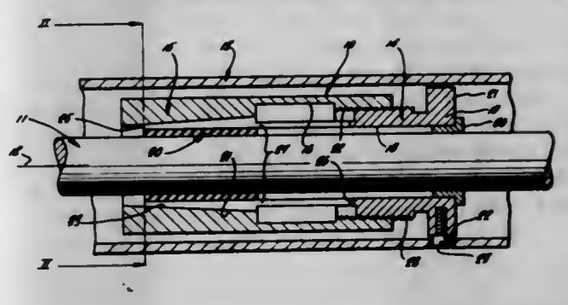
$$L=\frac{P_1^2-P_2^2}{fRT}\frac{\pi^2(r_h)^5g}{64w^2}$$

wherein f is the friction factor characteristic of said tubing, R is the universal gas content, T is a mean temperature between T_1 and T_2, g is the gravity constant, and w is the mass flow of said fluid.

3,273,357
CLUTCH

Howard Lyon, La Canada, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California

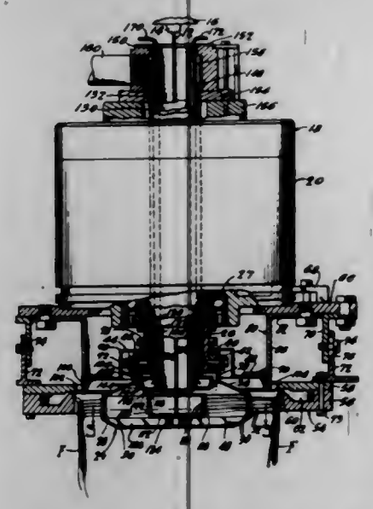
Filed Jan. 27, 1964, Ser. No. 340,204
5 Claims. (Cl. 64—30)



1. A clutch for coupling a rotatable drive shaft to a driven member disposed axially thereof comprising a col-

let sleeve disposed circumferentially of the shaft between the shaft and the driven member, means coupling one end of the collet sleeve and the driven member for securing the collet sleeve from angular motion relative to the driven member about the axis of the shaft and for accommodating movement of the collet radially relative to the driven member, a plurality of slots formed through the collet sleeve at and adjacent to the other end of the collet sleeve to define a corresponding plurality of cantilevered fingers, friction means engaged with the shaft about its circumference and captive to the cantilevered ends of the fingers, and selectively operable means coupled to the collet sleeve operable to move the cantilevered ends of the fingers toward and away from the shaft for varying the radial forces of engagement of the friction means with the shaft.

3,273,358
METHOD OF AND APPARATUS FOR FORMING FIBERS
Dale Kleist, Sur Lausanne, Switzerland, and Henry J. Snow and Carl S. Buchanan, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, Toledo, Ohio, a corporation of Delaware
Continuation of application Ser. No. 738,692, May 29, 1958. This application June 2, 1961, Ser. No. 114,376
9 Claims. (Cl. 65—6)



1. In the process of producing glass fibers by centrifugal force cooperating with a gaseous attenuating blast, the improvement which comprises flowing molten glass into a first rotating receptacle having openings to project the glass as streams onto the inner surface of a second rotating receptacle spaced from the first receptacle, projecting the glass on the inner surface of the second receptacle through openings therein in the form of molten glass streams, engaging the molten glass streams outside of the second receptacle with a gaseous blast moving transversely to the direction of movement of the streams from the second receptacle at such velocity as to draw out the molten glass into fibers and at a temperature below the temperature at which the molten glass is drawn out into fibers, applying to the molten glass by burning a gaseous medium within the second receptacle all of the heat needed to maintain the glass in the condition in which it is adapted to be drawn out into fibers until it is engaged by the attenuating blast.

5. Apparatus for forming fibers from heat-softenable mineral material including, in combination, a support, a hollow shaft journaled on the support, a hollow rotor carried by the shaft and having a peripheral wall formed with a plurality of orifices, an annularly shaped manifold surrounding the rotor and spaced therefrom and adapted to contain steam under pressure, said manifold having an annular orifice through which steam in the manifold is discharged as a generally cylindrical high velocity blast, a material distributing cup in said rotor adapted to be rotated with the rotor, means for feeding heat-softened material from a supply into the distributing cup, means for rotating the hollow shaft, rotor and distributing cup whereby the material is projected by centrifugal forces from the distributing cup to the peripheral wall and through the orifices, annularly shaped burner means within the rotor adapted to receive combustible mixture from a supply, said burner means having concentric circular wall regions, each circular wall being formed with a group of circumferentially spaced passages wherein the passages of one group are arranged to direct combustible mixture toward the distributing cup and the passages of the other group arranged to direct combustible mixture toward the interior region of the peripheral wall of the rotor whereby the mixture is burned adjacent the distributing cup and adjacent the peripheral wall for applying heat to the distributing cup, the rotor wall and the mineral material.

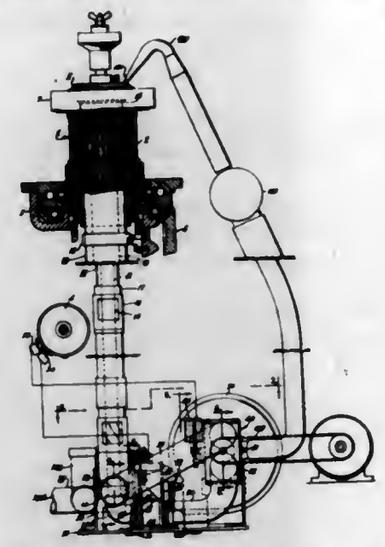
3,273,359
SINKER CAP MECHANISM FOR CIRCULAR KNITTING MACHINES
Oscar Fregeolle, Lincoln, R.I., assignor to The Banner Company, Central Falls, R.I., a corporation of Rhode Island
Filed Jan. 11, 1963, Ser. No. 250,863
6 Claims. (Cl. 66—8)



1. In a circular knitting machine, a needle cylinder, a sinker head encompassing the upper end of said cylinder and fastened to rotate therewith, a sinker cap overlying said sinker head, an annular sinker head bearing of angular formation being secured to the outer periphery of said sinker head comprising a vertical portion and a horizontal portion being adapted to support said cap, and an annular sinker cap bearing adapted to overlie said sinker head bearing.

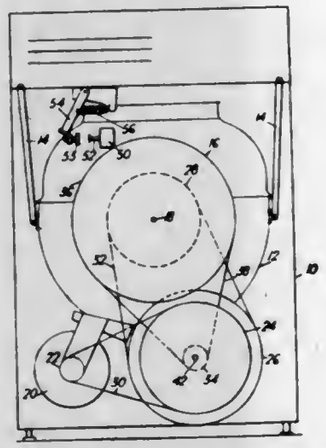
3,273,360
PNEUMATIC TENSIONING, EVERTING, AND DISCHARGING DEVICE AND METHOD FOR CIRCULAR KNITTING MACHINES
Peter A. Mahler, High Point, N.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 8, 1963, Ser. No. 314,705
14 Claims. (Cl. 66—149)

8. A device for everting, tensioning, and discharging tubular fabric fed from a circular knitting machine, comprising first and second hollow coaxial conduits, said conduits positioned so as to receive inside the first of said conduits and outside the second of said conduits the tubular fabric as it is knitted, said conduits terminating in a position remote from their fabric receiving end, air supply means having an air intake and air discharge, valve means interposed between said air intake and said conduits and operable to selectively connect said air intake to said first conduit to thereby tension said fabric being knitted, and to said second conduit at the termination of knitting to thereby evert the knitted fabric and draw the fabric through the second conduit, said device having a fabric receiving element operable to allow air flow therethrough, said element displaceable between a first and second position, in the first of said positions said element being in registry with



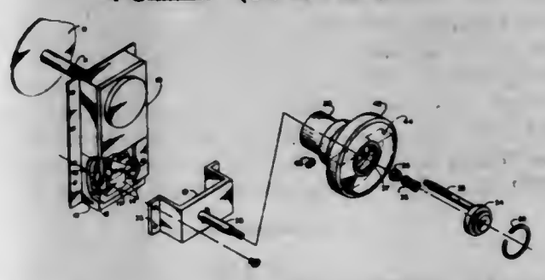
the second conduit and the air intake for receiving said fabric, and in the second position in registry with the air discharge for discharging the fabric.

3,273,361
CLOTHES WASHER MACHINE WITH A PROGRAMMED REBALANCING CYCLE
Bernard G. Smith, Saint-Cloud, France, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 9, 1964, Ser. No. 395,264
Claims priority, application Great Britain, Sept. 19, 1963, 36,901/63
1 Claim. (Cl. 68—12)



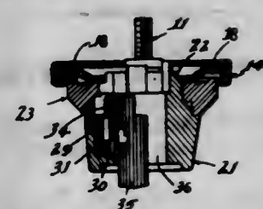
A clothes washer machine comprising a frame, a container and tub assembly mounted on said frame so as to be oscillatable within limits relative thereto, said tub being rotatable for the washing and the spin-drying of clothes therein, a reversible motor for rotating said tub in wash and spin operations, electric control devices for effecting sequential wash and spin operations of said tub, and an unbalance detector system responsive to oscillations of said assembly beyond a predeteremined limit due to clothes unbalance during said spin operation to actuate said electric control devices in a programmed rebalancing cycle so as to stop tub rotation, and then in sequence effect wash rotation in the direction of spin, wash rotation in the direction opposite to spin, wash rotation in the direction of spin, and finally a re-initiation of spin, said system including clutch means operable for selecting the wash or spin operation of said tub by controlling the speed at which said motor rotates said tub, timer motor means connected to said electric control devices for actuating same and an unbalance switch responsive to oscillations of said assembly beyond a predetermined limit due to clothes unbalance, said unbalance switch having a normal position in power supply relationship to said motor and an unbalance position interrupting power supply to said motor and in power supply relationship to said clutch means and said timer motor means to initiate said programmed rebalancing cycle.

3,273,362
SAFETY EXIT ATTACHMENT FOR COMBINATION LOCK
Edward G. Becke, 6006 Napoli Road, Camp Springs, Md. 20031
Filed Sept. 2, 1964, Ser. No. 394,988
4 Claims. (Cl. 70—320)



1. A combination lock-safety deadbolt extension combination which comprises an improved safety attachment therefor for withdrawing the deadbolt which comprises:
a mounting means,
a shaft means rigidly secured to said mounting means,
a door handle means rotatably secured about said shaft,
an arcuate slot in said mounting means adjacent to said shaft,
a spring loaded thumb button secured in said door handle means,
a deadbolt retrieving plunger secured to said thumb button,
said deadbolt retrieving plunger extending through a passage in said door handle means parallel to said shaft and extending through said arcuate slot in said mounting means,
said spring loaded button securing said deadbolt retrieving plunger normally in an outermost position relative to said mounting means for axial movement,
said deadbolt retrieving plunger adapted to release said safety deadbolt extension and to permit withdrawal of said deadbolt extension by rotation of said door handle means.

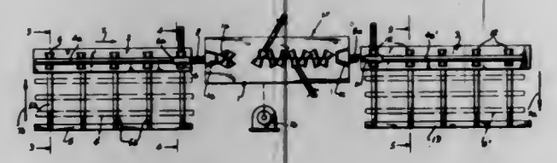
3,273,363
COMBINATION CHANGING DIAL, KNOB AND ESCUTCHEON ASSEMBLY
Edwin W. North and Robert L. Dauenbaugh, Rockford, Ill., assignors to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed May 27, 1964, Ser. No. 370,591
4 Claims. (Cl. 70—330)



3. In a combination changing dial, knob and escutcheon assembly adapted to be mounted on the exterior free edge of a locker door to operate a permutation lock mounted on the interior of the door, a hollow knob mounted at

the exterior of the escutcheon and having a hub projecting through said escutcheon and a central longitudinal opening therethrough, a separate dial rotatably mounted on said hub at the exterior of the escutcheon, the hub having a portion cut away and a cylindrical groove formed adjacent and parallel to the central longitudinal opening of the knob, said groove communicating with the inner circumference of said dial, said dial having plural spaced grooves on the inner circumference adapted to be aligned with the cylindrical groove of the knob at the cut-away portion thereof, a pin in said cylindrical groove of the knob and spring-biased toward said dial to project in one of said plural notches, and a change key having a free end insertable from the front of the escutcheon into the central opening in the knob, the free end having a lateral and then rearward projection extending into the cut-away portion of the knob with the rearward projection extending into the cylindrical groove to engage the end of the pin and retract the pin from engagement with the groove in the dial upon rearward movement of the change key to allow relative movement between the knob and the dial so that the pin may be projected into a succeeding notch of the dial to lock the dial to the knob and effect a new combination for the lock.

3,273,364
STRAIGHTENING MACHINE
Carl Ludwig Pohler, Solingen, and Rudolf Breuer, Solingen-Ohligs, Germany, assignors to Th. Kieserling & Albrecht Werkzeug-maschinenfabrik, Solingen, Rhineland, Germany
Filed Oct. 26, 1964, Ser. No. 406,436
Claims priority, application Germany, Oct. 24, 1963, K 51,169
14 Claims. (Cl. 72—12)

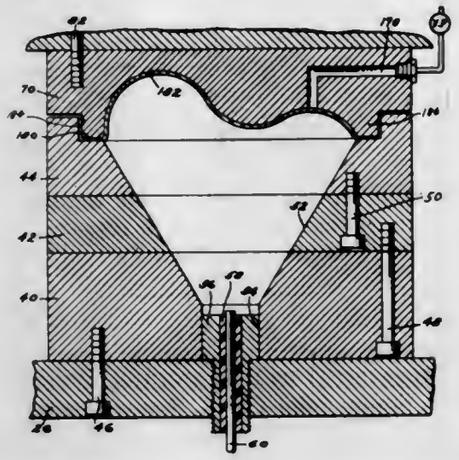


1. A straightening machine for bars, tubes and similar elongated workpieces, comprising a plurality of cooperating straightening rolls; a first conveyor for advancing untreated workpieces seriatim to said straightening rolls; a second conveyor for receiving treated workpieces from said straightening rolls; first transfer means operative to feed workpieces to said first conveyor; second transfer means operative to remove workpieces from said second conveyor; and control means for operating said transfer means in a predetermined sequence, said control means comprising a pair of induction coils respectively disposed intermediate said rolls and said first and second conveyors, each of said coils defining a passage for a workpiece respectively advancing toward and away from said rolls to produce impulses which are utilized to operate said transfer means.

3,273,365
METHOD AND APPARATUS FOR FORMING METAL
Robert Felts, Union Lake, Mich., assignor to The Cincinnati Shaper Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 14, 1963, Ser. No. 280,265
9 Claims. (Cl. 72—56)

1. In a device for forming material of the type utilizing a liquid chamber, a confined forming cavity and an electrode in said chamber for carrying a charge of high potential to said chamber and a high capacitance circuit adapted to be discharged to said electrode, an improved switch for controlling the charge and discharge of a high potential capacitance which comprises:

(a) spaced first contact members for a charging switch,
(b) means for supporting said spaced contact members in spaced relation,
(c) spaced second contact members for a discharge switch,
(d) means for mounting said second contact in spaced relation to each other and to said first contact members,
(e) a first conductive bar mounted to contact simultaneously said first contact members and span the distance therebetween to provide a conductive connection,
(f) a second conductive bar movable into proximity to said second contact members without contacting



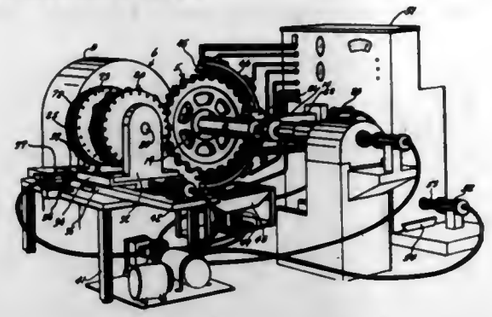
either member to provide a capacitance discharge path,
(g) means for mounting said conductive bars comprising:
(h) a plurality of arms on spaced mounting means having said conductive bar mounted respectively thereon,
(i) an actuator arm associated with each of said arms wherein movement of said actuator shifts said arms relative to said contact members, said arms being so positioned relative to said contact members that movement of one of said conductive bars to a position adjacent its respective contact members shifts the other of said bars a material distance away from its respective contact members wherein only one pair of said contact members may be electrically associated at any one time, and
(j) means for operating said actuator bar.

3,273,366
APPARATUS FOR FINISH-SHAPING SPROCKETS
Leslie N. Schuman, Brecksville, Ohio, assignor, by mesne assignments, to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed July 17, 1962, Ser. No. 210,511
12 Claims. (Cl. 72—69)

1. Apparatus for finish-shaping a sprocket rim portion having incompletely shaped teeth and recessed areas therebetween comprising:

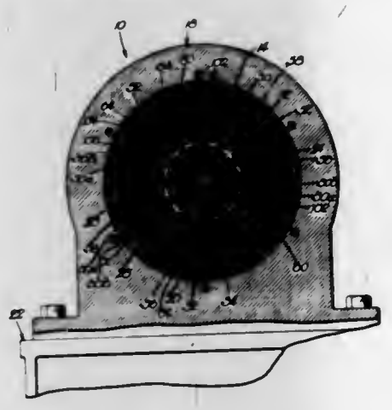
(A) a mandrel for supporting the sprocket with its axis of rotation merged with the axis of rotation of the mandrel;
(B) a plurality of rollers having cylindrical surfaces of uniform diameter adapted to be separately received between pairs of adjacent teeth of the sprocket;
(C) means for supporting said rollers with the axes of said cylindrical surfaces in serial uniformly-spaced relationship for meshing relation of the rollers with said teeth, said means movably arranged

to successively support each roller in radially non-yielding relation at the extremity of a fixed radius of the mandrel axis; and



(D) means for rotating the mandrel and moving said supporting means to engage successive rollers with successive recessed areas to reform said areas at said fixed radius.

3,273,367
ROTARY SWAGER
Karl W. Hallden, Thomaston, Conn., assignor to The Hallden Machine Company, Thomaston, Conn., a corporation of Connecticut
Filed Mar. 4, 1964, Ser. No. 349,283
20 Claims. (Cl. 72—76)

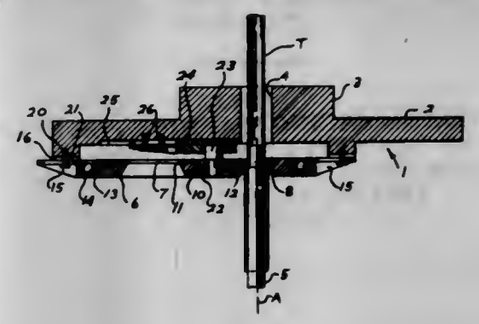


1. In a rotary swager, the combination of a die unit having about a first axis inwardly and outwardly movable swaging dies with outer surfaces; a roller unit surrounding said die unit, said units being relatively turnable about said axis, and said roller unit having rollers with peripheral surfaces turnable about their own axes and spaced apart about said first axis for inward rebounding impact of said dies with said rollers at their respective outer and peripheral surfaces on relative rotation between said units; and means operative to cause simultaneous relative rotation between said units and rotation of said rollers about their own axes in directions and at relative speeds such that said rollers and dies have on impact substantially synchronous speed in the same direction at their impacting surfaces.

3,273,368
METAL WORKING
Claus L. Sporck, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 3, 1963, Ser. No. 313,646
2 Claims. (Cl. 72—78)

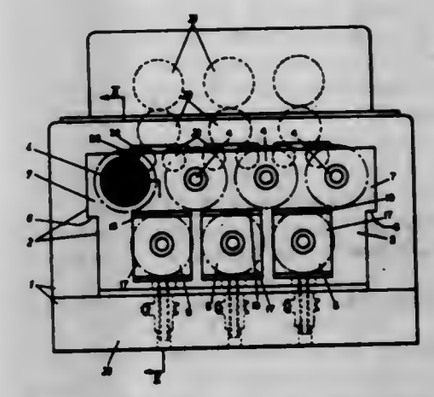
1. A roller head for a tube forming machine comprising:

a frame formed with a central bore to accommodate a tube to be worked;
means on said frame for mounting the frame for rotation about an axis extending through said bore, said rotational axis being coaxial with the axis of the tube to be worked;
a first roller in the form of a ring having an interior, annular working surface surrounding said axis, the roller working surface being engageable with a tube to be worked;
a slide surrounding said first roller;
bearing means connected between said slide and said first roller and providing for the roller to be rotatable relative to the slide;
means connecting said slide with said frame for movement in a direction to adjust the working surface of said first roller toward and away from said rotational axis;



a second roller in the form of a disc and having an exterior working surface for engaging a tube to be worked, the working surfaces of the first and second rollers being respectively disposed on diametrically opposite sides of said rotational axis so that the working force of one surface radially balances the working force of the other;
a second slide and means rotatably mounting said second roller on said second slide; and
means connecting said second slide with said frame for movement in a direction to adjust the working surface of said second roller toward and away from said rotational axis, said roller adjustments maintaining said diametrically opposed positions.

3,273,369
STRAIGHTENING MACHINE
Otto Mödder, Dahlbruch, Kreis Siegen, Germany, assignor to Siegener Maschinenbau G.m.b.H., a corporation of Germany
Filed Sept. 9, 1963, Ser. No. 307,604
Claims priority, application Germany, Sept. 13, 1962, S 81,440
7 Claims. (Cl. 72—164)

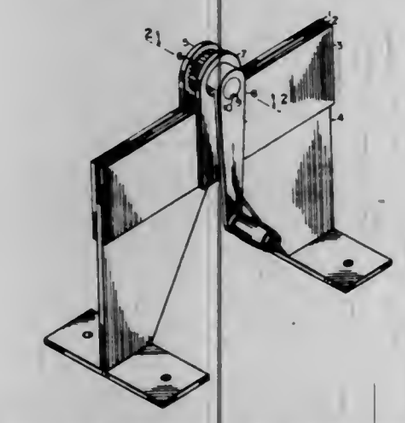


1. A straightening machine for materials such as, sheets and rails, comprising,

a relatively rigid heavy outer housing having a window,
a relatively light portable intermediate frame received in the window of said outer housing and engageable

with said outer housing on a first side of a pass opening between which the material is fed,
two groups of straightening rolls received in said intermediate frame and forming said pass opening, said rolls of one group being positioned in a staggered relationship to the rolls of the other group wherein the rolls act upon the opposite sides of the material,
guide boxes rotatably receiving the rolls of at least one group of rolls, displaceable toward and away from the rolls of the other group, and
means carried by said outer housing projectable from a side opposite said first side of said pass opening with respect to said rolls, and engaging said guide boxes for supporting the rolls of said one group independent of said intermediate frame.

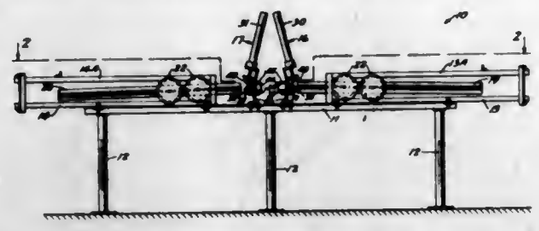
3,273,370
HAND FACING MACHINE FOR RULE, TYPE AND BORDER
James M. Owens, 1413 Coberg Road, Columbus, Ohio
Filed July 15, 1963, Ser. No. 295,252
3 Claims. (Cl. 72—199)



1. An apparatus for facing line border material which comprises
a base;
a pair of hangers supported on said base;
means comprising a substantially stationary horizontal guide way supported on and fixedly secured against movement relative to said base, said guide way forming a material channel for the reception of said line border material and slidably supporting said line border material;
a facing wheel rotatably supported by said hangers in a position above but adjacent to said channel; and
means comprising a crank secured to said facing wheel for manually rotating said facing wheel, impressing uniformly spaced markings upon said line border material, and advancing said line border material through said channel as the markings are impressed thereon.

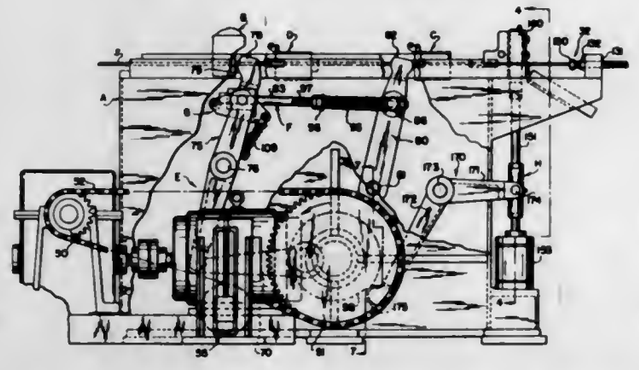
3,273,371
FABRICATING TABLE
Earl C. Peterson, Minneapolis, Minn., assignor to Permaduc, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 23, 1963, Ser. No. 332,553
8 Claims. (Cl. 72—218)

1. Apparatus for fabricating at least one elongated metallic member in substantially U configuration, said apparatus comprising a work supporting table, hold-down means arranged on said table for releasably retaining the elongated metallic member within the support table and providing support reaction for the upright legs during fabricating operations, and bending means mounted on said table including a forming head and a back-up plate, the back-up plate having a working surface, and the forming head being mounted for pivotal rotation about an axis spaced from said working surface, said work support table having a retractable loading carriage with a transverse support bed adapted for reciprocal to-and-fro move-



ment between first and second positions along said table, the loading carriage being arranged to support said elongated legs along said support bed when in said first position, and being disposed free of said work when in said second position.

3,273,372
COMBINED DRAWING AND CUT-OFF APPARATUS
William A. Ehlert, South Euclid, Ohio, assignor to The Ajax Manufacturing Company, Euclid, Ohio, a corporation of Ohio
Filed Feb. 24, 1964, Ser. No. 346,626
15 Claims. (Cl. 72—275)

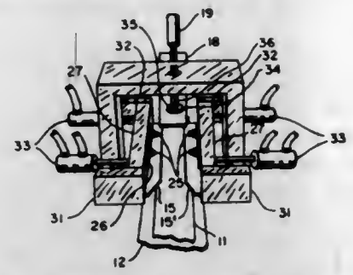


8. In combined stock drawing and cut-off apparatus, a frame, a cut-off mechanism, a reciprocable die slide carried by said frame, a drawing die carried by said die slide and adapted to perform a drawing operation on said stock during movement of said die slide away from said cut-off mechanism, a reciprocable feed slide carried by said frame, a stock gripping means carried by said feed slide and adapted to grip and advance the stock during movement of the feed slide toward said cut-off mechanism, first means operatively engaging said die slide for moving said die slide during the drawing operation, second means operatively interconnecting said first means with said feed slide and reciprocating the latter with the former, third means for actuating said cut-off mechanism to shear said stock at the end of said movement of said feed slide toward said cut-off mechanism, fourth means in said second means releasable upon said feed slide encountering a pre-determined resistance during movement of said feed slide toward said cut-off mechanism.

3,273,373
APPARATUS FOR APPLYING METAL CASES TO BRICKS
James D. Jenkins, San Jose, and Charles B. Reynolds, Saratoga, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed June 3, 1963, Ser. No. 285,093
7 Claims. (Cl. 72—316)

1. In an apparatus for applying a channel-shaped metal casing to a preformed brick having side faces and end

faces and at least one shallow, discontinuous depression in each of a pair of side faces, the combination of
(a) A support means,
(b) A conveying means for a brick and an associated casing,
(c) A plurality of punch means disposed adjacent to and directed inwardly toward a pair of said side faces of said brick on said conveying means,
(d) Means for simultaneously and limitedly moving



said punch means into contact with said casing at said pair of side faces to locally deform the casing into said depressions,
(e) Means for stopping said brick at a predetermined point relative to said punch means,
(f) Means for guiding said brick into alignment with said punch means, and
(g) Pressure means for holding said brick and said conveying means stationary against said support means.

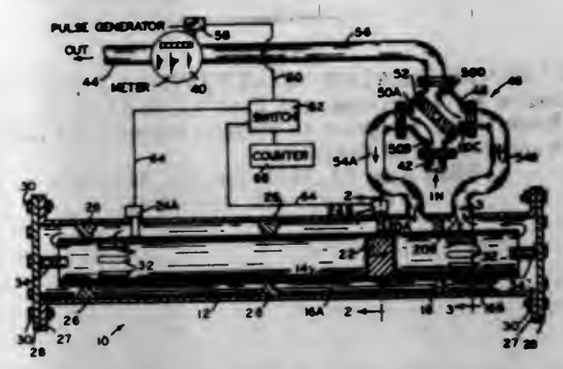
3,273,374
FILTERS FOR LIQUIDS
John Frederick Annett, Hounslow, Middlesex, England, assignor to The Metafiltration Company Limited, Hounslow, England, a British company
Filed Nov. 26, 1963, Ser. No. 326,140
Claims priority, application Great Britain, Feb. 28, 1963, 8,118/63
1 Claim. (Cl. 72—340)



A method of making a disc for an edge filter, which comprises stamping out from sheet metal, an initial disc in the form of an annulus having one side which is substantially flat whilst the opposite side is formed with shallow projections to define, when pressed against the flat side of a like disc, radial passageways for liquid, machining the initial disc to make it substantially circular, the machining operation forming a bur on each side of the circular disc edge, and then removing the bur from one side whilst diminishing the bur on the other side.

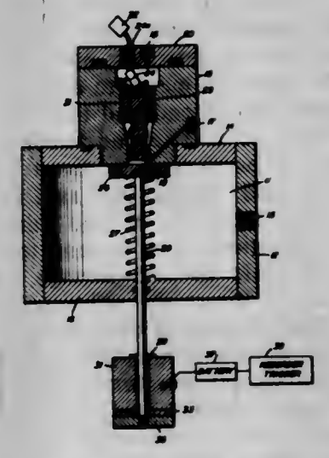
3,273,375
FLOW METER CALIBRATING BARREL
Ralph W. Howe, Tulsa, Okla., assignor to Halmor Industries, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Nov. 24, 1964, Ser. No. 413,422
6 Claims. (Cl. 73—3)

1. A calibrating barrel comprising:
an outer tubular housing closed at each end;
a reduced diameter and length inner tubular barrel supported within the housing providing an annulus between the exterior of the barrel and the interior of the housing;
a wall partitioning the annulus into two longitudinal portions, the housing having fluid ports therein communicating with each annulus portion wherein fluid flowing into one port flows within one annulus portion, through the barrel, through the other annulus portion and out the other port;
a free piston in the barrel; and



first and second spaced apart detector switches actuatable by the passage of the piston as it moves in the barrel.

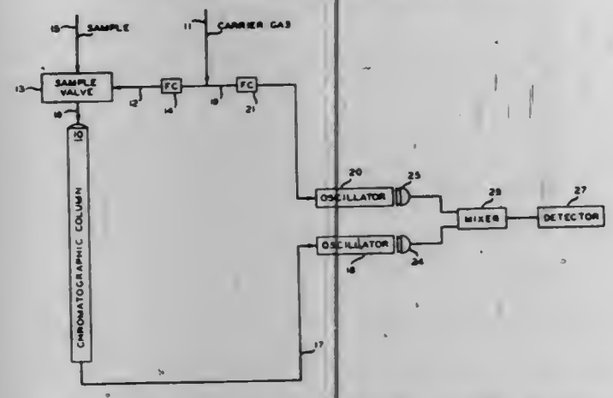
3,273,376
STATIC AND DYNAMIC CALIBRATION VESSEL FOR PRESSURE GAGES
Philip M. Aronson and Robert H. Waser, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 30, 1964, Ser. No. 407,936
5 Claims. (Cl. 73—4)



1. Apparatus for a static and dynamic calibration of pressure gages comprising:
a main pressure chamber having a cylindrical wall portion, a flat top portion and a flat bottom portion,
a cylindrical sleeve having a coaxial portion therein, said sleeve being mounted on said top flat portion such that the hole portion of said sleeve is in communication with the said main pressure chamber,
means within the hole portion of said cylindrical sleeve for mounting a test pressure gage therein,
port means in said main chamber, poppet valve means within said main chamber and abutting said cylindrical sleeve in the area of said hole portion such that a second chamber is provided between a test pressure gage and said poppet valve and a seal is provided between said main pressure chamber and said second chamber,
a cover portion on said sleeve forming a chamber between said cover portion and a pressure gage,
a second port means pneumatically connected to said second chamber,
third port means pneumatically connected to said third chamber,
means resistively urging said poppet valve against said cylindrical sleeve,
means for moving said poppet valve away from said

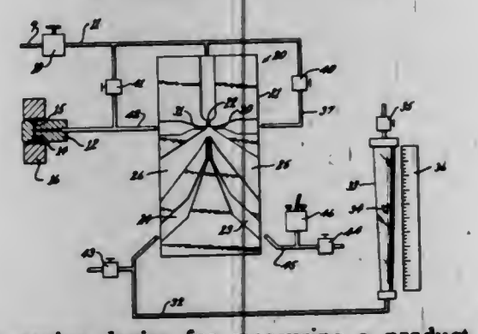
cylindrical sleeve whereby the pressure from said main chamber may be applied to said test pressure gage and said test pressure gage may be calibrated.

3,273,377
FLUID OSCILLATOR ANALYZER AND METHOD
Maurice K. Testerman and Paul C. McLeod, Jr., Little Rock, Ark., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,418
5 Claims. (Cl. 73—23.1)



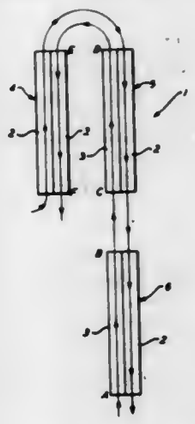
4. In a chromatographic analysis system wherein a fluid sample to be analyzed is introduced into a chromatographic column, and a carrier gas is directed through the column to elute the constituents of the fluid sample; apparatus for detecting the eluted constituents comprising first and second detectors, each comprising means forming a fluid passage, means to divert fluid at the outlet of said passage into second and third streams, means to return a portion of said second stream to said passage in a direction so as to tend to divert a greater portion of the fluid in said passage into said third stream, and means to return a portion of said third stream to said passage in a direction so as to tend to divert a greater portion of the fluid in said passage into said second stream; means to direct the effluent from the column through the fluid passage of said first detector; means to direct a stream of reference carrier gas through the fluid passage of said second detector; a first vibration sensing means positioned adjacent said first detector; a second vibration sensing means positioned adjacent said second detector; and means connected to said first and second sensing means to measure the difference between the frequencies of the vibrations received by said first and second sensing means.

3,273,378
GAGING DEVICE
William F. Gesell, Fairborn, Ohio, assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,828
6 Claims. (Cl. 73—37.9)



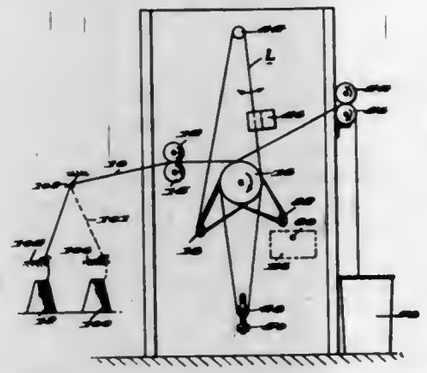
1. A gaging device for measuring a product characteristic comprising,
fluid pressure supply means providing a source of fluid through a common duct,
gaging means for operative association with a product to be gaged and controlling fluid flow to atmosphere which varies in accordance with the characteristic gaged,
gaging passage means operatively connecting said common duct to said gaging means,
a restrictor in said gaging passage means,
a fluid control device having no moving operating parts comprising,
a power jet of high energy flow operatively connected to said common duct,
first and second discharge passages arranged opposite said power jet to receive flow therefrom,
and first and second control jets of relatively low energy flow opposing one another transverse said power jet for proportioned diversion of the flow therefrom into said discharge passages in accordance with the relative flow through said control jets,
passage means connecting said first control jet to said common duct,
passage means connecting said second control jet to said gaging passage means downstream of said restrictor and upstream of said gaging means for control of flow through said second control jet in accordance with the flow through said gaging means and proportionate diversion of flow from said power jet into said discharge passages in accordance with the characteristic gaged, whereby flow conditions are obtained in said discharge passages as determined by the flow to atmosphere through said gaging means and amplified relative thereto,
control means for said restrictor for changing the basic flow level in said gaging passage means and to said second control jet providing amplification adjustment for said gaging device,
and signal means operatively connected to one of said discharge passages responsive to the flow therethrough to ambient atmosphere and to the gaged product characteristic.

3,273,379
METHOD OF LOCATING LEAKS
John J. Rendos, Millington, and Robert R. Banks, Berkeley Heights, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 17, 1963, Ser. No. 309,503
10 Claims. (Cl. 73—40.7)



1. A method for determining the existence and approximate location of a point of leak between adjacent passes of heat exchange apparatus, each having a direction of flow, comprising the steps of introducing condensible tracer materials having respectively different freezing points along the path of one pass of the heat exchange apparatus, said path being one of decreasing temperature along the direction of flow, conducting a stream through the adjacent pass, and analyzing said stream for traces of said condensible tracer materials.

3,273,380
APPARATUS FOR DETERMINING MASS PER UNIT LENGTH
John S. Seney, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 14, 1963, Ser. No. 287,815
3 Claims. (Cl. 73—67.2)



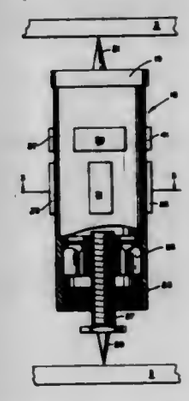
1. An apparatus for determining mass per unit length of a filamentary structure, said apparatus comprising: a driven shaft; an input feed roll rotatably mounted on said shaft; an output feed roll mounted on said shaft for rotation therewith; an idler roll mounted in spaced relationship to said shaft; a motor mounted on said shaft for rotation therewith and coupled to said input feed roll, said rolls being adapted to advance said structure axially over the input feed roll, around the idler roll, in rolling contact with the input feed roll to the output feed roll; a weight rotatably carried by the advancing structure in a loop between said input and output feed rolls; position detection means associated with said weight, said detection means including components for forwarding a control signal to said motor whereby to maintain the position of said weight and therefore the amount of tension on said structure substantially constant in the length advancing from said idler roll to the input roll; means associated with said structure in said length for vibrating the latter at its natural frequency, in a plane substantially perpendicular to the rotational axes of said feed rolls; and circuitry for detecting that frequency, converting the detected frequency to an indication of mass per unit length and recording the mass indication.

3,273,381
MEANS AND METHOD OF MEASURING VISCOELASTIC STRAIN
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Anthony San Miguel and Robert H. Silver
Filed Jan. 8, 1964, Ser. No. 336,608
8 Claims. (Cl. 73—88)

1. A method of testing a viscoelastic tubular solid propellant member, characterized by:
(a) coating at least one end of a tubular solid propellant member with a birefringent resin;
(b) sealing the ends of said propellant member internally of said birefringent resin whereby said resin is exposed;
(c) subjecting the tubular propellant member to internal pressures;
(d) exposing the coating to polarized light
(e) and photographing the strain pattern produced by said coating.

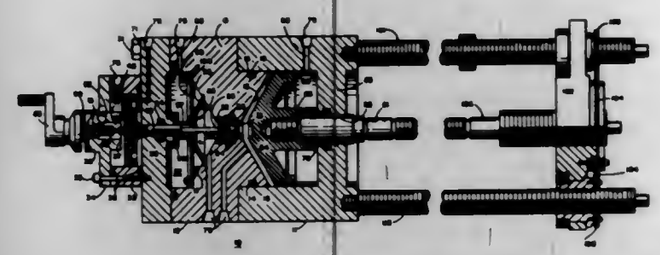


3,273,382
APPARATUS TO DETERMINE HORIZONTAL AND VERTICAL LOADS IN LANDING GEAR OF AIRCRAFT
Raymond L. Fonash, Haverford, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 20, 1963, Ser. No. 303,452
1 Claim. (Cl. 73—88.5)



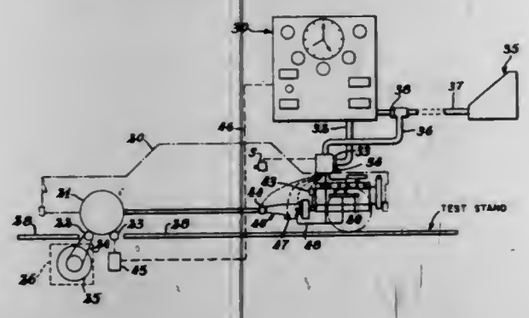
In aircraft landing gear having a tubular axle apparatus for continuously detecting ground loads applied to said landing gear, said apparatus comprising:
(a) a tubular proving rod constructed of material having a coefficient of thermal expansion similar to that of the said axle of the landing gear;
(b) four strain gages which are secured in quadrature on the exterior peripheral surface of the proving rod and which are calibrated after having been secured thereto;
(c) an end cap which is secured over one end of the tubular proving rod and which includes a pointed exterior projection centered on the longitudinal axis of the proving rod;
(d) an end plate which is secured in the other end of the proving rod and has a threaded aperture aligned with the longitudinal axis of the proving rod;
(e) a stud which is threadedly disposed in the aperture in the end plate and which includes a pointed exterior extremity that together with the pointed projection of the end cap engage opposite internal peripheral portions of the axle and support the proving rod on a predetermined axis therewithin;
(f) and means for detecting stress developed in the strain gages.

3,273,383
TENSION-COMPRESSION TESTING MACHINE
Joseph M. Krafft, 1709 Oakcrest Drive, and Walter A. Stolz, 4511 S. 34th St., both of Arlington, Va.
Filed Nov. 4, 1963, Ser. No. 321,375
4 Claims. (Cl. 73—93)



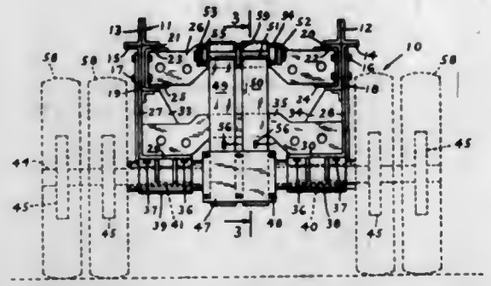
1. An improved tensile-compression testing machine which comprises a pressure chamber and a piston chamber separated from said pressure chamber by a wall structure including an axially aligned valve in the wall structure with the valve controlled from outside said pressure chamber by a valve stem that passes through the pressure chamber, said pressure chamber including hydraulic fluid and a gas fluid, the improvement comprising
(a) fluid separating means secured within said pressure chamber to separate said hydraulic fluid from said gas fluid,
(b) said valve stem passing axially through said fluid separating means and secured thereto,
(c) said fluid separating means being secured within said pressure chamber to prevent any fluid leakage between said fluid separating means, said valve stem, and the wall of said pressure chamber.

3,273,384
MACHINE AND METHOD FOR TESTING AUTOMATIC TRANSMISSIONS
Lawrence L. Flaugher, Pewaukee, Wis., assignor to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 7, 1963, Ser. No. 263,547
8 Claims. (Cl. 73—118)



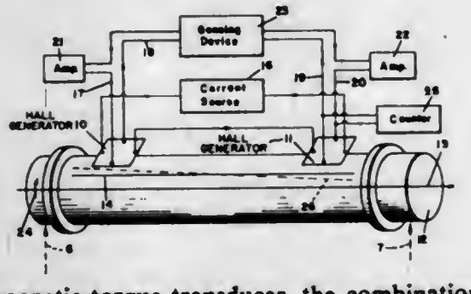
1. Apparatus connectable to automotive vehicle parts for in situ testing of a hydraulic fluid automatic transmission while said transmission is being operated through predetermined cycles of operation:
(a) said transmission having input and output shafts;
(b) said testing apparatus comprising first means for measuring the speed of said input and the speed of said output shaft;
(c) second means for measuring hydraulic fluid pressure; and,
(d) recording means connectable to said first and second measuring means for producing continuous line graphs, representative of said speeds and of said hydraulic fluid pressure, plotted against time for said predetermined cycles of operation of said transmission.

3,273,385
BRAKE TESTING APPARATUS
Leo F. Donnelly, Alvin M. Fischer, and Franklin R. Nall, Allentown, Pa., assignors to Mack Trucks, Inc., Plainfield, N.J., a corporation of New York
Filed Mar. 10, 1964, Ser. No. 350,758
6 Claims. (Cl. 73—129)



1. A device for measuring the horespower rating of vehicle brakes comprising a frame, an axle, means for rotatably supporting said axle on said frame wheels rotatably mounted on said axle for rotation thereon, brake means operatively fixed to said axle for selective engagement with said wheels to resist the rotation thereof, at least one torque arm operatively fixed to said transverse axle and secured to said frame to oppose axle rotation, and means for measuring stresses developed in said torque arm to measure the horsepower absorbed by the brake means when said brake means are engaged with the wheels.

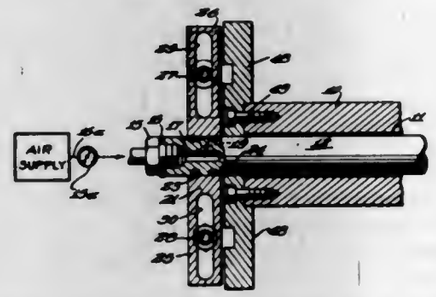
3,273,386
TORQUE TRANSDUCER UTILIZING A MAGNETIZED SHAFT HAVING A SURFACE DISCONTINUITY REFERENCE MARK
Harry Sipler, Philadephia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 14, 1962, Ser. No. 237,776
1 Claim. (Cl. 73—136)



In a magnetic torque transducer, the combination with a round circularly-magnetized rotary shaft for torque transmission under variable load, of
means providing a reference mark extending longitudinally in a straight line along the peripheral surface of said shaft substantially from end to end and defining a linearly-extending surface discontinuity and magnetic leakage field transversely thereacross,
said last named means being thereby subject to deformation in opposite directions at its ends in response to torsional deformation of the shaft under load and proportional to the magnitude thereof,
a pair of Hall generators of the rectangular-crystal Indium compound type having a relatively high degree of sensitivity to magnetic field change located in fixed spaced relation along said leakage field and aligned therewith to be traversed across the crystal thickness dimension by said field and to produce simultaneous voltage output pulses from said Hall generators for each revolution of the shaft without load and consecutive pulses under load having a relation in elapsed time proportional to the torque transmitted through said shaft,

means connected with said generators for indicating the time relation betwen the pulses for each revolution as a measure for determining the torque load applied to the shaft, and
means for applying magnetizing current to the shaft at rest between test operations to periodically restore the circular magnetization thereof, thereby to eliminate current conducting contact therewith in operation.

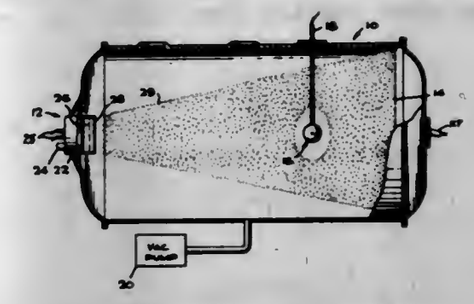
3,273,387
TORQUE METER
Carl M. Westbrook and Loyal H. Hess, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed May 25, 1964, Ser. No. 369,794
4 Claims. (Cl. 73—136)



1. A device for measuring torsion in a shaft comprising,
first and second fluid flow units each having a nozzle member positioned to direct a flow of fluid in a direction circumferentially of the shaft axis and a surface member facing said nozzle member for impeding flow therefrom, and mounting means for supporting the members on the shaft with the nozzle member being supported from one location at the shaft and the surface member being supported from another location axially spaced from said one location so that relative rotational movement occurs with torsion in the shaft,
means for continuously delivering fluid under constant pressure to the nozzle members, and pressure responsive means indicating variation in pressure occurring within said delivering means by back pressure caused by change in distance between said nozzle members and said surface members,
said first and second units spaced diametrically opposite relative to the shaft axis so that lateral bending of the shaft will simultaneously increase flow in one nozzle member and decrease flow in the other nozzle member thereby avoiding error in torsion measuring due to lateral bending.

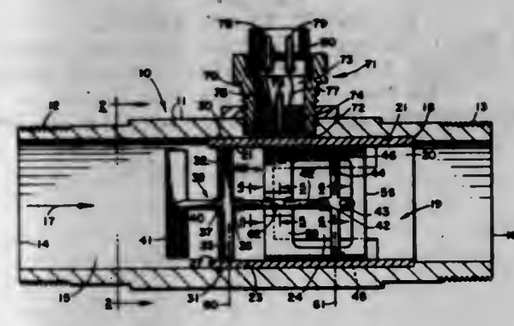
3,273,388
APPARATUS FOR MEASURING ELECTRIC FIELD STRENGTH ON THE SURFACE OF A MODEL VEHICLE
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of John M. Sellen, Jr. and David F. Hall
Filed Mar. 5, 1964, Ser. No. 349,782
8 Claims. (Cl. 73—147)

1. An apparatus for simulating the condition of a space vehicle moving rapidly through space and determining the electrical interaction between the space vehicle and the resident plasma in space; said apparatus comprising:
(a) a cylindrical vacuum chamber,
(b) a plasma source mounted in one end of said vacuum chamber for directing a pulsed plasma beam toward the other end of said vacuum chamber,
(c) a model space vehicle positioned within said vacuum chamber in the path of the pulsed plasma beam,
(d) means supporting said model vehicle within said vacuum chamber,



(e) sensor means mounted in said model vehicle, and
(f) means for measuring the momentary flow of electrical current induced in the sensor means during the interval of time when each of the plasma pulses from the plasma source is engulfing the model vehicle.

3,273,389
OSCILLATING VANE FLOWMETER
Charles C. Waugh, 5211 Beckford Ave., Tarzana, Calif.
Filed Dec. 9, 1963, Ser. No. 328,949
10 Claims. (Cl. 73—194)



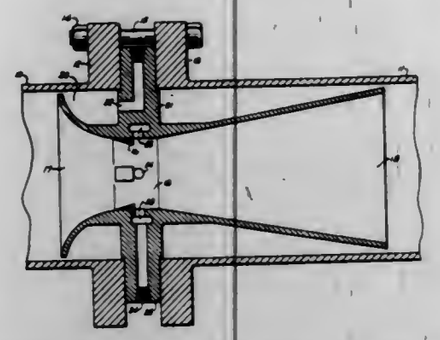
1. In a flowmeter for measuring the rate of flow of a fluid through a conduit, flow rate sensing means comprising,
an elongated support member within and extending along said conduit,
first pivot means pivotally mounting said support member on said conduit for turning about a first pivotal axis extending transversely of said conduit,
first vane means connected with said support means upstream of said first pivotal axis,
second vane means located downstream of said first pivotal axis,
second pivot means pivotally supporting said second vane means on said support member for turning about a second pivotal axis generally parallel to said first pivotal axis and located downstream of the center of lift of said second vane means, and
stop means for limiting the angular motion of said second vane means relative to said support member.

3,273,390
VENTURI TUBE
William R. Brown, St. Paul, Minn., assignor to Pfaudler Permutit Inc., Rochester, N.Y., a corporation of New York
Filed Oct. 6, 1965, Ser. No. 505,089
10 Claims. (Cl. 73—213)

1. A venturi tube adapted for fluid flow, said tube comprising:
(a) a converging section;
(b) a throat section;

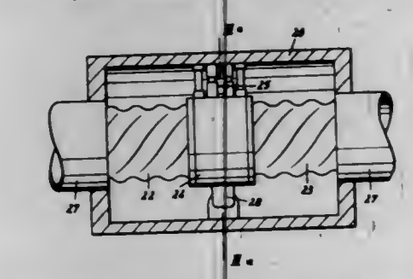
(c) at least one low pressure piezometer opening in said throat; and

(d) an element attached to said throat section immediately upstream of each of said low pressure piezometer openings for creating a quiescent region over and about said low pressure openings, only, said



elements having a width about the square root of three time the diameter of said low pressure openings and a height sufficient to pierce the boundary layer of fluid flowing through said throat section; the remainder of said tube being free of obstructions.

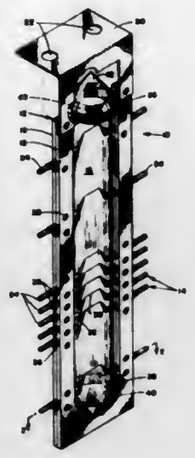
3,273,391
DYNAMIC FLOW METER
Horst Bader, Stuttgart-Sillenbuch, Germany, assignor to J. C. Eckardt A.G., Stuttgart-Bad Cannstatt, Germany
Filed Nov. 29, 1963, Ser. No. 326,962
Claims priority, application Germany, Mar. 20, 1963, E 24,522; Apr. 26, 1963, E 24,741
11 Claims. (Cl. 73—228)



2. A flow meter comprising a pipe section adapted to be inserted between two adjacent parts of a pipe line, means for connecting said pipe section to said adjacent parts so as to be rotatable relative thereto about a common axis, means for producing in said pipe section a helical twisting motion of a fluid medium flowing through said pipe line and said pipe section, and means outside of said pipe line and pipe section for measuring the torque exerted by said twisting motion upon said pipe section, a housing connected to said adjacent parts of said pipe line and enclosing said pipe section, said twist producing means comprising at least one guide wheel similar to a turbine wheel within said housing and connected to said pipe section, and pivot means connecting said guide wheel and said housing for pivotably suspending said guide wheel in said housing.

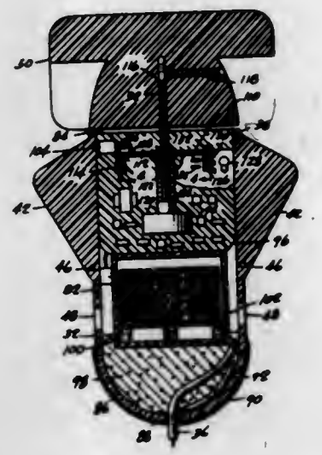
3,273,392
HOT WIRE LIQUID LEVEL DETECTOR FOR CRYOGENIC FLUIDS
William A. Olsen, Lakewood, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 17, 1963, Ser. No. 295,855
10 Claims. (Cl. 73—295)

1. A liquid level sensor to be utilized for measuring the level of cryogenic fluids including a supporting structure; at least a pair of electrically-conductive probes supported on said structure, resistance wires spanning the probes and in electrical connection therewith, and a



stillwell comprising a thin shell of low heat capacitance material disposed within the supporting structure and surrounding said probes for isolating the said probes from the structure.

3,273,393
BATHYTHERMOGRAPH
Wallace R. Spark, Santa Monica, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Mar. 24, 1964, Ser. No. 354,325
20 Claims. (Cl. 73—344)



1. A bathythermograph comprising:

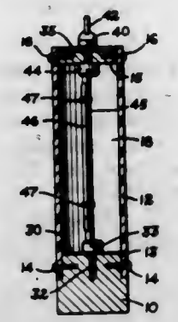
a transmitting system including

a bathythermosphere having means for sensing temperature of a surrounding fluid, means responsive to descent motion of said bathythermosphere for establishing its depth as it sinks in the surrounding fluid, and means for producing an electromagnetic signal carrying both the sensed temperature and established depth information in a correlated relationship through the surrounding fluid; and

a receiving system including

means for receiving the electromagnetic signal produced in the surrounding fluid, and means for converting the information carried in the received electromagnetic signal into visual information.

3,273,394
DEPTH THERMOMETER
John L. Chaney, Lake Geneva, Wis.
Filed Aug. 23, 1963, Ser. No. 304,046
4 Claims. (Cl. 73—354)



1. A depth thermometer for measuring the temperature of a body of liquid at a distance below the surface thereof comprising:

a weighted base member,

a transparent tubular member mounted on said base and forming a chamber for receiving and retaining a quantity of liquid,

said base member having port means extending therethrough and communicating with the lower part of said chamber,

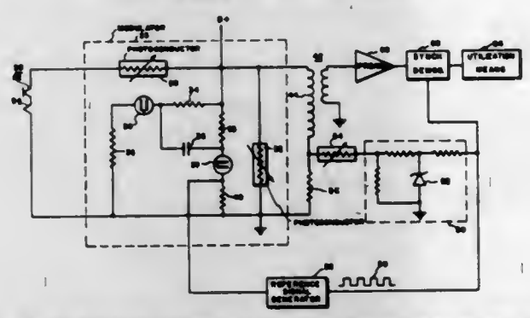
a closure member mounted at the upper end of said chamber and fastened to said tubular member in liquid sealing relation therewith,

said upper closure member also having port means therethrough communicating with the upper part of said chamber,

studs mounted on said base and upper closure members respectively and having slotted heads extending into said chamber,

and a thermometer mounted in the slots of said studs in position centrally of and readable through said tubular member.

3,273,395
AUTOMATIC AMBIENT TEMPERATURE COMPENSATION FOR A MEDICAL THERMOMETER
Frank Schwarz, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 299,841
7 Claims. (Cl. 73—355)



1. A radiometer for measuring temperature which includes automatic compensation for ambient temperature changes comprising

(a) an infrared detector,

(b) means for applying radiation from an object whose temperature is to be measured on said detector,

(c) an amplitude stable alternating voltage source,

(d) a voltage divider connected to said amplitude stable alternating voltage source which divider includes a temperature responsive resistor located in the proximity of said detector,

(e) modulator means for modulating the output of said detector,

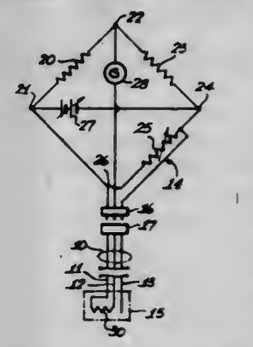
(f) means for mixing the outputs of said modulator means and said voltage divider,

(g) amplifying means for amplifying the mixed modulated outputs,

(h) demodulator means for synchronously demodulating the output of said amplifying means in synchronism with said modulator means, and

(i) utilization means coupled to said demodulator means for providing an indication of the temperature of the object being measured.

3,273,396
APPARATUS FOR MEASURING RESISTANCE AT THE END OF A LONG CABLE
Alan E. Beck, London, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ontario, Canada, a corporation of Canada
Filed Sept. 3, 1963, Ser. No. 306,063
6 Claims. (Cl. 73—362)



3. Apparatus for remotely measuring resistance comprising,

a cable having first, second and third conductors with distributed shunt resistance therebetween,

a first resistance having an unknown value connected between said first and second conductors at one end of the cable,

said third conductor having an open circuit termination at said one end of said cable,

an electric circuit comprising a second resistance connected between a first and second junction point, a third resistance connected between said second and a third junction point, and a fourth resistance connected between said third and a fourth junction point,

a current indicating means connected between said second and fourth junction points,

a source of direct current connected between said first and third junction points, and

connecting means on the other end of said cable connecting said first conductor to said first junction point and said second conductor to said fourth junction point forming with said electric circuit a Wheatstone bridge,

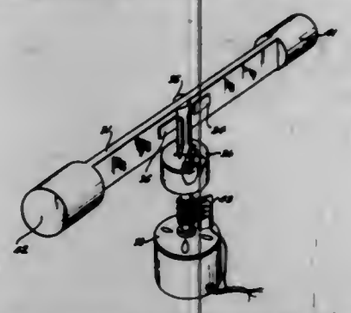
said cable introducing an undesired cable shunt resistance in an arm of said bridge including said first and second conductors and said first resistance,

said connecting means also connecting said third conductor to said third junction point introducing a compensating cable shunt resistance in an arm of said bridge including said fourth resistance.

3,273,397
MEASUREMENT OF STATIC FORCE FIELD GRADIENTS
Robert L. Forward, Oxnard, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 5, 1964, Ser. No. 372,866
14 Claims. (Cl. 73—382)

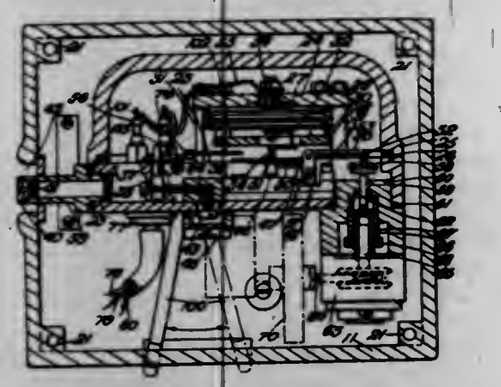
1. A system for measurement of static force field gradients, comprising: a resonant energy storage device

including a plurality of spaced sensing elements responsive to a particular type of force field coupled thereto; means for imparting equally to said sensing elements a periodic motion through the force field being measured to induce in said sensing elements energy in the form of periodically varying signals; means for combining said signals from each of the plurality of sensing elements in said resonant energy storage device to form a resultant complex signal, said spacing of said plurality of sensing elements causing said complex signal to have gradient connoting components at various harmonic frequencies



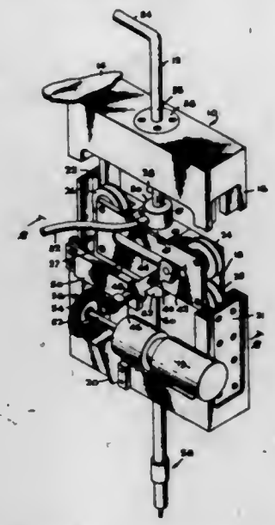
related to the frequency of the periodic motion of said sensing elements through the force field being measured, said storage device being resonant at a selected component frequency corresponding to a selected force gradient and excited thereby to provide a large amplitude response to the selected signal component; and output means coupled to said energy storage device and responsive to the large amplitude response for providing an output signal the magnitude of which is proportional to the magnitude of the selected gradient and the phase of which is indicative of the directional sense of the selected gradient.

3,273,398
ANEROID BAROMETERS
Douglas Cecil William Thomas Sharp, Basingstoke, England, assignor to Appleby & Ireland Limited, Hampshire, England, a British company
Filed Aug. 26, 1963, Ser. No. 304,461
Claims priority, application Great Britain, Nov. 6, 1962, 41,974/62
9 Claims. (Cl. 73—386)



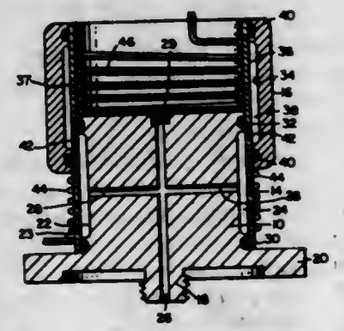
1. An aneroid barometer comprising in combination a pressure-responsive capsule, a pivotally mounted lever, a movable member carried by said capsule to move in accordance with pressure changes, a first electrical contact on the lever, a co-operating adjustable electrical contact member, means for adjusting the position of said adjustable electrical contact member towards and away from said first electrical contact, means for indicating the position of adjustment of said adjustable electrical contact member, a second pair of co-operating electrical contacts on said lever and said movable member respectively, means urging said lever about its pivot in a direction to close said second pair of contacts, said lever being arranged so that movement of the lever due to the adjustable electrical contact bearing against said first electrical contact causes the said second pair of electrical contacts to open and electric circuit means including indicating means for indicating when both pairs of electrical contacts are closed.

3,273,399
TRAVERSING PROBE
Edwin J. Saltzman, Kern County, and Meryl D. De Geer, Stanley C. Plamowski, and Robert Grant Green, Los Angeles County, Calif., assignors to the United States of America as represented by the National Aeronautics and Space Administration
Filed June 25, 1964, Ser. No. 378,080
9 Claims. (Cl. 73—389)



1. An instrument for examining and recording conditions existing in a flowing fluid comprising:
(a) a probe adapted for immersion in the flowing fluid to sense the conditions existing therein;
(b) a traversing mechanism coupled to said probe for extending and retracting said probe in a predetermined cyclic manner;
(c) a first means connected to said traversing mechanism for monitoring and recording the position of said probe, and
(d) a second means connected to said probe for recording the conditions sensed by said probe, whereby a record is obtained which indicates the exact conditions encountered by said probe at every position thereof.

3,273,400
PRESSURE CELL
Harvey L. Pastan, Brookline, Mass., assignor to Dynisco, Division of American Brake Shoe Company, Cambridge, Mass., a corporation of Delaware
Filed Sept. 8, 1964, Ser. No. 394,910
10 Claims. (Cl. 73—398)



7. A pressure transducer comprising
a deformable cylindrical wall,

means disposed within and about the wall cooperating with it to form two axially displaced chambers, said means being of substantially greater mass than the wall and being nondeformable within the contemplated pressure range of the transducer,
one of said chambers being defined by the inner surface and the other by the outer surface of said wall,
means for impressing the pressure of the fluid being measured upon the walls of the chambers,
and means for measuring the deformation of the deformable wall in response to the impressed pressure.

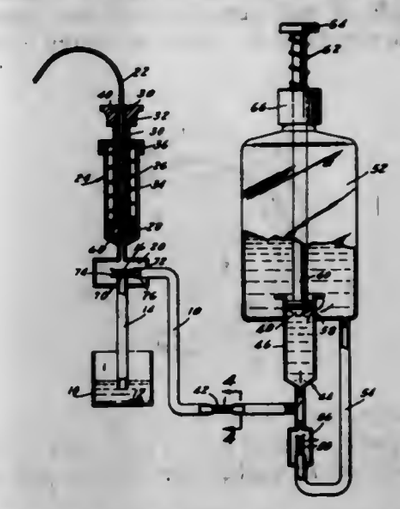
3,273,401
PROBE SAMPLER
Henry H. Kaufmann, St. Louis Park, and Douglas E. Fiscus, Burnsville, Minn., assignors to Cargill, Incorporated, Minneapolis, Minn., a corporation of Delaware
Filed May 14, 1964, Ser. No. 367,432
8 Claims. (Cl. 73—421)



1. A cotton seed sample collecting device comprising: a hollow probe means for packing cotton seed into a solid duct about and spaced from said probe, means for isolating cotton seeds from the mass, means for collecting cotton seeds isolated from the solid mass of stored cotton seed, means for conveying said collected cotton seed to a sample container, means for inserting and removing said probe into a mass of cotton seed.

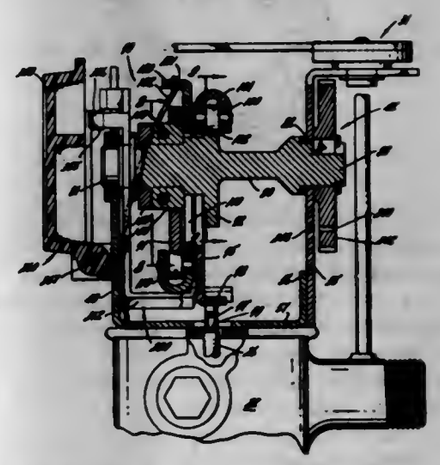
3,273,402
SPECIMEN SAMPLING AND DILUTING APPARATUS
Andrew F. Farr, 8620 San Antonio Ave., South Gate, Calif.
Filed Apr. 27, 1964, Ser. No. 362,830
7 Claims. (Cl. 73—425.6)

1. Specimen sampling apparatus comprising:
a container having a quantity of specimen liquid therein,
a sampling tube of predetermined capacity,
pump means for drawing liquid from said container into said tube and for removing excess liquid overflowing said tube,
said pump means including a sampling valve chamber,
a pressure responsive sampling valve within said chamber at one end of said tube,
a barrel communicating with said chamber,
a plunger movable in one direction within said barrel for reducing pressure within said chamber, and
coverable passage means through said plunger closed to reduce pressure in said chamber upon plunger movement in said one direction within said barrel



and open upon plunger movement in another direction.

3,273,403
WATER CONDITIONING SYSTEM
James E. Hiers and Edward J. Tischler, St. Paul, Minn., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed June 3, 1963, Ser. No. 285,117
22 Claims. (Cl. 74—2)

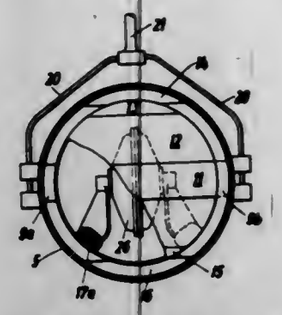


1. A timing device for controlling the operation of responsive means according to a pre-determined schedule, comprising: shaft means rotated by motor means at a pre-determined speed, operator means mounted on said shaft means for movement transversely thereof to operate the responsive means, cam means on said shaft means for cooperating with said operator means to initially energize said operator means for operation of the responsive means and to subsequently permit said operation at a pre-determined time, and resilient means for biasing said operator means out of operating relationship with the responsive means.

3,273,404
GYROSCOPIC INSTRUMENT
Hans Ehrich, Kiel-Schulensee, Germany, assignor to Anschutz & Co. G.m.b.H., Kiel-Wik, Germany, a limited liability company of Germany
Filed Mar. 6, 1964, Ser. No. 349,953
Claims priority, application Germany, Mar. 7, 1963, A 42,533
1 Claim. (Cl. 74—5)

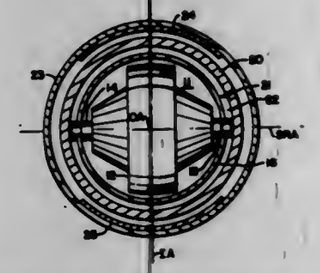
A gyroscope instrument comprising a vessel, an electrically conductive liquid filling said vessel, a float immersed in said liquid, at least one gyroscope mounted

within said float, electric driving means in said float for spinning said gyroscope, means including electrode faces on the inside of said vessel and on the outside of said float for the supply of the electrical energy to said electric



driving means, said float consisting of a mixture of a synthetic plastic material with a filler, said filler having a thermal conductivity higher than that of said plastic material.

3,273,405
CONTROL APPARATUS
Roger P. Durkee, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed June 19, 1961, Ser. No. 118,011
8 Claims. (Cl. 74—5.7)



1. In a sensitive instrument: an electric spin motor; a gimbal element, said spin motor having leakage flux and being mounted within said gimbal element for rotation about a spin reference axis; housing means; fluid means, said gimbal element being substantially supported within said housing means by said fluid means for rotation about an output axis perpendicular to said spin reference axis, said gimbal element tending to rotate about said output axis in response to spin motor reaction torque; and compensating means mounted on said housing means, said compensating means being positioned so as to interact with said leakage flux of said spin motor and apply a torque to said gimbal means so as to substantially eliminate the rotation thereof due to said spin motor reaction torque.

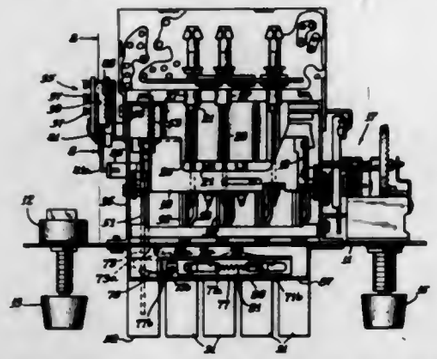
3,273,406
GYRO MECHANISMS
Moshe Epstein, 27 Wedgewood Blvd., Haifa, Israel, and Meir Dror, 13 Hagefen St., Sabinia, near Kiriat Bialik, Israel
Filed Nov. 6, 1962, Ser. No. 235,775
Claims priority, application Israel, Nov. 14, 1961, 16,320; Nov. 15, 1961, 16,328
10 Claims. (Cl. 74—5.12)

7. A gyro mechanism, comprising in combination a rotor mounted in gimbals so as to have at least two degrees of freedom, a narrow annular slit of uniform width being provided in said rotor at an angle with the axis of rotation, an annular bracket being positioned in fixed spatial relation to said rotor so as to surround the opening of said slit, a wire of such diameter as to be adapted to be wound in said slit in the form of a single layer spiral, an opening being provided in the annular surrounding bracket through which said wire can be inserted and withdrawn, said bracket being at such a distance from the slit as to prevent the escape of the wire from the slit, means being provided for fixedly holding in place said



gimbals during the time of withdrawal of the said wire when the rotor is actuated and for automatically freeing said gimbals after the withdrawal of said wire.

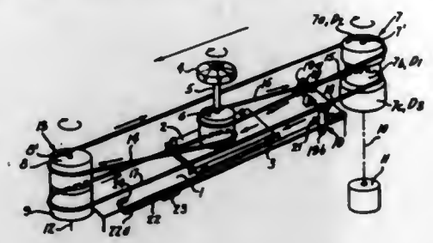
3,273,407
INDICATOR DEVICE
Gustav A. Winkler, Wheaton, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 10, 1964, Ser. No. 395,467
6 Claims. (Cl. 74—10.27)



1. An indicator for use in a device operable to two states by a pushbutton having first and second stable positions, one for each state, including in combination, a mask member having an opening therein, a slidable member disposed behind said opening in said mask member and having first and second characters thereon representing the two states to which the device is operable, said slidable member being movable to first and second positions to align said first and second characters respectively with said opening in said mask member so that they are visible, and a bell crank engageable by the pushbutton and pivotal to first and second positions according to the first and second positions of the pushbutton, said bell brank being coupled to said slidable member to move said slidable member between said first and second positions according to said first and second positions of said bell crank, whereby said indicator provides an indication of the operative state of the device.

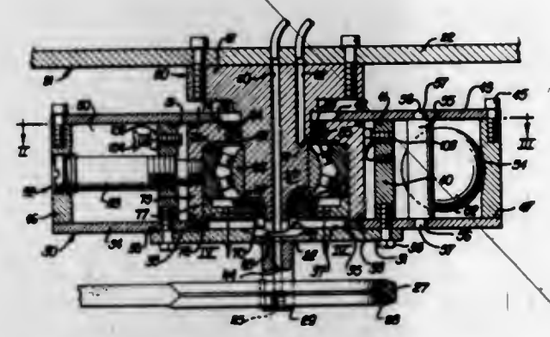
3,273,408
DRIVE APPARATUS FOR A CARRIAGE MOVABLE UPON A GUIDE
Ernst Nagel, Weissiingen, and Werner Steinmetz, Kempten, Zurich, Switzerland, assignors to Pneumafil Corporation, Charlotte, N.C.
Filed Dec. 3, 1964, Ser. No. 415,591
Claims priority, application Switzerland, Dec. 6, 1963, 14,981/63
13 Claims. (Cl. 74—22)

1. Drive apparatus comprising, in combination, a guideway, a carriage movable back and forth upon said guideway, pulley means mounted at the ends of said guideway and at said carriage, one of said pulley means mounted at the end of said guideway being capable of being driven, an endless member extending about said pulley means of said guideway, said pulley means of said carriage being trained by two different strands of said endless member, at least one of said pulley means being constructed to provide a step pulley having pulley steps of different diameter in order to generate a rolling movement of said pulley means of said carriage at one of said strands, an operable member rotatably mounted at said carriage, said pulley means of said carriage being



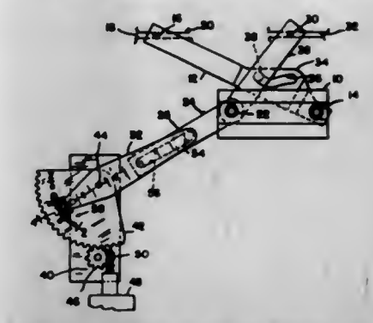
operatively coupled with said operable member in order to utilize the rotation of said pulley means of said carriage resulting during said rolling movement, reversing means for reversing the direction of movement of said carriage while the direction of rotation of said pulley means and said operable member remains the same, said reversing means cooperating with one of the pulley steps and said endless member in order to displace the latter from its trained pulley step.

3,273,409
MOTION GENERATOR MEANS
Lee B. Holman, Whittier, Calif., assignor to State Steel Products, Inc., City of Industry, Calif., a corporation of California
Filed May 6, 1963, Ser. No. 278,176
12 Claims. (Cl. 74—86)



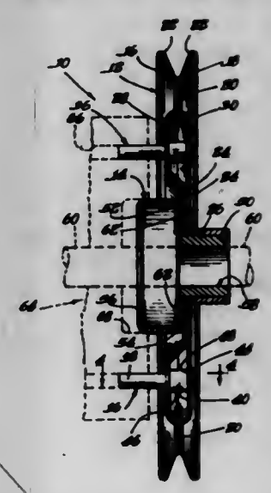
1. A self-balancing motion generator means for use on a material separating means including a screen receptacle adapted to be agitated and carrying said motion generator means, a base means, and driving means including a drive pulley belt for said receptacle on the base means, the combination of: a housing having an axis of rotation and a wall with an axial opening; a shaft portion on said housing co-axial with and below said housing and connected with a drive pulley belt of driving means for rotating said housing; a stub shaft receivable through said axial opening in spaced relation to said housing and connected to said receptacle; bearing means within said housing carried by said stub shaft and supporting said housing, said stub shaft and bearing means being laterally displaceable within said housing; means for moving and retaining said stub shaft and bearing means in selected lateral adjustment; and counterweight means operable within the housing for counterbalancing loads imparted to said housing to maintain a stable axis of rotation of the housing and to thereby impart gyratory motion to said stub shaft and receptacle connected thereto.

3,273,410
WINDOW REGULATOR
Joseph Pickles, Dearborn, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan
Filed Jan. 13, 1964, Ser. No. 337,297
4 Claims. (Cl. 74—89.18)



1. In window regulator mechanism, a support, a flat plate formed of sheet metal pivoted to said support, an operating arm pivoted to said support, pivot means on said support mounting said plate and said arm for independent swinging movement about the axis thereof, a pair of opposed spring retainer end abutments partially severed from the sheet material of said plate at opposite sides of said arm and bent up to confront a portion of said arm, a centering spring retainer abutment partially severed from the sheet material of said plate and bent up to occupy a position intermediate said end abutments, a coil spring under compression retained between said centering abutment and each of said end abutments, said arm having a spring retainer abutment engageable with the adjacent ends of both of said coil springs.

3,273,411
FABRICATED SHEET METAL SHEAVE
Edward H. Schultz, Jr., Glencoe, Ill., assignor to The Nagel-Chase Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 4, 1964, Ser. No. 408,816
5 Claims. (Cl. 74—230.4)



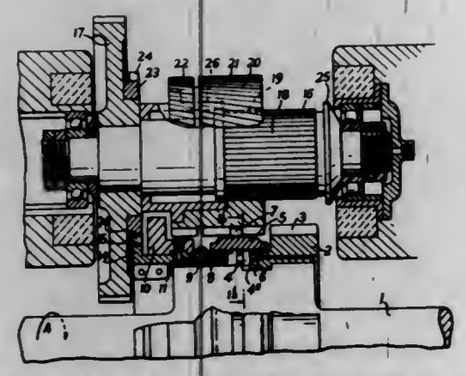
1. A sheave arrangement comprising: first and second sheet material members having outer edge portions defining a peripheral rim, inner edge portions defining a central aperture and annular regions intermediate said rim and said aperture cooperating to define a box section, a plurality of axially aligned hole means perforating said members at arcuately spaced positions on said box section; and a force-transmitting pin means fastened to said box section at each of said hole means, including an elongate portion extending axially beyond the face of one of said members to be engaged by motive means, said pin means further including a radially enlarged portion dis-

posed between said members and having at least one shoulder engaging a said member radially outwardly of the corresponding hole means to brace said pin means against torsional forces and prevent distortion by the engaging motive means.

3,273,412
SYNCHRONOUS SELF-SHIFTING GEAR MECHANISM

Herbert Arthur Clements, Weybridge, England, assignor to S.S.S. Patents Limited, London, England, a British company

Filed Feb. 23, 1965, Ser. No. 434,523
7 Claims. (Cl. 74—339)



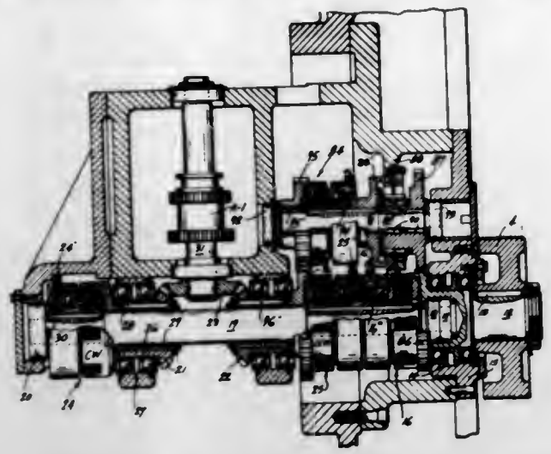
1. Synchronous self-shifting gear mechanism comprising a first rotary gear member, a first set of helical gear teeth carried by said first gear member, a second rotary gear member, means mounting said first and second gear members for rotation about parallel axes, an intermediate member, a second set of helical gear teeth carried by said intermediate member, means constraining said intermediate member for axial movement relative to said second gear member to bring said second set of gear teeth into and out of engagement with said first set of gear teeth, a rotary actuating ring member axially located relative to said first gear member, further helical teeth carried by said actuating ring member and engageable with said second set of gear teeth, pawl and ratchet mechanism for actuating said intermediate member to initiate precise interengagement of said first and second sets of gear teeth, said pawl and ratchet mechanism comprising ratchet teeth drivably connected to one of said actuating ring and first gear members and at least one pawl carried by the other of said actuating ring and first gear members.

3,273,413
TRANSMISSION WITH AUTOMATIC MESHING CONTROL

Richard E. Stobbe and Frank Zankl, Milwaukee, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin

Filed Aug. 28, 1963, Ser. No. 305,095
20 Claims. (Cl. 74—346)

1. In a multi-speed drive;
a train of gearing including a plurality of shiftable gear clusters;
shift means for each of said gear clusters for shifting said gear clusters singularly or in combination to vary the ratios in said gearing to provide a desired output;
an input drive including a normal speed and a creep speed takeoff;
means to connect said normal speed takeoff to said train of gearing;
detecting means individual to each of said shift means to detect the failure of any of said shift means to complete a shifting operation due to the lack of gear meshing in shifting;
means coordinating said detecting means and operable upon any incomplete shifting for disconnecting said normal speed takeoff and connecting said creep speed takeoff to said train of gearing to condition

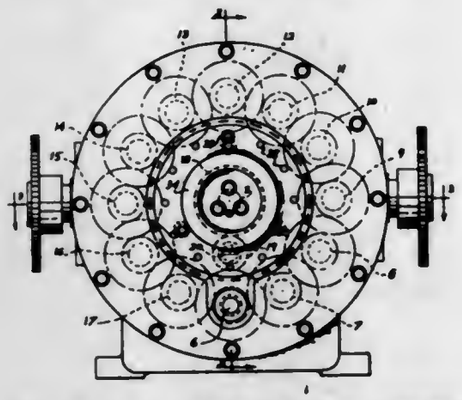


said stuck gears for meshing, and upon meshing thereby complete shifting automatically disconnecting said creep speed takeoff and connecting said normal speed takeoff.

3,273,414
MULTIPLE SPEED TRANSMISSION

Le Roy R. Boggs, Bristol, Tenn., assignor to Universal Moulded Fiber Glass Corp., Bristol, Va., a corporation of Delaware

Filed Dec. 17, 1963, Ser. No. 331,270
5 Claims. (Cl. 74—353)



1. A drive transmission including an output shaft, a series of gear shafts one of which comprises an input shaft, the shafts of said series being parallel to said output shaft and to each other and arranged around the output shaft at equal distances therefrom, each of said gear shafts having two gears thereon of different diameters with the larger gear on each shaft meshing with the smaller gear on an adjacent shaft of the series, a gear on the output shaft, and a gear shiftable in an orbit around the output shaft for selectively interconnecting the gear on the output shaft with the larger gear on any of said gear shafts.

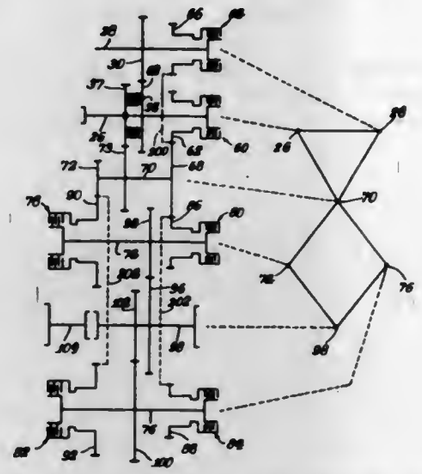
3,273,415
TRANSMISSION

Barry L. Frost, Jackson, Mich., assignor to Clark Equipment Company, a corporation of Michigan

Filed Dec. 30, 1963, Ser. No. 334,204
7 Claims. (Cl. 74—360)

1. In a transmission, an input shaft, a first clutch gear rotatable on said input shaft, a first forward-drive clutch adapted to selectively connect said first clutch gear to said input shaft, a reverse shaft, a second clutch gear rotatable on said reverse shaft, a reverse-drive clutch

adapted to selectively connect said second clutch gear to said reverse shaft, a second forward-drive clutch including a hub member rotatably mounted on said input shaft, a plurality of friction disk members carried by said hub member for rotation therewith, a drum member having a radial flange portion secured to said input shaft and a generally axial cylindrical portion carrying a plurality of friction disk members interleaved with said

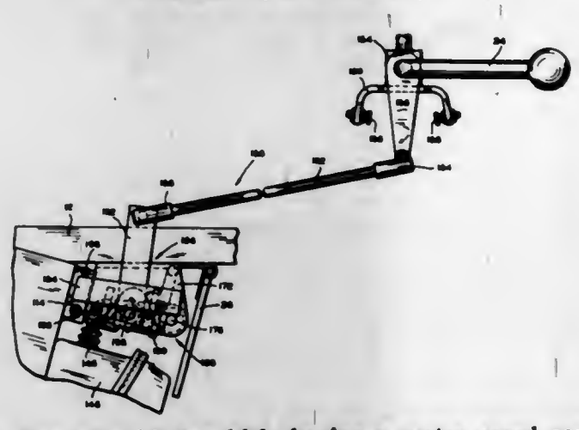


friction disk members on said hub member, and means for compressing together said disk members of said hub and drum members for clutching said hub member to said input shaft, said cylindrical portion of said drum member having a first drive gear, said hub member having a second drive gear, a gear secured to said reverse shaft and in constant mesh with said first drive gear, and gear means selectively driven from said first and second clutch gears and said second drive gear.

3,273,416
SPEED AND DIRECTION CONTROL LINKAGE

Louis A. Haddock, Jr., Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan

Filed June 1, 1964, Ser. No. 371,554
6 Claims. (Cl. 74—471)

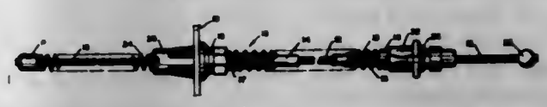


1. For use with a vehicle having a motor speed control which is actuated by an outwardly biased plunger and a direction control switch, speed and direction control linkage comprising a mechanism for changing bidirectional movement to unidirectional movement, the said mechanism including pin means disposed to operatively engage the plunger, an actuating member operatively connected to the said pin means, pivot means for said actuator so that movement of the said actuating member in either of two directions causes the said pin means to move in only a single direction away from operative engagement with the plunger and spring means for biasing the said pin means into operative engagement with the plunger with sufficient force to overcome the outward bias of the plunger, the said actuating member being disposed so that movement of the said actuating member in one of the said two directions actuates the direction control switch, and an operator's control member operatively connected to the said actuating member for moving the said actuating member in either of the said two directions.

3,273,417
CONTROL CABLE CORE ELEMENT POSITIONING MEANS

Warren E. Sevrence, Adrian, Mich., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York

Filed Apr. 6, 1964, Ser. No. 358,148
8 Claims. (Cl. 74—501)

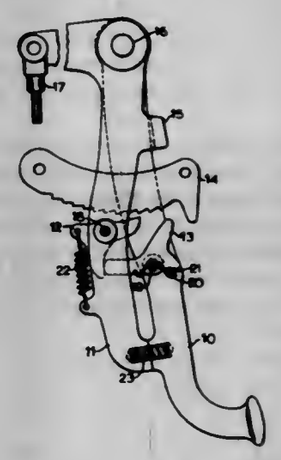


1. In a control cable wherein a core element is axially translatable through a casing fixed at least at one point along its length to displace an actuated member between first and second positions, core element positioning means for nominally locating said actuated member in its first position comprising:
(A) stop means attachable to said core element to abut one end of said casing, and
(B) mounting means movable through said casing and located on said core element to receive said stop means in fixed engagement at a predeterminded point on said core element immediately outside said end of the casing when said actuated member is in its first position.

3,273,418
VEHICLE PARKING BRAKE CONTROL

Elmer F. Ellis, 15722 Wisconsin, Detroit, Mich.

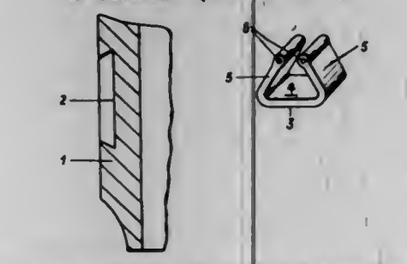
Filed Dec. 12, 1963, Ser. No. 330,127
3 Claims. (Cl. 74—539)



2. In a mechanism of the pawl and ratchet type for operating a parking brake or the like of a vehicle, including in combination a stationary support, a ratchet immovably fixed to said stationary support, a brake lever swingably mounted to said support, and with suitable means to connect it with a brake operating cable or rod, and adapted to be moved between a brake released position and a brake applied position, a pawl pivotally mounted on said brake lever with resilient means urging said pawl into contact with said ratchet for holding said brake lever in brake applied position, a brake pedal, also

swingably mounted on said stationary support and not only adapted to apply force on said brake lever in brake applying direction but also to swing away from said brake lever on urging of resilient means between them, when said brake lever is held by said pawl in a brake applied position, a distance limited by an appropriate stop between said brake lever and said pedal just sufficient to permit a pawl controlling lever, pivotally mounted on said pedal, to pivot to a position from which motion imparted to said pedal in a brake applying direction will cause said pawl controlling lever to force said pawl out of contact with said ratchet, permitting the mechanism to be eased back to brake released position, said pawl controlling lever being of such design that when mechanism reaches the brake released position said pawl controlling lever will have been pivoted by contact with appropriate projection on said ratchet or other non-moving part to position in which said pawl is released to make contact with said ratchet and, in which position said pawl is of such design that it will hold said pawl controlling lever in inoperative position while mechanism is in brake released position and during foot application of brake.

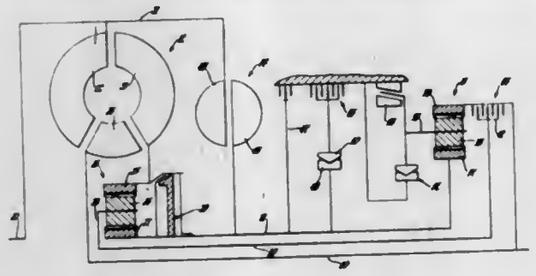
3,273,419
BALANCING WEIGHT CONSTRUCTION
Franz G. Kollmann and Friedrich Laussermair, Munich, Germany, assignors to BMW Triebwerkbau G.m.b.H., Munich-Allach, Germany
Filed Nov. 12, 1964, Ser. No. 410,472
Claims priority, application Germany, Nov. 13, 1963, B 74,240
6 Claims. (Cl. 74—573)



1. An arrangement for fastening balancing weights on rotating bodies, especially on rotors of flow machines rotating at high speeds, within annularly shaped apertures of said rotating bodies arranged in the end faces thereof and forming sidewalls, said weights comprising elastic structural portions, said arrangement comprising:
   mutually cooperating means in said weights and in said apertures,
   said cooperating means in a respective one of said weights being constituted by said elastic structural portions including spaced abutment surfaces thereof,
   said cooperating means in respective one of said apertures being constituted by said sidewalls thereof, said one of said apertures corresponding approximately in width to the distance between said spaced abutment surfaces,
   said respective one of said weights by reason of said elastic structural portions springily expanding and forcing said spaced abutment surfaces against said sidewalls of said respective one of said apertures and being tangentially non-displaceably secured therein by the resulting frictional engagement therewith.

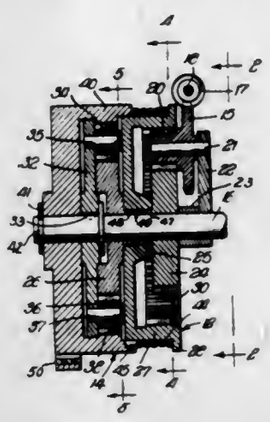
3,273,420
TRANSMISSION
John J. O'Malley, Livonia, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 6, 1963, Ser. No. 328,538
10 Claims. (Cl. 74—677)

1. In a transmission, a hydraulic torque converter including an impeller, a turbine and a reaction member, a fluid coupling of the type adapted to be selectively filled with and emptied of working fluid and including an impeller and a turbine, an engine driven power input shaft connected to both of said impellers for driving the same, a first gear unit, a planet carrier supporting a planet pinion gear in mesh with a ring gear and a sun gear, a final power delivery shaft, means connecting said converter reaction member to said final power delivery shaft for rotation therewith as a unit, a second gear unit including a planet carrier supporting a planet pinion in mesh with a sun gear and a ring gear, said last mentioned ring gear being connected to said final power delivery shaft for rotation therewith as a unit, an engageable and releasable clutch effective in all forward drive ratios to connect said



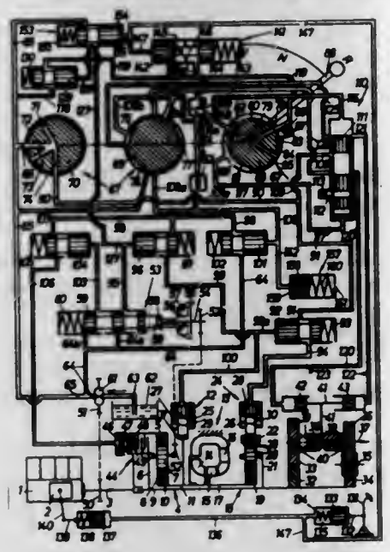
first gear unit carrier to said final power delivery shaft for rotation therewith as a unit, means connecting said sun gears to each other and to said fluid coupling turbine for rotation as a unit, means for preventing rotation of said second gear unit planet carrier for completing the establishment of first or low gear drive when said clutch is engaged, engageable and releasable brake means for preventing rotation of both of said sun gears to establish second gear drive when said clutch is engaged, said fluid coupling being filled with fluid and said clutch being engaged to establish direct drive through said transmission.

3,273,421
TIMER TRANSMISSION
Gerald W. Jones, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,509
12 Claims. (Cl. 74—705)



1. In a power transmission mechanism including an input element and an output element, the combination comprising: first and second relatively rotatable ring gears each having circumferential teeth; a gear assembly including a central gear portion and a sun gear portion; a first gear element, said central gear portion and said first gear element having meshing relationship and being driven by said input element, said first gear element also having meshing relationship with the circumferential teeth of said first ring gear; drive means including a second gear element interposed between said sun gear portion and the circumferential teeth of said second ring gear, said drive means having a driving relationship with the output element; and means for selectively controlling the relative rotation of said second ring gear to said first ring gear.

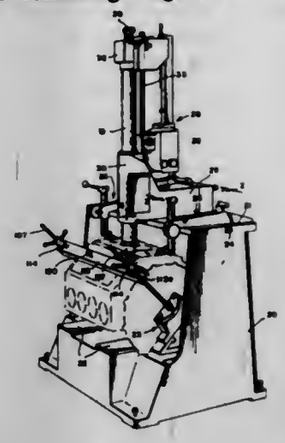
3,273,422
MULTIPLE SPEED TRANSMISSION
Hellmut Weinrich and Günther Paulsen, Heidenheim (Brenz), and Herbert Müller, Pinneberg, near Hamburg, Germany, assignors to Voith-Getriebe KG., Heidenheim (Brenz), Germany, a corporation of Germany
Filed Nov. 1, 1963, Ser. No. 320,651
12 Claims. (Cl. 74—752)



1. In an automatic multiple speed transmission having a power input shaft and a power output shaft, means including change speed means coupling said output shaft to said input shaft and means for selectively reversing the direction of output shaft rotation and comprising a low ratio speed and at least one higher ratio speed, said reversing means being operated by a manual shift member, said low ratio speed including at least a Foettinger type fluid drive for transmitting power in at least one direction of said output shaft, means responsive to the speed of said output shaft for effecting a change in the transmission ratio of said change speed means in at least one direction of output shaft rotation to automatically upshift and downshift between said low ratio speed and said at least one higher ratio speed, and means responsive to actuation of said shift member to automatically render the means operably associated with said at least one higher ratio speed inoperative and to automatically actuate the means operably associated with said low ratio speed for automatically effecting a downshift to said low ratio speed before permitting said reversing means to effect a reversal in the direction of output shaft rotation and then rendering the means for at least one higher ratio speed operative.

3,273,423
BORING MACHINE
Donald B. Rottler, 1221 Poplar Place, Seattle, Wash.
Original application May 27, 1963, Ser. No. 283,446. Divided and this application Dec. 13, 1965, Ser. No. 513,308
10 Claims. (Cl. 77—4)

1. In combination, a bed, a boring unit supported by said bed and presenting a depending boring bar with a boring head at its lower end, centering finger means having centering fingers on said boring head arranged to be extended and retracted in unison, air lifting means for selectively floating the boring unit relative to said bed while said centering fingers are being extended to



center said boring head, and clamping means for clamping the boring unit on said bed after the boring head has been centered.

3,273,424
PORTABLE RAIL DRILLS
Ralph Hughes, Graysville, Tenn., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 9, 1964, Ser. No. 358,499
4 Claims. (Cl. 77—11)

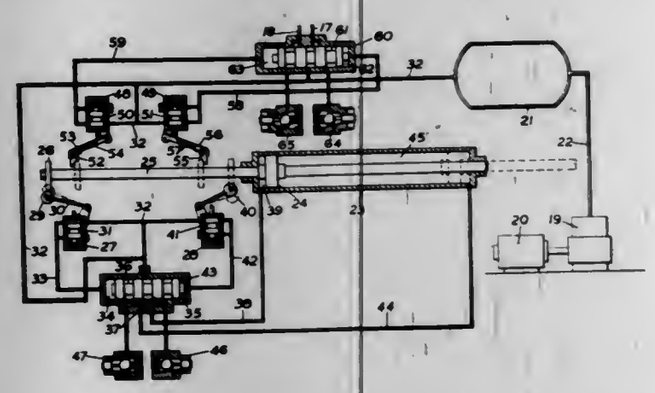


1. A rail drill for drilling a rail in place in the roadbed of a railroad comprising a base member, means for supporting said base member on a pair of spaced rails for adjustment relatively to said rails, means for releasably clamping said base member to that one of the rails that is to be drilled, a support, means for mounting said support on said base member for sliding movement in a direction toward and away from said one of the rails, a rotary drill mounted on said support, means for moving said support to advance said drill into and to retract the same from drilling relation with the rail to be drilled, said means for releasably clamping the base member to the rail comprising a pair of abutments secured to said base member on opposite sides of said drill, a pair of clamping arms having free ends opposed to said abutments and slidably mounted on said base member for movement of the free ends of the clamping arm toward and away from the abutments, and means on said base member for moving said clamping arms toward the abutments, said clamping arms and abutments being adapted for relative movement substantially in the same plane as said drill is movable.

3,273,425
MACHINE TOOL PECKING DEVICES
Albert Warmingham Hodgson, 2 Rope Lane, Wistaston, Crewe, England
Filed Aug. 3, 1964, Ser. No. 386,926
Claims priority, application Great Britain, Sept. 4, 1963, 34,863/63
17 Claims. (Cl. 77—32.3)

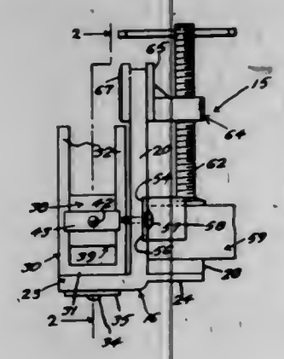
1. In a machine tool including a working head, means mounting said working head for working movement thereof and simultaneously for movement toward and away from a working position, and means for imparting a working movement to said working head; a machine tool pecking device comprising a fluid operated, double-

acting actuating piston and cylinder means, a fluid operated, self sustaining timing device, link means connecting said timing device to said actuating piston and cylinder means controlling the movement of the moving part of said actuating piston and cylinder means with respect to time from said timing device, variable loading means actuable on said moving part of said actuating piston and



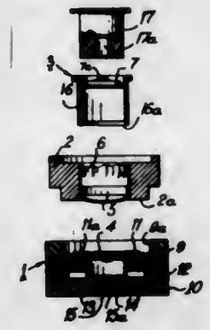
cylinder means in one direction of movement of said moving part thereof, and pecking drive take-off means connected to said moving part of said actuating piston and cylinder means and to said working head transmitting the movement of said moving part of said actuating piston and cylinder means to said working head to move said working head toward and away from said working position.

3,273,426
DRILLING JIG
James L. Cleveland, 351 Clyde Ave., Calumet City, Ill.
Filed Dec. 16, 1963, Ser. No. 330,778
6 Claims. (Cl. 77—62)



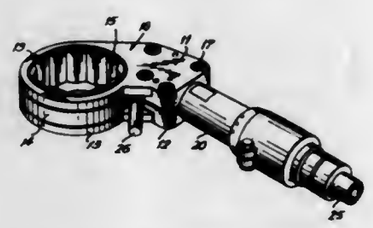
1. A drilling jig comprising a frame, a drilling guide support, means adjustably mounting said support on a first part of said frame, a drilling guide, means adjustably mounting the drilling guide on said support, a bracket detachably anchored to a second part of the frame, and a clamping screw engaging threadedly through said bracket and adapted to clamp a piece of material against a third part of the frame and with a surface of the material facing said drilling guide, said clamping screw, when in clamping engagement with the material, maintaining said bracket anchored to said second part of the frame, said second part of the frame including a top portion and a depending portion, said bracket having a first bifurcated portion straddling said depending portion and a second bifurcated portion engaging under and straddling said top portion.

3,273,427
METHOD AND DEVICE FOR MANUFACTURING BUTTONS CONSISTING OF SEVERAL ELEMENTS
André Zack, 13 Blvd. du Temple, Paris 13, France
Filed Oct. 21, 1964, Ser. No. 405,480
Claims priority, application France, Dec. 10, 1963, 956,633, Patent 1,386,426
6 Claims. (Cl. 79—5)



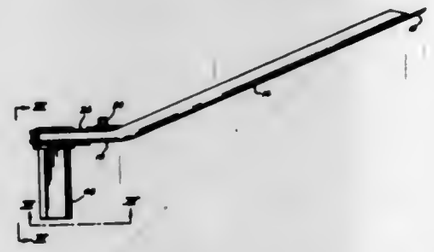
1. A device for making a button having a pair of confronting disc-shaped center pieces peripherally interconnected by a fabric-shrouded ring, comprising:
(a) a lower die having a depression surrounded by a beveled horizontal peripheral edge for receiving a first disc-shaped center piece;
(b) an annular intermediate die with a vertical bore of constant cross-section removably positioned on said lower die, said bore registering with said beveled edge;
(c) a tubular upper die slidably fitting in said bore, said upper die having a beveled lower peripheral edge confronting said beveled horizontal edge of said lower die;
(d) and piston means removably fitting into said upper die for assembling within said bore a second center piece substantially coextensive with said first center piece, a ring wider than said center pieces but narrower than said bore, and a fabric disc larger than said ring separating said ring from said center pieces and from the wall of said bore, with said center pieces and part of said fabric disc received within said ring, whereby subsequent application of axial pressure to said upper and lower dies brings said beveled edges into engagement with said ring through the intermediary of said fabric disc with consequent crimping of said ring and fabric disc around the peripheries of said center pieces to form a unitary structure.

3,273,428
MECHANICAL NUT DRIVING WRENCH
Bengt Gunnar Rudeke, Goteborg, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Nov. 4, 1963, Ser. No. 321,275
Claims priority, application Sweden, Nov. 7, 1962, 11,941/62
11 Claims. (Cl. 81—52.3)



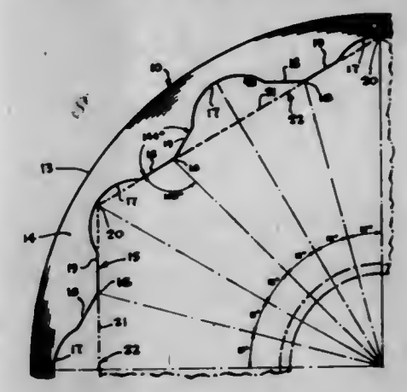
1. A mechanical nut driving wrench operated by impacts and including power operated reciprocating hammer means for delivering a series of rotational blows to a wrench body, said nut driving wrench comprising a pair of spaced apart parallel annular journals forming a head portion, a pressure fluid operated hammer connected at the forward end thereof to said head portion, an impact transmitting anvil block at said forward end of said hammer, an open ended annular socket wrench body coplanar with, but offset from the longitudinal central axis of said anvil block and rotatably carried between said journals for bidirectional rotation therein, a radially directed shoulder on said wrench body abutting said anvil block with the point of abutting contact between said shoulder and said anvil block always defining an obtuse angle between the central axis of said anvil block and a plane through the axis of rotation of said wrench body and said point, with said wrench body rotatable between a position with said anvil block abutting said shoulder and a position with said anvil block remote from said shoulder for permitting a substantial angular displacement of said shoulder relative to said head portion upon an impact delivered by said anvil block and for re-establishing abutting contact between said shoulder and said anvil block subsequently to said impact by manual turning of said hammer.

3,273,429
RATCHET WRENCH
Stephen De Orlow, Jackson, Mich., assignor to Ryerson & Haynes, Inc., Jackson, Mich., a corporation of Michigan
Filed Sept. 30, 1964, Ser. No. 400,396
6 Claims. (Cl. 81—62)



5. A ratchet wrench primarily formed of stamped sheet components comprising, in combination:
(a) a body member of sheet material having first and second sides,
(b) a cylindrical flange defined on said body member from the material thereof projecting from said second side thereof defining a cylindrical bearing surface and an opening in said body member,
(c) a plate formed of sheet material affixed to said body member in spaced relation to said first side thereof,
(d) a noncircular, tubular socket member rotatably received within said opening and of a cross section having inner and outer surfaces corresponding to the configuration of the member with which the wrench is to be employed, an inner end defined on said socket member located intermediate said body member and said plate, said socket member outer surface adapted to rotatably engage said cylindrical bearing surface,
(e) a ratchet wheel having a bore and a circumference, teeth defined on said circumference, said bore corresponding in configuration to the exterior configuration of said socket member and permanently affixed upon the inner end thereof intermediate said body member and said plate, said wheel being of greater dimension than said opening,
(f) a circular opening defined in said plate coaxial with said body member opening,
(g) a cylindrical bearing surface defined on said socket member inner end rotatably received within said circular plate opening,
(h) a ratchet dog located between said body member and said plate adapted to engage said ratchet wheel,
(i) pivot means extending between said body member and said plate pivotally supporting said ratchet dog, and
(j) handle means affixed to said body member.

3,273,430
WRENCH SOCKETS, SOCKET DRIVES AND SIMILAR COUPLERS
Raymond G. Knudsen, James W. Price, and Gene E. Olson, Kenosha, Wis., assignors to Snap-On Tools Corporation, Kenosha, Wis., a corporation of Delaware
Filed Nov. 6, 1963, Ser. No. 321,955
5 Claims. (Cl. 81—121)

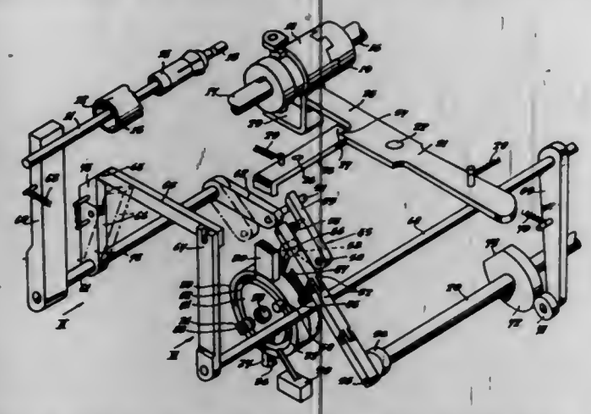


1. A wrench or the like having a peripherally closed socket defined by a plurality of equidistantly spaced peripherally and radially disposed protuberances presenting angularly related straight surfaces extending for the depth of engagement with complementally sized and peripherally disposed straight sided and sharp-cornered geometric fasteners or the like in alignment with the longitudinal axis of said wrench, and outwardly disposed curved concavities radially disposed to project oppositely to said first named straight surfaces and alternately therebetween to merge therewith for defining a continuous geometric fastener engaging member to impart turning moments to fasteners in registry therewith, said outwardly disposed curved concavities having a radius sufficiently greater than the sharp corners of the complemental geometric fasteners to avoid contact therewith.

3,273,431
AUTOMATIC LATHES AND LIKE MACHINE TOOLS
George Henry Luke, Bristol, England, assignor to Bristol Repetition Limited, Bristol, England, a company of Great Britain and Northern Ireland
Filed May 19, 1964, Ser. No. 368,466
Claims priority, application, Great Britain, May 20, 1963, 19,929/63
4 Claims. (Cl. 82—2.5)

1. An automatic machine tool of the kind in which a metal bar is fed through a hollow stock tube in order that repetition parts may be machined and cut off the bar successively, the bar being fed through the hollow stock tube, and comprising an element movable to disengage the working parts of the machine from the machine drive, a pivoted trip lever movable for actuation of said element, a rotary calibrated cylinder provided with a trip dog adapted to engage and operate said trip lever, a pawl and ratchet device for rotating the calibrated cylinder unidirectionally and step by step, said pawl element being reciprocable once for each operation cycle of the machine, each calibration unit on the cylinder indicating a single operation cycle of the machine

and the ratchet being arranged to move the cylinder through one calibration unit for each stepwise actuation by the pawl, spring means to rotate the cylinder contra to the driving direction effected by the pawl and ratchet device, stop means to retain the cylinder, whilst urged by said spring means, in a normal position with a zero calibration mark thereon in registration with a fixed indicator, the position to said trip dog being adjustable on said cylinder, a pivotally mounted feeler adapted to oscil-

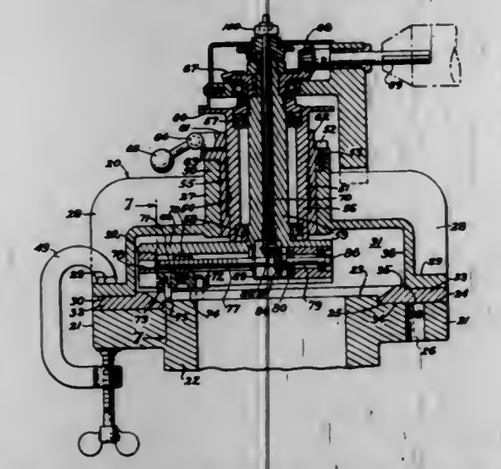


late across the mouth of the stock tube, spring means for moving the feeler in one angular direction of its oscillation, a pin connected to said feeler and mounted to hold the pawl out of engagement with the ratchet, a dog connected to the feeler, an arm mounted to reciprocate and for an end thereof to abut the said dog on the feeler when said arm is at or near the end of a movement to project said arm end, and means including a cam driven by the machine to effect reciprocation of said arm.

3,273,432
UNIVERSAL SELF-CENTERING FLANGE FACING DEVICE

John Hasund, Alameda, Calif., assignor to Thomas A. Short Company, Oakland, Calif., a corporation of California

Filed July 10, 1964, Ser. No. 381,837
3 Claims. (Cl. 82—4)

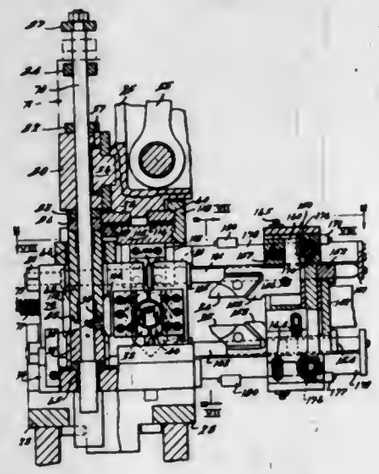


1. A cutting tool for facing an annular radial face comprising in combination:
- a tubular body portion;
- inner and outer independently rotatable concentric shafts housed therein and projecting from the ends thereof;
- a sleeve affixed to and supporting said outer shaft and adjustably fitting in said body portion to adjust the position of said shafts axially of said body portion;
- power applying means operatively connected to one end of said outer shaft;
- a cutter housing mounted on the other end of said outer shaft;
- a cutter tool assembly mounted in said housing for rotation therewith and for free radial movement relative thereto;
- gear means linking said tool assembly to said inner shaft for accomplishing radial translation of said assembly by relative rotation between said shafts;
- and a planetary type drive mechanism having a frame secured to said one end of said outer shaft, a ring gear rotatable with respect to said frame and keyed to said inner shaft, idler pinion gears in said frame engaging said ring gear, a center pinion gear engaging said idler pinion gears, and means for holding said center pinion gear against rotation, thereby slowing down the rotation of said inner shaft and translating said assembly.

3,273,433
TUBULAR STOCK CUTOFF METHOD AND APPARATUS

Alexander Borzym, 6841 Oakman Blvd., Dearborn, Mich.

Filed Dec. 1, 1964, Ser. No. 415,067
10 Claims. (Cl. 83—54)



10. The method of severing tubular stock which comprises advancing a pair of slotting blades simultaneously in parallel path across and in contact with the opposite sides of the wall of the stock in a common plane transverse to the stock, to form slots in opposite sides of the stock, moving said blades apart within said plane to a spacing exceeding the outside diameter of the stock and then retracting the blades along said paths, and thereafter severing the stock by means of a blade projected through one of the slots and across the stock and through the other slot.

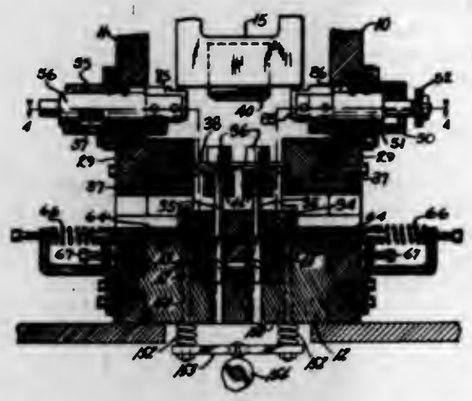
3,273,434
SHEARING MACHINE AND METHOD

Albert F. Hausman and Felix A. Chiplis, Indianapolis, Ind., assignors to Amsted Industries, Incorporated, Chicago, Ill., a corporation of New Jersey

Filed Nov. 24, 1964, Ser. No. 413,539
29 Claims. (Cl. 83—55)

1. In a shearing machine, having a stationary shearing element and a movable shearing element movable relative to the stationary element to perform a cutting operation by stressing in shear to the point of fracture a workpiece placed between them, a reciprocable ram movable over a predetermined path into and out of engagement with the movable shearing element, means constantly urging said ram toward engagement with the movable shearing element, said means comprising a cylinder and piston one of which is movable with the ram, a rotatable shaft, means including a cam carried by said shaft and operable in rotation thereof to move the ram to a retracted

position spaced from said movable shearing element and then to release it to permit fluid-pressure in said cylinder to force the ram toward engagement with said movable shearing element, means for maintaining fluid pressure in said cylinder sufficient to accelerate the ram to a velocity such that, upon striking the moving shearing element following its release, it will cause the movable shearing element to perform the shearing operation, means independent of said cam for limiting movement of the ram after it has struck the movable shearing element, and means operated in timed relation with said shaft for moving said movable shearing element to its retracted posi-



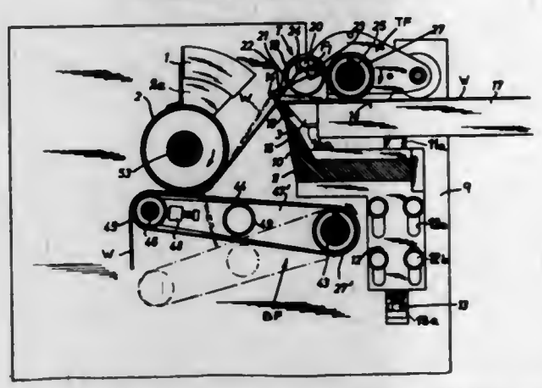
tion while the cam is moving the ram to its retracted position.

27. The method of producing an improved sheared face on a work-piece which is cut by stressing the same in shear to the point of fracture between a stationary shearing element and a movable shearing element confined to move in passing relation with the stationary shearing element, which comprises applying to the movable shearing element, in the direction of movement thereof, an accelerating force adapted to impart to the movable die element as it starts the shearing operation a velocity of at least 6 to 8 feet per second and more than sufficient kinetic energy to shear the material being acted on by the shearing elements.

3,273,435
APPARATUS FOR CROSS-CUTTING ELONGATED WEBS OF FABRIC

Walter Hübner, Kunseberk uber Bielefeld, Günter Myska, Bielefeld, and Horst Riemer, Berlin, Germany, assignors to Durkoppwerke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany

Filed Aug. 26, 1963, Ser. No. 307,761
Claims priority, application Germany, Aug. 31, 1962, D 39,738
14 Claims. (Cl. 83—210)

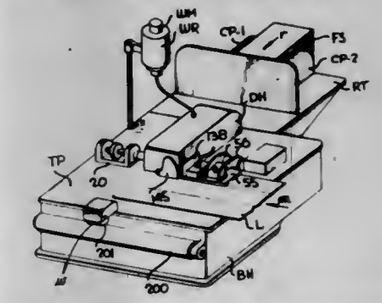


1. An apparatus for cross-cutting an elongated web of fabric, comprising guide means forming a generally horizontal track for said web; sensing means for detecting a transverse gap in the structure of said fabric, said sensing means including a row of upstanding feeler members extending across said track and adapted to enter said gap upon said web passing thereover; test means suspended above said track for contact with said web, said test means being normally maintainable by said web in an elevated position and being arranged to descend into an off-normal position upon a lowering of said web with penetration of said gap by said feeler members; feed means for advancing said web across said row; normally inoperative cutter means for severing said web adjacent said row; and mechanism responsive to a lowering of said test means into said off-normal position for arresting said feed means, actuating said cutter means and thereupon restarting said feed means.

3,273,436
SHEET FEEDING APPARATUS

Kurt Rudolf Schneider, Bainbridge, N.Y., assignor to Eureka Specialty Printing Company, Scranton, Pa., a corporation of Delaware

Filed Feb. 7, 1964, Ser. No. 343,488
29 Claims. (Cl. 83—241)

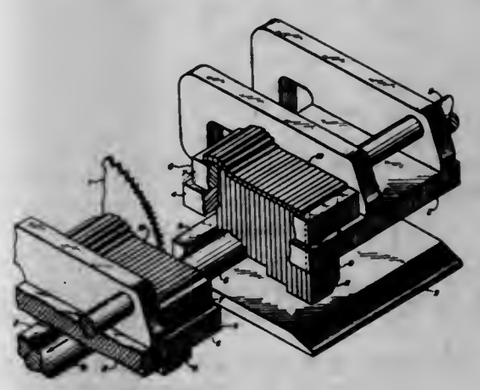


1. An apparatus for feeding sheets comprising a plate along which the sheet is to be fed, a guide structure having a surface for urging the sheet toward the plate, a member mounted on and movable along the guide structure for engaging and feeding the sheet toward an edge of the plate, said member being movable in the guide structure toward and from the plate and being urged toward the plate, and means carried by the guide structure for moving said member and advancing said sheet, said means including a first part engaged with said member and a second part carried by the plate permitting the said movement toward and from the plate.

3,273,437
SAW CLAMP ATTACHMENT

Earl H. Scott, Freemansburg, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware

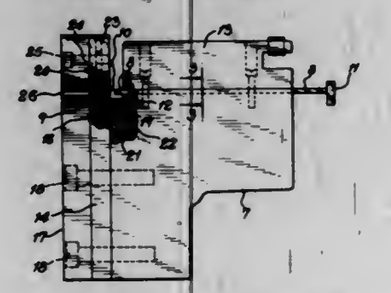
Filed Oct. 19, 1964, Ser. No. 404,872
1 Claim. (Cl. 83—444)



The combination comprising:
(a) a vertical rotary saw blade for sequentially cutting continuously horizontally advancing elongated hot metal workpieces,

(b) a clamp for said workpieces having upper and lower jaw members including flat horizontal clamping surfaces adjacent said blade,
(c) an open rectangular box-like holder mounted beside said upper jaw member, and
(d) a plurality of contiguous flat-sided T-blocks mounted in contacting side by side relationship and freely slidable vertically with respect to one another in said holder and having flat lower ends generally conforming to and engaging the upper and side surface of each workpiece as it rests on the lower jaw member while the workpiece is being cut, thereby holding the workpiece securely against lateral movement and obviating deformation of the workpiece during the cutting operation.

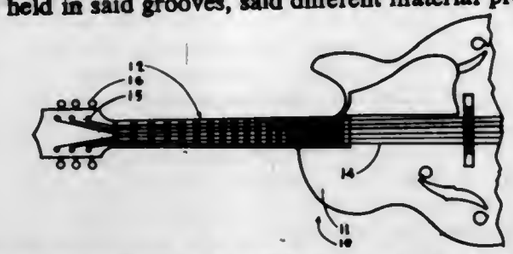
3,273,438
PUNCH HEAD WITH PUNCH-CUT REPLACEABLE DIES
Arthur F. Brook, Poughkeepsie, N.Y.
Filed Sept. 22, 1964, Ser. No. 398,363
1 Claim. (Cl. 83—685)



Punch head with punch-cut dies comprising,
a row of punches for punching a row of perforations in paper or other material,
companion dies for the respective punches,
said dies consisting each of a permanent die bed having a die cavity closely approximating the size and shape of the companion punch and freely receiving said punch and
a sheet of angularly bent thin die forming material suited to the punching of the material for which the punch head is designed,
said sheet of die forming material overlying said die bed and being penetrable by said punch, and
releasable means in the form of a clamp gripping the angularly bent portions of said sheets and fixedly confining said sheet of die forming material over said die cavity in the die bed,
said sheet having a final exact die forming perforation therein produced by the companion punch and forming an exact die fitted to said punch in line with the die cavity in the die bed and thereby adapted for the punching of accurately sized perforations in paper or other material and
whereby upon release of said confining means the punch-cut sheet of final die forming material may be removed and be replaced by a fresh sheet and be cut to accurate die forming shape by the companion punch members.

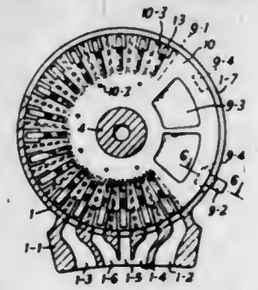
3,273,439
DEVICE WHICH ACCOMMODATES REMOVABLE FRETS ON ANY FRETTED STRINGED INSTRUMENT
Chester P. Keefe, 178 Cypress St., and John C. Navilliat, 69 Bowen St., Providence, R.I.
Filed Aug. 5, 1965, Ser. No. 477,570
4 Claims. (Cl. 84—314)

1. In a stringed instrument having an elongated fingerboard of one material with strings extending lengthwise thereof, said fingerboard having portions of a different material providing grooves extending laterally of the extent of said strings and frets removably mounted and frictionally held in said grooves, said different material providing



said grooves being of a character to provide greater frictional wearing qualities than the material of the fingerboard to better withstand the wear of insertion and removal of said frets.

3,273,440
ROUND-SHAPED HARMONICA
Shin-Hua Tr'ui, 734 King's Road, Hong Kong
Substituted for abandoned application Ser. No. 113,590, May 5, 1961. This application Mar. 18, 1963, Ser. No. 266,091
20 Claims. (Cl. 84—377)



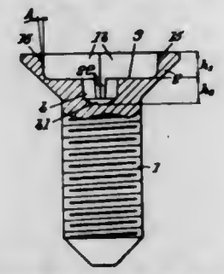
1. A harmonica comprising a disk-shaped reed assembly having a series of reed chambers therein each having an opening at the circumferential edge of the assembly, a casing enclosing said reed assembly, hub means secured within said casing, the reed assembly being rotatably mounted on said hub means, a mouthpiece extending from said casing, said mouthpiece having a number of internal wind passages therein positioned to cooperate with a corresponding number of said openings, and means coupled to the reed assembly to rotate the reed assembly about said hub means to bring a selected group of said openings into cooperating alignment with the wind-passages of said mouthpiece.

3,273,441
NUT CONSTRUCTION
Donald L. Biesecker, Arlington Heights, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 19, 1962, Ser. No. 167,348
4 Claims. (Cl. 85—35)



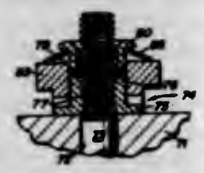
1. A molded plastic article for sealing attachment to a threaded fastener and a work panel comprising an elongated member having a closed end and a centrally located chamber of predetermined diameter opening to the opposite end, said elongated member having outer side walls formed with wrench engageable flats, said opposite end being characterized as having an axially extending lip of relatively thin deformable cross section and of a diameter greater than said predetermined diameter, said opposite end further having a diametrical surface with a plurality of curvilinear axially extending vanes of relatively thin deformable cross section extending in the diametrical plane from the vicinity of said recess to the vicinity of the periphery of said diametrical surface, said vanes upon rotation of article about its axis being of a curvature adapted to move fluid material in a generally radial direction.

3,273,442
SCREWS
Pierre Launay, 87 Ave. Niel, Paris, France
Original application Mar. 27, 1962, Ser. No. 182,790, now Patent No. 3,175,593, dated Mar. 30, 1965. Divided and this application Nov. 25, 1964, Ser. No. 413,836
Claims priority, application France, Mar. 31, 1961, 857,520, Patent 1,301,266
2 Claims. (Cl. 85—45)



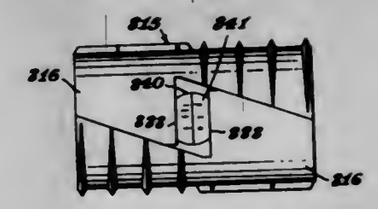
1. A screw having an axis of symmetry and comprising a shank and a head, said head being provided with a slot, said slot being of substantially diamond-shaped cross section in planes perpendicular to said axis, said slot having inclined end walls converging toward the end of said shank, said slot having opposed side walls tapering at an acute angle toward its bottom, the bottom of said slot being flat and transverse to said screw axis, said slot being provided at its bottom with a centrally located frusto-conical axial hole the apex angle of which is at least approximately equal to the acute angle of taper between the opposed side walls, each of said side walls comprising two flat surfaces located in respective planes intersecting each other along a straight line having the same inclination with respect to said axis as the generatrices of the surface of said frusto-conical axial hole, said two planes intersecting said frusto-conical surface.

3,273,443
TORQUE LIMITING NUT
Norman N. Rubin, 10012 Portland Place, Silver Spring, Md.
Filed Feb. 28, 1964, Ser. No. 348,917
1 Claim. (Cl. 85—61)



A separable fastener, comprising:
a threaded bolt;
a nut having a base portion and a substantially cylindrical body portion, said base portion being formed with integral ratchet teeth, of the type having one face radial and the other face inclined, said teeth being adapted to be driven, said body portion having a bore increased in diameter adjacent its outer end and being threaded for at least half of the length of the bore adjacent the inner end;
a rotary member journaled on the cylindrical body portion for free rotation with relation to said nut, said rotary member being formed with driving ratchet teeth of the type substantially identical with the base portion teeth, said ratchet teeth of the rotary member being adapted to engage the ratchet teeth of the base portion of the nut to provide a drive, in a clockwise direction, capable of slipping and a positive drive in a counter clockwise direction;
a resilient conical washer having its outer periphery engaging said rotary member to maintain said rotary member driving teeth in driving engagement with the ratchet teeth of the base portion of the nut;
said rotary member and said washer being retained on the cylindrical body portion by a radially outwardly extending collar at the outer end of said cylindrical body portion;
whereby upon resistance to turning of said nut exceeding a predetermined amount, said resilient washer will release said driving teeth from operable engagement with the teeth of the base portion of the nut.

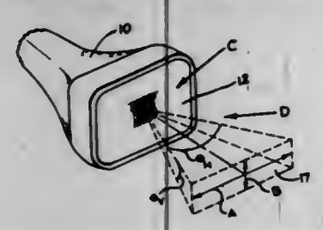
3,273,444
EXPANDABLE DOWEL
Irving S. Houvener and Albert J. Pulley, both of Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 349,914
1 Claim. (Cl. 85—79)



A radially expandable longitudinally contractable dowel having a generally cylindrical configuration, the dowel comprising:
two solid body portions, each of said body portions comprising
a first wedge and
a second wedge, the toe of the first wedge being rigidly affixed to the head of the second wedge, the first wedge and the second wedge having generally
planar spaced apart inclined wedging surfaces lying in generally parallel planes on one side of the body portion, the remaining side of the body portion having a generally cylindrical surface,
at least one circumferentially disposed cavity engaging rib extending from a generally cylindrical surface of the first wedge of the body portion,
a longitudinal rib member is disposed on a generally cylindrical side of the second wedge,
said head portion on each said body portion being a substantially centrally located flat planar surface transversely disposed relative to the longitudinal axis of the dowel and facing toward said inclined wedging surface of said second wedge of its respective body portion, said inclined wedging surface of each of said first wedges defining with said cylindrical surface thereof a radial dimension which decreases from a maximum adjacent said head portion to a minimum at the outer end of said first wedge, said inclined surface of each of said second wedges defining with said cylindrical surface thereof a radial dimension which increases from a minimum adjacent said head portion to a maximum at the outer end of said second wedge,
each of the body portions being arranged with the wedging surface of the first wedge adjacent the wedging surface of the second wedge of the opposite body portion, the heads of the second wedge portions being adjacent and facing each other, the toe of the second wedge of each of the body portions being disposed adjacent the head of the first wedge of the other

body portion, a key comprising a head, a wedging portion having a wedging surface remotely disposed from the head, a spacer having at least one flat surface disposed between the head and the wedging portion, an edge of the flat surface of the spacer being contiguous with an edge of the wedging surface of the spacer and being of constant width in a direction normal to the flat surface, the wedging surface adapted to engage the head of the second wedge of each body portion and extending generally transversely from the dowel movement of the key, thereby forcing the first wedges of each of the body portions closer together and increasing the diameter of the dowel in at least one direction.

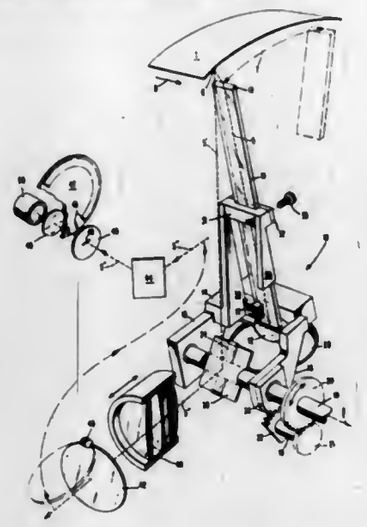
3,273,445
FIBER OPTICAL FACE PLATES HAVING DIFFERENT NUMERICAL APERTURE VALUES IN TWO DIFFERENT DIRECTIONS
Walter P. Siegmund, Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Oct. 22, 1962, Ser. No. 232,192
17 Claims. (Cl. 88—1)



1. An elongated light-transmitting optical fiber comprising a core formed of a transparent material of a predetermined refractive index and of predetermined geometric cross-sectional shape having a plurality of pairs of elongated side wall surface portions formed thereon, and with the surface portions of each pair being disposed in opposed facing relation to each other, a thin elongated layer of cladding material formed upon each surface portion, and all of said elongated layers being arranged to surround and enclose said core, the layers of cladding material upon each pair of opposed surface portions having a lower refractive index than that of said core, and the opposed layers on one of said pairs of surface portions being of a lower refractive index than the refractive index of the opposed layers on another of said pairs.

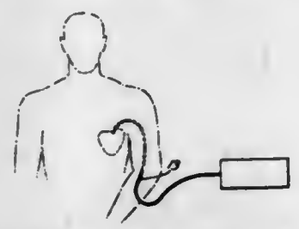
3,273,446
SCANNING DEVICE HAVING A CONSTANT LENGTH OPTICAL PATH
William E. Goetz and Fred L. Hajny, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 21, 1962, Ser. No. 246,384
3 Claims. (Cl. 88—1)

1. In a scanning device the combination comprising:
support means for supporting a light reflective object to be scanned in a position such that all points on a surface of said object are equidistant from a line having a position fixed in relation to said support means;
a light source;
frame means for holding said light source, said frame means being pivotably mounted about an axis coincident with said line;
light directing means attached to said frame means and adapted to direct a beam of light from said light source to a point of incidence on said surface;
drive means for moving said frame means about said axis to move said point of incidence in a predetermined path perpendicular to said axis across said surface, effecting a scan of said surface whereby portions thereof are successively illuminated in accordance with the path of said scan;
light receiving and sensing means, including a fixed light receiving aperture, adapted to receive and sense light reflected from said surface; and



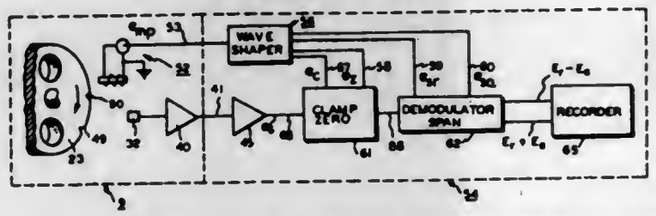
reflecting means pivotally moved by said drive means about said axis at one-half the angular velocity of said point of incidence whereby light reflected from said successively illuminated portions of said surface is directed to said fixed light receiving aperture along a constant distance path.

3,273,447
DETECTION AND MEASUREMENT DEVICE HAVING A SMALL FLEXIBLE FIBER TRANSMISSION LINE
Wallace E. Frank, Westtown, Pa., assignor to The Franklin Institute, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1963, Ser. No. 304,484
5 Claims. (Cl. 88—1)



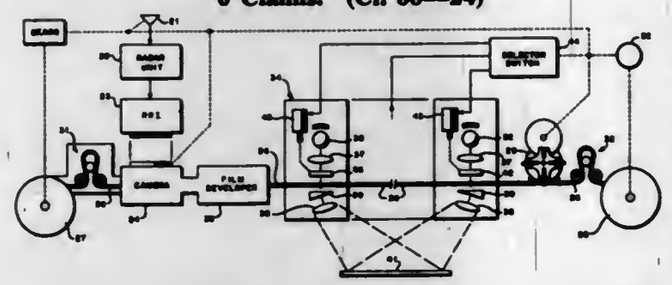
1. A detection device for measurement of pressure and pressure related effects comprising in combination a remote light source, a flexible light transmissive fiber transmission line of considerable length with respect to thickness, which thickness is sufficiently small to permit the feeding of the fiber transmission line through a narrow restricted and tortuous course, said transmission line serving as its own feed means through such tortuous course, said transmission line consisting of a light transmitting fiber path having high internal reflectance properties such that the same fiber serves for conveying light from the remote light source at one end of the transmission line to the other end and for transmitting reflected light from said other end in the other direction back to the end at the remote light source, a light reflecting transducer element sufficiently small to pass through a human blood vessel integral with the transmission line end of generally bulbous form terminating the end of the transmission line remote from the light source and providing a light reflecting surface positioned axially in the direction of light transmission along the length of the transmission line, such that a change in the shape of the bulbous element in response to changes in pressure will distort the reflecting surface and thereby cause different amounts of light to be reflected back through the transmission line in accordance with a limited predetermined change of shape of the bulbous member, and light detection means positioned at the same remote end of the transmission line as the light source in position to receive light reflected by the transducer element back to the detection means.

3,273,448
ANALYTICAL LOGARITHMIC RATIO DETERMINATION APPARATUS
Neal B. Kelly, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 6, 1962, Ser. No. 242,740
2 Claims. (Cl. 88—14)



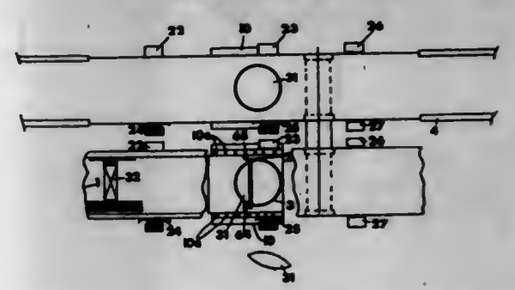
1. Apparatus for accumulating and processing physical data required for a comparison in the form of an approximation of the log R/A as a function of the first term, $(R-A)/(R+A)$, of the series expansion representative of said log R/A comprising, in combination in series electrical circuit in the order recited, means generating voltage pulses in alternation which correspond to the quantity A and the quantity R, respectively, means storing individual separate capacitive electrical charges of magnitude which are functions of said voltage pulses, means generating a D.-C. voltage signal E_a which is a function of the capacitive charge corresponding to said quantity A, means generating a D.-C. voltage signal E_r which is a function of the capacitive charge corresponding to said quantity R, means computing as one term the difference (E_r-E_a) and as another term the sum (E_r+E_a), means computing the ratio $(E_r-E_a)/(E_r+E_a)$ as an approximation of said log R/A, and means indicating said ratio.

3,273,449
DISPLAY APPARATUS
Marvin J. Foral, Doylestown, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 22, 1963, Ser. No. 282,520
6 Claims. (Cl. 88—24)



5. A photographic picture correlator, comprising:
a camera having means for taking a plurality of photographs in sequence at a relatively slow rate;
a rapid film developer having means for receiving and developing the exposed photographs from said camera;
a projector having a plurality of optical systems directed toward a common area, a light source in each of said optical systems, means for sequentially and cyclically transmitting light from each of said light sources through said optical systems, and means in each of said optical systems receiving one of a series of the developed photographs and cyclically projecting at a relatively fast succession rate onto said common area the first of a sequence of developed photographs and then each succeeding developed photograph as light from each of said light sources is cyclically transmitted.

3,273,450
DATA PROCESSING APPARATUS
John Helmut Ede, Feltham, Middlesex, Albert S. Pratt, Churchdown, and Brian Constantine Sewell, Teddington, Middlesex, England, assignors, by mesne assignments, to The Rank Organisation Ltd., London, England, a British company
Filed Nov. 15, 1963, Ser. No. 324,086
Claims priority, application Great Britain, Nov. 20, 1962, 43,888/62
4 Claims. (Cl. 88—24)

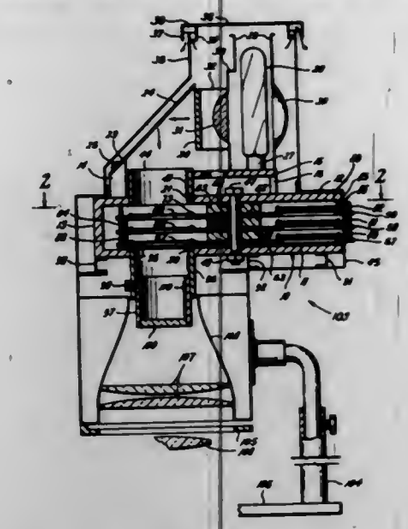


1. Apparatus for gaining access by optical means to predetermined data stored on a film strip through which light is transmitted, said film strip also including coarse and fine position distinguishing marks correlated to the location on the data stored on said film strip, which comprises a guide track for supporting said film strip for movement longitudinally of itself past a film gate, an aperture plate located at said film gate, said aperture plate including an elongated projection slit extending transverse to the direction of movement of said film strip and across which slit the stored data is passed for printing, said aperture plate being also provided with coarse and fine apertures laterally offset from said projection slit and adapted to register with the coarse and fine position distinguishing marks on said film strip, three sets of friction drive means located in longitudinally spaced relation along said guide track for transporting said film strip past said film gate, each said drive means comprising a drive roller located at one side of said film strip, a pinch roller located at the opposite side of said film strip and means for shifting said pinch roller from a retracted position to an advanced position wherein the film strip is pinched between the two rollers and thereby frictionally driven, a first one of said friction drive means being operated at a fast speed and controlled by the coarse position distinguishing marks on said film strip, a second one of said friction drive means being operated at a slower speed and being controlled by the fine position distinguishing marks on said film strip, and the third friction drive means being thereafter operated at an even slower speed for the purpose of scanning the stored data on said film strip.

3,273,451
PHOTOGRAPHIC APPARATUS
Frederick E. Wilson, 10103 Willowgrove, Houston, Tex.
Filed Dec. 17, 1963, Ser. No. 331,201
8 Claims. (Cl. 88—24)

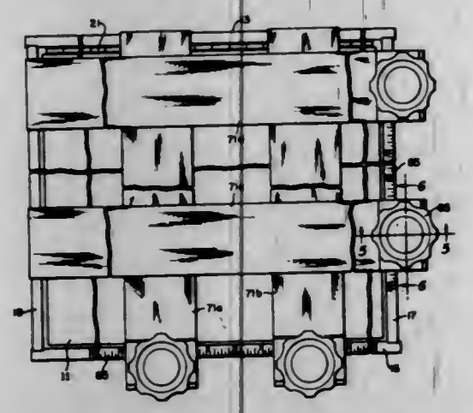
1. Photographic enlarger, comprising a light source, tubular means disposed to receive light from said light source at one end thereof, diffuser means disposed across said one end of said tubular means for scattering said light into said tubular means, opalescent means disposed across

the other end of said tubular means, said tubular means forming a light path from said diffuser means to said opalescent means, means for supporting a photographic



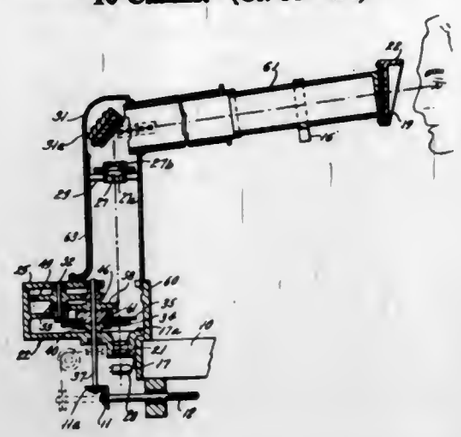
negative in the path of light issuing from said opalescent means, and lens means for directing an image of the illuminated photographic negative onto photographic paper.

3,273,452
ADJUSTING MECHANISM FOR PHOTOGRAPHIC APPARATUS
Robert P. Saunders, 113 Creekmeadow Lane, Greece, N.Y.
Filed Aug. 31, 1964, Ser. No. 393,164
7 Claims. (Cl. 88—24)



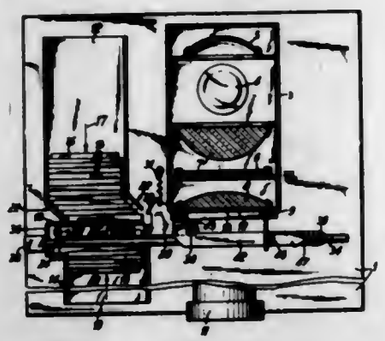
1. A photographic easel comprising a base board, an open rectangular frame hinged to said base board at one edge for swinging movement upwardly away from said board and downwardly toward said board, said rectangular frame including at least two rail portions extending along two adjacent sides of the rectangle, at least one adjusting carriage movably mounted for travel lengthwise along each of said two rail portions, and a masking blade fixed to each of said adjusting carriages for movement bodily therewith, characterized by the fact that each of said adjusting carriages includes a portion slidably embracing the rail on which it is mounted, a rotary member having two tapered flanges for engaging said rail at two spaced points, spring means tending to move said rotary member toward said rail to hold said tapered flanges in tight wedging contact with said rail, and a manually accessible manipulating knob operatively connected to said rotary member to turn said rotary member to drive said carriage along the rail on which it is mounted, thereby to adjust the position of the masking blade mounted on the carriage.

3,273,453
VARIABLE BACK GAUGE TRAVEL ADJUSTMENT MEANS FOR GUILLOTINE TYPE CUTTING MACHINE
Carl Thumim, Chicago, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 304,717
10 Claims. (Cl. 88—24)



1. In a paper cutting machine, a back gauge indicator comprising an optical projecting means and a plurality of dials coacting to produce an image of said dials disposed generally at operator eye level, a lead screw and a gear means connected thereto to rotate said dials proportionately to rotation of said lead screw.

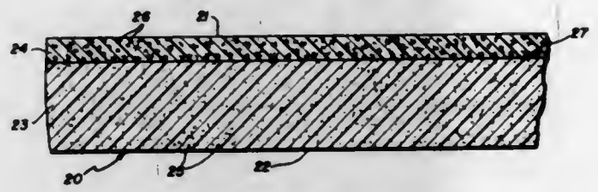
3,273,454
SLIDE PROJECTOR
Gerhard Bast, Braunschweig-Lehndorf, Germany, assignor to Voigtlander A.G., Braunschweig, Germany
Filed Feb. 1, 1965, Ser. No. 429,277
Claims priority, application Germany, Feb. 1, 1964, V 25,298
12 Claims. (Cl. 88—28)



1. In a slide projector, supply guide means for guiding a series of slides along a predetermined path, said supply guide means having a discharge end where an end slide of said series of slides is situated in a position to be removed from said slide guide means and to be displaced therefrom to a projecting position, said supply guide means providing for said path in the region of said discharge end of said supply guide means a direction which is inclined with respect to a portion of said path adjacent but spaced from said discharge end of said supply guide means, so that at least the end slide of said series of slides is displaced with respect to the slide next to said end slide to expose a surface of said slide next to said end slide, thickness-sensing means located at said discharge end of said slide guide means for engaging said surface of said slide next to said end slide so as to sense the thickness of said end slide, said supply guide means having at said discharge end thereof a discharge slot through which said end slide is displaced when moving

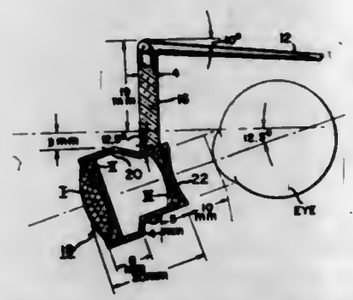
from said supply guide means to said projecting position, and adjusting means automatically actuated by said thickness-sensing means for adjusting the width of said slot to a size corresponding to the thickness of said end slide, whereby if the slide next to said end slide, by clinging to the latter, should tend to be displaced from said supply guide means with said end slide, said slot because it is adjusted to a thickness corresponding to that of said end slide will prevent said slide next to said end slide from being displaced out of said supply guide means with said end slide.

3,273,455
PROJECTION SCREEN
Karl Kaufmann and Augustin Sievers, Bad Lippspringe, Germany, assignors to Mechanische Weberei G.m.b.H., Bad Lippspringe, Germany, a corporation of Germany
Filed May 15, 1964, Ser. No. 367,635
Claims priority, application Germany, May 18, 1963, M 56,883
4 Claims. (Cl. 88—28.9)



1. A projection screen, comprising
(a) a plastic sheet having front and rear surfaces,
(b) coloring particles embedded in the sheet to form a first layer adjacent the rear surface, the plastic sheet being clear in the second layer with the exception of the crystals and the particles embedded in the first layer being present in sufficient quantity to render the first layer opaque, and
(c) reflective crystals, the said crystals consisting of large particles of material with a pre-determined index of refraction embedded in the sheet to form a second layer adjacent the front surface.

3,273,456
BIFOCAL LOUPES AND TELEMICROSCOPIC LENSES THEREFOR
William Feinbloom, 105 E. 35th St., New York, N.Y.
Filed Dec. 7, 1962, Ser. No. 243,048
6 Claims. (Cl. 88—57)

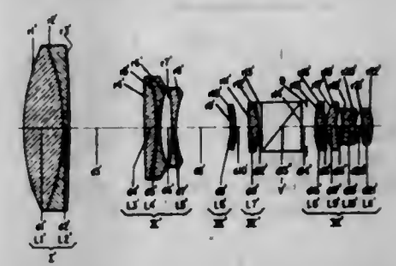


5. A telemicroscopic lens comprising an objective composed of a double convex crown having a thickness d_1 cemented to a concave flint having a minimum thickness d_2 and spaced from said objective by a fixed airspace distance d_3, a double concave eyepiece having a minimum thickness d_4, said double convex crown having an outer radius R_1 and an inner radius R_2, said concave flint having an inner radius R_3 and an outer radius R_4, said eyepiece having radii R_5 and R_6, the indices of refraction and the dispersive values of the double convex crown, the concave flint and the eyepiece being respectively n_1, ν_1, n_2, ν_2, n_3, ν_3, said radii, indices, dispersive values, thicknesses and airspace distance being substantially as set forth as follows:

n_1	1.620
ν_1	60.3
R_1	+19.0
R_2	−36.0
d_1	7.8
n_2	1.649
ν_2	33.8
R_3	−36.0
d_2	0.8
n_3	1.605
ν_3	43.6
d_3	11.3
d_4	0.8

the value of R_4 being chosen for a required close working distance, while the values of R_5 and R_6 are chosen to reduce the optical aberrations of spherical, coma and astigmatism of oblique bundles and so obtain the best possible optical image.

3,273,457
OBJECTIVE SYSTEM COMPRISING A PRINCIPAL OBJECTIVE AND A FOUR-COMPONENT ATTACHMENT
Karl Macher, Bad Kreuznach, Rudolf Solisch, Gottingen, and Walter Wöltche, Bad Kreuznach, Germany, assignors to Josef Schneider & Co., Optische Werke, Bad Kreuznach, Rhineland, Germany
Filed May 12, 1964, Ser. No. 366,878
Claims priority, application Germany, May 14, 1963, Sch 33,278
11 Claims. (Cl. 88—57)

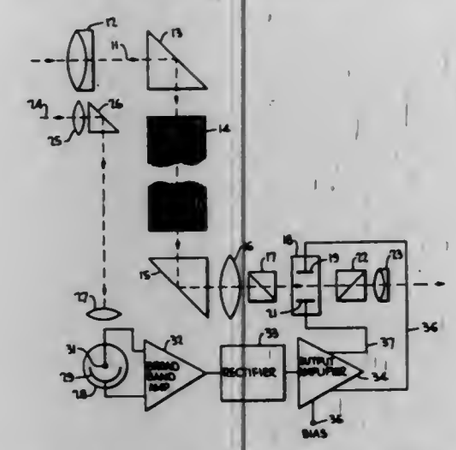


1. An objective system comprising a principal objective and an attachment forwardly of said principal objective, said attachment consisting of four air-spaced components including an at most limitedly adjustable positive first component on the object side of the system, a negative second component following said first component, a negative third component following said second component, and a fixed positive fourth component following said third component and facing said principal objective; said negative second and third components being movable, relatively to each other and to said first and fourth components, into a first position in which the system has a relatively small focal length and a second position in which the system has a relatively large focal length; said second component having an individual focal length whose absolute value is less than that of the individual focal lengths of said first, third and fourth components and less than twice that of the focal length of said principal objective, said first component being a doublet with a convex forward face and a negatively refracting forwardly concave cemented surface having a radius of curvature whose absolute magnitude is less than 1.5 times that of the radius of said forward face, said second component including a doublet with a concave rear face and a positively refracting forwardly concave cemented surface having a radius of curvature whose absolute magnitude is less than 2.5 times that of the radius of said rear face, said principal objective consisting of four air-spaced singlets including two image-side lenses of opposite re-

fractivity separated by an air space which is less than half the axial thickness of the negative one of said lenses; the separations *d*3, *d*6 and *d*8 each having a first value corresponding to said first position and a second value corresponding to said second position:

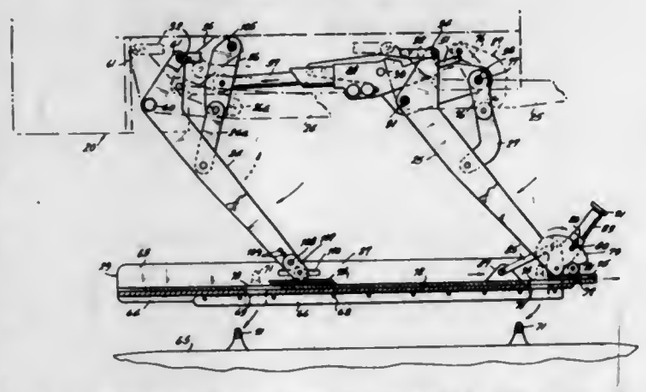
Lens	Radii	Thicknesses and Separations	n_d	ν
L1	$r1=+275.13$	$d1=58.75$	1.61772	49.78
L2	$r2=-355.60$	$d2=8.75$	1.76180	26.98
	$r3=-3212.50$	$d3=\begin{cases}6.15\text{ (first position)}\\214.52\text{ (second position)}\end{cases}$	Air space	
L3	$r4=-1821.25$	$d4=22.50$	1.80518	25.46
L4	$r5=-217.00$	$d5=7.50$	1.62041	60.29
	$r6=+102.06$	$d6=\begin{cases}180.15\text{ (first position)}\\12.90\text{ (second position)}\end{cases}$	Air space	
L5	$r7=-142.56$	$d7=6.25$	1.62004	36.34
	$r8=-3618.75$	$d8=\begin{cases}68.14\text{ (first position)}\\27.02\text{ (second position}\end{cases}$	Air space	
L6	$r9=+275.63$	$d9=12.50$	1.52015	63.59
	$r10=-220.31$	$d10+d11+d12=73.76$		
L7	$r13=+124.00$	$d13=13.75$	1.67790	55.52
	$r14=-473.63$	$d14=0.25$	Air space	
L8	$r15=+56.31$	$d15=14.88$	1.69680	55.61
	$r16=+85.50$	$d16=7.50$	Air space	
L9	$r17=-177.50$	$d17=19.69$	1.78470	26.10
	$r18=+46.84$	$d18=8.13$	Air space	
L10	$r19=+93.00$	$d19=14.38$	1.74400	44.90
	$r20=-71.94$			

3,273,458
OPTICAL DELAY SYSTEM FOR PROVIDING EYE PROTECTION AGAINST INTENSE LIGHT
Hans W. Kohler, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 28, 1964, Ser. No. 400,304
9 Claims. (Cl. 88—61)



1. In combination with an optical viewing device having an objective lens and an eyepiece lens, an electro-optical system for protecting an observer against harmful and blinding effects of intense light that may be produced by laser beams which impinge upon the optical viewing device or by atomic or nuclear explosions comprising:
(a) an optical delay means for receiving light from said objective lens and for providing a short time delay in the transmission therethrough of light so received,
(b) an inertia-free optical shutter between said optical delay means and said eyepiece lens, said inertia-free optical shutter being normally open permitting free transmission of light therethrough from said optical delay means to said eyepiece lens, and
(c) means connected to said inertia-free optical shutter for detecting the intensity of the light impinging on said objective lens and causing said inertia-free optical shutter to close when the light intensity exceeds a predetermined maximum.

3,273,459
LAUNCHER FOR STORES
Arthur R. Lardin, Monmouth Mobile Home Park, U.S. Highway 1, Monmouth Junction, N.J.
Filed Aug. 31, 1964, Ser. No. 393,209
11 Claims. (Cl. 89—1.5)



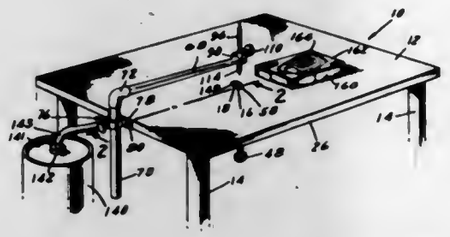
1. A launcher for airborne stores and the like comprising a hollow housing, an integrated launching linkage swingably connected at one end to the housing, said linkage comprising spaced front launching arms, spaced rear launching arms, a front toggle joint swingably connected at one end to the housing and at its other end to the front launching arms, a rear toggle joint pivotally connected at one end to the housing and at its other end to the rear launching arms, and an elongated missile carriage member swingably secured to the outer free ends of each of the launching arms, a gas expansion motor carried by the housing and drivably coupled to at least one of the toggle joints whereby power is applied to the launching arms through the intermediate linkage of the toggle to drive the carriage downward and away from the housing and thereafter retract the said carriage in a continuous motion, and means carried by the carriage and at least one of the launching arms to release a store at substantially the end of the downward motion of the carriage.

3,273,460
FIREARM WITH GAS OPERATED BREECH BLOCK UNLOCKING MEANS
James D. Mason, 5738 Ferber St., San Diego, Calif. 92122
Filed June 14, 1965, Ser. No. 463,827
3 Claims. (Cl. 89—185)



1. A firearm comprising in combination:
(A) means forming:
(1) a frame,
(2) a gun barrel supported by the frame, said gun barrel having:
(a) a muzzle end,
(b) a breech end,
(c) an orifice between the muzzle and breech ends,
(d) a breech block locking element at the breech;
(B) means forming a chamber surrounding the gun barrel and in communication with the orifice in the barrel, said second mentioned means including:
(1) a movable part slidably carried by the first mentioned means, said movable part being movable rearwardly by expansion of gas in said chamber;
(C) a breech block slidably and turnably carried by the movable part, said breech block having:
(1) a locking element, which upon turning of the breech block, cooperates with the first mentioned locking element for locking the breech block against the breech;
(D) means actuated by said rearward movement of the movable part upon expansion of the gas in the chamber for first turning the breech block to unlock the locking element on the breech block from the locking element on the barrel and for thereafter shifting the breech block rearwardly;
(E) a spring normally urging said movable part forwardly and subsequently to the shifting of the breech block rearwardly, co-operating with the last mentioned means for shifting the breech block forwardly and for thereafter turning the breech block to lock the locking element on the breech block with the locking element on the barrel;
(F) and a shoulder on the barrel for limiting forward movement of said movable part by the spring.

3,273,461
APPARATUS AND METHOD FOR MAKING THREE-DIMENSIONAL CONTOURED ARTICLES
David Livingston McCallum, P.O. Box 151, 9258 Aero Drive, Pico Rivera, Calif. 90660
Continuation of abandoned application Ser. No. 170,631, Feb. 2, 1962. This application Jan. 14, 1965, Ser. No. 426,480
23 Claims. (Cl. 90—13.1)



1. In apparatus for making three-dimensional profiled articles, comprising:
(A) workpiece support means for operably supporting a workpiece to be profiled,
(a) said support having an opening therethrough normal to the plane of said support;
(B) a rotary cutting element extending through said opening;
(C) power means for rotating said cutter element;
(D) means for effecting relative movement between said cutter element and support means,
(a) whereby said cutter element may be adjustably moved through said opening to various elevations relative to the top surface of said support means;
(E) a scriber support extending in parallel spaced relation to the support means;
(F) a scriber in axial alignment with said cutter element,
(a) and spaced axially therefrom,
(b) said scriber including a wick for ink,
(c) and a tubular reservoir for supplying ink to said wick;
(G) means for axially moving said scriber toward and away from said cutter element;
(H) suction means for removing cuttings,
(a) said suction means including an inlet conduit having an inlet opening adjacent the cutter element;
(I) a workpiece slidably supported on said support therefor,
(a) said workpiece having its top and bottom sides parallel with the bottom side slidable on said workpiece support means;
(J) and a pattern attached to the top surface of said workpiece.

3,273,462
360-DEGREE COPYING METHOD AND APPARATUS
Alfred H. Cheringou and Jean L. G. Heugas, Basses-Pyrenees, France, assignors to Turbomeca, Bordes, Basses-Pyrenees, France
Filed Oct. 21, 1964, Ser. No. 405,511
Claims priority, application France, Oct. 29, 1963, 952,084, Patent 1,384,664
25 Claims. (Cl. 90—13.5)

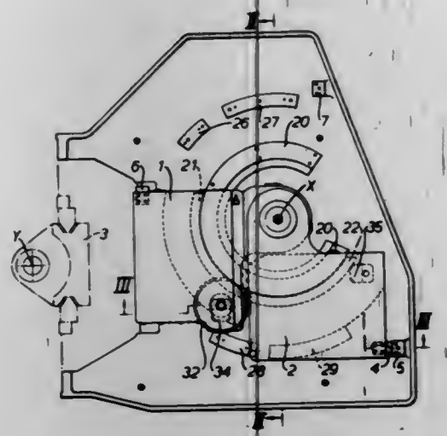


1. A 360-degree copying method involving the use of a single follower in contacting engagement with a pattern to be reproduced with rotary cutting tools machining by their lateral surface and the diameters of which may differ from that of said follower within limits of plus or minus approximately two millimeters, said method comprising displacing the center of the follower relative to its theoretical position whereat the diameter of said follower is equal to that of the cutting tool, in a direction perpendicular to the tangent to the profile of the pattern at the corresponding theoretical copying point, toward or away from said point according to whether the tool is larger or smaller, respectively, than said follower, and limiting said displacement to an amount equal to half the difference between the actual diameters of said follower and of said cutting tool, the follower center being displaced with respect to its theoretical position by tilting said follower about a fixed point.

3,273,463
WORK FIXTURE TABLES FOR BROACHING MACHINES
Victor James Bryant, 132 Westfield Ave., Watford, England
Filed May 7, 1964, Ser. No. 365,684
Claims priority, application Great Britain, May 7, 1963, 17,974/63
14 Claims. (Cl. 90—89)

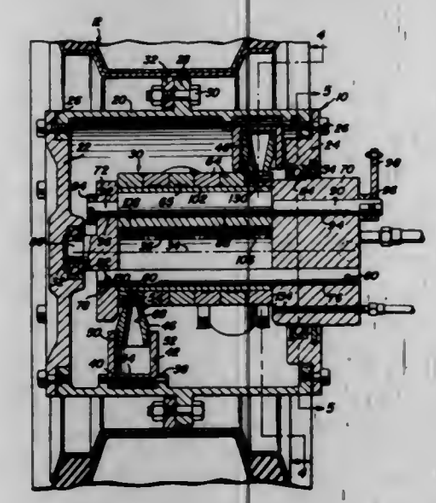
1. A broaching machine comprising a single tool slide and a pair of movable work tables each independently capable of movement between a respective loading posi-

tion and a common working position whereby tools on the slide can act on the work carried by each work table in



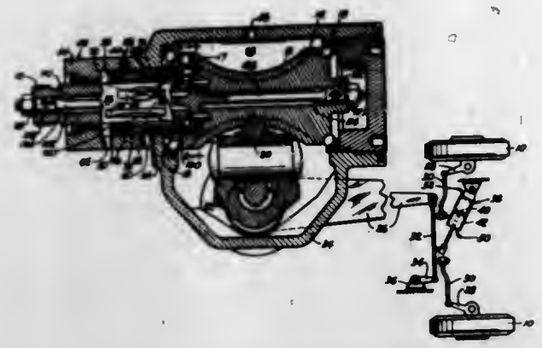
turn while the opposite work table is being loaded and unloaded as it remains in its loading position during the cutting and return stroke of the slide.

3,273,464
VARIABLE VOLUME ROTARY FLUID MOTOR AND PUMP
Ross D. Thurber, E. 13415 5th Ave., Spokane, Wash.
Filed Apr. 16, 1964, Ser. No. 360,191
12 Claims. (Cl. 91—284)



1. A rotary motor comprising a relatively stationary shaft assembly and a motor housing journaled thereon for rotation about a horizontal axis, a plurality of cylinders mounted upon the interior of said housing and rotatable therewith and directed inwardly towards said shaft assembly, a plurality of pistons each reciprocable in one of said cylinders, said shaft assembly including a crankpin comprising a cylindrical sleeve, a plurality of connecting rings rotatably journaled upon said sleeve in side-by-side relation and each fixedly connected to one of said pistons, means for cyclically delivering pressure motive fluid to and discharging it from said cylinders, means adjusting said sleeve towards and from said horizontal axis to thereby vary the stroke of said pistons in said cylinders as said cylinders and pistons revolve respectively about said horizontal axis and said crankpin.

3,273,465
POWER STEERING MECHANISM
Robert T. Eddy, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Nov. 30, 1964, Ser. No. 414,566
8 Claims. (Cl. 91—375)

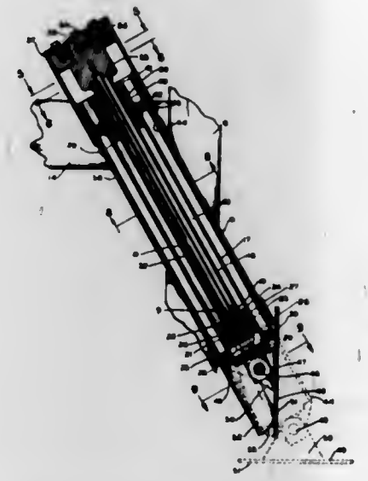


1. In a power steering mechanism including an input member, an output member, and a fluid motor operatively connected to said output member, the combination within a housing of a worm having groove means formed thereon, follower means operatively connected to said output member and engaging said groove means, a pair of relatively rotatable telescoped tubular elements through which fluid flow to and from said motor is controlled, one of which is a part of said input member and the other of which is connected to said worm, a torsion bar having two radially extending arms located between the ends thereof for separating said torsion bar into an upper torsionally preloaded section and a lower torsionally preloaded section, said torsion bar having the upper end thereof rigidly connected to said input member and the lower end thereof rigidly connected to said worm, a bifurcated end portion formed on said input member, said radially extending arms of said torsion bar being located between the bifurcations of said end portion, one of said bifurcations being continuously in contact with one of said arms and the other of said bifurcations being continuously in contact with the other of said arms for causing the lower section of said torsion bar to twist and increase the torsional reaction thereof when said input member is rotated in one direction, and a pair of oppositely disposed pins rigidly connected to said worm and located between said radially extending arms and said bifurcations, one of said pins being continuously in contact with one of said arms and the other of said pins being continuously in contact with the other of said arms for causing the upper section of said torsion bar to twist and increase the torsional reaction thereof when said input member is rotated in the opposite direction.

3,273,466
SINGLE BOOM DERRICK UNITS
Roy O. Balogh, Ladue, and Robert G. Bakula, Hanley Hills, Mo., assignors to McCabe-Powers Body Company, St. Louis, Mo., a corporation of Missouri
Original application Sept. 4, 1962, Ser. No. 221,225, now Patent No. 3,154,199, dated Oct. 27, 1964. Divided and this application July 16, 1964, Ser. No. 383,043
8 Claims. (Cl. 91—420)

1. An outrigger for use with trucks and other mobile platforms having portable derricks and the like, said outrigger comprising an outer housing of non-circular cross section having an open end, a double acting hydraulic cylinder disposed within said housing and being adapted for extensible movement through the open end thereof, a piston operatively disposed within said cylinder, a tubular cylindrical piston rod disposed within said cylinder, said piston rod being secured to said piston at its lower end and being rigidly secured to said housing at its upper end, a cylindrical pipe disposed concentrically within said piston rod

in the formation of first and second fluid conduits, a sleeve of non-circular cross section disposed about and encircling said hydraulic cylinder for its entire length and being rigidly secured thereto, said sleeve being in slidable engagement with the interior walls of said tubular housing for supporting said cylinder during the latter's extensible movement, base means pivotally mounted on the outer end of said cylinder, first closure means mounted on the upper end of said cylinder and being movable therewith, said first closure means having an aperture for accommodation of said piston rod, the space between said piston and said first closure means being enclosed by said cylinder forming a first fluid chamber, second closure means mounted at the lower end of said hydraulic cylinder, the



space between said second closure means and piston being enclosed by said hydraulic cylinder forming a second fluid chamber, said first and second fluid conduits being in communication with said first and second fluid chambers, respectively, first supply means for supplying fluid through said second conduit to said second chamber to cause extension of said hydraulic cylinder, second supply means for supplying fluid through said first conduit to said first chamber to cause retraction of said hydraulic cylinder, and valve means carried by said piston rod and operatively associated with said first and second supply means for regulating the amount of fluid to each of said first and second chambers, said valve means being adapted to hold said hydraulic cylinder in a rigid position if the pressure at either of said first or second supply means should fail.

3,273,467
HYDRAULIC SYSTEM
John D. Allen, South Euclid, Ohio, assignor to Fawick Corporation, a corporation of Michigan
Filed Jan. 26, 1965, Ser. No. 428,048
14 Claims. (Cl. 91—420)

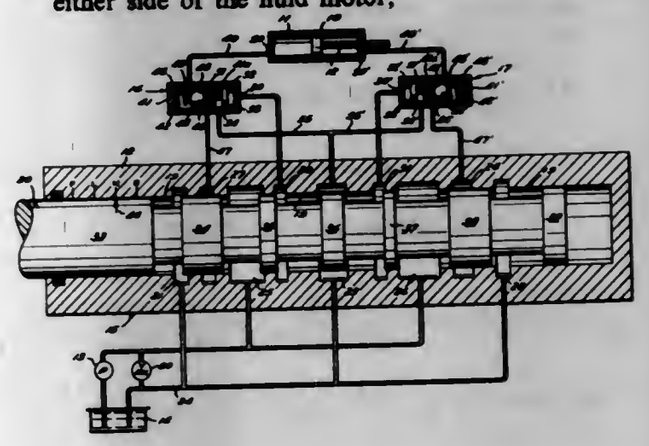
1. A hydraulic system for operating a fluid motor from a pump comprising:

a closed-center spool valve comprising a valve body having a bore therein and a plurality of recesses intersecting said bore at spaced locations therealong and including pump recess means for connection to the pump and return recess means for connection to a low pressure return line and additional recesses, and a spool slidably received in said bore and having a plurality of longitudinally spaced lands thereon for sealing engagement with the bore and having reduced diameter portions between its lands;

a first normally-closed check valve connected to one of said additional recesses in the spool valve body and having a port for connection to one side of the fluid motor, a first pressure responsive member connected to another of said additional recesses in the spool valve body and movable in response to fluid pressure thereat to open said check valve;

a second normally-closed check valve connected to another of said additional recesses in the spool valve body and having a port for connection to the opposite side of the fluid motor, a second pressure responsive member connected to another of said additional recesses in the spool valve body and movable in response to fluid pressure thereat to open said second check valve;

said spool in a first position thereof along the bore in the spool valve body blocking said pump recess means from both check valves and connecting the respective pressure responsive members in both check valves to the low pressure return through the spool valve body to maintain both check valves closed to block the flow of hydraulic liquid from either side of the fluid motor;



said spool in a second position thereof along the bore in the spool valve body connecting said pump recess means therein to the first check valve to open the latter for flow from the pump to said one side of the fluid motor, said spool in said second position thereof connecting said pump recess means therein to said second pressure responsive member to open the second check valve and connecting said second check valve to said return recess means therein for return flow from the opposite side of the fluid motor;

said spool in a third position thereof along the bore in the spool valve body connecting said pump recess means therein to the second check valve to open the latter for flow from the pump to said opposite side of the fluid motor, said spool in said third position thereof connecting said pump recess means therein to said first pressure responsive member to open the first check valve and connecting said first check valve to said return recess means for return flow from said one side of the fluid motor.

3,273,468
HYDRAULIC SYSTEM WITH REGENERATIVE POSITION
John D. Allen, South Euclid, Ohio, assignor to Fawick Corporation, a corporation of Michigan
Filed Jan. 26, 1965, Ser. No. 428,032
10 Claims. (Cl. 91—420)

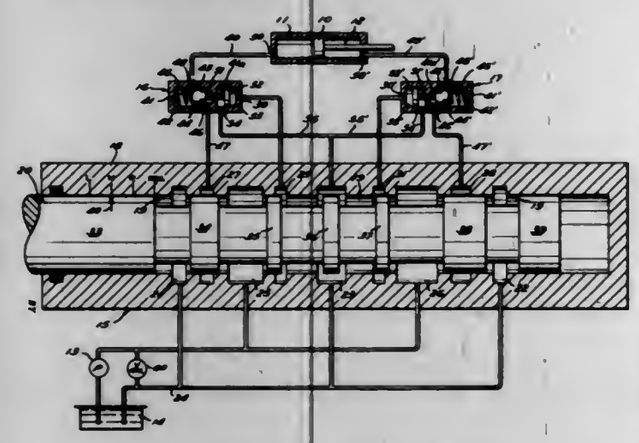
1. A hydraulic system for operating from a pump, a piston and cylinder in which the cylinder has first and second ports on opposite sides of the piston and the piston has a larger exposed area on one side, said system comprising:

a spool valve comprising a valve body having a bore therein and a plurality of recesses intersecting said bore at spaced locations therealong and including a pair of pump recesses for connection to the pump

and return recesses for connection to a return line and additional recesses, and a spool slidably received in said bore and having a plurality of longitudinally spaced lands thereon for sealing engagement with the bore between said recesses and having reduced diameter portions between its lands;

a first normally-closed check valve connected to one of said additional recesses in the spool valve body and having a port for connection to the cylinder at one side of the piston, a first pressure responsive member connected to another of said additional recesses in the spool valve body and movable in response to fluid pressure thereat to open said check valve;

a second normally-closed check valve connected to another of said additional recesses in the spool valve body and having a port for connection to the cylinder at the opposite side of the piston, a second pressure responsive member connected to another of said additional recesses in the spool valve body and movable in response to fluid pressure thereat to open said second check valve;



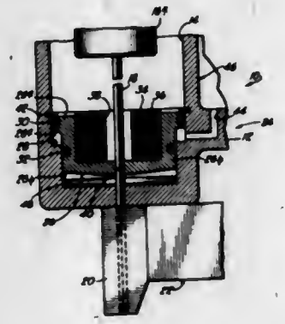
said spool in a first position thereof along the bore in the spool valve body blocking the pump recesses from both pilot valves and connecting the respective pressure responsive members in both pilot valves to the return line through the spool valve body to maintain both pilot valves closed to block the flow of hydraulic liquid from the cylinder at either side of the piston;

said spool in a second position thereof along the bore in the spool valve body connecting a pump recess therein to the first check valve to open the latter for flow from the pump to the cylinder at said one side of the piston, said spool in said second position thereof connecting a pump recess therein to said second pressure responsive member to open the second check valve and connecting said second check valve to a return recess therein for return flow from the cylinder at the opposite side of the piston;

said spool in a third position thereof along the bore in the spool valve body connecting a pump recess therein to the second check valve to open the latter for flow from the pump to the cylinder at said opposite side of the piston, said spool in said third position thereof connecting a pump recess therein to said first pressure responsive member to open the first check valve and connecting said first check valve to a return recess for return flow from the cylinder at said one side of the piston;

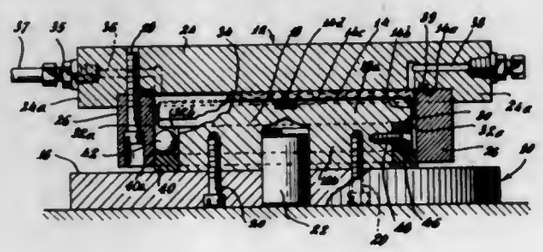
said spool in a fourth position thereof along the bore in the spool valve body connecting both pump recesses to the check valves and connecting the pump to the second pressure responsive member for the flow of hydraulic liquid from the pump to the larger area side of the piston and return flow from the smaller area side of the piston to the larger area side.

3,273,469
FASTENER DRIVING APPARATUS
Richard H. Doyle, Mount Prospect, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed Mar. 6, 1964, Ser. No. 349,902
3 Claims. (Cl. 92—85)



1. A fastener driving tool comprising a housing having a cylinder, fastener driving means including a piston movably mounted within the cylinder, said piston being normally disposed at one end of the cylinder and being movable during a power stroke to the opposite end of the cylinder, cylinder means concentric with the cylinder and disposed at said opposite end of the cylinder, said cylinder means having portions of different diameter, piston means of corresponding different diameters slidably mounted in the cylinder means, means for supplying a pressurized fluid to the cylinder means between said portions of different diameter to bias the piston means toward the drive piston, and means for limiting movement of the piston means toward the drive piston so that the piston means is spaced from but disposed in the path of movement of the drive piston during a power stroke, said piston means being engaged and moved against the bias of the pressurized fluid by the drive piston to cushion the termination of the power stroke of the drive piston.

3,273,470
HYDRAULIC LOAD CELL
Chester D. Bradley, Darien, Conn., assignor to The A. H. Emery Company, New Canaan, Conn.
Filed May 4, 1964, Ser. No. 364,499
6 Claims. (Cl. 92—101)



4. A load cell comprising, in combination:

(A) a base structure including an upstanding piston portion;

(B) a load receiving structure including

(1) an upper portion presenting a load receiving surface, and

(2) a cylindrical skirt portion depending from said upper portion and telescopically and coaxially receiving said piston portion with an annular space therebetween;

(C) a relatively thin flexible diaphragm of fluid impervious material sealed to said cylinder portion and overlying said piston portion to form a fluid pressure chamber between it and said upper portion,

(1) an annular fold of said diaphragm interlying an upper portion of said annular space;

(D) a ring surrounding said piston portion and presenting an annular support surface underlying said annular space; and

(E) a plurality of balls,

(1) arranged ball to ball on said support surface in a single closed circumferential row extending around said piston portion in said annular space, and

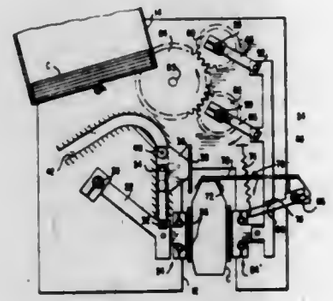
(2) rollably engaging the adjacent cylindrical walls of said portions to guide them in their telescopic movement and allow relative tilting movement therebetween;

(F) said cylindrical skirt extending downwardly beyond said annular space and sealingly engaging the outer peripheral surface of said ring member, whereby to prevent the entry of dust into said annular space;

(G) said ring member being formed of a resilient material so as to yieldably allow the aforedescribed relative tilting movement of said piston and cylinder portions and so as to yield downwardly upon collapsing telescopic movement of said portions to allow said balls to roll rather than skid on said cylindrical walls; and

(H) separate members rigid with said piston and said cylinder portions, respectively, and projecting radially therefrom into said annular space between adjacent balls to resist relative rotation between said portions and thereby prevent rupture of said diaphragm.

3,273,471
APPARATUS FOR SETTING UP FOLDED CARTONS
Franz Dollheimer, Valdosta, Ga., assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Jan. 21, 1964, Ser. No. 339,291
6 Claims. (Cl. 93—53)



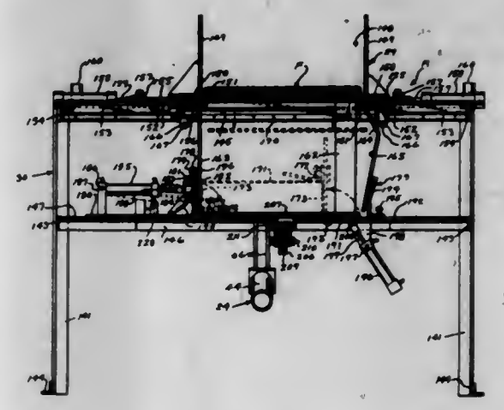
1. In packaging apparatus having a magazine for containing a stack of flattened cartons each expandable to form an open-minded, sleeve-like wrapper having a pair of spaced, parallel side panels joined at their upper and lower ends by top and bottom panels, respectively;

a first suction head movable between a feed position to engage the flattened carton at the discharge end of the magazine adjacent the lower end of one of the side panels, and a loading position in which it supports the carton at a carton expanding and loading station,

a second suction head mounted for parallel, oscillating movement relative to the position of the first suction head in its loading position between a first position in which it engages the other side panel of the carton adjacent its upper end, and a second position in which it is disposed in spaced, opposed relationship relative to the first suction head,

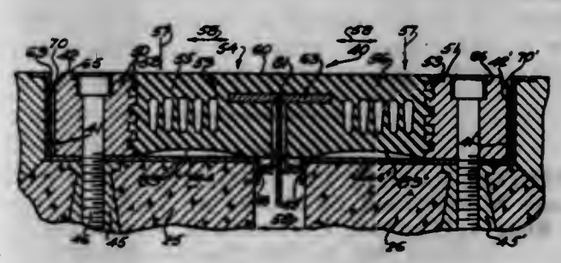
said first suction head remaining stationary in its loading position during movement of the second suction head from its first to second positions to thereby expand the carton.

3,273,472
CARTON FLAT SET UP MECHANISM
Martin Van Antwerpen and Leslie G. Freedy, Milwaukee, Wis., assignors to Vanant Company, Inc., Milwaukee, Wis.
Original application Aug. 22, 1962, Ser. No. 218,700, now Patent No. 3,247,645, dated Apr. 26, 1966. Divided and this application Oct. 6, 1965, Ser. No. 493,369
3 Claims. (Cl. 93—53)



1. A carton flat set up mechanism including a table for receiving a carton flat, said carton being of the type including top and bottom walls and connecting side walls and closure flaps carried by the ends of the top and bottom walls and end walls, a swinging picker plate carried by said table and disposed adjacent to one edge of a carton flat on the table, said carton flat being received on said table with its top wall and respective side wall uppermost and with said respective side wall adjacent said picker plate means for swinging the picker plate back and forth over one side wall of a carton on the table, and picker points carried by said plate adapted to penetrate said side wall of the carton when the picker plate is swung over the flap for raising said side wall upon upward swinging movement of the picker plate for lifting said flap to a raised set up position.

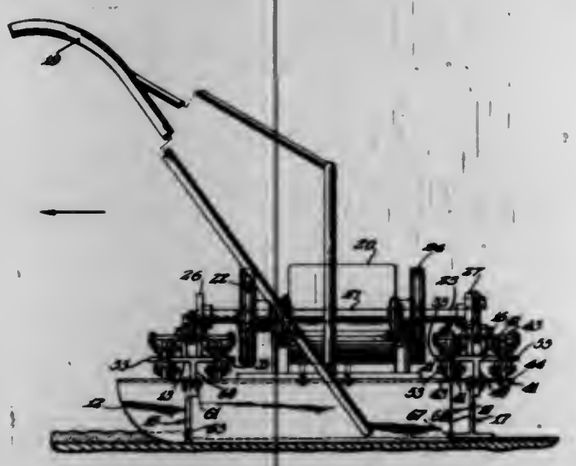
3,273,473
ROAD EXPANSION JOINT
Robert L. Pare, Cranston, R.I., assignor of one-tenth to David R. Black, Jr., Providence, R.I.
Filed Dec. 5, 1963, Ser. No. 328,241
4 Claims. (Cl. 94—18)



1. An expansion joint between two spaced structural elements defining an expansion gap comprising an elastomer block whose midportion spans said gap, a rigid plate

embedded in said elastomer block, said plate lying above and spanning said gap, said elastomer block having a substantially plane surface adapted to serve as a portion of a roadbed with said plate being substantially parallel to said plane portion, said elastomer block being positioned within upper recesses in said spaced structural elements with end portions of said elastomer block being anchored to said structural elements, said plate being positioned above the horizontal centroid of said elastomer block, means for maintaining the position of said plate fixed relative to said structural elements, said elastomer block provided with a plurality of voids located between the ends of said elastomer block and said plate in the region generally below said plate.

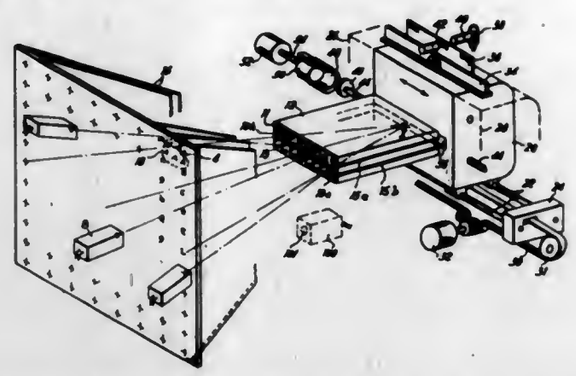
3,273,474
EPOXY FLOOR LAYING MACHINE
Johnny L. Hardin, Little Rock, and Harold R. Johnston, Bigelow, Ark., assignors to Clark Equipment Co., Inc., Little Rock, Ark., a corporation of Arkansas
Filed Dec. 26, 1963, Ser. No. 333,325
4 Claims. (Cl. 94—45)



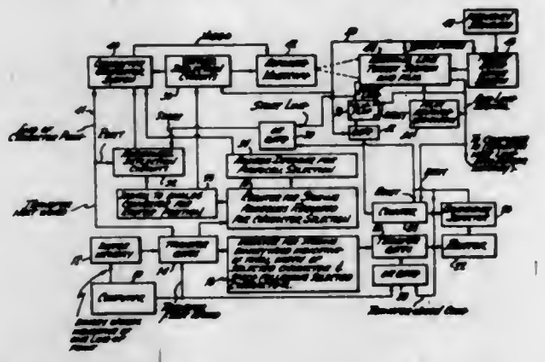
1. In a machine for laying plastic floors, a main frame, runners movable along the surface to be floored supporting said main frame in vertically spaced relation with respect to the floor, a pair of laterally spaced supports extending transversely of said main frame at the front and rear ends thereof, laterally and vertically spaced rollers mounted on each pair of supports, a separate carriage supported between said rollers on each pair of supports for movement transversely of said main frame, a motor, means driven by said motor for reciprocably driving said carriages, a spreader bar secured to and depending from the forwardmost of said carriages and having a scalloped bottom surface beveled to provide sharp edges at the scallops, a smoothing trowel secured to and depending from the rearwardmost of said carriages, and means mounting said spreader bar and trowel shoe on said carriages for vertical adjustable movement with respect to the ground engaging surfaces of said runners in accordance with the thickness of the floor to be laid.

3,273,475
PHOTOGRAPHIC TYPE COMPOSITION DEVICE
Louis M. Moyroud, 50 Brooks St., Medford, Mass., and Rene A. Higonnet, 136 Brattle St., Cambridge, Mass.
Filed Nov. 6, 1963, Ser. No. 321,827
10 Claims. (Cl. 95—4.5)

1. In a photographic type composing machine, a method for projecting to a common character image position all the characters of a matrix on which said characters are arranged in rows and columns formation comprising a first step in which all the columns of characters are merged into one column and a second step of continuously sweeping the length of a line to be composed and a third step in which all the rows of characters are merged into one row.



3,273,476
PHOTOCOMPOSING SYSTEM
Harold E. Haynes, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,518
19 Claims. (Cl. 95—4.5)

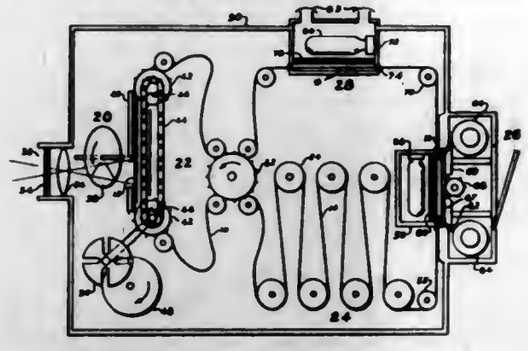


1. In combination,
means for storing a binary code indicative of a character it is desired to print;
an optical storage matrix in which a plurality of characters, including the desired one, are stored;
a light source responsive to said stored binary code for scanning, in raster fashion, the desired character;
light sensing means for deriving from the scanned character video signals indicative thereof;
a display means for displaying successive traces intensity modulated by said video signals;
a recording medium; and
a rotatable lens system for projecting the successive traces onto said recording medium along parallel side-by-side paths to trace out said desired character.

3,273,477
RANDOM EVENTS CAMERA AND METHOD
Edward G. De Hart, Boston, Mass., assignor to De Haart, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Dec. 31, 1963, Ser. No. 334,710
6 Claims. (Cl. 95—11)

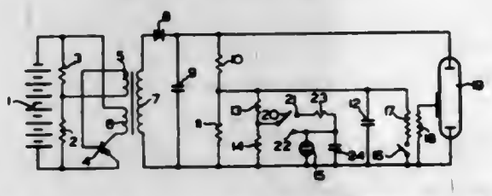
1. A random events camera, comprising in combination, a camera housing defining an aperture, a lens in said aperture, a cinematic exposure means behind said lens, a film belt drive mounted within said camera housing, a film belt memory bank mechanism mounted within said camera housing, a film belt print-out mechanism affixed to and partially penetrating said camera housing, a film belt erasure mechanism mounted within said camera housing,

and a continuous-loop belt or phosphor-coated film threaded through said mechanisms, in the order named and engaged by said drive, characterized in that said film belt printout mechanism comprises
(a) a substantially light-tight lamp enclosure which defines a window and is mounted within said camera housing,
(b) a lamp mounted within said lamp enclosure,



(c) a filter mounted in said window, said filter being substantially transmissive to only infra-red radiation,
(d) guide means mounted within said camera housing for guiding said film belt past said filter, and
(e) a photosensitive film strip, and
(f) a sprocket wheel indexing both said belt and said strip to maintain said strip in contact print relation with the portion of said film belt adjacent said filter.

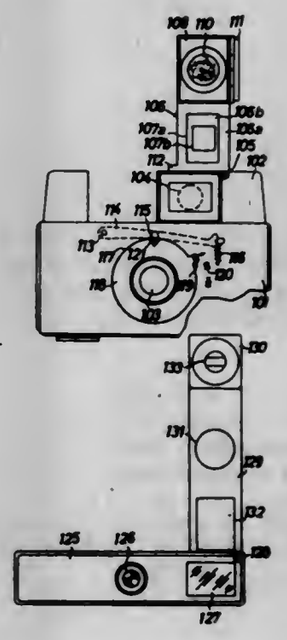
3,273,478
PHOTOGRAPHIC CAMERA WITH BUILT-IN ELECTRONIC FLASH DEVICE
Gotthard Kinder, Braunschweig, Germany, assignor to Voigtlander, A.G., Braunschweig, Germany, a corporation of Germany
Filed Dec. 17, 1964, Ser. No. 419,008
Claims priority, application Germany, Dec. 21, 1963, V 25,073
5 Claims. (Cl. 95—11)



1. In a camera, electronic flash means, a single electrical lamp, and circuit means connected with said electronic flash means and with said single lamp for operating the latter to provide a steady illumination for indicating that the electronic flash means is ready for operation and operating said single lamp to provide intermittent illumination for indicating that a proper exposure cannot be made.

3,273,479
CAMERAS WITH BUILT-IN FLASH ASSEMBLIES
Franz Jakob, Unterhaching, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Mar. 31, 1964, Ser. No. 356,249
Claims priority, application Germany, Apr. 11, 1963, A 19,851; May 2, 1963, A 43,015
7 Claims. (Cl. 95—11)

1. In a camera with a built-in flash assembly, in combination, a camera housing member, a cap member mounted on said camera housing member and defining therewith a chamber for accommodating components of the camera, flash means for providing flash illumination, said flash means being operatively connected to one of said members for movement relative thereto between a collapsed position where said flash means is relatively close to said members and an operating position where said flash means projects from said members and has a portion most distant from said members, said flash means having at said portion which is most distant from said members when said flash means is in said operating position thereof a reflector and a lamp socket, and said flash means when in said collapsed position thereof providing with said cap member and housing member a camera outline substantially conforming to the outline of a conventional camera without a built-in flash assembly; exposure time setting means carried by said camera housing member; and means compelling

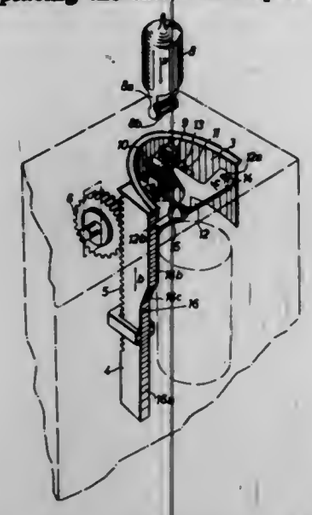


said exposure time setting means to provide an exposure time suitable for flash exposure when said flash means is displaced from said collapsed to said operating position thereof, said compelling means comprising releasable lock means engaging said flash means to prevent movement thereof from said collapsed to said operating position except when said exposure time setting means has a position providing an exposure time suitable for flash exposure, said exposure time setting means when placed in said latter position cooperating with said releasable lock means to actuate the latter for releasing said flash means for movement from said collapsed to said operating position thereof.

3,273,480
BUILT-IN FLASH STRUCTURE FOR PHOTOGRAPHIC CAMERAS
Alfred Winkler, Munich, and Franz Landbrecht and Dieter Engelmann, Unterhaching, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen Germany
Filed Nov. 24, 1964, Ser. No. 413,522
Claims priority, application Germany, Nov. 29, 1963, A 44,672; Apr. 18, 1964, A 21,608
8 Claims. (Cl. 95—11)

4. In a camera, in combination, housing means; reflector means carried by said housing means for movement from an inoperative position located at least for the most part within said housing means to an operative position projecting outwardly beyond said housing means; rotary drive means carried by said housing means for rotary movement, said housing means having an outer wall formed with an opening through which said rotary drive means is accessible to the operator so that the operator may manually turn said rotary drive means; driven means operatively engaging said rotary drive means

to be driven thereby and connected with said reflector means for displacing the latter in response to movement



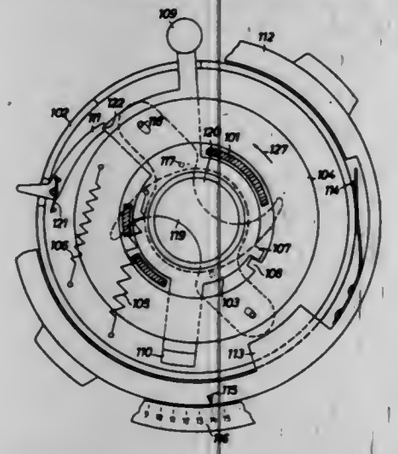
of said driven means by actuation of said rotary drive means; and spring means urging said driven means into engagement with said drive means.

3,273,481

CENTRAL PHOTOGRAPHIC SHUTTER

Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany

Filed Feb. 20, 1964, Ser. No. 346,251
Claims priority, application Germany, Mar. 7, 1963, A 42,526
5 Claims. (Cl. 95—63)



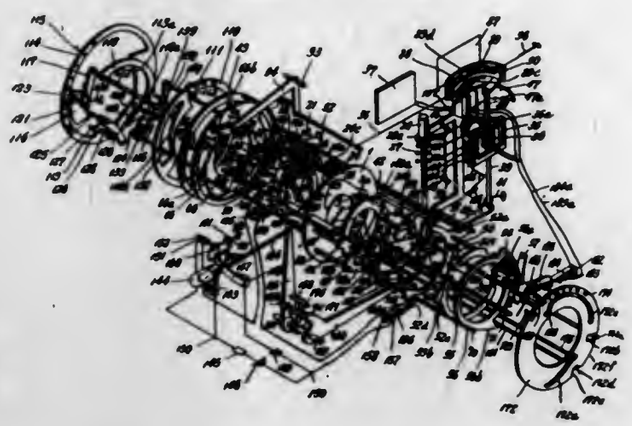
1. A photographic shutter of the central type comprising a housing, a pair of rotatably mounted concentric sector operating rings in said housing, a number of shutter sectors, each of said sectors being movably connected to both of said rings to cause them to open and close said sectors when the angular phase between said rings varies from the normal condition and returns to it, driving means connected to each of said rings for imparting separate driving forces to them, releasing means connected to said rings for causing said rings to commence their driven movement, said driving means for one of said rings moving it at a slower angular velocity than said driving means for the other of said rings, adjustable stop means connected to said housing for controlling the distance of motion of said rings whereby the shutter opening and exposure time may be varied in accordance with the adjustment of said stop means, said adjustable stop means comprising a lug on the opening ring of said pair of rings, an abutment member in the path of motion of said lug, an adjusting ring movably mounted on said housing, and said abutment member being on said adjusting ring.

3,273,482

PHOTOGRAPHIC CAMERA WITH AUTOMATIC DIAPHRAGM SETTING IN THE FLASH RANGE

Franz W. R. Starp, Calmbach (Enz), Germany, assignor to Alfred Gauthier G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany

Filed Feb. 4, 1964, Ser. No. 342,365
Claims priority, application Germany, Feb. 6, 1963, G 36,992
7 Claims. (Cl. 95—64)



1. A photographic camera comprising a diaphragm having an optical axis; means for setting the aperture of said diaphragm automatically for taking flash photographs, said means comprising a five-element jointed structure comprising one fixed member and four movable connecting members located around said axis; a guide number setting control calibrated according to flashbulb guide numbers; a range setting control, one of said movable members being controlled by said guide number setting control and a second one of said movable members being controlled by said range setting control; a stop engaging a third one of said movable connecting members to be set thereby; a lever system connected to said stop to cooperate therewith and connected to said diaphragm, whereby the setting of said diaphragm for flash pictures is controlled by the position of said stop; and a spring resiliently biasing said lever system.

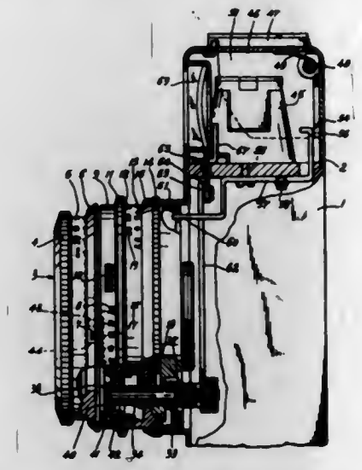
3,273,483

CAMERA WITH STRUCTURE FOR MAKING ADJUSTMENTS ACCORDING TO FLASH-GUIDE NUMBERS

Herbert Weidner, Steinkamp, and Paul Greger, Braunschweig, Germany, assignors to Voigtlander, A.G., Braunschweig, Germany, a corporation of Germany

Filed Oct. 9, 1964, Ser. No. 402,790
Claims priority, application Germany, Oct. 11, 1963, V 24,693
11 Claims. (Cl. 95—64)

1. In a camera, an objective having a distance setting means for setting the objective according to the distance between the camera and an object to be photographed thereby, film speed setting means for setting into the camera the speed of the film to be exposed therein, and diaphragm-setting means having a manually operable range and a non-adjusting position situated beyond said manually operable range, a diaphragm, transmission means operatively connected to said diaphragm-setting means and said diaphragm for transmitting movement of said diaphragm-setting means to said diaphragm for adjusting the latter only when said diaphragm-setting means is in said manually operable range thereof, said transmission means preventing adjustment of said diaphragm by said diaphragm-setting means when the latter is in said non-adjusting position thereof, differential means operatively connected to said distance setting means and said film speed setting means for assuming positions determined by the combination of the settings of said distance setting means and said film speed setting means, and coupling means coupling said differential means to said transmission means only when said diaphragm-setting means is in said non-adjusting position thereof for actuating said transmission means to automatically adjust the diaphragm according to the combined settings of said distance setting means and film speed setting means when said diaphragm-setting means is in said non-adjusting position thereof, said differential means including a differential lever having a pair of spaced cam-follower portions, a pair of cams respectively connected wtih said distance setting means and said film speed setting means for assuming positions determined by the positions of said distance setting means and film speed setting means, respectively, spring means acting on said differential lever for maintaining said cam-follower portions thereof respectively in engagement with said cams



so that the position of said differential lever will be determined according to the combined settings of said distance setting means and film speed setting means, and said coupling means including a coupling lever operatively connected to said differential lever to be angularly moved thereby for transmitting movement of said differential lever to said transmission means for actuating the latter to adjust the diaphragm automatically when said diaphragm-setting means is in said non-adjusting position thereof, said diaphragm-setting means having a camming portion engaging said coupling lever for maintaining the latter out of operative engagement with said transmission means when said diaphragm-setting means is in said manually operable range thereof and releasing said coupling lever for operative engagement with said transmission means when said diaphragm-setting means is in said non-adjusting position thereof.

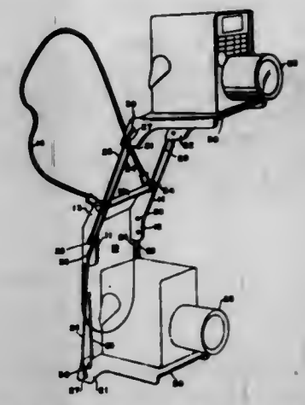
3,273,484

CAMERA SUPPORTS

Charles H. Lapsley, 4200 Tyson Ave., Philadelphia, Pa.

Filed Feb. 18, 1964, Ser. No. 345,666
4 Claims. (Cl. 95—86)

1. A camera support comprising a body-engageable element, camera-mounting means, a first link extending between and having pivotal axes on the element and on said means, a second link extending between and having pivotal axes on the element and means respectively spaced from the pivotal axes of said first link while being parallel thereto, whereby said means traverses a general curved path in moving from a relatively lower position toward a relatively higher position and return during which movement said means and said links have relative movement, said means being extended in one direction beyond the axes of said first and second links thereon and developing a gravitational moment relative thereto, said means in said higher position being movable on and with said links between a first and a second attitude, said means in said first attitude having one link axis on said means generally below and forwardly of the other link axis thereon, and in said second attitude having said one link axis thereon generally below and rearwardly of said other link axis thereon, and latching means responsive to movement



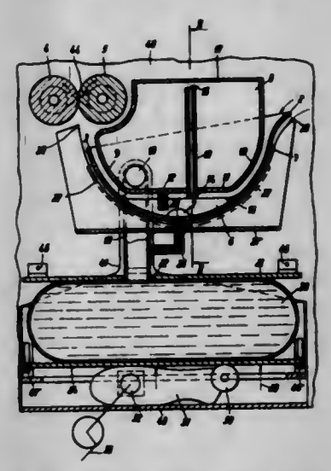
of said camera-mounting means from its first to its second attitude aided by said moment anchoring said mounting means and links against motion whereby the mounting means is supported rigidly in said second attitude on and relative to said element.

3,273,485

PHOTOGRAPHIC DEVELOPING APPARATUS

Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler KG, Hamburg, Germany, a German company

Filed Mar. 25, 1964, Ser. No. 354,674
Claims priority, application Germany, Apr. 1, 1963, L 44,521
9 Claims. (Cl. 95—89)



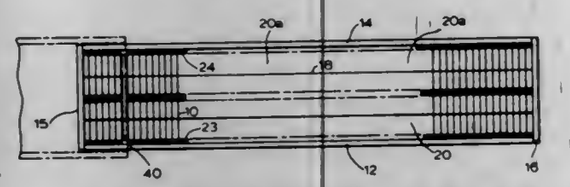
1. A surface-developing apparatus for exposed photographic emulsion carriers which are moistened on the emulsion side to effect development thereof by being guided past a liquid meniscus which the emulsion side faces, which apparatus comprises, in combination, a bath container for holding treatment liquid, guide members associated with said bath container for guiding emulsion carriers through such bath container so as to moisten the emulsion layer sides thereof, constant level liquid reservoir means for adjusting the meniscus level, a supply container for said constant level liquid reservoir means, said reservoir means being located above said bath container, first pipe means associated with said reservoir means and extending from the base of said supply container down to a position below the meniscus level in the filled bath container, second pipe means associated with said reservoir means and projecting upwardly inside the supply container and downwardly outside such container to a height which corresponds to the liquid meniscus level in

the bath container, a compressible reserve tank for developer liquid, first connecting duct means between said reserve tank and the supply container, second connecting duct means between the reserve tank and a lower part of the bath container and means for compressing said reserve tank.

3,273,486
APPARATUS FOR RETAINING AND PROCESSING DENTAL X-RAY FILMS

Charles Garris, 37—03 Little Neck Parkway, Little Neck, N.Y.

Filed Jan. 10, 1964, Ser. No. 336,967
8 Claims. (Cl. 95—98)

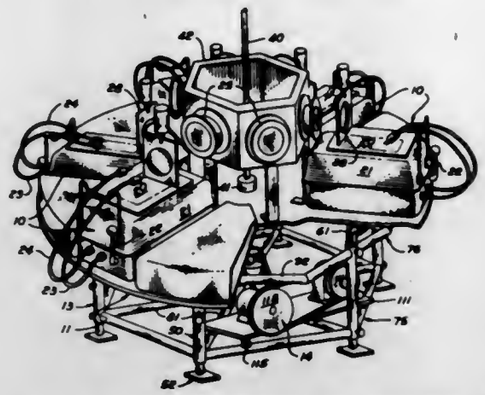


1. An apparatus for retaining and processing relatively small X-ray films, comprising a retainer rack for supporting a plurality of films, said retainer rack including a front wall, a rear wall spacedly located relative to the front wall and substantially parallel thereto, a pair of end walls fixedly attached to the ends of the front and rear walls and substantially perpendicular thereto, and a bottom panel fixedly attached to the end walls and located between the front and rear walls, spring means fitted to inner surface of each of the front and rear walls and projecting inward therefrom, and auxiliary spring means fitted to the inner surface of the bottom panel and projecting upward therefrom, each of said spring means being operative to grip the adjacent edge of the films inserted therebetween, the films being substantially perpendicular to the front and rear walls of the retainer rack, means removably inserted between the front and rear walls of the retainer rack operative to spacedly locate the individual films relative to one another, the front and rear walls of the retainer rack, each has a longitudinal channel cut into the inner surface thereof, the bottom panel having a longitudinal channel cut into the upper surface thereof, the spring means being a coiled tension spring fitted to each of the longitudinal channels in the front and rear walls of the retainer rack, a portion of the outer circumferential surface of the spring projecting beyond the inner surface of the adjoining front and rear wall of the retainer rack, the auxiliary spring means being an auxiliary coiled tension spring fitted to the longitudinal channel in the bottom panel, a portion of the outer circumferential surface of the auxiliary spring projecting beyond the upper surface of the bottom panel, the means removably inserted between the front and rear walls of the retainer rack being a spacer panel, inserted adjacent the surface of one film in the retainer rack, to spacedly locate the next film in the retainer rack, the spacer panel being substantially perpendicular to the front and rear walls of the retainer rack, the width of the spacer panel being narrower than the spacing between the front and rear walls of the retainer rack, to provide gaps between the edges of the spacer panel and the front and rear walls of the retainer rack, respectively, the bottom of the spacer panel being located above the upper surface of the bottom panel of the retainer rack, a spacer holder supporting the spacer panel, the spacer holder including a front wall and a rear wall substantially parallel to one another, the spacing between the front and rear walls of the spacer holder being greater than the spacing between the outer surfaces of the front and rear walls of the retainer rack, and a top wall fixedly attached to the upper edge of the front and rear walls of the spacer holder, the spacer panel being fixedly attached to and suspended from one end of the top wall.

3,273,487
HAM PUMPING DEVICE

Edward A. Schlernitzauer, Tampa, Fla., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed June 5, 1964, Ser. No. 372,975
10 Claims. (Cl. 99—254)

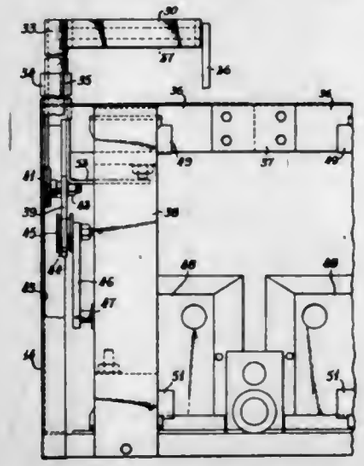


1. An improved apparatus for pumping hams, said apparatus comprising: a horizontal table mounted for rotation about a centrally disposed vertical axis; a plurality of automatic pickle pumping scales mounted uniformly spaced about the top of said table; a main vertical shaft supporting said table at said vertical axis; bearing means holding said main shaft, said bearing means being vertically cushioned on springs; a plurality of casters rollingly supporting said table outwardly of said main shaft, said casters being equally spaced radially and peripherally with respect to said main shaft; an equal plurality of adjustable legs supporting said casters, said legs being telescopically constructed and containing compression springs to equally cushion each of said casters; and drive means connected to said main shaft to turn said table thereby at a desired speed.

3,273,488
BASKET RAISING MECHANISM FOR TWIN FRYERS

Richard J. Anetsberger, Northbrook, Ill., assignor to Anetsberger Brothers, Inc., Northbrook, Ill., a corporation of Illinois

Filed Mar. 15, 1965, Ser. No. 439,596
4 Claims. (Cl. 99—407)

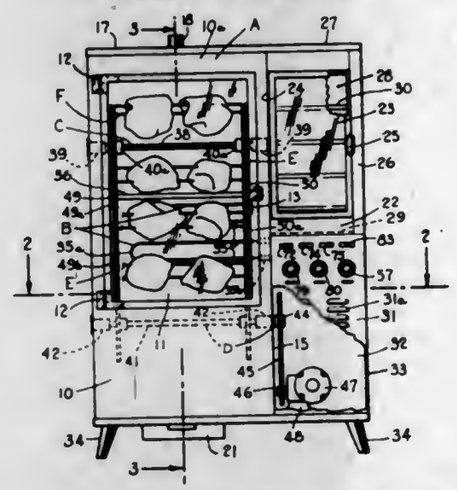


1. In a deep fat fryer having twin food-supporting baskets, a kettle, a vertical flue disposed rearwardly of the kettle in closely spaced relationship relative thereto, and an outer casing enclosing said kettle and flue in closely spaced relationship relative thereto; means for supporting and moving said baskets vertically independently of each other, comprising a lifting rod disposed between said kettle and said flue adjacent and interiorly of each lateral side wall of said casing, a hanger offset inwardly from the upper portion of each said lifting rod away from the adjacent said casing side wall for independently supporting one of said baskets, tubular guide means engaging said rod intermediate its ends, operating means including a movement-imparting member secured intermediate its ends to the lower end of each said lifting rod, and guide pads mounted on each said movement-imparting member adjacent the ends thereof for adjustment relative thereto laterally of said casing for resisting torque applied to the associated said lifting rod by the food-supporting basket supported thereby.

3,273,489
ELECTRIC OVEN

Robert G. Wilson, 643 E. Faris Road, Greenville, S.C.

Filed Oct. 18, 1963, Ser. No. 317,316
9 Claims. (Cl. 99—421)



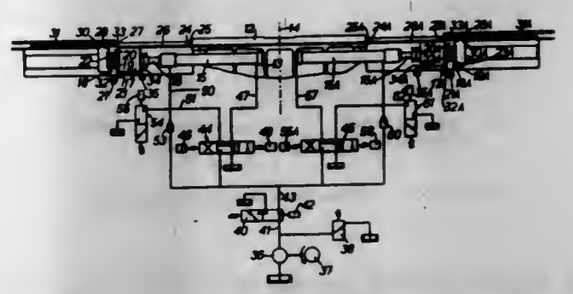
4. For use in an oven enclosure, the combination including, stationary vertically disposed electrical heating means disposed substantially within the central portion of the oven, a first horizontal shaft within the oven enclosure disposed above and in substantial alignment with the electrical heating means, a second horizontal shaft within the oven disposed below and in substantial alignment with the electrical heating means, sprockets adjacent the ends of each shaft whereby each of the sprockets on the upper shaft is substantially aligned with a sprocket on the lower shaft, a pair of horizontally spaced vertically disposed continuous chains carried by respective pairs of aligned sprockets so that a vertical run of the chains passes on each side of the electrical heating means, power operated driving means for turning said shafts continuously, a plurality of substantially horizontally disposed meat supporting means having respective end portions connected to said chains, said supporting means being subjected to the direct application of heat from said electrical heating means on each vertical run of the chains, and means on said chains cooperating with said meat supporting means positioning same for linear non-rotating movement on each vertical run of the chains so that the same side of said meat continuously faces said electrical heating means on both vertical runs of the chains.

3,273,490
PRESS ANVILS

Jack Herbert Beard, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, England

Filed Sept. 24, 1964, Ser. No. 399,018
Claims priority, application Great Britain, Sept. 26, 1963, 37,857/63
11 Claims. (Cl. 100—229)

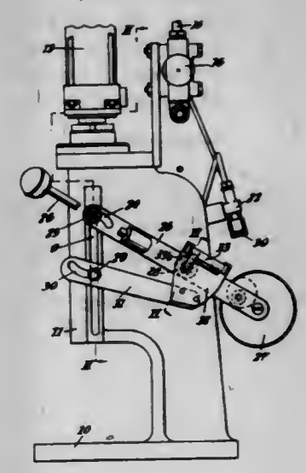
2. Apparatus for moving a horizontally slidable press anvil relative to a press center line bisecting the path of travel of said anvil, said apparatus comprising a first double acting piston and cylinder assembly located on one side of the press center line, first coupling means for coupling the first assembly to the anvil for moving the anvil on that side of the press center line, a second double acting piston and cylinder assembly located on the opposite side of the press center line, second coupling means for coupling the second assembly to the anvil for moving the anvil on that side of the press center line, and means for automatically disengaging the anvil from either assembly when it approaches the limit of the stroke of that assembly in a direction towards the other assembly, and automatically coupling that other assembly to the anvil.



3,273,491
AIR-OPERATED PRESSES

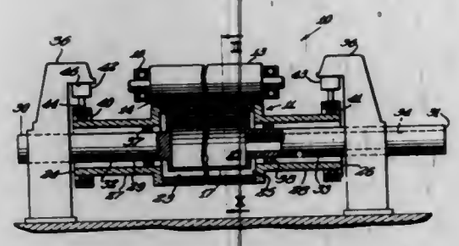
Eric Calvert, Burnley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Mar. 17, 1965, Ser. No. 440,503
3 Claims. (Cl. 100—53)



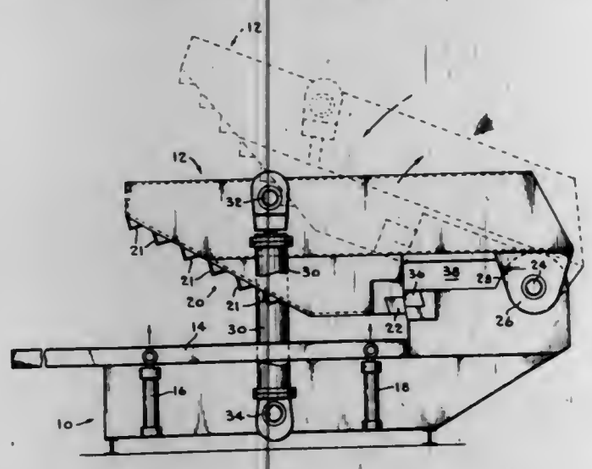
2. A press comprising a hollow housing, a tool holder slidably disposed within the housing, a pair of levers pivotally mounted about a common axis on the housing, one of said levers being connected, at a position removed from the axis, to the tool holder and the other lever being engageable therewith through a spring, a fluid pressure operated device associated with the tool holder for imparting a blow thereto when the tool holder has reached a predetermined position, a first valve on the housing operable to permit flow of fluid to said device to render it operative in response to relative movement between the two levers, against the action of the spring, and a second valve operable to permit flow to said device, said second valve being operated by said levers when said tool holder has reached said predetermined position which will preclude the insertion of an operator's finger beneath the tool holder, said device being operable only when both said first and said second valves have been operated.

3,273,492
SUCTION ROLL COUNTER-DEFLECTOR
Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Oct. 16, 1963, Ser. No. 316,711
18 Claims. (Cl. 100—90)



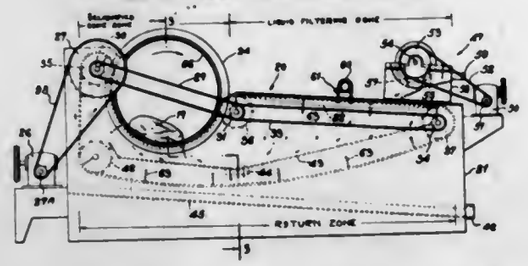
1. A roll assembly for use in a suction press or the like apparatus comprising:
a roll shell having normally a straight line centroidal axis that develops normally a central deflection in response to a load applied to the shell,
shaft means for the roll shell,
fixed support means for supporting said shaft means at the ends thereof,
first bearing means mounted on said shaft means inboard of said fixed support means and engaging said roll shell for normally maintaining said shaft means and said roll shell in coaxially aligned and spaced relation,
second bearing means mounted on said roll shell at the ends thereof for vertical movement relative to said fixed support means and situated between said fixed support means and said first bearing means, and
force imposing means operatively engaging said second bearing means for applying a force to the ends of said roll shell to act against restraint provided by said first bearing means to provide counter deflection of said roll shell in opposition to the deflection caused by a load applied thereto.

3,273,493
APPARATUS FOR PROCESSING SCRAP MATERIAL
Raimond J. Smiltneek, Butler, Wis., assignor to Logemann Brothers Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 13, 1965, Ser. No. 495,409
11 Claims. (Cl. 100—95)



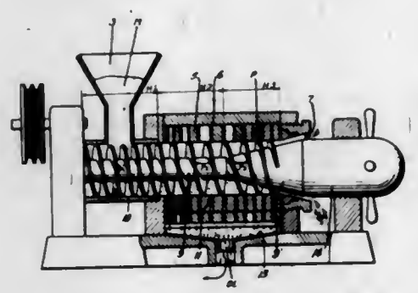
1. A material processing machine comprising:
a frame having a bed thereon for receiving material to be processed, said frame further provided with a shear member mounted thereon, said bed on said frame being movable with respect to said frame;
a jaw member pivotally mounted on said frame, said jaw member having a crushing portion at the outer end thereof and a shear member mounted thereon between said crushing portion and the point at which it is pivotally mounted on said frame, said shear members on said jaw and frame adapted when said jaw is pivoted to produce a shearing action therebetween; and
a power means for pivoting said jaw on said frame.

3,273,494
SEWAGE FILTER AND PRESS
Otell M. Cocchiarella, 99 Linden Ave., Verona, N.J.
Filed Mar. 11, 1965, Ser. No. 446,765
18 Claims. (Cl. 100—121)



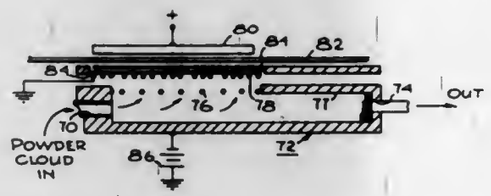
1. An apparatus for separating liquid from solids by filtration comprising, in combination:
(a) a frame;
(b) an endless belt filter;
(c) means on said frame for supporting said belt and guiding it successively through a filtering zone, deliquefied cake zone and a belt return zone;
(d) means for feeding liquid to said filtering zone;
(e) means for preventing the flow of liquid from said filtering zone to said deliquefied cake zone;
(f) said deliquefied cake zone comprising a depressed collection portion terminating in a portion inclined upwardly at an angle sufficient to cause deliquefied cake to collect and roll into a roughly cylindrical mass in said depressed collection portion to clean said belt; and
(g) means for driving said belt.

3,273,495
OIL EXPELLER
Masakatsu Ozawa, 207 Minakami, Fujieda, Shizuoka Prefecture, Japan
Filed Mar. 10, 1964, Ser. No. 350,813
Claims priority, application Japan, June 7, 1963, 38/29,219
4 Claims. (Cl. 100—145)



1. An oil expeller comprising a casing having a cylindrical passageway and conduit means connecting said passageway with a collector, an inlet in one end of the casing communicating with said passageway for admitting the material to be pressed into the passageway, an outlet at the other end of the casing for removing the pressed material, and a screw rotatably mounted in said passageway, said screw comprising a first core section of uniform diameter and a second core section of non-uniform diameter adjacent thereto, a thread integral with the core having a uniform diameter equal to the diameter of the passageway and having a first zone of predetermined pitch adjacent the inlet, a second zone of a greater pitch than said predetermined pitch adjacent the first zone, and a third zone of a pitch less than the pitch of the second zone, said third zone being adjacent said second zone and on the core section of non-uniform diameter.

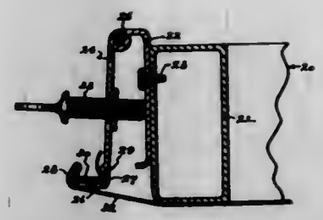
3,273,496
POWDER FEED FOR ELECTROSTATIC PRINTING SYSTEM WITH AN ELECTRIC FIELD FREE CHAMBER
Richard W. Melmon, San Francisco, Calif., assignor, by mesne assignments, to Crocker-Citizens National Bank, as trustee
Filed Aug. 28, 1964, Ser. No. 392,717
4 Claims. (Cl. 101—114)



1. In an electrostatic printing system of the type wherein there is provided an image electrode and a back plate positioned adjacent one surface of said image electrode for establishing an electric field therebetween, and electroscopic powder particles are applied to the opposite surface of said image electrode for passing through the image apertures therethrough into said electric field, means for applying said powder particles to said opposite surface of said image screen comprising conductive walls defining a powder cloud chamber, an input opening in one wall of said powder cloud chamber, an output opening in a second wall of said powder cloud chamber opposite said one wall, means for applying a powder cloud to said input opening of said powder cloud chamber to traverse said powder cloud chamber to the output opening, an opening in a third wall of said powder cloud chamber which is adjacent to said one and said second walls, a plurality of spaced wires extending over said opening in said third wall and electrically connected to said chamber walls, means for positioning said powder cloud chamber and said screen adjacent said opposite surface of said image screen, and means for biasing said plurality of spaced wires relative to said image screen for moving powder particles which have passed through said plurality of spaced wires towards said opposite surface of said image screen.

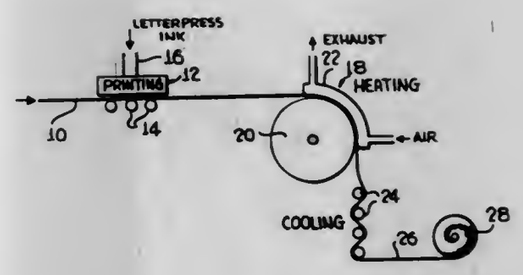
3,273,497
SCREEN STENCIL FRAME
Thomas James Rosema and Harry Russell Farwell, both of Grand Rapids, Mich., assignors to James A. Black, President of General Research, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Jan. 23, 1964, Ser. No. 339,736
3 Claims. (Cl. 101—128.1)

1. A device for securing a marginal edge of a stencil fabric to a side rail of a stencil frame, comprising: a hinge plate adapted for attachment to the outer surface of said side rail and extending substantially the length of said rail; a hinge leaf hingedly connected to the upper longitudinal edge of said hinge plate and depending therefrom, said hinge leaf terminating slightly above the bottom of said side rail in a channel having an open longitudinal surface, spaced side walls, one of said walls being inclined toward the other wall, said other wall having a plurality of projections extending therefrom toward the first of said walls; and a bar substantially coextensive in length with said channel, said bar having a width approximately equal to the width of said channel and having on one of its edges notches adapted to register with said projections, said bar being insertable in said channel through



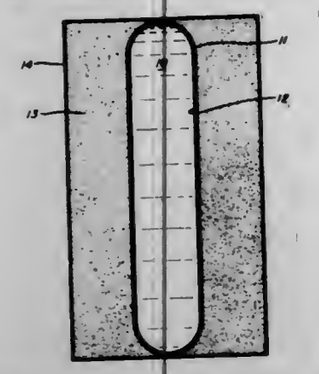
said open longitudinal surface with the marginal edge of the stencil fabric clamped between the bar and the walls of the channel and with the notches in the bar clearing said projections during such insertion, said bar being longitudinally slidable after such insertion to a position of non-registry of said notches with said projections whereby the bar and the marginal edge of the stencil fabric are retained within the channel behind said projections and said inclined wall.

3,273,498
FORMING COLORED PATTERNS UPON POLYOLEFIN SURFACES
Vernon P. Martin, West Chester, Pa., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 23, 1964, Ser. No. 353,782
8 Claims. (Cl. 101—426)



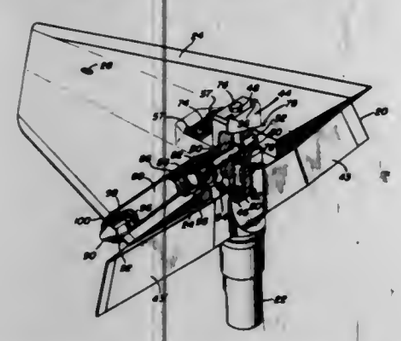
6. A method of fusing a heat-set, ink composition into the surface of supported films of polyethylene or polypropylene to obtain permanent printed matter thereon which comprises (1) printing on the surface of said films with a letterpress ink composition and (2) subsequently heating the printed surface to a temperature ranging from about 275°–350° F. by passing the reverse side of said supported printed surface at the rate of about 200–600 feet per minute over a heating element having a temperature of about 325° F. to 375° F. while (3) simultaneously subjecting the printed side of the film's surface to a current of hot air having a temperature of about 250°–500° F.; said ink composition consisting essentially of 25–35 parts-by-weight of a coloring pigment, 9–10 parts-by-weight of linseed oil, about one part-by-weight of cobalt naphthenate and 55–64 parts-by-weight of a varnish-solvent mixture consisting of a heat-set varnish and an organic solvent having a boiling range of about 472°–504° F. wherein the varnish is present in an amount of 45–60% by weight.

3,273,499
HIGH TEMPERATURE ILLUMINATING FLARE
Wayne A. Proell, Seymour, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Nov. 24, 1964, Ser. No. 413,647
8 Claims. (Cl. 102—37.8)



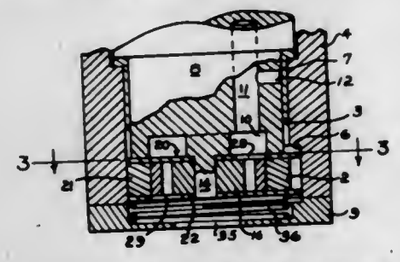
1. A pyrotechnic ignitable by impact and suitable for use as a high temperature illuminating flare, which pyrotechnic comprises chlorine trifluoride and a finely divided metal having a high heat of formation with chlorine and fluorine, said pyrotechnic being in a chemically stabilized condition until reaction is intentionally initiated by impact, said stability being imparted by the presence of a protective impact fracturable barrier separating said chlorine trifluoride from said metal.

3,273,500
SELF-ERECTING FOLDING FIN
Sverre Kongelbeck, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 25, 1965, Ser. No. 427,995
3 Claims. (Cl. 102—50)



1. A self-erecting structure, comprising,
a spar,
a first hinge pin means rigidly connected to said spar and extending with its longitudinal axis perpendicular to the longitudinal axis of said spar,
said first hinge pin means having a collar at one end thereof,
a bearing mounted on said hinge pin means,
an erectable member mounted on said spar and being pivotable about the longitudinal axis of said first hinge pin means from a folded position to an erected position on said spar,
an aerodynamically smooth housing on said member covering said bearing, said hinge pin means, and said collar,
plug means covering one end of said housing,
torsion spring means within said housing and connected at one end to said plug, and at its other end to said collar, said torsion spring means urging said member into said erected position,
latch pin means slidably mounted within said spar along its longitudinal axis,
spring means mounted in said spar for urging said latch pin means into said erectable member when said member is pivoted to said erected position, and
a second hinge pin means attached to said erectable member and extending perpendicular to the longitudinal axis of said spar, said erectable member being pivotable about the longitudinal axis of said second hinge pin means,
said second hinge pin means engaging said latch pin means to restrain said latch pin means against the urging of said spring means until said erectable member is pivoted to said erected position.

3,273,501
AUTOMATICALLY REVERSIBLE PUMPING MECHANISM
Dwight L. Tothero, York, Pa., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Oct. 1, 1964, Ser. No. 400,692
7 Claims. (Cl. 103—3)

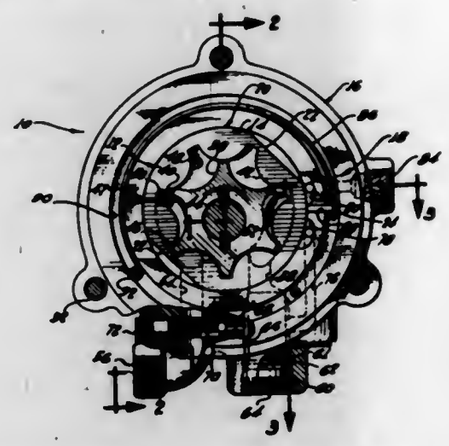


1. In an automatically reversible pumping mechanism, the combination of an externally toothed inner pump gear rotatable about a first axis; an internally toothed outer pump gear; a carrier having a gear journalling opening therein dimensioned to rotatably receive said outer gear, the axis of said carrier opening being offset from said first axis, said carrier being adapted to circumscribe said inner gear, said pump gears when rotated forming intake and exhaust spaces; rotatable driving means operatively secured to said inner gear; means forming suction and discharge passageways including a first port member on one side of said gears having an opening therethrough opposite said intake space and a second port member on the other side of said gears having an opening therethrough opposite said discharge space; and means accommodating predetermined rotation between said carrier and said first and second port members about said first axis upon a reversal in gear rotation to maintain said intake and exhaust spaces opposite said first and second port member openings.

3,273,502
PUMPING AND METERING DEVICE
Roger G. Martz, Lebanon, Ind., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Feb. 24, 1964, Ser. No. 346,644
2 Claims. (Cl. 103—5)

1. In combination, a pumping and metering device for drawing against at least 25" Hg suction and metering accurately continuous flow rates as low as .3 gallon per hour, comprising a housing having an internal cylindrical cavity, a pumping means including a gear set consisting of outer and inner gear members with said outer gear member having a plurality of internal teeth and said inner gear member having a different plurality of external teeth progressively engaged with the teeth of said outer gear member in response to rotation relative each other within the cavity to solely define a plurality of variable sized rotatable liquid oil pumping chambers, shaft means to support the inner gear member eccentrically of the outer gear member and housing cavity and to drive the gear set within the housing, inlet and outlet porting means

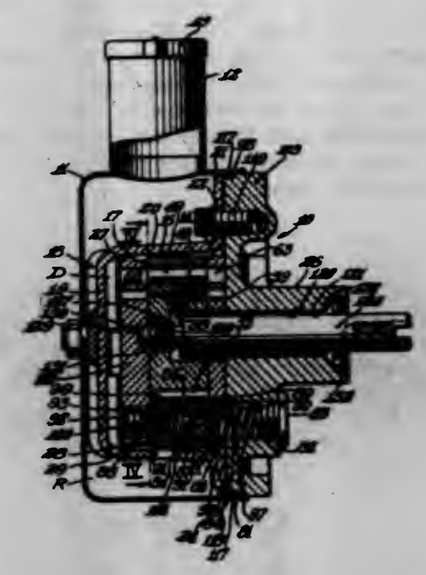
adjacent and open to the gear set operable to provide for fluid transfer through the defined pumping chambers, a metering means including a cylindrical periphery on the outer gear member having at least one flattened portion on its cylindrical periphery which defines within the cavity at least one peripheral chamber of relatively small fixed volume, a vane of width equal to the axial length of the defined peripheral chamber, means for biasing said vane to engage the periphery of the outer gear member for sweeping the peripheral chamber of fluid upon the rotation of the outer gear member in the housing, inlet and outlet porting means disposed, respectively, on opposite sides of the vane each adjacent and open to the defined peripheral fluid chamber operable upon rotation of the



outer gear member for transferring the fluid through the peripheral chamber, a passageway of fixed volume in said housing to communicate the outlet porting means of the pumping gear set chambers to the inlet porting means of the metering peripheral chamber, a second passageway of fixed volume in said housing between the outlet porting means of the pumping gear set and the inlet porting means of the pumping gear set, and a check valve in said second passageway opened whenever the pressure at the inlet porting means of said peripheral chamber exceeds the inlet pressure at said pumping chamber by a predetermined amount with said valve being held open in response to all pressures in excess of said predetermined amount to pass all liquid in excess of that accepted by said metering chamber.

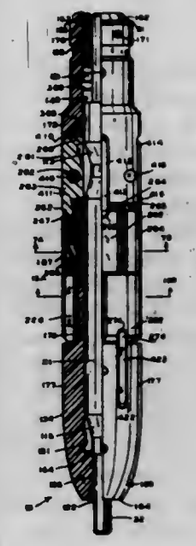
3,273,503
STACK UP SLIPPER PUMP AND COMPACT VALVE ASSEMBLY
Hubert M. Clark, Bloomfield Township, Oakland County, and Gilbert H. Drutchas, Birmingham, Mich., assignors to TRW Inc., a corporation of Ohio
Filed Dec. 26, 1963, Ser. No. 333,763
9 Claims. (Cl. 103—42)

1. In a pump,
a stack up of parts forming a pump cartridge and including a ring member having a bore forming a pump chamber and plate members forming surface face seals on opposite sides of said ring member all disposed in an axial row,
rotary fluid displacement means in said pumping chamber,
said stack up of parts having an axial through opening extending through said ring member spaced outwardly of said bore and disposed parallel to the axis of said bore,
casing means enclosing said stack up of parts and together therewith forming separated inlet and outlet zones,
means including said ring member forming a by-pass passage,
said ring member having as a part of said by-pass passage a portion disposed transversely of and intersecting said through opening and extending outwardly therefrom in opposite direction to open into said inlet zone,



and a flow control valve in said axial through opening regulating the by-pass of fluid between said zones, whereby the valve is balanced by flow on both sides of the valve.

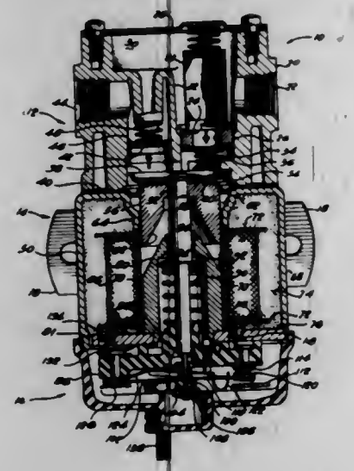
3,273,504
WELL PUMPING PROCESS AND APPARATUS THEREFOR
Cecil Ray Lyles, 2101 E. 16th St., Farmington, N. Mex.
Filed July 26, 1965, Ser. No. 474,573
2 Claims. (Cl. 103—52)



1. An oil well apparatus providing for an external by-pass of fluid therepast for operation in a well tubing comprising a frame with a longitudinally extending recess therethrough, rod holding means in said frame, said rod being slidably held in said recess in one of two positions, toggle means actuated by said rod and pivotally attached to said frame for motion of one portion thereof inward and outward on upward and downward motion of the rod with respect to said frame, two series of sealing elements each of which series circumscribe the periphery of said

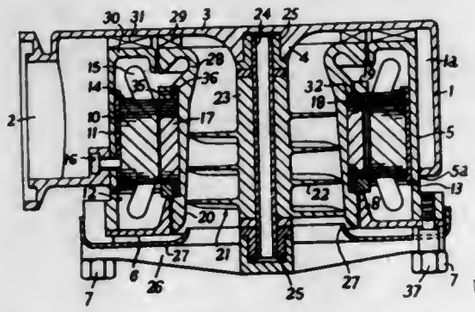
frame, each of the elements of each of said series having a spring nested therein and said spring pressing each of said elements outward, one edge of one portion of said element engaging said toggle, the other end of said element engaging an element of said other series engaged by a toggle, spaces between the elements of one series not contiguous with spaces between elements of the other series, said series being adjacent each other, said rod having portions of different thickness along its length, said springs urging said extensible member into contact with toggles and said toggles into contact with said rod, and resiliently actuated releasable locking means between said rod and said frame.

3,273,505
ELECTRICALLY OPERATED FUEL PUMP
Marshall Miles, Wilmette, Joseph D. Northrup, Mount Prospect, and Edward T. Prell, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Nov. 10, 1964, Ser. No. 410,116
8 Claims. (Cl. 103—53)



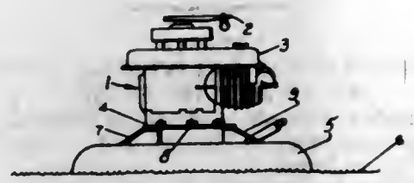
1. In a fuel pump assembly of the type having an inlet port normally adapted to be closed by an inlet valve and communicating with an outlet valve through a diaphragm chamber whose volume is adapted to be varied by a movement of a diaphragm for either drawing fuel into said chamber or pumping fluid from said chamber, the improvement comprising a coil having a movable armature carried on a shaft fixedly connected to said diaphragm and biased to move said diaphragm in one direction for pumping fuel from said chamber, a copper bobbin for said coil, an integrally formed magnetic housing for said coil having one wall portion surrounding said coil and an inner wall portion encircling said armature and engaged against one end of said copper bobbin, an end plate engaged against the end of said one wall and spaced from the other end of said bobbin with a small recess in the periphery of said plate into which said one wall is partially crimped to prevent relative rotation of said plate, a wax encapsulation adapted to be poured through said recess after said crimping and surrounding said coil to prevent displacement of said coil with the level of said wax being visually ascertainable, a stationary core for said coil having an aperture through which said shaft extends, a snap acting switch having a blade movable in either of two directions for respectively establishing or opening a circuit to said coil, an actuator adapted to be threaded on the extending end of said shaft and having a pair of spaced apart flanges located on opposite sides of said blade, and movable with said diaphragm for operating said blade in either of said two directions dependent on which flange engages said blade, and a spring clip having one leg passing through a slot in said actuator and an aperture in said shaft and another leg formed to grasp the end of said shaft for holding said actuator in its adjusted position.

3,273,506
MOTOR-DRIVEN PUMP UNITS
Archie William Holmes Jamieson, Slough, England, assignor to Plessey-U.K. Limited, Ilford, England, a British company
Filed Aug. 17, 1964, Ser. No. 390,777
Claims priority, application Great Britain, Aug. 30, 1963, 34,352/63
2 Claims. (Cl. 103—87)



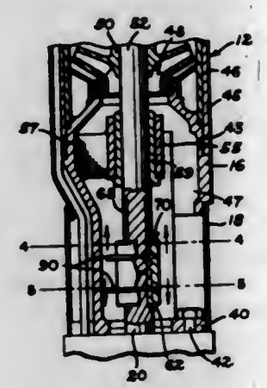
1. A fuel pump for submerged installation in a fuel tank, comprising a volute-type pump housing formed with a lateral delivery connection, said housing being closed at one side of the volute and having a circular opening at the other side, a stator housing having a substantially cylindrical external surface fitting into said aperture and sealingly secured therein to project into proximity of said closed side of the pump housing and having a generally cylindrical inner surface concentric with said external surface, and an end wall projecting radially inwardly from said cylindrical inner surface to form with said closed side of the pump housing a generally radial diffusor channel, diffusor guide vanes in said diffusor channel extending axially between the opposed surfaces of said closed side of the pump housing and said end wall respectively, a stator body of ferromagnetic material fitted on said cylindrical inner surface of the stator housing in fixed relation to the stator housing, a stator winding accommodated in said stator body, a perforate end shield secured to the assembly of said pump housing and stator housing, the said end shield and the closed side of the pump housing having aligned bearing means coaxial with the cylindrical surfaces of the stator body, a rotor body mounted for rotation in said bearing means, said rotor body having a central portion coaxial with said bearings, an outer wall portion, radially spaced from the central portion to form with said central portion an annular passage coaxial with said central portion, said outer portion having a substantially cylindrical outer surface and being connected to said central body by a substantially helical fin portion and having at its end adjacent to the closed side of the pump housing an outwardly extending flange to form with said closed side passage chamber extending substantially radially of the housing, said flange portion having impeller blades extending into said chamber axially of the central portion into close proximity of the closed end of the pump housing, said radial chamber of the rotor being substantially aligned with said radial passage of the stator, an annular rotor body of ferromagnetic material secured on the cylindrical outer surface of said outer wall portion to face the cylindrical inner surface of the stator body, said ferromagnetic rotor body being equipped with a short-circuit winding of the squirrel-cage type, the arrangement being such as to permit the entry of liquid delivered from said chamber in the rotor to enter between the adjacent walls of the stator and rotor body so as to immerse the said bodies.

3,273,507
TRANSPORTABLE FLOAT-SUPPORTED CENTRIFUGAL PUMP ASSEMBLY
James Bruce Handford, Paradise Point, Gold Coast, Queensland, Australia
Filed Oct. 7, 1964, Ser. No. 402,078
Claims priority, application Australia, Oct. 15, 1963, 36,509/63
11 Claims. (Cl. 103—87)



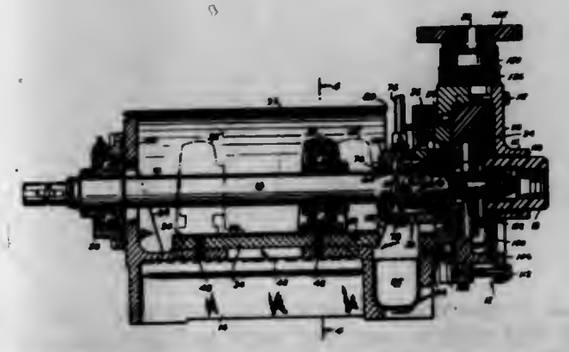
1. A transportable float-supported centrifugal pump assembly, said assembly consisting of a single float fabricated into the form of a closed loop rectangular in shape with its sides formed from lengths of hollow tubing of circular cross-section having mitered ends welded together to form a structure sealed against the ingress of liquid, said float serving to support an internal combustion engine above the liquid to be pumped; a centrifugal pump driven by said internal combustion engine and supported by said float below the surface of the liquid to be pumped; ancillary means for the supply of fuel to, and the control of operation of, said internal combustion engine; an inlet orifice to draw liquid into the pump; and a discharge pipe extending from the pump casing to convey the liquid under pressure from the pump after it has been acted upon by the rotation of the pump impeller vanes.

3,273,508
PUMPS
Kenneth R. Lung, Morehead City, N.C., assignor to The Tait Manufacturing Company, Dayton, Ohio, a corporation of Ohio
Filed Jan. 18, 1965, Ser. No. 426,161
6 Claims. (Cl. 103—87)



1. A pump unit comprising a motor including a projecting motor shaft having spline means formed externally on the end portion thereof, a pump housing rigidly connected to the end of said motor, a pump shaft rotatably supported within said housing, spline means formed externally on the end portion of said pump shaft, a tubular coupling having corresponding internal spline means engaging the end portion of said motor shaft and the adjacent end portion of said pump shaft to provide a positive drive connection therebetween, means defining diametrically opposed grooves in said end portion of each said shaft spaced a predetermined distance from the end thereof, means defining diametrically opposed slots in said coupling opposite each said groove and spaced apart axially to provide full circumferential driving engagement between the central portion of said coupling and the end portions of said shafts, and retaining clip means removably inserted in said slots for engaging said corresponding grooves to limit relative axial movement between said coupling and said shafts.

3,273,509
CENTRIFUGAL PUMP
Edward A. Margus, Morris Plains, N.J., assignor to Vanton Pump & Equipment Corp., a corporation of New Jersey
Filed Apr. 7, 1964, Ser. No. 357,874
1 Claim. (Cl. 103—103)

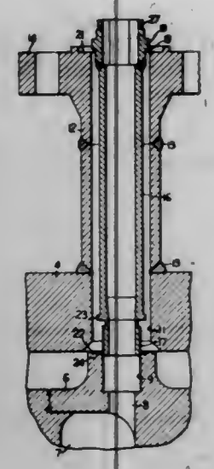


A centrifugal pump comprising a casing which houses an impeller carried on an overhung shaft, an elongated base, said pump casing being mounted at one end of the base, a fixed bearing mounted at the other end of the base, a seal around said shaft at the casing, a movable bearing slidably mounted on the base adjacent the seal, said bearings being well spaced apart axially for good support of the overhung shaft, a slide plate fixedly mounted on the base beneath the movable bearing to afford sliding of the movable bearing away from the seal toward the fixed bearing for easy access to the parts of the seal, said slide plate and movable bearing having guide means extending longitudinally of the base to keep the slidable bearing in accurate alignment with the fixed bearing and the pump as the bearing is moved toward or away from the seal, said movable bearing being secured in position by inverted T head bolts the heads of which are received in the base, said base having wide slots for the heads of the T bolts, and the slide plate having narrow slots over the said wide slots for the shanks of the T bolts, said plate being fixedly mounted on the base to thereby form T slots for the T bolts.

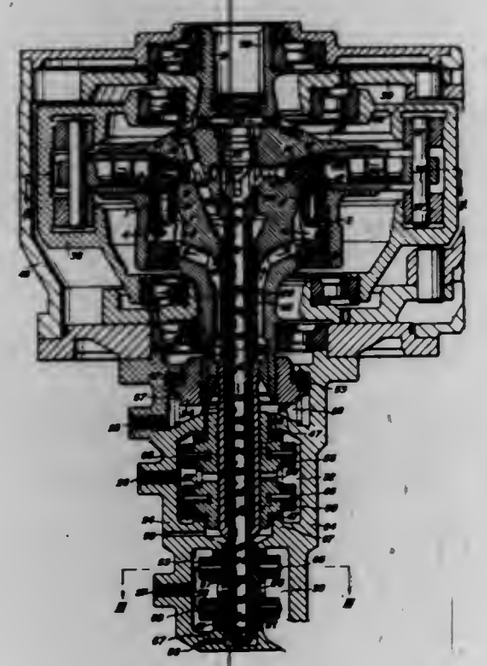
3,273,510
EXTRACTION CONNECTION FOR DOUBLE CASING MACHINE
Joseph J. Jacobs, Trenton, N.J., and David R. Basco, Wauwatosa, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 16, 1964, Ser. No. 383,024
3 Claims. (Cl. 103—111)

1. An extraction connection for a machine having inner and outer casings comprising: walls defining a first threaded opening through the outer wall of said inner casing; walls defining a second opening through the outer wall of said outer casing in substantial alignment with said threaded opening; an externally threaded conduit threadably engaged within said threaded opening and passing through said second opening, the outside diameter of said conduit being less than the diameter of said second opening to permit lateral deflection of said conduit within said second opening; an annular shoulder on said conduit having an outside diameter substantially equal to the diameter of said second opening, said shoulder being positioned in said second opening when said threaded engagement is completed, the distance between said shoulder and the threaded end of said conduit being greater than

the distance between the outer surface of said inner casing and the outer end of said walls defining said second opening to permit said threaded engagement to be initiated prior to insertion of said shoulder into said second opening; and means associated with said shoulder and said walls of said second opening providing a fluid tight seal therebetween.

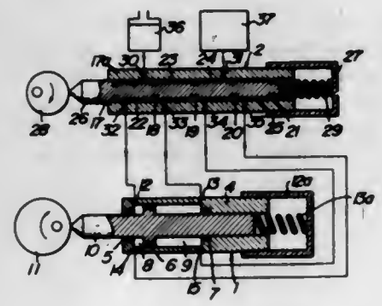


3,273,511
ROTARY MULTI-FLOW PUMP OR COMPRESSOR
Karl Eickmann, 2420 Isshiki, Hayama-machi, Kanagawa-ken, Japan
Filed June 4, 1963, Ser. No. 285,259
Claims priority, application Germany, June 12, 1962, E 23,017
10 Claims. (Cl. 103—161)



1. In a fluid handling machine, in combination, rotor means having an axis and including a main portion with a first diameter having a plurality of circumferentially spaced working chambers expanding and contracting during rotation, and inlet ducts and outlet ducts communicating with said working chambers, said rotor means having a fluid distributing portion projecting in axial direction from one axial end of said main portion and having a diameter smaller than the diameter of said main portion, said distributing portion rotating with said main portion and including a plurality of tubular members surrounding each other and forming in and between each other an inlet passage connected with said inlet duct and a plurality of delivery passages respectively connected with selected outlet ducts whereby the fluid pressures in said delivery passages are determined by the pressures in the working chambers with which said selected outlet ducts are connected.

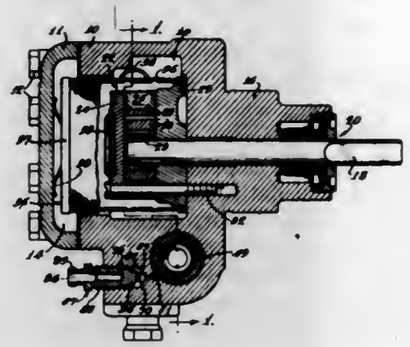
3,273,512
PUMP DEVICE FOR DELIVERING A MINUTE QUANTITY OF FLUID
Kasumi Yoshida, Mito-shi, and Mitsuo Shimada, Katsutashi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 16 1964, Ser. No. 352,274
5 Claims. (Cl. 103—171)



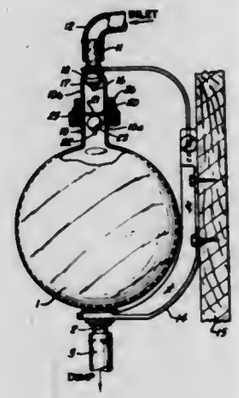
3. A pump device for delivering a minute quantity of fluid comprising a pump mechanism of reciprocating type, a fluid supply source and a fluid receptacle, fluid passage means forming operative connections of said pump mechanism to said fluid supply source and to said fluid receptacle, said fluid passage means comprising a mechanism for controlling said connections, said pump mechanism comprising two working chambers for respectively effecting discharge and suction of fluid and also comprising means operable to alternately change the volumes of said working chambers at a uniform rate of speed, said last-named means comprising a rotary cam member and a piston actuated thereby, said mechanism for controlling said connections comprising a rotary cam means operable at a high speed, said last-named mechanism being effective to operatively connect said working chambers to said fluid receptacle upon the attainment of maximum volumes of said two working chambers, said last-named mechanism being also effective to operatively connect said working chambers to said fluid supply source when the volumes of said working chambers have, respectively, reached their minimum.

3,273,513
OIL BURNER PUMP UNIT WITH AIR PURGING MEANS
Raymond W. Roper, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed Apr. 28, 1965, Ser. No. 453,558
11 Claims. (Cl. 103—203)

1. In an oil burner pumping system, a casing, means providing an inlet to the casing adapted for connection with a source of burner oil, a drive shaft mounted in the casing, a pump in the casing driven by said shaft, having a low pressure intake communicating with said inlet and having a high pressure outlet, means providing a burner port in the casing adapted for connection with an oil burner, a discharge passage in the casing connecting the high pressure outlet and the burner port, a pressure responsive valve in the discharge passage adapted to establish communication between the high pressure outlet and the burner port upon the buildup of a predetermined discharged pressure, air purging means comprising a port in the casing communicating with said passage, a cylindrical recess in the casing communicating with said purge port and opening to the exterior of the casing, a manually operable air purge plug threadably adjustable in said recess, said plug comprising a cylindrical member having a reduced inner end portion slightly spaced from the recess wall and providing between the wall and the reduced portion a restrictive annular passage, a valving surface on the reduced end portion cooperable with said bleed port and movable relative to the bleed port upon threadable adjustment of the plug between a port closed position and a port open position, a longitudinal passage through the plug member from the exterior of the casing to the vicinity of the reduced end portion, and a radial port in the plug member connecting said annular passage and said longitudinal passage.

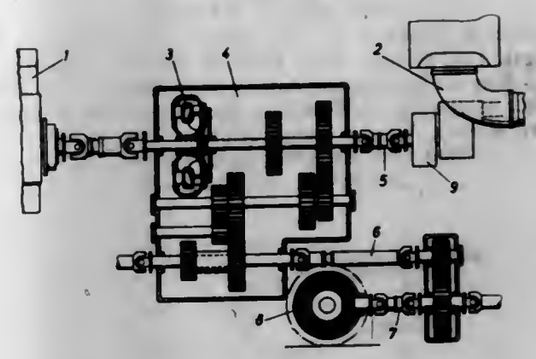


3,273,514
FLUID CONVEYING APPARATUS
Lloyd F. Bender, Hayward, Wis.
Filed June 17, 1965, Ser. No. 464,628
8 Claims. (Cl. 103—236)



1. Fluid conveying apparatus comprising, a vessel having a fluid inlet conduit at its upper end, a fluid outlet conduit at its lower end, and a vacuum conduit adjacent its upper end, said fluid inlet conduit having a one-way check ball to prevent flow of fluid from said vessel and also having distributor means comprising a shiftable ball in said inlet conduit to distribute the fluid around the vessel as it flows into the vessel, said outlet conduit having a one-way fluid discharge valve which closes when said vessel is subjected to vacuum and opens when said vessel is open to atmosphere; and shiftable valve means for alternately placing said vacuum conduit and consequently said vessel in communication with a source of vacuum and with the atmosphere.

3,273,515
LOCOMOTIVE WITH A MAIN AND AN AUXILIARY DRIVING MACHINE
Georg Oestreicher, Cologne-Deutz, and Georg Oberländer, Oberursel (Taunus), Germany, assignors to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany
Filed Nov. 23, 1964, Ser. No. 413,198
Claims priority, application Germany, Nov. 23, 1963, K 51,437
8 Claims. (Cl. 105—96.2)



1. In combination with a self-propelled vehicle having a driving axle: a diesel engine, transmission means interposed between and drivingly connectable with said diesel engine and said driving axle for conveying driving energy from said diesel engine to said driving axle, said transmission means including a mechanical transmission and a hydraulic transmission interposed between said mechanical transmission and said diesel engine for conveying driving energy from said diesel engine to said mechanical transmission, and a gas turbine selectively connectable to said mechanical transmission for conveying additional driving power from said gas turbine through said mechanical transmission to said driving axle while bypassing said hydraulic transmission.

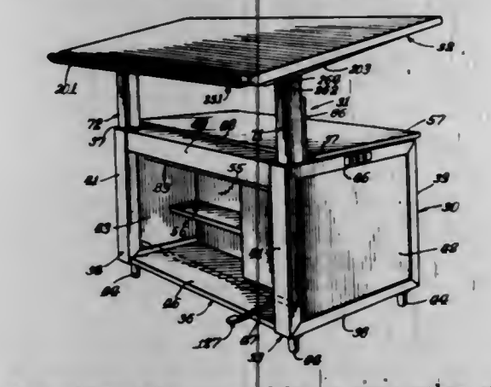
3,273,516
LONGITUDINAL SHOCK ABSORBING ASSEMBLY FOR VEHICLES
Konrad Trümper, Weidenau/Siegen, and Karl Raab, Wiesbaden, Germany, assignors to Rheinstahl Siegener Eisenbahnbedarf Gesellschaft mit beschrankter Haftung, Siegen, Germany
Filed July 7, 1964, Ser. No. 380,906
Claims priority, application Germany, July 16, 1963, R 35,680
20 Claims. (Cl. 105—392.5)



1. A longitudinal shock absorbing assembly comprising, in combination, first elongated shock receiving frame means disposed to receive longitudinal shocks, and second elongated load carrying frame means, one of said frame means having longitudinal ramp tracks upwardly rising in opposite directions with respect to a horizontal plane; roller means connected to the other frame means for longitudinal movement therewith and engaging said ramp tracks resting thereon and running along the same so as to transmit the weight of a load on said second load carrying frame means to said supporting frame means; and brake means actuated only during movement of said roller means toward the higher ends of said ramp tracks,

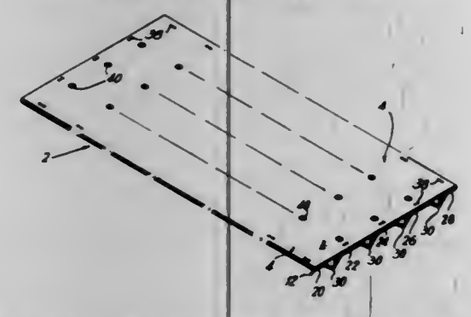
said brake means being not actuated during movement of said roller means away from said higher ends of said ramp tracks, said brake means being applied during said movement of said roller means toward the higher ends of said ramp tracks by the weight of said load on said load carrying frame to brake relative longitudinal movement between said first and second frame means with a force depending on the weight of the load.

3,273,517
DRAFTING TABLE
Franklin R. Amthor, Jr., Manitowoc, and Henry J. Brelvogel, Two Rivers, Wis., Egon R. Hoenle, Chicago, Ill., and Roy E. Kanitz and James M. Katzfey, Two Rivers, Wis., assignors to Hamilton Manufacturing Company, Two Rivers, Wis., a corporation of Wisconsin
Filed Feb. 12, 1964, Ser. No. 344,303
26 Claims. (Cl. 108—2)



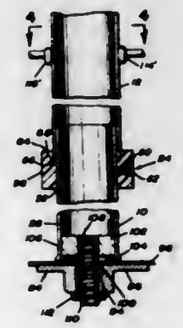
1. A drafting table comprising a supporting structure, a column assembly mounted for vertical movement on said supporting structure comprising two laterally spaced vertically extending columns and a horizontally extending center member rigidly connecting the upper ends of said columns together, means for guiding the vertical movement of said column assembly on said supporting structure, means for vertically moving said columns equally, a drafting board on said column assembly, said means for guiding the vertical movement of said column assembly preventing forward and rearward tilting movement of said assembly, the rigid connection of said center member with said columns and said equal moving means preventing lateral tilting of said column assembly.

3,273,518
PALLET
Frank C. Shina, Floral Park, N.Y., assignor to United Board & Carton Corporation, New York, N.Y., a corporation of New Jersey
Filed Aug. 2, 1965, Ser. No. 476,581
3 Claims. (Cl. 108—55)



1. A pallet of the type which may be used to support materials above the level of the supporting surface whereby the pallet may be lifted with the material thereon, the combination of, a flat sheet of corrugated paper board which presents a material-supporting surface, an undersheet of corrugated paper board having substantially the overall longitudinal and transverse dimensions of said flat sheet with a plurality of parallel flat strip portions positioned along the underside of said flat sheet and equally spaced from each other, said flat strip portions including a pair of edge strips positioned respectively along the longitudinal side edges of said flat sheet, said undersheet including a plurality of integral leg portions corresponding in number with the number of spaces between said flat strip portions and positioned respectively in said spaces with edges coextensive with the respective edges of said flat strip portions and integral therewith whereby each of said flat strip portions is separated from the next adjacent flat strip portion by an integral leg portion, each of said leg portions comprising two flat portions which are at an angle to each other and which are interconnected by a supporting ridge which is adapted to rest upon the supporting surface whereby said pallet is supported by a plurality of parallel supporting ridges, and attaching means attaching said flat strip portions to said flat sheet, said undersheet having its corrugations extending substantially transversely of said flat strip portions and said flat portion of said leg portions whereby said flat portions of each of said leg portions are rigid between the supporting ridge of the leg portion and the adjacent flat strip portion.

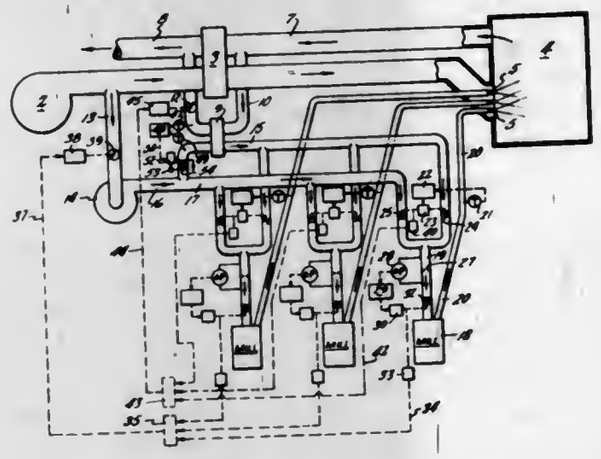
3,273,519
ARTICLE SUPPORT CONSTRUCTION
Philip Duboff, Kearny, N.J., assignor to Shelfmaker Products Corp., Kearny, N.J., a corporation of New Jersey
Filed Jan. 29, 1965, Ser. No. 429,065
3 Claims. (Cl. 108—105)



1. An article support construction comprising:
a supporting base;
a first elongated pole;
attaching means coupling said first elongated pole to said supporting base to maintain said first pole in vertical upstanding disposition;
a second elongated pole in nested telescoping relation with said first pole and extending above said first pole;
collar means slidable along one of said poles and lockable in any desired location therealong;
said collar means being engageable with an end of one said poles to adjust the height at which said second pole is extended above said first pole;
said second pole being rotatable relative to said first pole and having its uppermost end free from engagement with any supporting surface; and
article support means secured to said second pole and rotatable therewith;
said attaching means including a nut secured within the lower portion of said first pole and a screw means threadably engaged with said nut and projecting therefrom beyond the lower end of said first pole;
said nut being spaced inwardly a short distance from the lower end of said first pole to thus define a bottom margin between the lower surface of said nut and the lower end of said first pole;
said bottom margin being flared outwardly;

said supporting base having aperture means therein for reception of said projecting screw means;
said screw means being tightened after insertion through said aperture means to thus engage said first pole lower end with the top of said supporting base, said bottom margin flaring outwardly to assure a firm and stable coupling between said first pole and said supporting base.

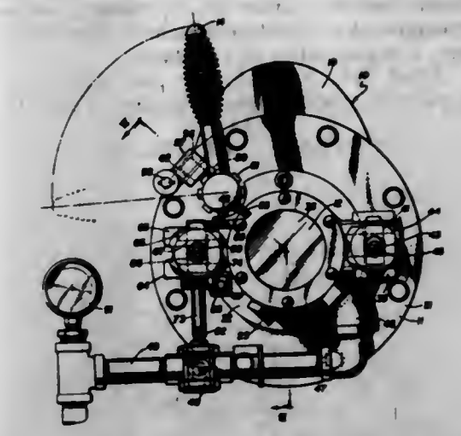
3,273,520
METHOD AND APPARATUS FOR AIR TEMPERATURE REGULATION
Richard D. Hottenstine, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,967
11 Claims. (Cl. 110—56)



1. A pulverized fuel system for a vapor generator having a furnace, burners for burning a pulverized fuel in the furnace, a gas pass for conveying convection products from said furnace, a secondary air heater located in said gas pass, and a means for conveying secondary air through said secondary air heater and thence to the furnace to support combustion therein comprising: a plurality of pulverizers; a primary air heater located in said gas pass, said air heater being in parallel relation with said secondary air heater with respect to gas flow; means for passing primary air through said primary air heater to the mills for fuel drying and thence to the burners; means for supplying tempering air to the pulverizers; means for controlling said tempering air flow in response to the temperature leaving each pulverizer; means for selecting the pulverizer having the lowest tempering air flow; means for regulating the gas flow through the primary air heater in accordance with the tempering air flow supplied to the selected pulverizer, whereby said tempering air flow may be maintained at a minimum value.

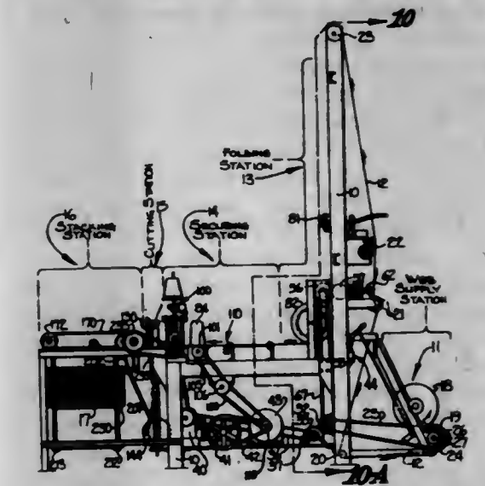
3,273,521
FURNACE DOOR
George J. Nyberg, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Nov. 9, 1964, Ser. No. 409,690
6 Claims. (Cl. 110—179)

1. A furnace door, comprising
(a) a housing adapted to be mounted on a furnace wall,
(b) a transparent window hingedly mounted on the housing,
(c) a shutter mounted in the housing and movable from a first position in which it lies between the window and the interior of the furnace and a second position in which it does not so lie,
(d) apparatus operative, on occasion, for causing a flow of air through the housing into the furnace,



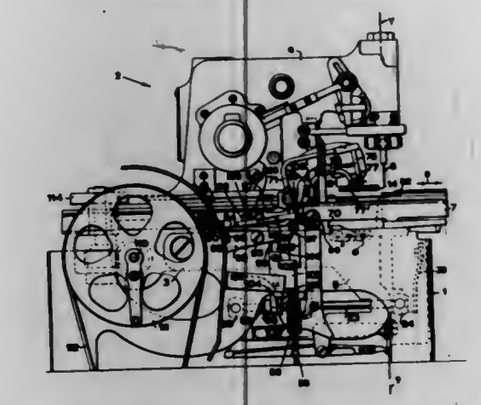
(e) means preventing the opening of the window unless the said apparatus is operative and unless the shutter is in the said second position.

3,273,522
MECHANISM FOR AUTOMATICALLY PRODUCING PREFOLDED DIAPERS
Graves T. Gore and Albert D. Martin, Ware Shoals, and Norman Smith, Greenwood, S.C., assignors to Riegel Textile Corporation, a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,691
9 Claims. (Cl. 112—2)



1. A mechanism for automatically producing prefolded diapers comprising a frame portion, driven feeding means carried by said frame and adapted to feed the continuous web of diaper material through said mechanism, a supply means carried by said frame for supplying an open width continuous web of diaper material to said mechanism, folding means carried by said frame and disposed adjacent said supply means and adapted to fold the traveling continuous web of diaper material in the desired prefold along at least two fold lines to define a longitudinally extending multiple layer center panel and two side panels in the folded material, securing means carried by said frame and disposed adjacent said folding means comprising a pair of sewing means adapted to apply longitudinal lines of stitches through the multiple layer center panel of the folded diaper material for securing the traveling folded continuous web of diaper material in the desired prefolded condition, and cutting means carried by said frame and disposed adjacent said securing means for transversely cutting the traveling folded and secured continuous web of diaper material into individual diapers of a predetermined length.

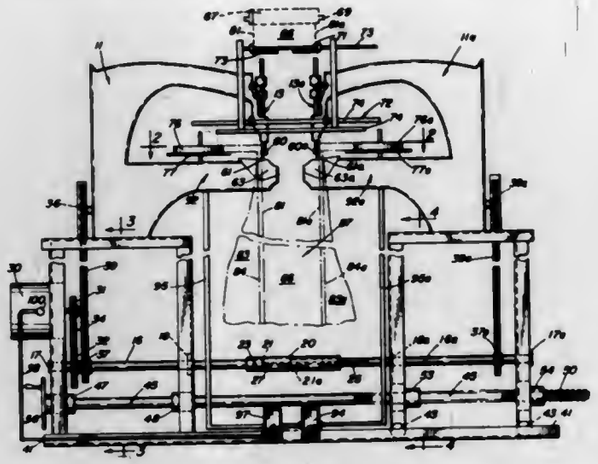
3,273,523
BUTTONHOLE-STITCHING MACHINE AND THREAD-SEVERING MEANS THEREFOR
Hermann Pudelko, Bielefeld, Germany, assignor to Durkoppwerke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed Feb. 9, 1965, Ser. No. 431,319
Claims priority, application Germany, Feb. 10, 1964, D 43,575
17 Claims. (Cl. 112—65)



1. In a buttonhole-stitching machine having support means, stitch forming means on said support means for feeding at least an underthread and a stay cord to a stitching location, and a fabric carrying table cooperating with said stitch forming means for positioning a fabric at said location while being generally linearly shiftable on said support means from a starting position at the commencement of a buttonhole-stitching operation with a generally reciprocating movement returning substantially to said position upon conclusion of said operation, the improvement which includes thread-severing means for cutting said underthread and said stay cord upon conclusion of said operation, said thread-severing means comprising:
cooperating blade means mounted on said table and engageable with said underthread and said stay cord in the region of said position for severing them upon actuation of said blade means;
an angularly oscillatable shaft on said support means operatively connected with said blade means for actuation thereof upon angular displacement of said shaft in one rotational sense;
actuating means connectable with said shaft for angularly displacing same in said rotational sense;
mechanism on said support means for selectively blocking and unblocking angular displacement of said shaft; and
abutment means on said table cooperating wtih said mechanism for preventing displacement of said shaft during said reciprocating movement of said table, but permitting displacement of said shaft upon termination of said reciprocating movement.

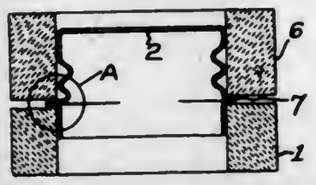
3,273,524
SEWING MACHINE METHOD FOR PRODUCING AN ENVELOPE
Leo H. Koltun, 6659 N. Francisco Ave., Chicago, Ill.
Filed Jan. 21, 1964, Ser. No. 339,148
8 Claims. (Cl. 112—262)

1. A method of producing an envelope in which each marginal side edge of an elongated strip of material is securely attached to the periphery of separate parallel opposed panels which extend transversely of said strip to form said envelope, said method comprising the steps of:
placing respective peripheral edges of said separate opposed panels to operatively engage respective fastening heads of laterally spaced fastening means of tandem machines adapted to feed in unison in the same direction;
placing remaining portions of said panels in a vertically extending workpiece receiving and manipulating zone below and between said spaced apart machines;
positioning said elongated strip under said fastening heads with each said marginal side edge thereof in alignment with said respective peripheral edges of corresponding said separate opposed panels;



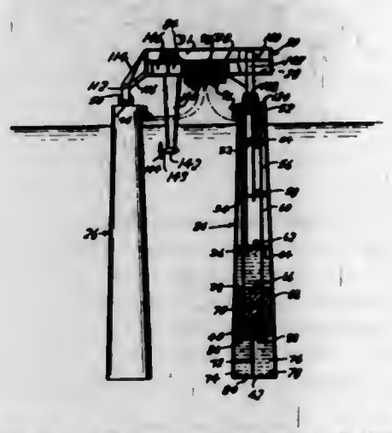
concurrently progressively advancing said peripheral edges of said panels and each said marginal side edge of said elongated strip and simultaneously joining opposed side edges of said strip to corresponding said peripheral edges of said panels along substantially the entire perimeter of said panels to complete a circuit path and produce said envelope.

3,273,525
TAMPER-PROOF CAPS FOR CONTAINERS
Frederick G. Robinson, Broad Balk, Kemp Road, Swanland, East Yorkshire, England
Filed Sept. 2, 1964, Ser. No. 393,838
3 Claims. (Cl. 113—121)



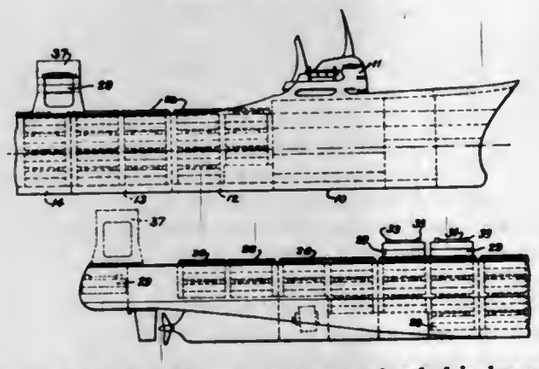
1. In the method of manufacturing a ductile tamper-proof cap which is reusable after opening, said cap having a lowermost peripheral bead and a skirt therebelow, said cap used as a closure for the mouth of a container having a neck and a shoulder on said neck, that improvement in providing a weakened portion of the cap which consists of forming an interrupted line of weakening in said rolled peripheral bead of the closure cap on the shoulder of the neck of the bottle by the steps of compressing the upper and lower surfaces of said peripheral bead between an upper stationary pressing member and a lower non-rotatable pressing member which is reciprocably movable toward and away from said upper member to form upper and lower annular portions of the bead into flattened relation and folded against each other, said lower movable member having an outer pressing shelf and an inner knife edge, the continuity of said knife edge being interrupted by a series of equally spaced radial slots to thereby cut an interrupted circular line completely through the entire thickness of the lower fold of said compressed bead and partially through the thickness of the upper fold of said compressed bead by the axial up and down movement of said knife edge, said cutting being performed by the knife edge being confined at the juncture of the lower inner bead fold line and the dependent skirt, whereby the unscrewing of said cap automatically ruptures the closure along the line of weakening provided at the lower fold of said peripheral bead and the torn portions thereof curve inwardly after said rupture.

3,273,526
STABLE OCEAN PLATFORM
Lawrence R. Glosten, 71 Columbia St., Seattle 4, Wash.
Filed Nov. 15, 1963, Ser. No. 324,038
5 Claims. (Cl. 114—.5)



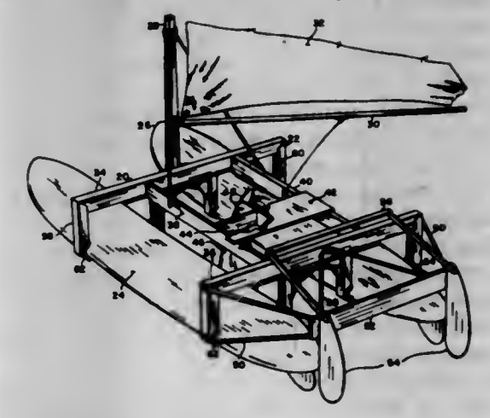
1. A marine platform comprising a superstructure housing, three elongated flotation hulls, each of said hulls having transverse bulkheads spaced lengthwise thereof and dividing the hull into ballast tanks, pivot means connecting the upper ends of said hulls to equally spaced circumferential portions of said superstructure housing and guiding said hulls for swinging relative to said superstructure housing about said pivot means between positions projecting downward from said superstructure housing with their lengths upright and substantially coplanar positions with their lengths generally parallel and horizontal, and means operable to supply gas simultaneously to corresponding ballast tanks of all of said hulls for effecting simultaneous and coordinated swinging thereof toward horizontal positions and further operable to provide a supply of water simultaneously to corresponding ballast tanks of all of said hulls for effecting simultaneous and coordinated swinging of said hulls relative to said superstructure housing about said pivot means toward upright positions.

3,273,527
INTEGRATED BARGE AND CARGO SHIP CONSTRUCTION
Jerome L. Goldman, 1420 N.B.C. Bldg., New Orleans, La.
Filed Dec. 28, 1964, Ser. No. 421,237
3 Claims. (Cl. 114—43.5)



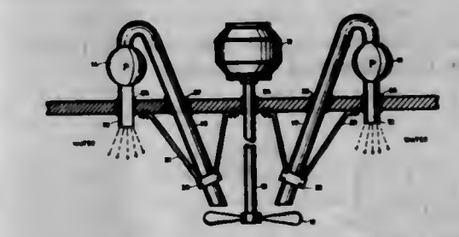
1. A cargo ship for carrying cargo loaded in barges for quick loading and unloading comprising
(a) a main hull having cargo hold areas along the longitudinal axis thereof;
(b) the stern of said hull having beam width continuations above the water line forming with the stern of said hull an open-ended barge transfer well;
(c) the cargo hold areas being of a size along the fore and aft axis of the hull to receive two tiers of cargo barges with the fore and aft axis of the barges athwart ship of the main hull;
(d) and a barge transfer crane astride of the cargo hold areas and movable along the longitudinal axis of the hull from the cargo area closest the bow of the main hull to and onto said hull continuations so that the crane is above said barge transfer well;
(e) and cargo barges receivable by said crane with the fore and aft axis of the barges transversely of the longitudinal axis of the hull.

3,273,528
WINDSURFER
Michael C. Kiefer, 509 Amphitheater Drive, Del Mar, Calif.
Filed July 20, 1964, Ser. No. 383,852
7 Claims. (Cl. 114—61)



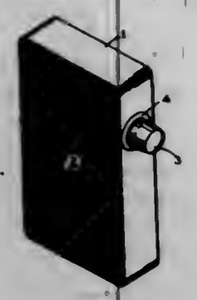
1. A craft of the catamaran type, comprising in combination:
(A) a main frame;
(B) two surfboards;
(C) and clamping means on the main frame engageable with opposite edges of both surfboards for removably attaching the surfboards to the main frame.

3,273,529
MEANS AND METHOD FOR INCREASING THE SPEED OF SHIPS
Alexander M. Senkewich, New York, N.Y., assignor of five percent to James M. Hellman, Rye, N.Y., and five percent to Marjorie Kingston, Flushing, N.Y.
Filed Feb. 18, 1965, Ser. No. 433,561
5 Claims. (Cl. 115—34)



1. Ship propulsion means comprising a propeller mounted on a hull, means for removing air from around said propeller comprising at least one pipe extending through said hull to the vicinity of said propeller, pump means mounted within said hull for removing the air from the propeller area into the hull and then out again to aid in propelling said hull.

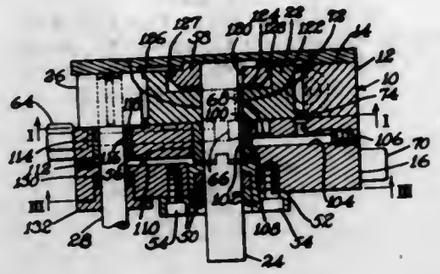
3,273,530
MONO-FREQUENCY SOUND SOURCE
James J. Hill, 3750 E. 10 Court, Hialeah, Fla.
Filed Aug. 2, 1965, Ser. No. 476,350
1 Claim. (Cl. 116—137)



A manually operated mono-frequency sound source comprising a means forming a base,
a tuning fork parallel with and secured to said base for resonance at a predetermined audio frequency,
a flat striker spring secured at one end thereof to said base and positioned in parallel relation to said fork including a striker member secured in the opposite end portion thereof and positioned in predetermined spaced relation from said fork when said striker spring is in its idle position,
an operating member slidably retained on said base for reciprocation transverse said fork from an idle to an activated position,
a push button secured on one end of said operating member,
spring means biased between said base and said member for urging the latter into said idle position.
a pawl means pivotally secured for a limited range of oscillation on said operating member including an integral tripping projection,
an abutment integral with said base positioned in the path of movement of said tripping projection when said operating member is moved to its said activated position,
a stop projection in said base in the path of return movement of said tripping projection of said pawl means for restoring the latter to its initial position when said operating member is moved to its idle position,
a sear projection integral with said pawl means for momentarily engaging and disengaging the opposite said end of said striker spring when said operating member is moved to its said activated position and said pawl means is rotated by engagement with said abutment whereby said striker spring will flex and impact said striker member against said fork for oscillating the latter at its fundamental frequency when said push button is operated,
a cover casing secured to said base constructed to be held in the hand with one side thereof substantially transparent to sound and including an aperture through said casing for the free operation of said button by a finger of the hand.

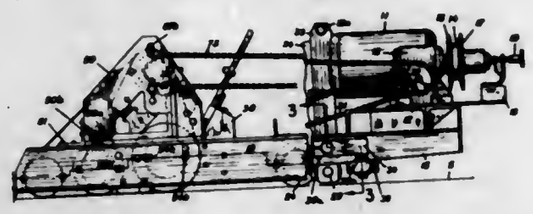
3,273,531
APPARATUS FOR APPLYING ADHESIVE
Harold W. Boothroyd, Wenham, and Harry Phillips, Hamilton, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed July 23, 1963, Ser. No. 297,073
6 Claims. (Cl. 118—202)

1. Apparatus for applying adhesive comprising a casing formed to provide a recess for receiving a rotary applying wheel, an applying wheel mounted on a shaft, a bearing associated with the casing for journaling said shaft with a major portion of the applying wheel in said recess, a member located substantially within the confines of the casing and cooperating with the peripheral surface of the wheel in a location where the wheel leaves the casing for determining the amount of adhesive carried by the wheel, and means for introducing adhesive into said recess at a point adjacent to said member, said casing and bearing be-



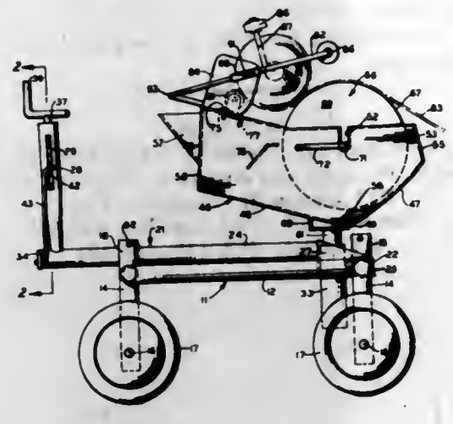
ing formed to provide passageways leading from a point in the recess adjacent to said member, through the bearing, to a point in the recess adjacent to the location where the wheel re-enters the casing, whereby a continuous flow of adhesive through said bearing, to lubricate and clean the bearing, is provided when the applying wheel is rotated in a direction toward said member.

3,273,532
SURFACE COATING APPARATUS
John Brzuskiewicz, Dolton, and Roy F. Lo Presti and Wayne Ridenour, Chicago, Ill., assignors, by mesne assignments, to Barker Chemical Company, Chicago, Ill.
Filed Oct. 30, 1963, Ser. No. 320,156
7 Claims. (Cl. 118—202)



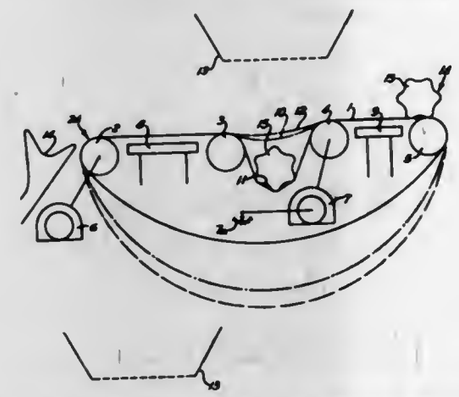
1. An apparatus for applying a hot melt type of coating material to a surface, comprising a frame, driving means on the frame for driving the apparatus along the surface to be coated, said driving means comprising a driving motor on the front end of the frame and driving wheels positioned to the rear of the center of gravity of said apparatus and adapted to roll on the surface to be coated, adjustable guiding means on the said front end of the frame and extending laterally of the frame and adapted to bear in guiding engagement on vertical lateral justing the height of the frame relative to the surface to surfaces along the surface to be coated for guiding the apparatus along the surface to be coated, frame height adjusting means on said front end of said frame for adbe coated and comprising a front roller mounted adjacent the front of the frame and adapted to roll on the surface to be coated and support some of the weight of the apparatus, and means connected to said front roller for raising and lowering the front roller, whereby when the front roller is raised or lowered, the rear of the frame is lowered and raised as it pivots about the driving wheels, means adjacent the rear end of the frame for holding a supply of hot melt type coating material and keeping it molten and for delivering the molten material, and means on the rear end of the frame for forming and applying a layer of the molten hot melt material from the holding and delivering means to the surface to be coated.

3,273,533
ROOFING FELT LAYING MACHINE
Wendel J. Sims, Rte. 1, Box 90, Gilroy, Calif.
Filed Nov. 26, 1963, Ser. No. 326,011
15 Claims. (Cl. 118—235)



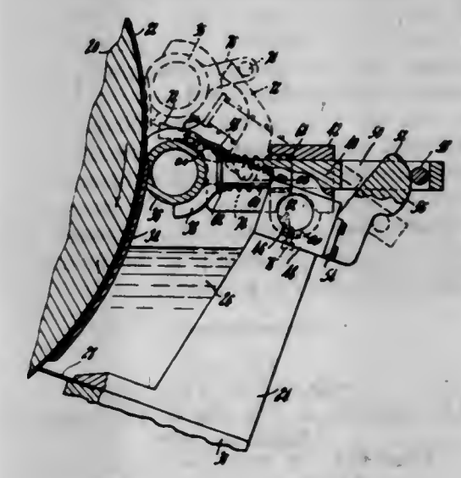
1. A roofing felt applying machine comprising a carriage having wheels, a trough, means mounting said trough for pivotal movement relative to said carriage about a vertical axis, a drum mounted in said trough rotatable about a horizontal axis with said drum partially extending above said trough, and guide means for mounting a roll of felt with its axis parallel to said drum and the underside of the felt in contact with a portion of said drum above said axis.

3,273,534
APPARATUS FOR COATING HOT BILLETS OF OPTIONAL SHAPE WITH A LUBRICATING POWDER
Laurent Hyvert, Paris, France, assignor to Compagnie du Filage des Metaux et des Joints Curty (Cefilac), Paris, France, a corporation of France
Filed Mar. 24, 1964, Ser. No. 354,313
Claims priority, application France, Mar. 29, 1963, 929,803
6 Claims. (Cl. 118—308)



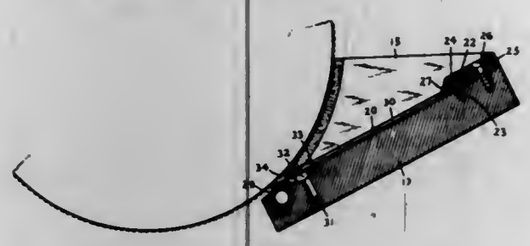
1. Apparatus for coating with a lubricating powder before extrusion or piercing a metal billet heated to a hot extrusion or a hot piercing temperature, comprising an endless conveyor belt disposed between a first station where said billet is received onto said belt and a second station where said billet is delivered to means for advancing same to an extrusion or piercing machine, said belt being disposed upon and in engagement with roller members, being positioned substantially transversely of the longitudinal axis of the billet and forming a path of travel for said billet between said first and second stations, at least one of said roller members having a driving connection with a motor means which effects travel of said belt along said path, between said first and second stations two of said roller members being spaced apart a distance such that a pocket can be formed in said belt below said path and of a size sufficient to hold said billet, operable means for raising and lowering that portion of said belt between said two spaced apart roller members during travel of said belt when said billet is intermediate said two spaced apart roller members to form said pocket and to eliminate said pocket, said belt having a total length which permits formation of said pocket of a depth such that said billet when in said pocket is rotated about its longitudinal axis by travel of said belt and lubricating powder dispersing means positioned opposite said pocket and spaced apart therefrom for delivering said lubricant onto said billet when in said pocket.

3,273,535
TRAILING-BLADE-COATER INCLUDING ADJUSTABLE DRAG-BLADE
Garo Krikorian, Paxton, Mass., assignor to Rice Barton Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Oct. 6, 1964, Ser. No. 408,716
10 Claims. (Cl. 118—410)



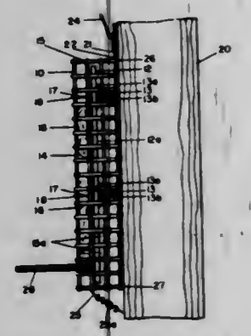
1. In a coater having a backing roll around which a traveling web to be coated is drawn, a liquid coating reservoir and doctor blade assembly which comprises a liquid coating enclosure having an open face disposed against said web and supporting backing roll; a trailing type doctor blade forming a base portion of said enclosure and having the trailing edge thereof yieldably supported with relation to said traveling web in position closing the leaving edge of said open face; a drag blade disposed in narrowly spaced relation to said traveling web across the width of the web and having the face thereof conformed generally to the web and backing roll over which the web passes; said drag blade extending from above the top face of said liquid coating material and terminating in an inner submerged edge spaced from said doctor blade thus forming a wall of said enclosure and generally preventing contact of said material with the traveling web portion contiguous to said drag blade so that substantially that portion only of the traveling web extending from said inner submerged edge of the drag blade to the leaving edge defined by said doctor blade is in contact with said liquid coating; and adjustable supporting means on which said drag blade is shiftable relatively to said backing roll to vary the width of the space between the inner submerged edge of the drag blade and the doctor blade and thereby the thickness of coating material driven past the yieldable trailing edge of said doctor blade.

3,273,536
TRAILING-BLADE COATER INCLUDING FLUID SEAL
Merrill F. Galer, Monroe, and Morrison N. Stiles, Westport, Conn., assignors to Time Incorporated, New York, N.Y., a corporation of New York
Filed June 26, 1961, Ser. No. 119,431
4 Claims. (Cl. 118—413)



1. A coating apparatus which cooperates with a rotatable cylinder serving as a back-up surface for a web to be coated comprising a coating blade, a coating blade support holding the coating blade in position to engage the web, a pair of end walls carried by the blade support adjacent the rotatable cylinder to confine the coating material therebetween, means defining a slot in the base of each end wall to receive the side edge of the blade therein, the height of the slot being greater than the thickness of the blade, the coating blade protruding forwardly of the end walls in the direction of movement of the cylinder and the web against the cylinder and defining a space forward of each end wall between the blade and the surface to be coated, the forward end of each said slot communicating with one of said spaces, and passage means establishing communication between a source of fluid under pressure for supplying the fluid to said space to provide a fluid seal for said space.

3,273,537
WILDLIFE FEEDER
San W. Orr, Room 305, 122 W. Washington Ave., Madison, Wis.
Filed Feb. 10, 1965, Ser. No. 431,512
3 Claims. (Cl. 119—51)



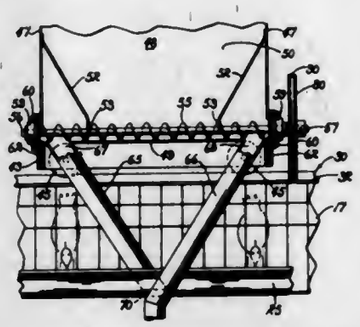
1. A wildlife feeder comprising:
(a) an enclosure having a front screen made of shape retaining material and a continuous side wall connected thereto, said enclosure having an open back side,
(b) said screen having a plurality of openings therein of sufficient size to permit wildlife to withdraw food from said enclosure therethrough,
(c) a plate adapted to be removably positioned within said enclosure approximately parallel to said front screen, and
(d) means spaced substantially within said enclosure and being detachably connected to said screen and bearing against the back of said plate for continually forcing said plate toward said screen, wherein the continuous side wall of the enclosure has a plurality of openings of sufficient size to permit wildlife to withdraw food from said enclosure therethrough, wherein the means for forcing the plate toward the front screen comprises a plurality of springs, each of said springs engaging the rear surface of said plate and having an integral wire extension connected to the front screen whereby to force said plate toward said screen.

3,273,538
TIME OPERATED ANIMAL FEEDING DEVICE
David R. Woerner and Joseph F. Woerner, both of 823 Azalea St., Houston, Tex.
Filed Mar. 10, 1965, Ser. No. 438,517
8 Claims. (Cl. 119—51.12)



1. An automatic feeding device comprising a housing with a base portion having an upstanding flange sized to receive a removable food receptacle, said housing having a compartment with a horizontal opening, a cover plate over said food receptacle, a radial extension of said cover plate adapted to extend through said horizontal opening and into said compartment for mounting said cover plate, means to adjust the alignment of the cover plate when positioned over said food receptacle, means to support the cover plate when not positioned over said food receptacle, means to urge the cover plate into contact with said food receptacle, and means to rotate the cover plate and uncover said food receptacle at the expiration of a pre-selected interval of time.

3,273,539
FEEDING SYSTEM
Robert B. Cooper, 4832 N. Fruit, Fresno, Calif.
Filed Mar. 27, 1964, Ser. No. 355,173
13 Claims. (Cl. 119—52)



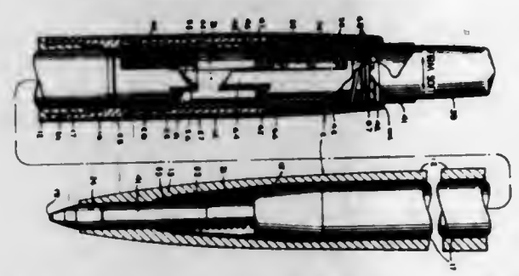
2. An animal feeding system comprising a pair of substantially parallel feed troughs, a feed hopper having a pair of feed discharge members extended therefrom, means mounting said hopper adjacent to the troughs for reversible movement therealong with said discharge members individually extended toward the troughs to discharge feed therein, and feed conveying means mounted in the hopper for automatically alternately directing feed from the hopper through one discharge member into its respective trough during movement of the hopper in one direction and for directing feed from the hopper from the other discharge member into its respective trough during movement of the hopper in the other direction.

3,273,540
POULTRY SPUR PROTECTOR
Gabriel Fuentes, Jr., P.O. Box 867, Bayamon, Puerto Rico
Original application May 4, 1964, Ser. No. 364,601. Divided and this application July 19, 1965, Ser. No. 484,150
4 Claims. (Cl. 119—144)



1. A protective glove for poultry having spurs on its legs comprising an elongated strap with centrally located orifice therein, a spur receiving and enclosing protective shield member affixed to said strap over said orifice capable of receiving said spur when said orifice is placed over said spur and means on said strap to secure it to said leg of said poultry.

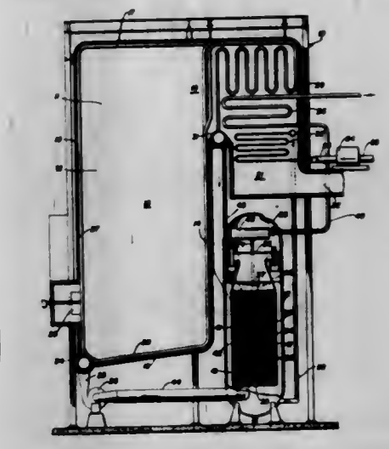
3,273,541
ADJUSTABLE RESILIENT WRITING INSTRUMENT
Richard L. Thurman, Beloit, and August J. Coutre, Janesville, Wis., assignors to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin
Filed Sept. 18, 1963, Ser. No. 309,723
9 Claims. (Cl. 120—42.03)



3. In a writing instrument of the type comprising a housing having an open end, a writing unit including a writing tip, said writing unit being mounted movably in said housing for movement between a projected position in which the tip extends through and beyond the open end of said housing and a retracted position in which the tip is withdrawn into said housing, actuating means for moving said unit between said positions, retaining means for retaining said unit in said projected position and means for disabling said retaining means to allow said unit to move to said retracted position, the improvement comprising; means for supporting said retaining means movably within said housing and resilient means urging said retaining means toward the open end of said housing, said retaining means being yieldable against the influence of said resilient means away from the open end of said housing in response to the application of pressure to said writing tip.

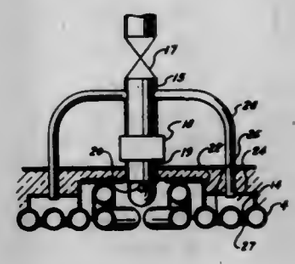
3,273,542
STEAM GENERATING UNIT
Louis E. Griffith, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed May 19, 1964, Ser. No. 368,657
2 Claims. (Cl. 122—33)

1. A steam generating unit, comprising
(a) a combustion chamber having burners mounted on its walls and having tubes designed for relatively low-pressure operation lining its walls and forming a heat exchanger therewith, the chamber having a convection pass means extending therefrom,
(b) a water boiler designed for relatively high-pressure operation having a steaming section and a steam-separating section, the boiler consisting of a vertically-elongated housing having the steaming section with an indirect heat exchange means in its lower portion and the steam separator in the upper portion,
(c) circulation means introducing an inert gas into the tubes of the combustion chamber,



(d) means connecting the tubes of the combustion chamber to the heat exchange means in the steaming section of the water boiler,
(e) means connecting the indirect heat exchange means in the said steaming section to the circulation means, and
(f) an economizer located in the said convection pass means and connected directly to the steaming section of the boiler to preheat the water before it reaches the boiler.

3,273,543
FURNACE WALL BLOWER IMPROVEMENT
Elwood P. Petit, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,167
17 Claims. (Cl. 122—392)

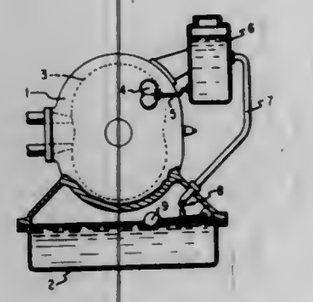


1. In a vapor generator having a furnace, tubes lining the walls of said furnace, means for burning an ash bearing fuel within said furnace whereby ash collects on the tube lined walls of the furnace, and means for directing a jet of cleaning medium along at least a portion of a furnace wall, the method of cleaning ash off the walls of said furnace comprising: burning fuel within the furnace and forming a layer of ash and slag on the walls thereof; removing ash from co-planar tubes lining a wall of the furnace, in a limited area immediately adjacent the jet means; thereafter directing the jet of cleaning medium across said co-planar tubes lining said furnace wall so that it operates against the edge of the remaining ash layer whereby the ash beyond said immediately adjacent area is removed.

3,273,544
ROTARY PISTON INTERNAL COMBUSTION ENGINE

Wolf-Dieter Bensinger, Stuttgart-Unterturkheim, Hans-Otto Derndinger, Stuttgart-Wangen, and Franz G. F. Behles, Ingolstadt, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Mar. 20, 1964, Ser. No. 353,387
Claims priority, application Germany, Mar. 23, 1963, D 41,204
14 Claims. (Cl. 123—8)



1. A rotary piston internal combustion engine of trochoidal construction having a housing provided with internal cam surfaces and an oil pan forming the oil sump and flangedly connected below the housing, comprising:

additional oil storage tank means disposed relatively high,

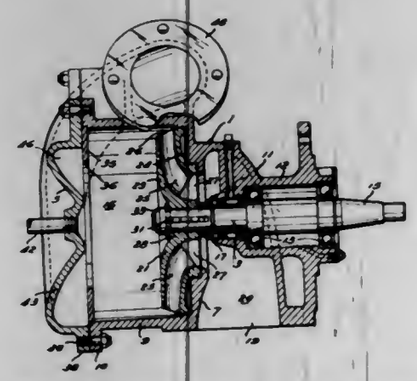
first line means operatively connecting said additional tank means with the oil sump,

and second line means including oil pump means connecting said additional tank means with the engine to supply lubricating oil from said additional tank means to the internal cam surfaces of the engine.

3,273,545
METHOD AND APPARATUS FOR SEPARATING FLUIDS

Stanley B. McFarlin, Jeromesville, Ohio, assignor to The Gorman-Rupp Company

Filed Oct. 13, 1964, Ser. No. 403,620
17 Claims. (Cl. 123—41.47)

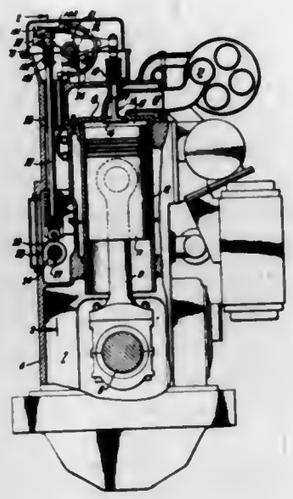


1. A cooling system comprising a liquid cooling jacket of an internal combustion engine, a plurality of radiators, means for conducting liquid from said jacket selectively to said radiators including a header connected to said jacket, separate branch tubes leading from the header to the radiators and valves in said branch tubes to control the flow of liquid from the header to the radiators, a tank connected to the radiators to receive liquid and gas discharged therefrom, a centrifugal pump positioned to receive a mixture of liquid and gas from said tank and to pump and separate them, and means to conduct the separated liquid into said jacket.

3,273,546
VALVE TIMING SELECTOR

Henry R. von Arx, Berkeley, Calif., assignor to General Metals Corporation, Oakland, Calif., a corporation of California

Filed Jan. 24, 1964, Ser. No. 340,058
8 Claims. (Cl. 123—90)



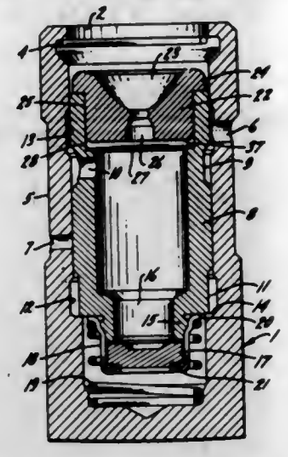
1. A valve timing selector for use with an engine having a cam shaft and a reciprocating valve comprising a forward cam on said cam shaft, a reverse cam on said cam shaft, a first cam train including a first follower and a first pushrod operated in a first path by said forward cam, a second cam train including a second follower and a second pushrod operated in a second path by said reverse cam, a rocker in engagement with said valve, means on said rocker including opposite walls defining a cross chamber, a slide reciprocable in said cross chamber and including surfaces slidable on said walls, a forward hook projecting from said slide on one side of said rocker, a reverse hook projecting from said slide on the other side of said rocker, means on said rocker forming a cylinder, means on said slide forming a piston reciprocable in said cylinder, means for supplying said cylinder with actuating fluid to reciprocate said slide in said rocker, a first tappet engaging said first pushrod and engageable with said forward hook when said slide is in one reciprocated position, and a second tappet engaging said second pushrod and engageable with said reverse hook when said slide is in another reciprocated position.

3,273,547
HYDRAULIC TAPPET WITH METERING MEANS

Kenneth W. Lesher, Wheaton, Ill., assignor to Standard Screw Company, Bellwood, Ill., a corporation of Illinois

Filed Jan. 12, 1965, Ser. No. 424,901
10 Claims. (Cl. 123—90)

1. A metering valve for a tappet having a hollow open ended cylinder, a hollow plunger mounted for reciprocation therein, a passage formed in the cylinder wall and in the plunger wall through which oil may reach the interior of the plunger, a pressure chamber defined within the cylinder and between it and the plunger, a closure for said plunger, a passage through said closure, said value comprising means within the plunger for metering flow through said closure passage comprising a disklike member, a plurality of raised portions formed one on each face of said member, each comprising a wall-like member having adjacent ends approaching but separated from each other, the area of separation of the ends of each pair of wall-like members being identical, and a surface formed on said closure within said plunger against which the adjacent wall-like member is adapted to be seated in response to pressure within the plunger, said wall-like members being

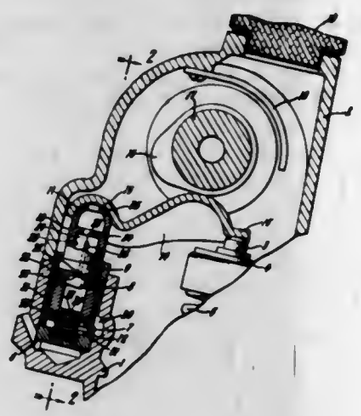


so disposed on said first-mentioned member as to surround the opening to said closure passage regardless of which of said wall-like members faces said seating surface.

3,273,548
HYDRAULIC LASH ADJUSTER

Donald J. Hoffman, Grand Rapids, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 29, 1965, Ser. No. 491,246
4 Claims. (Cl. 123—90)



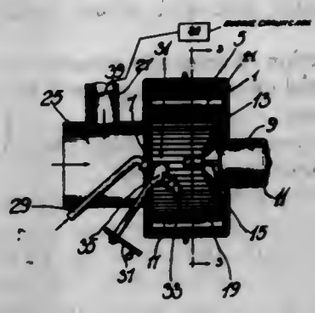
2. In a hydraulic lash adjuster, a generally upstanding dash pot, means for supplying hydraulic fluid to the dash pot including a hollow plunger therein having a side port, said port being inclined upwardly from the exterior of the plunger and constituting the sole inlet for fluid flow into the plunger, and a tube inclined upwardly within the plunger for conducting said fluid thereinto from said port, said tube having a bulbous external enlargement sealingly fitting said port.

3,273,549
INTERNAL COMBUSTION ENGINE CARBURETOR HAVING A FAN

Olivier Deland, L'Acadie, St. Jean, Quebec, Canada

Filed Nov. 18, 1963, Ser. No. 324,429
9 Claims. (Cl. 123—119)

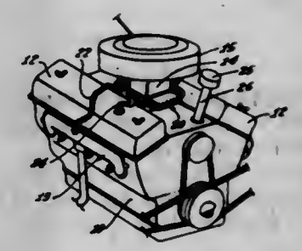
3. A carburetor for supplying a mixture of air, vaporized and liquid fuels to a combustion engine comprising: a fan having a rotary impeller formed with peripheral blades and a main air inlet; means discharging hot vaporized fuel into said air inlet to warm the air entering said fan and liquid fuel inlet means discharging fuel centrally of said rotary impeller on said blades so as to be atomized thereby.



3,273,550
CARBURETION SYSTEM

Warren Ball, 1304 N. Gordon St., Hollywood, Calif.

Filed Nov. 24, 1964, Ser. No. 413,506
23 Claims. (Cl. 123—119)



1. In a system for recycling gaseous fluids through the combustion zone of an internal combustion engine, wherein passage means conveys gaseous fluid from the engine to the intake of the engine, the improvement comprising:

a first valve and a second valve operating in parallel to control flow through the passage means in response to changes in the pressure in the intake,

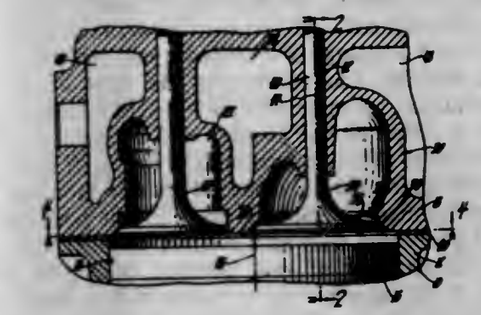
the first valve being open at relatively low vacuum in the intake and progressively closing in response to rise in the vacuum,

the second valve being closed at a relatively high vacuum in the intake and progressively opening in response to rise in the vacuum.

3,273,551
CYLINDER INLET PASSAGE FOR AN INTERNAL COMBUSTION ENGINE

Harry A. Julien, Oxford, and Carl J. Robinson, Pontiac, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 30, 1964, Ser. No. 400,460
7 Claims. (Cl. 123—188)



1. In an internal combustion engine, a cylinder, a cylinder head closing one end of the cylinder, means defining an inlet passage through the cylinder head and communicating with the cylinder, and a poppet inlet valve

having a central axis and reciprocably disposed in the passage for controlling communication of the inlet passage with the cylinder, said inlet passage means being characterized by:

a throat portion of generally circular cross-section opening into the cylinder and adapted to be closed by the inlet valve;

an entrance portion spaced from the throat portion and offset from the valve axis;

means defining a fluid flow path extending from the entrance portion around one side of the valve axis and blending into the throat portion in a descending spiral configuration, said fluid flow path defining means including a valve guide boss surrounding the valve axis and extending into the flow path and a side wall extending tangentially from the guide boss to the entrance portion and terminating at its lower edge in a web connecting the guide boss with the throat portion, said web terminating the descending spiral configuration portion of the flow path; and

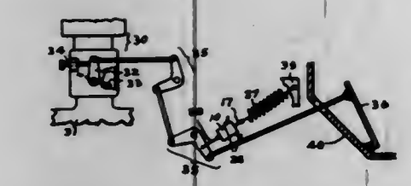
a flow directing vane projecting into the flow path between the entrance portion and the throat portion, said vane lying in a plane offset from and parallel to the valve axis.

3,273,552

SPRING ACTUATED SAFETY SWITCH FOR THE FUEL SUPPLY LINKAGE OF AN INTERNAL COMBUSTION ENGINE

Walter Leon Plath, 8251 42nd Ave. NE., Seattle, Wash.

Filed July 15, 1964, Ser. No. 382,824
2 Claims. (Cl. 123—198)



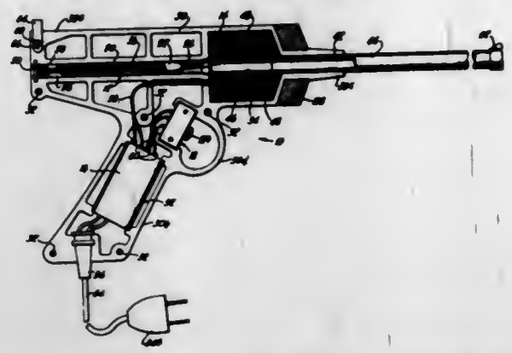
1. The combination with an internal combustion engine, of a fuel intake control valve controlling the supply of fuel to said engine, said valve having an idling position in which a minimum amount of fuel is supplied to the engine; valve control means remote from said intake control valve; linkage connecting said valve control means with said valve; a return spring adapted for connection with said linkage and capable of exerting a substantial force yieldingly urging said fuel intake control valve toward its idling position, said return spring being yieldable to valve opening force exerted through said valve control means; ignition means including a conductor controlling the supply of current for ignition purposes to said engine; a safety switch adapted to be connected in line with said return spring and controlling the flow of current through said ignition conductor, said safety switch comprising a housing; two spaced apart terminals carried by said housing and controlling the flow of current in said conductor; a contact member in said housing movable between a closed circuit position and an open circuit position relative to said two terminals; a spring of less strength than said return spring disposed in said housing urging said contact member into an open circuit position; and a pull rod connected with said contact member and extending to the exterior of said housing, said pull rod and housing being adapted to be connected in line between said return spring and said linkage and said return spring being capable of exerting a substantially greater force in urging said contact member into a closed circuit position than is exerted by the spring within said housing in urging said contact member into an open circuit position.

3,273,553

ELECTROMAGNETICALLY OPERATED GUN

Richard H. Doyle, 104 S. Albert St., Mount Prospect, Ill.

Filed Sept. 12, 1963, Ser. No. 308,535
8 Claims. (Cl. 124—3)



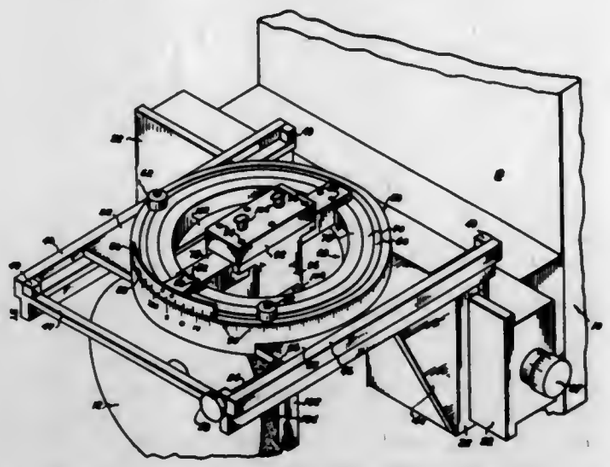
2. An electric gun energized by an undulating potential source for propelling a projectile having a magnetic portion comprising a housing having a barrel structure, winding means on the housing including an axial opening aligned with the barrel for receiving the projectile, control circuit means connected between the undulating potential source and the winding means for connecting the winding means to the potential source for a period of time no greater than one undulation in the potential supplied by the source, and manually operable means carried on the housing for controlling the operation of the control circuit means.

3,273,554

RADIUS AND TANGENT DRESSER FOR ABRASIVE WHEELS

Lothar P. Bunge, 3312 Eleven Mile Road, Warren, Mich.

Filed Nov. 8, 1963, Ser. No. 322,311
4 Claims. (Cl. 125—11)



1. A dresser for abrasive wheels, comprising:

a first member fixed with respect to said wheel;

a frame mounted on said first member and slidable therealong in a first direction;

an annular member slidable in said frame in a second direction perpendicular to said first direction, said annular member being the outer race of an annular bearing;

an annular inner race rotatable within said outer race;

a slide bar fixed to diametrically opposed points on said inner race;

a sliding structure adapted to slide along said slide bar;

an arm support on said sliding structure adapted to slide along said sliding structure in the direction perpendicular to the extension of said slide bar;

an arm fixed to said arm support;

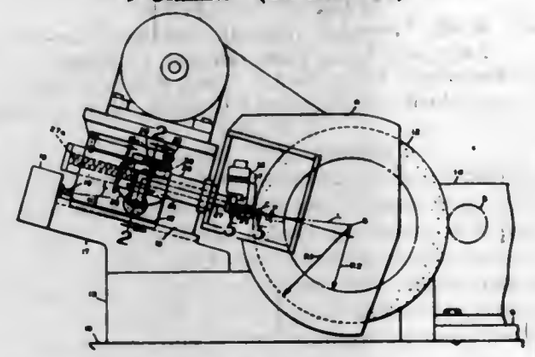
and a cutting tip mounted in said arm and adapted to cut the face of said abrasive wheel.

3,273,555

METHOD AND APPARATUS FOR DISTRIBUTING WEAR OF TRUING ROLLER

William B. Seidel, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed Jan. 22, 1964, Ser. No. 339,383
9 Claims. (Cl. 125—11)



1. A method of truing an arcuate profile on a grinding wheel with a cylindrical truing roller comprising,

(a) aligning the roller with the axis thereof perpendicular to a radial plane containing the axis of the grinding wheel,

(b) positioning the roller for point contact of one edge of the periphery of the roller with the periphery of the grinding wheel on said radial plane,

(c) moving the roller around the periphery of the grinding wheel and maintaining said one edge of the periphery of the roller in point contact with the periphery of the grinding wheel for an initial truing cut,

(d) advancing the roller in discrete increments for successive truing cuts on the grinding wheel along a line inclined with respect to said radial plane to move the point of contact of the roller with the grinding wheel across the roller as successive truing cuts are taken, and

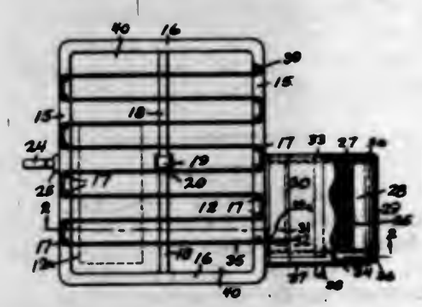
(e) maintaining the axis of the roller perpendicular to said radial plane as the roller is advanced in discrete increments to maintain the point of contact between the periphery of the roller and the periphery of the grinding wheel in said radial plane.

3,273,556

OUTDOOR GRILL

Warren B. Mogensen, 1609 E. 32nd St., Sioux Falls, S. Dak.

Filed Nov. 20, 1964, Ser. No. 412,739
5 Claims. (Cl. 126—25)



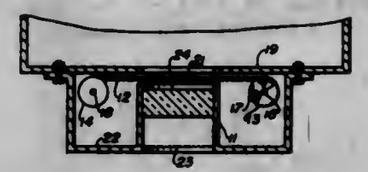
3. An outdoor grill comprising a grill framework, a plurality of vertically positioned spaced pins attached to said framework, a disposable wire member wound about said pins to provide a grill surface, a wire reel positioned adjacently to said grill, said wire reel providing a continuous supply of wire for said disposable wire member, a casing enclosing said wire reel, said casing having an opening for permitting passage of wire therethrough.

3,273,557

VACUUM FURNACE WINDOW

Niels R. Borch, Livermore, and Robert S. Juntz, Hayward, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 12, 1965, Ser. No. 425,094
7 Claims. (Cl. 126—200)



1. A viewing window assembly for use in combination with vacuum furnaces operable at high temperatures, comprising:

(a) a viewing window hermetically coupled in planar alignment to an apertured outer wall of a vacuum furnace to provide a transparent viewing path for viewing the interior of the furnace from a point outside said furnace,

(b) a transparent tape of polyethylene terephthalate resin disposed between and in planar relation with said viewing window and said aperture defined by said vacuum furnace wall thereby preventing matter from the interior of the furnace from impinging on at least a part of said window and maintaining the transparency of the viewing path in the presence of high temperatures,

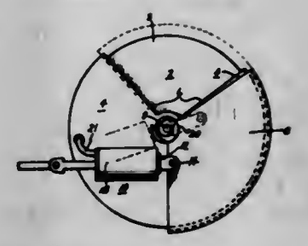
(c) transport means to move said tape along a path transverse to the viewing surface of said window at a rate greater than the rate at which impinging interfering matter collecting on said tape causes the viewing path through said tape and said window to become impervious to light.

3,273,558

SELF-CONTROLLING GAS GENERATOR

Willis A. Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 28, 1964, Ser. No. 385,608
5 Claims. (Cl. 126—271)



1. A gas generator comprising

a cylindrical storage tank having a black absorption surface for transmitting heat at a high rate to a liquid within said tank to evaporate the liquid,

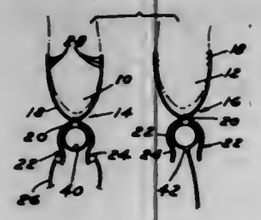
reflective means surrounding said tank, having a sector shaped opening to expose part of said surface of said storage tank,

a reflecting shield movable between an open and closed position whereby in the closed position said shield completely covers the opening and thereby covers said exposed surface of said storage tank and in the open position completely exposes the opening and thereby exposes said surface of said storage tank,

a cylinder connected to said storage tank, and

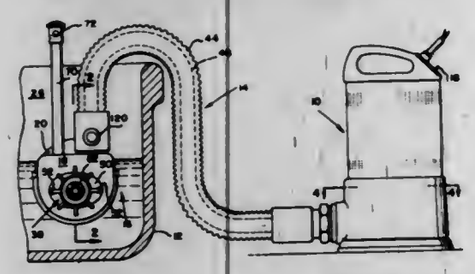
a piston travelling in said cylinder connected to said shield and responsive to the pressure in said storage tank to cause said shield to cover said exposed portion of said storage tank when the pressure exceeds certain values.

3,273,559
METHOD AND APPARATUS FOR MONITORING THE APPROACH OF BIRTH
Henry Lee Evans, Ann Arbor, Mich., assignor to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware
Filed Aug. 28, 1963, Ser. No. 305,149
7 Claims. (Cl. 128—2)



1. A system for indicating the approach of childbirth in a female mammal comprising an electrical circuit including first and second elements physically and mechanically independent of each other adapted for insertion in the vaginal cavity of the female and co-operable electrically with each other to control a measurable parameter of said circuit as a function of the proximity of said elements to each other, means associated with said elements adapted to removably attach said first element to one lip of the cervical opening of the female and said second element to the other lip with no physical or mechanical association between the elements, and telemetering means located externally of the female and coupled to said electrical circuit for translating variations in said parameter into a signal for indicating the spacing of said cervical lips from each other.

3,273,560
HYDROTHERAPY UNIT
Candido Jacuzzi, Lafayette, Calif., assignor to Jacuzzi Bros., Inc., Richmond, Calif., a corporation of California
Filed Aug. 5, 1963, Ser. No. 299,698
12 Claims. (Cl. 128—66)



3. A portable hydrotherapy apparatus for use in bathtubs and the like which comprises:

(A) a pump housing adapted to be removably positioned outside of a bathtub adjacent thereto with said housing containing

(1) an electric motor and

(2) a water pump connected to said electric motor to be driven thereby and having a pump inlet and a pump outlet,

(B) a unitary nozzle housing adapted to be removably positioned in a bathtub below the water level therein and having mounted therein for support thereby a water inlet and a discharge nozzle, and

(C) conduit means connecting said pump housing and said nozzle housing and adapted to extend therebetween over the edge of a bath tub, with said conduit means having

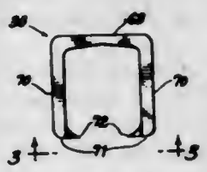
(1) a first water conducting passageway connecting said pump inlet to said water inlet, and

(2) a second water conducting passageway connecting said pump outlet to said nozzle.

3,273,561
BANDAGING MATERIAL FOR MEDICAL PURPOSE
Helmut Wolf, Neuwied (Rhine), Germany, assignor to Lohmann K.G., Fahr (Rhine), Germany
No Drawing. Filed Nov. 4, 1963, Ser. No. 321,278
Claims priority, application Germany, Nov. 3, 1962, L 43,364
4 Claims. (Cl. 128—156)

1. A bandage for medical purposes, comprising a single web of creped material, three-dimensional embossed areas on said web extending over a plurality of creped folds and pulling said crepe folds into drome-shaped elevations while maintaining the creped formation, said crepe folds being consolidated or compacted at the lower edge of the embossed areas by compression of said creped folds.

3,273,562
SKIN AND SURGICAL CLIPS
Adolph M. Brown, deceased, late of Beverly Hills, Calif., by Marthe E. Brown, administratrix, Beverly Hills, Calif., assignor of twenty percent to Rene G. Le Vaux and twenty percent to Ernest C. Wood
Original application Feb. 24, 1960, Ser. No. 10,595, now Patent No. 3,098,232, dated July 23, 1963. Divided and this application Apr. 17, 1963, Ser. No. 273,791
1 Claim. (Cl. 128—337)

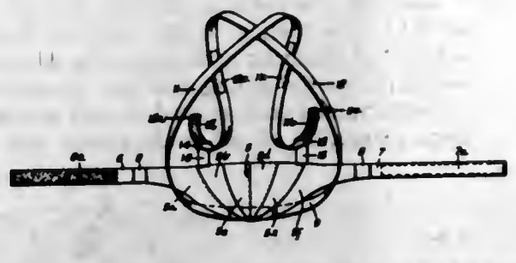


A skin clip comprising a flat, sheet metal member which is deformable and which remains in the shape to which it is deformed consisting of a crosswise extending bail portion, an elongate arm extending forwardly perpendicularly from each of the outer ends of said bail portion, said bail portion and arms having flat top and bottom surfaces of substantial width by comparison with the depths between said top and bottom surfaces and with each arm having a forward end portion and inner and outer lateral edges throughout the lengths thereof, spicules integral with the inner edges of each arm in the forward end portion thereof and extending inwardly in the direction towards each other and angularly downwardly beyond the plane formed by the bottom walls of the arms, the forward edge of said crosswise extending bail being tapered rearwardly from the outer ends inwardly towards the center to provide a bail of decreasing width from the outer ends towards the center of the bail.

3,273,563
MATERNITY GIRDLE
Raymond P. Bonang, 5 Calef Ave., Saco, Maine
Filed Sept. 18, 1964, Ser. No. 397,566
8 Claims. (Cl. 128—579)

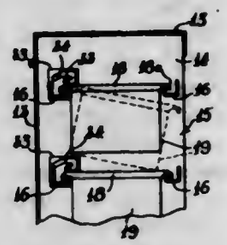
1. A maternity girdle comprising an abdominal pouch contoured to embrace the abdomen of a wearer, said pouch terminating at its opposite longitudinal extremities in waist encircling bands, means for adjustably connecting the ends of said bands over the back of the wearer, a supporting harness consisting of a continuous strap, the

central longitudinal area of which extends across and is secured to the central lower boundary of said pouch, the opposite longitudinal extremities of said strap beyond said central area being free from said pouch and respectively terminating in elongated shoulder strap extensions which are directed diagonally upward to partially overlie the adjacent portions of said pouch and adapted to criss-cross



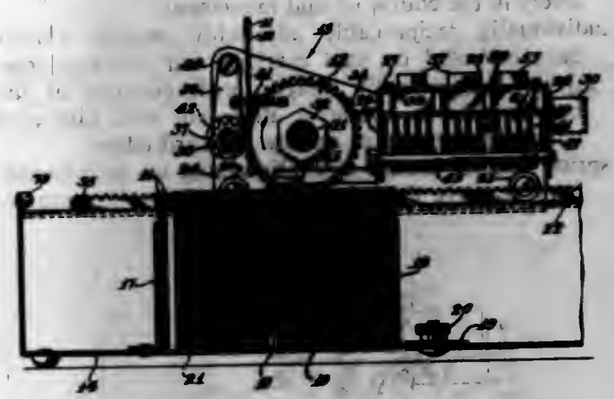
over the back and pass forwardly and downwardly over the shoulders of the wearer, and means for adjustably securing the free ends of said criss-crossed extensions at spaced points along the upper longitudinal boundary of said pouch, whereby continuous and uniform support is provided for the abdomen along both the upper and lower extremities of said pouch.

3,273,564
SUSPENSION MEANS
Walter Feldmahr, Canton, N.Y., assignor to Gary Industries, Inc., doing business as Acco Products, Ogdensburg, N.Y., a corporation of Nevada
Filed Jan. 26, 1965, Ser. No. 428,115
1 Claim. (Cl. 129—16)



In a structure for suspending file folders having hook-like extensions on opposite ends thereof, said structure comprising, a pair of spaced apart parallel horizontally extending rails over which the hook-like extensions are engaged, guide blocks one at each end of one of said rails, a convolute slotted track in each guide block, a lock bar coextensive with said one rail and having its ends engaged in said tracks; said tracks each including a lower horizontal portion disposed transversely of the guide rail and into which the guide rod may be moved to locate the rod closely adjacent to the said one rail to prevent upward displacement of the one hook-like extension engaged thereover, said lower horizontal portion extending from adjacent said one rail forwardly toward the other rail and terminating at its forward end in an upwardly extending slot portion and being restricted in its width at its juncture with said upwardly extending slot portion to restrain movement of the lock bar into said upwardly extending slot portion, a second substantially horizontal slot portion in communication with the upper end of said upwardly extending slot portion and extending rearwardly therefrom, the rearmost end portion of said upper horizontal slot portion being inclined downwardly to restrain movement of the lock bar in a forward direction when said lock bar is carried into said upper horizontal slot portion said rearmost end portion terminating rearwardly of said one rail and said one hook-like extension to allow upward displacement of the hook-like element when said lock bar is moved into said rearmost end portion.

3,273,565
FILE CARD RETRIEVAL APPARATUS
Malcolm G. Townsley, Park Ridge, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 17, 1962, Ser. No. 231,080
10 Claims. (Cl. 129—16.1)



1. In card sorting apparatus for retrieving cards from a pack of cards wherein one of their edges is exposed and has a magnetic portion and code notches:

supporting means for the pack of cards,

a retrieval assembly including:

frame structure mounted for relative movement with respect to said supporting means for traversing said edges,

magnetic card withdrawing means movably mounted on said frame structure and operative to attract said magnetic portions on the cards and withdraw the cards successively from the pack in the course of said relative movement, and barrier code bars adjustably mounted on said frame structure and adjacent to said edges with one of their end portions adjacent to said magnetic means in such relation thereto that the card edges are adapted to be blocked by said end portions against any substantial movement toward said magnetic means,

said bars being correlated with said code notches and being selectively settable to position the bars with said end portions corresponding to the code notches of a selected card to be withdrawn from the pack but to block withdrawal of all other cards from the pack,

said end portions of said bars being so located with respect to said magnetic means that the code notches of the selected card afford escape clearance past the bar ends for withdrawal by the magnetic means,

means for effecting said relative movement between said supporting means and said assembly to effect successive passing of said magnetic means in magnetic attracting relation past said magnetic portions whereby said selected card is magnetically attracted through its magnetic portion toward said magnetic means, and means for moving said magnetic means to effect withdrawal of said selected card.

3,273,566
FILE CARD RETRIEVAL DEVICE
Louis A. Smitzer, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 17, 1962, Ser. No. 231,215
9 Claims. (Cl. 129—16.1)

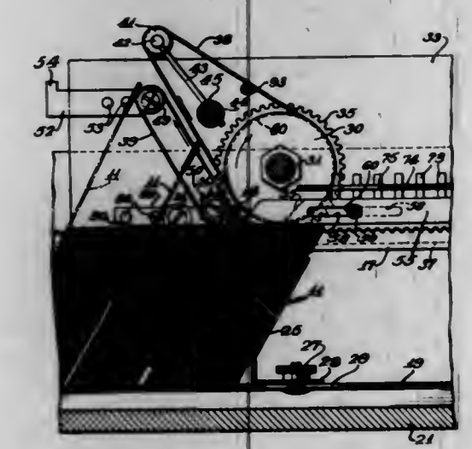
9. In card sorting apparatus for retrieving selected cards from a pack of cards wherein one of the edges of the cards is exposed and has a magnetic portion and code notches,

a carriage constructed and arranged for relative longitudinal movement in traversing relation along said card edges,

card withdrawing means mounted on said carriage and including magnetic means operative during said movement to attract said magnetic portions of the cards and withdraw the cards from the pack successively in the course of said movement,

individually reciprocably adjustably settable barrier bars mounted on said carriage and movable relatively longitudinally thereon with portions of the bars located in operative alignment with said card withdrawal means to oppose the card edges,

spring biasing means normally acting on said barrier bars to move them longitudinally into clearance re-



lation relative to said withdrawal means so that card edges can escape thereby for withdrawal, means for selectively setting said bars according to predetermined code determination in longitudinal opposition to said biasing means into blocking relation to withdrawal of all cards except any card that has matching code notches,

stripper means mounted on said carriage and cooperative with the set bars to preclude withdrawal of any other than the card having matching code notches while said magnetic portions are in the magnetic field of the withdrawal means and after said set bars progress beyond the edges of the other cards during said relative movement,

and means for actuating said withdrawal means.

3,273,567
FILE CARD RETRIEVAL DEVICE
Louis A. Smitzer, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 17, 1962, Ser. No. 231,216
14 Claims. (Cl. 129—16.1)

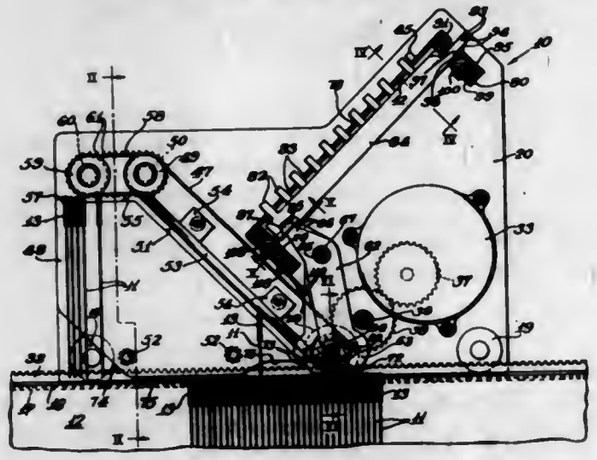
1. In card sorting apparatus for retrieving cards from a pack of cards wherein each card has one edge thereof equipped with code notched magnetic means including respective portions adjacent to the ends of said edge, and with all of such edges of the cards adapted to be disposed in a substantially common plane and exposed for retrieval sorting,

a selfcontained retrieval unit comprising:

a supporting carriage frame structure including side frame members having means for supporting the carriage frame structure for relative movement in a path with respect to supporting structure in which said cards are supported with said edges in said common plane, and the carriage frame structure in said relative movement successively traversing said edges of said cards,

individual magnetic card extracting means mounted on the carriage frame structure adjacent to each of the respective side frame members for magnetically attracting the respective opposite end magnetic portions of the card edges and spaced substantially apart to leave substantial portions of the card edges between said magnetic end portions available for card selection purposes,

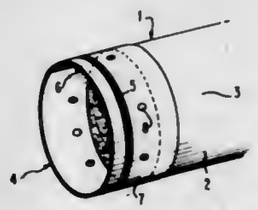
card selecting individually settable barrier bars carried by the carriage frame structure between said spaced magnetic card extracting means and having means for setting said bars according to a predetermined code related to said notches to block extraction of all cards except any card



that has matching code notches in its edge portion between said end magnetic portions in the course of relative card sorting movement of the unit and the cards,

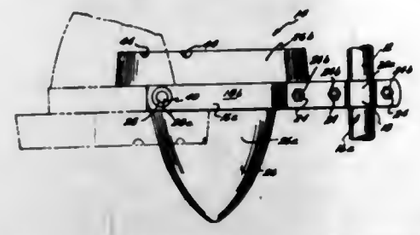
card withdrawing means carried by and having parts operative at each respective side of the carriage frame structure clear of said card selecting means and associated with each of said magnetic card extracting means to effect withdrawal from the remaining cards of any selected card extracted by the magnetic card extracting means, and means carried by the carriage frame structure for driving said card withdrawing means.

3,273,568
SELF-LIGHTING CIGARETTE
Canio Di Carlo, Jr., 159 Claremont Ave., Montclair, N.J.
Filed Aug. 4, 1965, Ser. No. 477,109
5 Claims. (Cl. 131—7)



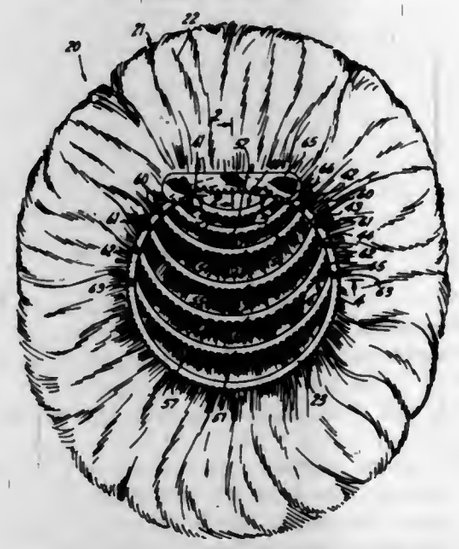
1. In a cigarette having a cigarette wrapper, a tobacco filler only within said wrapper and an igniter disposed at one end of said wrapper, said igniter comprising a hollow member of the same sectional configuration as the cigarette wrapper and extending beyond said tobacco filler and wrapper, said member comprising an outermost zone of paper, a median zone of paper impregnated with an ignitable compound, and an innermost zone of paper adjacent to said wrapper and filler, all of the ignitable compound being spaced from the outer end of said tobacco filler and wrapper.

3,273,569
PERMANENT ASH RECEPTACLE
James M. Callouette, 13862 Ponderosa, Apt. G, Santa Ana, Calif.
Filed May 7, 1964, Ser. No. 365,653
3 Claims. (Cl. 131—241)



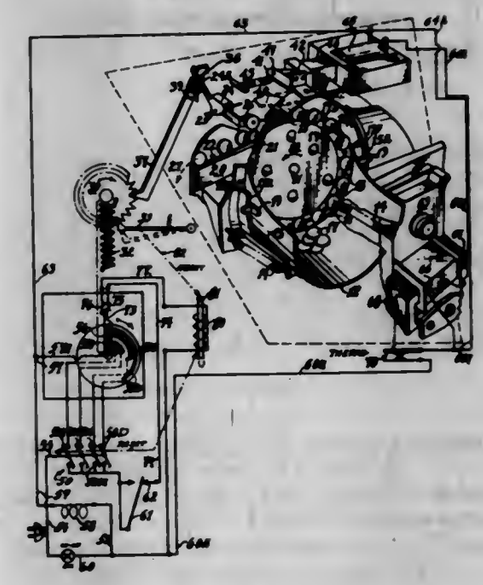
1. A cigar and cigarette ash receptacle comprising in combination, a cantilever bracket having an end portion provided with attachment means to secure said bracket to a stationary member and an opposite end portion comprising a pair of oppositely disposed generally arcuate arms having substantially parallel end portions and forming a generally U-shaped horizontal bracket portion, an ash receiving tray formed with a relatively deep cup-shaped ash receiving portion providing a relatively low center of gravity for said tray and an annular flange at the upper end thereof, and means mounting said tray on said bracket comprising at least one pivot pin intersecting the substantially parallel end portions of said arms and said tray subjacent said annular flange and spaced from the vertical axis comprising said center of gravity on the opposite side thereof from said attachment means thereby requiring the portion of said annular flange nearest said attachment means to rest on said bracket portion to dispose said ash receiving portion upwardly, said ash receiving portion being of such size as to pass through said bracket portion upon pivoting of said tray on said bracket to inverted position wherein said flange on said tray engages the underside of said bracket portion to retain said tray in such inverted position.

3,273,570
ANNULAR WIG SUITABLE FOR ATTACHMENT TO THE NATURAL HAIR
Ethel Allison, 685 Park Place, Brooklyn, N.Y.
Filed May 28, 1965, Ser. No. 464,595
5 Claims. (Cl. 132—53)



1. A wig comprising an annular array of radially extending hair, an annular binding extending about the internal circumference of said annular array and securing together the hair of said annular array, a plurality of arcuate arrays of radially extending hair, a plurality of arcuate bindings each securing together the hair of a respective arcuate array, said arcuate arrays being arranged in generally concentric radially spaced relation with respect to each other and extending chordally across said annular binding, said arcuate bindings being secured at their respective ends to spaced regions of said annular binding.

3,273,571
PRE-SELECTIVE COIN COUNTER
Herman L. Selden, Chicago, Ill., assignor to Lion Manufacturing Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 24, 1964, Ser. No. 340,033
11 Claims. (Cl. 133—8)

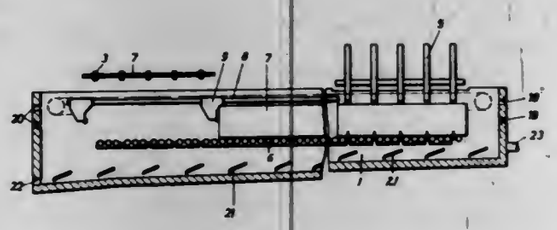


1. In a combination with a rotary transport disc inclined from the vertical and operative to pick up coins at a lower region of its transit and carry the same close to the rim of the disc seriatim upwardly along an upper level into engagement with a coin-sensing means and beyond to a discharge zone, a coin-sensing means in the form of a lever pivotally mounted near said discharge zone with an end portion disposed to move toward and away from the rim of the disc, and a coin-engaging part in the form of a conically-shaped roller rotatable at said end portion of the lever about an axis at approximately right angles to the plane of travel of the coins with the base of the cone disposed away from the disc, and means yieldingly urging the lever and said end and roller thereof in a direction toward said rim to a normal position for engagement with edge portions of coins of given diameter transported therebeneath by said disc, whereby such coins tend to be caught and wedged by the conical pitch of said roller toward the disc to prevent escape from the roller.

3,273,572
CONTINUOUS COOLING OF METAL SLABS AND THE LIKE IN A WATER BATH
Gerhard Schwarze, Kaarst, near Neuss, Hanns-Peter Lemm, Duesseldorf, Hermann Hover, Duesseldorf-Benrath, and Otto Wiecheropp, Duesseldorf, Germany, assignors to Schloemann Aktiengesellschaft, Duesseldorf, Germany
Filed Feb. 10, 1964, Ser. No. 343,714
Claims priority, application Germany, Feb. 11, 1963, Sch 32,748, Sch 32,856
5 Claims. (Cl. 134—104)

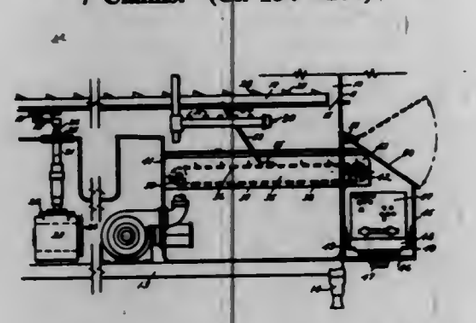
1. Apparatus for cooling metal articles such as slabs, plates and thick sheets by immersion in a substantially vertical position in a cooling liquid bath, said apparatus comprising a relatively long and narrow cooling bath tank, a slide pivotally mounted adjacent one end of said tank for movement about a horizontal axis substantially

parallel to the longitudinal axis of said tank from a horizontal position to a substantially vertical position, a plurality of arms supported for longitudinal sliding movement on said slide, means for delivering said articles in a horizontal position and depositing the same on said arms, said horizontal pivotal axis being so located that the weight of said article on said arms tends to cause



pivotal movement of said slide, arms and articles from a horizontal to a substantially vertical position, a power cylinder mounted on said tank, a piston in said cylinder and a piston rod connected to said slide for assisting in the pivotal movement thereof, means for lowering said arms and said articles vertically into said tank, and means for moving said articles from said arms and for conveying said articles to the opposite end of said tank.

3,273,573
DISHWASHING MACHINE AND REFUSE DISPOSAL AND METHOD
Creston R. Southard, Winston-Salem, N.C., assignor to Champion Dish Washing Machine Company, Winston-Salem, N.C., a corporation of North Carolina
Filed Sept. 14, 1964, Ser. No. 396,319
7 Claims. (Cl. 134—104)



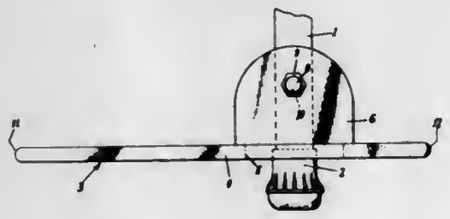
4. In a dish washing machine and refuse disposal apparatus for receiving and conveying dishes supported in dish racks along a directed path of travel through a spray cabinet having nozzles at spaced intervals to spray water on dishes from above and below the racks comprising a spray cabinet having front and side walls, said front wall having a dish rack-receiving opening, means for supporting dish racks introduced into the cabinet through said front wall opening and advanced along a directed path of travel, a dish rack advancing means supported between said dish rack-supporting means having a plurality of spaced-apart dish rack engaging pawls thereon with each of said pawls extending vertically above said dish rack-supporting means to engage and intermittently advance a dish rack in only one direction of movement of said dish rack advancing means through the spray cabinet, means for actuating said dish rack advancing means, an endless belt conveyer for receiving refuse from dishes in said dish racks mounted beneath said dish rack advancing means, means for actuating the belt conveyer to move the refuse caught thereon to a remote location, and a receptacle for receiving refuse caught on said conveyer belt mounted beneath the discharge end of the conveyer at said remote location.

3,273,574
ARCHITECTURAL STRUCTURE
Carl F. Huddle, 3 Kenberton Drive, Pleasant Ridge, Mich.
Original application Aug. 29, 1963, Ser. No. 305,483. Divided and this application Aug. 2, 1965, Ser. No. 481,155
5 Claims. (Cl. 135—3)



1. An architectural structure comprising a frame, a pair of arch members each comprising a pair of transversely spaced leg portions connected by an intermediate bight section adapted to be positioned in opposed relationship and with respective ones of said leg portions pivotally mounted on said frame for angular swinging movement of said arch members to and from a first position and a second position angularly spaced from said first position, connecting means extending between and connected to said intermediate bight sections of said arch members, each said leg portion including extensible means for providing a controlled expansion and contraction of said arch members, and means for actuating said extensible means effecting a controlled expansion and separating movement of said bight sections of said arch members and a corresponding tensioning of said connecting means resulting in the application of a torque to said arch members effecting pivoting movement thereof between said first position and said second position.

3,273,575
ATTACHMENTS FOR CRUTCHES AND LIKE WALKING AIDS
Thomas R. Aldrich, 1151 Windsong Lane, Siesta Key, Sarasota, Fla.
Filed June 29, 1964, Ser. No. 378,913
1 Claim. (Cl. 135—62)



An attachment for a walking aid of the type including an elongated support having a ground-engaging lower end portion comprising, in combination,

an elongated shoe member having an opening therethrough,

said shoe member comprising a front portion located forwardly of said opening and a rear portion located rearwardly of said opening;

a pair of upstanding members fixed to said shoe member and spaced apart transversely thereof with each of said upstanding members disposed at a different side of said opening,

said opening being dimensioned to accommodate the ground-engaging lower end portion of the walking aid to which the attachment is applied,

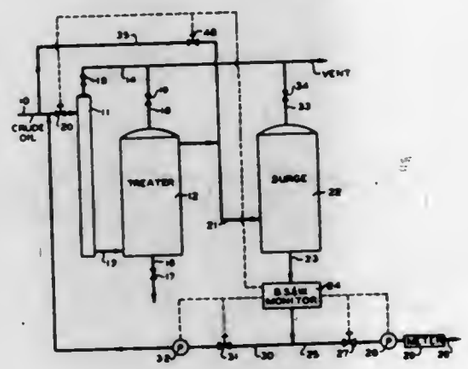
in such fashion that such lower end portion extends between said upstanding members, said upstanding members each being provided with a lateral opening, said lateral openings being aligned transversely of said shoe member and alignable with a transverse opening in the lower end portion of the walking aid; and

pivot shaft means carried by said upstanding members extending across said opening and transversely of said shoe member, and said pivot shaft means comprising an axle extending through said aligned openings, and

said pivot shaft means being operative to removably count said shoe member on the ground-engaging lower end portion of the walking aid with said shoe member then free to pivot about said pivotal axis relative to the ground-engaging lower end portion of the walking aid,

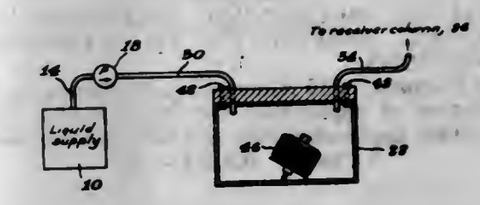
said rear portion of said shoe member being heavier than said front portion whereby, when the walking aid is raised to free the lower end portion thereof from the ground, said shoe member will gravitate pivotally to cause said front portion to swing upwardly and said rear portion to swing downwardly, said shoe member thus automatically assuming a position in which said front portion will not tend to catch on or otherwise engage the ground in such manner as to trip the user.

3,273,576
MEASUREMENT AND CONTROL SYSTEM
Dale A. Fluegel and Louis E. Kuntz, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,381
6 Claims. (Cl. 137—2)



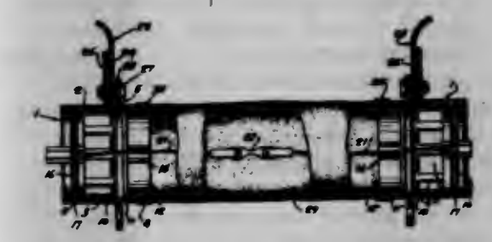
1. An oil transfer system comprising a source to supply oil, treating means to remove B.S. & W. from oil, said treating means having an inlet and a outlet, a receptacle to receive oil, first conduit means to convey oil from said source to the inlet of said treating means, second conduit means to convey oil from the outlet of said treating means to said receptacle, third conduit means to convey oil from the outlet of said treating means to the inlet thereof, fourth conduit means to convey oil from the inlet of said treating means to the outlet thereof, means connected to said second conduit means to measure the B.S. & W. content of the oil in said second conduit means, and means responsive to said means to measure to (1) pass oil through said first and second conduit means when the measured B.S. & W. content is in a predetermined range, (2) pass oil through said third conduit means when the measured B.S. & W. content exceeds said predetermined range and (3) pass oil through said fourth and second conduit means when the measured B.S. & W. content is below said predetermined range.

3,273,577
METHOD AND APPARATUS FOR DAMPING A PULSATING FLOW OF LIQUID
John C. Moore, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 18, 1964, Ser. No. 376,133
5 Claims. (Cl. 137—13)



4. In an improvement in a chromatographic column apparatus which includes a liquid supply, chromatographic column, and a pump to provide a flow of said liquid to said column, said column being characterized as being resistant to liquid flow therein, said pump being characterized as producing surges of pressure in said fluid flow when said pump acts against the resistance to flow of said column and a chamber filled with said liquid, said chamber connected in series with and intermediate said pump and said chromatographic column, the improvement which comprises: a sealed bellows arrangement immersed in said liquid-filled chamber, said bellows being filled with a volume of a substantially incompressible liquid being equal to the total volume of the bellows at its mechanical compression limit, and a volume of gas substantially insoluble in said liquid being equal to the difference between the volumes of the bellows at its mechanical compression and extension limits, said gas being at about atmospheric pressure at the extended limit of the bellows.

3,273,578
CRASH CLOSED SHUT-OFF VALVE
John H. Clark, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 9, 1962, Ser. No. 216,004
8 Claims. (Cl. 137—68)



1. A crash closed shut-off valve for use in a fluid system and actuated by displacement of components of that system comprising:

(a) a valve body having a fluid passage therethrough;

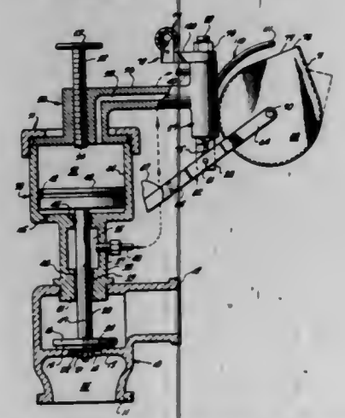
(b) a valve controlling fluid flow in the passage, disposed for movement along a longitudinal axis within said valve body between a normal valve open position and valve closed position;

(c) releasable locking means coacting between said valve body and said valve to lock said valve in the valve open position until a predetermined tensile force acting along said longitudinal axis is exerted on said valve;

(d) second locking means coacting between said valve body and said valve to lock said valve in the valve closed position in response to the movement of said valve from the valve open position to the valve closed position;

(e) actuating cable means attached to said valve body and adapted to transmit tensile force to said valve body along said longitudinal axis and to break, without damage to the valve and fluid system, when said tensile force is substantially greater than that needed to move the said valve to the valve closed position.

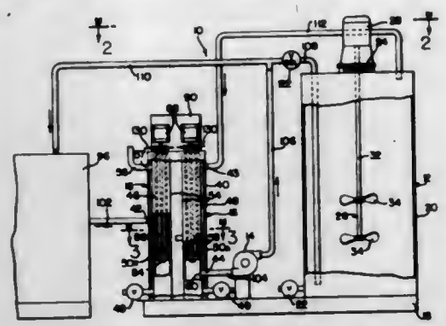
3,273,579
HYDRAULIC MECHANISM INCLUDING PILOT CONTROL RESPONSIVE TO ATMOSPHERIC CONDITIONS
George Koculyn, 3239 Altura Ave., La Crescenta, Calif.
Continuation of application Ser. No. 109,981, May 15, 1961. This application July 6, 1965, Ser. No. 480,217
9 Claims. (Cl. 137—80)



1. Hydraulically powered means in association with an existing hydraulic pressure source for providing reciprocating motion responsive to temperature comprising a piston having first and second effective pressure areas with the first area being greater than the second, a two-position control valve, the second area and the inlet of the control valve being in continuous communication with the pressure source, variable-centroid balance means operating the control valve against the valve inlet pressure, duct means connected from the control valve for supplying water at a predetermined rate to the balance means when the control valve is in one valve position for varying the centroid of the balance means to cause the balance means to move from a first one of two stable positions in which the control valve is in said one position to the second of said two stable positions, the control valve responding to movement of the balance means from the first to the second stable position thereof to move to a second valve position to provide communication between the piston first area and the pressure source for reciprocation of the piston by unbalanced hydraulic pressure forces on the first and second areas, the balance means in the second stable position being responsive to removal of moisture from the balance means to unbalance same for movement thereof toward the first of said two stable positions, movement of the balance means from the second to the first of said stable positions effecting movement of the control valve from the second to said one valve position, and self-adjusting temperature actuated means directly operable against the balance means for governing the motion of the balance means from the second to the first stable positions thereof.

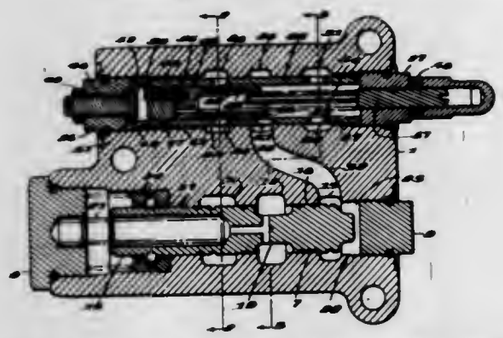
3,273,580
SOLUTION CONCENTRATION CONTROL AND MAKE-UP SYSTEM
Charles M. Ladd, 14180 Garfield Ave., Detroit 39, Mich.
Filed Jan. 27, 1964, Ser. No. 340,286
11 Claims. (Cl. 137—93)

1. In a system for maintaining the concentration of a processing solution substantially at a predetermined level,
a solution resistance sensing chamber containing a reference cell and an actuating cell,
a reservoir tank of make-up solution normally at a relatively high level of concentration,
a supply of said processing solution,
and pump and conduit means for drawing processing solution from its tank through said sensing chamber and into and through said pump for delivery back to said supply of processing solution and alternatively to said reservoir tank,



said conduit means conducting said processing solution from its supply into said sensing chamber by gravity,
said conduit means conducting solution from said pump to said reservoir tank having a normally closed valve therein adapted to open and close upon actuation by means responsive to the electrical resistance of said solution in said actuating cell.

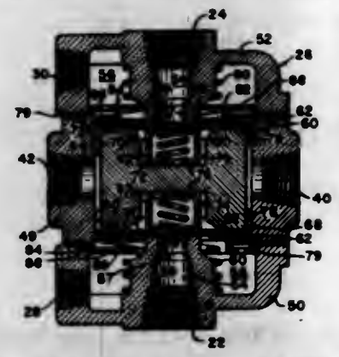
3,273,581
PILOT OPERATED UNLOADING VALVE HAVING RELATIVELY ADJUSTABLE LOADING AND UNLOADING LIMITS
Kyle E. McAfee, Jr., Lima, Ohio, assignor to The New York Air Brake Company, a corporation of New Jersey
Continuation of application Ser. No. 180,466, Mar. 19, 1962. This application Mar. 1, 1965, Ser. No. 440,663
7 Claims. (Cl. 137—108)



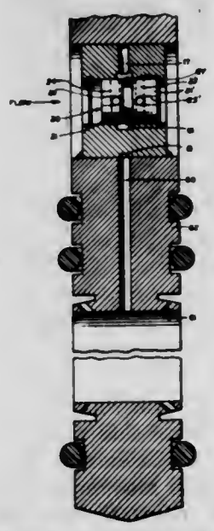
1. In a pressure responsive, pilot-operated unloading valve including piloted unloading valve means shiftable between loading and unloading positions under the control of a pressure responsive pilot valve means, the pilot valve means including an element shiftable to first and second control positions when the applied pressure reaches first and second valves, respectively, the improvement which comprises means for adjusting said pilot valve means to vary at least one of said values relatively to the other of said values.

3,273,582
DUAL CIRCUIT PROTECTION VALVE
Harry M. Valentine, Elyria, Ohio, assignor to Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio, a corporation of Delaware
Filed Apr. 12, 1963, Ser. No. 272,600
9 Claims. (Cl. 137—111)

1. A fluid pressure responsive control valve comprising a casing having two pairs of spaced apart inlet and delivery cavities and ports, a pair of axially aligned passages communicating each inlet cavity with its delivery cavity, a pair of opposed axially aligned check valves for controlling the one-way flow of fluid through said passages from said inlet to said delivery cavities, a third inlet port in said casing, a fluid conduit in said casing connected to said third inlet port and communicating at its opposite ends with the respective delivery cavities, a second pair of opposed check valves in said conduit for controlling the one-way flow of fluid from said conduit to the respective delivery cavities, bore means in said casing in axial alignment with said first pair of check valves and communicating at its opposite ends with said delivery cavities, a fluid pressure responsive element in said bore means having opposed motive areas exposed to the pressure in the respective delivery cavities, and means carried by said pressure responsive element on opposite sides thereof for engaging said first mentioned check valves to positively retain one or the other closed whenever the pressure responsive element is moved theretowards in response to pressure in one delivery cavity which is greater by a predetermined amount than the pressure in the other delivery cavity.

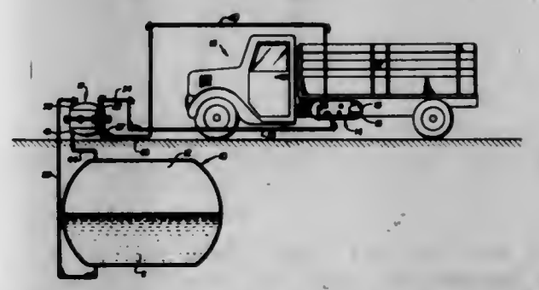


3,273,583
PRESSURE RELIEF VALVES
Sydney E. Carlton, 240 W. Hereford, Gladstone, Oreg.
Filed July 25, 1963, Ser. No. 297,507
4 Claims. (Cl. 137—112)



1. In a relief valve for mounting in the gate of a gate valve and operable in the closed position of said gate valve a body portion having a top and bottom, an axial bore extending through said body, an annular groove extending outwardly from said bore at substantially the plane of the mid-point, an inwardly directed groove on the exterior of said body member in the same plane as said annular groove, a transverse radial passage in said body connecting said grooves, a double headed piston mounted for axial slidable movement in said bore, said piston having an annular groove substantially at its mid-point said groove being substantially less in width than the annular groove of the bore dividing the piston into two, a transverse passage through each head adjacent the median groove and spaced from each other so that one of them is always in communication with the bore annular groove and said radial passage and an axial passage connecting the transverse passage with the exposed outer surfaces of each piston head.

3,273,584
BALANCED PRESSURE PUMP FOR LIQUID PETROLEUM FUEL
Kenneth K. Kennepohl, 46151 N. Sierra Highway, Lancaster, Calif.
Filed Feb. 3, 1964, Ser. No. 342,310
2 Claims. (Cl. 137—209)

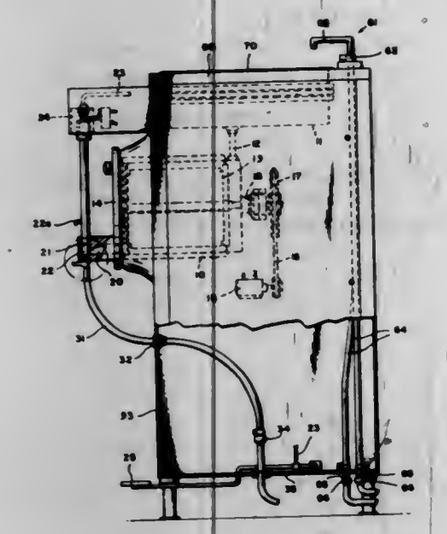


1. A liquid petroleum pump system comprising a supply tank having an upper level connection and a lower level connection, a consumer storage tank having an upper level connection and a lower level connection, a pump device intermediate said tanks and fuel conections from said supply tank through the pump device to the storage tank and from said storage tank through the pump device to the supply tank, said pump device comprising opposite hollow sections, a reciprocating element between said sections, one of said sections having a supply chamber on one side of said reciprocating element, and the other of said sections having a discharge chamber on the other side of said reciprocating element, a supply port to said supply chamber having an inflow check valve therein, an outflow port from said supply chamber having an outflow check valve therein, a discharge port to said discharge chamber having an inflow check valve therein, an exhaust port from said discharge chamber having an outflow check valve therein, a pump shaft member extending into said discharge chamber in reciprocating driving relationship with said reciprocating element, said fuel connections from the supply tank to the storage tank comprising a line from the lower level connection of the supply tank to the supply port of the supply chamber and a line from the outflow port of the supply chamber to the lower level connection of the storage tank, said fuel connections from the storage tank to the supply tank comprising a line from the upper level connection of the storage tank to the discharge port of exhaust chamber and a line from the exhaust port of the discharge chamber to the upper level connection of the supply tank, whereby to equalize pressures on opposite sides of the reciprocating element while said reciprocating element is reciprocated by said pump shaft during a pumping cycle.

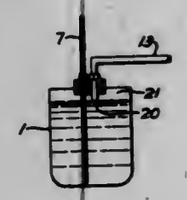
3,273,585
FLUSHING APPARATUS FOR DISPENSING FREEZERS
Robert S. Patch, Bainbridge Island, Wash., assignor to Sweden Freezer Manufacturing Co., a corporation of Washington
Filed Mar. 18, 1963, Ser. No. 265,939
4 Claims. (Cl. 137—240)

1. In combination, a dispensing freezer having a freezing chamber with a discharge opening, a lift valve for

selectively closing said opening, a drain tube, and hollow stopper means on said tube detachably fitting into said discharge opening and having a lift finger adapted to engage said valve and lifting it from closing position without blocking the drain tube whereby cleaning fluid in said chamber can be drained therefrom to a point remote from said discharge opening.



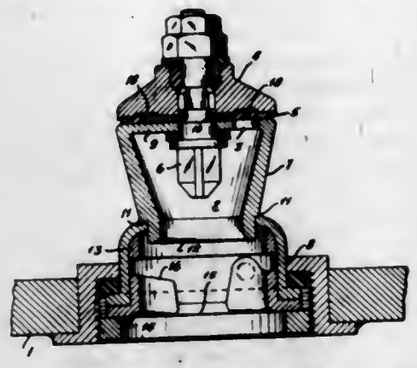
3,273,586
DETERGENT FEED SYSTEMS
Donald J. Killmeyer, Pittsburgh, Pa., assignor to Calgon Corporation, a corporation of Pennsylvania
Filed Feb. 24, 1964, Ser. No. 346,852
3 Claims. (Cl. 137—268)



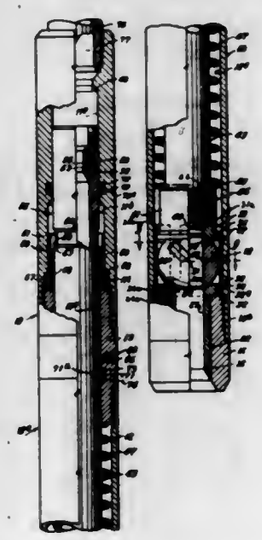
1. A granulated detergent package for automatic dispensing of detergent in solution comprising a rigid sealed container substantially filled with dry granulated detergent, a water inlet fixture on said container, an outlet fixture on the top of said container including a terminus in the interior of said container at a point on a horizontal plane such that when the container is upright, the volume above which plane is no greater than about one-sixth of the total volume of the container but which is sufficiently great when occupied by air to provide insulation for said fixtures from hot detergent solution and effective protection for the container seal from pressure shocks.

3,273,587
LAGER VALVE
Irwing F. Fausek, Clayton, and Robert F. Lamping, St. Louis County, Mo., assignors to Modern Engineering Company, St. Louis, Mo., a corporation of Missouri
Filed Dec. 26, 1963, Ser. No. 333,487
6 Claims. (Cl. 137—323)

4. In a lager valve having a stationary orifice surrounded by a seat area, a seal-holder cooperating with and movable relative to said orifice between a position whereat said orifice is closed and a position whereat said orifice is open, a seal movable with said seal-holder and maintained in contact with said seat during such movement; the improvement which comprises, a cavity between said seal-holder and said seal at the location which is aligned with said orifice when the valve is in its closed position.



3,273,588
FLOW CONTROL VALVE FOR USE IN A WELL TUBING STRING
William W. Dollison, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 328,157, Nov. 29, 1963, which is a continuation of application Ser. No. 100,667, Apr. 4, 1961. This application Apr. 7, 1965, Ser. No. 448,565
9 Claims. (Cl. 137—460)



1. A well flow control device for use in a well tubing string including: an elongate housing having a bore extending therethrough; means for connecting said housing in a well tubing string with the bore of said housing in alignment with the bore of said tubing string; a valve element having a passage extending longitudinally therethrough and mounted for movement longitudinally within said housing between a first position and a second position; seal means between said valve element and said tubular housing for sealing between said valve element and said housing whereby fluid flowing through said housing may pass only through said valve element passage; valve means mounted within said housing and operatively associated with said valve element for opening and closing said passage in accordance with the movement of said valve element, said valve means opening said passage when said valve element is in said first position, said valve means closing said passage when said valve element is in said second position; resilient means in said housing

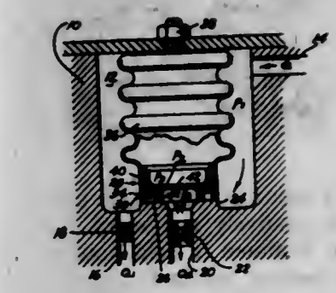
disposed about said valve element and engaging said housing and said valve element and biasing said valve element to said first position wherein said passage is open; a collet disposed about said valve element and mounted in fixed position relative to said housing; recess means on the exterior of said valve element, said collet having yieldable latch means engageable with said recess means on the exterior surface of said valve element with a force supplementing the force exerted on said valve element by said biasing means for releasably holding said valve element in said first position wherein said passage is open; and means restricting said passage of said valve element whereby a predetermined rate of fluid flow through said passage produces a differential pressure acting on said valve element with a force in excess of the force with which said biasing means and said yieldable latch means of said collet sleeve restrains said valve element in said first position to release said latch means and move said valve element from said first position to said second position with a sudden snap action, thereby operating said valve means for closing said passage.

3,273,589
LOW PRESSURE PILOT VALVE
William W. Dollison, 1441 Larchmont, and Donald F. Taylor, Jr., 3555 Vancouver, both of Dallas, Tex.
Filed Nov. 20, 1961, Ser. No. 154,394
9 Claims. (Cl. 137—495)



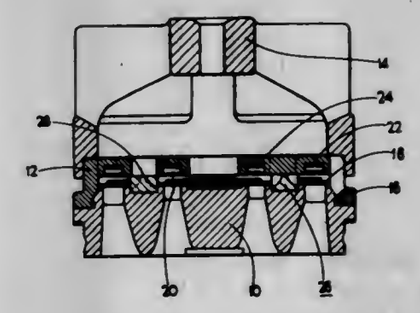
1. A pilot valve for use with a fluid pressure device having a passageway, a valve seat in said passageway and a ball check valve seatable on said valve seat by fluid pressure upstream of said valve seat, said pilot valve comprising: a housing having a bore therein closed at one end and open at the other end thereof, said housing being adapted to be connected to said fluid pressure device so that the open end of said bore is in fluid communication with said passageway downstream of said valve seat, a plunger disposed in said bore for axial movement between first and second positions therein, said plunger being adapted to engage said ball valve to unseat said ball check valve when said plunger is in its first position and to allow said ball check valve to be seated when said plunger is in its second position, first and second seal means sealing between said plunger and bore at spaced apart points adjacent said open and closed ends of said bore respectively, the area sealed by said first seal means being less than the area sealed by said second seal means, passage means fluidly communicating the open and closed ends of said bore, spring means for resiliently biasing said plunger to its second position, and means for venting said open end of said bore through said housing to atmosphere when said plunger is in its second position.

3,273,590
PRESSURE RESPONSIVE VALVE HAVING A UNIFORMLY PROGRESSIVE AND SMOOTH OPENING CHARACTERISTIC
Stephen G. Woodward, Elmira, N.Y., assignor to The Bendix Corporation, Elmira, N.Y., a corporation of Delaware
Filed June 4, 1964, Ser. No. 372,500
4 Claims. (Cl. 137—510)



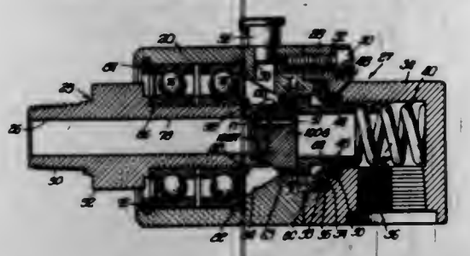
1. A fluid pressure responsive valve device comprising: a housing member having walls defining a fluid chamber, a fluid supply conduit connected to said housing for supplying an input fluid flow to said fluid chamber, a fluid outlet conduit connected to said housing, a valve member disposed within said fluid chamber for controlling fluid flow from said fluid chamber to said outlet conduit, said valve member having first and second annular radially-spaced valve lands forming an intermediate annular valve chamber therebetween, a bellows member having a first end fixedly secured to said housing, said bellows having a second free end connected to said valve member, first passage means formed in said valve member, fluidly connecting said annular valve chamber and the interior of said bellows, second passage means fluidly connecting said fluid outlet conduit and the interior of said bellows.

3,273,591
COMPRESSOR VALVE WITH REMOVABLE GUIDE MEANS
Warren A. Stewart, Easton, Pa., assignor, by mesne assignments, to Cooper Industries, Inc., a corporation of Ohio
Filed Jan. 21, 1964, Ser. No. 339,152
3 Claims. (Cl. 137—512.1)



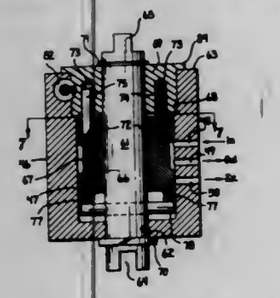
1. A valve for compressors comprising a seat member, a guard member secured thereto,
flat annular valve discs disposed between said seat member and guard member,
and a separate guide member between said valve discs, said guide member being removably mounted partially within the seat member and having spaced portions respectively slidably engaging a periphery of said valve discs.

3,273,592
ROTATING UNION CONTROL VALVE
Louis H. Deubler, James A. Porter, and Maurice Thomas, Northbrook, Ill., assignors to Deublin Company, Northbrook, Ill., a corporation of Illinois
Filed Mar. 27, 1964, Ser. No. 355,398
4 Claims. (Cl. 137—624.13)



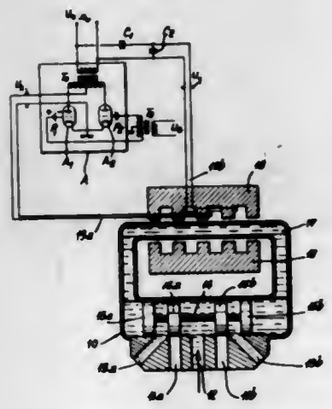
1. In a rotating union embodying a control valve, the combination of a relatively stationary housing, a rotor member rotatably mounted in said housing and projecting from one end thereof, means for coupling the projecting end of said rotor to a rotating driving device adapted to receive fluid conducted through said rotating union, a discharge passageway extending axially through said rotor member, a fluid inlet chamber in the other end of said stationary housing, and valve means for controlling the flow of fluid from said inlet chamber into the discharge passageway of said rotor member, said valve means comprising a rotatable valve disk mounted in said rotor to rotate therewith, a non-rotating valve disk mounted in said inlet chamber, a tubular carrier sleeve in said inlet chamber in which said non-rotating valve disk is mounted, means slidably supporting said carrier sleeve, a spring in said inlet chamber acting against said carrier sleeve to hold said non-rotating valve disk resiliently pressed against said rotatable valve disk, and valve ports in both of said disks operative to move into and out of registration by the relative rotation between said disks for controlling the flow of fluid from said inlet chamber to the discharge passageway through said rotor member.

3,273,593
TIMER MECHANISM
Charles W. Kinsley, Indianapolis, Ind., assignor to Glass Machinery Inc., Indianapolis, Ind., a corporation of Indiana
Filed Aug. 26, 1964, Ser. No. 392,143
13 Claims. (Cl. 137—624.17)



1. For use with a fluid-actuated device having a first port and a second port, timed pilot valve means for controlling fluid flow to and from said ports comprising a first pilot valve including a portless rotor and shiftable means concentric with and non-rotatably driven by said rotor between a position connecting said first port with a source of fluid under pressure and a position connecting said first port with exhaust, and means operable during rotation of said rotor to adjust the phase relation of said shiftable means to said rotor by rotative adjustment of said shiftable means about the axis of said rotor, a second pilot valve including a second portless rotor and second shiftable means concentric with and non-rotatably driven by said second rotor between a position connecting said second port with a source of fluid under pressure and a position connecting said second port with exhaust, and means operable during rotation of said second rotor to adjust the phase relation of said second shiftable means to said second rotor by rotative adjustment of said second shiftable means about the axis of said second rotor, and means for driving said rotors at a fixed ratio of angular velocities.

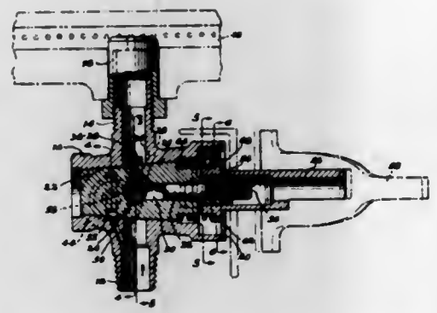
3,273,594
ELECTROHYDRAULIC ACTUATOR
Ferdy Mayer, Grenoble, France, assignor to Inventions Finance Corporation, a corporation of Delaware
Filed May 26, 1961, Ser. No. 112,915
Claims priority, application France, May 27, 1960, 4,249
3 Claims. (Cl. 137—625.66)



1. A fluid actuator comprising an electric motor fieldpiece, means feeding said fieldpiece with electric signals, a channel including a section extending in the immediate vicinity of said fieldpiece, liquid filling said channel, at least the liquid in said section of the channel being conductive and being subjected to a propelling action by the modifications in the field produced by the signals in said fieldpiece, means for varying the characteristics of said signals thereby to vary the strength of said field, and a slide member disposed in said channel for reciprocatory sliding movement and having opposite end portions communicating with the liquid in the channel on opposite sides of said fieldpiece, the cross-sectional area and configuration of said end portions being matched to the cross-sectional area and configuration of said section of said channel, so that said slide member reciprocates with a force and velocity matched to the optimum power fluid distribution conditions, when said conductive liquid reciprocates in said section of said channel under the optimum electric motor performance conditions.

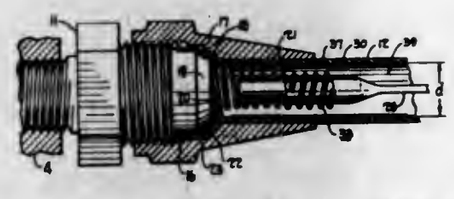
3,273,595
GAS FLOW CONTROL VALVE
Thomas A. Novak, Parma, Ohio, assignor to The W. J. Schoenberger Co., Cleveland, Ohio
Filed Mar. 4, 1964, Ser. No. 349,441
6 Claims. (Cl. 137—637.4)

1. A fuel gas flow control valve for a gas burner adapted to operate at "high" and "intermediate" and "low" heat settings, said valve including a body portion having a gas inlet port and a gas outlet port directionally aligned through said body, said body having a central bore intercommunicating said inlet and outlet ports, a pair of gas passageway grooves formed in said body to extend from said outlet port in opposite directions to diametrically opposed intake positions at the central bore wall intermediately of said inlet and outlet ports, a valve plug slipfitted into said central bore and being rotatable within said body about an axis transverse to the direction of alignment of said inlet and outlet ports, said plug having a transverse bore extending diametrically therethrough in open communicating relation with said inlet and outlet ports in one positional adjustment of said plug member, said plug having an axial bore intersecting and leading away from said transverse bore, a diagonal bore separate from said transverse bore leading into the interior of said plug from an inlet opening on the periphery of said plug rotatable into registry with said inlet port when said transverse bore is in open communication with one of said grooves and opening at its other end into said axial bore thereby providing a "low heat" gas supply orifice



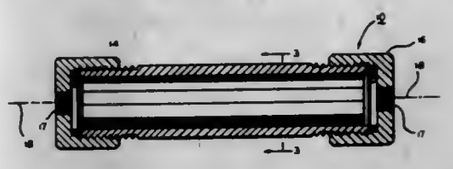
into said axial bore, a throttle valve member disposed in said axial bore and positionally displaceable therein in axial directions for variably throttling said orifice, a radial bore separate from said transverse bore and said diagonal bore leading into the interior of said plug from an inlet opening on the periphery of said plug rotatable into registry with said inlet port when said transverse bore is in open communication with the other of said grooves and opening at its other end into said transverse bore thereby providing an "intermediate heat" gas supply to said outlet port, and manual control means connected to said plug for rotating the latter in said body between valve fully off and "high heat" and "intermediate heat" and "low heat" positions.

3,273,596
HYDRAULIC PULSATION ABSORBER
Reginald W. Beckett, Elyria, Ohio; Mildred Jean Beckett, executrix of said Reginald W. Beckett, deceased
Filed Sept. 3, 1963, Ser. No. 306,243
7 Claims. (Cl. 138—30)



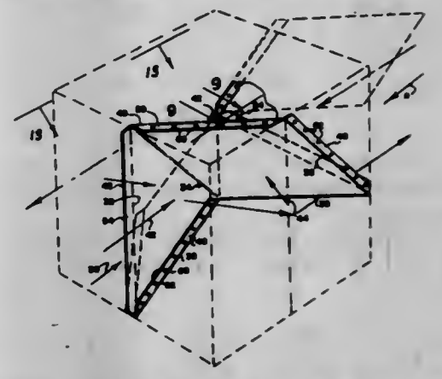
1. In a hydraulic system having a conduit having a diameter of the order of ⅜ to ½ inch and a pump connected to the conduit, operation of the pump producing sonic vibrations in the audible frequency range in the liquid and the conduit, a device for dampening said vibrations and rendering them substantially inaudible comprising a cushion member in the form of an elongated tube composed of a resilient deformable elastomeric material sealed at spaced points to provide a closed elongated cushioning chamber, said cushioning chamber containing a gas at approximately atmospheric pressure, the outer diameter of the tube being such as to provide a clearance between the exterior of the tubular cushion member and the interior of the conduit, and means for resiliently mounting the cushion member in the conduit adjacent the point of attachment of the conduit to the pump.

3,273,597
SURGE ARRESTOR
George W. Reznor, Mercer, Pa., assignor to International Telephone and Telegraph Corporation, a corporation of Maryland
Filed Jan. 29, 1964, Ser. No. 341,040
3 Claims. (Cl. 138—30)



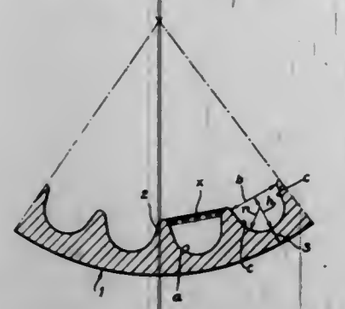
1. A surge arrestor adapted to be connected in a pressure line conducting a column of pulsating liquid for smoothing out the pulses in said column of liquid, said arrestor comprising a casing defined by a substantially hollow cylindrical member having an internal diameter substantially larger than the internal diameter of said pressure line, means closing the ends of said casing and affording means for connecting said casing into said pressure line with the longitudinal axis of said casing extending coincident with the axis of said pressure line, and a yielding capsule contained within said casing for absorbing the pulses of said column of liquid, said capsule being formed of a pair of spaced apart compliant membranes joined in spaced apart sealed relationship and having a quantity of compressible gas held therebetween, said capsule being coiled upon itself and confined in said coiled condition by the said casing and presenting in such coiled condition a passage for movement of said pulsing column of liquid and a large compliant surface to said liquid.

3,273,598
DUCT STRUCTURE
William H. Goettl, 4627 N. Granite Reef Road, Scottsdale, Ariz.
Filed Mar. 23, 1964, Ser. No. 353,842
8 Claims. (Cl. 138—37)



1. In a dual passage duct structure the combination of: a rectangular in cross section hollow duct structure having four sides and having two passages therein; a baffle separating said passages; first and second sheet metal baffle plates of said baffle; each of said baffle plates comprising a triangular section and a trapezoidal section; an edge of each trapezoidal section connected to an edge of each triangular section of each baffle plate; each trapezoidal section disposed at an angle to each triangular section of each baffle plate whereby said edge of each trapezoidal section is connected to a respective edge of each triangular section to provide a 90 degree twist in the baffle structure formed by the two plates; each triangular section being disposed at right angles to two opposite sides of said rectangular in cross section duct structure; one of said triangular portions of one of said plates being disposed at 90 degrees to a respective triangular portion of the other baffle plate.

3,273,599
INTERNALLY FINNED CONDENSER TUBE
Hermann Heeren, Nurnberg, Germany, assignor to Maschinenfabrik Augsburg-Nurnberg AG., Nurnberg, Germany
Filed Nov. 4, 1964, Ser. No. 408,975
Claims priority, application Germany, Nov. 9, 1963, M 58,859
1 Claim. (Cl. 138—38)



A water-cooled tube for a heat exchanger such as for condensing saturated steam comprising a tubular body having a generally cylindrical inner wall, a plurality of fins extending longitudinally of said body and projecting from said wall toward the interior of said body with grooves having circular arc bottoms lying between adjacent fins, and the distance b between the tips of adjacent fins and lying within the range of the line x of the interior water friction between adjacent fins is larger than the height h of line b above the lowest point in bottom a formed of an arc having a radius r, in which

$$\frac{b}{2r} > 1.0 < \frac{b}{h}$$

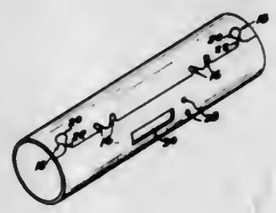
and straight sides for said grooves composed as tangents divergently extending from the circular arc bottoms to the tips of the fins, the tubular body being such that water freely flowing through the center of said body will pull the water flowing through said grooves substantially at the velocity of the freely flowing water despite the frictional resistance on the water in the grooves caused by the water-exposed surfaces in said grooves.

3,273,600
FLEXIBLE TUBE
Alfred H. Swan, Newport Beach, Calif., assignor to Air Reduction Company, Inc., Murray Hill, N.J., a corporation of New Jersey
Filed June 10, 1963, Ser. No. 286,826
4 Claims. (Cl. 138—122)



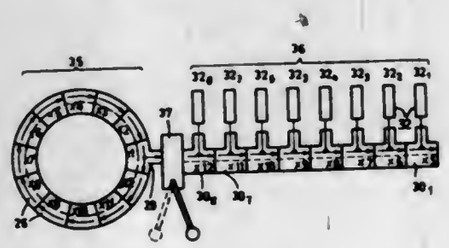
4. A flexible substantially nonshortening, smooth-bored tube, comprising:
(a) a plastic channel-shaped strip having a substantially flat web portion and a flexible flange along each of its lateral edges projecting outwardly generally transversely to said web, each of said flanges being adapted to flex angularly relative to said web portion,
(b) said strip being helically wound to form a tube defined by the edgewise abutment of the web portions of adjacent convolutions such that the adjacent flanges of said convoluted strip project radially outwardly from said tube and the confronting side faces of said flanges are contiguous along a helical seam therebetween,
(c) and sealing means extending in a helical path along the helical seam between the convolutions of said coiled strip linking the respective adjacent flanges,
(d) said sealing means comprising a flexible plastic strip overlapping the outer edges of said adjacent flanges, joined to the outer side faces of said flanges and leaving the contiguous side faces of said flanges free to move apart at their inner ends, upon the application of tension to said convoluted strip, to permit the adjacent webs of each convolution of said strip to separate by the angular flexing of said adjacent flanges while maintaining said convolute tube fluid tight.

3,273,601
STAMPED TUBULAR PRODUCT AND METHOD OF MAKING THE SAME
William J. De Gain, Detroit, Mich., assignor to Koppy Tool & Die Company, Ferndale, Mich., a corporation of Michigan
Filed Apr. 4, 1963, Ser. No. 270,756
7 Claims. (Cl. 138—166)



1. A tube product comprising: a generally rectangular sheet bent in circular form so that a pair of opposed edges abut one another and form a seam; and a plurality of tab connectors closing the seam, each consisting of a male member extending from the edge forming one side of the seam and a complementary female opening in the edge forming the opposite side of the seam and each being of the type which resists separating motion in a direction parallel to the plane containing the edges of the sheet, a plurality of such tab connectors being of the type which may be closed by bringing the edges of the sheet toward one another in the direction of the plane of the sheet, and at least one tab connector, disposed adjacent to an end of the tube, being of the type which is closed by a motion in a direction perpendicular to the plane of the sheet.

3,273,602
MEANS AND METHOD FOR UNWEAVING IN WAVE WEAVING LOOMS
Heinrich Fend, Regensdorf, Zurich, Switzerland, assignor to Verwaltungsgesellschaft der Werkzeugmaschinenfabrik Oerlikon, Zurich, Switzerland
Filed Oct. 12, 1964, Ser. No. 403,195
Claims priority, application Switzerland, Oct. 14, 1963, 12,599/63
19 Claims. (Cl. 139—1)



1. In a wave weaving loom, a plurality of shuttles weaving simultaneously, a controllable program storage mechanism for controlling harness motion, a harness change mechanism operably connected with said program storage mechanism, a transmission device capable of being switched-in between said program storage mechanism and said harness change mechanism for prolonging a program for controlling harness motion a number of repetitions equal to the number of shuttles employed during weaving.

3,273,603
DEVICE FOR OPERATING LOOM SHEARS
José Lladó Lladó, Calle Jorge Girona Salgado 12, Barcelona, Spain
Filed June 15, 1964, Ser. No. 375,162
Claims priority, application Spain, June 18, 1963, 289,437
3 Claims. (Cl. 139—127)



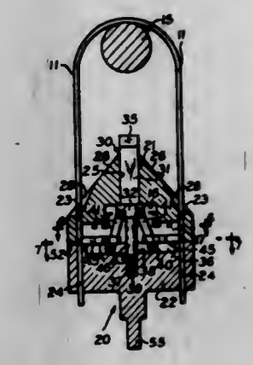
1. In a loom having a stationary frame, a reciprocating slay and shear means for the weft yarn, carried by said slay, a device operating said shear means comprising a first support member secured to said frame in adjustable relation to said slay, a second support member secured to said first support member for vertical adjustment, said second support member being provided with an angular slot, a roller movable in said slot, and a lever attached to said roller and actuating said shear means in synchronism with the movement of the slay so as to effect the cutting operation when the slay has beaten up the yarn.

3,273,604
SHUTTLE BOXES FOR LOOMS FOR WEAVING
Wallace R. Brooksbank, Embsay Tannery, Skipton, England
Filed Jan. 27, 1964, Ser. No. 340,468
Claims priority, application Great Britain, Feb. 5, 1963, 4,752/63
5 Claims. (Cl. 139—183)



1. A shuttle box for looms having an open mouth adapted to receive a shuttle, and means for braking a shuttle propelled into the box through said open mouth comprising two brake lining support members extending in opposed side-by-side spaced relation toward said mouth, at least one of said support members having a one-piece, continuous brake lining strip formed of shuttle braking material, said strip being treated at the open end of said mouth with a first wax having a relatively high melting point to provide a hard impact-resistant surface adjacent said shuttle box mouth, said strip being further treated over the remainder of its length with a second wax having a lower melting point than said first wax to provide a braking surface that is more flexible and less hard than said impact-resistant surface.

3,273,605
STAPLE TWISTER
Daniel A. Ferrara, Jr., New Rochelle, N.Y., assignor to Ferrara Industries, New York, N.Y., a partnership of New York
Filed July 8, 1963, Ser. No. 293,505
7 Claims. (Cl. 140—93.6)

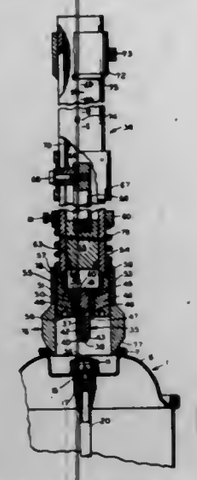


1. Apparatus for twisting together a pair of wires, such as the legs of a staple comprising, in combination, a body arranged for driving connection to a power tool for rotation by the latter; said body being formed with a pair of relatively elongated rectilinear bores substantially parallel to its axis of rotation and disposed on either side thereof for receiving the legs of a stable for twisting of the legs for rotation of said body; latch means in said body in association with said bores and operable automatically, responsive to insertion of staple legs into said bores, to latch the staple legs against withdrawal; cam means in said body normally maintaining said means in the automatic latching position; and an operator projecting axially from said body for engagement with the twisted portion of the staple legs and operatively associated with said cam means, said operator, responsive to a pre-selected twisting of the staple legs, operating said cam means to release said latch means for movement to a position releasing the staple legs for withdrawal; said body being formed with a recess extending diametrically of its axis of rotation and intersecting each of said bores; said latch means comprising a pair of relatively elongated latch bars disposed in said recess and pivoted intermediate their ends to said body, the latching ends of said bars intersecting said bores; said cam means being disposed in said recess normally in engagement with said bars and preventing rotation of the latter in a staple leg releasing direction.

3,273,606
METHOD AND APPARATUS FOR PACKAGING PAINT AND THE LIKE IN A PRESSURIZED DISPENSING CONTAINER
Paul J. O'Neill, Jr., Terra Linda, Calif, assignor to Union Machine Company, San Francisco, Calif.
Filed Oct. 29, 1962, Ser. No. 233,721
7 Claims. (Cl. 141—3)

1. The method of packaging a paint, which includes a base paint and a colorant, within a pressurized dispensing container having a discharge valve adapted to be opened to discharge the contents thereof, comprising the steps of:
providing a propellant and a base paint under pressure within said container, and thereafter discharging a

charge of colorant under pressure through said discharge valve into said container and simultaneously

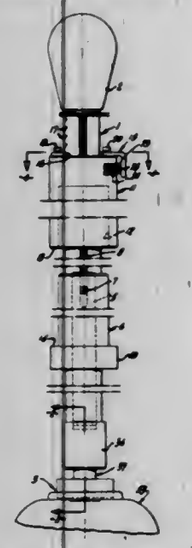


preventing escape of fluid from said container during such discharge.

3,273,607
METHOD AND APPARATUS FOR PACKAGING PAINT AND THE LIKE IN A PRESSURIZED DISPENSING CONTAINER

Paul J. O'Neill, Jr., Terra Linda, Calif., assignor to Union Machine Company, San Francisco, Calif., a corporation of California

Filed June 16, 1964, Ser. No. 375,563
7 Claims. (Cl. 141—3)



1. The method of packaging a paint, which includes a base paint and a colorant, within a pressurized dispensing container having a discharge valve adapted to be opened to discharge the contents thereof, comprising the steps of:

providing a colorant under pressure within a closed vessel,

connecting said vessel with a colorant gun and injecting a measured quantity of colorant into said gun from said vessel by the internal pressure of said vessel,

providing a propellant and a base paint under pressure within said container,

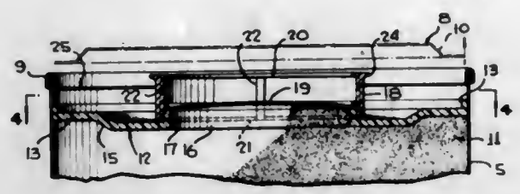
connecting said gun with the discharge valve of said container and discharging said measured quantity of colorant into said container through said discharge valve, and simultaneously preventing escape of fluid from said container,

and thereafter discharging a measured quantity of a drier into said container while the latter is still pressurized.

3,273,608
DISPENSING CONTAINER FOR SHORTENING OR THE LIKE

Henry E. Frankenberg, Berwyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 16, 1963, Ser. No. 331,016
15 Claims. (Cl. 141—27)

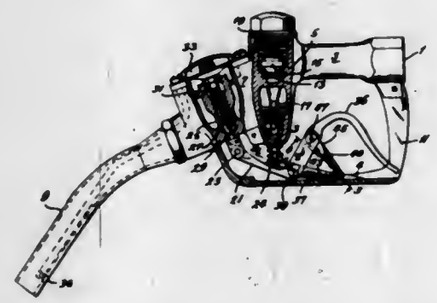


1. A self-contained dispensing container for fill such as shortening or the like comprising a body, a top closure, and a dispensing follower slidably mounted in the body and adapted to engage over fill beneath said top closure and having a dispensing opening therethrough so that upon removal of the top closure on a filled container and application of pressure downward on said follower the follower will press downward on the fill and force some thereof upwardly through the opening, said follower having means therein entirely in underlying relation to said closure, for measuring quantities of fill thus displaced upwardly through the follower opening.

3,273,609
DISPENSING NOZZLE HOLD-OPEN CATCH

Mervin L. Carder and Hazel L. Sutcliffe, Kirkwood, Mo., assignors to Husky Corporation, Kirkwood, Mo., a corporation of Missouri

Filed Aug. 24, 1964, Ser. No. 391,695
15 Claims. (Cl. 141—206)

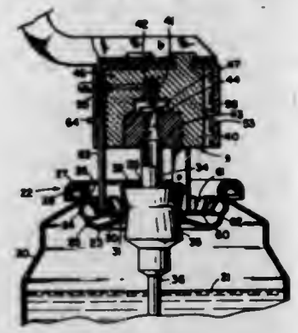


1. An automatic shut-off nozzle for delivering liquid to a tank, comprising a body having a liquid conduit therethrough, a discharge spout, a control valve in the conduit, a spring urging said valve into closed position, a manually operable lever for opposing the thrust of said spring and thereby opening said valve, a fulcrum for said lever carried by said body and permitted to be released for movement away from said body when the tank is filled, guard means rigid with said body and disposed on the opposite side of said lever from said valve, a ratchet arm pivoted to a portion of said lever remote from said fulcrum and supported at its free end on a portion of said structure, a pawl pivoted to a portion of said lever more remote from said fulcrum than said ratchet arm pivot and having its free end selectively engageable with said ratchet arm, spring means interposed between said body and said lever intermediate said fulcrum and said ratchet arm pivot and biasing said lever away from said valve spring opposing position whereby, when said fulcrum is released, to cause said lever to pivot about said ratchet arm pivot and lift said pawl out of hooked engagement with said ratchet.

3,273,610
VALVED PRESSURIZED FLUID DISPENSING RECEPTACLE WITH RECEPTACLE-ATTACHED FITTING

John W. Frost, 512 E. Parkway Blvd., Appleton, Wis.

Continuation of application Ser. No. 129,816, Aug. 7, 1961. This application Apr. 16, 1964, Ser. No. 363,046
5 Claims. (Cl. 141—353)



1. In a device comprising a pressurized valved receptacle having a valve and containing fluid under pressure and an appliance for dispensing said fluid and utilizing the potential energy stored in said fluid by reason of said pressurization;

wherein said receptacle comprises a dished metal closure member having a horizontally-extending annular bottom, an outer circular portion extending upwardly from the outer edge of said annular bottom and extending inwardly at its upper portion to terminate at its upper peripheral portion with a crimped seal to the body of said receptacle, an inner portion extending upwardly from the inner edge of said annular bottom, a substantially annular top portion on said inner portion having a hole in the center thereof through which a tubular member extends, said fluid being dispensed through said tubular member;

apparatus to maintain said receptacle in engaged relation with said appliance and open the valve in said receptacle;

said apparatus comprising a substantially annular member surrounding said inner upwardly extending portion and lying against said bottom, a plurality of members extending diagonally outward and upward from the outer periphery of said annular member into the metal of said outer circular portion, and a plurality of members extending upwardly from the outer periphery of said annular member and thence substantially horizontally;

and, as a part of said appliance, a receiver having an outer wall and an inner wall defining a space therewithin, tube means extending from said appliance through said inner wall, an orifice member in said receiver, said orifice member having an orifice communicating with said space in said receiver and communicatingly engaged with the interior of said receptacle through said hole in said annular top portion;

said orifice member depressing said tubular member to open said valve in said receptacle;

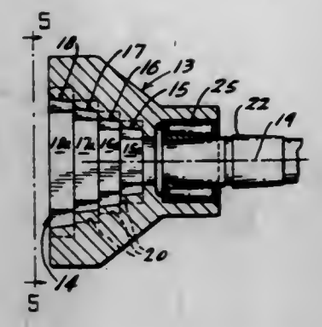
and a substantially circular downward extending member attached to said receiver and provided with a plurality of surfaces equal in number and spacing to the said portions extending upwardly and outwardly from said annular member, each of said surfaces having a beginning and an end and extending in an arc around the axes of said orifices and extending upward from its beginning to its end;

each of said surfaces being engaged by the horizontally extending portion of one of said upwardly and horizontally extending portions.

3,273,611
LATHE CENTERS

Frederick M. Haggvist, Toledo, and Arthur E. Van Epps, Dayton, Ohio, assignors to The Freeman Supply Company, Toledo, Ohio, a corporation of Ohio

Filed July 13, 1964, Ser. No. 382,059
4 Claims. (Cl. 142—53)

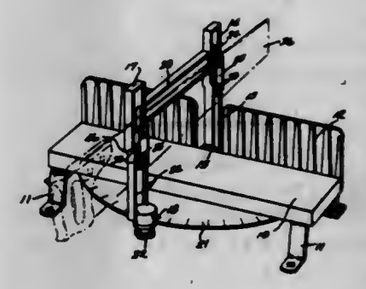


1. Self-centering lathe centers for square stock comprising: a pair of heads having longitudinally extending axes, each of said heads having an axially extending shaft extending from one end thereof, the end of each of said heads opposite said shaft having an outwardly stepped recess comprising a plurality of generally pyramidal-shaped stepped portions, each of which has at least four side abutment surfaces equally spaced from said axis, said abutment surfaces being tapered outwardly, the shaft on one of said heads being rigidly attached to said one of said heads and being adapted to be centered in the head stock of a lathe, and the shaft on the other of said heads being journaled in said other head for support by the tail stock of said lathe, whereby stock having flat sides is automatically centered when one end is wedged in one of said heads and the other of said heads is wedged upon the other end of the stock.

3,273,612
MITER BOX WITH MAGNETIC SAW GUIDES

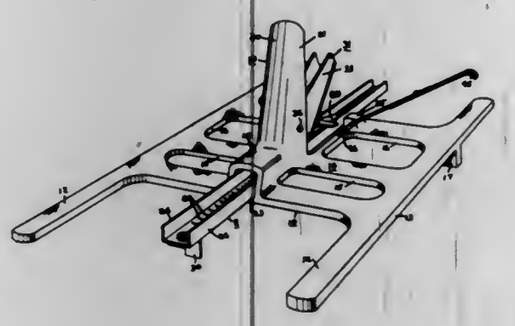
Burton G. Keddie, Brookfield, Wis., assignor to Hempe Manufacturing Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 10, 1964, Ser. No. 337,027
12 Claims. (Cl. 143—89)



1. A miter box having a work table, front and rear saw blade guide supports, saw blade guides mounted on said supports, said saw blade guides comprising channel-shaped ferromagnetic pole pieces having laterally spaced vertically elongated flanges which constitute parallel magnetic poles and a block of permanent magnetic material between said flanges to energize said poles, said vertically elongated flanges providing magnetic attraction for a saw blade in various positions of vertical adjustment thereof.

3,273,613
PORTABLE SAW GUIDE AND WORK HOLDER
Aaron Sanford Craven, Jr., 505 Independence Ave., Philadelphia, Pa.
Filed May 18, 1964, Ser. No. 367,971
12 Claims. (Cl. 143—167)



1. A portable saw guide and work holder device adapted for quick securement to and detachment from a work piece, comprising in combination,

(a) a main body having a substantially planar undersurface adapted to seat downward flatwise upon the work piece and from which depends a pair of laterally spaced apart alignment stops adapted to simultaneously engage one edge of the work piece, at least one outer edge of said main body extending rectilinearly longitudinally at a right angle to the straight line extending between the points of engagement of said alignment stops with the work piece,

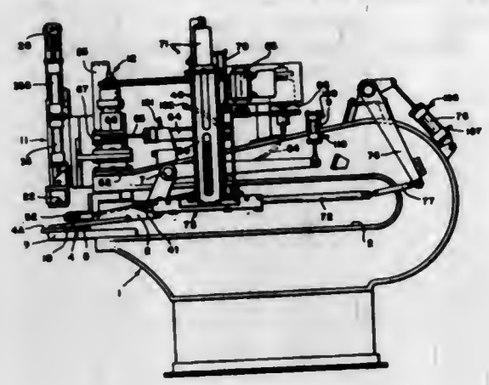
(b) an elongated rack member carried by said main body above the planar undersurface of the latter and being shiftable longitudinally thereof between the said spaced apart alignment stops, said rack member having a clamping stop depending from the end thereof remote from said alignment stops and projecting downward below the undersurface of said main body,

(c) a handgrip extending upward from said main body by means of which said device may be grasped by one hand and readily positioned as desired with respect to the work piece,

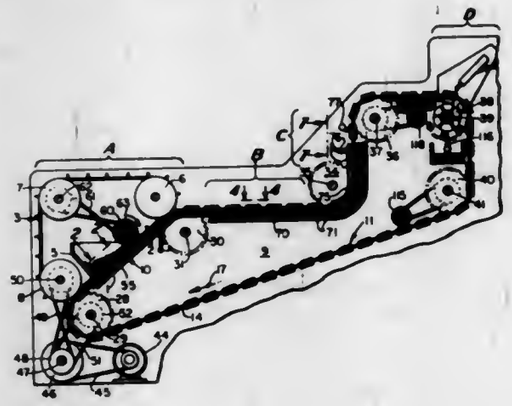
(d) rack member driving means engaged with said rack member and effective when actuated to drive said rack member longitudinally of said main body to advance said clamping stop toward said alignment stops until the work piece is clamped therebetween, said rack member driving means being carried by said handgrip and including actuating means grippable simultaneously with said handgrip and operable to drive said rack member as aforesaid when so gripped.

3,273,614
METHOD AND MEANS FOR PATCHING ASSEMBLED PLYWOOD PANELS
Per Olof Skoog, P.O. Box 102, Olympia, Wash.
Filed June 27, 1961, Ser. No. 119,978
17 Claims. (Cl. 144—310)

16. The method of patching the surface portion of a piece of building material having a defect thereon, comprising: (1) positioning a routing means over said defect and removing said defect by routing out a recess in the outer surface of said material, (2) generally simultaneously with said routing operation forming a mating patch for said recess with a patch forming means at a point located away from but in close proximity to said routing operation, (3) upon completion of said routing and patch forming steps transferring said routing means away from and transferring said mating patch over said recess in said patch forming means so that said patch forming means also acts as a hold means for said mating patch, and (4) employing a portion of said patch forming means to deliver said patch to said recess.



3,273,615
APPARATUS FOR ORIENTING FRUIT HAVING STEMS, AND FOR PITTING SAID FRUIT
Henry Aguilar, 1309 27th Ave., San Francisco, Calif.
Original application Jan. 30, 1963, Ser. No. 255,016, now Patent No. 3,212,545, dated Oct. 19, 1965. Divided and this application Aug. 5, 1965, Ser. No. 477,433
10 Claims. (Cl. 146—19)



4. A machine for orienting and pitting drupe bodies, such as cherries having stems projecting from a side thereof;

(a) supporting means for supporting a plurality of said drupe bodies for movement thereover in one direction in a generally horizontally extending path of travel;

(b) drupe moving means supported over said supporting means in a position for engagement with drupes on the latter, and for movement over said supporting means in one direction for rolling such drupes thereon in said one direction, and means connected with said drupe moving means for so moving the latter;

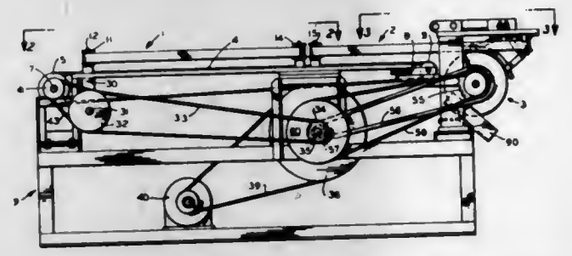
(c) guide means engageable with the stem on each drupe during rolling of said drupes by said drupe moving means for guiding the stem on each drupe to a position generally trailing each drupe;

(d) pit engaging and ejecting means supported for reciprocable movement through each drupe when the latter is engaged by said drupe moving means and when said stem is in trailing relation to said drupe for ejecting each pit from each drupe;

(e) means so supporting said pit engaging and ejecting means;

(f) means connected with said pit engaging and ejecting means actuated by engagement with and movement of said drupe moving means for so reciprocating said pit engaging and ejecting means.

3,273,616
FREESTONE DRUPE PITTER
Carl T. Petersen, Lafayette, Calif., assignor to Filper Corporation, San Ramon, Calif., a corporation of California
Filed Apr. 7, 1965, Ser. No. 446,279
5 Claims. (Cl. 146—28)



1. In a freestone drupe halver and pitter, the combination of:

(a) a pair of annular, horizontally disposed, coaxial, members supported for rotation in one direction about their common axis;

(b) means supporting said members for such rotation;

(c) means connected with said members for rotating them simultaneously in said one direction;

(d) the outer peripheral surfaces of said members being bevelled toward their adjacent sides to coact for forming a generally V-shaped seat on the uppermost sides of said members for supporting a whole drupe thereon at spaced points generally at opposite sides of the pit therein;

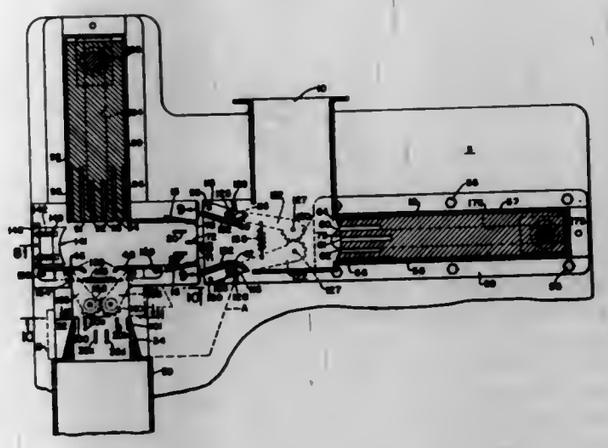
(e) a disc coaxial with said annular members disposed between the latter and supported for rotation thereof in the same direction as the direction of rotation of said annular members;

(f) means connected with said disc for rotating the latter in said one direction at a substantially higher rate of rotation than the rate of rotation of said members;

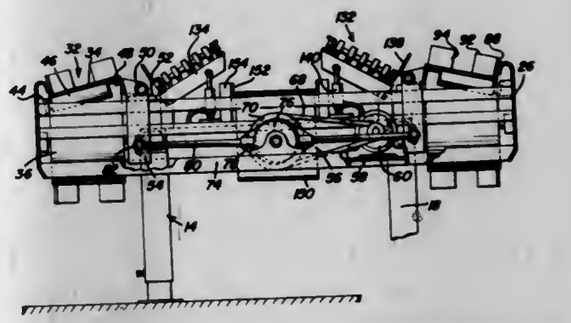
(g) circumferentially spaced portions of the peripheral outer edge of said disc projecting radially outwardly of the adjacent closest portion of said bevelled surfaces and having circumferentially facing surfaces facing in the direction of rotation of said disc and extending radially outwardly a sufficient distance to engage the trailing end of a pit in a whole drupe supported on said bevelled surfaces for moving such pit out of the leading end of said drupe.

3,273,617
HIGH SPEED MECHANISM FOR SEGMENTING CRINKLE CUT VEGETABLES
Frank G. Lamb, Lake Oswego, Oreg., assignor to Lamb-Weston, Inc., Portland, Oreg., a corporation of Oregon
Filed Jan. 24, 1964, Ser. No. 339,967
8 Claims. (Cl. 146—78)

1. In a high speed vegetable cutting mechanism for continuously and sequentially segmenting a vegetable product into center cut portions, the combination comprising: a first series of cutting elements mounted in one direction for removal of all but two slabs of said product and for segmenting said product into a plurality of center segments, a second series of cutting elements mounted in a direction at right angles to said one direction to remove said two slabs and for segmenting said slabs into a plurality of elongated center cuts, the segmenting cutting elements of each of said first and second series being mounted in at least two different planes with respect to said one direction and said direction at right angles, respectively, and a means for each stage to push said product therethrough, said means comprising a reciprocating plunger having slots in the product-contacting end thereof to accommodate said cutting elements, and means for separately discharging said slabs and said center cuts.



3,273,618
ASPARAGUS TRIMMER
John F. Flodin, Sunnyside, Wash., assignor to Flodin Inc., a corporation of Washington
Filed Feb. 26, 1964, Ser. No. 347,439
7 Claims. (Cl. 146—81)



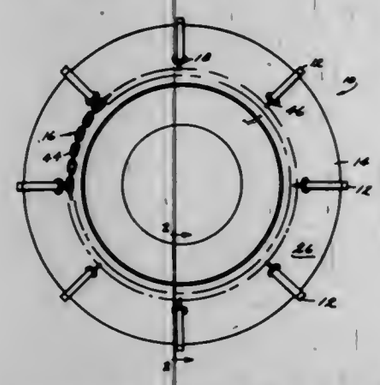
2. A machine for handling and trimming asparagus or similar articles comprising, an elongated support extending between a container loading station and an article severing station, container return means mounted by the support for continuously conveying unloaded containers toward the loading station, a pair of container supporting conveyors disposed on opposite longitudinal sides of the container return means adapted to convey loaded containers from the loading station toward the severing station, means mounting said container supporting conveyors in transversely tilted positions to facilitate removal of articles in the loaded containers from opposite longitudinal sides of the support, a pair of endless belts mounted along said opposite longitudinal sides of the support for easy removal, compartment means mounted on said belts for positioning articles transferred thereto from the loaded containers, means continuously moving said belts in transversely tilted condition along the container supporting conveyors toward the severing station, and severing means operatively mounted by the support at the severing station for cutting articles positioned in the compartment means.

3,273,619
ANTI-STEALING SAFETY DEVICE FOR PURSES
Walter Marini de Azevedo, Rua Buarque de Macedo, 28, Apt. 6, Rio de Janeiro, Brazil
Filed Jan. 23, 1964, Ser. No. 339,710
Claims priority, application Brazil, Feb. 22, 1963, 147,190
6 Claims. (Cl. 150—47)



1. A safety device for a purse and the like comprising a base element, a guide rail element mounted on said base element securing said base element to the material of said purse, guide rails upon said guide rail element at opposite sides thereof, a needle loosely mounted upon said guide rail element, a slide sliding upon said guide rails having an aperture therein through which said needle extends when said slide is displaced by gravity in one direction along said guide rails and which covers said needle when located in the opposite direction, said slide forming the sole means for retaining said needle on said guide rail element.

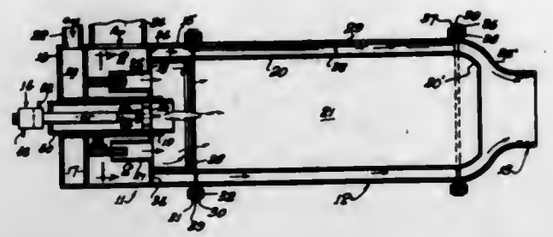
3,273,620
TIRE CHAINS
James T. Phillips and George D. Phillips, both of Rte. 2, Southwood Drive, Gastonia, N.C.
Filed Aug. 14, 1964, Ser. No. 389,625
1 Claim. (Cl. 152—228)



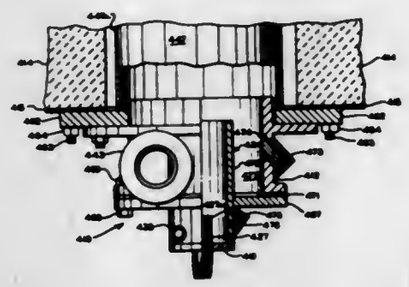
A traction device for a vehicle tire comprising a plurality of high molecular weight polyethylene traction elements adapted to be disposed transversely over the periphery of a vehicle tire, said polyethylene having a density of at least 0.94 and a molecular weight of at least 800,000, attaching means for securing said traction elements to said tire and means connecting said traction elements to said attaching means.

3,273,621
BURNER ASSEMBLY
Herman T. Childree, Cason, Tex., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed July 20, 1964, Ser. No. 383,564
10 Claims. (Cl. 158—7)

1. A burner assembly comprising a mixing section, a combustion section, a nozzle section and a pilot burner; said mixing section including a fuel manifold, an air manifold, a fuel inlet means operatively connected to said fuel manifold, an air inlet means operatively connected to said air manifold, nozzle means operatively attached to said fuel manifold, nozzle means operatively attached to said air manifold, said air nozzle means extending into said air manifold in a direction toward said fuel nozzle means while providing communication between said air manifold and said combustion section, said fuel nozzle means extending partially through said air nozzle means for discharging fuel thereinto; said combustion section including a combustion chamber operatively connected to said mixing section and said nozzle section, a turbulence creating means positioned in said combustion chamber, and cooling means operatively associated with said combustion chamber and said nozzle section; said pilot burner including means for supplying air and fuel thereto and an ignitor/flame rod assembly therefor.

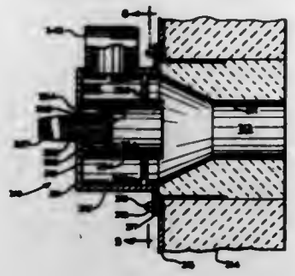


3,273,622
SELF-STABILIZING COMBUSTION APPARATUS
John D. Nesbitt, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Original application June 7, 1965, Ser. No. 473,267, now Patent No. 3,244,219, dated Apr. 5, 1966, which is a division of application Ser. No. 102,316, filed Apr. 11, 1961. Divided and this application Nov. 8, 1965, Ser. No. 516,817
2 Claims. (Cl. 158—7)



1. Self-stabilizing burner apparatus for heating a tubular element comprising, in combination: wall means including a backplate forming a substantially cylindrical combustion chamber having an inlet end and an exit end, said chamber being in fluid communication with said tubular element; a burner body circumposing the exit end of said combustion chamber and forming therewith an annulus in fluid communication with said tubular element; fuel pipe means for delivering a stream of fuel substantially axially to said combustion chamber, said fuel pipe means having an outlet end disposed within said combustion chamber somewhat downstream from the backplate thereof; first air inlet pipe means for delivering a stream of air to said combustion chamber, said first air inlet pipe means being disposed tangentially to said combustion chamber and perpendicularly to the axis thereof and being disposed intermediate said backplate and the outlet end of said fuel pipe means; and second air inlet pipe means for delivering a stream of air to said annulus, said second air inlet pipe means being disposed substantially perpendicularly to the axis of said combustion chamber.

3,273,623
SELF-STABILIZING COMBUSTION APPARATUS
John D. Nesbitt, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Application June 7, 1965, Ser. No. 473,267, now Patent No. 3,244,219, dated Apr. 5, 1966, which is a division of application Ser. No. 102,316, Apr. 11, 1961. Divided and this application Nov. 3, 1965, Ser. No. 516,818
2 Claims. (Cl. 158—7)



1. Self-stabilizing burner apparatus comprising, in combination: wall means including a backplate forming a substantially cylindrical combustion chamber having an inlet end and an exit end; wall means forming a burner body circumposing said combustion chamber and forming an annular chamber therewith; a refractory tunnel block having a tunnel in fluid communication with said combustion chamber and said annular chamber; a fuel inlet pipe for delivering a stream of fuel substantially axially to said combustion chamber, said pipe having an outlet end disposed within said combustion chamber at a point somewhat downstream from the backplate thereof; an air inlet connection for delivering a stream of air to said annular chamber; air inlet conduit means extending from said combustion chamber to said annular chamber for delivering a portion of said stream of air from said annular chamber to said combustion chamber for combusting a portion of said stream of fuel, said air inlet conduit means being disposed tangentially to said combustion chamber and perpendicularly to the axis thereof and being disposed upstream from the outlet end of said fuel inlet pipe; and a restricted orifice disposed within said annular chamber being adapted to restrict the flow of the remaining portion of the stream of air from said annular chamber to said tunnel, thereby causing the remaining portion of the air stream and the uncombusted portion of the stream of fuel to mix rapidly in said tunnel.

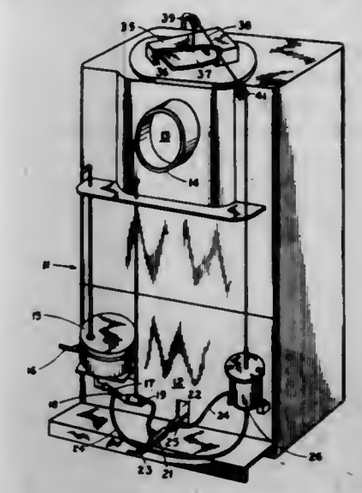
3,273,624
THERMOSTATIC LIQUID FUEL CONTROL DEVICE FOR FURNACES
John D. Webster, Norfolk, Va., assignor of three-twentieths to Joseph M. Carson, Jr., and three-twentieths to Grover C. Outland, both of Norfolk, Va.
Filed Sept. 25, 1964, Ser. No. 399,324
14 Claims. (Cl. 158—28)

1. A liquid fuel control device connectible to a furnace of the type having a fuel supply main conduit interconnecting a supply of fuel and said furnace and having a feeder valve mounted in said fuel supply main conduit, comprising:

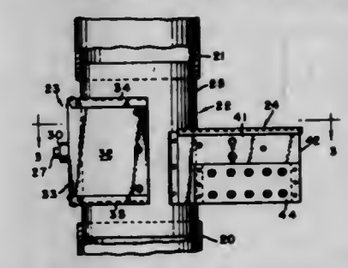
(A) a bypass conduit having its respective ends adapted to be connected to said main conduit before and after said feeder valve;

(B) a dispenser valve mounted in said bypass conduit, said dispenser valve including a spring actuated plunger movable between a position obstructing the flow of fuel through said bypass conduit to a position permitting the flow of fuel through said bypass conduit, said spring urging said plunger into said position obstructing the flow of fuel through said bypass conduit; and

(C) a heat-responsive dispenser valve actuator, including a metallic plate adapted to be supported upon said furnace and connected to said dispenser valve plunger via cable means, said plunger being movable against the action of said spring to said position permitting the flow of fuel through said bypass conduit as said metallic plate flexes in response to firing of said furnace.



3,273,625
STACK DAMPER AND CONTROL ASSEMBLY FOR FURNACES
Paul R. Holtzman, 200 S. Railroad St., and Allen B. Holtzman, Rte. 3, both of Myerstown, Pa.
Filed Aug. 3, 1965, Ser. No. 476,954
4 Claims. (Cl. 158—28)



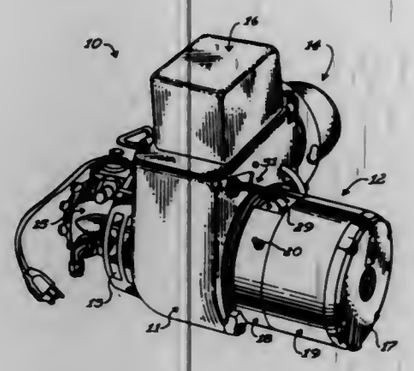
1. A stack damper and control assembly for a furnace equipped with a stack, a burner motor and burner motor control unit; the assembly including a damper unit interposed between the furnace and stack, the damper unit comprising a damper cylinder, a disk-shaped damper within said cylinder, a rectilinear operating shaft mounted in said cylinder, said damper being diametrically fixed to said operating shaft, and a damper control unit operatively connected to said damper unit, the damper control unit including unidirectional, low speed, high torque motor means in direct engagement with the operating shaft of said damper unit, switch means on said damper control unit in circuit with the burner control unit and the burner motor, and switch-actuating means mounted on said operating shaft and rotatable therewith, for operating said switch means at predetermined intervals.

3,273,626
BURNER CONTROL SYSTEM
Richard W. Brown, Excelsior, Minn, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 19, 1965, Ser. No. 433,851
13 Claims. (Cl. 158—28)

1. In an oil burner system in which an oil pump is rotated by the rotor of an electric motor having a run actuator to provide running torque and a start actuator to aid the run actuator in providing a high starting torque which is necessary to institute rotation of the rotor;

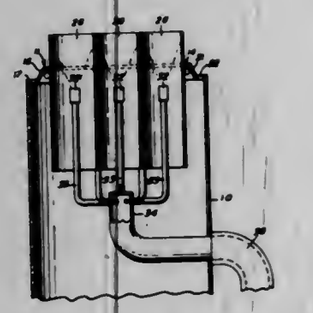
a time delayed temperature responsive switch mounted to be responsive to the ambient temperature of the motor, and having a single electrically energizable actuator electrically connected in circuit with the run and start actuator to be responsive to the electrical current drawn by the motor,

and a fast-acting electric flame detector including a flame relay having a normally closed no-flame switch connected in series with only the start actuator to de-energize the start actuator upon detection of flame,



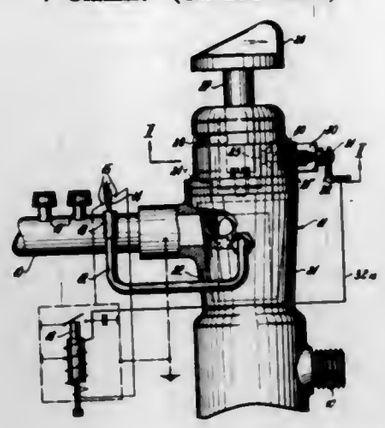
to provide oil burner safety cutout action by operation of the temperature responsive switch in respone to the electrical current drawn by the motor in the event of failure to sense the establishment of flame, to prevent start of the motor and subsequently to provide oil burner safety cutout action in response to the locked rotor current of the motor in the event of the false sensing of flame during a standby period, and to provide motor protection in the event of an abnormally high motor ambient temperature.

3,273,627
FLARE STACK BURNER ASSEMBLY
John Smith Zink, Hershel Goodnight, and Robert D. Reed, Tulsa, Okla., assignors to John Zink Company, Tulsa, Okla., a corporation of Delaware
Filed Mar. 16, 1965, Ser. No. 440,216
7 Claims. (Cl. 158—99)



1. In a flare stack burner, an elongated vertically disposed tube for guiding a combustible gas for upward movement therein, a burner tip at the upper end of said tube having a central opening for the escape of said gas, partition means within said central opening through which a portion of gas may escape, means for discharging water droplets into the gas within said partition means, and means providing for ignition and combustion of that portion of the gas escaping from the stack exteriorly of said partition means and which is shielded from the water droplets.

3,273,628
INTERRELATED GAS VALVE AND MANUAL IGNITER CONTROL
Heinrich Puttfarcken, Wernau (Neckar), Germany, assignor to Junkers & Co., G.m.b.H., Wernau (Neckar), Germany
Filed Dec. 3, 1963, Ser. No. 327,695
Claims priority, application Germany, Dec. 3, 1962, J 22,756
7 Claims. (Cl. 158—115)

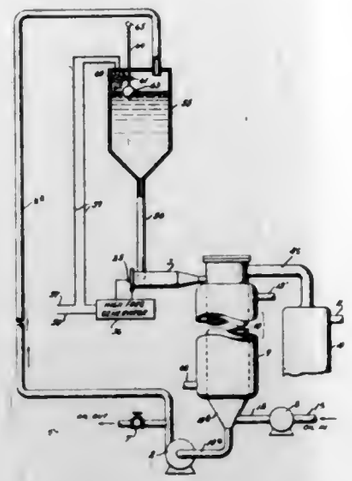


1. In a gas burning apparatus, in combination, a gas supply conduit; a first and a second burner communicating with said conduit, said burners being sufficiently close to each other so that ignition of one burner results in automatic ignition of the other burner; a valve provided in said conduit upstream of said burners, said valve comprising a housing and a valve member being movable in said housing between a first position, a second position and a third position in which said valve respectively prevents flow of gas to both of said burners, permits flow of gas to said one burner, and permits flow of gas at least to said other burner; and a control circuit including a hand-powered high tension electromagnetic current generator including a coil having a primary circuit and a circuit breaker arranged in said primary circuit, electrode means defining a spark gap adjacent to said one burner, conductor means connecting said current generator with said electrode means, and short-circuiting means for short-circuiting said circuit breaker and including a normally closed switch arranged in parallel with said circuit breaker, said switch comprising a first contact located in said housing and secured to and movable with said valve member, and a second contact engaging said first contact in all but said second position of the valve member, so that the switch is closed in said first and third positions of said valve member and is open to enable ignition of said one burner by said current generator only when said valve member is moved to said second position and the current generator generates a current which suffices to produce a spark across said gap.

3,273,629
METHOD AND APPARATUS FOR REMOVING WATER FROM FUEL AND OTHER OILS
Ralph G. Sargeant, Lakeland, Fla., assignor to Pet Milk Company, St. Louis, Mo., a corporation of Delaware
Application May 24, 1962, Ser. No. 198,687, now Patent No. 3,209,812, dated Oct. 5, 1965, which is a division of application Ser. No. 841,478, Sept. 22, 1959, now Patent No. 3,072,490, dated Jan. 8, 1963. Divided and this application Nov. 6, 1964, Ser. No. 416,176
4 Claims. (Cl. 159—3)

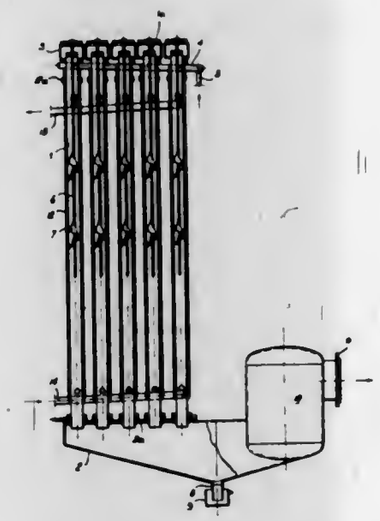
1. The method of removing relatively small percentages of water from oils which comprises freeing the oil and water mixture from any air which it may contain, flowing the air free oil and water mixture as a solid, confined stream under substantial hydraulic pressure; applying high-frequency electrical energy to the flowing liquid, while

under such pressure; then discharging the mixture into a flash evaporation zone while maintaining said zone under high vacuum and at such temperature as to cause the water



content only of the mixture to flash into vapor, and separately withdrawing the water-free oil from said evaporating zone.

3,273,630
FALLING FILM EVAPORATOR FOR CONCENTRATING ALKALINE LIQUORS
Hans Kühnlein, Fullinsdorf, Basel Land, Switzerland, assignor to Hch. Bertrams Aktiengesellschaft, Basel, Switzerland
Filed Aug. 19, 1963, Ser. No. 302,846
Claims priority, application Switzerland, Aug. 20, 1962, 9,920/62, 9,921/62
5 Claims. (Cl. 159—6)



1. Apparatus for concentrating alkaline liquor, which comprises at least one upright tube, means for introducing alkaline liquor near the top of said tube for forming a continuous liquor film descending along the interior wall of said tube, heating means for heating the exterior wall of said tube, means for withdrawing concentrated liquor from the lower end of said tube and mechanical obstructing means arranged within the interior of said tube and spaced from said film for obstructing liquor particles entering the space defined by said liquor film and for conducting said particles back to said film, said obstructing means comprising at least one screw member mounted on rod means extending within said tube, said screw member having a slanted surface, the pitch of said screw member being about 150 mm. while the inclination of the slanted surface of the screw is about 20° relative to the axis of the tube.

3,273,631
ULTRASONIC FLUID HEATING, VAPORIZING, CLEANING AND SEPARATING APPARATUS
George E. Neuman, Burnaby, British Columbia, Canada, assignor to Neuman Enterprises Limited, Nassau, Bahama Islands, a corporation of the Bahamas
Filed Jan. 13, 1964, Ser. No. 337,241
17 Claims. (Cl. 159—6)

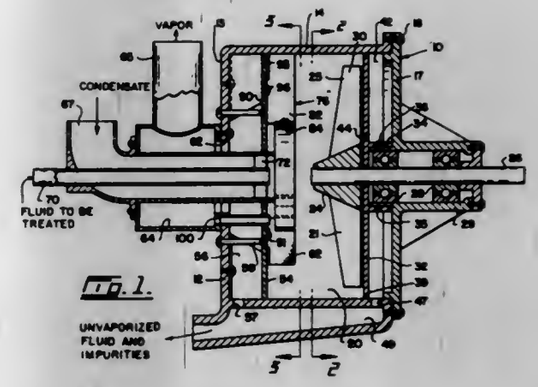


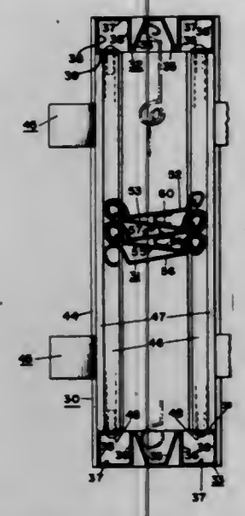
Fig. 1.

1. Ultrasonic apparatus for heating, vaporizing, cleaning and separating flowing fluids, comprising a closed chamber, an impeller having radially-extending blades mounted for rotation in the chamber and adapted to be rotated at high speeds, said blades having broad surfaces in planes generally parallel to the axis of rotation of the impeller, means for directing fluid into the impeller blades during rotation of the impeller, said fluid being moved at high speed along a circular path around the axis of the impeller in the chamber by the impeller blades, at least one stationary blade extending longitudinally thereof in a substantially radial direction and mounted in the chamber across said circular path near the impeller and forming an obstruction to the movement of the fluid around the chamber, said stationary blade having a front impinged broad surface extending transversely of said blade and generaly parallel to said axis of rotation and against which the fluid is directed and a back leeward surface where a low pressure area is formed, said chamber having a clear space on the impinged surface side of said stationary blade in which said movement of the fluid is unobstructed before impinging against said surface, said fluid flowing around an edge of the stationary blade between the latter and at edges of the impeller blades, and outlet means for the chamber adjacent the stationary blade through which fluid exits from the chamber, whereby the impeller blades moving past the stationary blade generate ultrasonic vibrations in the fluid in the chamber.

3,273,632
FIRE DAMPER
Francis J. McCabe, Penns Park, Pa., assignor to Air Balance Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed June 17, 1964, Ser. No. 375,855
17 Claims. (Cl. 160—1)

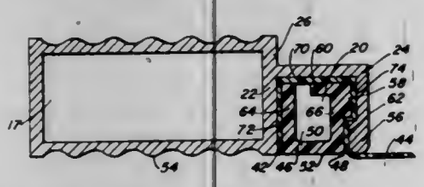
17. A blade assembly for a folding shutter comprising a plurality of one piece blades each of which is formed from substantially constant thickness sheet material, each blade including a central web and a pair of parallel ex-

tending hinge elements formed respectively at opposite edges of said web and extending longitudinally continuously for substantially the full web length, one hinge element on one blade being interfittable within a hinge element on an adjacent blade by sliding the former endwise into the latter to form a hinged blade pair, each of said hinged blades of said pair when interfitted with the other being



relatively rotatable through a sufficient angle so that said blade assembly may be opened out into flat curtain form and may also be compacted into a minimum volume by reversely folding blades of said assembly against one another, at least one hinge element of each of alternate blades physically engaging one another when said blade assembly is compacted.

3,273,633
SHOWER DOOR CONSTRUCTION
Maynard J. Seidmon, Chicago, Ill., and George J. Ellis, Grand Rapids, Mich., assignors to Theodore Efron Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 10, 1964, Ser. No. 350,782
3 Claims. (Cl. 160—381)



1. In a shower enclosure panel a framing construction for a plastic sheet secured along its marginal edges to the framing construction,

said framing construction including a generally rectangular frame,

said frame being of hollow core formation and including an integral open channel defined by parallel inner and outer walls on each side thereof,

said channel being disposed adjacent an inner marginal edge of said core;

an integral longitudinal rib extending inwardly of said channel from one of said walls;

spline means anchoring said sheet with respect to at least two surfaces of said channel,

said spline means comprising generally parallel jaw-like elements including longitudinally extending off-set portions co-extensive therewith and adjacent terminal edges of said jaw-like elements,

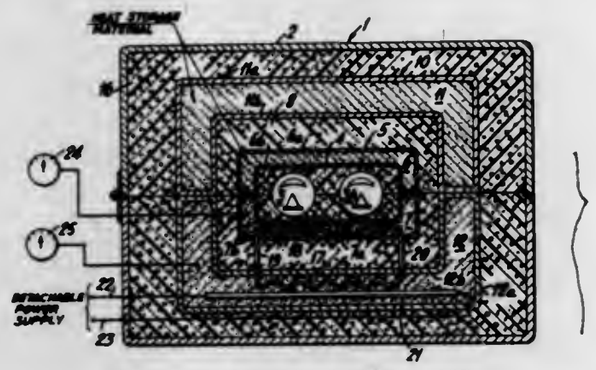
said off-set portions and said jaw-like elements being resiliently deformable whereby upon installation in said channel said jaw-like elements will be compressed toward one another;

a first one of said off-set portions adjacent a terminal edge of one of said jaw-like elements engaging and being resiliently biased into anchoring relation within said open channel for cooperation with said longitudinal rib in keying relation therewith to obviate inadvertent dislodgement of said spline from said channel;

a second one of said offset portions adjacent a terminal edge of one of said jaw-like elements extending toward the said first one of said jaw-like elements to limit relative lateral movement of free ends of said jaw-like elements toward each other;

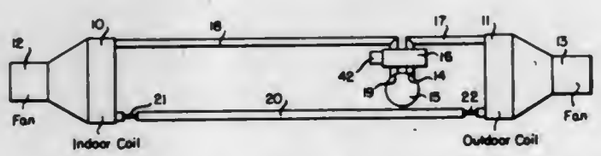
whereby portions of said plastic sheet overlying said two surfaces of said channel will be securely locked by said spline means to prevent displacement of said sheet from said frame construction.

3,273,634
SELF-SUSTAINING TEMPERATURE CONTROL PACKAGE
Charles D. Snelling, 2949 Greenleaf St., Allentown, Pa.
Filed Jan. 4, 1965, Ser. No. 422,894
8 Claims. (Cl. 165—1)



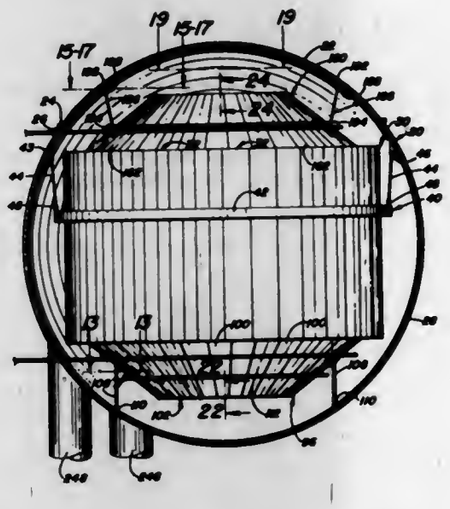
1. A self-sustaining temperature control package adapted to sustain a given temperature for prolonged periods which comprises, a container having insulatedly packed therein a temperature-sensitive object and a plurality of heat sinks, each containing a heat storage material therein characterized by a relatively high heat of fusion, an inner one of said heat sinks being thermally associated with said temperature-sensitive object, at least one other of said heat sinks being insulated from and surrounding said object and said inner heat sink, and an insulation surrounding at least said other heat sink within said container, such that any heat loss from said inner heat sink is greatly minimized.

3,273,635
HEAT PUMP CONTROLS
Harry W. Jobes, Hallandale, Fla., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Apr. 17, 1964, Ser. No. 363,050
11 Claims. (Cl. 165—12)



1. A control for defrosting a heat pump operating on a heating cycle, said heat pump having indoor and outdoor coils, compressor means for circulating refrigerant through said coils and a valve means for connecting the delivery side of said compressor means to said indoor coil on the heating cycle or to said outdoor coil for cooling or defrosting comprising: a clock mechanism for registering the time of operation of said compressor means, means for preventing the operation of said clock except when the outdoor ambient temperature is below the level at which frost accumulates on said outdoor coil, means energized when said clock registers a predetermined accumulated time for operating said valve means to connect the delivery side of said compressor means to said outdoor coil to heat said outdoor coil, and means responsive to a rise in the pressure of refrigerant in said outdoor coil to reverse said valve means to again connect the delivery side of said compressor means to said indoor coil.

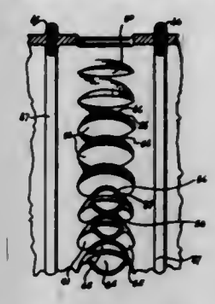
3,273,636
SPACE SIMULATION CHAMBER
Thomas N. Hickey and Charles B. Hood, Jr., Columbus, Ohio, assignors to Cryovac, Inc., Columbus, Ohio, a corporation of Ohio
Filed Oct. 31, 1962, Ser. No. 216,625
25 Claims. (Cl. 165—67)



1. A space simulation chamber comprising, in combination, an outer structural wall; a thermal shroud within said structural wall, said shroud comprising in combination, a plurality of side wall panel assemblies each of said assemblies including a plurality of adjoining refrigerated side wall panels; yieldable connecting means between adjoining edges of said side wall panels; yieldable connecting means between adjoining edges of said side wall panels; means for passing refrigerated fluid between said side wall panels; a plurality of support rods attaching said side wall panels to the structural wall of said space simulation chamber; a plurality of adjoining refrigerated top wall panels; top wall mounting means attaching said top wall panels to the structural wall of said space simulation chamber; a plurality of refrigerated bottom wall panels; and bottom wall mounting means for attaching said bottom wall panels to the structural wall of said space simulation chamber.

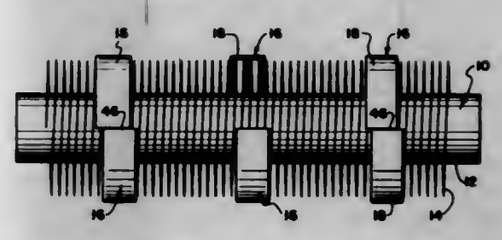
3,273,637
HEAT EXCHANGER
Theron F. Pauls, Oak Park, Ill., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia
Original application June 3, 1957, Ser. No. 663,062, now Patent No. 2,999,308, dated Sept. 12, 1961. Divided and this application Oct. 5, 1960, Ser. No. 67,147
5 Claims. (Cl. 165—171)

1. A hollow sheet metal plate having extending internally therein a system of fluid passages with said passages comprising spaced parallel fluid passageways extending longitudinally in said plate and also distended out of the plane of said plate with the distention of said passageways in a cross-section thereof normal to said plane extending out of said plane an amount greater than the width of said passageways in said cross-section so that said passageways in said cross-section are elongated to have their major axis extending in a direction transverse said plane, the thickness of said plate between said pas-



sageways being less, in gradations throughout the cross-sectional extent thereof, than the thickness of said plate in portions circumscribing said passageways, a portion of said plate between said passageways having at least one opening through said plate adjacent at least one integral fin extending out of and substantially transverse said plane of said plate.

3,273,638
FINNED TUBE PROTECTOR
Raymond A. Darling, 5306 E. 26th St., Tulsa, Okla.
Filed July 1, 1964, Ser. No. 379,673
5 Claims. (Cl. 165—134)

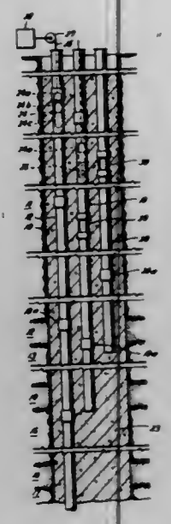


3. In combination with a finned tube including a central tube having a plurality of radially extending ribs on the outer periphery thereof, a removable fin protector comprising a pair of complementary semi-circular housings cooperating for encasing a plurality of adjacent fins, each of said semi-circular housings comprising an arcuate outer housing having an inner diameter slightly greater than the outer diameter of the fins, a radially inwardly directed rib member carried by the outer housing and having an inner diameter substantially equal to the outer diameter of the central tube for engagement therewith, and an angular flange provided on the outer ends of the rib for extending the inner periphery thereof through an arc greater than one half the circumference of the central tube for facilitating securing of the complementary semi-circular housings around the central tube.

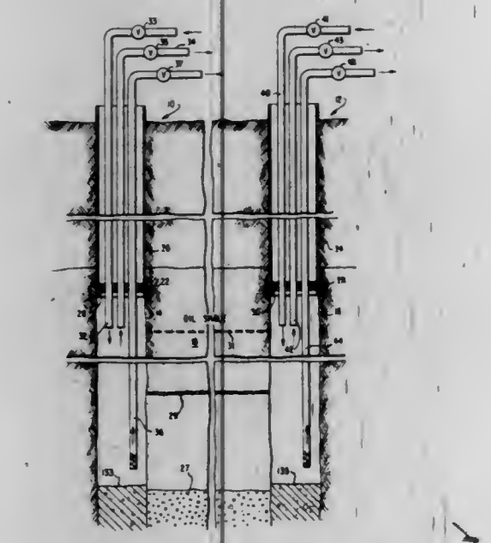
3,273,639
WELL PRODUCTION METHODS AND APPARATUS
Maurice P. Lebourg and John T. Dewan, Houston, Tex., assignors to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed July 27, 1960, Ser. No. 45,694
4 Claims. (Cl. 166—4)

2. A method for completion of one string of tubing relative to a coextensively extending string of tubing in a well bore comprising the steps of: disposing a first string of tubing coupled by collars in a well bore to the greatest depth at which production is expected; disposing a second string of tubing coupled by collars in the well bore wherein the string of tubing includes a section of pipe having a characteristically different length as com-

pared to other pipe lengths to develop characteristic magnetic anomalies identifiable from collar couplings and having a characteristic radioactivity anomaly; logging the earth formations traversed by the first string of tubing with radioactivity anomaly detecting means to obtain indications of the radioactivity of the traversed earth formations and indications of the characteristic radioactivity anomaly in the second string of tubing as a function of depth; and logging the second string of tubing with magnetic anomaly detecting means to obtain indications of collar couplings and magnetic anomalies of said pipe section as a function of depth.



3,273,640
PRESSURE PULSING PERPENDICULAR PERMEABILITY PROCESS FOR WINNING STABILIZED PRIMARY VOLATILES FROM OIL SHALE IN SITU
Morgan G. Huntington, Galesville, Md., assignor to Pyrochem Corporation, Salt Lake City, Utah, a corporation of Utah
Filed Dec. 13, 1963, Ser. No. 330,334
9 Claims. (Cl. 166—7)



1. An in situ process for winning oil shale from an oil shale formation, the formation including a production bore hole and an injection bore hole drilled therein, as well as a path of lateral fluid communication through the otherwise impervious oil shale between the production and injection bore holes, the process comprising;

(a) preheating the oil shale adjacent the path of lateral fluid communication with hot water to a temperature just below that at which pyrolysis of the oil shale begins,

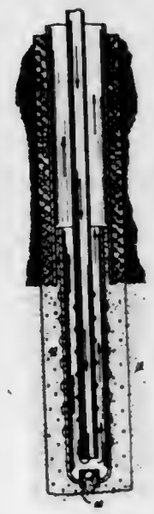
(b) introducing superheated steam under pressure into the path of lateral fluid communication through the injection bore hole,

(c) cyclically varying the superheated steam pressure between the limits of rock pressure and a lower pressure sufficient to prevent undue steam condensation,

(d) removing steam and oil shale entrained vapor from the production well, and

(e) treating the removed steam and oil entrained vapor after first reducing the partial pressure of steam by contact catalysis in the presence of hydrogen.

3,273,641
METHOD AND APPARATUS FOR COMPLETING WELLS
Henry A. Bourne, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
Filed Dec. 16, 1963, Ser. No. 330,927
10 Claims. (Cl. 166—12)



1. A method of completing an oil and gas well or the like including the steps of:

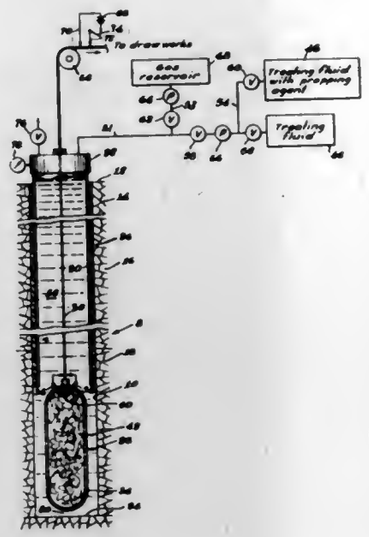
positioning in the well, a well screen having fusible means temporarily closing a plurality of transverse openings therein;

placing a permeable cement in said well around the exterior of said screen; and

melting the fusible means temporarily closing said openings.

3,273,642
METHOD OF IMPLODING FRANGIBLE CAPSULES USED IN WELL TREATMENTS
John Karpovich, Caro, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 20, 1964, Ser. No. 340,852
4 Claims. (Cl. 166—39)

1. A method of imploding in a bore hole adjacent to an earth formation a frangible sealed hollow vessel having ignitable internal heating means therein, comprising disposing said vessel in a generally liquid medium in a bore hole, pressurizing said medium to a pressure equal to at least half the pressure required to fracture said formation, and then igniting said internal heating means to substantially instantaneously raise the temperature of said vessel to a temperature much above the temperature of said medium, whereby the combination of the thermal stresses created in said walled vessel and the lower internal pressure of the vessel as compared with the higher pressure of the medium cause said vessel to implode.



3,273,643
METHOD OF INITIATING FOAM IN DROWNED WELLS
William E. Billings and Reginald M. Lasater, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Jan. 24, 1964, Ser. No. 339,886
17 Claims. (Cl. 166—45)

1. A method for treating subterranean wells containing aqueous liquid which comprises adding a foaming agent to the liquid in the well whereby the water and foaming agent are mixed, said mixing producing an aqueous solution of said foaming agent within the well, adding a foam initiator composition capable of evolving nitrogen to said solution in said well and allowing said foam initiator composition to evolve nitrogen whereby a foam comprising aqueous liquid and gas flows from the well.

3,273,644
SYSTEM AND APPARATUS FOR PUMPING OIL WELLS
Russell R. Waterman, Long Beach, Calif., assignor of ten percent to Vernon D. Beehler, Los Angeles, Calif.
Filed Sept. 24, 1962, Ser. No. 225,598
4 Claims. (Cl. 166—62)

1. A system for heating and pumping an oil well from a reservoir of production fluid at a production zone comprising a heating line extending from ground surface into the well and having a heat exchanger section extending into the reservoir from a location adjacent the top to a location adjacent the bottom thereof, a production tubing line extending from the surface into the well and having a stand pipe section extending into said reservoir, said heat exchanger being separate from and located between said stand pipe section and the adjacent circumference of the well, said stand pipe section comprising a hollow casing having a sump chamber therein, said stand pipe section having adjacent the upper end of the sump chamber and adjacent the upper end of said reservoir a production inflow port, said inflow port being substantially at the level of the top of said heat exchanger, and pumping means in communication with the lower end of the sump and connected to said production line whereby to pass production fluid from the sump to the surface.



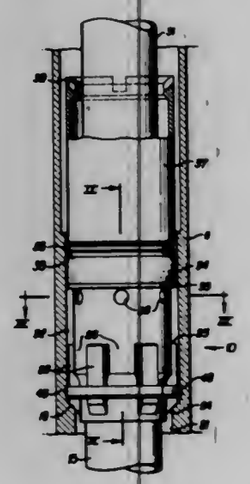
3,273,645
WELL COMPLETION APPARATUS
Raymond W. Der Mott, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed July 23, 1962, Ser. No. 211,525
14 Claims. (Cl. 166—55.1)



8. Well perforating apparatus adapted for suspension by an electric cable in a well bore having at least one string of pipe therein comprising: perforating means having a prescribed direction of lateral firing, selectively operable anchor menas for selectively engaging the wall of a string of pipe including wall-engaging members movable laterally between non-engaging and wall-engaging positions, rotator means intermediate said anchor means and said perforating means operative for rotating said perforating means relative to said anchor means

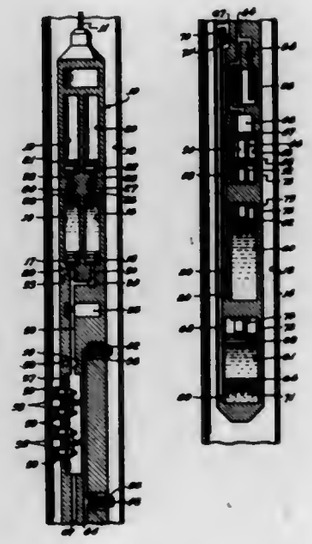
when said wall-engaging members are in said wall-engaging position, and position responsive means connected to said wall-engaging members for providing electrical signals of the position of said wall-engaging members.

3,273,646
CIRCULATING CASING HANGER ASSEMBLY
Raymond W. Walker, Huntington Beach, Calif., assignor to Shaffer Tool Works, Brea, Calif., a corporation of California
Filed July 2, 1963, Ser. No. 292,390
11 Claims. (Cl. 166—86)



1. A circulating casing hanger assembly adapted to be permanently inserted into a well head structure for use in cementing additional casing therewithin, comprising:
- a tubular, elongated casing hanger member having upper and lower ends,
- means on said lower end of said casing hanger member for carrying well hole casing adapted to be permanently cemented into position within the well hole structure,
- supporting means on the inner surface of said casing hanger member for receiving and landing additional well tools,
- radially extending circumferentially spaced rib portions provided on said casing hanger member and adapted to support said casing hanger member in the well head structure, said ribs including downwardly directed support shoulders at one end thereof and upwardly directed stop shoulders at the other end thereof,
- the spaces between said ribs providing longitudinally extending channels for allowing cement to pass upwardly therethrough,
- circumferentially spaced, transverse fluid ports in said casing hanger member spaced from said casing hanger member lower end and above said radially extending rib portions,
- a movable sealing element carried on the exterior of said casing hanger member adjacent said ports, said sealing element adapted to be longitudinally moved across said ports to seal off flow through said ports and into abutting engagement with said stop shoulders on said ribs when in sealed positions; and
- a longitudinally movable seal element setting sleeve cooperating with said seal element and threadably engaging said casing hanger member, said setting sleeve including means for rotating and moving said sleeve longitudinally, whereby fluid flowing around the periphery of said casing hanger member and into said ports can be sealed off by said seal element being moved into sealing engagement across said ports by said seal setting sleeve.

3,273,647
COMBINATION WELL TESTING AND TREATING APPARATUS
George E. Briggs, Jr., and Timothy D. Brown, Houston, Tex., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,943
6 Claims. (Cl. 166—100)

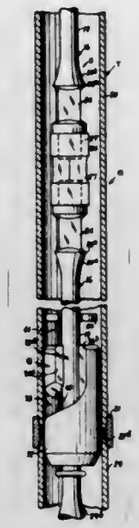


1. A device for injecting fluids into an earth formation adjacent to the walls of a borehole comprising: a body adapted to be lowered into the borehole, sealing means mounted on said body and adapted to isolate an area of borehole wall and establish fluid communication therewith when urged thereagainst, means on said body propellant for urging said sealing means into engagement with a wall of the borehole, the body having two sample-receiving chambers each connected to said sealing means by a valved passage, respectively, the body also having a chamber containing treating fluid for injection into the formation within said isolated area, means on the body forming a passage connecting said sealing means with the injection-fluid chamber so as to establish communication with said isolated area, and means for displacing injection fluid from said injection-fluid chamber into said formation within said isolated area, whereby separate samples of formation fluid may be obtained before and after injecting treating fluid into the formation.

3,273,648
WELL TOOLS
Charles F. Barnard, 3116 Caruth Blvd., Dallas, Tex.
Filed July 8, 1963, Ser. No. 293,456
15 Claims. (Cl. 166—175)

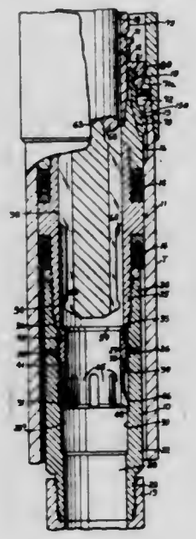
1. A well tool assembly including: a flow conductor having a longitudinal flow passage; and a plurality of well tools in the flow conductor for removing deposits on internal surfaces of the flow conductor reciprocably movable in said passage in limited longitudinal ranges in the passage of the flow conductor, each of said well tools having valve means for closing said longitudinal passage and being movable upwardly in said range in said longitudinal passage when closing said flow passage by fluids flowing upwardly in said passage and moving downwardly in said range in said flow passage when not closing said passage, said well tools removing deposits from internal surfaces of the flow conductor during their longitudinal movement

in the flow conductor, said valve means of each of said well tools being operative to open and close said passage



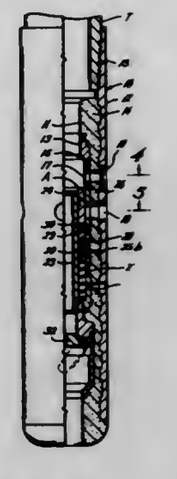
of said well tool independently of the operation of the valve means of the others of said well tools.

3,273,649
EQUALIZING VALVE MEANS
Jack W. Tamplen, Celina, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 311,687
8 Claims. (Cl. 166—224)



8. An equalizing device including: a tubular body having a longitudinal bore with a lateral port formed in the wall of the body opening into the bore thereof; a tubular valve slidable longitudinally in said body between a position closing said lateral port and a position spaced from said lateral port; a shifting tool movable into said body and said valve; and means on said shifting tool and on said valve coengageable to interconnect said shifting tool and said valve for movement of said valve longitudinally of said body from one of said positions to the other and means for maintaining said co-engageable means on said valve and said shifting tool engaged until said valve is returned from said other position to said one position.

3,273,650
AUTOMATIC FILL-UP AND CEMENTING DEVICES FOR WELL PIPES
Thomas E. Alexander, Houston, and Wayne F. Nelson, Waxahachie, Tex., assignors to Koehring Company, Waxahachie, Tex., a corporation of Wisconsin
Filed Apr. 13, 1964, Ser. No. 359,366
9 Claims. (Cl. 166—225)

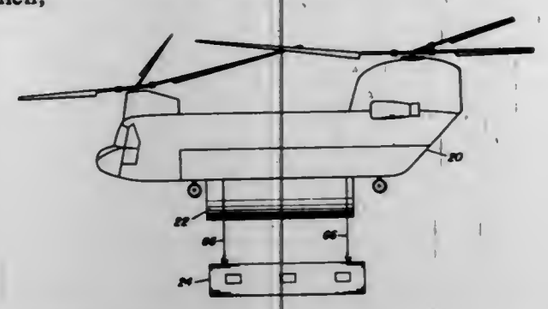


1. A fill-up device including,
- a tubular body having means for connecting said body in a well pipe string,
- said body having an orifice establishing communication between the exterior and interior thereof whereby fluid from the annulus surrounding the body and pipe string may flow through the orifice and into the string,
- an annular element mounted for movement within the body and movable to a position closing flow into the pipe string,
- said annular element being subjected to the pressure of the fluid flowing through said orifice into the pipe string,
- means for subjecting said annular element to the static pressure in said annulus surrounding said body in opposition to the pressure of the fluid flowing through said orifice into the pipe string whereby a differential pressure is created across said annular element,
- releasable means for normally holding said annular element in a position allowing flow through the orifice and into the pipe string,
- said releasable holding means being released by the differential pressure caused by a predetermined increase in the velocity of flow of fluid passing through said orifice to permit movement of said annular element,
- said differential pressure also moving said annular element to a position closing further flow into the pipe string, and
- means permitting downward flow through said tubular body and through the central portion of said annular element whereby circulation may be established through said device to the annulus surrounding said body and said well pipe string.

3,273,651
FIRE FIGHTING EQUIPMENT
William O. Andrews, 4716 College Ave., San Diego, Calif.
Filed Jan. 6, 1965, Ser. No. 423,877
8 Claims. (Cl. 169—1)

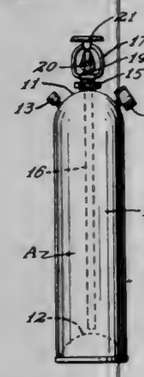
1. Fire fighting mechanism comprising in combination:
- (A) A navigable flying machine having:
  - (1) a motor,
  - (2) winch means driven by the motor,
  - (3) control mechanism means for rendering winch means operative and inoperative;

(B) means forming a tank for fire extinguishing material and forming a platform for supporting firemen;



(C) cables connected with the last mentioned means and the winch means;
(D) and a hose connected with the tank and extendible to the areas of platform.

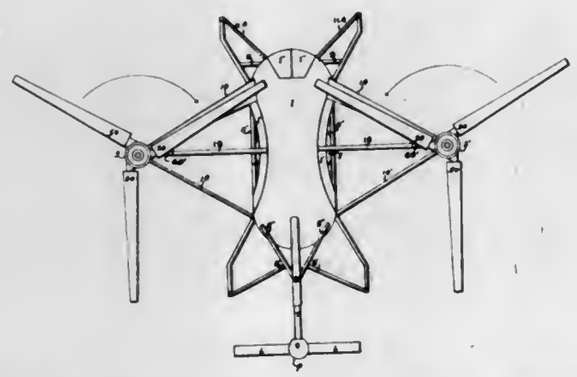
3,273,652
FIRE EXTINGUISHER
Gerhardt A. Neumann, Minneapolis, Minn., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
Filed July 20, 1964, Ser. No. 383,832
1 Claim. (Cl. 169—30)



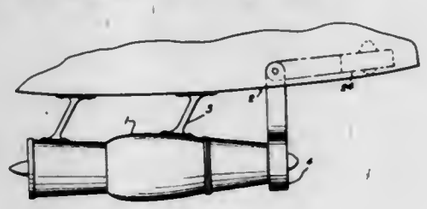
A portable readily movable fire extinguisher comprising:
a pressure compartment,
a pressure indicator secured to said compartment,
a dry chemical powder within said pressure compartment,
gas under pressure within said compartment,
said pressure compartment being vertically elongated and having a base portion upon which said compartment may rest in a vertical position,
a sprinkler head secured to the upper end of said compartment and supported centrally thereof,
said compartment having a rounded upper end from which said sprinkler head projects, said sprinkler head being coaxial thereto,
said sprinkler head including a closure plug and a fusible element holding said plug in compartment closing position, and
a deflector means supported above and concentric with said sprinkler head and said closure plug and operable to deflect the greater portion of the powder outwardly and downwardly over said rounded compartment end when said plug is released.

3,273,653
ROTARY WING AIRCRAFT
Frank W. McLarty, 337 S. Edgefield Ave., Dallas, Tex. 75208
Filed Oct. 4, 1957, Ser. No. 688,318
3 Claims. (Cl. 170—135.2)

3. A rotary wing aircraft comprising a fuselage framework, outrigger frames at each side of the fuselage framework on which are mounted paired rotors on upright shafts, means of rotating the upright paired rotor shafts using a common shaft driven by a prime-mover, said paired rotors becoming autorotational immediately and automatically on diminution of power from the prime-mover, and means of controlling longitudinal tilt of the fuselage frame relative to the horizon on an axis parallel to lines projected from the center of the hub of each rotor perpendicular to a vertical plane passing through the longitudinal axis of the fuselage frame, said means of tilt control consisting of an auxiliary rotor, mounted near an end of the fuselage frame, whose normal thrust is in the said vertical plane passing through the longitudinal axis of the fuselage frame, and whose blades are provided with hydraulic means of adjusting and preferably reversing their angle of attack consisting of means of reciprocating a fluid retaining cylinder, having two compartments provided with suitable annular flexible seals preventing passage of fluid, longitudinally of a smaller parallel telescoped cylindrical housing through which extends a rotor shaft rotating in tapered roller bearings mounted in said shaft housing, a second cylinder having suitable thrust bearings mounted on said reciprocable cylinder relative to which the second cylinder rotates, and linkages, rigidly attached to the second cylinder, between the rotatable cylinder and the rotor blades, to which each linkage is attached pivotally at points spaced from longitudinal axes on which the blades pivot, said means not employing hydrauic fluid conveyed through the rotor shaft.

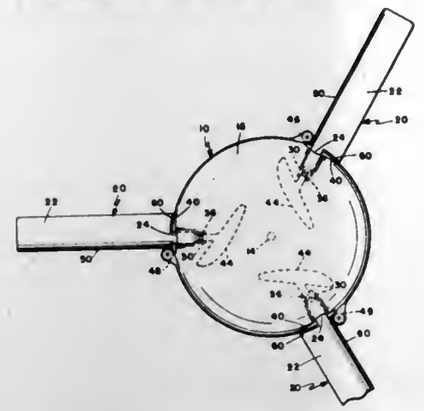


3,273,654
MOVABLE TURBINE-FAN UNIT FOR AN AIRCRAFT JET ENGINE
Robert W. Pinnes, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Army; and/or the Administrator of the Federal Aviation Agency
Filed June 18, 1965, Ser. No. 465,218
10 Claims. (Cl. 170—135.7)



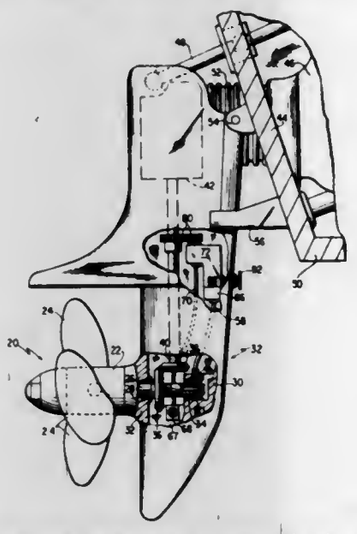
1. A movable turbine-fan unit comprising:
(a) a turbine including rotor and stator blades;
(b) a plurality of fan rotor blades fixedly mounted on said turbine for rotation therewith;
(c) a plurality of fan stator blades longitudinally aligned with said turbine stator blades; and
(d) means for moving said turbine into and out of register with the rear of a jet engine.

3,273,655
CENTER BODY PIVOTALLY RETRACTABLE ROTOR
Peter F. Girard, La Mesa, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Aug. 2, 1965, Ser. No. 476,261
12 Claims. (Cl. 170—160.12)



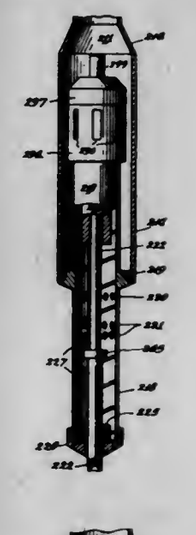
1. In an aircraft, a lifting rotor having means for rotatable mounting on the aircraft and being retractable and extensible in flight, the rotor comprising:
a hollow center body;
a plurality of rotor blades mounted to rotate with said center body and being pivotal to swing in a plane substantially perpendicular to the axis of rotation of the center body; and
means operatively connected to said blades to swing the blades simultaneously and synchronously in a common direction between extended positions substantially radial to said center body and retracted positions disposed substantially chordally of the center body, independent of rotational speed of the rotor.

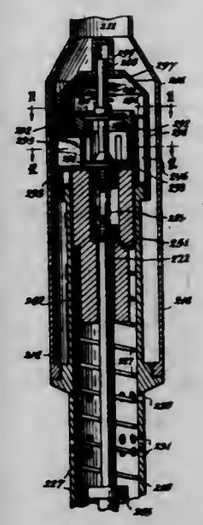
3,273,656
HYDRAULICALLY ACTUATED CONTROLLABLE-PITCH PROPELLER SYSTEM FOR OUTBOARD MOTORS AND OUTDRIVES
John Le Grand Bird, Upland Drive, Greenwich, Conn.
Filed June 30, 1964, Ser. No. 379,180
17 Claims. (Cl. 170—160.32)



14. A hydraulically actuated controllable-pitch propeller for outboard motors and outdrives comprising a hub having cylinder means therein, movable piston means in said cylinder means, a plurality of blades mounted on said hub having stub shafts rotatably received in said hub, pitch control arms secured to said stub shafts and each having first and second ends on generally opposite sides of said stub shaft, a plurality of springs in said hub pressing said first ends of the control arms against said piston means for engaging said piston means for changing the pitch setting of the blades in response to movement of said piston means, said hub having means for admitting hydraulic liquid into said cylinder means for moving said piston means, and a plurality of stop screws in the hub for engaging the second ends of said control arms for limiting the range of movement of said piston means for limiting the range of pitch adjustment, and gear means ganging all of said stop screws together for simultaneous adjustment thereof.

3,273,657
IMPACT TOOL
Donald J. Willems, Omaha, Nebr. (10341 Minnick, Oak Lawn, Ill.), and Henry A. Spitzley, 564 West St., Portland, Mich.
Continuation of application Ser. No. 838,475, Sept. 8, 1959. This application Mar. 9, 1964, Ser. No. 351,277
44 Claims. (Cl. 173—121)

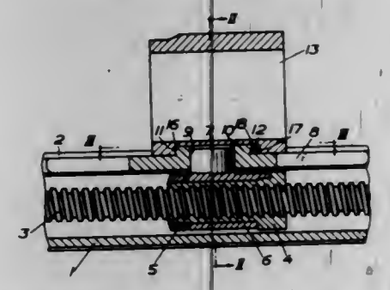




10. A pneumatic impact tool comprising a pressure chamber; means for introducing air into said pressure chamber, a piston housing communicating with said pressure chamber; a piston slidably mounted in said piston housing; said piston having a longitudinal aperture extending therethrough; means for controlling air flow from said pressure chamber to said piston housing; an impact pin extending from a position proximate to said means for controlling air flow through said aperture in said piston; means for closing the end of said piston housing opposite of said means for controlling air flow; said means for closing the end of said piston being adapted to permit the impact pin to slide therethrough; means on said impact pin for transferring the momentum of said piston in its

power stroke to said impact pin; elastic means for applying a force which tends to hold said means for controlling air flow in a closed position; elastic means for applying a force which tends to hold said means for controlling air in an open position, said elastic means being proximate to said means for controlling air flow and responsive to the motion of said impact pin; and elastic means positioned between said piston and said means for closing the end of said piston housing, said elastic means being adapted to urge said piston to its normal starting position after each power stroke.

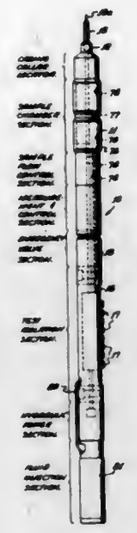
3,273,658
FEEDING SLIDE ARRANGEMENT FOR ROCK DRILLING MACHINES OR THE LIKE
Sven Laurentius Ytterfors and Åke Eugén Jansson, Nacka, Sweden, assignors to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Mar. 6, 1962, Ser. No. 177,872
Claims priority, application Sweden, Mar. 16, 1961, 2,801/61
9 Claims. (Cl. 173—141)



1. A feeding slide arrangement for rock drilling machines or the like comprising a feed bar, spaced apart guideways extending in parallel relation along said feed bar, a slide movable along said feed bar on said guideways, a driving device on said feed bar for feeding and retracting said slide along said guideways, a drilling machine on said slide, a first pair of dovetail surfaces in opposed arrangement on said drilling machine, a second pair of dovetail surfaces in opposed arrangement of said slide and extending transversely to said guideways and substantially co-planar with the upper edges thereof, one dovetail surface of said first pair being in engagement upon assembly with one dovetail surface of said second pair while the said second dovetail surface of the said first pair is not in engagement with the said second dovetail surface of the said second pair leaving a space therebetween, and a removable locking wedge insertable in the said space between the said second two dovetail surfaces of said pairs providing the sole means for fixedly locking said drilling machine to said slide.

3,273,659
WELL SAMPLING AND TREATING TOOL
Francois H. K. Reynolds, Jr., Houston, Tex., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,823
12 Claims. (Cl. 175—4)

1. In a well fluid sampling tool adapted to be lowered into a well casing on a wire line, the combination of: a tool body having a lateral opening, the tool body having a sample-receiving chamber, a barrel member insertable into said lateral opening into operative position on the body, releasable means for securing said barrel member to the body, the barrel member being provided with fluid sample inlet elements which project through said lateral opening in the body when the barrel member is secured in operative position, each element having a jet charge for perforating the casing and admitting well fluid through said fluid inlet elements into the interior of said barrel member, conduit means on the body connecting the interior of said barrel member with said sample-



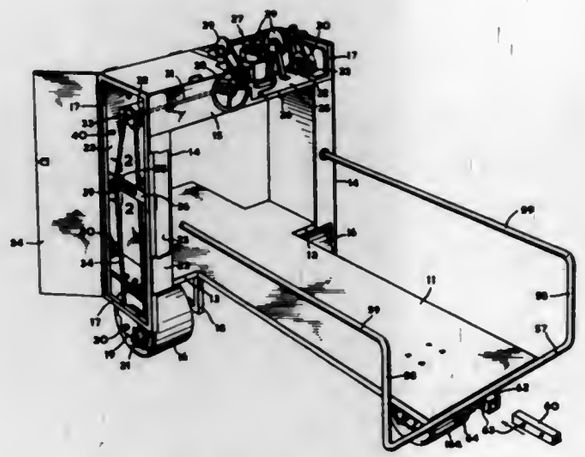
receiving chamber, and laterally extendible means on the body adapted to move the body laterally and to hold said fluid inlet elements in contact with the casing.

3,273,660
METHOD AND APPARATUS FOR CHANGING SINGLE DRILL PIPE STRINGS TO DUAL DRILL PIPE STRINGS
John Gordon Jackson and Charles O. Vail, Denver, Colo., assignors to Gas Drilling Services Co., Los Angeles, Calif., a partnership
Filed Oct. 30, 1963, Ser. No. 320,088
14 Claims. (Cl. 175—57)



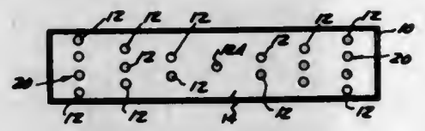
10. A method for changing from a single drill pipe drilling section to a dual drill pipe drilling section comprising the steps of introducing an inner drill pipe section into an outer drill pipe section to form a fluid passage inside the inner drill pipe section and an annular fluid passage between the outer and inner drill pipe sections, locating an expandable coupling unit between the sections to seal the two fluid passages from each other and establish communication of the two respective fluid passages with corresponding fluid passages of adjacent drill pipe members, and firmly positioning the inner section in the outer section by expanding the coupling unit.

3,273,661
BOAT TRAILER AND LAUNCHER
Eugene G. Shannon, 215 Courtleigh Blvd., Toronto, Ontario, Canada
Filed Feb. 17, 1965, Ser. No. 433,324
3 Claims. (Cl. 180—27)



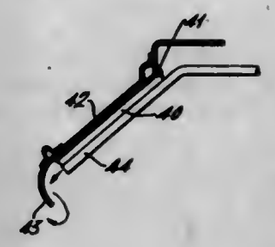
1. A boat trailer and launcher comprising:
a platform having a front and a back end, at least one end of the platform being open to permit a boat to be floated onto the platform when the latter is submerged,
wheel means at both ends of the platform by which the platform can roll over the ground, the wheel means including at least one drivable wheel,
a source of motive power,
transmission means between said source and said drivable wheel for selectively rotating the drivable wheel to drive the platform over the ground,
the wheel means at one end of the platform being steerable to steer the platform while it is being so driven,
manual means for steering said steerable wheel means,
and at the front end of the platform coupling means by which the front end can be hitched to the back of a vehicle for trailing therebehind with the front end wheel means raised clear of the ground.

3,273,662
STEREO SOUND SYSTEM
Charles G. Roberts, 23861 Verne, Detroit, Mich.
Filed Dec. 27, 1965, Ser. No. 516,446
8 Claims. (Cl. 181—31)



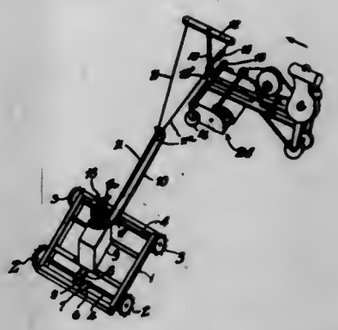
1. A stereo sound system comprising
(a) an enclosure with an open side,
(b) a plurality of speakers mounted in the enclosure and facing said open side, and with the speakers disposed to form an arcuate surface, and arranged in vertical rows about a central speaker so that as the distance from the central speaker increases, the number of speakers in each vertical row increases.

3,273,663
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER
Christopher Sydney Cockerell, Bassett, Southampton, England, assignor to Hovercraft Development Limited, a company of Great Britain and Northern Ireland
Filed May 6, 1965, Ser. No. 453,655
Claims priority, application Great Britain, Sept. 1, 1958, 27,978/58
5 Claims. (Cl. 180—7)



1. A vehicle of the type adapted to travel or hover over a surface and to be supported above said surface at least in part by a cushion of pressurised gas contained beneath the vehicle in a cushion space located between the underside of the vehicle and the surface over which it is travelling, comprising a main body structure, a wall structure mounted so as to extend below the main body structure and adapted to flex to accommodate major variations and irregularities in the clearance between said main body structure and the surface, said wall structure consituting a part of the peripheral boundary of said cushion space, and a further flexible structure carried by said wall structure and extending below the latter, said flexible structure constituting a further part of the peripheral boundary of said cushion space and being of flexible material so as to yield to and pass over minor obstructions in its path, said flexible structure being lighter and capable of quicker response to variations and irregularities in the surface over which the vehicle is travelling than said wall structure.

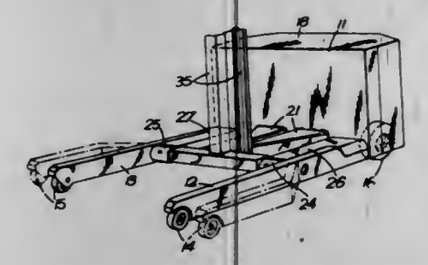
3,273,664
REMOTE AUTOMATIC CONTROL OF POWER DRIVEN EQUIPMENT
Edward L. Ramer, Hockessin, Del., deceased; Mildred A. Ramer, executrix, Hockessin, Del.
Filed Dec. 12, 1963, Ser. No. 330,163
16 Claims. (Cl. 180—79)



1. A system for lawn mowing, harvesting and the like comprising as essential components thereof a control unit and at least one field unit having a steering mechanism movably mounted on said field unit to afford a right-hand steering part and a left-hand steering part, said control unit comprising a vehicular framework supported by wheels and axles for said wheels, one of said axles being equipped with means for propelling the framework through a power train connected with a horizontal continuously rotatable arm which is attached at one end to

a vertical shaft mounted on said framework and connected also to the steering mechanism of a powered field unit by means of two guide lines one of which is connected to the said right-hand steering part and the other of which is connected to the said left-hand steering part and, said power train being actuated by the continuously rotation of the horizontal arm resulting from the forward movement of the field unit.

3,273,665
RUNNING GEAR ARRANGEMENT FOR INDUSTRIAL TRUCKS
Cecil Goodacre, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, England, a British company
Filed Aug. 4, 1964, Ser. No. 387,461
Claims priority, application Great Britain, Aug. 6, 1963, 31,053/63
3 Claims. Cl. (180—85)



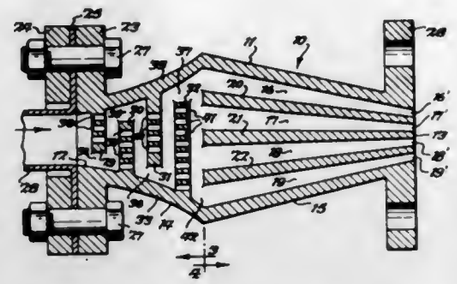
1. An industrial load-handling truck having a body portion, an upstanding load-carrying mast supported by the body portion, a pair of transversely spaced straddle legs projecting from the body portion, each leg being pivotally mounted on the body portion independently of the other leg about a substantially horizontal axis extending transversely of the leg, a pair of wheels for supporting the body portion from the ground, which wheels are mounted in fixed vertical relation to and beneath the body portion, an electric motor for driving at least one of the wheels supporting the body portion, at least one wheel for supporting each leg from the ground, which wheel is mounted on the end of the leg remote from the body portion and in fixed vertical relation thereto, and resilient means located remote from the pivot axis between adjacent parts of each leg and the body portion to limit resiliently up and down pivotal movement of said end of the leg remote from the body portion.

ERRATUM

For Class 181—31 see:
Patent No. 3,273,662

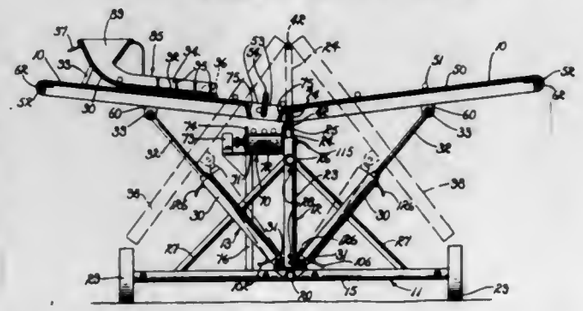
3,273,666
MULTI-PASSAGE MUFFLER PRODUCING COLLIDING FLUID STREAMS
Charles M. Hamilton, 876 Niagara St., and Daniel M. Kapral, 441 Fargo Ave., both of Buffalo, N.Y.
Filed Mar. 5, 1965, Ser. No. 349,712
9 Claims. (Cl. 181—56)

1. A muffler comprising a housing, an inlet in said housing, an outlet in said housing, a plurality of baffles in said housing extending transversely to the path of flow between said inlet and said outlet, a relatively large opening means associated with each of said baffles, each of said relatively large opening means being out of alignment with the relatively large opening means associated with other of said baffles to thereby cause portions of the flow entering said housing from said inlet to follow a sinuous path through said relatively large opening means, a plurality of relatively small opening means in each of said baffles to permit a portion of the flow to pass therethrough which does not pass through the relatively large opening means of each baffle whereby the flow emanating from said relatively large opening means of a baffle is caused to mix with the flow emanating from the



relatively small opening means of the same baffle to thereby effect an extensive mixing action on said flow passing through said housing, and a plurality of partitions extending generally in the direction of flow of gases through said muffler and providing passageways which converge toward said outlet.

3,273,667
HARVESTING SCAFFOLD FOR ORCHARDS
Kazuo Hiyama and Howard Kazuhiko Hiyama, both of 8184 E. Adams, Fowler, Calif.
Filed July 20, 1964, Ser. No. 383,751
7 Claims. (Cl. 182—129)

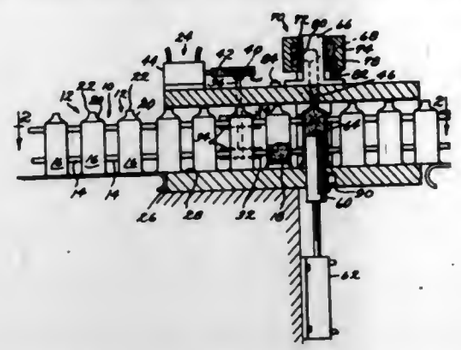


1. A mobile scaffold comprising a vehicle having predetermined forward and rearward ends, a pair of substantially planar workmen support platforms; means mounting the platforms in edgewardly adjacent relation in elevated position on the vehicle for pivotal elevational movement about an axis extended longitudinally of the vehicle; powered means interconnecting the vehicle and the platforms adapted to pivot the platforms between picking position with the platforms outwardly and upwardly inclined from their axis and transport position with the platforms outwardly declined therefrom and inwardly folded for narrowed travel, said platforms having a discharge opening adjacent to the axis to which objects tend to roll when deposited on the platforms when in picking position; and an elongated conveyor mounted on the vehicle beneath the opening and extended from beneath the platforms.

3,273,668
EXTRUSION APPARATUS AND METHOD
Martin L. Abel, Oak Park, Mich., assignor to Permawick Company, Detroit, Mich., a corporation of Michigan
Filed Nov. 13, 1963, Ser. No. 323,308
5 Claims. (Cl. 184—1)

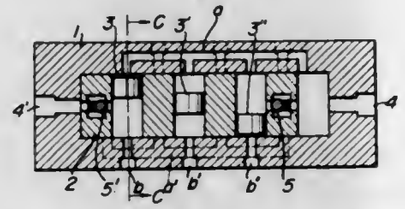
5. The method of extruding oil-impregnated fibers into bearing wells, which includes the steps of, providing a container filled with a predetermined amount of oil-impregnated fibers, positioning said container within an extruding device having an outlet orifice with an outlet of said container in alignment with the outlet orifice of said extruding device, placing a bearing well of a bearing in

communication with said outlet orifice, and extruding the oil-impregnated fibers out through said outlet orifice into



said bearing well by applying pressure to a portion of said container.

3,273,669
CENTRALIZED LUBRICATING SYSTEM
Hiroshi Fujita, Shiga-ken, Japan, assignor to Daikin Kogyo Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Apr. 10, 1964, Ser. No. 358,699
Claims priority, application Japan, Apr. 12, 1963, 38/19,210
1 Claim. (Cl. 184—7)

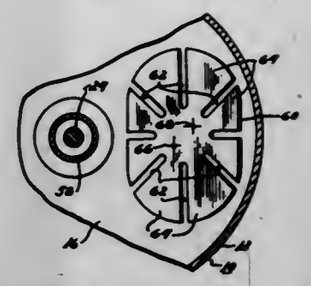


A centralized lubricating system including a plurality of distributing valve assemblies arranged in series with each other in a loop of conduit line, each of said distributing valve assemblies comprising a casing having an axial cavity formed therein and openings formed in the opposite end walls of said casing to communicate with the adjacent ends of said cavity, a pilot plunger fitted in said cavity for free reciprocatory sliding movement therein over a definite length of stroke with a number of spaced bores formed through said pilot plunger transversely thereof and in alignment with each other, a corresponding number of metering plungers fitted in said respective transverse bores for free reciprocatory sliding movement therein, and a pair of check valves arranged in said pilot plunger at the opposite ends thereof and each in communication with the adjacent one of said transverse bores and also with the adjacent one of said end openings in a manner so as to allow fluid flow through said check valve in an outward direction, and fluid passage means including two sets of aligned outlet ports communicating with said respective transverse bores, the arrangement being such that the fluid directed under pressure into said transverse bores alternately through said end openings in said casing is discharged from the valve assembly through a set of said outlet ports by means of said metering plungers.

3,273,670
VIBRATIONAL DAMPER
Elmer W. Kleinlein, Troy, Mich., assignor to American Motors Corporation, Detroit, Mich., a corporation of Maryland
Filed June 1, 1964, Ser. No. 371,540
2 Claims. (Cl. 188—1)

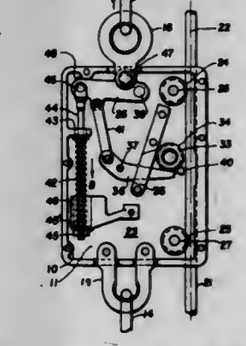
1. Sound attenuating means for use with motor-compressor units, and comprising,

a substantially flat uniplanar member oblong in shape and having a plurality of bifurcating slots formed therein,
said slots extending radially outward from centrally of said member breaking the outer edge and forming distinctly separate friction damper fingers of differing size and shape between respectively different of said slots,



a motor compressor housing including a dome shaped cover member having an inner concave surface,
and means for securing said bifurcated member within the protection of said dome shaped member and to the vibration responsive surface thereof for best covering said surface and having the peripheral extremities of said damper fingers frictionally engaged thereto.

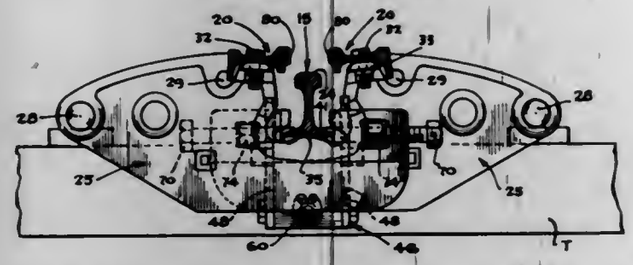
3,273,671
LOAD TRANSFER DEVICE AND BRAKING ARRANGEMENT
Carlos Vrana, Long Island City, N.Y., assignor to Kantfall Products Corp., Brooklyn, N.Y., a corporation of New York
Filed Dec. 20, 1963, Ser. No. 332,226
2 Claims. (Cl. 188—44)



1. A load transfer arrangement adapted to transfer a load upon release of normal load support, comprising a carrier linked to a load member and normal load support means, load transfer actuating means integral to said carrier comprising a counter weight connected to a finger, a spring each adapted to actuate a finger connected to said counter weight, said counter weight and spring co-acting and adapted to actuate said finger, said normal load support means applied to said load transfer actuating means, said load transfer actuating means adapted to immediately act upon any change in normal support means, transferred load support means within said carrier, said transferred load support means separate from said load support means and substantially parallel to the axis of said carrier, and load transfer means within said carrier including; guide means between said transferred load supporting means; a freely moveable wedging member of a size in excess of the space between said fixed guide means and said transferred load support means adapted to be guided by said guide means; said finger engageable with said freely moveable wedging member and adapted to move said wedging member towards said guide means; said freely moveable wedging member carried by said carrier unconnected to said carrier and unconnected

to said load transfer actuating means; said freely moveable wedging member adapted to engage said guide means and said transferred load support means immediately upon resumption of said normal load support.

3,273,672
RETARDER
Fred W. Creedle, Park Ridge, and Ray W. Mars, Downers Grove, Ill., assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,135
9 Claims. (Cl. 188—62)



1. A retarding system for retarding the movement of railroad cars with a braking force proportional to the weight of a railroad car, said railroad car having its wheels disposed on traffic rails, at least one which is vertically movable with respect to the railroad ties,

a plurality of levers mounted on opposite sides of at least one of said traffic rails and each of said levers adapted for pivotal movement,

braking means secured to each of said levers and engageable with a car wheel to exert a retarding force thereon,

means on each of said levers for supporting said one traffic rail,

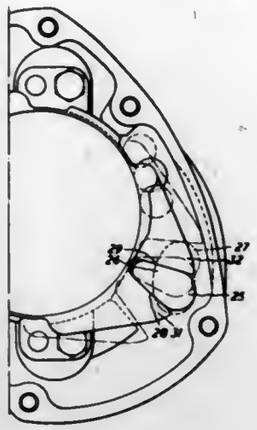
the weight of said railroad car on said one traffic rail forcing said levers to pivot in opposite directions of pivotal movement to bring said braking means together to exert a retarding force proportional to the weight of said railroad car on said one traffic rail,

means connecting said levers to said one traffic rail, and

lifting means supported on said ties for lifting said one traffic rail upwardly to remove the weight of said railroad car from said levers and through said connecting means to pivot said retarding rails to move said braking means further apart.

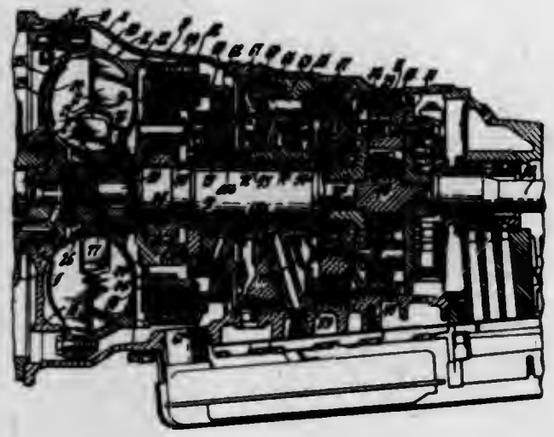
3,273,673
DISC BRAKES
Gordon John Edwards, Solihull, and George Eric Thompson, Birmingham, England, and Alexander Senkowski, deceased, late of Warwickshire, England, by Barclays Bank Limited, executor, London, England, assignors to Girling Limited and Tractor Research Limited, both British companies of Birmingham, England, and Coventry, England, respectively
Filed Dec. 14, 1964, Ser. No. 418,347
4 Claims. (Cl. 188—72)

1. A disc brake comprising a stationary housing, a rotatable shaft extending axially through said housing, axially spaced friction surfaces in said housing, friction members axially movable on and rotatable with said shaft, co-operating pressure plates located between said friction members, opposed co-operating inclined recesses in the adjacent faces of said pressure plates, roller means in said recesses, radially projecting lugs on said pressure plates, opposed abutment surfaces on said lugs, a cam located between said lugs for engagement with said abutment surfaces to effect relative angular movement of said pressure plates in opposite directions, a camshaft rotatable about its axis and carrying said cam, and means for guiding said shaft in said housing in a path such that as the shaft moves circumferentially with the pressure plates in the normal direction of rotation of said friction members it also moves radially inwards whereby the mean effective



position of the points of engagement of the cam with the said abutment surfaces on the pressure plates remains substantially constant.

3,273,674
TORQUE BOOSTED BRAKE
Kenneth E. Snyder, Northville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 18, 1963, Ser. No. 309,759
9 Claims. (Cl. 188—72)

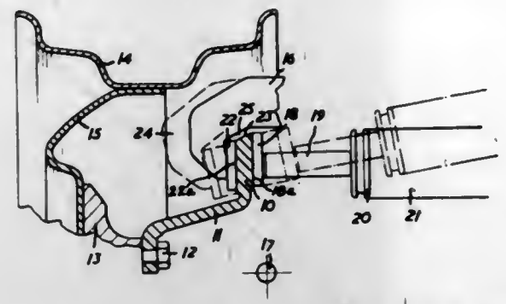


4. In a transmission of the type having friction gripping surfaces adapted to be engaged and released, a cylinder, a piston axially movable in response to fluid pressure for initiating engagement of said friction gripping surfaces, said piston being rotatable with respect to said cylinder in response to contact of said friction gripping surfaces, a recess in said piston, means for limiting the angular rotation of said piston and for applying additional thrust acting in assistance to said fluid pressure comprising a pin fixed to said cylinder and a plurality of balls positioned in said recess between said pin and a wall of said cylinder.

3,273,675
DISC BRAKES FOR VEHICLES
Peter William Brown, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company
Filed Apr. 29, 1964, Ser. No. 363,373
3 Claims. (Cl. 188—73)

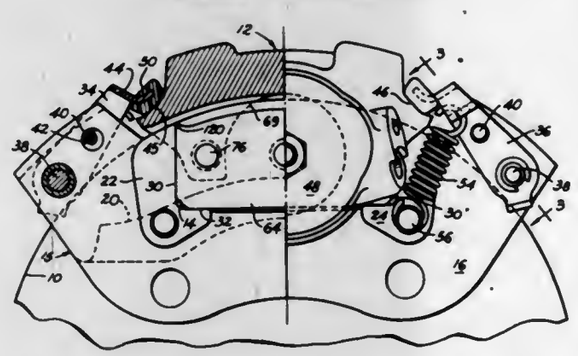
1. A disc brake comprising a rotatable disc, a caliper straddling a portion of the peripheral edge of the disc, a hinge adapted to mount said caliper to a rigid relatively

stationary part for angular movement about an axis substantially at right angles to that of the disc, friction members located in the caliper for engagement with opposite sides of the disc, means located in the caliper for applying at least one friction member to the disc, and annular parallel braking paths on opposite sides of the disc for engagement by said friction members, the annular centerline of one of said paths being spaced radially inwardly with



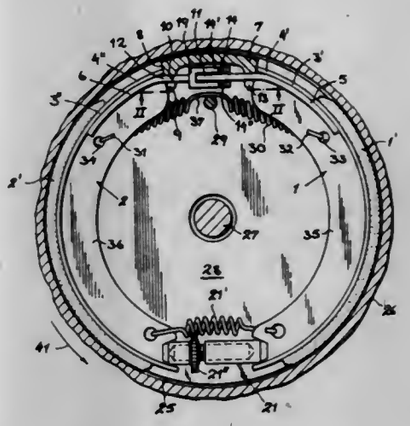
respect to the other whereby one braking path is staggered radially inwardly with respect to the other, the outer edges of the respective braking paths being located substantially on the peripheral edges of the disc and lying substantially on an arc struck about the axis of said hinge whereby the relatively radial staggered position of said braking paths is constant with respect to the axis of said disc throughout the wear life of the pads.

3,273,676
SPOT-TYPE DISC BRAKES
René Thirion, Paris, France, assignor to Societe Anonyme D.B.A., Paris, France, a company of France
Filed Nov. 30, 1964, Ser. No. 414,559
Claims priority, application France, Dec. 4, 1963, 955,951
7 Claims. (Cl. 188—73)



1. A disc brake comprising a rotating disc, a U-shaped fixed support including two limbs located on the opposite sides of said disc, an outwardly opening recess formed in said limbs, a pair of friction pads located in said recess and cooperating with the opposite friction surfaces of the disc, a floating stirrup including an actuator operatively connected to the adjacent friction pad and a pressure member operatively connected to the second friction pad, a pair of levers pivotally mounted at their outer end thereof on the fixed support at the opposite sides of the said recess and the inner ends of which extend in operating position of said levers over the outer periphery of said recess over the adjacent portions of the stirrup, a pin removably mounted on the fixed support and providing the pivotal connection at the outer end of said levers, a safety pin permanently secured to each lever, an opening formed in the fixed support and through which extends the safety pin, said opening having a size larger than that of the safety pin, a pair of springs respectively connecting the inner-end of said levers to the fixed support, and biasing in operating position of the levers the stirrup inwardly with respect to said recess and thus apply the friction pads onto a seat formed at the bottom of said recess as well as create a clearance between the safety pin and the said opening, the latter having a size enabling a pivotal movement of said levers within a predetermined range which is however insufficient to enable an escape of the stirrup from the recess, the attachment point of said springs to the respective levers, being selected at such a distance from the safety pin, that upon withdrawal of the removable pin, and rocking said levers towards the opposite side of the safety pin, the said springs are subjected to a load of the same order as that to which the springs are subjected when the levers are in operating position.

3,273,677
INTERNAL-EXPANSION BRAKE SYSTEM WITH REINFORCED BRAKE-SHOE EXTENSIONS
Carl Press, Offenbach, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik KG, Frankfurt am Main, Germany, a German company
Filed Sept. 2, 1964, Ser. No. 393,976
Claims priority, application Germany, Sept. 3, 1963, T 24,627
1 Claim. (Cl. 188—78)



A drum-type brake system, comprising:

a brake drum rotatable about an axis and having a generally cylindrical internal brake surface centered thereon;

support means surrounded by said surface;

a pair of generally segmental brake shoes juxtaposed with diametrically opposite portions of said surface and movably disposed on said support means, said brake shoes being generally elongated and having two pairs of corresponding extremities, said brake shoes each including

a respective arcuate backing member generally parallel to the respective portion of said surface,

a respective brake lining affixed to each of said backing members and disposed between said surface and the respective backing member, and

a pair of ribs extending inwardly along said backing members and transversely thereto;

coupling means interconnecting one of said pairs of extremities of said brake shoes in force-transmitting relationship;

abutment means on said support means interposed between the other pair of extremities and having a pair of abutment faces respectively engageable thereby and fixed with respect to said support for selective immobilization of said other extremities of said brake shoe, said abutment means having a guide surface generally transverse to said faces, said brake shoes being formed with respective, generally coplanar extension plates at said other extremities substantially perpendicular to said faces and projecting

therebeyond toward one another, said extension plates being parallel to said guide surface and slidably engageable thereby while being secured to the respective backing members, said extensions having interfitting formations at their proximal ends,

actuating means at said abutment means and interposed between said other extremities for shifting said brake shoes into engagement with said brake surface, said actuating means including an actuating lever of U-shape configuration extending through said support means having a generally planar portion transverse to said extension plate and disposed therebetween for shifting said brake shoes, one of said formations being constituted as tongue passing with clearance through said planar portion of said lever, the other of said formations having a cutout receiving said tongue, said abutment means being recessed to provide a pair of lateral guide surfaces bracketing said extension plates and preventing them from shifting parallel to the axis of rotation of said drum, said actuating lever being formed with a pair of flanks extending perpendicularly to said planar portion and parallel to said extension plates on opposite sides thereof in the region of interengagement of said formations; and

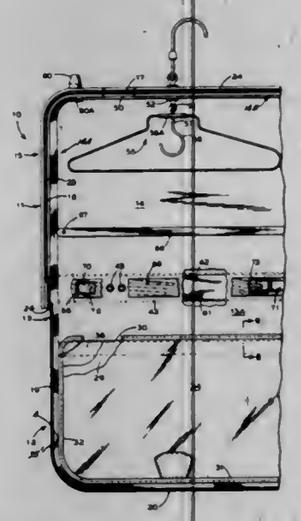
resilient means drawing said brake shoes toward one another and floatingly mounting said brake shoes on said support means.

3,273,678

FOLDABLE LUGGAGE BAG

Richard Koret, Bedford Hills, N.Y., assignor to Koret, Inc., New York, N.Y., a corporation of New York

Filed Sept. 3, 1963, Ser. No. 306,203
9 Claims. (Cl. 190—43)



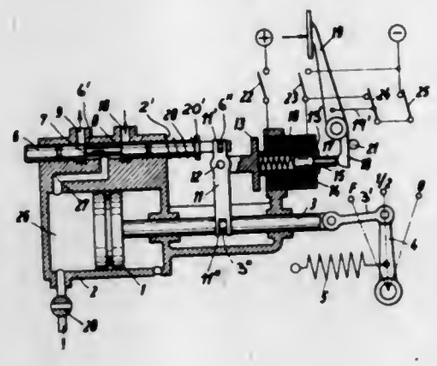
4. A foldable luggage bag comprising in the open, extended condition thereof, a continuous, longitudinally extending substantially rectangular flexible wall, said flexible wall comprising in longitudinal succession a garment holding section, a fold section and a compartment section, said garment holding and compartment sections being foldable about said fold section into opposed relation, a U shaped wall member having an end wall portion and parallel side wall portions, the bottom edges of the wall portions of said U shaped wall member being secured to corresponding edge portions of said garment holding section wall portion, said U shaped wall member providing the bottom and end walls of said luggage bag in the folded, closed condition thereof, a flexible walled compartment on the compartment section of said longitudinally extending wall, said compartment including upstanding parallel side walls and parallel end walls, a top wall and a bottom wall, said compartment side and end walls being of substantial depth and projecting into the garment holding portion of said bag defined by said U shaped member and the garment holding section of said longitudinal flexible wall when said bag is in its folded, closed condition, the flexible side and end walls of said compartment being reducible in depth to conform to the bulk of the contents of said compartment.

3,273,679

AUTOMATIC CONTROLS FOR FLUID PRESSURE CLUTCH OPERATOR

Edmond Uher, Cap d'Antibes, France, assignor to Beltomatic Patentverwertungsanstalt, Vaduz, Liechtenstein, a corporation of Liechtenstein

Filed Aug. 10, 1964, Ser. No. 388,623
Claims priority, application Germany, Aug. 9, 1963, U 10,041
1 Claim. (Cl. 192—.052)



In a vehicular-clutch system for an automotive vehicle provided with an engine, a variable-speed transmission coupled with said engine, a clutch interposed between said transmission and said engine and having an actuating element for shifting said clutch between a first position wherein said transmission is decoupled from said engine and a second position wherein said transmission is fully coupled with said engine, and operator-controlled accelerator means for selectively varying the speed of said engine, the improvement which comprises:

(a) servomotor means operatively connected with said actuating element for shifting the latter between said first and second positions through at least one intermediate position wherein said clutch partially couples said engine with said transmission but normally maintaining said element in said first position in an operative condition of said engine;

(b) first operating means connecting said accelerator means with said servomotor means for controlling same in dependence upon the actuation of said accerelator means and energizing said servomotor means to shift said element to said second position upon actuation of said accelerator means to increase the speed of said engine;

(c) second operating means responsive to the speed of said vehicle and connected with said servomotor means for controlling same in dependence upon a speed of the vehicle and energizing said servomotor means to shift said element at least into said intermediate portion upon the speed of said vehicle exceeding a predetermined minimum; and

(d) third operating means connected with said transmission and said servomotor means for temporarily operating same to shift said element toward said first position upon actuation of said transmission to alter the transmission ratio thereof,

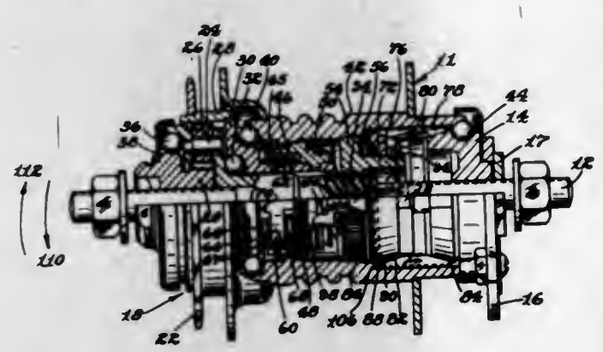
said servomotor means comprising a fluid-responsive piston-and-cylinder arrangement and valve means for regulating the flow of a medium to and from said arrangement, said valve means including a shiftable valve member for regulating the flow of said medium to said arrangement, said first operating means including a connecting member interposed between said accelerator means and said valve member for shifting the latter upon actuation of said accelerator means by the vehicle operator, and electromagnetic means co-operating with said connecting member and energizable to shift said valve member in a sense tending to operate said piston-and-cylinder arrangement so that said element is displaced toward said first position, said second operating means includes an electric circuit connected with said electromagnetic means and having at least one switch in circuit therewith, and governor means responsive to the speed of said vehicle for operating said switch upon the speed of said vehicle exceeding said predetermined minimum, said circuit including a further switch in series with the first-mentioned switch and constituting part of said first operating means, both of said switches being normally closed with said first-mentioned switch being opened by said governor means upon the speed of the vehicle exceeding said predetermined minimum and said further switch being opened by said acelerator means upon actuation thereof by the vehicle operator.

3,273,680

HUB AND BRAKE FOR VELOCIPEDES AND THE LIKE

Edwin Elliott Hood, Elmira, N.Y., assignor to The Bendix Corporation, Elmira, N.Y., a corporation of Delaware

Filed May 6, 1965, Ser. No. 453,717
9 Claims. (Cl. 192—6)



7. In a hub for driving and braking velocipedes and the like comprising:

a non-rotating axle;

a hub having a clutch surface formed thereon;

a screw-shaft means journalled on the axle;

a driving clutch means threaded on the screw-shaft adapted to engage the hub clutch surface;

axially-moveable brake expander means;

fixed brake expander means;

shoe brake means mounted between the brake expander means;

said driving clutch means having an axially-extending cylindrical portion;

said moveable brake expander means journalled on said cylindrical portion;

retarder means adapted to engage the moveable expander means and the driving clutch means for causing the aixal movement of the driving clutch means on the screw-shaft means; and

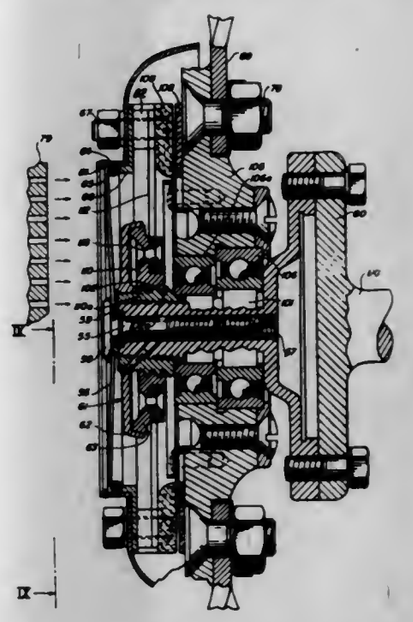
the moveable expander member having its transverse end adjacent the driving clutch means adapted to be engaged by the driving clutch means for braking the hub.

3,273,681

THERMOSTATIC TORQUE RESPONSIVE CLUTCH

Gerd Wolfgang Seifert, Seestrasse 190, Unterschondorf, Germany

Filed Jan. 13, 1965, Ser. No. 425,146
Claims priority, application Germany, Jan. 15, 1964, S 89,070; Apr. 18, 1964, S 90,623
10 Claims. (Cl. 192—54)



1. A clutch assembly for intermittently operating a cooling unit for an internal-combustion engine, comprising a drive shaft provided with male threads and powered by said engine; a nut on said shaft limitedly rotatable and axially displaceable with reference to said shaft, said nut having female threads mating with said male threads for axially displacing said nut from a normal position toward an off-normal position upon relative rotation of said nut and said shaft in a predetermined direction; a rotary body concentric with said shaft; force-transmitting means including an axially yieldable resilient linkage connecting said body with said nut at least in positions other than said normal position for joint rotation therewith; a driven member coaxial with said shaft and said body, said driven member being coupled with said cooling unit, said driven member and said body being provided with confronting annular contact surfaces spaced from each other in said normal position of said nut and bearing upon each other with increasing pressure upon progressive displacement of said nut toward said off-normal position for frictional entrainment of said driven member with a torque depending upon the axial position of said nut; and control means responsive to changes of ambient temperature in the vicinity of said engine for exerting upon said nut an axial force for shifting said nut into and out of said normal position with reference to said shaft, said threads having a pitch angle large enough to enable relative axial displacement of said nut and said shaft by said force.

3,273,682

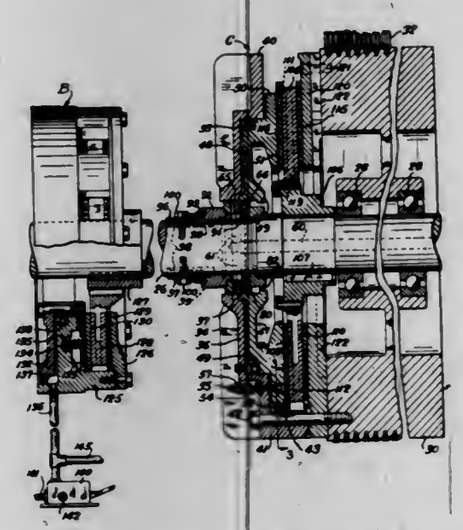
SEAL FOR FLUID OPERATED CLUTCH

Alfred W. Schultz, Cleveland Heights, Ohio, assignor to The Cleveland Crane & Engineering Company, Wickliffe, Ohio, a corporation of Ohio

Filed July 10, 1964, Ser. No. 381,675
3 Claims. (Cl. 192—85)

2. In a press or the like, a shaft adapted to actuate the press, a rotary drive element rotatably supported on said shaft, fluid operated clutch means to drivingly connect the shaft to said drive element including fluid motor means comprising cylinder and piston members concentric with said shaft, means to direct fluid into said

fluid motor means, first and second annular abutment means having axially tapered surfaces concentric and rotatable with said shaft, first and second annular sealing members in sealing engagement with said cylinder and piston members, respectively, and concentric with said shaft, said first and second sealing members being freely movable circumferentially and axially relative to said shaft and their respective cylinder and piston members and being independently axially movable relative to each other, said sealing members having axially tapered an-



nular surfaces complementary with the tapered surfaces of said abutment means, said sealing members being movable toward and away from one another into and out of engagement with said abutment means, said axially tapered surfaces of said abutment means and said sealing members having a large taper angle for effecting a radial force component which is substantially less than the axial force component when said first and second members are forced apart and into sealing engagement with said abutment means by fluid directed into said fluid motor means.

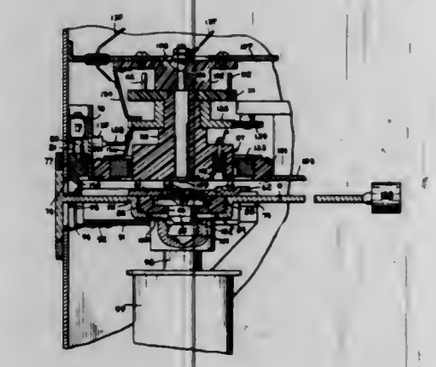
3,273,683

AUTOMATIC PARKING AREA MECHANISM

Morris Goodman, 30 W. Court St., Indianapolis, Ind.

Original application Oct. 8, 1962, Ser. No. 229,082, now Patent No. 3,241,755, dated Mar. 22, 1966. Divided and this application Mar. 9, 1966, Ser. No. 532,959

8 Claims. (Cl. 194—4)



1. Means for reading a discoid, electrically-conductive token having an orienting depression in one face and having a radial tab, comprising a housing, a slide having an upwardly-presented surface formed with a well therein, said slide being supported for movement between an outer position in which said well is exposed outside said housing and an inner position in which said well is disposed wholly within said housing, a dielectric element loosely received in said well, a platform member movably supported relative to said dielectric element and formed to provide an upwardly-presented surface having an upward orienting projection, means supported from said slide and cooperating with said platform member, when said slide is in its outer position, to support said platform member with its said surface substantially flush with said slide surface to receive a token with said upward orienting projection entered in said orienting depression, a contactor ring mounted in said housing above said slide and concentrically registering with a token supported on said slide when said slide is in its inner position, means in said housing and engageable with said dielectric element, when said slide is in its inner position, to lift said dielectric element to move the tab of a token supported thereon into electrical contact with said ring, said ring being made up of a series of conductor pads separated by rectifier wafers, a collar concentric with said ring and mounted for rotation about the axis of said ring, a brush carried by said collar to sweep said ring, and means for rotating said collar step-by-step to move said brush, at predetermined uniform time intervals from one pad to the next and to turn said collar through one complete revolution in twenty-four hours.

3,273,684

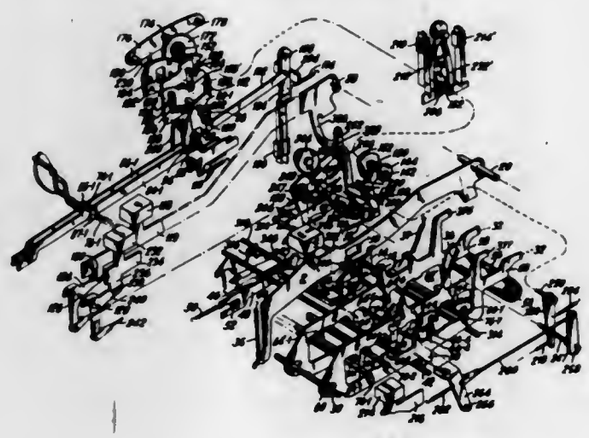
INPUT-OUTPUT TYPEWRITER HAVING DOUBLE SHIFT MEANS

Jun Oshiba, Mitsuro Isobe, Junichi Umeda, and Kunio Kaneko, all of Tokyo, Japan, assignors to Nippon Electric Company, Limited, Minato-ku, Japan, a corporation of Japan

Filed May 24, 1965, Ser. No. 457,975

Claims priority, application Japan, May 25, 1964, 39/29,261

8 Claims. (Cl. 197—19)



1. An input-output typewriter comprising:

a plurality of letter keys, each being assigned with a first-letter-position letter, a second-letter-position letter, and a third-letter-position letter and being accompanied by a first-letter-position encoding-member group complying with a letter code combination allotted to said first-letter-position letter according to a first manner of allotment and a second-letter-position encoding-member group complying with a letter code combination allotted to said second-letter-position letter according to a second manner of allotment;

each of said letter keys as is assigned with a third-letter-position letter to which a letter code combination is allotted according to said first manner of allotment, being accompanied by a first-code-family third-letter-position encoding member group complying with the last-mentioned letter code combination and by a first code-family-shift operating member;

each of said letter keys as is assigned with a third-letter-position letter to which a letter code combination is allotted according to said second manner of allotment, being accompanied by a second-code-family third-letter-position encoding-member group complying with the last-mentioned letter code combination and by a second code-family-shift operating member;

first-letter-position shift-key means for shifting, when touched, the typewriter mechanism into a first-letter position where all the first-letter-position encoding-member groups are brought into cooperative relation with the respective letter keys;

second-letter-position shift-key means for shifting, when touched, said typewriter mechanism into a second-letter position where all the second-letter position encoding-member groups are brought into cooperative relation with the respective letter keys;

third-letter-position shift-key means for shifting, when touched, said typewriter mechanism into a third-letter-position where all the third-letter-position encoding-member groups are brought into cooperative relation with the respective letter keys and where all the first and the second code-family-shift operating members are brought into cooperative relation with the respective ones of said letter keys;

a code-family-shift indicator-activator, responsive to said first-letter-position and said second-letter-position shift-key means and to said first and said second code-family-shift operating members and capable of being put into a first-code-family position, when the same is not in such a code-family position, by a touch given to said first-letter-position shift key means and by said first code-family-shift operating member activated, while said typewriter mechanism is in said third-letter position, by a touch given to such one of said letter keys as is accompanied thereby, and being put into a second-code-family position, if the same is not in such a code-family position, by a touch given to said second-letter-position shift-key means and by said second code-family-shift operating member activated, while said typewriter mechanism is in said third-letter position, by a touch given to such one of said letter keys as is accompanied thereby;

at least one code contact for producing signals in succession, each representing one of the letter code combinations, a first-code-family shift code combination for use in indicating that the following at least one signal is one representing the letter code combination allotted to a letter according to said first manner of allotment, and a second-code-family shift code combination for use in indicating that the following at least one signal is one representing the letter code combination allotted to a letter according to said second manner of allotment;

a letter code-contact activator, responsive to said code-family-shift indicator-activator, for coupling, while said code-family-shift indicator-activator is in said first-code-family position, all said first-letter-position and said first-code-family third-letter-position encoding-member groups with said code contact, and for coupling, while said code-family-shift indicator-activator is in said second-code-family position, all said second-letter-position and said second-code-family third-letter-position encoding-member groups with said code contact;

a code-family code-contact activator, responsive to change of said code-family position of said code-family-shift indicator-activator, for causing, when said code-family-shift indicator-activator is put into said first-code-family position, said code contact to produce the signal representing said first-code-family shift code combination, and for causing, when said code-family-shift indicator-activator is put into said second-code-family position, said code contact to produce the signal representing said second-code-family shift code combination;

an encoder trigger responsive to a touch given to one of said letter keys while said typewriter mechanism is in one of said first-letter and said second-letter positions, for making the corresponding one of the accompanying first-letter-position and second-letter-position encoding-member groups activate said code contact through said letter code-contact activator, thereby causing said code contact to produce the signal representing the desired letter code combination;

and an encoder-trigger controller, responsive to said third-letter-position shift-key means, for suppressing the operation of said encoder trigger in case said typewriter mechanism is in said third-letter position;

said first and said second code-family-shift operating members cooperating, in case said typewriter mechanism is in said third-letter-position, with said code-family-shift indicator-activator and also with said encoder-trigger controller, to cause said encoder-trigger controller to temporarily put said encoder-trigger into operation when a touch is given to such one of said letter keys as is accompanied by the third-letter-position encoding-member group of the same code family as the code-family position of said code-family-shift indicator-activator, and to change the code-family position of said code-family-shift indicator-activator and thereafter cause said encoder-trigger controller to temporarily put said encoder-trigger into operation when a touch is given to such one of said letter keys as is accompanied by the third-letter-position encoding-member group of the code family different from the code-family position of said code-family-shift indicator-activator.

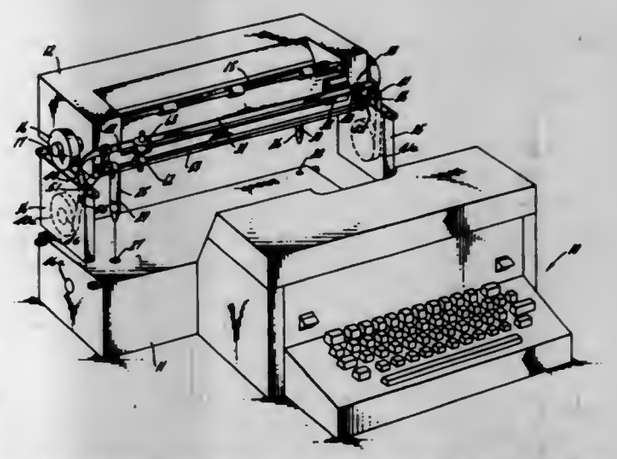
3,273,685

METHOD AND APPARATUS FOR JUSTIFYING RIGHT HAND MARGINS

Theodore B. Holliday, 248 Arlington Ave., Elmhurst, Ill.

Filed June 27, 1963, Ser. No. 291,194

2 Claims. (Cl. 197—84)



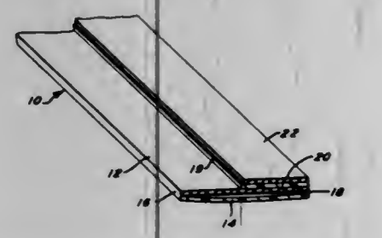
1. A typewriter assembly to justify right-hand margins of paper which includes, in combination, a key section linked to character bars, a carriage joined to the key section, said carriage adapted to fix a paper against horizontal movement, a contact point spaced laterally of the paper, a supply reel of flexible, deformable ribbon on one end of the typewriter, a holder for said supply reel on said one end of the typewriter, a take-up reel for the ribbon on the other end of the typewriter, a holder for

said take-up reel on said other end of the typewriter, means to move the ribbon towards the take-up reel after a character has been impressed as a raised impression at the contact point, means to ink the raised impressions, a guide bar attached to the typewriter, a clamp slidably positioned on the bar adapted to fix the ribbon towards the take-up reel, another clamp slidably positioned on the bar, said other clamp adapted to engage and hold the ribbon at a position removed from the last impression so that said other clamp is adapted to pull and stretch the ribbon towards the supply reel, and a roller slidably joined to the guide bar to press the stretched ribbon against a sheet of paper and transfer the impressions from the ribbon to the paper.

3,273,686
IMPRESSION RIBBON AND METHOD OF MAKING SAME

Walter Ploeger, Jr., North Bellmore, N.Y., assignor to Filmon Process Corp., New York, N.Y., a corporation of New York

Filed Aug. 10, 1964, Ser. No. 388,490
8 Claims. (Cl. 197—172)



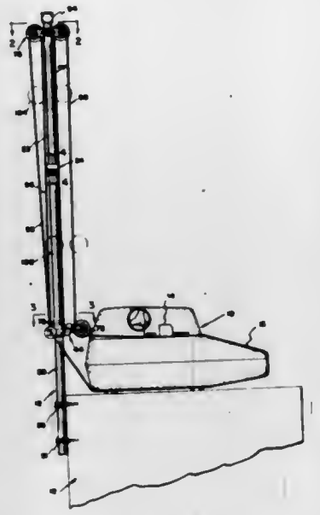
1. An impression ribbon comprising a first layer of material adapted to have a transfer medium thereon, a second layer of material impervious to the transfer medium on said first layer, said second layer overlying said first layer, said first and second layers being of substantially the same width and joined together by a fused joint only along their longitudinally extending side edges, a third layer of material adapted to have a transfer medium thereon, said third layer being approximately one half the width of said first layer, said third layer overlying one longitudinal half of said first layer, a fourth layer of material interposed directly between said first and third layers, said fourth layer having a width slightly greater than the width of said third layer, said fourth layer being impervious to the transfer mediums on said first and third layers, said fourth layer overlying said one longitudinal half of said first layer, said third and fourth layers being joined to said first and second layers only by a fused joint along the longitudinally extending coextensive side edges, with all of said layers being made from a pliable material, and the longitudinally extending side edge of said fourth layer which is not joined to the third layer projecting beyond the adjacent longitudinally extending side edge of the third layer.

3,273,687
TAPE HANDLING DEVICE

Paul E. Becking, Lake Orion, Mich., assignor to Dura Corporation, Oak Park, Mich., a corporation of Michigan

Filed July 9, 1963, Ser. No. 293,822
5 Claims. (Cl. 197—180)

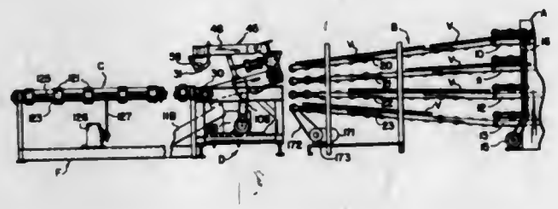
1. In combination with an automatic writing system including, in a common casing, a writing unit and coded tape feed mechanism for imparting movement to an endless band of coded tape; an endless band of coded tape drivably associated with said coded tape feed mechanism and adapted to be driven substantially horizontally through the coded tape feed mechanism; and a separate vertically extending coded tape supporting device associated with said automatic writing system for supporting said endless band of coded tape, said tape supporting device being completely separate from and extending upwardly above the components of said automatic writing system within the common casing, a support for said automatic writing system, mounting means for said tape supporting device mounting said tape supporting device in spaced relationship to said automatic writing system said mounting means connecting said tape supporting device to said support for said automatic writing system in spaced and operatively oriented relationship to said common casing, a first pulley means on said tape supporting device located in general vertical alignment with said automatic writing system opposite said coded tape feed mechanism, a second pulley means on said tape supporting device located vertically above said first pulley means and said automatic writing system, and said endless band of coded tape extending through said coded tape feed mechanism and around said first pulley means in a first elongated loop elongated in a generally horizontal direction and extending around said first pulley means and said second pulley means in at least one other elongated loop elongated in a generally vertical direction.



3,273,688
VENEER DRYER FEEDER

Roger H. Foltz, Jr., Painesville, Ohio, assignor to The Coe Manufacturing Company, Painesville, Ohio, a corporation of Ohio

Filed Jan. 22, 1964, Ser. No. 339,485
15 Claims. (Cl. 198—20)

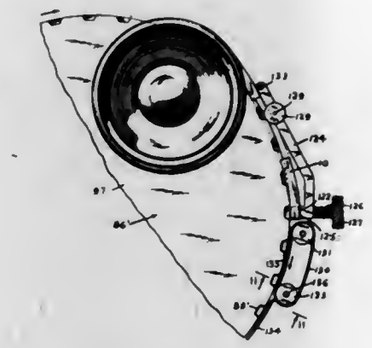


1. In equipment for feeding veneers to power driven conveyor means operating to move veneers thereon at a predetermined speed, feed means locatable adjacent to one end of conveyor means to be fed, said feed means comprising roll means located one above the other, power means for driving at least one of said roll means, power driven conveyor means at the side of said feed means opposite to the side locatable adjacent to the conveyor means to be fed for conveying veneers lengthwise of said roll means with their one ends between said roll means, and means adapted for periodically actuating said feed means in timed relation to the operation of the conveyor means to be fed to cause said feed means to feed veneers on said conveyor means the ends of which are between said roll means to the conveyor means to be fed.

3,273,689
APPARATUS FOR LOADING OBJECTS INTO AN INDEX TABLE

Fred C. Gleason, Cannondale, Conn., and Edward E. Byrnes, South Bend, Ind., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Original application June 29, 1962, Ser. No. 206,480, now Patent No. 3,212,668, dated Oct. 19, 1965. Divided and this application July 9, 1965, Ser. No. 484,146
2 Claims. (Cl. 198—24)



1. Apparatus for positioning a series of generally elongate objects of predetermined cross-sectional dimensions, said apparatus comprising:

(1) a substantially vertical chute adapted to permit passing of the elongate objects axially therethrough said chute comprising walls forming an upper end and a lower discharge end comprising an unyielding bottom member for totally arresting axial movement of objects reaching said end, and a lateral opening in one of said unyielding walls of said chute above said bottom member to permit lateral exiting therefrom of an arrested object;

(2) means in communication with the upper end of the chute for furnishing elongate objects axially and seriatim thereto;

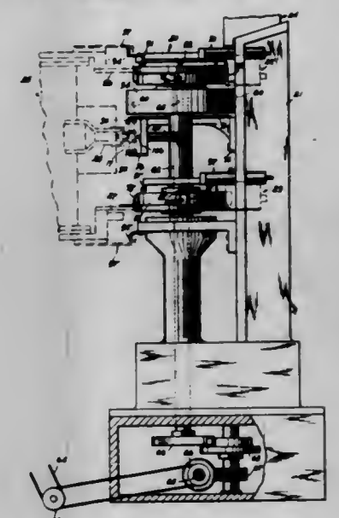
(3) a rotatable circular index table mounted for rotation on a substantially vertical axis, said index table having a plurality of pockets therein located in the periphery thereof, each of said pockets having a lateral opening therein, said table being rotatable with respect to said discharge end of said chute for causing seriatim aligned communication of each of the lateral openings in said pockets with the lateral opening in said discharge end of said chute; and

(4) means for urging a totally arrested object in said discharge end of said chute laterally through the lateral opening in said chute and into one of said pockets of said index table via said lateral opening in said pocket, said means comprising an opening in another wall of said chute, an elongate lever arm having a pusher element mounted at one end region thereof, means pivotally mounting said elongate lever arm at the other end region thereof for movement in a direction wherein said pusher element extends through the opening in said other wall of said chute and toward said opening in said one of said walls of said chute, resilient means biasing said lever arm intermediate said end regions thereof toward said direction, a cam follower mounted on said lever arm for movement therewith in the same general direction as said pusher element moves, said cam follower bein positioned on said lever arm and proportioned for entry into the lateral opening in one of said pockets each time the lateral opening of another of said pockets is in alignment with the lateral opening in said chute whereby said biasing means are permitted to urge said lever arm in said direction.

3,273,690
APPARATUS FOR FEEDING SETS OF PARTS

Jack J. Monahan, Allentown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 4, 1964, Ser. No. 372,618
5 Claims. (Cl. 198—25)



1. An apparatus for feeding sets of parts to be assembled comprising:

a rotary work table,

sets of holders mounted at spaced angular positions on the work table,

a plurality of rotary transfer devices, one for each of the parts, mounted adjacent the work table on a common axis parallel to the axis of the work table,

each transfer device having part receiving means located thereon at spaced angular positions,

means for supplying parts singly to the part receiving means,

means to drive the work table and the transfer devices in synchronism so that each set of parts is brought into mutual alignment with, and adjacent to, a set of holders, and

means operable when a set of parts is so aligned to transfer the said set of parts to the aligned set of holders.

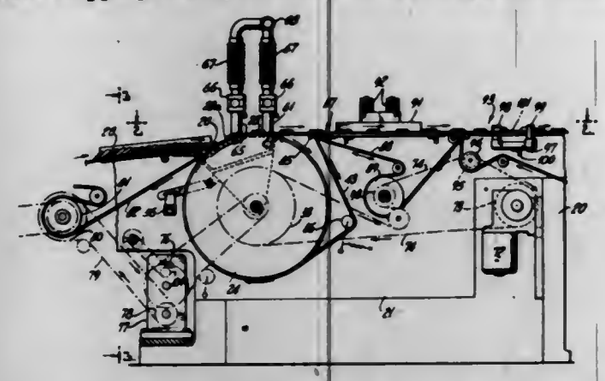
3,273,691
PRODUCT FEEDING APPARATUS

Arthur J. Griner, Wykoff, N.J., assignor to National Biscuit Company, a corporation of New Jersey

Filed Jan. 6, 1964, Ser. No. 335,996
13 Claims. (Cl. 198—34)

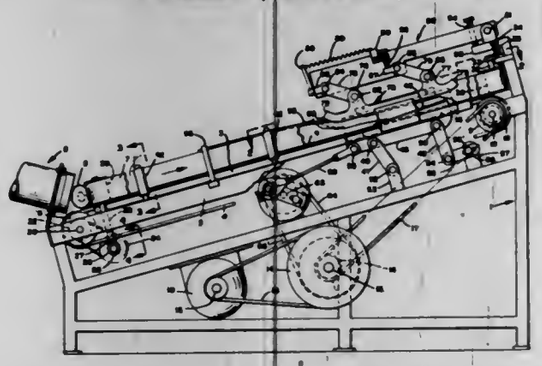
1. In product feeding apparatus, in combination, an elongated frame, conveying means supported by said frame and adapted to present a plurality of parallel massed columns of flattened articles, a cross shaft secured in said frame, a hollow drum rotatably mounted on said shaft and adapted to be peripherally engaged by said parallel columns of articles, vacuum means operable through orifices in the periphery of said drum to clutch said articles successively from said columns to said periphery in circumferentially staggered spaced relation second conveying means to strip said articles from said drum

against final resistance of said vacuum clutching means, a third conveyor adapted to receive said articles from said stripping conveyor means in said staggered relation



and to move the same toward a delivery station, means to drive said conveyors and said drum, and means associated with said third conveyor for guiding said staggered articles into single line delivery relation.

3,273,692
FREESTONE DRUPE PITTER AND METHOD
Carl T. Petersen, Lafayette, and Etheridge R. McClelland, Hayward, Calif., assignors to Filper Corporation, San Ramon, Calif., a corporation of California
Filed Jan. 6, 1965, Ser. No. 423,788
7 Claims. (Cl. 198—34)



1. The method of spacing adjacent pairs of generally spherical drupes of different sizes in a row thereof while moving said row in one direction longitudinally thereof from a feeder to a pitting mechanism that includes the steps of:

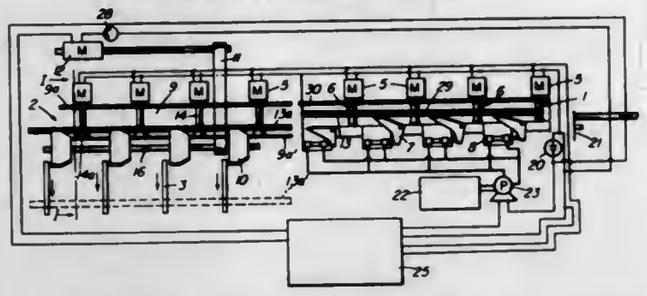
(a) rollably supporting said drupes in said row on a surface extending between said feeder and said mechanism for movement of the drupes of adjacent pairs toward and away from each other on said surface;

(b) supporting said surface at an upward incline from said feeder to said mechanism of approximately an angle relative to horizontal sufficient to cause said drupes to roll down said surface solely under the influence of gravity in the absence of any obstruction to such rolling;

(c) rotating said drupes on said surface about generally horizontally extending axes normal to said row, and carrying said drupes on said surface longitudinally of said row toward said pitting mechanism by moving said surface upwardly longitudinally of said row from said feeder to said mechanism at a rate of speed sufficient to overcome the said influence of gravity whereby the drupes of said row will not only be carried up said surface, but upon engagement between trailing and leading drupes of an adjacent pair thereof on said surface during their said upward movement with said surface, the movement of said trailing drupe will be immediately retarded under said influence of gravity for spacing it from the leading drupe;

(d) holding said drupes in said row with the latter extending longitudinally of said incline during said movement of said drupes.

3,273,693
TRANSFER APPARATUS
Walter vom Dorp, Rheydt, Germany, assignor to Mannesmann-Meer Aktiengesellschaft, Dusseldorf, Germany, a German company
Filed Sept. 20, 1963, Ser. No. 310,293
9 Claims. (Cl. 198—127)



1. Apparatus to transfer rolled mill stock to a cooling bed comprising a source of energy,

a supply conveyor energized by the source of energy and adapted to transport rolled mill stock away from a mill, and

a bed to cool said stock, in combination with apparatus to deflect rolled mill stock out of the mill run-out line as it moves along the supply conveyor,

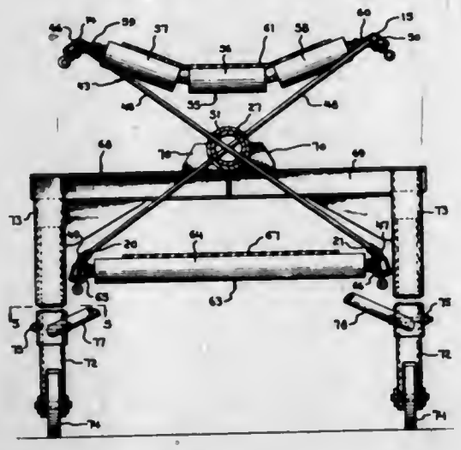
means connecting the source of energy to the deflecting apparatus,

a delivery conveyor to receive rolled mill stock from the supply conveyor,

drive means connecting the source of energy to the delivery conveyor, and

transfer devices associated with the delivery conveyor to remove rolled mill therefrom and to transfer the stock to said cooling bed.

3,273,694
PORTABLE CONVEYOR
Clarence A. Joslin, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 21, 1964, Ser. No. 397,911
9 Claims. (Cl. 198—129)



1. In a conveying structure,

elongated compression tube means, said means having a terminal at each end,

a pulley associated with each terminal,

an endless conveyor belt reeved about the two pulleys,

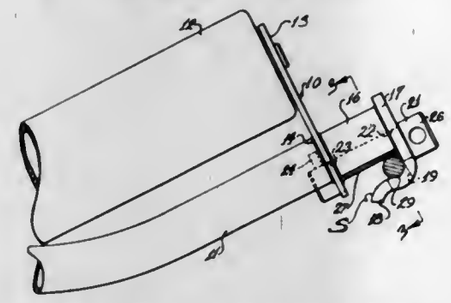
upper and lower flexible strand means disposed at levels respectively above and below the compression tube means and substantially parallel with it

roller means carried by the flexible strand means and effectively supporting the conveyor belt along substantially the entire length of the compression tube means,

the strand means being connected respectively between the terminals, and

means for stretching the strand means to simultaneously apply compression in the compression tube means and tension in the strand means to furnish support for the belt.

3,273,695
PROCESS AND APPARATUS FOR LOCKING MEMBERS TO CABLES AND THE LIKE
Paul Hamaker, George C. Morgan, and Jeff R. Powell, Jr., all of Birmingham, Ala., assignors to Transall, Inc., a corporation of Alabama
Filed July 29, 1964, Ser. No. 385,860
2 Claims. (Cl. 198—192)



1. For use as a clamp for securing a cable,

(a) a plate having a laterally directed cable engaging flange on one side thereof,

(b) there being a slot in said flange adjacent the juncture of said flange and said plate,

(c) cable engaging bearing points on the flange adjacent opposite ends of the slot and disposed to be engaged by the cable,

(d) a second plate parallel to and spaced from said first plate and said flange a distance sufficient to permit the cable to be passed therebetwen thereby to be positioned at the juncture of the first plate and said flange and over the slot,

(e) a cylindrical cable locking pin member having a substantially flat surface on one side located intermediate the ends thereof and a generally cylindrical surface on the other side thereof opposite said flat surface,

(f) there being a curved cam-like surface joining said flat surface and said cylindrical surface,

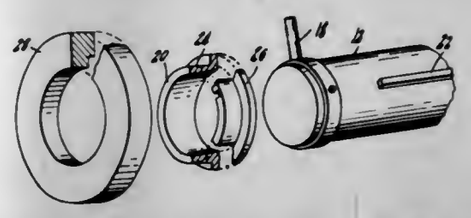
(g) said pin member having its cylindrical ends rotatably mounted in aligned holes in said first and second plates and with its intermediate portions extending across said flange and the slot therein,

(h) said intermediate portion of the pin member being so dimensioned and positioned that when said flat surface is rotated to face said slot the cable may be inserted between the flat surface of the pin and said flange and when the flat surface is rotated to face away from the slot on the cable is forced into the slot and into biting, locking engagement with the said bearing points, and

(i) means for rotating said pin.

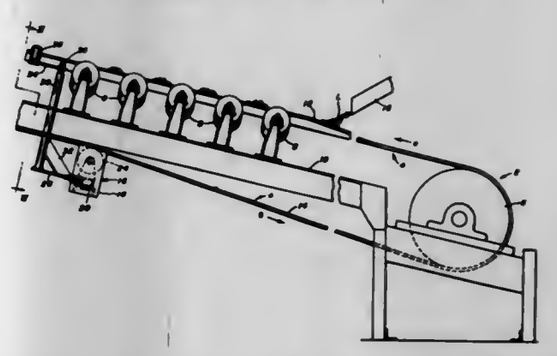
3,273,696
BELT POSITIONING DEVICE
Robert E. Thurston, Amherst, N.H., assignor to Improved Machinery Inc., Nashua, N.H., a corporation of Delaware
Filed Jan. 27, 1965, Ser. No. 428,320
5 Claims. (Cl. 198—202)

1. Apparatus for controlling the position of a traveling belt transversely on guide rolls and like supports against which the belt is trained in a partial wrap having, in combination, a support roll assembly comprising a support shaft rotatable on an axis, said shaft having a series of circular bearing surfaces disposed in parallel planes with parallel axes each tilted with respect to and intersecting the axis of said support shaft, and with parallel transverse diameters perpendicularly intersecting said shaft axis, a series of rolls having belt engaging peripheral surfaces freely rotatable on said bearing surfaces in said parallel planes, said supporting shaft and bearing surface supported rolls having a neutral angular position on said



support shaft axis in which said transverse diameters perpendicularly intersecting the support shaft axis are transverse to the roll engaging wrap portion of said belt so that the extent of peripheral surface of each said roll engaging said belt having an axial movement in one direction is balanced by an equal extent of peripheral surface engaging said belt having an axial movement in the opposite direction, said supporting shaft and bearing surface supported rolls having alternative angularly disposed belt shifting positions at each side of said intermediate neutral position.

3,273,697
APPARATUS AND METHOD FOR CENTERING A CONVEYOR BELT
Frank A. Kvaternik, Eveleth, Minn., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 430,863
8 Claims. (Cl. 198—202)

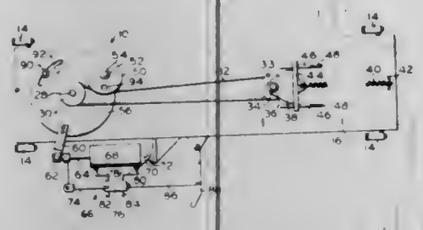


1. Apparatus for centering a conveyor belt mounted on a pulley and having a conveying run and a return run with directions of travel respectively toward and away from said pulley, said apparatus comprising a belt-training idler in rolling contact with said return run, an idler support holding said idler rotatable about an axis substantially parallel to the plane of travel of said return run at the place of said rolling contact, a stationary frame having pivot means for rotatably supporting said idler support on a second axis substantially perpendicular to said plane of travel of the return run, means disposed adjacent an edge of said conveying run for sensing the movement of said edge thereagainst, and means connecting said sensing means to said idler support so that the movement of said edge of the conveying run against said sensing means causes said idler and said idler support to pivot about said second axis so as to move laterally said return run in the opposite direction of said lateral movement of the conveying run.

3,273,698
ECCENTRIC PULLEY DRIVE

Kenneth M. Allen and Chester H. Harper, Newberg, Oreg., assignors to Allen-Harper, Inc., Newberg, Oreg., a corporation of Oregon

Filed June 1, 1964, Ser. No. 371,289
10 Claims. (Cl. 198—220)

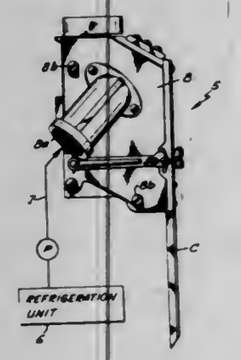


1. In combination,
a conveyor bed mounted for back-and-forth movement,
a driven pulley connected to the conveyor bed,
a drive pulley rotated continuously,
an endless belt extending around and between the pulleys in a tensioned condition,
an eccentric pulley,
and adjustable means carrying the eccentric pulley for moving the eccentric pulley from a retracted position out of driven engagement with the belt to an operating position deflecting a course of the belt and driven by the belt.

3,273,699
METHOD AND APPARATUS FOR PREVENTING LEADING OF SPACEBANDS IN LINE-CASTING MACHINES

George L. Curle, 4324 Zenith Ave. S., Minneapolis, Minn.

Filed Mar. 12, 1965, Ser. No. 439,153
9 Claims. (Cl. 199—62)

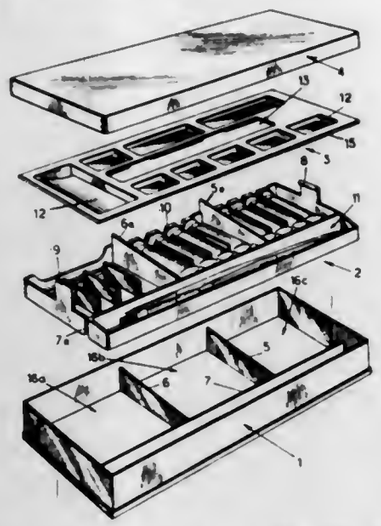


1. The method of substantially preventing leading of the spacebands in a line-casting, type-forming machine which utilizes a conventional spaceband box with discharge chute, said method consisting in
substantially enclosing the front and rear walls of said spaceband box to form an air circulating chamber therein,
introducing into said chamber a flowing, chilled gaseous medium such as air having an entering temperature about in the range of 28 to 32° F.,
through the inherent nature of the air circulating chamber formed with substantial enclosures on the front and rear walls of the spaceband box and the normal entrance and discharge apertures, causing said chilled gaseous medium to thoroughly contact and chill the spacebands contained within and moving through said chamber whereby the same, before successive dropping through the discharge chute, are chilled to a temperature resistant to an accumulation of metal thereon in the subsequent conventional casting of line type.

3,273,700
COMPACT PAINT BOX FOR PAINTING WITH WATER COLORS

René Paul Moreau, Chantilly, Henri Charpentier and Pierre Ricart, Bury, and Pierre Boutevin, Mouy, France, assignors to Société Anonyme dite: Société Anonyme des Anciens Etablissements J. M. Paillard

Filed Jan. 6, 1964, Ser. No. 335,856
Claims priority, application France, Jan. 11, 1963, 921,193, Patent 1,355,592; Mar. 29, 1963, 929,841, Patent 1,360,379
2 Claims. (Cl. 206—1.7)

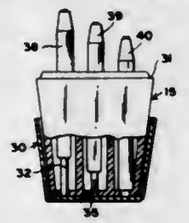


1. A paint box comprising at least two separable receptacles, one of which is a tray dimensioned to be a close sliding fit within the other, each receptacle being divided into a plurality of compartments, the compartments of said other receptacle being separated from each other by partition means and the compartments of said tray being separated from each other by means which define channels positioned to receive the partition means in said other receptacle, at least some of the compartments in said tray being dimensioned to receive paint tubes, said partition and channel defining means being of substantially equal depth, so that substantially the full height of said partitions is received within said channels when said tray is fitted into said other receptacle, said box comprising also a plate dimensioned to fit within said other receptacle, said plate being formed with a plurality of depressions separated by double walls which define channels positioned to partially receive the channel-defining means on said tray when said plate is positioned within said other receptacle above said tray, and to partially receive said partition means when said plate is positioned in said other receptacle in the absence of said tray.

3,273,701
DISPLAY CONTAINER

Jerome Friedman, 19 The Genada, Roslyn Heights, N.Y.

Filed Mar. 31, 1965, Ser. No. 444,265
11 Claims. (Cl. 206—45)

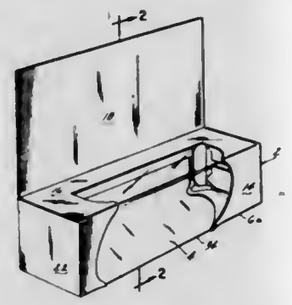


1. In a box structure of the character described, an upright open top box member having a plurality of holes through its bottom wall, said holes being in a predetermined spaced relation from each other, structure within the box member dividing it into open-top vertical compartments; said holes being communicative with one compartment respectively, a separate tray member having said box member therewithin and parallel pins extending from the floor wall of the tray member, through said holes and into said compartments respectively; the lengths of certain of said pins being different than the lengths of other of said pins; the tray member when separated from the box member, being adapted to be placed inverted on the box member as a cover over its mouth.

3,273,702
DISPLAY CONTAINER

Charles E. Palmer, Somers, Conn., assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

Filed Mar. 6, 1964, Ser. No. 349,974
14 Claims. (Cl. 206—45.31)



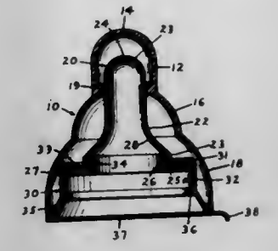
1. A partially erected window container comprising a frame member of relatively rigid and opaque sheet material, said frame member being cut and scored to define two adjacent portions hingedly connected along a longitudinally extending weakening line, said two adjacent portions being folded about said weakening line into generally flattened, overlying relationship, said frame member having end closure portions hingedly connected to the ends of said two adjacent portions and a window aperture extending across said weakening line into said two adjacent portions; means engaging said two adjacent portions to each other along an engagement line spaced from said weakening line, said window aperture in said two adjacent portions terminating inwardly from said engagement line; and a window member of semi-rigid, transparent synthetic plastic sheet material extending beyond the margins of said window aperture interiorly of said frame and secured thereto, said window member having a fold therein along a line adjacent to and aligned with said weakening line in said frame member, portions of said window member about said fold substantially superfically conforming to corresponding portions of said frame member, portions of said two adjacent portions of said frame member and of said window member intermediate said engagement line and said weakening line being movable away from each other to form a compartment therebetween in the erected position, said end closure portions being foldable to close the ends of said compartment and to lock said container in erected position.

3,273,703
PRESTERILIZED DISPOSABLE NIPPLE ASSEMBLY

Rexford C. Stribley, Mason, Ingham, Mich., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 11, 1963, Ser. No. 308,206
3 Claims. (Cl. 206—46)

1. A sterilized, disposable nipple assembly adapted for use on a baby feeding container which comprises a snap-on nipple positioning and retaining cap, adapted to be pressure seated on the neck of a liquid feeding container, a feeding nipple positioned in said cap and retained thereby, a flexible nipple cover surrounding the nipple and cap having an upper closed dome portion, an intermediate body portion flaring downwardly from the lower edge of the dome portion and a lower skirt portion flaring downwardly from the lower edge of the

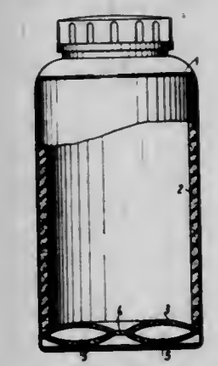


intermediate portion, said cover having a nipple locking means at the joint of the dome and intermediate portions in engagement with the nipple and a tear-off bottom sealed to the bottom edge of the skirt, sealing the nipple and cap in said cover.

3,273,704
CONTAINER FOR THE PREPARATION OF BATH SALTS

Ernst Rüdiger, Schonburgstrasse 12, Berlin 42, Germany

Filed July 7, 1965, Ser. No. 470,123
Claims priority, application Germany, Feb. 16, 1965, R 39,914; Mar. 30, 1965, R 30,320
11 Claims. (Cl. 206—47)



2. A container for preparing at least one dose of a bath salt comprising, in combination, a bottle; at least one porous solid substance attached therein, said substance being impregnated with and when said bottle is vigorously shaken, yielding liquid ingredients of a bath salt; and a closure for said bottle; said substance, upon partially filling said bottle with a salt, closing and repeated shaking, releasing its impregnants are absorbed by said salt thus forming a dry bath salt; the intensity and number of shakes determining the quantity of impregnants released and thus the number of doses of said bath salts which can be prepared.

3,273,705
FASTENER

Frederic L. Rieger, Dayton, and Paul H. Hamisch, Jr., Xenia, Ohio, assignors to The Monarch Marking System Company, Dayton, Ohio, a corporation of Ohio

Filed July 22, 1963, Ser. No. 296,664
3 Claims. (Cl. 206—56)

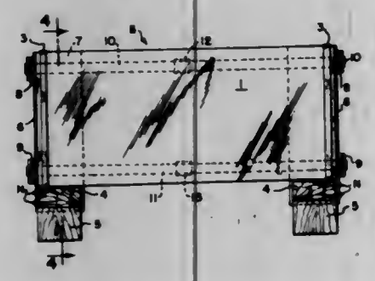
3. A fastening device comprising,
a needle tapering to a point at one end and having a recess at the other end,
a flexible strand having one end integrally connected to said needle intermediate its ends and forming an acute angle with the recessed end portion of said needle, and

an eyelet integral with the other end of said strand and having its axis lying in a plane common to said



needle, said strand having sufficient resilience to maintain the defined orientation of the eyelet and needle.

3,273,706
GLASS PALLET PACKAGE
Albert J. Bundy, Kingsport, Tenn., assignor to American Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware
Filed Nov. 27, 1963, Ser. No. 326,470
1 Claim. (Cl. 206—62)

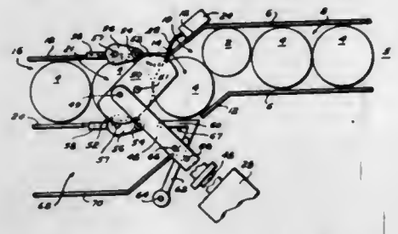


A pallet package of sheet glass comprising a bundle of flat glass sheets in closely packed side-by-side arrangement with the flat surfaces upright and secured in a container having two end caps only, an end cap over each of two opposite ends of the bundle, each end cap comprising an attached cross rail in transverse position with respect to the sheets of the bundle on which the ends of the bundle rest with the sheets in edge-bearing contact with each rail, each end cap having an end and sides which cover and bear against the end and a part of the sides of the bundle, metal bands surrounding the bundle and both end caps which hold the sheets together and provide the only means which hold the end caps in pressed contact with the ends of the bundle, and elevating means on the cross-rails which hold the bundle sufficiently above a floor or the like for the insertion thereunder of the fork of a lift truck.

3,273,707
PRODUCTION OF LOW SILICA IRON SUPERCONCENTRATES
Peter D. R. Maltby, Ottawa, Ontario, Canada, assignor to Her Majesty The Queen, in right of Canada as represented by the Minister of Mines and Technical Surveys
No Drawing. Filed May 20, 1963, Ser. No. 281,816
2 Claims. (Cl. 209—39)

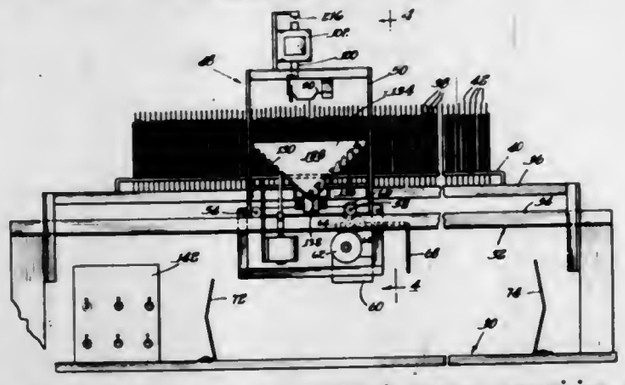
1. A method of producing iron superconcentrates which comprises grinding an ore concentrate consisting essentially of specular hematite having a silica content of more than 1%, to a particle size of minus 100 to minus 325 mesh, subjecting said ground ore body to a froth flotation treatment with a cationic collector to remove silica therefrom and produce a wet flotation concentrate containing in the order of 0.10% silica, subjecting said flotation concentrate while still wet to a wet magnetic separation treatment in a magnetic field having an intensity in the range of 3000 to 7000 gauss to produce a magnetic separation concentrate from said ore body containing not substantially less than 99% iron oxide and not substantially more than 0.05% silica.

3,273,708
OBJECT SEPARATING APPARATUS
Lloyd N. Shuford and Carroll B. Messer III, Lynchburg, Va., assignors to Simplimatic Engineering Co., Lynchburg, Va.
Filed Dec. 29, 1964, Ser. No. 421,974
22 Claims. (Cl. 209—74)



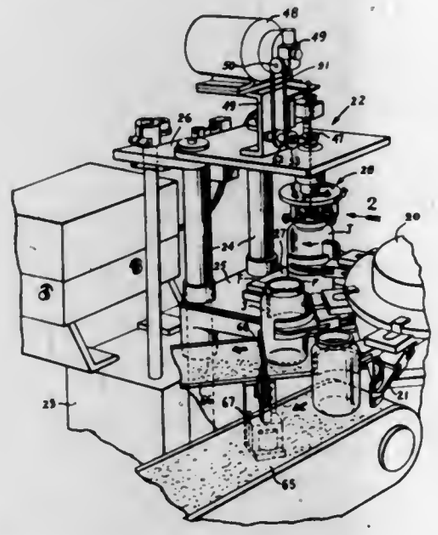
1. Apparatus for separating bodies of a first type from bodies of a second type comprising an inlet station, a separating station communicating with said inlet station, and first and second outlets communicating with said separating station, means for pressure-feeding a line of said bodies from said inlet station through said separating station and normally to said second outlet, means for sensing the presence at said separating station of a body of said first type to be separated from said line, means actuated by said sensing means for inhibiting the movement of a given body in advance of said body to be separated and positioning said given body so that a line between the effective horizontal centers of the bodies in said line immediately in advance of and behind the body to be separated is spaced from the effective horizontal center of the body to be separated and is on the other side of said last mentioned center from said first outlet, whereby the pressure-feeding action of said line of bodies on said body to be separated cams the latter out of said line and toward said first outlet.

3,273,709
DOCUMENTARY STORAGE AND RETRIEVAL SYSTEMS
Henry N. Staats, Deerfield, Ill., assignor to Recall, Inc., Chicago, Ill., a corporation of Delaware
Original application Sept. 29, 1960, Ser. No. 59,207, now Patent No. 3,176,841, dated Apr. 6, 1965. Divided and this application July 29, 1964, Ser. No. 385,954
5 Claims. (Cl. 209—81)



3. A card storage and retrieval system comprising a plurality of file cards each having code means exposed along the edge thereof and coded according to information on said card, frame means, card storage means on said frame means having a succession of stalls for respectively supporting said file cards vertically on edge in parallel array spaced perpendicularly of their faces with said coded edges all exposed in the same direction, carriage means, search means on said carriage means selectively comparable with the code means on said cards, means movably supporting said carriage means from said frame means, means acting between said carriage means and said frame means to cause said carriage means to traverse said frame means selectively to bring said search means into corporation with said card coded edge portions to locate a file card in said storage means, ejection means on said carriage means operatively connected to said search means and controller thereby for moving a selected file card from rest position in a stall, file card return means on said carriage means, means on said carriage means for sensing a vacant stall as said carriage traverses, and means on said carriage means operatively connected to and controlled by said sensing means for returning a file card to a vacant stall in said storage means during said traverse.

3,273,710
BOTTLE GAUGING
Richard L. Early and Thomas B. Sorbie, Toledo, Ohio, assignors to Owens-Illinois Inc., a corporation of Ohio
Continuation of application Ser. No. 42,837, July 14, 1960. This application Dec. 4, 1963, Ser. No. 329,342
15 Claims. (Cl. 209—88)



9. The method of inspecting the finish of a hollow container which comprises

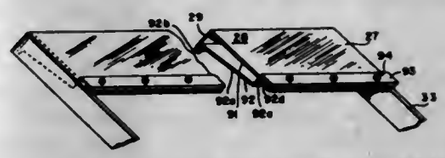
scanning the top surface of the finish of the container to ascertain variations in the vertical position of various portions of the top surface of the finish,

continuously sensing for a warp or dip condition wherein the vertical variation is greater than a predetermined standard in a unit peripheral distance of the finish, for a cocked finish condition wherein the vertical variation between the maximum and minimum exceeds a predetermined maximum, and for an over or under height condition wherein the vertical variation from an intermediate position exceeds a predetermined value,

and rejecting the container when any one of the aforementioned conditions exists.

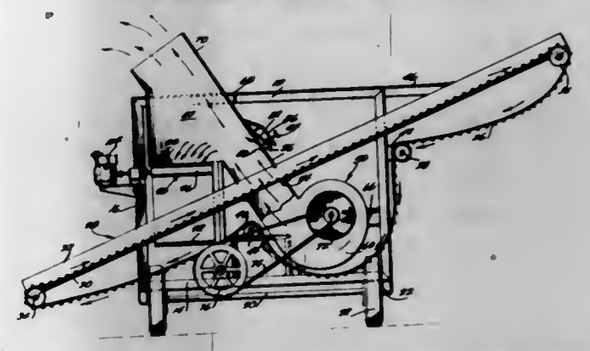
3,273,711
SHUFFLE FEED SORTER WITH SLIVER EJECTION
Traver J. Smith, San Jose, Calif., assignor of one-half interest to Genevieve L. Magnuson, and one-half interest to Genevieve I. Magnuson, Robert Magnuson and Louis J. Fox, trustees of the estate of Roy M. Magnuson
Filed Oct. 12, 1965, Ser. No. 495,134
4 Claims. (Cl. 209—98)

2. A shuffle feed structure comprising a frame, a first set of transversely disposed inclined shuffle members carried by said frame, a second set of transversely disposed inclined shuffle members carried by the frame and interposed between the shuffle members of the first set in alternating relation therewith, each shuffle member comprising a tube having spaced-apart top and bottom walls joined together at their rearward edges and having their front



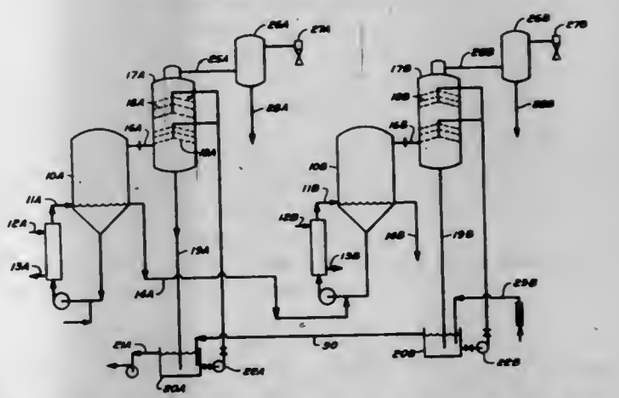
edges connected in spaced-apart relation by a front wall providing the article advancing face of a shuffle member, and means for effecting relative reciprocation between the respective sets of shuffle members.

3,273,712
STONE SEPARATOR
Bert L. Spafford, Rte. 3, Rhinelander, Wis. 54501
Filed July 10, 1964, Ser. No. 381,659
5 Claims. (Cl. 209—147)



1. A separator for relatively light and heavy objects such as potatoes and stones, a framework of generally box-like configuration, a transverse extending inclined conveying means mounted on said framework for conveying mixed objects thereon, fan means on said framework for producing an air stream, said conveying means carrying said mixed objects over said air stream whereby the lighter objects will be entrained in the air stream and the heavier objects carried beyond the air stream to the end of the conveying means, and means for receiving said lighter objects, said receiving means being disposed in the bottom of an expansion chamber for the air stream thereby discharging the lighter objects from the slowed air stream.

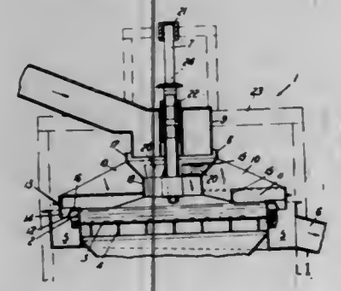
3,273,713
REMOVAL OF FLUORINE COMPOUNDS FROM PHOSPHORIC ACID
William R. Parish, Gretna, La., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 9, 1963, Ser. No. 271,718
7 Claims. (Cl. 23—153)



1. In the multi-stage method for concentrating "wet-process" phosphoric acid wherein said acid is concentrated under vacuum in a primary concentrator to pro-

duce vapors containing water vapor and fluorine compounds mainly in the form of HF and SiF_4, wherein said vapors are contacted with a primary fluorine-compound-absorbing liquor to absorb said compounds in said primary liquor, and wherein said acid is transferred to a secondary concentrator,, an improvement for avoiding precipitation of silica during recovery of fluorine compounds from said vapors, said improvement comprising the steps of: adding HF to said primary fluorine-compound-absorbing liquor in quantities sufficient to provide an excess of HF in said primary liquor after absorption of said vapors whereby precipitation of silica is avoided; further concentrating said acid under vacuum in said secondary concentrator to produce additional vapors containing a stoichiometric excess of HF over SiF_4; contacting said additional vapors with a secondary fluorine-compound-absorbing liquid whereby an excess of HF is absorbed by said secondary liquor; and transferring a portion of said secondary liquor to said primary liquor to serve as a source of HF for said primary liquor.

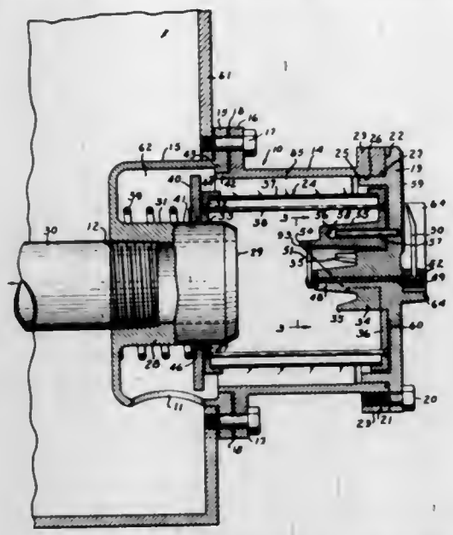
3,273,714
CIRCULAR JIGS
Norman Cleaveland, Kuala Lumpur, Malaya, assignor to Pacific Tin Consolidated Corporation, New York, N.Y., a corporation of Maine
Filed May 28, 1962, Ser. No. 198,289
Claims priority, application Great Britain, Sept. 8, 1961, 32,368/61
5 Claims. (Cl. 209—456)



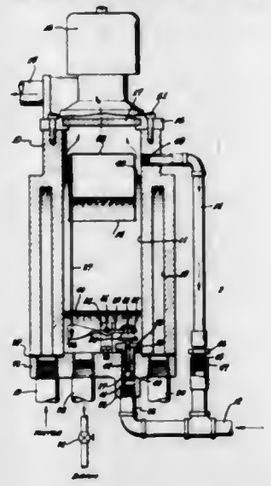
1. A jig for mineral dressing comprising:
a circular jig bed basket;
means for pulsating water through said basket;
means for delivering a feed of solid particles onto the central portion of said basket whereby a bed of solid particles is established on said basket; and
skimming means rotatably mounted around said delivery means above said basket, said skimming means comprising arm means extending substantially from said delivery means to the periphery of said basket, and blade means attached to said arm means, the lower edge of said blade means extending at least to the top of said basket and being shaped to contour the major portion of the surface area of the bed between said delivery means and the periphery of said basket and maintain a uniform bed depth by distributing feed evenly over the contoured surface of said bed basket.

3,273,715
FLUID FILTERS
Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Apr. 27, 1962, Ser. No. 190,764
27 Claims. (Cl. 210—90)

1. A fluid filter for mounting in association with a fluid reservoir of a hydraulic system comprising a housing, two openings formed through the wall of said housing, one an inlet and the other an outlet for the fluid of the system, one of said openings adapted to be open to the fluid of said reservoir and the other opening adapted to be connected to a conduit in said system, a filter cartridge chamber in said housing, an axially movable filter cartridge mounted within said chamber, guide means carried by said housing for supporting said cartridge for axial movement in said housing whenever the pressure differential across the cartridge exceeds a predetermnied value, a valve including a fixed valve part and a movable valve part cooperating to block flow from said reservoir to said cartridge chamber whenever the cartridge is removed and a single spring means associated with said movable valve part and said cartridge for controlling both movement of said filter cartridge and for urging said valve to closed position.

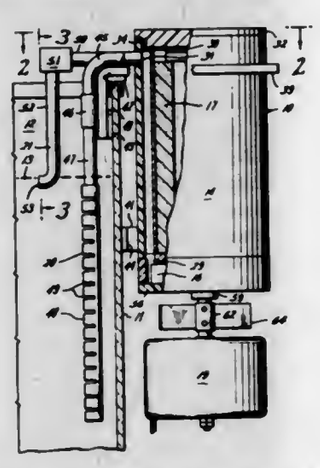


3,273,716
LIQUID PETROLEUM FUEL CLEANER
Kenneth K. Kennepohl, 46151 N. Sierra Highway, Lancaster, Calif.
Filed Jan. 6, 1964, Ser. No. 335,824
4 Claims. (Cl. 210—120)



1. An eliminator for impurities in liquid petroleum fuel comprising a housing having a conversion chamber therein, said housing including means to convert said liquid fuel to gas in said chamber, said chamber having a supply port, a discharge means at the top to discharge said gas, a return port adjacent the top and a drain port at the bottom, said ports opening into said chamber, a liquid petroleum fuel supply line connected to said supply port having an inflow check valve therein, a return line connected between said return port and said supply line at a point upstream from said inflow check valve and an outflow check valve in said return line, a valve seat in said chamber at a location controlling said inflow port, and a valve operating device comprising an arm mounted in said chamber and having a valve element on said arm, said valve element being at a location adapted to seat on said seat, a float in said chamber and a float arm on said float connected to said arm, said float establishing a level of said liquid petroleum in said chamber, said float having a location in the upper half of the chamber adjacent said return port, said float being adapted to shift said valve element alternatively to open and closed positions in response to the change of level of said liquid petroleum, whereby to precipitate relatively non-volatile substances from said liquid petroleum fuel prior to the passage of said fuel in a gaseous state from said discharge means.

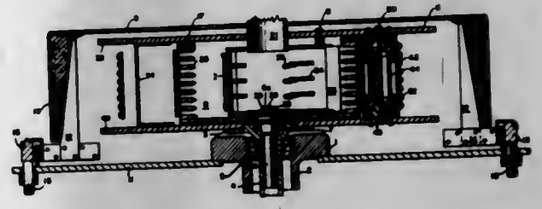
3,273,717
COMBINATION FILTER AND AERATOR
Howard M. Canterbury, Houston, Tex., assignor to W. F. Wilson, Houston, Tex.
Filed Oct. 2, 1963, Ser. No. 313,260
12 Claims. (Cl. 210—169)



1. A combination filter and aerator for an aquarium or the like, comprising a sealed housing, means for mounting the housing in an upright position exteriorly of the aquarium, means dividing the housing into a filter chamber above a pump chamber, a cap removably disposed over the upper end of and sealing the filter chamber, a filter in the filter chamber, an inlet to and outlet from the upper end of the filter chamber, a suction tube and a discharge tube for connecting the aquarium with the inlet and outlet, respectively, means connecting the filter chamber and pump chamber, said filter being disposed across the path of flow from the inlet to the pump chamber, means including a by-pass conduit within the filter chamber connecting the pump chamber with the outlet, and an impeller in the pump chamber for drawing aquarium water from the suction tube through the filter and into the pump chamber and then forcing it from said pump chamber into the by-pass conduit for return to the aquarium through the discharge tube.

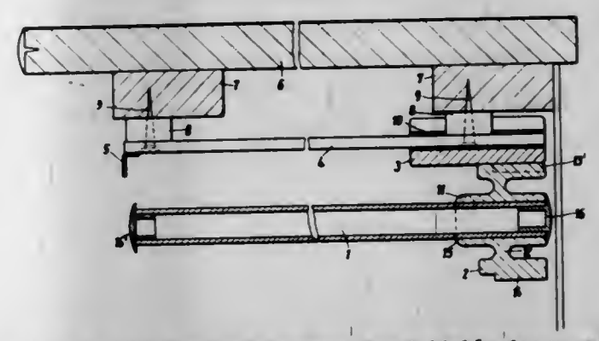
3,273,718
HEAVY DUTY CENTRIFUGAL SEPARATORS
Ray E. Riethmann, Arvada, Joseph R. Grout, Wheat Ridge, and Norman O. Peck, Arvada, Colo., and William H. Peck, Sr., Tulsa, Okla.
Filed Aug. 6, 1963, Ser. No. 300,348
4 Claims. (Cl. 210—370)

1. In a centrifugal separator, the combination of a carrier rotatable on a vertical axis, a basket disposed concentrically in and rotatable relative to said carrier, said basket including a set of vertically spaced rings, pairs of vertical rollers rotatably mounted in said carrier at the outside of said basket, a set of vertically stacked endless belts passing around each pair of said rollers, said belts having inner reaches in engagement with said basket rings and closing the spaces between said rings, a hollow impeller rotatable with and supported by said carrier centrally in said basket, a material delivering chute communicating with the upper portion of said hollow impeller, said impeller having a closed bottom and including a plurality of vertically spaced horizontal plates and vertical side plates at perimetric edges of said horizontal plates, said horizontal plates being provided with vertically aligned central openings below said material delivering chute, a plurality of deflectors secured to said horizontal plates and projecting inwardly into said openings whereby to deflect and spread material delivered by



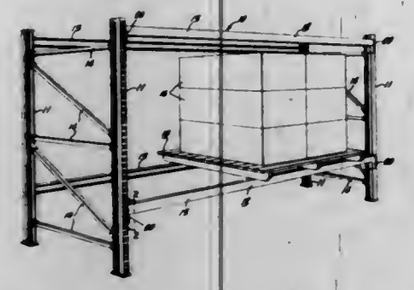
said chute downwardly through the impeller, said side plates having spaced apart vertical side edges defining discharge gaps at the perimeter of the impeller whereby material spread downwardly through the impeller by said deflectors may be discharged substantially uniformly through said gaps against the rings of said basket and the inner reaches of said belts, vertically elongated flexible flaps provided at said vertical side edges of said vertical plates of said impeller and extending outwardly therefrom toward said basket to assist in directing material discharged through said gaps against said basket and belts, and means for rotating said carrier and said basket at relatively different speeds.

3,273,719
RACK FOR TOWELS, PAPERS, FILMS, AND THE LIKE
Fritz Hoffmann, Steinenbronn, near Stuttgart, Germany, assignor to Robert Krause KG Zweigniederlassung Weilheim-Teck, Weilheim an der Teck, Germany
Filed June 24, 1964, Ser. No. 377,667
Claims priority, application Germany, June 26, 1963, H 49,549; June 20, 1964, K 53,266
19 Claims. (Cl. 211—94)



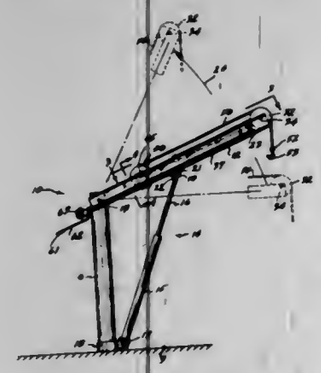
1. A rack arrangement for supporting foldable sheet material, especially towels, films and papers, which includes: substantially horizontal rail means, shoe means displaceably mounted on said rail means, carrier means positively connected to said shoe means, and substantially horizontal supporting bar means connected to and carried by said carrier means, said carrier means having a rectangular cross section transverse to the longitudinal extension of the supporting bar means connected thereto, and having two adjacent sides of said cross section provided with dovetail-shaped protrusions while the remaining two adjacent sides of said cross section are provided with dovetail-shaped recesses.

3,273,720
STORAGE RACKS
Edward A. Seiz, 136 E. 3rd St., Lansdale, Pa.
Filed Oct. 16, 1964, Ser. No. 404,219
4 Claims. (Cl. 211—148)



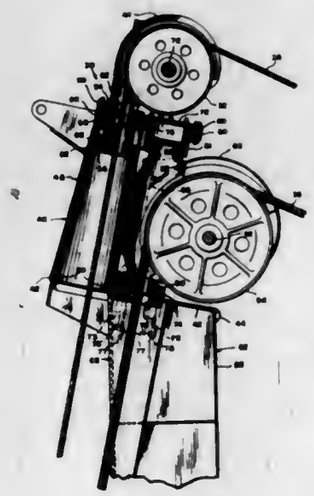
1. A storage rack comprising a plurality of uprights and having a plurality of load support beams each of which is connected at opposite ends to one of said uprights by a coupling means, at least one of said uprights having at least one longitudinally extending flange and web, a longitudinally extending protrusion on said flange, said protrusion having a plurality of rearwardly facing spaced slots therein, said web having at least one set of longitudinally spaced apertures therein, at least one of said coupling means comprising an angle member having a pair of angularly spaced legs merging into a junction, one of said legs having a plurality of fingers extending therefrom and spaced longitudinally therealong, said fingers being dimensioned and positioned so as to register with said slots and engage the peripheral edges thereof, the other of said legs having at least one pin connected to said leg, projecting therefrom, and positioned thereon so as to register with a selected aperture in said web, said fingers and said pin, when engaged in said upright, providing load bearing support for said beams, and a latch mounted on said angle, said latch comprising a spring having a slot therein, said spring normally biased against the leg of said angle containing said pin, a bolt engaging the slot in said spring and alignable with a hole in said leg, said bolt having an axial length, when in registry with said hole and said coupling means is in a mounted position on said upright, to allow registry of said bolt in another selected aperture of said web and engagement thereof on an upper peripheral edge of said aperture.

3,273,721
HYDRAULICALLY POWERED PORTABLE LIFTING APPARATUS
James L. Brunton, 20924 Avis Ave., Torrance, Calif.
Filed Jan. 15, 1965, Ser. No. 425,816
1 Claim. (Cl. 212—35)



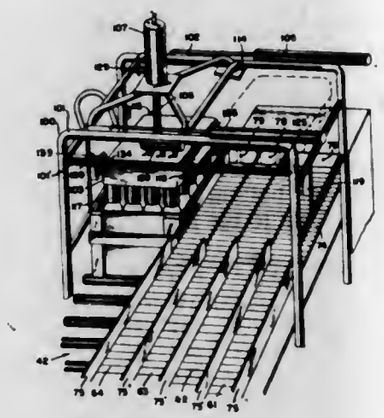
A hydraulically powered portable lifting apparatus comprising:
(a) a rigid post member adapted at one end thereof to be pivotally mounted upon a support means for receiving the same;
(b) a rigid boom member attached at the opposite end of said post and adapted to be moved pivotally about said point of attachment with said post;
(c) boom lift means including a hydraulic actuator having one end thereof pivotally affixed to said post and the opposite end thereof pivotally affixed to said rigid boom member intermediate the ends thereof,
(1) said boom means being raised and lowered by actuation of said hydraulic actuator;
(d) a first pair of pulleys pivotally mounted on a common axis adjacent the opposite end of said boom in a fixed relationship with respect to said boom;
(e) a second hydraulic actuator including a cylinder housing a movable piston having a shaft affixed thereto and extending through one end of said cylinder;
(f) attaching means securing the other end of said cylinder to said boom;
(g) a second pair of pulleys pivotally mounted on a common axis and secured to the terminal end of said shaft and being movable with respect to said boom as said shaft moves upon application of fluid under pressure thereto;
(h) said cable being passed over said pulleys and having one end fixed with respect to said boom and the other end free and extending from said first pair of pulleys for lifting loads;
(i) means for applying fluid under pressure to said hydraulic actuator thereby to cause said second pair of pulleys to move away from said first pair of pulleys and said cable to move in a lifting direction in response to application of fluid under pressure to said actuator; and
(j) a pair of U shaped guide brackets affixed to said terminal end of said shaft and movable therewith,
(1) the arms of said brackets engaging said boom to retain said pairs of pulleys in aligned relationship with said boom.

3,273,722
TOWER TOP FOR LOGGING SPAR
Reid G. Priest and Dean K. McCurdy, Port Angeles, Wash., assignors, by direct and mesne assignments, to Hyster Company, Portland, Oreg., a corporation of Nevada
Filed Oct. 28, 1963, Ser. No. 319,219
2 Claims. (Cl. 212—70)



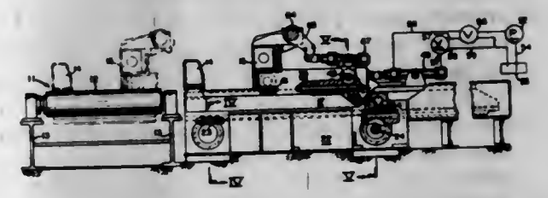
1. A tower top and fairleader assembly for a generally vertically disposed portable logging spar, comprising:
(a) a main tower top housing mounted on the top of said spar including a first tubular section being open at both its upper and lower ends;
(b) a base section extending generally outwardly at a right angle to said first tubular section and having a cable opening therein;
(c) a top support section extending generally outwardly at a right angle to said first tubular section and having a bearing cage means detachably mounted therein generally coaxially with said cable opening in said base portion;
(d) a first block means with tubular stem means pivotally mounted and received within the upper portion of said first tubular section;
(e) a second generally tubular block support section pivotally supported by said bearing cage and by bearing means concentrically disposed around said cable opening for pivoting in non-concentric but generally parallel relation to said first block means; and
(f) said housing with said first and second tubular block sections being mounted at an angle on said vertically disposed spar so that said block sections pivot at an angle to said spar, the lower open end of said first tubular section located generally outside the vertical plane of the walls of said spar, said angular mounting of said tubular sections permitting cables to pass downwardly from said housing and the topmost portion of said spar outside said spar.

3,273,723
PACKING MACHINE
John Moritz Andersen, Bergen, Norway, assignor to A/S Hansa Bryggeri, Bergen, Norway
Original application May 22, 1959, Ser. No. 815,022, now Patent No. 3,130,528, dated Apr. 28, 1964. Divided and this application Apr. 27, 1964, Ser. No. 362,876
8 Claims. (Cl. 214—1)



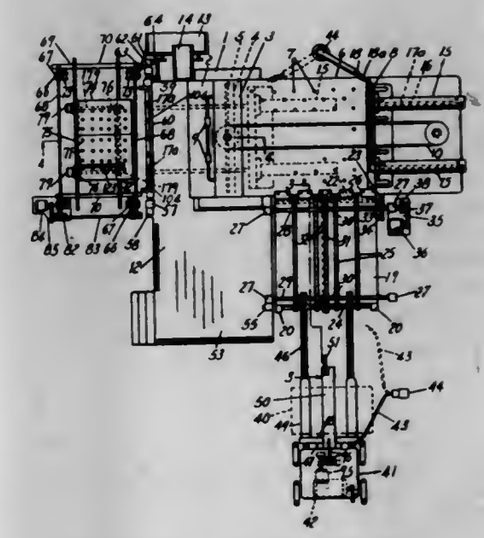
1. An article gripping mechanism comprising a substantially rigid body portion; elastic means connected to said body portion and in the unstressed condition, having a configuration complementary to the configuration of the article portion to be gripped and having a substantially uniformly different dimension than the article portion; means to supply fluid under pressure to expand said elastic means into gripping engagement with the article; said body portion having a seat; said elastic means having a sealing portion in engagement with said seat, normally forming a fluid tight seal; said body portion and said sealing portion permitting relative movement therebetween responsive to a predetermined amount of expansion of said elastic means to produce fluid leakage; separate sensing means responsive to said leakage to control the operation of said article gripping mechanism.

3,273,724
APPARATUS FOR HANDLING METALLIC WORKPIECES
Karl Ernst Buechting, Bethel Boro, and Joseph Paul McHale, Bethel Park, Pittsburgh, Pa., assignors to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 16, 1964, Ser. No. 375,502
Claims priority, application Great Britain, July 1, 1963, 25,980/63
5 Claims. (Cl. 214—1)



1. In combination with a means for supporting a workpiece, an apparatus for engaging and moving a worpiece supported by said workpiece supporting means comprising:
a first head having a surface adapted to engage one surface of the workpiece,
movable supporting means for said first head,
a second head having a surface adapted to engage a second surface of a workpiece,
a carriage to which said second head is secured for movement therewith,
said carriage adapted to be supported by said movable supporting means and movable relative thereto,
means for moving said movable supporting means relative to said workpiece supporting means to move said heads relative to a workpiece supported by said workpiece supporting means, and
means carried by said movable supporting means for moving said second head relative to said first head.

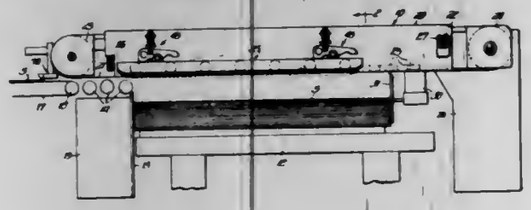
3,273,725
PAPER TRIMMING AND PILING APPARATUS
Frederick B. Curtenius, 1537 Long Road, and Robert W. Polderman, 2504 Russet Drive, both of Kalamazoo, Mich.
Filed July 15, 1963, Ser. No. 295,016
17 Claims. (Cl. 214—1.6)



11. Paper trimming and piling apparatus comprising,
a paper trimmer mounted in an elevated position so that its table is above the surrounding floor more than the height of a shipping stack of paper on a shipping and handling skid,

a narrow operators platform positioned in front of said trimmer and above the floor at a normal level relative to the trimmer table,
power actuated transfer means at one side of said trimmer arranged to lift a stack of untrimmed paper and transfer a trimmer load pile from the top of the stack to the table of the trimmer,
ejector means arranged to push a trimmed pile of paper off of the front edge of the trimmer table,
a vertically reciprocable piler positioned on the opposite side of said platform from said trimmer and movable from pile receiving lever at the level of the trimmer table downwardly to deposit trimmed piles of paper on a handling skid or a partially formed stack of piles on the skid,
and a bridge plate movable from an unobstructing position relative to said platform to a bridging position across the platform in plie supporting and transfer position between the table of the trimmer and the raised position of said piler.

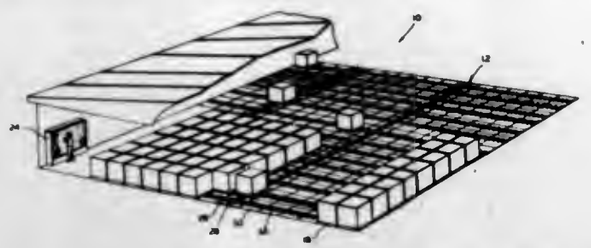
3,273,726
BRAKE FOR METAL SHEET CONVEYOR
Dario Buccicone, Gary, Ind., assignor to Bucciconi Engineering Co., Inc., Gary, Ind., a corporation of Indiana
Filed Oct. 31, 1963, Ser. No. 320,359
2 Claims. (Cl. 214—6)



1. In a sheet handling mechanism, an overhead electromagnetic conveyor, means for delivering sheets to the undersurface on the overhead conveyor for advance thereby, a movement retarding device between the entrance and discharge ends of the overhead conveyor which device comprises an elongate bar positioned along the side of the overhead conveyor and generally parallel with the sheet engaging bottom face thereof, said bar being mounted for vertical movement on a pair of parallel links, each of said links being pivotally connected to said bar intermediate the ends thereof, a pivotal connection between one end of each link and a support member which is fixed relative to said overhead conveyor, a hanger bar pivotally connected to each of said links between the pivotal connections thereof with the bar and the fixed support member and a resilient sliding connection between said hanger bar and said fixed support member whereby said bar is normally held in an uppermost position spaced above the bottom face of the electromagnetic conveyor, and electromagnets operative to pull the bar down against the upper surface of a sheet carried on the overhead conveyor.

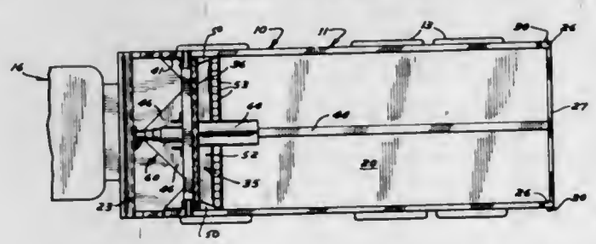
3,273,727
LOAD HANDLING APPARATUS
Cyril B. Rogers, Niles, and Mac R. Doolittle, Lansing, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed July 8, 1964, Ser. No. 381,025
7 Claims. (Cl. 214—16)

1. A load handling apparatus comprising a floor, a pallet for use in conjunction with said floor, means for providing a fluid film between said pallet and said floor, and means for propelling said pallet over said floor, said propelling means including an electric linear motor having primary windings and secondary windings, one of said windings being located in said floor in a particu-



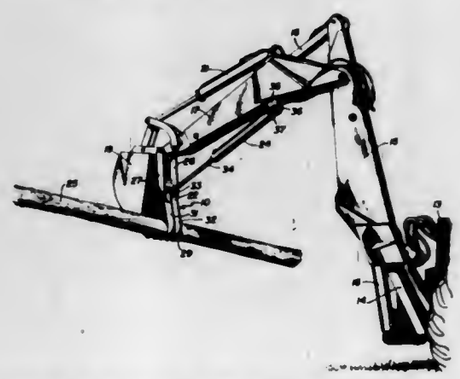
lar pattern, the other of said windings being located on the underside of said pallet and including portions at right angles to each other.

3,273,728
REAR UNLOADING BOX
Elgin L. Kelso, Benson, Minn., assignor to Tyler Corporation, a corporation of Minnesota
Filed Nov. 5, 1964, Ser. No. 409,255
9 Claims. (Cl. 214—82)



1. An unloading box comprising a bottom panel, a pair of side wall panels spaced apart and attached to said bottom panel at opposite sides thereof, a rear opening in said box, a platen slidably mounted in said box for movement from the front to the rear thereof, said platen including a pair of side wing members hingedly attached thereto and extending outwardly and rearwardly therefrom, said side wing members being adapted to engage the side panels of said box and scrape the sides of said box as said platen moves from the front to the rear thereof, and a plurality of individual bottom panel scraper members hingedly attached adjacent the lower portions of said platen and adapted to engage the bottom of said box as said platen is moved from the front to the rear.

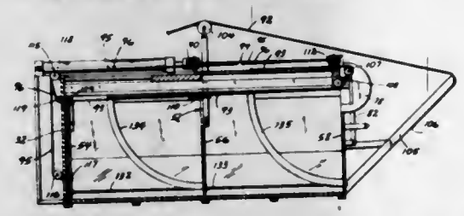
3,273,729
CLAMPING DEVICE
Vaino J. Holopainen, East Sullivan, N.H., assignor to Channel Construction, Inc., East Sullivan, N.H., a corporation of New Hampshire
Filed Jan. 4, 1965, Ser. No. 423,188
5 Claims. (Cl. 214—138)



1. Clamping device for use with a vehicle, comprising (a) a dipper stick having an actuating cylinder for changing its aspect relative to the vehicle,

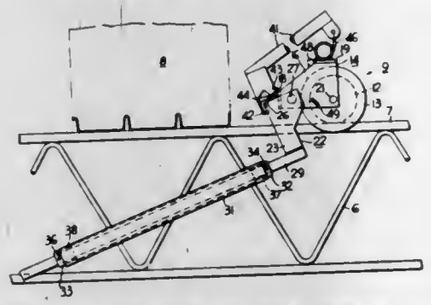
(b) a bucket pivotally attached to one end of the dipper stick, and an actuating cylinder for changing the aspect of the bucket relative to the dipper stick,
(c) a clamping arm pivotally mounted adjacent the bucket for hinged movement about substantially the same axis as the bucket, and
(d) an actuating cylinder operatively connected between the dipper stick and the arm to bring about pivotal movement of the bucket and arm toward and away from one another.

3,273,730
SCOOP CONVEYOR APPARATUS
Joseph A. Moore, Boone, Iowa, assignor of forty-five percent to Vern T. Pritchard, Boone, Iowa
Filed Jan. 27, 1965, Ser. No. 428,487
14 Claims. (Cl. 214—146)



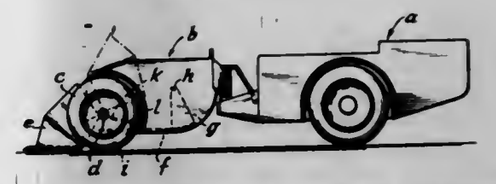
1. In a material scoop conveyor, comprising in combination,
a vehicle,
a scoop mounted on said vehicle, said scoop being so positioned on said vehicle such that the longitudinal axis of said scoop extends transversely of the line of travel of said vehicle, and said scoop having an outlet opening at one end and an inlet opening on one side, said one side being outwardly of said vehicle,
unloading means on said scoop movable along the longitudinal axis of said scoop to discharge material through said outlet opening, and said unloading means includes a plurality of paddles disposed in spaced relationship along the length of said scoop when said unloading means is in a loading position and positioned at said one end of said scoop when in an unloading position, said paddles adapted to discharge material from said scoop upon being moved from said loading position to said unloading position.

3,273,731
DEVICE FOR LIFTING AND TRANSPORTING ROOF DECKING
Clarence P. Brahm, 5000 N. 132 St., and Alfred K. Jensen, 5001 N. 132 St., both of Butler, Wis.
Filed Mar. 10, 1964, Ser. No. 350,745
5 Claims. (Cl. 214—390)



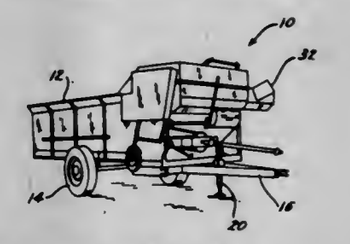
1. A device in combination with spaced roof trusses for lifting and transporting roof decking resting on the spaced roof trusses comprising: a carriage; means supporting said carriage and contacting the surface of the roof trusses and capable of movement along said roof trusses; load engaging means connected to said carriage for selective movement relative thereto above and below the contact point between said support means and said truss surface, said load engaging means adapted for engagement with the underside of said decking, and means for selective movement of said load engaging means relative to said carriage to raise the decking from the surface of said trusses for movement therealong.

3,273,732
SELF-LOADING VEHICLE AND DUMP GATE THEREFOR
Alfred Trieschmann, Philippsthal, Germany, assignor to Vereinigte Kaliwerke Salzdetfurth AG., a corporation of Germany
Filed Nov. 23, 1964, Ser. No. 413,007
Claims priority, application Germany, Nov. 25, 1963, V 24,919
7 Claims. (Cl. 214—518)



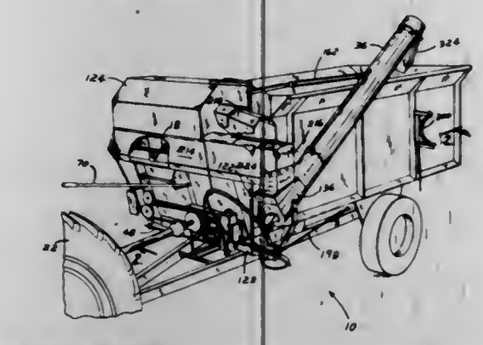
1. A material loading and unloading machine comprising in combination, a body unit defining a receptacle for receiving said material; a bucket member pivotally mounted at one end of said unit for loading material into said receptacle; a slideable closure means for closing a material discharge aperture in the bottom of said unit, said slideable closure means including a first part for closing said aperture in a first position of said closure means, and a second part connected to said first part for closing said aperture in a second position of said closure means; and driving means for moving said closure means from said first to said second position whereby to transfer material from said one end toward the other end of said unit and for further moving said closure means to a third position in which the aperture is open to permit discharge of the material.

3,273,733
GRAIN WAGON
Dorland H. Schuler, Griswold, Iowa
Filed June 11, 1964, Ser. No. 374,455
11 Claims. (Cl. 214—519)



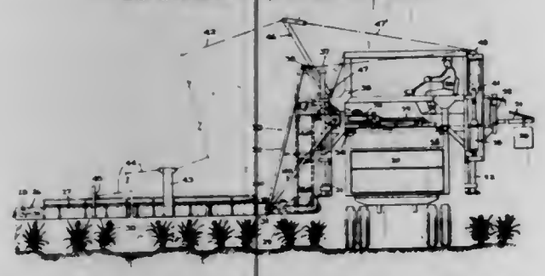
1. In a grain wagon, comprising,
a floor terminating at one end of said wagon in a trough,
an endless conveyor movable around said floor and being defined by a pair of chains on each side of said floor and slats extending therebetween in spaced relationship along the length of said chains,
means for moving said conveyor around said floor for carrying grain material on said floor into said trough,
means for removing grain from said trough, and
a plurality of laterally and longitudinally spaced apart guide cleaning means in engagement with each of said chains adjacent said trough end of said floor to direct the return chain under said floor upwardly at an angle to the floor whereby grain will fall from said slats and said grain will fall from said chains between said spaced apart guide cleaning means into the trough.

3,273,734
FEED MIXING AND BLENDING MACHINE
Dorland H. Schuler, Griswold, Iowa
Filed Sept. 26, 1963, Ser. No. 311,748
8 Claims. (Cl. 214—521)



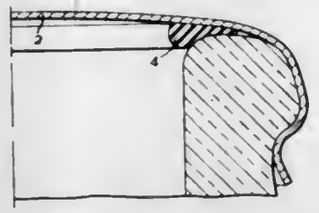
8. A feed wagon;
a conveyor disposed on the floor of said wagon for moving feed to one end of said wagon, said floor conveyor disposed lengthwise of said wagon,
a vertical disposed conveyor at said one end of said wagon in communication with said floor conveyor to move said feed upwardly from the floor of said wagon,
a third conveyor horizontally disposed and extending transversely of said wagon along said one end and below the upper end of said vertical conveyor to receive feed from said vertical conveyor and more it to one side of said wagon, and
a discharge opening in the outer end of said third conveyor at the side of said wagon, and
a fourth conveyor in communication with the discharge opening of said third conveyor,
a support arm pivotally connected on a vertical axis to one end of said wagon at an outer corner of said wagon and adapted to pivot outwardly of said wagon in a horizontal plane between positions extending towards the opposite end of said wagon from said outer corner to positions extending forwardly of said one end of said wagon, and
said fourth conveyor pivotally secured to said arm for pivotal movement in horizontal and vertical planes.

3,273,735
VERTICAL LIFT
George Chi-Chu Kuo, Honolulu, Hawaii, assignor to Castle & Cooke, Inc., Honolulu, Hawaii, a corporation of Hawaii
Filed Nov. 30, 1964, Ser. No. 414,691
18 Claims. (Cl. 214—522)



10. A vertical lift conveyor for elevating a plurality of loose articles from a lower feeding station to an upper discharge station, a first and a second pair of endless chains adapted to travel in the same direction, the first pair of endless chains forming a closed path entirely within the closed path formed by the second pair of endless chains, the ascending portions of said first pair being parallel to and spaced from the plane of the ascending portions of the second pair, the remaining portions of said pairs being in the same planes, a plurality of sets of load-carrying supports carried by said pairs of endless chains, each set including a load-carrying member supported at opposite ends by said first and second pairs of endless chains respectively, and a spill-preventing member supported at opposite ends entirely by said first pair of endless chains, said sets being spaced from each other when ascending between the portions of the pairs of endless chains in spaced planes and adjacent each other when carried between the portions of the pairs of endless chains in the same planes, each spill-preventing member arranged to precede a corresponding load-carrying member of a set as said sets are driven in the same direction and having its trailing edge adjacent the leading edge of the load-carrying member such that said spill-preventing member occupies a load-supporting position at the loading station as the immediately preceding load-supporting member begins its ascent between the portion of the pairs of endless chains in the spaced planes and means for continuously driving said pairs of endless chains in the same direction.

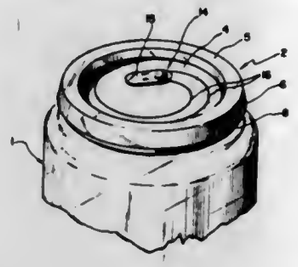
3,273,736
CROWN CLOSURES
Leslie Lister and Arthur Thompson, Banbury, England, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Apr. 17, 1963, Ser. No. 273,640
Claims priority, application Great Britain, Apr. 19, 1962, 15,365/62
3 Claims. (Cl. 215—40)



1. An apparatus comprising, in combination, a standard bottle having a neck terminated at a standard mouth configuration including radiused surface joining the conventional top end sealing surface and the substantially cylindrical inside surface of the bottle neck, and a crown closure secured to said bottle over said mouth comprising an aluminum shell having a thickness of between 0.010 and 0.013 inch (0.252–0.325 mm.) including a top portion and a fluted skirt, an annular gasket formed of flowed-in plastic material and having a weight of not less than 160 mgms. (in the uncured state) and a width of from 0.08 to 0.14 inch (2.0–3.5 mms.), bonded to the underside of said top portion, the inside diameter and width of the gasket being such that the gasket seals against an annular portion of said radiused surface of the standard bottle, the inner diameter of said gasket being substantially equal to, or less than, the inner diameter of said inner surface of said bottle neck.

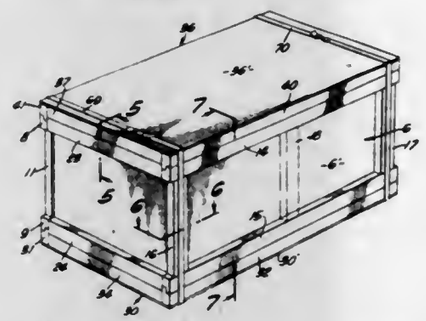
3,273,737
CONTAINER AND CLOSURE
James W. Davie, Monroeville, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 14, 1964, Ser. No. 403,898
3 Claims. (Cl. 215—46)

1. In combination,
a container
having a substantially rigid neck portion terminating in an annular bead provided with an annular upper sealing surface, an outwardly and downwardly disposed outer sealing surface, an inwardly and downwardly disposed shoulder surface, inclined downwardly at a relatively small angle from a horizontal plane with a rounded corner connecting said outer sealing surface with said shoulder surface,
a metal closure
having a recessed scored central panel with a pull tab affixed thereto within the scoring to provide an opening device, a peripheral sealing gasket retaining channel, and an unscored depending skirt of substantially uniform length, said skirt being necked in against said container shoulder surface in a substantially permanent sealed relationship, said central panel being adapted to



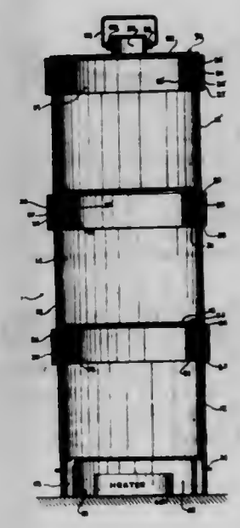
be substantially entirely removed on opening said container without removing the remainder of said closure; and
an adhesively retained annular sealing gasket
having a portion thereof disposed in said gasket retaining channel and retained between said channel and said upper sealing surface, and having a generally wedge-shaped portion thereof retained between said closure skirt and said outer sealing surface, said sealing gasket adapted to remain intact on opening said container; and the assembly having an internal pressure less than atmospheric pressure.

3,273,738
KNOCKDOWN CONTAINER CONSTRUCTION
Elias Blanco, 8262 Fountain Ave., Los Angeles, Calif.
Filed Nov. 23, 1964, Ser. No. 413,030
2 Claims. (Cl. 217—12)



1. A rectangular container adapted to be rapidly assembled and disassembled comprising a first pair of substantially identical sections including walls and a frame for each wall on one side thereof, certain walls having at least two parallel spacers and two parallel cleats at right angles to said spacers, said cleats being spaced from the edges of the walls of said side sections and having continuous rabbets therein, a second pair of substantially identical sections including walls and a pair of identical cleats on one side of each wall of said sections and spaced from the edges of the walls of said end sections and having continuous rabbets therein, and a third pair of substantially identical sections, each of said third pair of sections having walls and two pairs of parallel cleats on one side of said walls at the edge portions of said walls, each of said cleats having continuous rabbets therein, rabbets being provided in said cleats of said first and second pairs of sections facing toward the interior of said container, and the rabbets in said third pair of sections facing away from the interior of said container, said opposing rabbets being adapted to interlock when said container is assembled.

3,273,739
DOUBLE STACKED ROCKET FOOD DISHES
Tohchung Wei, 169 E. Broadway, New York, N.Y.
Filed Aug. 5, 1963, Ser. No. 299,799
13 Claims. (Cl. 220—4)

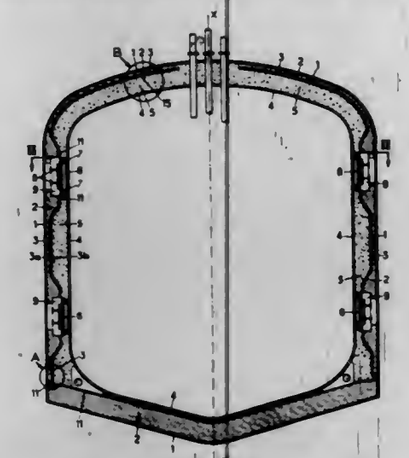


1. A sealed stacked container assembly, comprising a plurality of cylindrical containers disposed in an axially aligned stacked array, each of said containers having a cylindrical wall with a closed circular bottom wall and open top, a first two cylindrical, radially spaced, concentric, cylindrical flanges depending from said bottom wall, three radially spaced concentric other flanges disposed at the open top of each container, and a radial annular wall supporting and securing said other flanges to the cylindrical wall of the container, all of said flanges being axially aligned with each other and with the axis of said cylindrical wall, the first two flanges of each upper container in said array interfitting in and between the three spaced other flanges at the top of the next lower container in said array to define four annular sealing surfaces between said flanges, the bottom wall of the upper container and the radial, annular wall of the lower container.

3,273,740
TANK FOR LIQUEFIED NATURAL GAS AND OTHER PRODUCTS STORED AT LOW TEMPERATURES
Pierre Herrenschmidt, Neuilly-sur-Seine, France, assignor to Societe anonyme des: Ateliers et Chantiers de la Seine Maritime
Filed Sept. 3, 1963, Ser. No. 306,250
Claims priority, application France, May 7, 1963, 933,980, Patent 1,364,070
8 Claims. (Cl. 220—15)

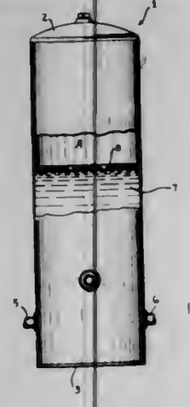
1. A tank for transporting fluids at low temperatures comprising an inner casing made of a metal which is resilient at said temperatures, a relatively rigid outer casing, an intermediate deformable casing between said inner and outer casing, interfitting relatively slidable tongue and groove means extending through said intermediate casing, said tongue means being attached to one of said inner and outer casings and said groove means to the other so as to guide said inner casing as it expands

and contracts relative to the outer casing, and solid insulation between said intermediate casing and one of said



inner and outer casings and pulverulent insulation between said intermediate casing and the other of said inner and outer casings.

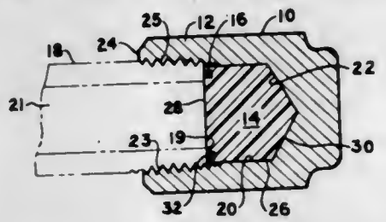
3,273,741
AIR BARRIER MEANS FOR HYDRO-PNEUMATIC TANK
Stuart F. Faunce, Fanwood, N.J., assignor to John Wood Company, New York, N.Y., a corporation of Delaware
Filed May 4, 1962, Ser. No. 192,491
7 Claims. (Cl. 220—26)



7. A pressure water reservoir comprising an integral tank; a free floating substantially rigid air barrier means within said tank and adapted to float on the top surface of water within said tank; said free floating air barrier means being comprised of a float formed of expanded polystyrene which has a specific gravity of less than 1, said float having a transverse central web portion, and a multiplicity of spaced apart intersecting ribs extending from each side of said transverse central web portion, said spaced apart intersecting ribs forming a multiplicity of pockets open at their outer faces on each side of said float.

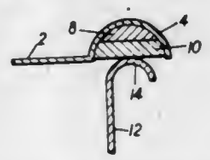
3,273,742
END CLOSURE ASSEMBLY
Emery J. Zahuranec, Bedford, and Zoltan Szohatzky, Cleveland, Ohio, assignors to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio
Filed June 2, 1964, Ser. No. 372,015
7 Claims. (Cl. 220—39)

1. An end closure assembly for a threaded mating member having an axial fluid passageway therein and a radial end sealing face transverse to the axis of the passageway, comprising a cap member having thread means for engagement with the threaded mating member, said cap member having means for advancing the cap member along the threads of the mating member, said cap member further having a generally cylindrical cavity concentric with said thread means and having a closed inner end wall, a generally cylindrical plug member separate from said cap member and snugly and slidably received in said cavity, said plug member having an inner end surface substantially complementary with said closed inner end wall of said cap member, said closed inner end wall including inclined wall means to center the axis of said cap member relative to the axis of said plug member, the outer end of said plug member having a radially extending surface



generally complementary with the sealing face of the mating member and recessed to define a sealing cavity opposed to the sealing face of the mating member when the end closure assembly is operatively connected with the mating member, sealing means received within the sealing cavity and, in the undeformed state, extending axially slightly beyond said radially extending surface of the plug, thereby providing adequate seal compression and effecting a proper fluid seal between the sealing face of the mating member and the radially extending surface of the plug when the end closure assembly is operatively associated with the mating member.

3,273,743
SEALING
John Cameron McColl, Childwall, Liverpool, England, assignor to Rubbarite Limited, Liverpool, England, a British company
Filed Nov. 14, 1963, Ser. No. 323,706
Claims priority, application Great Britain, May 17, 1963, 19,634/63
4 Claims. (Cl. 220—46)



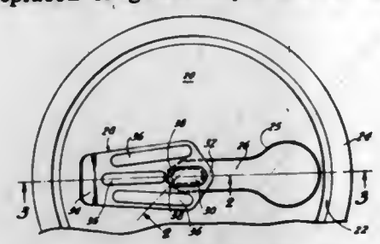
1. The combination of a container lid having a peripheral curl of substantially semi-circular transverse cross-section and a sealing member disposed within said curl, said sealing member comprising a first layer composed of a resiliently deformable material having a bulk density of from 1½ to 2 lbs. per cubic foot and a second layer composed of a resiliently deformable material having a bulk density of from 30 to 45 lbs. per cubic foot, said sealing member being applied to said lid by pressing said member into said curl so that the first layer conforms to the contour of the curl and the second layer wedges in place in the opening of the curl.

3,273,744
CONTAINER OPENING DEVICES
Ermal C. Fraze, 355 W. Stroop Road, Dayton, Ohio
Filed Mar. 2, 1964, Ser. No. 348,618
8 Claims. (Cl. 220—54)

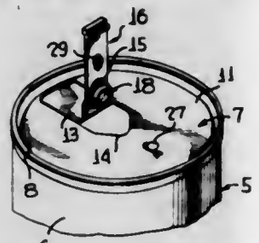
1. In the structure of a container wherein a metal wall of the container is scored along a line to form a tear strip and a hollow rivet is formed in the tear strip in overlapping engagement with a tab for use of the tab as a lever to initiate severance of the tear strip at a particular

region near one end of the tear strip, the improvement comprising:

said rivet being elongated in plan towards the particular region and the overhanging metal of the rivet also being displaced longitudinally towards the particular region with consequent greater overhang of the bead in the portion of the joint between the tab and the tear strip where maximum stressing of the joint between the tear strip and the tab is created by the lever action.

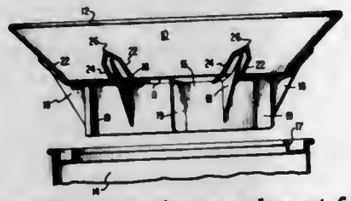


3,273,745
VENTED EASY OPENING CONTAINER
Frederick J. Stec, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed July 1, 1964, Ser. No. 379,481
5 Claims. (Cl. 220—54)



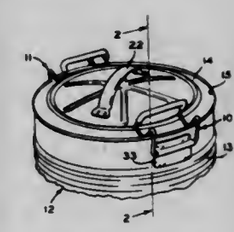
1. In a container for packaging a liquid under pressure, a panel having an integral removable portion defined by weakening lines formed in said panel and a vent opening aligned with said removable portion for first venting the container and a pull tab for facilitating the removal of said removable panel, said pull tab being formed of a resilient plastic and including an elongated strap-like body, a connector on said body adjacent one end permanently securing said pull tab to said removable portion, said body having at the other end thereof a grip portion, said body further having an intermediate depending plug projecting through said panel opening and engaging said panel around said opening to seal said panel and said body being bonded to said panel adjacent said plug to prevent accidental displacement of said plug, said removable portion having a starting end, an opening in said removable portion adjacent said starting end, and said connector being in the form of a plug passing through said removable portion opening and interlocked with said removable portion.

3,273,746
PAINT CAN BIB
Harold D. Andrews, Jr., 1207 Westwood Drive, Valdosta, Ga.
Filed June 2, 1964, Ser. No. 372,024
12 Claims. (Cl. 220—90)



1. A brush holder and wiper atachment for paint cans comprising: an annular body having an axial passage dimensioned to receive a paint brush or the like, said body including an upper substantially funnel-shaped drain portion, an intermediate portion providing an internal circular shelf the upper face of which merges into the inner face of the drain portion at its lower end, the inner edge of the shelf circumscribing a paint brush passage aperture, a cylindrical baffle portion depending from the bottom of said shelf and concentric with the brush aperture, supports extending axially between and connecting the outer faces of the drain portion and the baffle, said supports being spaced apart circumferentially around said body and extending radially therefrom, and the radially outermost faces of the supports being upwardly and outwardly divergent from the lower end portion of the cylindrical baffle to their points of juncture with said drain portion, portions of said radially outermost faces being spaced sufficiently from said body to permit paint or the like to flow freely between the outside of the holder and the surrounding mouth edge of a paint can or the like.

3,273,747
COMBINED LATCH AND HANDLE STRUCTURE
Anthony C. Kalz, St. Louis, Mo., assignor to Schlueter Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Mar. 27, 1964, Ser. No. 355,347
12 Claims. (Cl. 220—95)

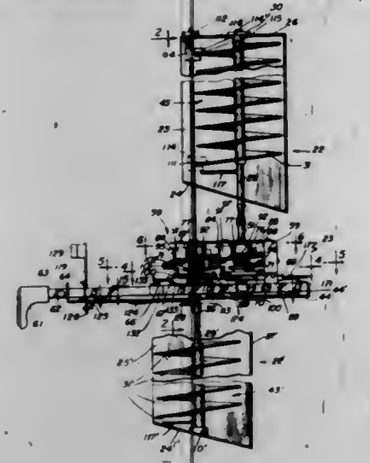


1. In a combined latch and handle structure:
(a) a container including a top wall and a side wall, the top wall being provided with an opening,
(b) a lid closing the opening,
(c) a latch handle including an inturned pivot portion and a grip portion interconnected by a substantially 5-shaped arm,
(d) means pivotally mounting the pivot portion to the side wall,
(e) a keeper shoulder on the container,
(f) the 5-shaped arm having a reverse portion that fits over and engages the keeper shoulder to maintain the latch handle selectively in a clamp position, and
(g) the 5-shaped arm having another portion that overlies the lid to hold the lid in place when the latch handle is in the clamp position.

3,273,748
HELIX ARTICLE VENDOR
Le Roy F. De Shon, Park Forest, and Mahlon Wesley Kenney, Oak Park, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 28, 1964, Ser. No. 407,140
4 Claims. (Cl. 221—75)

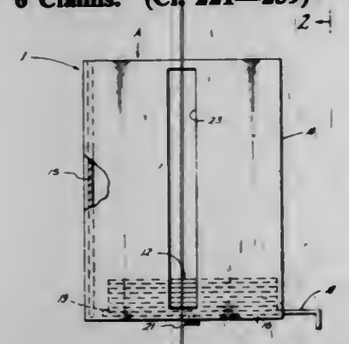
1. In a vending machine, a storage and releasing mechanism comprising:
a frame member;
a helical member rotatably journaled in the frame member for rotation about its longitudinal axis, the said helical member providing a continuous spiral surface upon which vendible articles may be disposed;
an actuating member journaled for rotation in the frame member, the said actuating member being

adapted to impart rotational movement to the helical member;
index means on the actuating member, the said index means being adapted to rotate therewith;
latching means pivotally mounted on the frame member between a first position and a second position, the said latching means being adapted to engage the index means and to control the rotation thereof, whereby movement of the latching means from its first to its second position frees the index means for rotation through a portion of an arc of substantially 180° and movement of the latching means there-



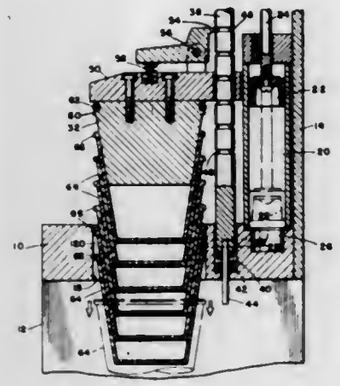
after from its second position to its first position frees the index means for rotation through the remainder of the arc of substantially 180°;
spring means adapted to be wound whereby to exert rotational force on the index means;
means adapted to wind the spring means; and
latch-releasing means adapted after winding of the spring means to move the latching means to its second position and thereafter to its first position, whereby the latching means releases the index means in two steps for rotation thereof by the spring means through an arc of substantially 180°, so as to dispense a vendible article from the helical member.

3,273,749
TONGUE BLADE DISPENSER
Stanley E. Thompson, 202 S. 4th St., Richmond, Tex.
Filed July 28, 1965, Ser. No. 475,346
6 Claims. (Cl. 221—239)



1. A dispenser for holding stacked tongue blades, comprising:
(a) a housing for receiving stacked tongue blades,
(b) said housing having substanitally parallel container walls and having a bottom attached to said container walls,
(c) gripping means attached to said parallel walls at one end thereof and spaced above said bottom to provide an opening,
(d) a dispenser plate supported by said bottom of said housing and disposed for receiving a stack of the tongue blades thereon and adapted to be moved back and forth from a retracted position to an extended position,
(e) means with said plate for engaging the lowermost of the tongue blades for moving same with said plate as it is laterally moved toward said opening, and
(f) said plate being movable upwardly when in said extended position to engage the upper surface of the lowermost tongue blade with said gripping means for holding the lowermost tongue blade to prevent retraction thereof upon a return of said plate to said retracted position.

3,273,750
FLUID PRESSURE CUP DISPENSER
Robert E. Davy, La Mesa, Calif., assignor to Coroga Co., Anaheim, Calif.
Filed Feb. 1, 1965, Ser. No. 429,507
7 Claims. (Cl. 221—278)

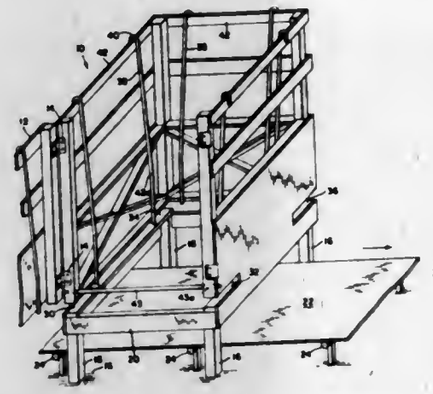


1. A cup dispenser for dispensing individual cups from a tightly interfitted uniform stack of cups, the structure comprising:
a frame having a cylindrical throat through which the stack of cups passes, said throat being dimensioned so that the rims of the cups are gripped firmly, and an axial length sufficient to hold the rims of at least two of the stacked cups simultaneously whereby a portion of said throat defines, with said rims, a closed annulus;
ejecting means for supplying a pulse of compressed air into said annulus, whereby the cups are separated and one is ejected;
and indexing means for advancing the stack of cups a distance equal to the axial spacing of the cup rims, after each cup is ejected.

3,273,751
PALLET DISPENSER
Arnold D. De Wees, 1730 Ebers St., San Diego, Calif.
Filed Aug. 26, 1964, Ser. No. 392,359
4 Claims. (Cl. 221—281)

1. A device for sequentially dispensing pallets from a vertical stack thereof onto a moving conveyor belt or platform, said device comprising:
a frame constituting an enclosure designed to receive said stack of pallets, said frame being of substantially rectangular cross-section considered in a horizontal plane, said frame having at least one side which can be selectively opened so that said stack of pallets may be placed therein;
a pair of rotatable shafts lying in a horizontal plane near the lowermost portion of said enclosure, said shafts being disposed in spaced-apart parallel relationship with their axes aligned in the direction of movement of said conveyor belt onto which the pallets stacked in said enclosure are to be sequentially dispensed;

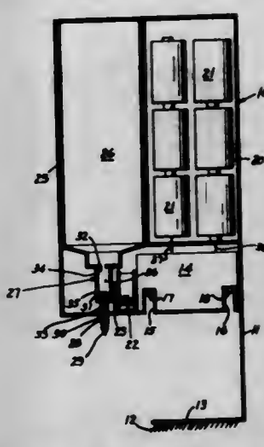
a pair of sprocket wheels carried on each of said shafts, the sprocket wheels on each shaft being spaced apart by a distance less than one dimension of each pallet comprising said stack;
each sprocket wheel including a plurality of radially-projecting fingers, the number of fingers on each sprocket wheel being identical and with corresponding fingers of all four sprocket wheels lying in the horizontal plane of said shafts at a given point in each cycle of shaft rotation, the corresponding fingers of said sprocket wheels when in the said horizontal plane engaging an undersurface of the lowermost pallet in said stack and supporting such pallet thereon;
means for producing a rotation of each of said shafts in opposite directions so as to bring about a disengagement between the said sprocket wheel fingers



and the lowermost one of said pallets, whereupon the latter is released to fall upon said moving conveyor belt, said last-mentioned means comprising:
a first pair of worm gears mounted on corresponding ends of each of said shafts, said worm gears being threaded oppositely to one another;
a control shaft rotatably carried by said housing and extending in a direction transverse to the direction of each of said first-mentioned pair of shafts but parallel to the horizontal plane of the latter;
a second pair of worm gears carried by said control shaft and designed to respectively mesh with said first pair of worm gears, said second pair of worm gears also being threaded oppositely to one another;
whereupon manual actuation of said control shaft to produce a limited rotation thereof will act to turn said pair of shafts in opposite directions and thus bring about a disengagement between the fingers of the sprocket wheels mounted thereon and the undersurface of the lowermost pallet in said stack, thereby achieving the dispensing objective of said device.

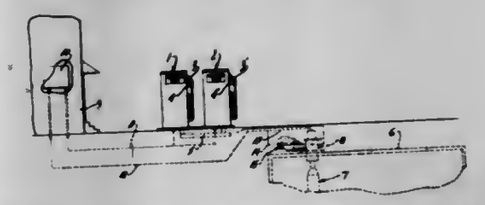
3,273,752
PHOTO-ELECTRIC CONTROLLED DISPENSER
Geza E. Horeczky, 661 Via Santa Ynez, Pacific Palisades, Calif.
Filed Feb. 11, 1965, Ser. No. 431,884
8 Claims. (Cl. 222—52)

4. A container having an orifice with a central axis, and means for opening and closing said orifice comprising a pellet of magnetizable material having greater lateral dimensions than the orifice and freely movable both laterally and axially relative to the orifice, whereby the pellet may close the orifice by resting in the same in the absence of a magnetic field sufficient to move the pellet away from the orifice, and may be moved away from the



orifice to open the same when in the presence of a sufficient magnetic field to cause said movement.

3,273,753
PUMPING SYSTEM AND LEAK DETECTION UNIT CONTROL THEREFOR
Irving A. Johnson and Stephen Stasenko, Erie, Pa., assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Mar. 25, 1965, Ser. No. 442,593
18 Claims. (Cl. 222—52)

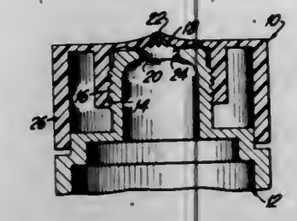


1. In a pumping system having a pressurized discharge line and an electrical control circuit for actuating a pumping means to discharge fluid through the line, a volume sensitive leak detector comprising,
a chamber connected to the pressurized line and having a member movably mounted to respond to the volume of fluid therein and having means urging said member against the force of the line pressure, and
a control means having a circuit enabling means adapted to be connected in the control circuit and operably associated with said member to dispose the enabling means in the enabling position with a selected amount of fluid within the chamber and to dispose the enabling means to a disabling position in response to selected volumetric reduction as a result of fluid discharged from said chamber whereby said control means is insensitive to pressure changes and sensitive to volumetric changes to control the pumping means.

3,273,754
ONE-PIECE CLOSURE FOR COLLAPSIBLE CONTAINERS
Donald C. Lindley, Greenlawn, N.Y., assignor to Leonard H. King, Valley Stream, N.Y.
Filed Dec. 28, 1964, Ser. No. 421,185
11 Claims. (Cl. 222—92)

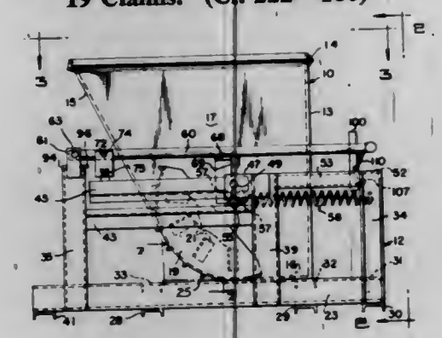
1. A resilient one-piece closure member for a collapsible tube having a dispensing orifice and external threads thereabout, said closure member comprising a cap member having internal threads adapted to mate with the external tube threads, said cap member comprising a top surface and an inwardly facing concave central portion pro-

vided with at least one slot extending partially through said top surface, an annular area surrounding said concave central portion, said annular area being adapted to



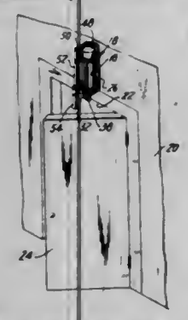
be upwardly displaced by the peripheral portion of the tube dispensing orifice when said closure member is rotated and axially displaced with respect to the collapsible tube.

3,273,755
SELF-DUMPING BUCKET WITH BRAKE
Robert D. Shomo, Taylor, Mich., assignor of thirty-three and one-third percent to Ernest S. Shomo, Taylor, Mich., and thirty-three and one-third percent to Claude R. Boyd, Dearborn, Mich.
Filed Apr. 1, 1964, Ser. No. 356,547
19 Claims. (Cl. 222—166)



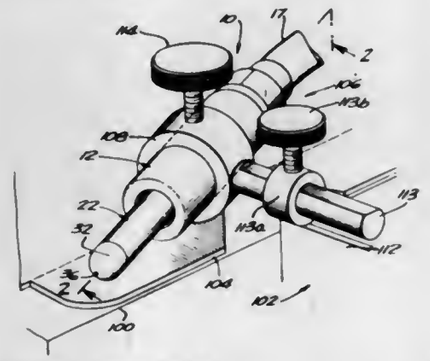
17. A dumping hopper device including:
a frame;
hopper means mounted on said frame for rotation relative thereto;
braking means for closely controlling the rotation of said hopper; and,
means including shaft means mounted on said hopper means;
means mounting said shaft means for rotation and translation relative to said frame; and, means mounted on said frame for controlling the translation of said shaft means relative to said frame.

3,273,756
DEVICE FOR THE AUTOMATIC TREATMENT OF THE AIR IN AN ENCLOSED SPACE HAVING A DOOR
Larry W. Levy, 2930 Rockaway Ave., Oceanside, N.Y., and Harry M. Durst, 552 Brookside Ave., Freeport, N.Y.
Filed Feb. 9, 1965, Ser. No. 431,281
10 Claims. (Cl. 222—180)



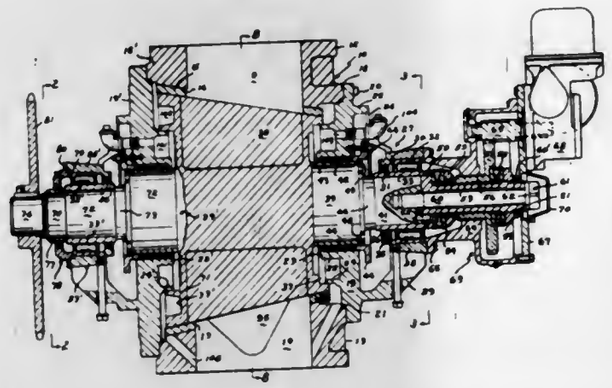
1. A device of the character described comprising, in combination, a pressurized spray dispenser including a container and a member projecting therefrom and movable to open and shut the outlet valve thereof, said member resiliently biased to normally maintain said member in valve-closing position, with a structure for supporting said spray dispenser for actuation by a moving door, said structure including means securable on a structural surface adjacent a door opening for securing and holding said spray dispenser and a member actuating bar pivotally supportable by one end in position to overlie and engage against said movable member, said actuating bar adapted to have its other end extending substantially to a level with the edge of said door opening when said holding structure is secured on said structural surface, said bar having a stiffly resilient strip secured thereto at its other end and projecting therefrom to overlap said door opening when said holding means is secured in said position and to be engaged by said door in its movement in one direction for initially pressing said bar against said member to move said member into valve opening position and to be offset by further movement of said door to permit the movement of the door past it.

3,273,757
FLUID DISPENSER WITH SUPPORT THEREFOR
Lenard E. Moen, 422 Ocean View Ave., Whittier, Calif.
Filed Oct. 30, 1964, Ser. No. 407,834
11 Claims. (Cl. 222—185)



1. A dispenser comprising:
a rigid-walled body having an internal chamber for containing a liquid to be dispensed and an opening in one end,
a rigid-walled actuator barrel having one end extending into said body through said opening and pivotally mounted on said body for lateral deflection of said barrel relative to the body,
means sealing said one end of said barrel to said body,
said barrel having a central passage communicating at one end to said chamber and opening at its other end to the exterior of the barrel through a dispensing port in the tip of the barrel,
a valve seat within said barrel tip about said passage and in close proximity to said port,
a valve including a stem extending from said chamber through said barrel to said barrel tip, whereby said stem has an inner end located in said chamber and an outer end located within said barrel tip, and an obturator on the outer end of said stem within said barrel tip engageable with said valve seat to close said passage,
means pivotally mounting the inner end of said valve stem on said body whereby said valve is adapted to deflect laterally with said barrel, and
means coacting between said body, said barrel, and said valve for yieldably retaining said barrel and valve in a normal angular position relative to said body and said obturator in seating contact with said valve seat when said barrel and valve occupy said normal position and effecting relative axial movement of said barrel and valve to unseat said obturator from said seat in response to lateral deflection of said barrel and valve from said normal position,
valve operating means within said passage and operatively connected between said barrel and obturator for affecting engagement of said obturator with said seat to close said passage when said barrel occupies a given normal position relative to said body and effecting relative separation of said valve seat and obturator to open said passage in response to lateral deflection of said barrel from said normal position.

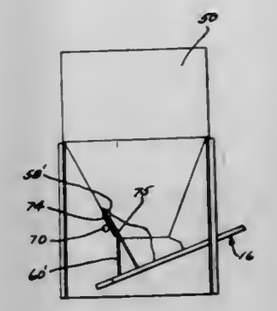
3,273,758
ROTARY VALVE
James R. Starrett, Springfield, Ohio, assignor to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio
Filed Feb. 28, 1964, Ser. No. 348,157
15 Claims. (Cl. 222—194)



1. A material handling valve comprising a shell forming a tapered passage opening from either end of said shell, a mating tapered rotor housed in such shell, shaft means projecting relative either end of said rotor, means anchored to one end of said shell forming a seal about the projected end of said shaft means adjacent the rotor portion of minimal cross-sectional dimension, means forming an axial extension of the end of said shaft which projects relative said seal, means indexing said extension to said shaft accommodating their relative axial displacement but preventing their relative rotation, a single accessible element engaging to said shaft and holding said axial extension from axial displacement relative to said shaft, means rotatably mounting about said axial extension and contained against endwise movement relative thereto, and relatively fixed nut-like means in connection with said sealing means threadedly related to the means about said axial extension whereby on rotation of said latter means there is produced thereby an axial movement of said axial extension and said shaft due to the containment of said extension to said shaft by said single element and means forming a seal about the opposite extremity of said shaft means forming a closure element for asid shell which on release thereof and release of the single element said shaft means forming a closure element for said shell without disturbing the first mentioned sealing means or said axial extension.

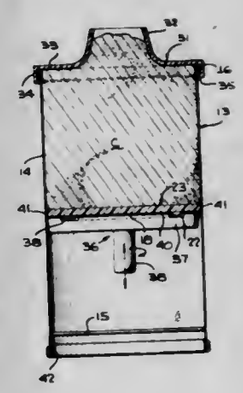
3,273,759
BIN AND CHAIN FEED SYSTEM
Preston D. Rigterink, Holland, Mich., and Richard A. Haggard, Nacogdoches, Tex., assignors to Big Dutchman, Inc., a corporation of Michigan
Filed Apr. 29, 1964, Ser. No. 363,535
4 Claims. (Cl. 222—202)

1. A feed hopper mechanism for an animal feed system, comprising: a walled vessel forming a hopper having a bottom discharge outlet; a boot structure on the bottom of said hopper, having convergent walls extending downwardly from said hopper outlet to direct feed therefrom into a conveyor means positioned immediately beneath the said boot; an elongate flexible panel having a free length extending downwardly into said boot and terminating near the lower end thereof and directly above said conveyor means; vibrator means on the exterior of



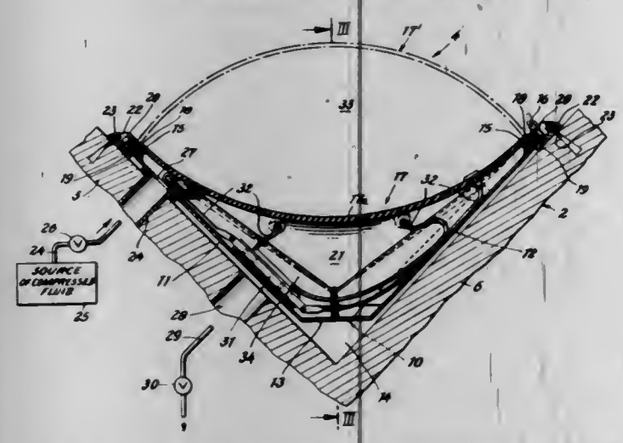
said hopper mechanism and arranged to impart vibrations to said panel; said panel when vibrated flexing increasingly along its free length such that the bottom end thereof moves in a sweeping motion between the converging walls of the boot directly above said conveyor means and in the direction of motion thereof to cause particulate matter within the boot to be imparted simultaneously with a vertical and lateral motion serving to break up bridging of the particulate matter.

3,273,760
CONTAINER WITH EXPELLING MEANS FOR USE IN MANNED SPACE SHIPS
Henry E. Frankenberg, Berwyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 6, 1962, Ser. No. 235,668
12 Claims. (Cl. 222—386)



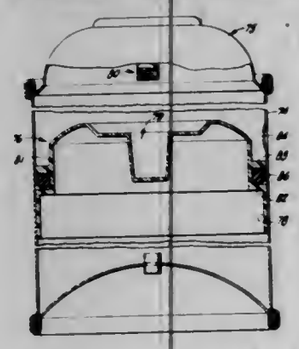
1. A container comprising an imperforate cylindrical metallic body having an upper end and a lower end, a metallic closure at each of said ends, interlocking means securing said closures to the body, at least said closure at said upper end being openable, an expelling plate located internally of said body, said expelling plate being movable toward said upper openable closure whereby the contents of said container may be expelled through the upper end of the body originally closed by said openable closure, an imperforate overcap removably secured to one of said ends in overlying relationship with one of said closures, and said lower closure being provided with a score line to facilitate severance of a portion of the closure from the container body.

3,273,761
AGITATOR FOR GRANULAR MATERIALS AND THE LIKE
Peter Langen, Walberberg, Germany, assignor to Franz Clouth Rheinische Gummiwarenfabrik Aktiengesellschaft, Cologne-Nippes, Germany
Filed Oct. 13, 1964, Ser. No. 403,527
Claims priority, application Germany, Dec. 2, 1963, C 31,559
13 Claims. (Cl. 222—386.5)



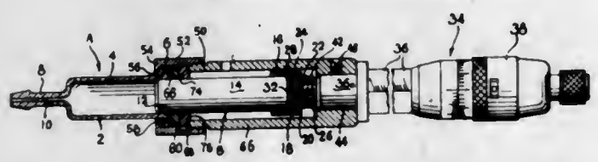
1. For use in a container for comminuted material having at least one pair of mutually inclined side walls bounding a container corner zone in which the material tends to agglomerate, an agitator for said corner zone comprising a rigid carrier having two mutually inclined sections bounding a section corner zone, a flexible diaphragm having edge portions sealingly secured to the corresponding sections and extending across said section corner zone to define with the carrier a fluid-receiving chamber, and means for admitting a fluid into said chamber to flex the diaphragm; and means for securing said sections to the inner faces of said mutually inclined side walls of a container, so as to overlie said container corner zone, whereby said agitator breaks up eventual agglomeration of material in said section corner zone when said diaphragm is flexed in response to admission of fluid into said chamber.

3,273,762
PRESSURE CAN CONSTRUCTION INCLUDING FREE PISTON
Paul J. O'Neill, Jr., San Rafael, Calif., assignor to Union Machine Company, San Francisco, Calif., a corporation of California
Filed June 28, 1965, Ser. No. 467,651
3 Claims. (Cl. 222—389)



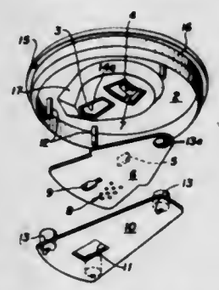
1. In combination with the container body of a pressurized dispenser having cylindrical sidewalls, a free piston comprising:
a generally cylindrical skirt slidably received on said side walls,
an annular ring integral with said skirt and extending radially inwardly from one end thereof to define an axially directed shoulder,
a piston head including a cylindrical portion of less diameter than said skirt and integrally secured to said ring,
an O-ring seal positioned on said shoulder in sealing engagement with said side walls,
the annular space between said portion and said side walls being substantially unobstructed from said shoulder along the entire axial extent of said head to permit said O-ring to be inserted axially through said space and onto said shoulder.

3,273,763
MICROMETER BURET
Roger Gilmont, Douglaston, N.Y., assignor to Roger Gilmont Instruments, Inc., Great Neck, N.Y., a corporation of New York
Filed Jan. 22, 1965, Ser. No. 427,326
19 Claims. (Cl. 222—390)



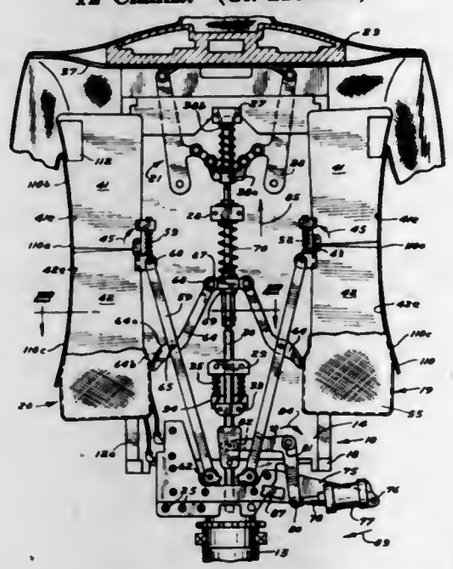
1. A buret comprising a reservoir body having an inner chamber with an aperture therethrough communicating with said chamber, a plunger slidable in said chamber operatively toward and away from said aperture, a positioning element operatively connected to said plunger for moving the latter, and mounting means for connecting said positioning element and said reservoir body; the improvement which comprises a gasket of chemically resistant material sealingly received over said plunger so that the latter is slidable therethrough, said gasket having a first surface directed toward said reservoir body, a first O-ring of rubber-like material sealingly engaged between said first gasket surface and said reservoir body, a second O-ring of rubber-like material sealingly received over said plunger on the other side of said gasket from said reservoir so that said plunger is slidable therethrough, and means for retaining said second O-ring in position.

3,273,764
POWDERED OR GRANULAR MATERIAL DISPENSING DEVICE
Albert J. Kurtz, 62 Belvedere St., San Rafael, Calif.
Filed Nov. 16, 1964, Ser. No. 411,237
4 Claims. (Cl. 222—480)



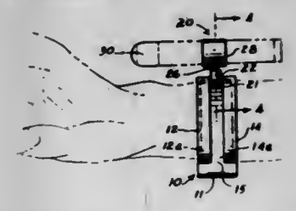
1. A device for dispensing powdered or granular material and the like from a container comprising:
a first flat stationary upper member secured to an outer surface of said container and communicating with the interior thereof;
said first member having an aperture therethrough, said aperture being completely surrounded by a peripheral raised wall positioned on the interior surface of said member;
a second flat stationary lower member fixedly positioned against the interior surface of said first member and in parallel spaced relation thereto;
said second member having an aperture therethrough, said aperture being in alignment with the aperture in said first member, said aperture in said second member being surrounded by a peripheral raised wall positioned on that surface of said second member facing said first member;
a movable member pivotally mounted between said first and said second stationary members in spaced relationship thereto and in sliding relationship with said raised walls in said first and second stationary members;
said movable member having an aperture therethrough positioned so as to come into alignment with said apertures in said first and second stationary members when said movable member is in a first or pouring position;
said movable member having a plurality of holes therethrough positioned so as to come into alignment with said apertures in said first and second stationary members when said movable member is in a second or sprinkling position;
said movable member having a solid section positioned so as to close off said apertures in said first and second stationary members when said movable member is in a third or closed position;
means for moving said movable member alternately between said first and second positions and said third position;
whereby said material in said container may be alternately poured, sprinkled or shut off from said container while said material is prevented from moving into the said space between said stationary and said movable members.

3,273,765
SHIRT BUCK APPARATUS
Calvin E. Piilola, Minneapolis, Minn., assignor to The Unipress Company, Incorporated, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 22, 1965, Ser. No. 441,680
12 Claims. (Cl. 223—57)



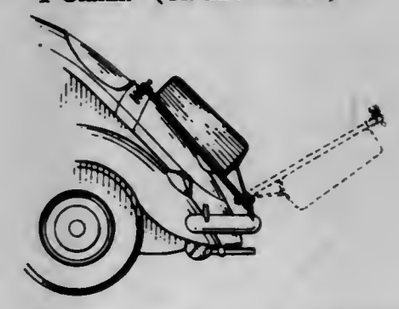
1. In a shirt buck assembly including a shirt buck frame elongated in a vertical direction and having a vertical axis, an elongated wing support arm on each side of said axis, each arm having an upper end portion and a lower end portion, means for pivotally connecting said lower end portions to the frame, and means movably mounted on the frame and pivotally connected to the support arms for selectively moving said upper end portions horizontally away from one another and toward one another, the improvement being a wing assembly for each support arm conprising an upper wing plate having a generally straight lower edge and a lower transverse inner corner portion, a lower wing plate having a generally straight upper edge and an upper transverse inner corner portion, means for pivotally connecting said corner portions together to permit movement of the upper plate relative the lower plate about a horizontal axis, said upper and lower edges lying in substantially the same plane, means attached to one of said plates for pivotally mounting the last mentioned plate on the upper end portion of the adjacent support arm and means connected to at least one of said plates for resiliently urging the one of said plates relative the other plate to a position that said upper edge abuts against said lower edge.

3,273,766
WRIST ARTICLE RETAINING DEVICE
Frank P. Cosentino, 2106 35th St., Astoria 5, N.Y.
Filed Nov. 2, 1964, Ser. No. 408,043
4 Claims. (Cl. 224—28)



2. An article retaining device for the wrist of a wearer, including:
(a) a semi-rigid and flexible band adapted to fit about the wrist of a wearer,
(b) and a pair of spaced and parallel guide bars affixed to said band, said guide bars being undercut,
(c) and a plurality of article retaining clamps adjustably positioned about said band, and fitting at least partially within said undercut portion of said guide bars and extending above,
(d) and a threaded member at least partially threaded within each of said clamps and extending therefrom to bear against said band thereby locking said clamps in position between said band and said undercut portions of said guide bars,
(e) each of said clamps having a spring-like portion to retain an article, said spring-like portion being affixed to the side of said threaded member away from said band, whereby rotation of said spring-like member will rotate said threaded member thereby locking or releasing said clamp.

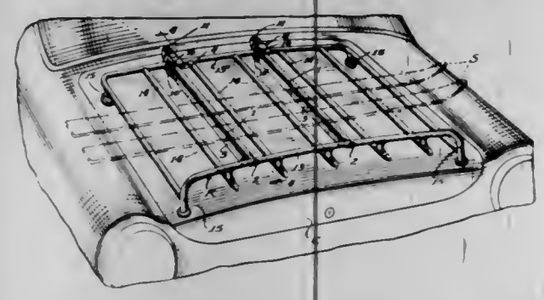
3,273,767
LUGGAGE RACK
Robert L. Moore, Orange County, Fla. (7100 Autumvale Drive, Orlando, Fla.)
Filed Feb. 24, 1965, Ser. No. 434,952
1 Claim. (Cl. 224—42.01)



A detachable luggage rack for a Volkswagen vehicle comprising; an inverted U-shaped tubular element having divergent legs having no interconnection other than the bight of the U-shaped element, support means on each leg extending at right angles thereto to mount luggage thereon, clamping means at the end of each leg to clamp the

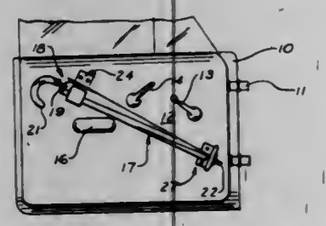
legs to the tubular section of the Volkswagen bumper, attachment means at the bight of the U-shaped member to secure it to an air-intake grill of the Volkswagen, said clamping means upon partial unclamping also serving as a pivotal connection of the rack about the tubular section of the bumper to permit opening of the underlying vehicle door and access to the interior, said bight portion also serving as a handle means for hand carrying the rack upon removing said rack from the vehicle.

3,273,768
SKI CLAMP FOR AUTOMOBILE LUGGAGE RACKS
Frederick L. Duer, 2810 Madison St., Bellwood, Ill.
Filed Oct. 19, 1965, Ser No. 497,876
5 Claims. (Cl. 224—42.1)



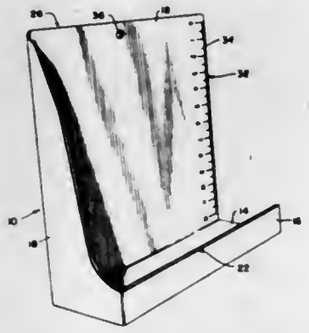
1. In combination with a luggage rack having relatively spaced side rails:
(a) an elongated body the length of which approximates the distance between said side rails;
(b) one end of the body being detachably and pivotally engageable with one of the side rails for transverse spanning of the rack;
(c) a locking bracket pivotally mounted on the opposite end of the body; and,
(d) a catch member endwise pivotally connected to said bracket inwardly of its pivotal mounting on the opposite body end and extending outwardly therefrom.

3,273,769
UMBRELLA HOLDER FOR AUTOMOBILES
Marilyn J. Miller, 1440 W. 56th Ave., Gary, Ind.
Filed Oct. 6, 1965, Ser. No. 493,364
2 Claims. (Cl. 224—42.45)



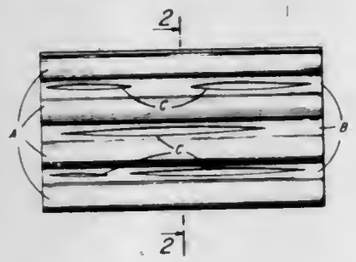
1. Apparatus for attachment to an automobile door hinged at the leading edge for receiving and retaining an umbrella having a handle end and an elongated generally cylindrical tip opposite the handle end comprising a handle receiver of generally J-shaped configuration for receiving and supporting the handle portion of the umbrella, said handle receiver including at least one fastener receiving opening for attachment of the handle receiver to said car door and a tip receiver having a frame portion defining a fastener receiving opening for attachment of the tip receiver to said car door in a position spaced from the handle receiver and adjacent the leading edge of said door, said tip receiver having a retainer portion carried by the frame portion, said retainer portion being a disc of resilient material defining a central opening of a diameter slightly less than the diameter of the cylindrical tip on the umbrella and a plurality of radially extended slots through said disc projecting from the central opening outwardly a distance less than the radius of said disc, thereby defining resilient fingers between the slots for resilient frictional engagement with said umbrella tip.

3,273,770
SCHOOL BOOKS CARRIER
Leon A. Miller, Chicago, Ill., assignor to Henest Corporation, Chicago, Ill., a corporation of Illinois
Filed July 7, 1965, Ser. No. 469,994
10 Claims. (Cl. 224—46)



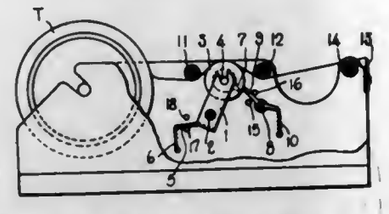
1. A carrier for school books and the like comprising a unitary member of sheet-like material having a generally rectangular-shaped backer wall, a rectangular shaped bottom wall along the width thereof and an upstanding front wall of limited height spaced forwardly of the backer wall, and a side wall on one side of the member formed with the side edges of said front and bottom walls and extending along the side of the backer wall to short of its upper edge, the side wall being of a width less than the spacing of the front wall from the backer wall and having an inclined planar edge portion lying in a plane including the upper edges of said front and backer wall, the member thereby being adapted to be inverted and rested by said upper edges of the front and backer walls and planar edge portion on a horizontal surface so as to stably support the backer wall in an inclined plane and function as a book rest and writing surface.

3,273,771
FILAMENTARY MATERIAL
Albert G. Beaumont, Kenilworth, England, assignor to Courtaulds Limited, London, England, a British company
Filed May 10, 1963, Ser. No. 279,508
Claims priority, application Great Britain, May 14, 1962, 18,380
2 Claims. (Cl. 225—3)



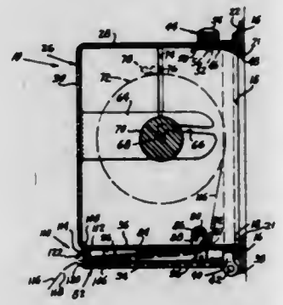
1. A method of making filamentary material comprising combing an array of collateral filaments each of less than 80 denier with webs connecting adjacent filaments, the thickness of said webs being substantially less than the diameter of said filaments, which comprises moving the array longitudinally into contact with an endless assembly of points moving in the same direction as and more quickly than the array, whereby the points pierce and slit lengths of the webs.

3,273,772
DEVICE FOR SEVERING FIXED LENGTH OF TAPE
Jitsuji Nakajima, Ibaraki, Hiromi Hayashi, Kyoto-ku, and Kenji Onishi, Ibaraki, Japan, assignors to Nitto Electric Industrial Co., Ltd., Ibaraki, Japan
Filed July 14, 1964, Ser. No. 382,509
Claims priority, application Japan, July 17, 1963, 38/38,770
2 Claims. (Cl. 225—12)



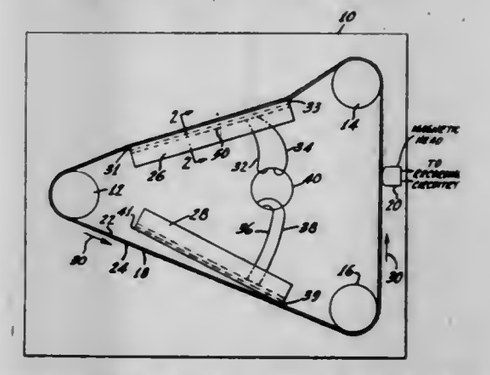
1. A device for drawing a fixed length of an adhesive tape from a supply roll and severing it, said device being adapted to receive and rotatably support a roll of adhesive tape, said device comprising a cutter blade, a freely rotatable roller positioned substantially midway between the tape roll position and the cutter blade and adapted to have the tape run over it, a lever pivoted on said device having said roller mounted on a free end thereof and movable through a fixed angle when a pulling force is exerted on the tape, lever stop means engaged by the lever for limiting the angular movement of said lever to a fixed amount between a first and a second position, a pawl operatively associated with said roller and projecting therefrom, pawl stop means engageable by said pawl when said lever is in said second position to stop the rotation of said roller, a further rotatable means mounted between the cutter blade and said lever and engageable by the end of the tape remaining when the drawn off length is severed and spring means coupled to said lever urging said lever toward said first position so that said pawl can disengage from said pawl stop means when the tension on the tape is released, the said further roller rotating backward to allow movement of said roller and said lever under the action of said spring.

3,273,773
DISPENSER FOR ROLL PAPER
Harold R. Eder, 1234 Seminole St., Clearwater, Fla.
Filed May 26, 1965, Ser. No. 458,863
9 Claims. (Cl. 225—17)



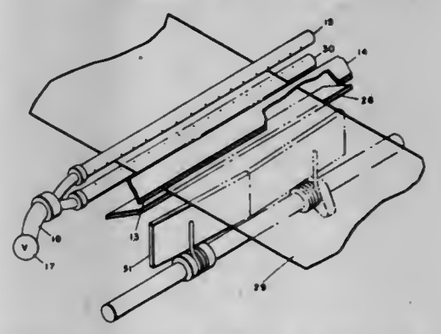
1. A dispenser for a roll of paper comprising
frame means for attachment to a wall providing an upper edge and a lower edge;
a rectangularly shaped casing having an upper wall, a forward wall, a bottom wall, and two lateral walls, carrying means for rotatably mounting a roll of paper within said casing, said bottom wall of said casing being formed with a transverse slot;
means pivotally mounting said bottom wall of said casing on said lower edge of said frame means;
means releasably connecting said upper wall of said casing and said upper edge of said frame means;
grasping and severing means secured on said bottom wall comprising
plate means mounted on and underlying said bottom wall,
means biasing said plate means downwardly,
rigid frame means positioned adjacent and underlying said plate means and cooperating with said plate means for providing an area of discharge for said paper,
actuator means movably mounted on said bottom wall adjacent said area of discharge above said plate means for engaging said plate means for selectively precluding upward movement of said plate means.

3,273,774
ELECTROSTATIC WEB FEEDING APPARATUS
Richard C. Hansen, Collingswood, N.J., and Martin L. Levene, Elkins Park, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed Sept. 27, 1962, Ser. No. 226,554
16 Claims. (Cl. 226—50)



1. Apparatus for feeding a tape along a path comprising at least one pair of drive units having surfaces extending longitudinally along said path and having a heel and a toe at opposite ends thereof, said pair of drive units being spaced from each other along said path with said heel and toe ends of different ones of said pair of units disposed successively along said path, said heel end of each of said pair of units being closer to said path than said toe end thereof, and means for electrically energizing said pair of drive units for alternately attracting said tape thereto.

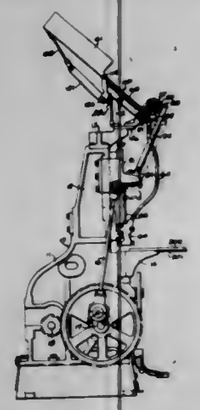
3,273,775
APPARATUS FOR FEEDING THIN FILM TO CUTTING KNIVES
Larry D. Cook, Dallas, Tex., assignor to Hercules Incorporated, a corporation of Delaware
Filed Dec. 2, 1964, Ser. No. 415,311
1 Claim. (Cl. 226—97)



Apparatus for feeding a film through a set of cutting knives which comprises an upper perforated air pipe having a deflector plate associated therewith, a lower perforated air pipe having a deflector plate associated therewith, said upper and lower deflector plate being mounted

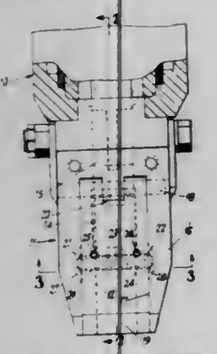
at an angle relative to each other, with a small gap therebetween and said perforated air pipes being mounted with perforations positioned to project air onto the deflector plates, whereby a venturi effect is created between the plates, means for supplying air to said perforated pipes, and means for interrupting the flow of air from the perforated pipes at predetermined intervals.

3,273,776
NAILING MACHINE
Boyd Bryson, Wayne, N.J., assignor to William S. Doig, Inc., Haverstraw, N.Y.
Filed Mar. 31, 1965, Ser. No. 444,291
2 Claims. (Cl. 227—109)



1. In a nailing machine, the combination comprising, feed mechanism having means for controlling the feed of nails, a plurality of selectively adjustable feed governing means capable of cyclically performing successive governing operations differing from each other in accordance with the selective adjustment of each, means for selectively rendering one of said governing means operative with relation to said controlling means by its attachment to said machine in substitution for another of said governing means, and means for actuating the selected feed governing means, said nail feed controlling means comprising a hopper, means for agitating said hopper, a plurality of nail guide tracks extending between said hopper and said feed governing means, said guide tracks each defining a slot for the passage of nails or the like fasteners, said guide tracks comprising two groups of a plurality of guide tracks each, and means for separately adjusting the width of the slots of each of said groups to simultaneously accommodate nails of two different sizes.

3,273,777
EASY CLEAR GUIDE BODY
Albert G. Juilfs, George C. Juilfs, and Carl T. Becht, all of Cincinnati, Ohio, assignors to Senco Products, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 11, 1964, Ser. No. 351,027
6 Claims. (Cl. 227—123)



1. In a fastening device including a drive track, a driver, means for reciprocating said driver in said drive track, and means for successively feeding a plurality of fasteners into position to be driven by said driver; an improved guide body comprising:

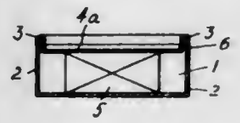
(a) A body portion defining at least one wall of said drive track;

(b) Fastener feed stop means in fixed association with said body portion, said fastener feed stop means comprising a depending abutment centrally located with respect to said drive track;

(c) A nose piece hingedly secured to the fastening device and movable from a closed position defining at least a portion of another wall of said drive track to an open position permitting expulsion of a partially driven fastener through said wall of said drive track; and

(d) Means releaseably holding said nose piece in said closed position.

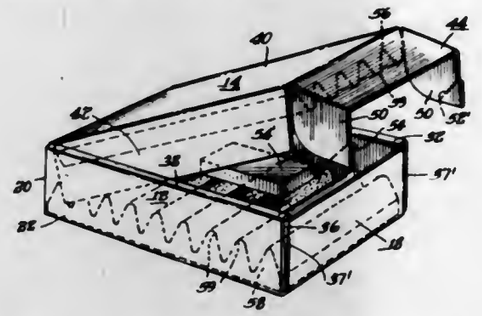
3,273,778
PACKING CARTON
Lauritz Moritz, 18 Chrysanderstrasse, Hamburg-Bergedorf, Germany
Filed Dec. 14, 1964, Ser. No. 418,146
Claims priority, application Germany, Dec. 17, 1963, M 46,872
3 Claims. (Cl. 229—5.5)



1. A container for packaging articles having a bottom wall, side walls, end walls and an open top, said open top having a removable cover to close said open top, each said side wall having a permanently formed crimp constructed from said side wall as an extension thereof at the open end of said container, each said crimp being formed at the time said container is constructed and before the container is filled, each said crimp rising in a first direction upwardly with the side wall, each said crimp then turning in a second direction inwardly of the container, substantially normal to the first direction, each said crimp then turning downwardly in a third direction, substantially normal to said second direction and opposite to said first direction, said removable cover lying in a substantially single plane beneath the bottom edge of the crimp and above the packaged article, said removable cover having at least one upwardly extending flanged portion and at least one downwardly extending bent-off portion separate from said flanged portion, said bent-off portions and said flanged portions interspersed about the periphery of the cover so as to wedge said removable cover above a packaged article, and between said crimps, of said container.

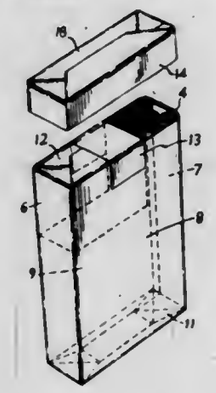
3,273,779
FOLDED BOX
Laurie G. Mykleby, Chicago, Ill., assignor to Republic Packaging Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,218
2 Claims. (Cl. 229—14)

1. In a folded box having two separable box sections, means for locking said box sections together comprising: closely spaced walls on one of said sections defining at least one tab-receiving space therebetween, said one section having an opening on the outside of the box section communicating and in alignment with said tab-receiving space, one of said walls having a flap-receiving recess opening on said tab-receiving space, said other box section having a tab-forming extension extendable into said tab-receiving space, said tab-forming extension having a fold line along which a part of the tab-forming extension can be folded back on either side thereof to form a folded back flap, said flap when folded on either side of the tab-forming extension being opposite said flap-receiving recess when the tab-forming extension is substantially fully inserted into said tab-receiving space, said folded flap when



folded back on one side of said tab-forming extension springing away from the plane of the tab-forming extension into said flap-receiving recess permanently to hold the tab-forming extension in said tab-receiving space, and said flap when folded on the other side of the tab-forming extension being releasably frictionally engageable with the other of said walls.

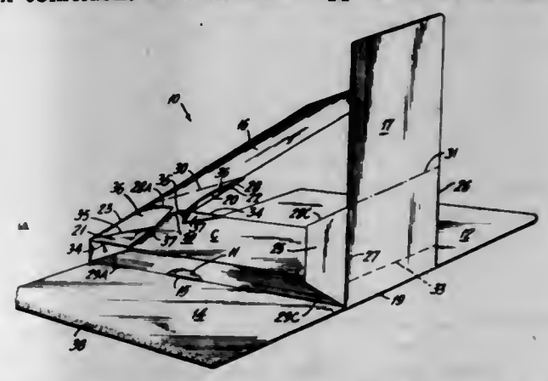
3,273,780
PACKINGS
John Walker Chalmers, Deptford, London, England, assignor to The Molins Organisation Limited, London, England, a British company
Filed Mar. 30, 1964, Ser. No. 355,780
Claims priority, application Great Britain, Apr. 26, 1963, 16,542/63
3 Claims. (Cl. 229—37)



1. A container formed from a strip of sheet material and a rectangle of sheet material, said strip being caused to adhere along one edge of said rectangle with the length of said strip less than the length of said edge, comprising a tubelike body formed from the combined strip and rectangle and having a seam transverse to said edge, a sealed bottom opposite said edge formed by folding the end of the tube and an incomplete top formed by folding said strip.

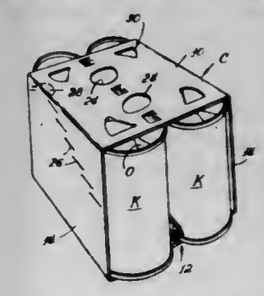
3,273,781
MAILING WRAPPER
James C. Mills, Miami Shores, Fla. (2451 Brickell Ave., Miami, Fla. 33129)
Filed Feb. 25, 1964, Ser. No. 347,230
1 Claim. (Cl. 229—40)

A wrapper for a flat bulk item of rectangular shape and of a given length and width but of varying thickness, said wrapper comprising a flat blank sheet including a rectangular body panel of a length and width substantially equal to that of said bulk item and adapted to receive said bulk item thereon, foldable top, bottom and end panels extending from the respective edges of said body panel, each of said end panels having a pair of oppositely disposed foldable tabs extending from the top and bottom edges thereof respectively, each of said tabs comprising inclined, outwardly convergent end edges, said end panels being adapted to be folded against the ends of said bulk item with the outer end portions thereof folded about transverse fold lines coincident with the top end edges of said bulk item toward each other in overlying relation and over the top surface of said bulk item while said tabs are foldable about reentrant fold lines converging to an apex coincident with the outer opposite ends of the said



transverse fold lines of the end panels to provide a double thickness of said folded tab portions between an overlying portion of said end panels and a top corner surface portion of said bulk item and a single thickness of said folded tab portions adjacent side surface portions of said bulk item, and said top and bottom panels being adapted to be folded to bring the lower portions thereof into contact with the sides of said bulk item and the opposite ends thereof into contact with said folded tabs and to bring the upper portions thereof into overlapping relation over the overlying end portions of said end panels, and means for securing said overlapping top and bottom panels together.

3,273,782
CAN CARRIER
Francis A. Chidsey, Jr., Devon, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed June 10, 1965, Ser. No. 462,944
5 Claims. (Cl. 229—40)



1. In a sleeve-type, wraparound, carrier carton for enclosing a plurality of cylindrical articles having chimed, recessed ends, the combination comprising:

(a) opposed pairs of top and bottom end walls and side walls hingedly attached to form a tubular structure open at the ends;

(b) a plurality of can retaining tabs cut from at least one of said end walls and folded inwardly therefrom into approximately parallel relation with said one end wall for engagement with the recessed ends of adjacent articles to prevent movement of the articles out of the open ends of the tubular structure;

(c) each of said tabs having a periphery defined by a single, first hinge line and a continuous cut line

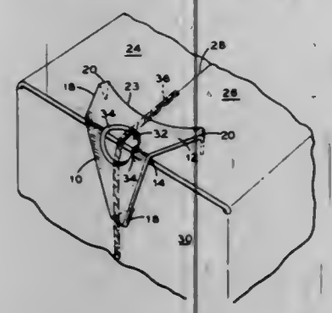
extending from one end of the hinge line around the free edge of the tab to the opposite end of the hinge line;

(d) each of said tabs being connected to said one end wall by a generally triangular connecting panel hinged on one side edge to said tab along the entire length of said first hinge line and hinged on its opposite side edge to said one end wall along a second hinge line diverging from and having a length approximately equal to said first hinge line;

(e) said connecting panel being disposed to extend substantially normal to and between said one wall and said tab to space the latter inwardly from the former and thereby urge the latter into firm engagement with the recessed end of an adjacent cylindrical article;

(f) said connecting panel presenting a free end edge extending vertically between the hinge lines of said connecting panel which free end edge is disposed for engagement with the inside surface of the chime of said article.

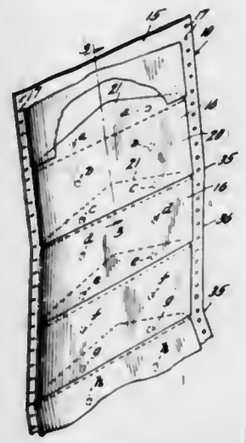
3,273,783
CARTON SEAL
Edgar Boone, 15 Walt Whitman Road, Huntington Station, Long Island, N.Y.
Filed June 11, 1964, Ser. No. 374,435
2 Claims. (Cl. 229—47)



1. A seal for closing a carton having a bisected freed top side, said seal comprising two wings integrally attached at an approximate right angle juncture, the first of said wings terminating in a tip which is bent inwardly with respect to the angle to form a prong, the second of said wings having opposed angularly related ends each of which terminates in a tip which is bent inwardly with respect to the angle to form a prong whereby a carton may be releasably sealed by application of the seal over an edge with a tip of the second wing secured to each half of the freed top side and the first wing secured to a second side of the carton at right angles to the freed side by puncturing said sides with the prongs of the seal, said seal having an aperture at the right angle juncture of said wings the material of said seal being thick enough for the aperture to create vertical shoulders at each side of said aperture thereby to form a channel over which a cord may extend without danger of lateral displacement.

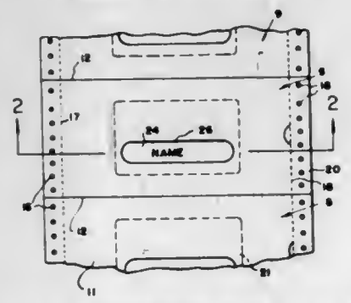
3,273,784
ENVELOPE ASSEMBLIES
Virgil V. Porter, Richmond, Calif., assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed May 8, 1963, Ser. No. 278,834
1 Claim. (Cl. 229—69)

A continuous train of envelopes for passage through a business machine for imprinting prior to sealing the envelopes, each envelope unit comprising solely a completed envelope having front and back panels connected along three adjoining side edges, and a sealing flap hingedly connected along the fourth edge of said front panel and adapted to lie during travel of the web substantially in the plane of said front panel, but in use to be folded along the hinge line to overlap an upper portion of the back panel to be secured thereto; a flexible carrier web to which successive envelope units are temporarily secured, and means for securing each envelope unit to said web with a portion of the back panel and the inward side of the flap alongside and in contact with a face of said web and the remainder of the back panel overlying the flap of the succeeding envelope; said securing means com-



prising a series of dots of adhesive occurring at intervals along said face of the web and alternately uniting points on the said inward side of the flaps of the envelope and points on the back panel wherein the dots on the flaps are near the hinge and the back panel extends toward and substantially adjacent to the hinge lines sufficiently to underlie the points of impingement of the dots of adhesive on the inner face of the flaps to prevent contact of these dots with the contents of the envelope.

3,273,785
SELF-MAILER
Irving C. Beckman and Alex Morrell Beerbohm, Huntington Woods, Mich. (Both of 30105 Stephenson Highway, Madison Heights, Mich.)
Filed Mar. 25, 1965, Ser. No. 442,663
2 Claims. (Cl. 229—69)



1. A continuous burstable printing form for permitting high speed computerized printing of small or wallet size stiff plastic card components thereof, such as are conventionally used as identification and credit cards; with the form being burstable into individual card containing self mailers;

said form comprising long continuous registered upper and lower webs of paper or light card stock;

the webs having horizontal tear lines uniformly spaced along the form and extending from one vertical continuous edge to the other to enable the form to be burst on such tear lines into rectangular individual two ply card mailers;

there being horizontally arranged adhesive spots in each individual mailer between but also adjacent the horizontal tear lines and spaced inwardly from the horizontal edges of said mailer for removably sealing together the plies thereof adjacent the tear lines;

the remaining or vertical edges of the mailer, transverse to the tear lines, also being sealed, whereby the mailer is sealed completely on all its edges while still part of the form;

each mailer, while still a part of the form, containing as a component, between its sealed together plies and adhesively but removably secured therein, one small or wallet size stiff heavy stock rectangular printable plastic card such as is conventionally used as an identification or credit card; the length and width of each mailer being considerably greater than the length and width of the card thereof, with the card being so positioned that all four edges of the card are well spaced from all four edges of the mailer;

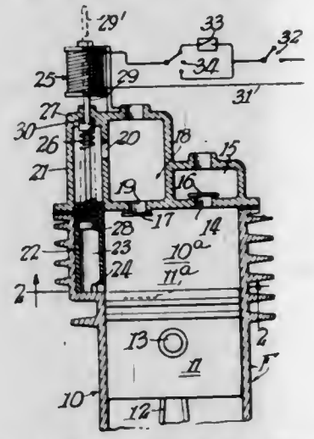
and with all cards being uniformly spaced and in alinement in the form for printing continuously;

the upper web having uniformly spaced alined window openings, one at each card to enable the exposed parts of the cards to be printed through the openings;

with each opening being smaller than the card beneath it so that edges of the card are covered and protected by the upper web;

the adhesive spots being between the horizontal edges of the card and the horizontal edges of the mailer; the mailer also having at each vertical edge a vertical line of uniformly and closely spaced holes.

3,273,786
FLOW REGULATOR FOR PISTON-EQUIPPED CYLINDER
Alwin B. Newton, 136 Shelbourne Drive, York, Pa.
Filed Feb. 1, 1963, Ser. No. 255,491
4 Claims. (Cl. 230—23)

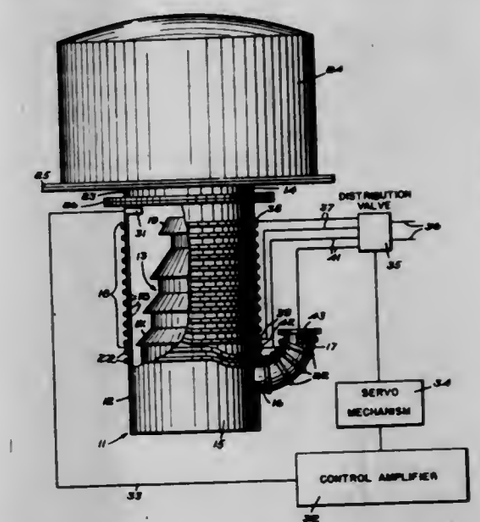


2. In a device of the character described, a pair of adjacent cylinders each containing a piston for reciprocation therein, a crankshaft for driving said pistons in out-of-phase relationship, an opening in the common wall between said pair of cylinders, a movable element mounted within said opening and having its opposite sides shaped to fit closely to said pistons when adjacent thereto, means for positioning said element within said opening to vary the effective size of said opening, and means in said element for flowing fluid therethrough into said cylinders.

3,273,787
HIGH VACUUM SYSTEM METHOD AND APPARATUS
Hans Georg Nöller, Walberberg, and Werner G. Bächler, Cologne, Germany, assignors to Leybold Holding Aktiengesellschaft
Filed May 7, 1964, Ser. No. 365,752
Claims priority, application Germany, May 31, 1963, L 45,001
16 Claims. (Cl. 230—101)

1. A high vacuum apparatus comprising in combination:

(a) a diffusion vacuum pump comprising a pump housing, a boiler section in said pump housing and adapted to heat a pumping fluid, an inlet and an exhaust port in said pump housing, a plurality of vertically stacked pumping jet assemblies positioned in said pump housing above said boiler section, said jet assemblies adapted to accept a vapor stream evaporating from said boiler section and to direct it in a downward direction, an inner wall in said pump housing adapted to intercept the directed vapor stream from said jet assemblies, an auxiliary cooling means in heat exchanging relationship with said pump housing and adapted to cool that portion of said inner wall which intercepts the vapor stream directed from the lowest one of said jet assemblies,

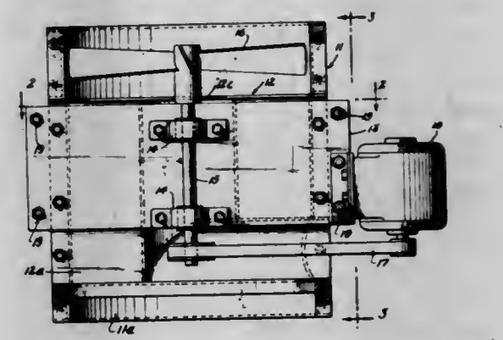


a primary cooling means in heat exchanging relationship with said pump housing and adapted to cool that portion of said inner wall which intercepts the vapor stream directed by at least one upper one of said jet assemblies, and means for independently controlling said primary and auxiliary cooling means;

(b) a vacuum chamber having a volume whose magnitude is at least eight times the magnitude of the cross sectional area of said inlet port of said pump housing where the cubic units of the vacuum chamber volume are the same as the square units of the inlet port cross sectional area; and

(c) connection means connecting said inlet port of said pump housing with said vacuum chamber so as to provide for gas communication therebetween.

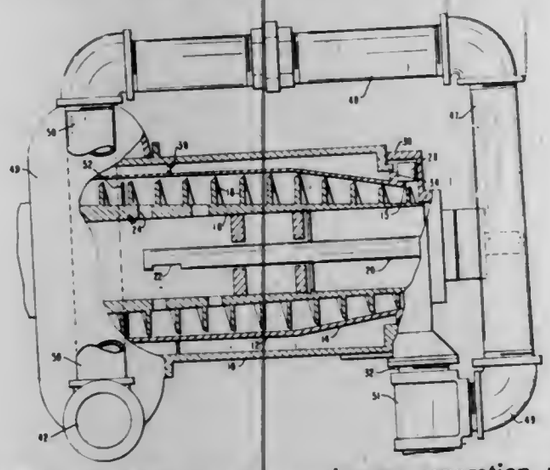
3,273,788
FAN ASSEMBLIES
Charles Waddell Coward, Jr., Mount Laurel Township, N.J. (R.D. 1, Box 64, Moorestown, N.J.)
Filed Jan. 11, 1965, Ser. No. 424,484
25 Claims. (Cl. 230—117)



1. In a fan assembly consisting of a cylindrical housing to confine and direct the air and having installed within said cylindrical housing a fan wheel attached to a shaft

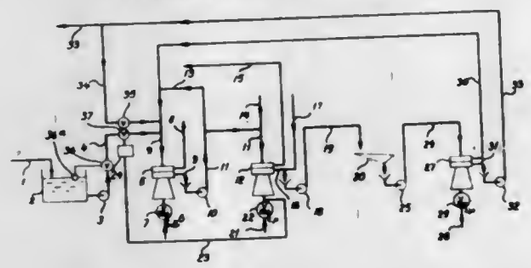
and said shaft being attached to a drive system, said fan wheel, shaft and drive system combination being supported by a plate extending from within said cylindrical housing to the exterior wall of said housing, said cylindrical housing being removably attached to said support plate at the point where said cylindrical housing and said support plate intersect and said support plate extending beyond said exterior wall of said cylindrical housing for a finite distance, said support plate thereby supporting the combination of the fan wheel, shaft, and drive system, independently of the support of the cylindrical housing, said support plate also maintaining a fixed relationship between the combination of fan parts.

3,273,789
SOLID BOWL CENTRIFUGE WITH AIR CIRCULATION CONTROL
Richard A. Koffinke, Walpole, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts
Filed May 22, 1963, Ser. No. 282,354
11 Claims. (Cl. 233—7)



1. In a centrifuge for the continuous separation of solids and liquids from slurry, comprising
an outer housing including a central casing portion, a solids collection chamber and solids discharge outlet portion at one end of the casing, and a liquid collection chamber and liquid discharge outlet portion at the other end of the casing,
a solid-walled bowl mounted for rotation about a central axis in said housing and adapted continuously to receive slurry to be separated, the slurry upon rotation of said bowl forming an annular pool therein,
a conveyor member mounted within said bowl for concentric rotation therewith at a speed different from the bowl to work solids from the pool of slurry toward a first end of the bowl for discharge therefrom into said solids collection chamber of said housing,
solids discharge means at that end of the bowl over which solids are conveyed from said bowl to said solids collection chamber and outlet, and
liquid outlet means at the other end of the bowl, located within the liquid collection chamber of said housing and over which liquid flows from the annular pool in said bowl to said liquid collection chamber and outlet,
said liquid outlet means being disposed at a larger radius of said bowl than said solids discharge means;
that improvement comprising
a gas recirculation pipe,
said pipe being connected at one end and opening into said liquid outlet outside of the confines of said bowl and near said liquid collection chamber in an area of said outlet substantially liquid-free and open to the pressure of gas in said liquid collection chamber,
said pipe being connected at its other end and opening into a portion of said housing remote from said liquid collection chamber and outside of the confines of said bowl in an area open to gas pressure in said housing relatively lower than the gas pressure in said liquid collection chamber,
whereby gas flow in the direction from said liquid collection chamber toward the area of relatively lower pressure in said housing occurs substantially wholly in said recirculation pipe.

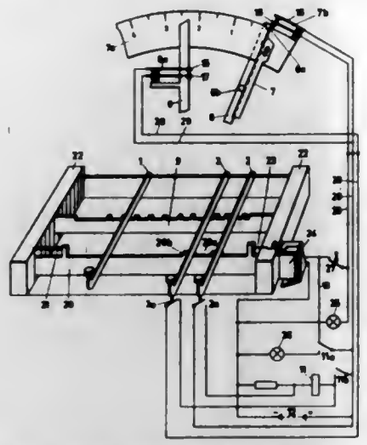
3,273,790
METHOD AND APPARATUS FOR CENTRIFUGAL SEPARATION OF SUSPENSIONS
Bengt Ingmar Dahlberg, Tullinge, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden
Filed June 4, 1964, Ser. No. 372,519
Claims priority, application Sweden, June 12, 1963, 6,456/63
4 Claims. (Cl. 233—18)



1. In the centrifugal separation of a suspension of solids in a liquid, the method comprising the steps of feeding the suspension to a separating zone of a first locus of centrifugal force and there separating the suspension into liquid and sludge, discharging the separated liquid from said locus while separately discharging a relatively low concentration of said sludge through nozzles from a sludge chamber of the locus surrounding said zone, feeding discharged sludge from said first locus to a separating zone of a second locus of centrifugal force and there separating it into liquid and sludge, discharging said second-separated liquid from the second locus while separately discharging a relatively high concentration of said second-separated sludge through nozzles from a sludge chamber of the second locus surrounding said zone thereof, supplying a measuring liquid separately and at a constant rate under pressure to said sludge chamber of the second locus by way of a closed path, whereby the pressure in said path increases with increased concentration of the sludge in said sludge chamber of the second locus, and varying the proportion of solids in said suspension fed to the first locus in response to changes in the pressure in said path to counteract variations in the concentration of said sludge discharged from the second locus.

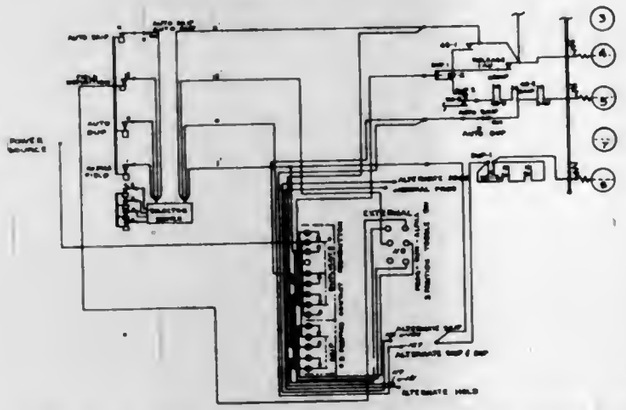
3,273,791
CONTROL APPARATUS FOR TYPE SETTING MACHINES
Leon Starck, Frankfurt am Main, Germany, assignor to Linotype G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 28, 1963, Ser. No. 319,933
Claims priority, application Germany, Oct. 26, 1962, L 43,294
24 Claims. (Cl. 234—7)

14. Composing apparatus comprising, in combination, selector means for composing a line of matrices and space bands; operating means for causing an operation permissible only with a justifiable line of matrices and space bands; operating means for causing an operation perfor registering the total of the widths of all selected matrices and space bands; and control means automatically actuated by said registering means to render said



operating means inoperative when said registering means register a total of matrix widths and space band widths corresponding to a non-justifiable line whereby an undesired operation with said non-justifiable line is prevented.

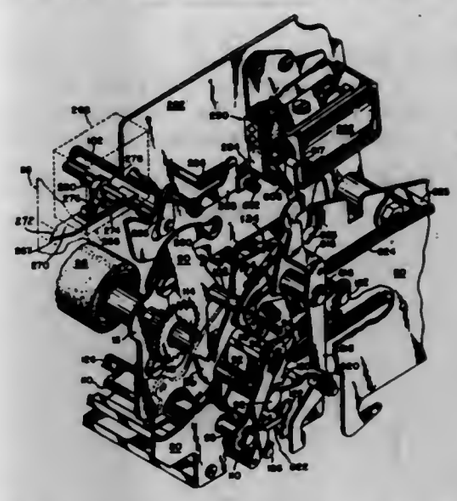
3,273,792
MULTI-SELECTOR UNIT FOR AN IBM KEY PUNCH MACHINE
Ralph E. Smith, Park Ridge, Ill., assignor to Cam Corporation, Greensboro, N.C., a corporation of North Carolina
Filed July 31, 1964, Ser. No. 386,611
15 Claims. (Cl. 234—18)



12. In a card punching machine having means for shifting between numeric and alphabetic coding, and selection means for either combined skipping and duplicating or column by column positioning, the combination with said machine of an attachment having means interposed in said selection means for either skipping and duplicating, operation or skipping operation, means for selectively locking in the numeric or alphabetic coding position, and means for successive repetition of a selected alternate program position out of a plurality of programming positions.

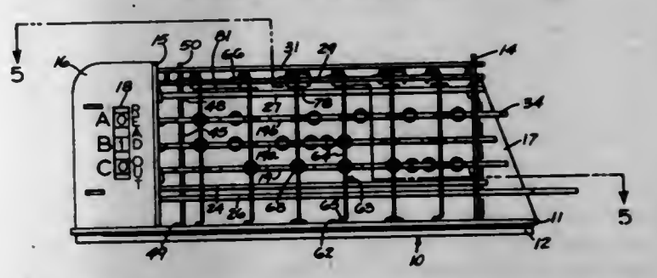
3,273,793
ACCOUNTING MACHINE PERFORATOR CONTROL SYSTEM
Neal Hepuer, Birmingham, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 7, 1965, Ser. No. 446,280
10 Claims. (Cl. 235—60.51)

1. In a cyclically operable accounting machine, supporting means, a platen mounted on said supporting means for movement between a retracted record sheet receiving position and a printing position, means operable to move said platen between said positions, a sheet marker operable to mark a sheet to designate a line of printing thereon, and a control member operatively connected to said marker to control actuation thereof



and to said operable means for actuation by the latter, said control member movable by said operable means to an effective position on movement of said platen to said sheet receiving position and movable by said marker to an ineffective position on movement of the platen to printing position.

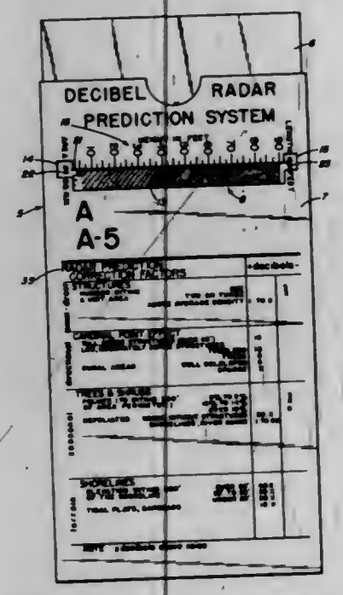
3,273,794
MECHANICAL BINARY DIGITAL COMPUTER
Irving J. Lieberman, West Orange, and William H. Duerig and Charles D. Hogan, Montclair, N.J., assignors to E. S. R., Inc., Orange, N.J., a corporation of New Jersey
Filed Oct. 21, 1963, Ser. No. 317,503
6 Claims. (Cl. 235—61)



1. A mechanical binary digital computer comprising at least one flat generally rectangular plate having a first stable position and a second stable position; set means, having a first set position and a second set position; reset means, having a first reset position and a second reset position; two pairs of logic tabs extending from a lateral edge of said plate; at least two rotatably mounted rods, each said rod disposed in cooperative relationship with one of said two pairs of logic tabs, so as to be opposite the first logic tab of its respective said pair of logic tabs when said plate is in said first stable position and opposite the second logic tab of said respective pair of logic tabs when said plate is in said second stable position; spring means, continually urging said rods toward said respective logic tab opposite each said rod; hollow tubes, mounted on one logic tab of each said pair of logic tabs, extending from said plate beyond said logic tab; clocking means, adapted to rotate said rods away from said plate beyond said hollow tubes when said plate is being driven from said first stable position to said second stable position and from said second stable position to said first stable position and allowing said rods to rotate toward said respective logic tabs opposite each said rod when said plate is not being driven; and driving means, adapted to drive said plate from said first stable position to said

second stable position when said set means is in said first set position and to drive said plate from said second stable position to said first stable position when said reset means is in said first reset position.

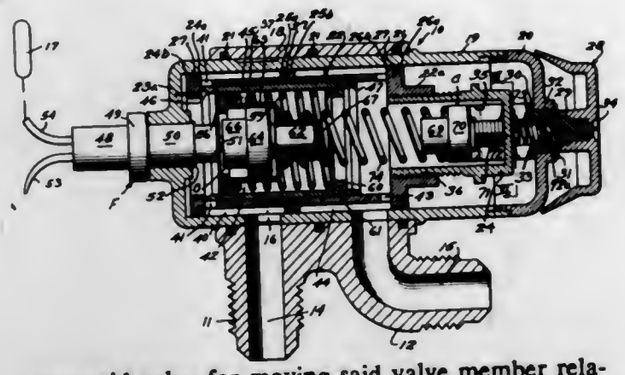
3,273,795
CALCULATOR FOR THE DECIBEL RADAR PREDICTION SYSTEM
John J. Evans, Riverdale, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 27, 1959, Ser. No. 789,458
4 Claims. (Cl. 235—89)



1. A calculator for the Decibel Radar Prediction System comprising an elongated, open-ended envelope, at least one window in said envelope representing a surface material composition category, an offset aperture at each end of said window and communicating therewith, height indicia inscribed along the top edge of the window, a slide slidably disposed in said envelope, a graph inscribed on said slide so as to be visible through said window, said graph being comprised of a series of curved lines representing the radar return value in decibels, decibel indicia arranged around said graph so as to be visible through said window and area indicia inscribed along one side of said graph so as to be visible through one of said apertures whereby a predicted omni-directional decibel return for a selected structure will appear opposite the height marking representing the height of the structure when the area indicia representing the area of the structure is aligned with the top edge of said window.

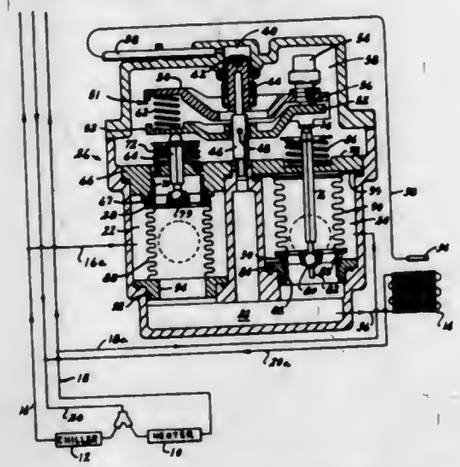
3,273,796
HEATING AND COOLING ZONE VALVE BY-PASS
Carl C. Bauerlein, Clearwater, Fla., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Mar. 23, 1964, Ser. No. 353,854
16 Claims. (Cl. 236—1)

1. A fluid control valve comprising:
a valve body having a chamber formed therein defined by an elongated chamber wall having spaced inlet and outlet ports opening through said chamber wall at opposite ends thereof,
a valve member slidable along said chamber wall between said ports and having portions cooperable with each of said ports to control fluid flow therethrough,
temperature responsive actuating means positioned within said chamber and connected to said valve member for shifting said valve member to a flow controlling position adjacent one or the other of said ports as a function of the temperature of fluid at said inlet port,
spring means biasing said valve member in one direction,
means energizable as a function of temperature remote



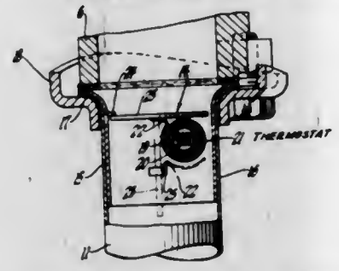
from said valve for moving said valve member relative to said ports,
whereby said last-named means in conjunction with said spring means will cause said valve member to cover and uncover only that port to which said valve member is adjacent as a function of temperature in a region remote from the valve, and
manual means for moving said valve member and said chamber wall relative to said last-named means.

3,273,797
AIR CONDITIONER VALVE
Darwin R. Grahl, Lincoln Park, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 19, 1965, Ser. No. 433,900
6 Claims. (Cl. 236—1)



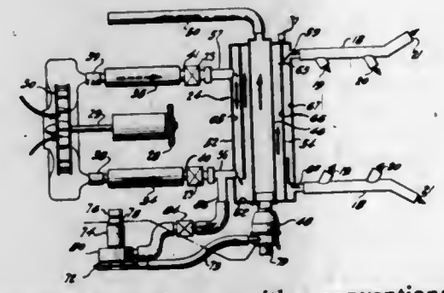
1. In combination: a valve body defining a cold fluid inlet chamber, a hot fluid inlet chamber, and outlet chamber means; a first valve seat located between the cold inlet chamber and the outlet chamber means; a second valve seat located between the hot inlet chamber and the outlet chamber means; a first valve element movable toward and away from the first valve seat to control flow therepast; a second valve element movable toward and away from the second valve seat to control flow therepast; means mounting said first valve element comprising a first pressure-balancing bellows having one of its ends sealed to the valve body and having its other end sealed to the valve element; said bellows having its interior surface exposed to one of the cold inlet chamber and outlet chamber means, and its exterior surface exposed to the other of said cold inlet chamber and outlet chamber means; means mounting said second valve element comprising a second pressure-balancing bellows having one of its ends sealed to the valve body and having its other end sealed to the second valve element; said second bellows having its interior surface exposed to one of the hot inlet chamber and outlet chamber means, and its exterior surface exposed to the other of said hot inlet chamber and outlet chamber means; the first bellows having substantially the same effective area as the first valve seat, and the second bellows having substantially the same effective area as the second valve seat.

3,273,798
EXHAUST MANIFOLD HEAT VALVE
Dan B. Kuiper, Grand Rapids, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,678
1 Claim. (Cl. 236—93)



A valve device adapted to be located in an exhaust passage of an internal combustion engine for controlling the flow of engine exhaust gases through said passage in response to engine operating temperature, said exhaust passage comprising two axially adjacent conduits separably joined in abutting relation, said valve device comprising a casing adapted to be inserted into one of said conduits, said casing having a flange adapted to extend between said conduit ends, a generally plate-shaped valve, a thermostatically responsive spirally wound element, and a post fixed to the inner spiral terminus of said element and at one end to a side of the casing, said valve being fixed to the outer spiral terminus of said element for movement therewith about said inner terminus between first and second positions respectively generally normal to and parallel with the axis of said casing in response to spiral winding and unwinding of said element with change in temperature, said casing having first and second stops formed therein, said first stop preventing movement of said valve beyond said position generally normal to the axis of said casing and said second stop preventing movement of said valve beyond said position generally parallel with the axis of said casing.

3,273,799
AUTOMOTIVE BOOSTER HEATER
Gordon J. Fairbanks and Kurt Staiger, Indianapolis, Ind., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Feb. 10, 1964, Ser. No. 343,606
21 Claims. (Cl. 237—2)



1. A booster heater for use with a conventional vehicle cab heater system having means for heating air including the vehicle engine, means for distributing the heated air to the vehicle cab, and means for forcing the heated air through the heating and distributing means to the vehicle cab; said booster heater comprising a burner; a heat exchanger for the burner having an inlet for connection to said heating means and an outlet for connection to the distributing means of said vehicle; means providing unheated air to said burner heat exchanger; valve means between the unheated air providing means and said burner heat exchanger operable to permit the unheated air to pass to said burner heat exchanger only when the pressure output of the vehicle air forcing means at said valve means is less than the pressure output of said unheated air providing means at said valve means; and temperature responsive means for controlling the operation of said burner to control the temperature of the air passing to the vehicle cab.

3,273,800
REMOTE POWDER FEED FOR FLAME SPRAYING TORCH
Don L. Keys, Huntington, John P. Broderick, Bayside, and Frank G. Lohnes, Glen Cove, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
Filed Oct. 23, 1964, Ser. No. 406,137
17 Claims. (Cl. 239—85)

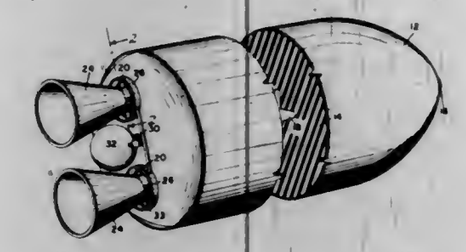


1. A remote powder feed support for suspending a powder container and its feed tube above a flame spraying torch to which said feed tube is connected, said support comprising a holder, the base of said holder having container coupling means for mounting said powder container with its discharge end downwardly disposed, tube attaching means in said base for connection to said feed tube, a passageway in said base connecting said container coupling means to said tube attaching means for permitting powder in said container to flow into said tube, connecting means at the top of said holder for suspending said holder above said torch, said holder being shaped to extend around said container, and one side of said holder being open to permit said container to be directly inserted and removed from said holder whereby the replacement of said container is facilitated.

3,273,801
ROCKET ACCELERATION AND DIRECTION CONTROL BY FLUID INJECTION
Verbon H. B. Wilhite, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 30, 1962, Ser. No. 220,378
5 Claims. (Cl. 239—265.23)

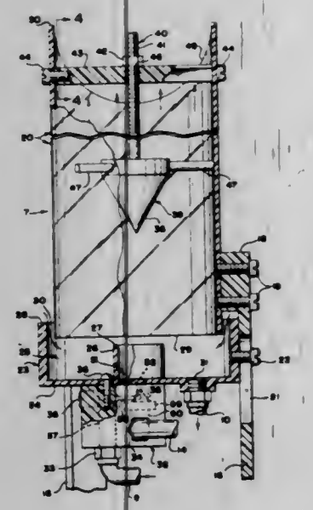
1. A control for a rocket engine having a vessel closed at its forward end and having a plurality of nozzles at its

opposite end located in equally spaced relation to each other around a central axis and at equal distances from the axis, a propellant in said vessel, each of said nozzles having a throat through which the combustion products of said propellant pass, and means for each nozzle for producing a nonstructural throat therein and at different areas of the throat of the nozzle comprising a plurality of spaced ducts leading into said structural throat in a plane located between the smallest diameter of said nozzle throat and a place upstream therefrom, a



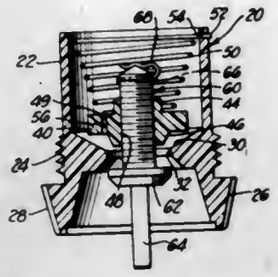
source of noncombustible fluid, means for delivering fluid from said source to the ducts in the throats of said nozzles to impinge the exhaust gases passing therethrough, and an adjustable valve in each of the ducts in each of said nozzles for varying the rate of flow therethrough from zero to maximum rate whereby to produce nonstructural throats eccentric to the structural throats in said plurality of nozzles and produce nonstructural throats concentric with the structural throats in said plurality of nozzles.

3,273,802
APPARATUS FOR CORROSION TESTING
Richard O. Hull, Jr., Bay Village, Ohio, assignor, by mesne assignments, to The G S Equipment Company, Cleveland, Ohio, a corporation of Ohio
Filed May 26, 1964, Ser. No. 370,153
10 Claims. (Cl. 239—338)



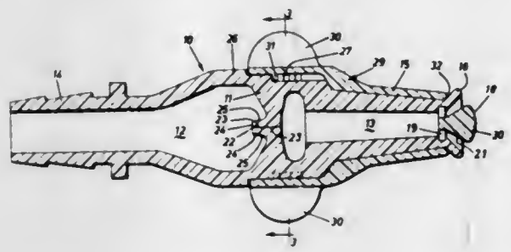
10. A mist generating device comprising a vertically elongated tube of corrosion-resistant material, a generally conical deflector mounted in said tube out of contact with the inner walls of the tube, means for supporting said deflector in a series of positions adjusted axially of said tube, an annular liquid trap mounted below said tube and spaced therefrom to define an annular air opening, and a central aspirator nozzle for creating a corrosive mist and directing it upwardly toward said deflector from the central part of said trap.

3,273,803
ADJUSTABLE SPRAY NOZZLE INSERT
Lewis E. Crowley, 1540 N. Hudson St., Los Angeles, Calif.
Filed Oct. 29, 1964, Ser. No. 407,401
5 Claims. (Cl. 239—457)



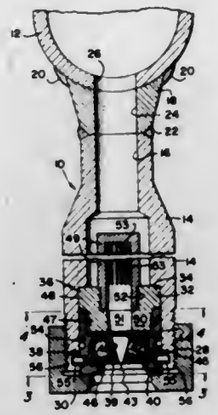
1. An insert for a spray nozzle which comprises: a tubular body member disposed so as to be inserted and secured in a spray nozzle; an annular valve seat internally disposed in the body member intermediate the ends thereof, said valve seat having a centrally disposed opening therethrough; a polygonal wafer valve disposed in the body member so as to be seated on the valve seat and provide a fluid flow passage around the wafer valve and through said opening; a core member adjustably mounted on the wafer valve and extending through said opening; and a collar mounted on the core member and disposed so as to be moveable from a position within said opening to a position externally thereof upon adjustment of the position of the core member relative to the wafer valve.

3,273,804
VALVE
Wilfred W. Wilson, Woodbridge, Ontario, Canada, assignor to The Amara Company Limited, Ontario, Canada
Filed Dec. 9, 1964, Ser. No. 417,008
12 Claims. (Cl. 239—569)



1. A valve comprising a housing, said housing defining a chamber through which a fluid may be passed, a valve member positioned within and extending across said chamber, said valve member being adapted to control the flow of fluid through the chamber defined by said housing and comprising a deformable wall having a slit extending therethrough, the slit in said deformable wall communicating on both sides of said deformable wall with the chamber defined by said housing and itself being defined by facing surfaces, means actuable by the pressure of fluid in the chamber defined by said housing for holding said surfaces together, whereby when said means are under the influence of such fluid pressure the slit in said deformable wall is normally closed; and means for deforming said deformable wall against the influence of such fluid pressure to open the slit in said deformable wall and permit fluid to pass through the slit in said deformable wall.

3,273,805
PRESSURIZED FLUID NOZZLE ASSEMBLY
Thomas E. Hall, Allentown, Pa., assignor, by mesne assignments, to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 2, 1964, Ser. No. 401,156
6 Claims. (Cl. 239—590.3)

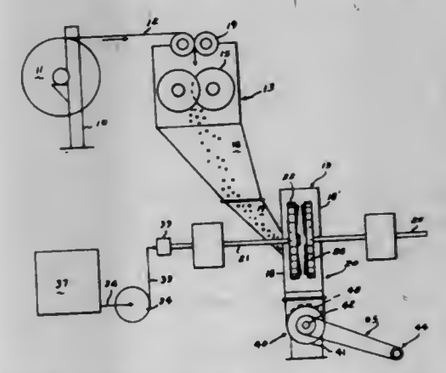


1. A pressurized fluid nozzle assembly comprising:
(a) a conduit means connected to a source of pressurized fluid,
(b) a hollow, opened ended housing connected at one end to said conduit means and communicating with the latter to receive the pressurized fluid, said housing including an outwardly opening socket at its other end,
(c) a cylindrical assembly member inserted within and slidably and removably seated within said socket,
(d) stop means formed in said housing interiorly thereof and contacting said cylindrical assembly means to limit inward movement of said assembly member in said socket,
(e) a nozzle means having a fluid flow path therethrough and including a discharge orifice adapted to discharge a non-circular spray, said element being carried within said cylindrical assembly member so as to receive and conduct the pressurized fluid, as a spray, into the atmosphere
(f) a first hollow positioning means carried by and extending laterally outwardly of said cylindrical assembly member,
(g) a second positioning means formed on the other end portion of said housing and comprised of a lateral recess receiving said first positioning means and coacting therewith to fix the cylindrical assembly member in a predetermined angular position within said housing,
(h) holding means secured to the housing and bearing on said cylindrical assembly member to hold said assembly member and said nozzle in said housing, such that the non-circular spray from said discharge orifice is angularly oriented in relation to the fluid conduit means.

3,273,806
TREATMENT OF PHOSPHORS
Yonesaku Aoki and Masayuki Emoto, Kitatama-gun, Tokyo-to, and Tetsuro Tanaka, Hachioji-shi, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Sept. 11, 1962, Ser. No. 222,918
Claims priority, application Japan, Sept. 11, 1961, 36/32,159
9 Claims. (Cl. 241—20)

1. A method of treating phosphor materials, which comprises pulverizing a phosphor material to the ultimate size desired, subsequently subjecting said phosphor material thus pulverized to a dispersion treatment for substantially 30 minutes in a solution containing beside solvent at least one dispersing agent selected from the group consisting of inorganic dispersing agents, anionic and non-ionic surface-active agents, allowing the dispersed phosphor particles to settle for not more than 24 hours, separating and removing fine phosphor particles of a size of 0.5 micron and less, then drying the remaining phosphor.

3,273,807
REFINER SYSTEM
James Howard Wright, Springfield, Ohio, assignor to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio
Filed Aug. 5, 1963, Ser. No. 300,038
12 Claims. (Cl. 241—42)



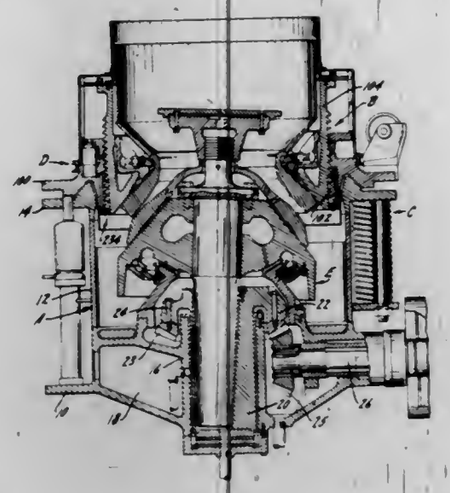
1. A refiner system including, means for supporting fibrous material in web form, a shredder and a disc refiner arranged in succession to immediately follow said support means, means for guiding said web material to said shredder for reduction thereby to flake form, means for transmitting the flakes to said disc refiner for fluffing thereby to expose their individual fibers, means in connection with said disc refiner for spraying a fiber conditioning fluid so as to produce an intimate contact thereof with the individual fibers as they are exposed within said disc refiner, and means for conveying the so conditioned fluffed fibers from said disc refiner arranged to compress and produce a soft plug thereof in movement from said disc refiner in a manner to inhibit flow of air to or from said disc refiner.

6. A refiner system including a housing having an inlet for delivery of pulp thereto, opposed relatively revolvable discs in said housing for receiving the pulp and fluffing it therebetween, means in connection with one of said discs for delivering a spray of pulp conditioning fluid in a path generally tangential to the disc operating surfaces to thereby contact and coat individual fibers in the process of their exposure during the fluffing operation and means defining an outlet from said housing for delivery of conditioned fiber solids therefrom exclusive of excess conditioning fluid.

3,273,808
SEAL FOR GYRATORY CRUSHERS
Hansjörg Balmer, Langenthal Bern, Switzerland, and Rudolph J. Gasparac, Milwaukee, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Original application Nov. 14, 1961, Ser. No. 152,222, now Patent No. 3,140,839, dated July 14, 1965. Divided and this application Apr. 8, 1964, Ser. No. 358,264
4 Claims. (Cl. 241—215)

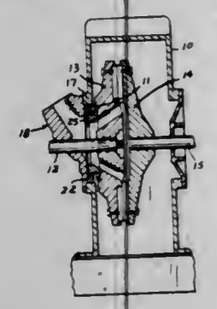
1. In a gyratory crusher, a main frame, a gyratory head positioned in the main frame, a bowl mounted in the main frame defining a crushing cavity with the head and constructed to be adjusted vertically to vary the size of the crushing cavity, and a seal between the bowl and main frame including generally concentric cylindrical surfaces

on the bowl and main frame, a seal ring between the surfaces bearing on each and connected to one, means for biasing the seal ring toward one extreme position of move-



ment, and means for engaging the seal after a predetermined amount of adjustment of the bowl to overcome the biasing means so that the seal ring thereafter moves with the bowl.

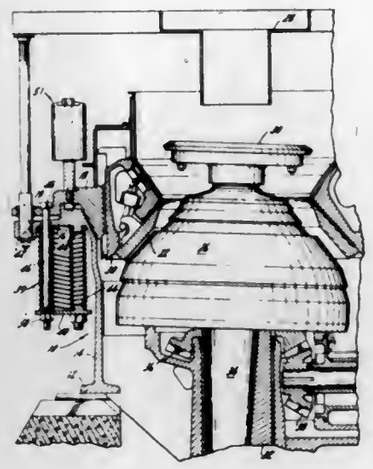
3,273,809
REFINER SEAL
Anton J. Horstman, Houghton, Mich., assignor to Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio
Filed Apr. 22, 1963, Ser. No. 274,516
11 Claims. (Cl. 241—244)



1. A seal device to form a bridge between a fixed and a relatively rotating conduit member including an apertured means for application at the exit from said fixed member, the aperture defining surface portion of which is convergent in the direction of said rotating member, and apertured means fixed to said rotating member, about the entrance thereto, a surface portion of which mates with and positions in adjacent relation to said convergent surface whereby relative rotation of the mating surfaces will produce forces which operate to eject material attempting to flow therebetween in the course of flow through said conduit members.

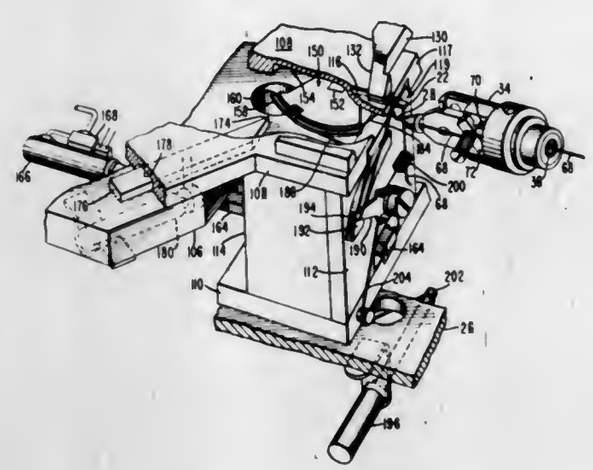
3,273,810
CRUSHER CLEARING SYSTEM
Rudolph J. Gasparac, Milwaukee, Arnold P. Szaj, Hales Corners, and Wolfgang Turnwald, Milwaukee, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 26, 1963, Ser. No. 333,429
6 Claims. (Cl. 241—290)

1. In a crusher, a main frame, a bowl releasably mounted on the main frame, springs urging said bowl toward said frame, a portable jacking assembly removably mounted on the bowl, said jacking assembly supported by said bowl, and means in said jacking assembly engaging the main frame so that upon actuation of the assembly, the bowl will be raised relative to the main



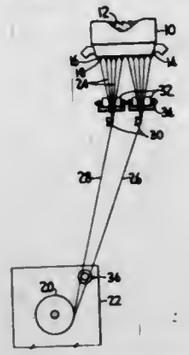
frame and against the urging of said springs so that the crushing cavity may be cleared.

3,273,811
COIL WINDING MACHINE
Lawrence E. Mueller, Livonia, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 6, 1963, Ser. No. 278,046
7 Claims. (Cl. 242—9)



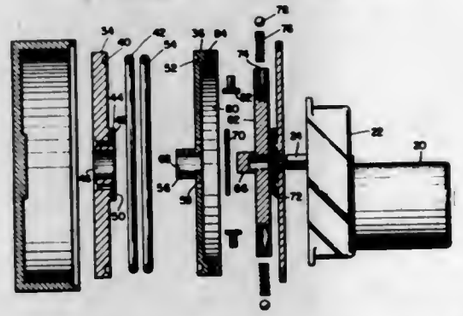
6. In a coil winding machine having a wire threaded needle revolvable through a cycle of operation between start and stop positions to wind a length of wire about a core piece, a wire handling mechanism comprising a hook mounted for movement from a retracted position at one side of the axis of revolution of the needle to a wire severing station on the other side of the axis of revolution of the needle, said hook engaging and pulling a loop of the wire including a coil side leg and a needle side leg to the wire severing station, a cutter at the wire severing station, a releasable clamp member operable following the pulling of the loop by said hook to engage and hold the needle side leg of the loop, and a back-up member movable with said hook to said wire severing position in registry with said cutter.

3,273,812
METHOD FOR FORMING AND WINDING GLASS STRANDS
Adrien R. Lacasse, Shelby, N.C., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 13, 1962, Ser. No. 237,251
1 Claim. (Cl. 242—42)



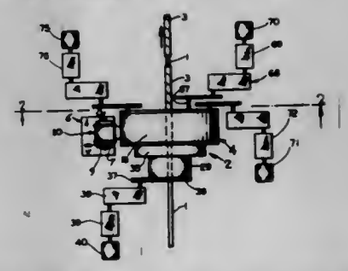
A method of forming a plurality of untwisted strands and winding said strands on a single tube so that said strands can be unwound from said tube as separate strands which comprises,
drawing a multiplicity of individual filaments from a molten glass body,
grouping said filaments together to form a pair of spaced strands,
advancing said strands in overlying spaced relation to each other and in converging planes to a traversing station, which planes intersect at a point of take-up on a winding tube,
separately traversing said strands at said traversing station in opposite directions and in parallel planes as said strands are wound on said tube,
said strands being separately traversed at said traversing station so that said strands are deposited on said tube in continuously varying lateral spaced relation to each other with one strand alternately overlapping and crossing over the other of said strands at a substantial angle and alternately being spaced from the other strand,
and maintaining substantially the same tension on both strands as they are wound on said tube.

3,273,813
ANTENNA DRIVE MECHANISM
Michael P. George, 161 Concord Ave., Lexington, Mass.
Filed Dec. 22, 1964, Ser. No. 420,397
6 Claims. (Cl. 242—54)



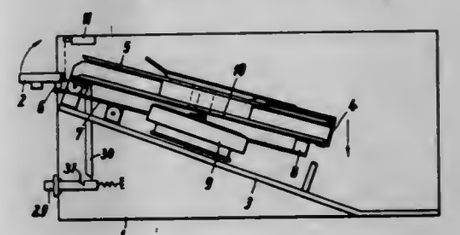
1. A power drive mechanism for a telescopic antenna, comprising
(a) a pulley formed with a peripheral groove,
(b) power means for selectively rotating said pulley in either of two rotary directions,
(c) a pair of resilient annular members mounted to said pulley in registered opposition adjacent the opening of said groove to restrict the size of said opening,
(d) a housing enclosing said pulley and having an opening formed therein generally tangential to said pulley, and
(e) a flexible rod extending through said housing and having one end connected to said antenna and the other end secured to said pulley, said rod having a diameter larger than the restricted groove opening.

3,273,814
ROTATING DISPENSING APPARATUS
Donald F. Prusak and Theodore E. Crawford, Milwaukee, Wis., assignors to Dowsmith Inc., Milwaukee, Wis., a corporation of Delaware
Filed Apr. 1, 1964, Ser. No. 356,602
6 Claims. (Cl. 242—55)



1. A material dispensing system for continuous supplying a flexible elongated element, comprising
a plurality of concentrically and rotatably mounted reels and adapted to rotate relative each other to wind,
a flexible elongated element on said reels with adjacent reels being conversely wound,
means to unwind the element internally of the innermost reel, and
means to stop rotation of an outermost of said reels while maintaining rotation of the inner of said reels for attaching of an additional length of said element to the outermost end of the element.

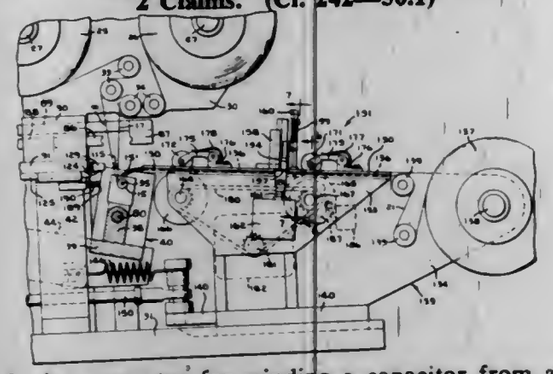
3,273,815
TAPE RECORDER
Eduard Schüller, Wedel, Holstein, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Feb. 20, 1964, Ser. No. 346,338
Claims priority, application Germany, Feb. 20, 1963, T 23,501
17 Claims. (Cl. 242—55.12)



1. In a tape recorder, the combination which comprises:
(a) a housing having an opening at the front through which tape reels can be inserted and removed;
(b) turntable means in said housing;
(c) guide means arranged in said housing and being in alignment with said opening to receive tape reels inserted therethrough;
(d) positioning means associated with said guide means for making the end position of a reel inserted through said opening onto said guide means a position in which such reel is in alignment with said turntable means;
(e) closure means for closing said opening; and

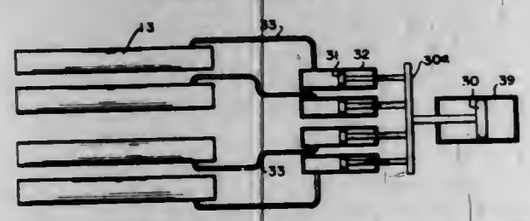
(f) moving means operative by the closing movement of said closure means for bringing a reel held by said guide means in said end position and said turntable means into engagement with each other.

3,273,816
APPARATUS FOR WINDING WEBS AND INSERTING TABS THEREBETWEEN
William J. Fanning, Melrose Park, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 25, 1964, Ser. No. 369,826
2 Claims. (Cl. 242—56.1)



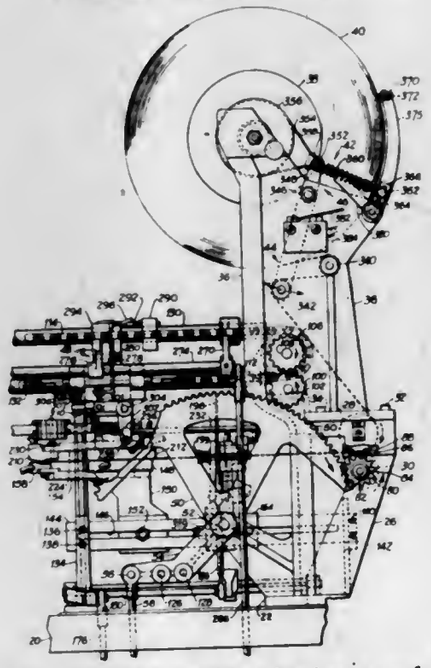
1. An apparatus for winding a capacitor from a pair of metallized webs and for inserting a section of a dielectric tape between the trailing end portions of the metallized webs which comprises:
means including a rotatable arbor for winding a pair of webs into a roll;
a carrier having a guide for supporting a tape for intermittent movement along a predetermined path into engagement with the bite of the roll and one of the webs extending therefrom;
means for moving said carrier from a retracted position to an advanced position with said tape guide adjacent to said arbor and the roll thereon;
a first means on said carrier for advancing the tape a predetermined distance along said guide;
means on said carrier for shearing the tape in said guide to sever a section thereof;
a second means on said carrier for advancing the severed section of tape from said guide into engagement with the bite of the roll and the web;
means for severing the webs adjacent to the said arbor and the roll thereon; and
control means for effecting the operation of said winding means, said web severing means, said tape shearing means, said first and said second tape advancing means, and said carrier moving means in a predetermined timed relation to one another.

3,273,817
COLLAPSIBLE MANDREL
Pierre M. Damiron, Paris, France, assignor to Wean-Damiron S.A., Paris, France
Filed June 22, 1964, Ser. No. 376,873
Claims priority, application France, July 2, 1963, 940,052
7 Claims. (Cl. 242—72)



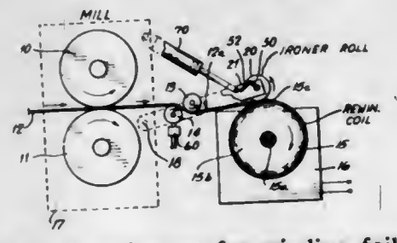
1. An expandable mandrel comprising an elongated central shaft formed with a plurality of longitudinal recesses radially spaced around the periphery thereof; an elongated member disposed to slide within each of said recesses toward and away from the axis of said shaft; a liquid tight inflatable envelope located in each of said recesses between the bottom of said recess and the member, the volume of said envelopes being equal; an auxiliary hydraulic compressor operatively connected to each of said envelopes to supply pressurized liquid to said envelope for inflation thereof; and an actuating means for simultaneously actuating each of said auxiliary compressors to simultaneously supply fluid to each of said envelopes.

3,273,818
WEB FEED
Bert Harold Wallace, Uniondale, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 29, 1963, Ser. No. 305,350
3 Claims. (Cl. 242—75.43)



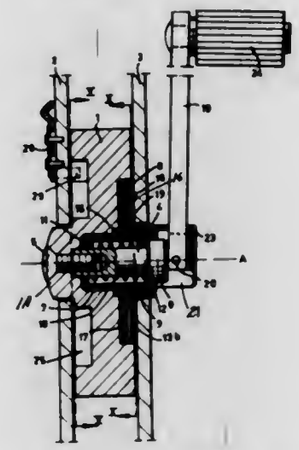
1. A cigar web feed machine having a reel mounting a web of tobacco material, a lever having a first end, a second end and a pivot intermediate said ends, a roller mounted on said lever near said first end, means for directing said web around a portion of the surface of said roller, a brake band on said reel, said band having an end connected to said second end, means for sensing the diameter of said web of material, and a tension spring having a first end connected to both said second end of said lever and to said end of said band and a second end connected to said sensing means.

3,273,819
FOIL ROLLING APPARATUS
Olivo G. Sivilotti, Kingston, Ontario, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Nov. 12, 1964, Ser. No. 410,650
7 Claims. (Cl. 242—78.1)



1. In high speed equipment for winding foil and including rotatable means for accepting wound layers of foil, motive means for rotating said rotatable means so as to wind said foil thereon to constitute a reel of layers, an ironer-roll rotatably adapted to ride against the outermost layer of foil on said reel, and foil winding deceleration means for decelerating said rotatable means and thereby said reel, the improvement comprising means responsive to said foil winding deceleration means for decelerating said ironer-roll.

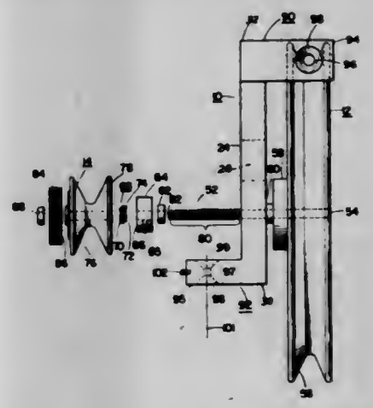
3,273,820
TAPE REEL
André Quenot, Besancon, Doubs, France, assignor to Firm of Etablissements Quenot & Cie, Besancon, France
Filed Oct. 8, 1964, Ser. No. 402,535
Claims priority, application France, May 12, 1964, 974,249
6 Claims. (Cl. 242—84.8)



1. A drum system comprising a rotary tape-carrying drum provided with an axial blind recess opening in one side, two flanges between which the drum is revolvably carried, a sleeve slidingly and revolvably fitted in the recess in the drum and provided with an inturned end, a rod coaxially rigid with the drum extending through the sleeve, a head of a larger diameter rigid with said rod and located inside said sleeve, a spring engaging the transverse surface of said head facing the rod and urging the inturned end of the sleeve against the bottom of the recess, a disc coaxially rigid with the sleeve engaging a transverse surface of the drum and forming a clutch therewith, parallel outer extensions of the sleeve at the end thereof opposed to its inturned end, a pin perpendicular to the axis of the sleeve fitted between said extensions, and a crank including an end fitted eccentrically on said pin and adapted to rock round said pin between a position for which it urges the disc rigid with the sleeve into clutching engagement with the drum to thereby operatively connect the crank with the drum, and a position for which the clutch is disengaged upon outward shifting of the sleeve by the crank end against the action of the spring.

3,273,821
ICE FISHING REEL
William M. Miller, Spencerville, Ind.
Filed Jan. 27, 1964, Ser. No. 340,346
5 Claims. (Cl. 242—106)

5. A fishing reel comprising: a frame; means for mounting said frame on a support; said frame having a tubular bearing therein, said bearing being substantially transverse to said frame; a first pulley having a means for storing fishing line thereon; a shaft having an axis and first and second ends, said first pulley being coaxially secured to said shaft at said first end thereby preventing independent rotation of said first pulley and said shaft, said shaft being rotatably supported in said bearing, said shaft having a threaded shaft portion adjacent said second end extending from said second end toward said frame, said frame spacing apart said first pulley and said shaft portion, said first pulley being rotatable in a first direction to dispense fishing line and in a second direction to store fishing line, a ring having at least one end surface, said ring being coaxially secured to said shaft thereby preventing independent rotation of said shaft and said ring, said ring being spaced from said first pulley by said frame, said end surface facing away from said frame; a second pulley having means for storing cord and at least one pulley end surface, said pulley being coaxially supported on said shaft adjacent said ring, said ring and pulley end surfaces facing each other, said second pulley being rotatable in said second direction to dispense cord and in said first direction to store cord, said second direction being opposite said first direction, said second pulley having a diameter substantially smaller than said first pulley whereby withdrawal of a predetermined length of said actuating cord from said second

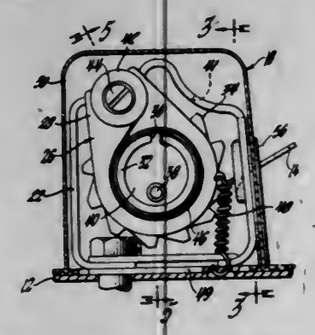


pulley winds a substantially greater length of said fishing line upon said first pulley; a thumb screw threadedly mounted on said shaft portion adjacent said second pulley, said thumb screw being rotatable into a first position securing said second pulley to said ring by means of frictional forces between said thumb screw and said second pulley and frictional forces between said second pulley and said ring thereby preventing said second pulley from rotating independently of said first pulley, said thumb screw being rotatable into a series of second positions permitting rotation of said second pulley independently of said first pulley, said rotation being selectively impaired by varying the frictional forces between said thumb screw and said second pulley and between said second pulley and said ring to a different degree at each of said second positions thereby forming a clutch by which said first pulley may be selectively permitted to rotate freely and independently of said second pulley, permitted to rotate with a selected frictional impairment independently of said second pulley and prevented from rotating independently of said second pulley.

3,273,822
SEAT BELT RETRACTOR
Richard L. Merrell, Simsbury, and Angelo J. Misenti, Bristol, Conn., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 359,829
1 Claim. (Cl. 242—107.4)

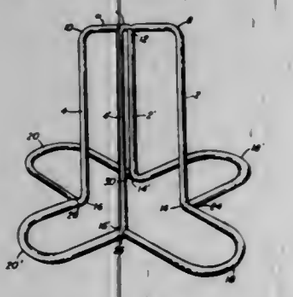
An inertia operated seat belt retractor adapted to be mounted in a motor vehicle comprising a housing,
a U-shaped yoke member having an arcuate surface portion extending between a pair of transversely extending arms,
a support member secured to said vehicle within said housing for supporting said U-shaped yoke member

and including an arcuate surface portion in sliding engagement with the arcuate surface portion of said yoke member,
a hollow reel rotatably journalled between the arms of said yoke member,
a seat belt retaining pin supported within said reel between a pair of spacers,
said spacers engaging the inner surface of said hollow reel to maintain said pin substantially immovable in a direction transverse to the axis of said reel,
said pin being movable parallel to the axis of said reel for reception by a loop formed in one end of a seat belt to couple the seat belt to the reel,
said support member and said housing being provided with aligned openings,
a non-metallic guide member mounted in said opening and including a slot for receiving said seat belt,



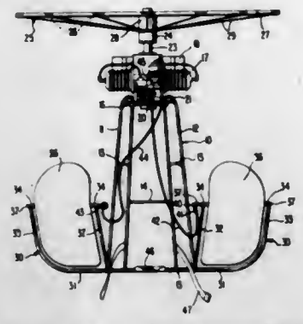
a spool rotatably supported in said yoke,
a flat spring having one end secured to said spool and the other end secured to said reel and normally being wound on said spool but adapted to be backwound on said reel when said reel is rotated in an unwinding direction,
a pair of toothed wheels rotatable with said reel,
a plurality of apertures formed in said support member located in the path of arcuate movement of said yoke member for receiving a portion of said toothed wheels to prevent rotation of said wheels in response to a predetermined sliding movement of said yoke member,
a coil spring connected between each of said arms and said support member for normally, yieldingly biasing said toothed wheels out of engagement with said support member to permit free rotation of said reel in a winding and unwinding direction.

3,273,823
DISPENSING DEVICE
William Taylor, Jr., 2215 W. Indiana Ave., Elkhart, Ind.
Filed Mar. 24, 1964, Ser. No. 354,354
4 Claims. (Cl. 242—129)



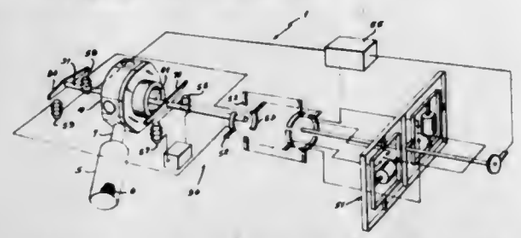
1. A dispensing package for coiled material which comprises two U-shaped elements, each element having a pair of substantially vertical medial members joined together by an upper apex member and a pair of U-shaped base members lying in a plane substantially at right angles to the plane of said medial members at a radial angle thereto.

3,273,824
SINGLE PASSENGER AIRCRAFT
Walter K. Owens, 4324 Creighton Road, Pensacola, Fla.
Filed Feb. 4, 1965, Ser. No. 430,282
10 Claims. (Cl. 244—4)



1. An aircraft of the single passenger type comprising a supporting framed adapted to be mounted bodily upon and secured to the body of the passenger, an overhead power plant on said frame having a hinged connection therewith near the back of the frame and including an engine and a substantially vertical axis propelling rotor driven by the engine, a control element connected with the power plant near the front thereof and operable to tilt the power plant upon the axis of the hinged connection, a pair of vertically swingable control elements pivoted to said frame and arranged adjacent the opposite sides thereof directly below said rotor and in the path of the downward airstream produced by the rotor and a control handle element connected with each of said control elements for operating the latter independently, one of said control handle elements including a power plant throttle control.

3,273,825
GUIDANCE SYSTEMS
Vernon H. Kerner, St. Louis County, Mo., assignor to Emerson Electric Co., a corporation of Missouri
Filed Oct. 30, 1961, Ser. No. 148,443
7 Claims. (Cl. 244—14)



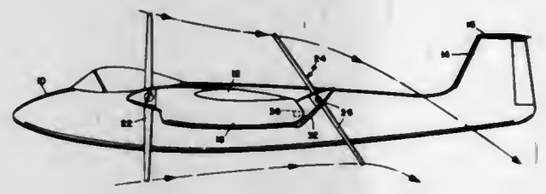
1. A guidance system adapted for use with a source of gas independent of the main propulsion system of a missile, comprising a hollow shell in the form of a manifold the interior of which communicates with said source of gas, said manifold having a plurality of ports therethrough through which said gas can escape; throttle means adjacent and associated with said manifold, for selectively blocking ports in said manifold; a hollow body having paired nozzles, the nozzles in a pair being directed in diametrically opposite directions from one another and said nozzles communicating discretely with one of said manifold ports arranged to be selectively blocked by said throttle means, said throttle means being positioned between said manifold ports and said nozzles, and power means connected to move said throttle means with respect to said ports in such a way that restriction of the effective area of a port communicating with one nozzle of a pair is accompanied by expansion of the effective area of a port communicating with the other nozzle of the pair, whereby the total effective gas escape area of the ports, hence the total flow of gas, remains constant, and the radial forces produced by an equal flow of gas from the nozzles of a pair are cancelled.

3,273,826
VARIABLE AIRFOIL HIGH-LIFT SLAT AND SLOT FOR AIRCRAFT
Charles E. Jackson, Fort Worth, Tex., assignor to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware
Filed Mar. 3, 1965, Ser. No. 436,780
4 Claims. (Cl. 244—42)



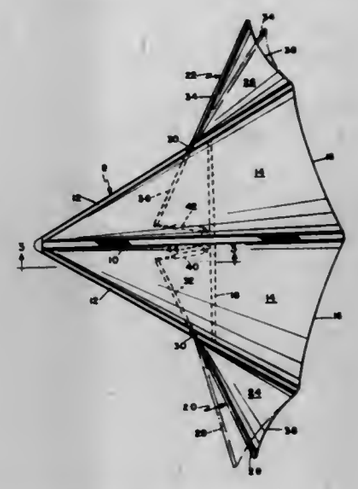
2. A composite airfoil structure defining a wing configuration having a leading edge, said structure comprising:
a primary supersonic fixed wing structure having a thin leading edge and a bi-segmented auxiliary airfoil compenent longitudinally movably superimposed upon said primary wing, and of substantially the same configuration as said primary wing leading edge, said auxiliary airfoil having a variable geometry nose portion and a trailing portion, said nose portion rotatable with respect to said trailing portion about a pivot in response to a programed outward and downward trajectory movement of said pivot point in respect to said fixed wing structure, said nose portion rotation and auxiliary airfoil trajectory movement increasing both chord length and camber of said auxiliary airfoil structure and simultaneously the chord and camber of said composite airfoil structure through relocation of impinging airstream pressure peaks and stagnation points.

3,273,827
PROPELLER-ROTOR HIGH LIFT SYSTEM FOR AIRCRAFT
Peter F. Girard, La Mesa, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Apr. 27, 1964, Ser. No. 362,691
5 Claims. (Cl. 244—42)



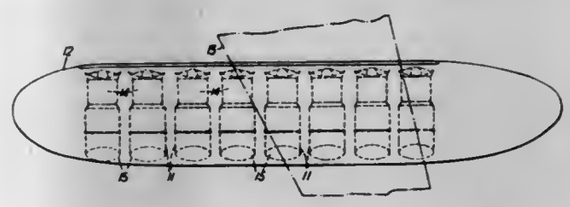
1. In an aircraft having a driven primary propulsion propeller, high lift means, comprising:
a bladed rotor mounted on the air craft rearwardly of said propeller to intercept substantially all the air flow from the propeller and being rotatable to retard the propeller airflow;
said rotor being pivotally mounted to swing about an axis extending substantially parallel to the pitch axis of the aircraft;
and means to move said rotor between a first position with the rotational axis thereof parallel to the rotational axis of said propeller and a second position with the rotor axis inclined to the propeller axis.

3,273,828
DOUBLE DELTA FLEXIBLE WING
Harry A. James, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Aug. 7, 1964, Ser. No. 388,124
7 Claims. (Cl. 244—43)



1. A flexible wing, comprising:
a primary wing having a longitudinal keel, leading edge members extending angularly rearwardly from the forward end of said keel on opposite sides thereof, and flexible wing panels secured to and between said keel and said leading edge members;
a pair of secondary wings mounted on the rear portions of said leading edge members outwardly thereof;
and actuating means operable to laterally extend and retract said secondary wings selectively.

3,273,829
AIRCRAFT
Paul Maxwell Lawrence Elstone, Winscombe, England, assignor to Hawker Siddeley Aviation Limited, Kingston-upon-Thames, England, a British company
Filed Dec. 17, 1962, Ser. No. 246,870
Claims priority, application Great Britain, Dec. 18, 1961, 45,372/61
8 Claims. (Cl. 244—54)



1. A pod structure for attachment to an aircraft to give it a short take-off and landing capability, comprising a pod floor, opposite side walls and a top wall all defining internal pod chambers, openings in said opposite side walls communicating with said chambers, a plurality of jet lift engines each having an air intake end and a gas effluent exit end and being mounted in said chambers at intervals along the pod in the fore-and-aft direction, each engine being disposed with its longitudinal axis substantially horizontal and across the direction of flight and having its intake end directed toward a first of said side wall openings at one side of the pod and its exit end directed toward a second side wall opening at the opposite side of the pod, and a jet nozzle mounted on the exit end of each engine and disposed to direct the engine jet efflux out through said second side wall opening, each said jet nozzle comprising means to turn the jet efflux through an appreciable angle with respect to the engine axis so as to deflect the

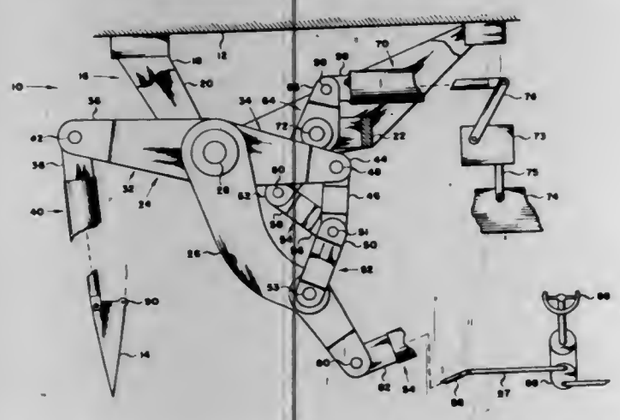
efflux downwardly in the short take-off and landing condition, and said nozzle means being angularly adjustable about said axis of the respective engine to direct the jet efflux rearwardly.

3,273,830
THIXOTROPES AS BRAKING MEDIUM FOR CATAPULT BRAKE
James E. Scholl, Fairfax, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 31, 1965, Ser. No. 444,477
8 Claims. (Cl. 244—63)



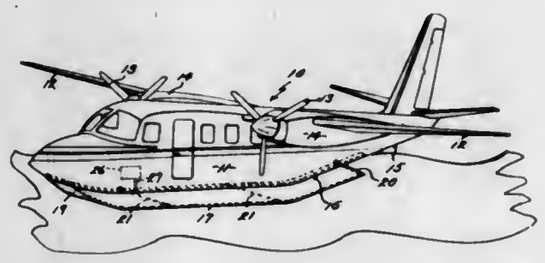
1. A catapult launcher comprising
a cylinder;
a piston which moves forward within said cylinder and which is actuated by the pressure produced within said cylinder by the introduction of pressure fluid therein, said piston being provided with means for moving a load positioned externally of said cylinder;
a braking medium reservoir in said piston, said reservoir culminating in means defining a forwardly facing opening in said piston;
a tapered spear fixedly mounted within said cylinder and adapted to engage said opening of said piston and therethrough said reservoir near the end of the piston stroke;
a thixotropic material within and filling said reservoir, said thixotropic material being in the gelled state when the piston is at rest;
whereby the action of said spear contacting said thixotropic material will brake the piston at the end of its stroke.

3,273,831
CONTROL MECHANISM FOR AIRCRAFT
Richard L. Vernon, Glendale, and Harold E. Hoben, Northridge, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed July 29, 1963, Ser. No. 298,366
10 Claims. (Cl. 244—83)



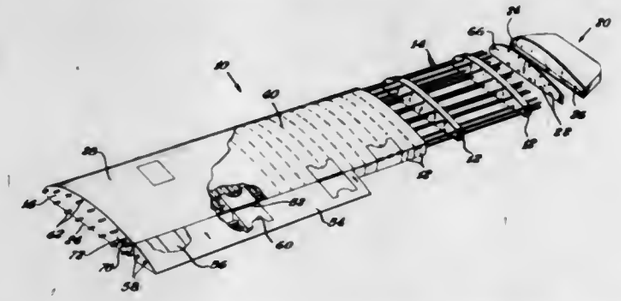
1. In an aircraft having a flap having a neutral and a deflected position, an aircraft control mechanism comprising:
(a) a control surface having a neutral position, a droop position, a maximum up deflected position, and a maximum down deflected position;
(b) a member for positioning said control surface between the control surface neutral and maximum up or down deflected positions;
(c) a mechanism operatively inter-connecting said control surface and said positioning member,
said inter-connecting mechanism including means for moving said control surface from the neutral position or the droop position to said deflected position when said positioning member is moved a fixed amount; and
(d) a means for operating the flap from a neutral to a deflected position and for operating the control surface to a droop position, the operating means including a linkage which does not change the maximum control surface up and down deflected positions when the control surface is either in the neutral or the droop position.

3,273,832
INFLATABLE PONTOON FOR AIRCRAFT
Edgar L. Keedy, Rte. 1, Box 242, Woodstock Road, Gates Mills, Ohio
Filed Sept. 24, 1964, Ser. No. 398,940
3 Claims. (Cl. 244—105)



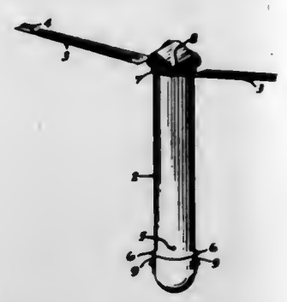
1. In combination with an airborne vehicle having an airfoil surface on the normal underside thereof, a gas inflatable hull having means connecting it with said vehicle, means for inflating said hull and extending it into water engaging position spaced beneath said airfoil surface, said hull having a rigid ski-type lower surface, means for collapsing said hull and retracting it to said airfoil surface, and said hull in collapsed condition having airfoil compatability with said airfoil surface.

3,273,833
AIRFOIL STRUCTURE
Leo J. Windecker, Midland, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 438,143
36 Claims. (Cl. 244—123)



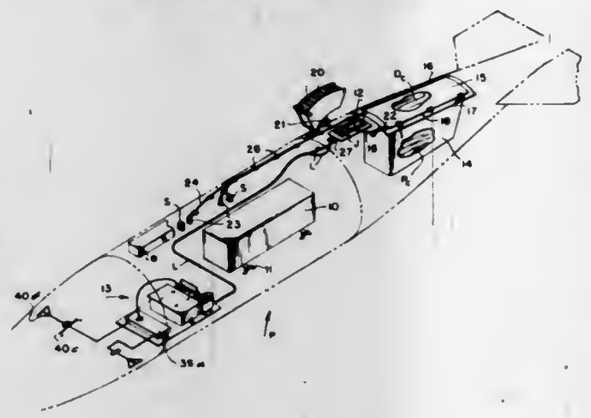
1. An aircraft airfoil structure which comprises a core consisting of a structurally rigid foam, a multiplicity of elongated spars running longitudinally through bores in said core from end to end thereof, said spars being spaced apart and disposed between ⅜ inch and one inch from the outer surface of said core and being continuously bonded to the walls of said bores along the length of the spars extending through said bores, and a skin, said skin covering said core and being integrally bonded thereto.

3,273,834
AIR DROP AUTOROTATING GYROPLANE DROP CHUTES
Bernal L. Bower, 8336 Creighton Ave., Los Angeles, Calif.
Filed Apr. 4, 1961, Ser. No. 131,945
18 Claims. (Cl. 244—138)



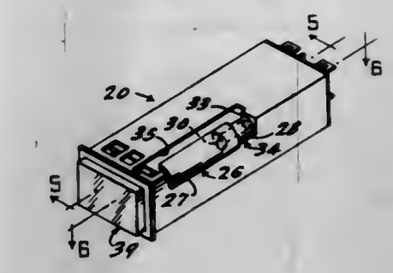
10. The combination in an autorotating airdrop chute of a flexible blade, a blade tip balance weight, a container with said blade fastened rigidly thereto, said blade having negative blade section camber.

3,273,835
SELF-EJECTING EMERGENCY CHUTE RECOVERY SYSTEM
Lloyd J. Holt, Ridgecrest, and Harry L. Myers, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 19, 1964, Ser. No. 368,723
5 Claims. (Cl. 244—138)



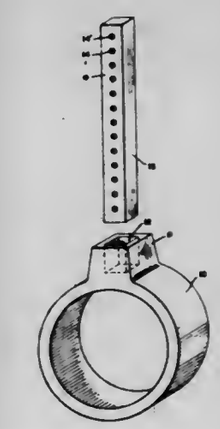
5. In a pod recovery system:
a pod;
an electrically operable pod mounting means adapted to releasably mount said pod on an airborne vehicle and release said pod in response to a flow of electrical current;
a source of electrical current;
means including a plurality of normally open switches connecting said source of a current with said mounting means;
switch closing means connected between said pod mounting means and said source of electrical power;
first means adapted to activate said switch closing means in response to destruct signals transmitted to vehicle;
second means adapted to activate said switch closing means in response to power failure occurring aboard said vehicle;
means adapted to transmit a beacon signal from said pod in response to an activation of said second means;
a parachute connected with said pod; and
means adapted to deploy said parachute in response to a release of said pod by said mounting means.

3,273,836
PANEL MOUNTED INSTRUMENT
Don M. Hallerberg, San Pedro, Calif., assignor to Master Specialties Company, Gardena, Calif., a corporation of California
Original application July 29, 1963, Ser. No. 298,090. Divided and this application Aug. 26, 1965, Ser. No. 482,879
2 Claims. (Cl. 248—27)



1. A device for mounting in an opening in an instrument panel comprising, a thin walled housing forming an internal chamber having an open front end, a stationary abutment on the outer external surface of said housing adjacent its front end, a lead screw secured in said internal chamber adjacent said wall of said housing, said housing having a recessed area in its sidewall opposite said lead screw, an abutment member comprising a sector of an element whose center is located on the center of said lead screw threadably engaging said lead screw, said abutment member being shaped to lie totally within the recessed area of said housing when in one angular position on said lead screw, and to project out of said recessed area when rotated to another angular position on said lead screw, and said abutment member being movable lengthwise of said housing while projecting out of said recessed area in said housing upon rotation of said lead screw to clamp an instrument panel between said abutment member and said stationary abutment, the wall of said recessed area being engaged by said abutment member during movement thereof towards clamping position.

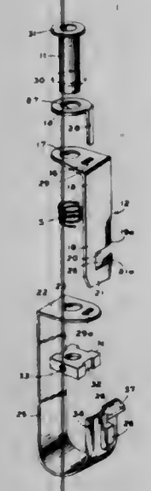
3,273,837
PLASTIC PIPE HANGER
Clarence C. Willert and Russell F. Henriksen, Walnut Creek, Calif., assignors to Willert and Henriksen, Walnut Creek, Calif.
Filed June 23, 1965, Ser. No. 466,260
8 Claims. (Cl. 248—59)



1. A hanger for light-weight plastic pipe comprising: an annular plastic member for placement about the circumference of said pipe, said annular member having an inside diameter slightly larger than the outer diameter of the pipe for a loose slidable fit therebetween to allow for

thermodynamic expansion and contraction of the pipe, a plastic rod having at least one pair of flat parallel sides, a series of spaced apart apertures through said rod along said pair of flat sides, and a recess in said annular member mating with the cross sectional area of said rod, said rod and annular member being initially separate but formed from plastic that is mutually chemically bondable at ambient temperature.

3,273,838
PIPE HANGER
Walter H. Fletcher, Lincoln Park, and Lloyd E. Mylne, Dearborn Heights, Mich.; Carl M. Weideman, administrator of the estate of Walter H. Fletcher, deceased
Filed July 21, 1965, Ser. No. 473,721
24 Claims. (Cl. 248—62)



1. In a pipe hanger for suspending a pipe from the threaded lower end of a rod or the like, the combination comprising

a tubular collet having enlarged ends and adapted to be telescoped over the threaded lower end of a rod or the like,

a first member rotatably mounted on said collet intermediate the enlarged ends of said collet and having a free end adapted to partially encircle a pipe and extending upwardly,

a second member rotatably mounted on said collet intermediate the enlarged ends of said collet with the free end thereof projecting downwardly adjacent the free end of said first member,

means interlocking the free ends of said first and second members,

a nut adapted to be threaded on the threaded lower end of a rod or the like,

and a lock member rotatably mounted on said collet intermediate the ends of said collet and having a portion projecting adjacent said nut for preventing rotation of said nut after it has been threaded on a rod or the like,

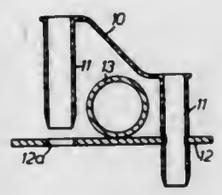
whereby the assembly of said collet, first member, second member and lock member may be mounted on the threaded lower end of a rod or the like by telescoping the collect over the rod and said nut may be threaded on the lower end of a rod to support the pipe from the rod,

said first member may be positioned beneath a pipe to partially encircle the pipe,

and the second member may be thereafter rotated and interlocked with the first member by said interlocking means,

and said lock member may thereafter be moved to engage the nut and prevent its rotation.

3,273,839
FASTENING DEVICES
Alan James Bennett, Pontypridd, Glamorgan, Wales, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 30, 1964, Ser. No. 386,243
2 Claims. (Cl. 248—73)

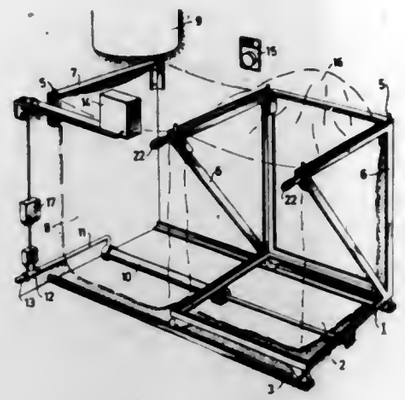


1. A fastening device for mounting an article on a support member having a pair of spaced, substantially circular apertures therein comprising, a flexible strap adapted to be brought into overlying engagement with said article, an elongated, hollow pin integrally attached to each of the opposed ends of said strap and extending normally therefrom adapted to be inserted through the apertures in said support member, said pins being of a substantially identical construction and comprised of a resilient polymeric material, each of said pins having a substantially uniform wall thickness throughout a major portion of its axial length with a substantially smooth, uninterrupted outer surface throughout such length prior to insertion through the respective of said apertures, each of said pins having a smooth, uninterrupted inner surface which is free of any internal support means, each of said pins being circular in transverse section with the diameter being constant throughout its axial extent and having a dimension which is designed to be greater than the corresponding transverse dimension of the respective of said apertures, the resiliency of the polymeric material of said pins being such that when inserted through said apertures, the wall of each of said pins is circumferentially deformed inwardly to provide a reduced diameter neck portion and enlarged portions on either side thereof adapted to travel progressively upwardly along the axial extent of each of said pins as they are moved downwardly through the respective apertures; and the material of each of said pins passed which the neck portion and enlarged portions have traveled being adapted to resiliently return to the original constant diameter of said pins prior to insertion through said apertures, whereby the confronting marginal edges of said apertures are held in frictional engagement within the neck portion and between the enlarged portions of the respective pins in any selective axial position thereof, thereby to retain the strap in frictional engagement around said article for holding the same against said support member.

3,273,840
GARBAGE CONTAINER STRUCTURE, IN PARTICULAR FOR GARBAGE CHUTE
Per Olov Oberg, Hagersten, Sweden, assignor to Handelsaktiebolaget Sanera, Mariehall, Sweden
Filed July 21, 1964, Ser. No. 384,178
8 Claims. (Cl. 248—98)

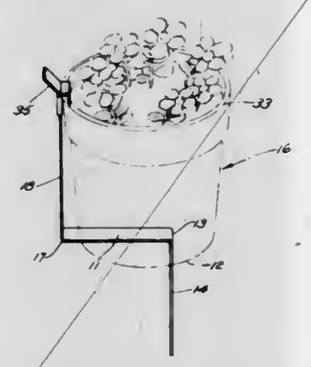
1. Container construction comprising a displaceable carriage, a container supported on said carriage, said carriage being movable from a first operative position for the container to a second inoperative position for the container, a second container, and frame means having a stationary position as said carriage is moved between

said first and second postions, said container being supported by the carriage and the frame means for being in



folded inoperative position with said carriage in its first position and being unfolded to an operative position with the carriage in said second position.

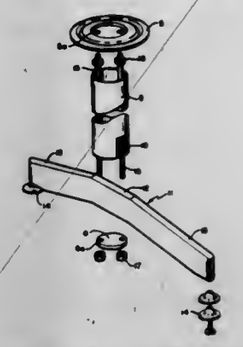
3,273,841
DEVICE FOR HOLDING FLOWER RECEPTACLE IN UPRIGHT POSITION
John G. Cota, 68 Academy Ave., Providence, R.I.
Filed Apr. 23, 1965, Ser. No. 450,385
3 Claims. (Cl. 248—154)



1. A device for holding a receptacle in upright position on the ground comprising a member of one piece of flat sheet material having a receptacle bottom engaging portion for engagement with the receptacle to be held in position, a leg extending in one direction from one end of said portion and at generally right angles thereto for insertion into the ground, and an arm extending in the opposite direction from the other end of said portion at generally right angles thereto to be positioned along the outside of the receptacle and to a height greater than said receptacle, and means at the upper end of said arm for extending over and engaging the upper edge of said receptacle to hold it in engagement with said bottom engaging portion.

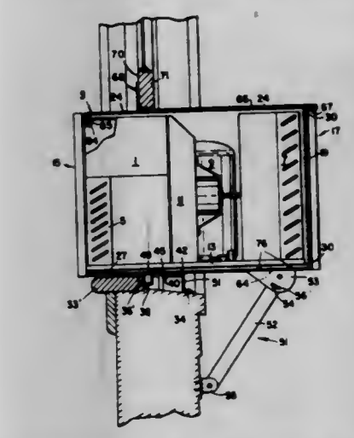
3,273,842
PEDESTAL BASES
Roy F. McMahan, Jr., Harrods Creek, Ky., assignor, by mesne assignments, to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Continuation of application Ser. No. 424,288, Jan. 8, 1965, which is a continuation of application Ser. No. 217,771, Aug. 17, 1962. This application Oct. 21, 1965, Ser. No. 506,438
23 Claims. (Cl. 248—188.7)

1. A pedestal base comprising a floor-contacting assembly including a bottom compression plate, a pedestal member supported at its lower end on said floor-contacting assembly and upstanding therefrom, a top compression plate supported at the upper end of said pedestal member, a pair of separate tie rods extending between said plates,



and means coupling respective ones of said tie rods to said plates to draw them together and compress said pedestal member therebetween to form said pedestal base.

3,273,843
MOUNTING MEANS FOR AIR CONDITIONING UNITS
William W. Bell, Jr., Marcellus, and David E. MacLeod, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 417,875
10 Claims. (Cl. 248—208)

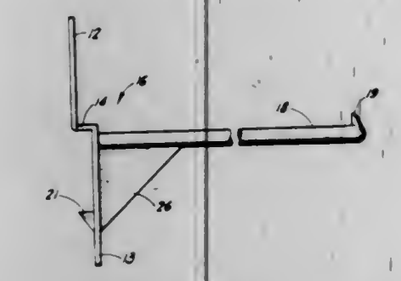


1. In a structure for positioning an air conditioning unit having a housing in the window opening a building having a movable sash-type closure for said opening, the combination of means for releasably holding said housing in a first position in said opening, a part of said housing projecting outdoors through said opening, gauge means temporarily attachable to said housing and cooperable with said sash-type closure to place said housing in a substantially level position in said window opening, and brace means connectable between the outdoor part of said housing and the outside of said building to fix said housing in said substantially level position and permit removal of said gauge means.

3,273,844
DISPLAY HOOK
Richard J. Hodson and Max Myers, Deming, N. Mex., assignors to Auburn Rubber Company, Inc., Deming, N. Mex., a corporation of New Mexico
Filed Dec. 14, 1964, Ser. No. 417,887
2 Claims. (Cl. 248—217)

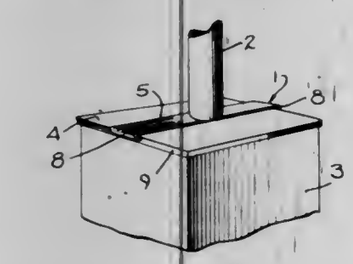
1. A one-piece plastic display bracket for mounting of items upon a wall of limited unit structural strength comprising a horizontal portion having a length substantially equal to the thickness of a wall upon which the bracket is to be mounted and adapted to fit in a horizontal wall slot, a flat upper plate extending upwardly from the rear edge of said horizontal portion for flat engagement with a

back wall surface, a lower flat plate depending from a front edge of said horizontal portion for flat engagement with a front wall surface and having substntially the same wall contact area as said upper plate, a three-dimensional triangular porjection from said lower plate directed rearwardly thereof with said projection having a pointed outer end with a thin upper edge and lateral sides tapering out-



wardly from said edge and a rear surface tapering outwardly from said point to a substantial lateral base dimension at said lower plate for piercing a wall to lock the bracket thereto, and a rigid horizontal bar extending substantially perpendicularly outward from said lower plate at the top thereof with said bar having an upturned outer end for carrying items mounted on a wall by the bracket.

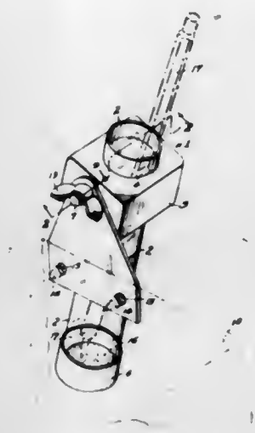
3,273,845
BRACKET ADAPTED TO ATTACH A DISPLAY POLE TO A CONTAINER
Paul H. Jepsen, New Canaan, Conn., assignor to Snyder & Black & Schlegel, White Plains, N.Y., a corporation of New York
Filed Nov. 12, 1964, Ser. No. 410,516
2 Claims. (Cl. 248—226)



1. A bracket adapted to attach an advertising display pole to a container comprising a strip of flexible material formed with a pair of elongated flat portions, a U-shaped portion intermediate said flat portions, said U-shaped portion having a pair of legs extending substantially perpendicularly from said repsective flat portions on one side of said strip, and clip-on end portions extending from the opposing side of said strip from said flat portions whereby the U-shaped portion is adapted to fit inside and support a hollow display pole and said clip-on portions are adapted to snap over the opposing edges of a container to thereby interconnect said pole and container.

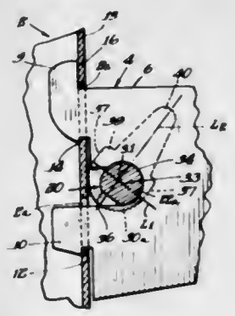
3,273,846
DRAFTSMAN'S PENCIL HOLDER AND THE LIKE
Baltzar Leo De Maré, 627 W. Belair Ave., Aberdeen, Md.
Filed Nov. 12, 1965, Ser. No. 507,594
10 Claims. (Cl. 248—226)

1. A pencil holder for attachment to a drawing board comprising in combination, a container for holding pencils therein, a bracket for attachment to a drawing board, there being a mounting bore at its upper end, adjustable means for mounting said container to said bracket whereby said container may be pivoted and held at a con-



venient angle relative to said drawing board and means housed in the lower end of said container for protecting the points of pencils when in said container.

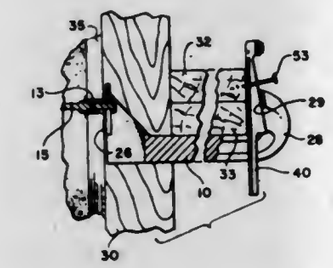
3,273,847
BRACKET CONSTRUCTION
Marvin A. Berman, Highland Park, Ill., assignor to Capitol Hardware Mfg. Co., Inc., Chicago, Ill., a corporation of Illinois
Filed May 16, 1963, Ser. No. 280,929
2 Claims. (Cl. 248—243)



1. In combination with a vertically oriented thin-walled bracket body having a generally vertical rear edge with vertically spaced hooked extensions adapted to pass through corresponding openings in an upright to hold the bracket in a forwardly extending position on the upright, the rear portion of the bracket plate being provided with a generally circular opening extending over an arc greater than 180 degrees, there being a 180-degree bearing section of the opening on the front side of said opening facing the rear edge of the bracket body, said opening having a cam member-receiving mouth extending between said vertical edge and said opening, which mouth has a width substantially less than the diameter of the cam member-receiving opening, one edge of said mouth being tangent to said circular opening and the opposite edge thereof being parallel to said one edge and spaced a distance therefrom less than the diameter of said opening, a cam member rotatably mounted in said opening about a transverse horizontal axis and having a head portion with a cylindrical surface having a diameter approximately equal to the diameter of, and making rotatable engagement with the bearing section of said circular cam member-receiving bracket opening, said cylindrical surface having only a single flat thereon which enables the cam member to be slipped into said cam member-receiving opening through said mouth thereof in one angular position of the cam

member where rotation thereof from said position will lock the cam member in said opening and move the flat in a direction toward the rear edge of the bracket body, said head portion of the cam member having a curved surface portion which is eccentrically related to said cylindrical surface and which projects beyond the rear edge of the bracket body in progressively varying degrees as the cam member is rotated over a range of angular positions about said axis, said flat on said cylindrical surface being spaced from said 180-degree bearing section of said bracket opening over said range of angular positions of said cam member so the full useful bearing surface of said opening is utilized.

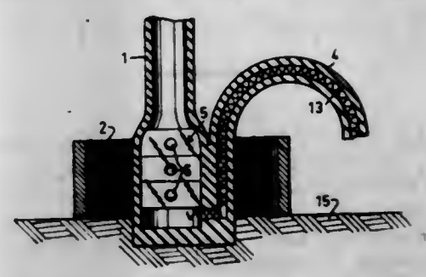
3,273,848
TIE-ROD BRACKET FOR CONCRETE FORMS
Helen M. Allen, 1724 Morocco Drive, San Jose, Calif., and Avery J. Austin, 19314 69th Place W., Lynnwood, Wash.
Filed June 21, 1963, Ser. No. 289,512
5 Claims. (Cl. 249—219)



1. A rigid metal bracket comprising:
(a) a first member formed to define an upstanding tie rod end wall formed with a tie rod head-receiving opening, a horizontal rest portion longer than the distance between the lower end of said tie rod end wall and said tie rod head-receiving opening and extending rearwardly from said tie rod end wall, an outer upturned holding end formed to include an upstanding tongue means and holding means facing said tie rod end wall and positioned above the level of said horizontal rest portion; and
(b) a U-shaped second member closed at its lower end and closed at its upper end by a rearwardly offset cross connecting member, said second member being mounted upon the horizontal rest portion of said first member and vertically movable with respect thereto, U-shaped portion of said outer wall means having wedge means facing the outer upturned holding end of said first member, said wedge means being positioned to bear against said holding means and being sloped upwardly and forwardly to cause said second member to move toward the tie rod end wall of the first member when said second member is forced upwardly, said cross connecting member being configurated to interlock with said tongue means while permitting said tongue means to be received within the opening formed by the U-shape of said outer wall means.

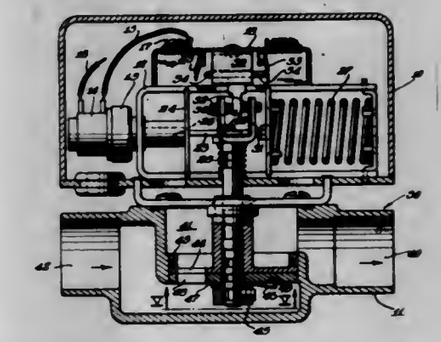
3,273,849
APPARATUS FOR CONTROLLING THE MOISTURE CONTENT IN LIQUID-ABSORBING SUBSTANCES
Thure Henning Hansson, Ernst Ahlgrensgatan 2B, Malmo, Sweden
Filed Apr. 29, 1963, Ser. No. 276,493
11 Claims. (Cl. 251—4)

1. A moisture responsive valve comprising an elastic fluid conduit, expansible means adjacent to a substantial portion of said conduit and being expandable upon absorption of liquid, means to limit the expansion forces substantially to those effecting collapse of said conduit,



whereby absorption of liquid by said expansible means effects collapse of said conduit and arrests fluid flow therethrough.

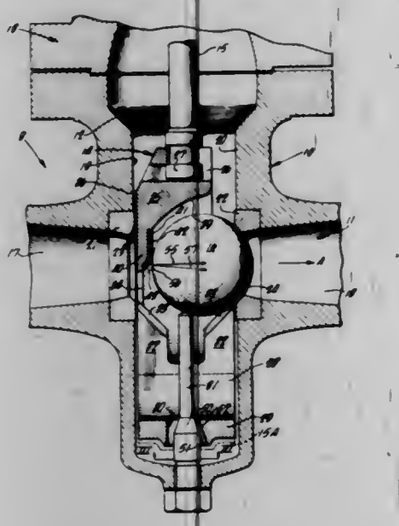
3,273,850
ZONE VALVE
Lawrence A. Kolze, Bensenville, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Oct. 9, 1963, Ser. No. 314,912
10 Claims. (Cl. 251—11)



1. A fluid control valve comprising:
(a) a valve body having an inlet and an outlet and a port communicating said inlet with said outlet,
(b) a shaft journaled for rotary movement within said body having a valve disc mounted thereon and rotatable therewith and overlying said port,
(c) an aperture in said disc positionable in registry with said port to permit maximum fluid flow through said valve, whereby rotation of said disc to move said aperture out of registry with said port will decrease the flow of fluid through said valve,
(d) a radially extending lever connected to said shaft for rotation therewith,
(e) a rectilinearly movable element pivotally connected to a free end of said lever, whereby rectilinear movement of said element will effect rotary movement of said shaft,
(f) a motor mounted on said body and having an element extensible therefrom upon energizing thereof where said extensible element abuts said rectilinearly movable element whereby movement of the said extensible element imparts rectlinear movement to the said rectilinearly movable element,
(g) an electric switch having a plurality of contacts and a switch finger whereby movement of the switch finger opens and closes the said contacts,
(h) an adjustable mechanical linkage between the said switch finger and the said lever whereby extensible and retractable movement of the said extensible element imparts movement to the said switch finger through cooperation of the said rectlinearly movable element, the said lever, and the said mechanical linkage, and
(i) an electric circuit comprising the said motor and a pair of contacts of the said electric switch and connected to an electric power source, whereby current

flow in the electric circuit energizes the motor causing the said extensible element to extend and whereby the electric switch controls the current flow in said circuit in response to extension of the said extensible element.

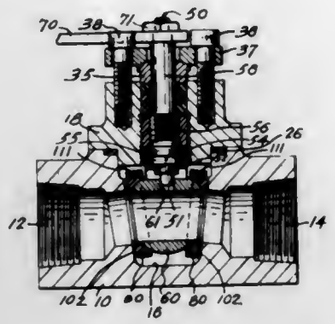
3,273,851
BALL VALVE HAVING URGING MEANS ACTING NORMAL THERETO
Francis Clifford Rosch, Jr., Bridgeport, and Clyde Kenneth Hines, Southport, Conn., assignors to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed May 23, 1963, Ser. No. 282,621
9 Claims. (Cl. 251—124)



1. In a valve having a casing defining a fluid flow passage therethrough and a recess intersecting the flow passage, said passage defining inlet and outlet openings to the recess, an annular valve seat peripherally of one opening, a ball disposed in the recess, and selectively operable means carrying the ball and movable reciprocably in the recess essentially along a line parallel to the valve seat for moving the ball along said line toward and away from closure relation with the valve seat, the improvement comprising means acting on the ball substantially normal to the valve seat in response to operation of the selectively operable means to move the ball toward the valve seat for urging the ball into intimate sealing contact with the valve seat.

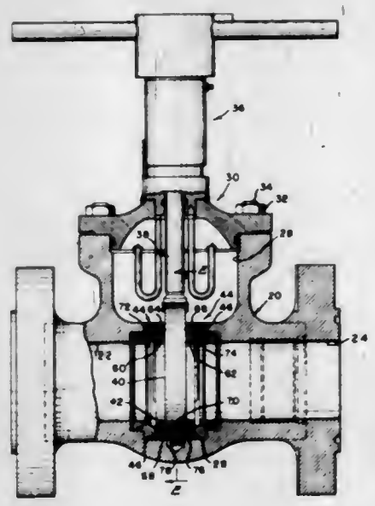
3,273,852
BALL VALVE CONSTRUCTION
Roger Louis Ripert, Roxboro, Quebec, Canada, assignor to Velan Engineering Companies, Quebec, Quebec, Canada
Filed May 14, 1964, Ser. No. 367,427
5 Claims. (Cl. 251—171)

1. A ball valve construction comprising a main valve housing having an open-topped inner valve chamber with opposed converging sealing seat surfaces and aligned fluid passages extending from the exterior of said housing to said valve seat surfaces, a ball valve having an opening therethrough mounted within said valve chamber for rotary movement between an open and closed position between a pair of opposed annular seal seats slidably fitting against said chamber sealing surfaces and adapted to cooperate with said valve and surfaces to form a pressure seal, a seal seat pressure member having at least a resilient portion and being mounted within said chamber to span the upper surface of said ball valve and having end portions engaging the upper side surfaces of said opposed seal seats, a valve bonnet mounted on said housing sealing off said valve chamber open top and a valve spindle mounted for restricted rotational and reciprocal movement within said bonnet, said valve spindle having an end portion extending within said valve chamber and operatively engaging said ball valve for rotational movement relative to said annular



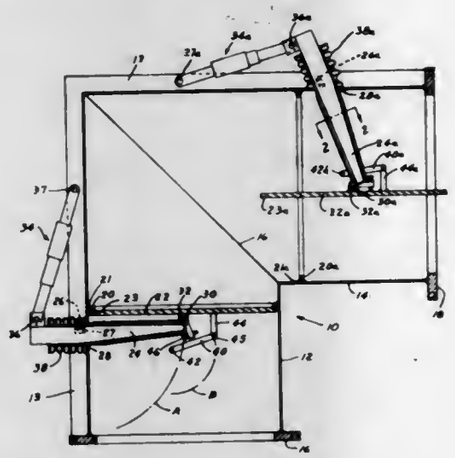
seal seats and also to engage said seal seat pressure member for restricted reciprocal movement simultaneously with said ball rotational movement to urge said seal seats along said chamber sealing seat surfaces in the direction of convergence when said ball valve is rotated to closed position and to release said seal seat pressure means when said ball valve is rotated to the opposite open position.

3,273,853
COMPOSITE METAL-RUBBER INSERT FOR GATE VALVE
Eldert B. Pool, Palos Park, Ill., and Joseph R. Kertis, Hammond, and James A. Hollingsworth, Gary, Ind., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 27, 1963, Ser. No. 326,426
3 Claims. (Cl. 251—175)



3. A valve comprising a body having flow passages intersecting at their inner ends an enlarged central cavity, a flow controlling gate movable into and out of said cavity between closed and open positions, removable annular wear rings carried by said body and surrounding the inner ends of said flow passages, a composite metal-elastomer sealing insert removably mounted in said cavity between said wear rings, said inert having a resilient bridge portion, said bridge portion having an upper surface against which said gate seals when said gate is moved to closed position, a metallic reinforcement member bonded to the lower surface of said bridge portion and extending completely across said cavity between said wear rings to hold said wear rings in position throughout opening and closing movements of said gate, and said reinforcement member being formed on essentially the same radius as said wear rings to thereby engage said wear rings around a substantial portion of their periphery, and mean providing pressure equalizing passages in said bridge portion.

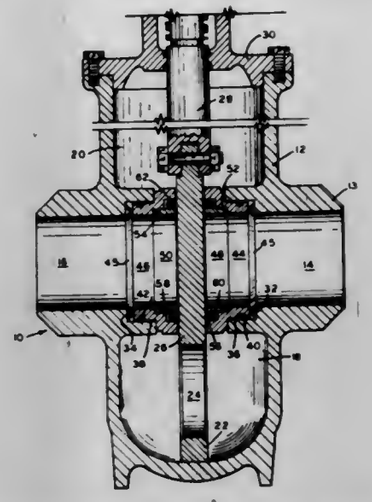
3,273,854
ELBOW VACUUM VALVE
Austin U. Bryant, Walnut Creek, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Sept. 10, 1963, Ser. No. 307,963
4 Claims. (Cl. 251—228)



1. A valve comprising:
a valve body including a flow passageway,
a valve seat in said body,
a valve closure plate,
an actuator arm; a first pivotal connection between said body and said actuator arm enabling said arm to swing in a plane transverse to said valve seat,
a second pivotal connection between said actuator arm and said closure plate,
a shorter control arm pivotally connected between said valve body and said closure plate to swing in a plane parallel to said actuator arm,
adjustment means for varying the spacing between said first and second pivotal connections, and
means for pivoting said actuator arm to swing said pivotal connection from a first position wherein said closure plate engages said valve seat and a second position retracted therefrom.

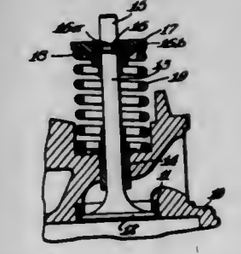
3,273,855
VALVE SEAT FOR GATE VALVES
Russel L. Wells, 7322 E. 22nd Place, Tulsa, Okla.
Filed July 11, 1963, Ser. No. 294,414
4 Claims. (Cl. 251—328)

1. A gate valve, the combination comprising:
a body having a substantially circular passageway therethrough;
a valve chamber intersecting said passageway;
a reciprocable slab gate member located in said valve chamber, said gate member provided with a passage alignable with the said circular passageway in the open position and a solid portion to cover said passageway in the closed position;
facing annular recesses surrounding said passageway;
a seat member in each of said recesses, each of said seat members formed of an annular ring having a primary seating face for sealed contact with said gate member and an annular groove in said ring opening at said primary seating face and toward said gate member, said seat member including an integral lip member ring therein which extends partially into said groove; and



a deformable sealing member bonded to and covering said lip ring and a dimension whereby said sealing member is contactable against said gate member to form a secondary seating face against said gate member.

3,273,856
VALVE STEM RETAINER LOCK
Max J. Tauschek, South Euclid, Ohio, assignor to TRW Inc., a corporation of Ohio
Filed Dec. 26, 1963, Ser. No. 333,484
12 Claims. (Cl. 251—337)

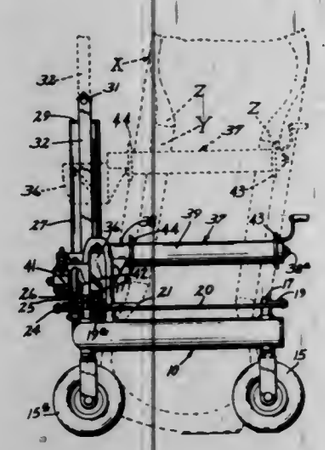


1. A valve spring retainer lock which comprises a one-piece metal tube having at least three slots extending inwardly a given distance from one end thereof and providing therebetween at least three expansible and contractible arcuate segments, said segments having inner peripheral gripping walls which are of a constant diameter along substantially their entire axial length which is equal to the inner diameter of said tube at said given distance from said one end thereof and external tapered walls diverging to the free ends of the fingers, the ends of the fingers having inturned ribs beyond the gripping walls adapted for locating the lock axially on a stem.

3,273,857
EARTH-MOVER TIRE TRANSPORTER
Charles E. Branick, % Branick Mfg. Co., Box 1937, Fargo, N. Dak.
Filed Apr. 20, 1965, Ser. No. 449,520
5 Claims. (Cl. 254—2)

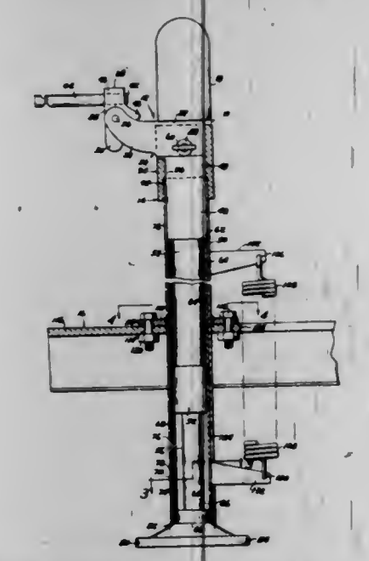
1. In a device of the class described,
(a) mobile frame structure including a rear frame member and laterally spaced opposite side frame members which cooperate to define a forwardly opening tire-receiving mouth,

(b) a horizontally disposed lifting arm secured to the intermediate portion of said rear frame member and projecting forwardly therefrom and adapted to be received within the central opening of a tire casing received within said mouth when the axis of said tire casing opening is generally parallel to the axis of said lifting arm,



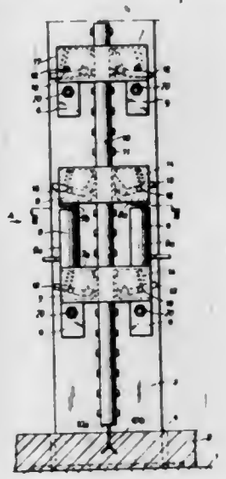
(c) means mounting and guiding said arm for raising and lowering movements,
(d) means for imparting raising movements to said arm, and
(e) means associated with said arm for imparting rotary movements to a tire casing suspended therefrom.

3,273,858
TRAILER TONGUE ELEVATOR
Franklin Woods Coburn, 81 S. Edgewood Drive, Grosse Pointe Shores, Mich.
Filed July 16, 1964, Ser. No. 383,020
4 Claims. (Cl. 254—86)



1. A trailer tongue elevator comprising
a hydraulic lifting jack including a manually-operated hydraulic pump, a hydraulic fluid reservoir, and a hydraulic reciprocatory motor hydraulically connected to said pump and reservoir,
said motor having a lifting cylinder and a supporting plunger movably mounted in said cylinder for relative reciprocation therebetween and extending downwardly from said cylinder,
a ground-engaging structure mounted on the lower portion of said plunger,
and a trailer tongue adapter structure including a jack holder connected to said jack and also including attachment means for securing said jack holder to a trailer tongue,
said jack holder including an outer tubular member surrounding said cylinder and also including means for securing said cylinder to said outer tubular member, said securing means including a sleeve connected to the upper portion of said outer tubular member and also connected to the upper portion of said cylinder, said sleeve having an opening therein and said pump being disposed above said cylinder and extending outwardly therefrom through said opening.

3,273,859
DEVICE FOR THE STEPWISE ELEVATION OF AT LEAST ONE STRUCTURAL MEMBER OR THE LIKE
Ernst Wälli, 3 Alpenstrasse, Arbon, Thurgau, Switzerland
Filed Oct. 28, 1964, Ser. No. 407,009
Claims priority, application Switzerland, Oct. 31, 1963, 13,381/63
15 Claims. (Cl. 254—109)

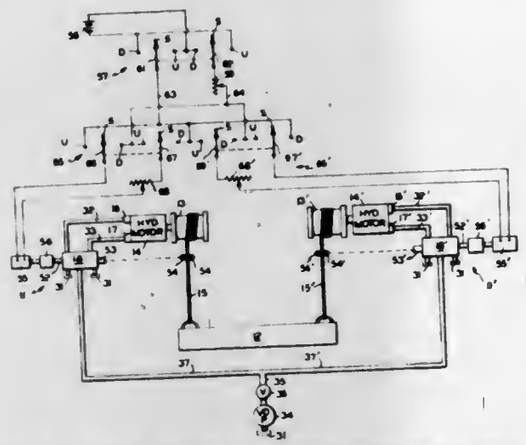


1. Device for the stepwise elevation of at least one member to be raised along a column serving as a terminal anchoring for said member, comprising at least one guide means and at least two pawl mechanisms, means for anchoring said guide means with the member to be raised, lifting means for moving said guide means, said pawl mechanisms being provided with pawl means automatically engageable with said guide means, means mounting a first of said two pawl mechanisms to said lifting means and means selectively anchoring the second of said two pawl mechanisms at different elevational positions along the column.

3,273,860
HYDRAULIC SYSTEM
Charles O. Weisenbach, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Mar. 4, 1965, Ser. No. 437,167
6 Claims. (Cl. 254—184)

1. A hoisting system comprising
(a) a plurality of winches, each adapted to reel in and pay out a cable;
(b) reversible hydraulic motors, one connected to drive each winch and each having a pair of ports, the motor causing the winch to reel in cables when one port is pressurized and to pay out cable when the other port is pressurized;
(c) a hydraulic reservoir;

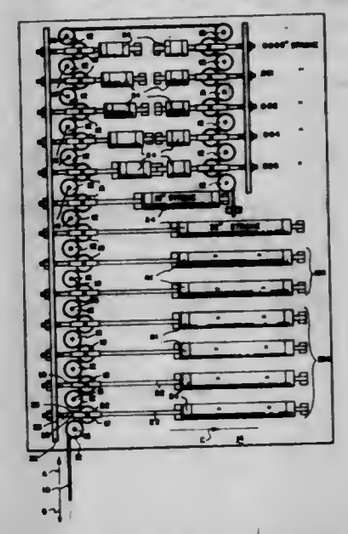
(d) a discharge pressure compensated variable delivery hydraulic pump having an inlet port connected with the reservoir and to discharge port;
(e) a plurality of control valves, each connected with the two ports of one hydraulic motor and with both the discharge port of the pump and the reservoir;
(f) each control valve including a valve member movable in opposite directions from a neutral position in which it prevents communication between the pump and reservoir and hydraulically locks the associated hydraulic motor, movement of the valve member in one direction serving to open progressively flow paths between one motor port and the pump and between the other motor port and the reservoir, and movement of the valve member in the opposite direction serving to open progressively flow paths between said one motor port and the reservoir and between the said other motor port and the pump;
(g) a reversible electric motor associated with each control valve;
(h) feedback means associated with each winch and each including a rotary element which is driven at a velocity that varies with the velocity of the cable;



(i) actuating means associated with each control valve and operatively connected with the valve member and the associated rotary feedback elements and electric motor, each said actuating means being responsive to the speeds and directions of movement of the rotary feedback element and electric motor for positioning the valve member so as to maintain a predetermined proportionality between said speeds and a predetermined relationship between said directions of movement;
(j) electrical circuit means for energizing the electric motors;
(k) common control means associated with the circuit means for simultaneously and uniformly varying the speeds of all electric motors and for simultaneously reversing the directions of operation of all motors; and
(l) a plurality of independent control means associated with the circuit means, each independent control means serving to vary the speed of only one electric motor.

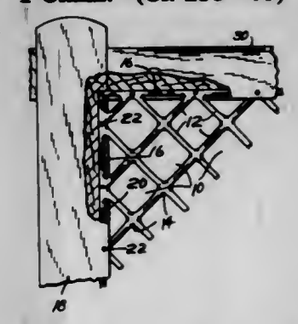
3,273,861
PRECISION POSITIONING DEVICE
Richard W. Schuff, 5026 E. Cherry Lynn Road, Phoenix, Ariz.
Filed July 6, 1964, Ser. No. 380,583
5 Claims. (Cl. 254—189)

1. In a precision positioning device the combination of: a frame; a flexible cable having one end fixed with relation to said frame; a plurality of spaced first means over which said cable is engaged; a plurality of spaced second means over which said cable is engaged, said first and second means alternately disposed between each other; actuators connected to said second means and disposed to move said second means relative to said first means for causing movement of said flexible cable relative to said



frame; and fixed stop means disposed precisely to limit movement of said actuators and said second means; a card having indicia portions thereon; switch means responsive to said indicia portions; said actuators operable in response to operation of said switch means.

3,273,862
PLASTIC PANELS FOR PLAY YARDS
Francis A. Miller, Leominster, Mass., assignor to Joseph P. Miller Co. Inc., Leominster, Mass., a corporation of Massachusetts
Substituted for abandoned application Ser. No. 178,435, Mar. 8, 1962. This application May 26, 1964, Ser. No. 371,875
1 Claim. (Cl. 256—73)

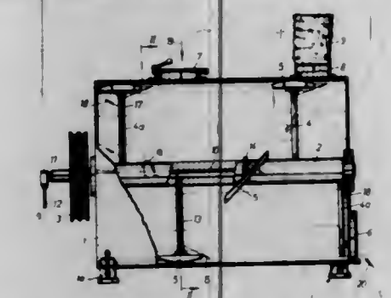


A panel comprising a molded plastic flexible reticulate one-piece member including a continuous surrounding edge bead and a plurality of mutually spaced runners connected to the edge bead and extending therefrom across the panel to other parts of the edge bead,
each runner intersecting certain other runners, the corners formed by intersecting runners and by runners and the edge bead being rounded, said rounded corners providing additional strength against rupture, the runners and edge bead being integral.

3,273,863
MIXING APPARATUS
Wilhelm Lodige, 9c Elsener Strasse, Fritz Lodige, 9b Elsener Strasse, and Josef Lucke, 13 Im Lohfeld, all of Paderborn, Germany
Filed Apr. 21, 1965, Ser. No. 449,818
Claims priority, application Germany, Apr. 24, 1964, L 47,681
7 Claims. (Cl. 259—9)

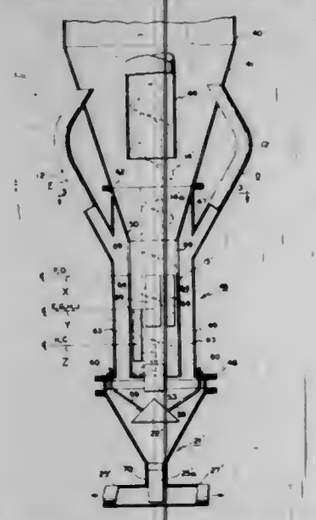
1. A mixing apparatus comprising, in combination, a cylindrical container having a closeable inlet opening

in its upper part and a closeable outlet opening in its lower part, a rotatable drive shaft extending coaxially through said container and having a central bore extending lengthwise therethrough, radially-extending supporting arms on said shaft, said supporting arms having a central bore extending lengthwise therethrough and said bores communicating with the central bore of said drive shaft, mixing means at the outer ends of said supporting arms, said mixing means extending with their outer



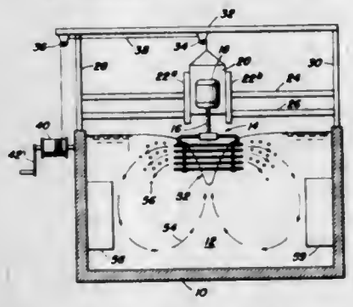
edges close to the inside wall of said container, nozzle means in the rear side of said arms for ejecting a jet of fluid, said nozzle means being arranged in a pipe socket at the rear side of said arms as to the direction of rotation and communicating with the central bore in said supporting arm and being arranged with their bore at an angle of about 45° both to the inner surface of said container and to the direction of rotation of said mixing means and being directed towards the outlet opening of said container.

3,273,864
SOLIDS BLENDING APPARATUS
Frederick M. Thomson, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 9, 1965, Ser. No. 438,276
6 Claims. (Cl. 259—97)



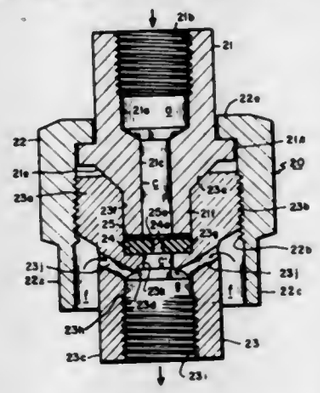
1. A solids return and unloading apparatus for a solids blender having a vessel for the retention of solids to be blended, a co-axially disposed screw conveyor for solids recycle and a plurality of principal gravity-flow solids draw-offs opening into the periphery of said vessel proportioned to deliver substantially equal volumes of solids to be blended from said vessel during a given interval of time comprising, in combination, a tubular conduit enclosing the lower material input end of said screw conveyor at close clearance and defining therewith a receiver for solids to be recycled, solids throughput openings cut through the wall of said tubular conduit in open communication with individual ones of the lower ends of said principal gravity-flow solids draw-offs, individual extension gravity-flow solids draw-offs connected in open communication with said lower ends of said principal gravity-flow solids draw-offs disposed substantially co-parallel with the axis of said conveyor screw, and solids discharge means in open communication with the lower ends of said extension gravity-flow solids draw-offs.

3,273,865
AERATOR
Douglas F. White, Bedminster, N.J., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed June 23, 1964, Ser. No. 377,350
16 Claims. (Cl. 259—108)



1. An aerator for aerating a liquid in a container exposed to the air comprising a plurality of apertured laminae having surface portions, spider means connected to at least one of the outermost apertured laminae, means for connecting each one of the remaining laminae to said outermost apertured lamina whereby said laminae are supported in parallel, axially-spaced and aligned relationship so that the apertures of said laminae define a central unobstructed cylindrical open-ended cavity, and means for rotating said spider means and thereby said laminae about a common axis of rotation at high speed so that a shear force is exerted on the liquid between the surface portions of said laminae to establish a vortex of liquid in the region defined by the apertures of said laminae, said vortex providing a constantly changing interface of air and liquid.

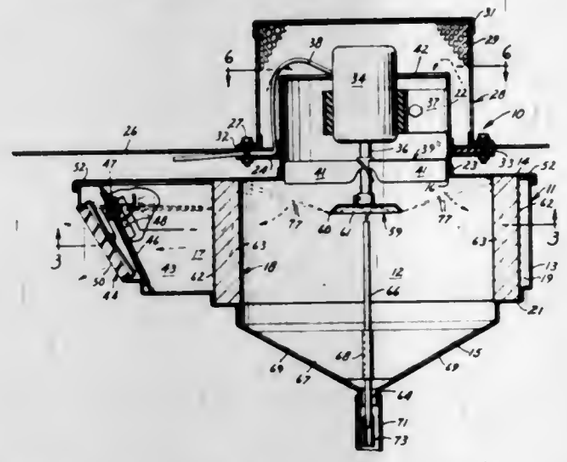
3,273,866
CONSTANT FLOW AERATOR AND SIPHON BREAKER
Leslie E. Lancy, Ellwood City, Pa., assignor to Lancy Laboratories, Inc., Zelienople, Pa., a corporation of Pennsylvania
Filed Mar. 12, 1963, Ser. No. 264,614
12 Claims. (Cl. 261—19)



5. A compact unitary device for aerating and supplying a conditioning liquid from a source at a substantially constant flow rate and in an aerated condition to a liquid body to be conditioned which comprises, a pair of interfitting liquid inlet and outlet body parts having cooperating portions for aligning them in a liquid-flow relation with each other, means removably-securing said body parts in an aligned assembled relation, said body parts defining a forwardly-extending venturi bore and a recessed portion within said venturi bore, said inlet

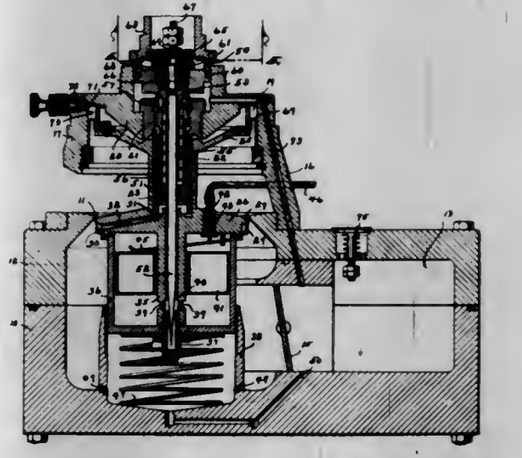
body part having an inlet chamber for supplying liquid from the source into and along said venturi bore, an outlet chamber in said outlet body part for supplying liquid to the liquid body to be conditioned, flow control means operatively-positioned in said recessed portion for supplying the liquid at a substantially constant flow rate to said outlet chamber irrespective of the pressure of the liquid introduced into said inlet chamber, a vacuum chamber associated with a forward end of said venturi bore, and air passageways inclining forwardly-inwardly through and open at their back ends outwardly from said outlet body part and open at their front ends inwardly to said vacuum chamber for aerating the liquid flowing into said outlet chamber and preventing a back-flow of the liquid from the liquid bath through the device.

3,273,867
EVAPORATIVE AIR COOLER AND WASHER
John C. Enblom, Rochester, Minn., assignor to Crenlo, Inc., Rochester, Minn., a corporation of Minnesota
Filed Sept. 18, 1963, Ser. No. 309,628
3 Claims. (Cl. 261—29)



1. An air conditioner assembly comprising:
(a) a housing having a peripheral side wall portion, a top wall portion and a bottom wall portion,
(b) said housing further defining a gas inlet port in said top wall portion and a gas outlet port in said side wall portion,
(c) said bottom wall portion defining a drain opening,
(d) a generally tubular filter element having a vertical axis and mounted in said housing between said inlet and outlet ports and in spaced relation to said side wall portion with the opposite ends of said filter element disposed in sealing engagement with said top and bottom wall portions respectively,
(e) a vertical drive shaft journalled for rotation substantially on the axis of said filter element and having its lower end disposed intermediate the ends of said filter element,
(f) a generally horizontally disposed spreader pan having a generally circular outer edge and a concave undersurface and rigidly secured at its center to the lower end of said drive shaft for common rotation therewith,
(g) power head means for rotating said drive shaft,
(h) a reservoir for liquid coolant remote from said housing,
(i) means including a pump and a conduit extending upwardly through said drain opening for delivering a stream of liquid coolant from said reservoir and axially against said spreader pan under surface, whereby liquid coolant striking said concave spreader pan surface is driven centrifugally outwardly against said filter element responsive to rotation of said drive shaft and spreader pan, and
(j) a drain tube extending from said drain opening to said reservoir, said conduit extending longitudinally within said drain tube from said reservoir into said housing,
(k) and means for imparting movement to air from said inlet port through said filter element and outwardly through said outlet port.

3,273,868
CARBURETOR FOR INTERNAL COMBUSTION ENGINES
Glenn R. Morton, 7025 Sarpy Ave., Omaha, Nebr.
Filed Sept. 15, 1964, Ser. No. 396,532
17 Claims. (Cl. 261—39)



1. In a carburetor for internal combustion engines,
a lower carburetor housing having a top opening,
an upper housing spaced apart from said lower housing,
a vertically movable carburetor bowl in said lower housing,
a means for yieldingly holding said carburetor bowl in an upward position of its movement,
a vertically slidable spool having a lower skirt secured to said carburetor bowl and an upper skirt vertically slidable in said upper housing,
means for connecting the inside of said carburetor bowl to a source of liquid combustible fuel,
a needle valve seat associated with said carburetor bowl,
a fuel passageway in the said lower skirt of said spool having one end operatively communicating with said needle valve seat and its other end exiting at the periphery of said lower skirt,
a tapered needle valve associated with said needle valve seat,
means for holding said needle valve at least in one direction,
a valve having one side communicating with the inside of said lower carburetor housing and its other side adapted to be in communication with the intake manifold of an internal combustion engine,
and a valve adjustable passageway having one end communicating with the outside atmosphere and its other end communicating with the inside of said upper housing above the upper skirt of said spool.

3,273,869
CARBURETOR MEANS FOR INTERNAL COMBUSTION ENGINES
Glenn R. Morton, 7025 Sarpy Ave., Omaha, Nebr.
Filed Aug. 19, 1963, Ser. No. 302,925
10 Claims. (Cl. 261—40)

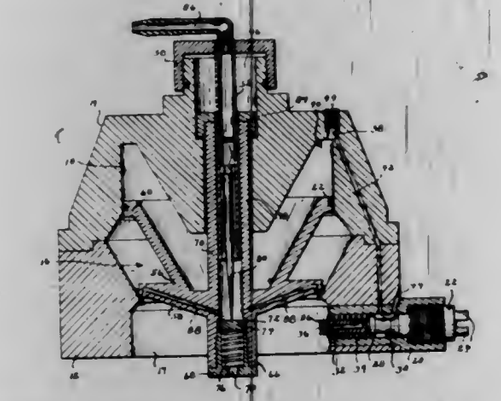
1. In a carburetor means for internal combustion engines,
a carburetor housing having an upper bore and a lower compartment area;

said lower compartment area adapted to be in communication with the intake manifold of an internal combustion engine,

throttle valve means slidably mounted in the bore of said housing and adapted to adjustably restrict the entrance to said lower compartment area,

an air inlet port communicating with the inside of said carburetor housing at a point located above the entrance to said lower compartment area,

a passageway means in said carburetor housing having one end communicating with the lower compartment area of said carburetor housing and its other end communicating with the upper bore of said carburetor housing and above said throttle valve means,



a manually adjustable valve means imposed in said passageway means, a conduit means having one end adapted to be in communication with a source of ignitable fluid, and its other end in communication with the lower area of said carburetor housing,

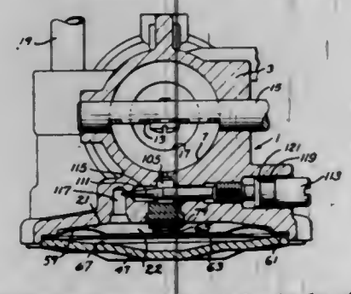
a valve seat imposed in said conduit means,

means mounting a reciprocating needle valve extending into said valve seat,

and a means associated with said throttle valve means for progressively moving said needle valve in a direction away from said valve seat when said throttle progressively moves upwardly;

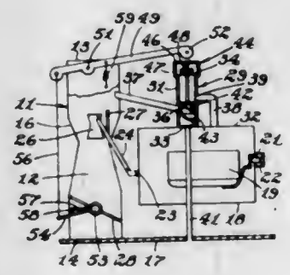
said manually adjustable valve means being also in communication with the outside atmosphere and capable at one position of its movement of permitting outside air to pass into the passageway in which it is imposed.

3,273,870
CARBURETOR
Eldon A. Johnson, deceased, late of St. Louis County, Mo., by Dolores Johnson, administratrix, St. Louis County, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 11, 1965, Ser. No. 424,856
5 Claims. (Cl. 261—41)



1. A carburetor comprising a body having a fuel and air mixture conduit, said body having, a fuel chamber and a fuel inlet passage extending to said fuel chamber, an inlet valve in said fuel passage, a diaphragm formed of flexible material extending across said chamber, said diaphragm having; a center hole and an annular preformed loop molded therein concentric with said hole, a plate secured to one surface of the diaphragm and having a button projecting through said hole in said diaphragm, valve operating means including an arm connected to said inlet valve and operable by said button for operation of said inlet valve in response to movement of said diaphragm to regulate delivery of fuel through said fuel passage to said chamber, said body having a fuel passageway formed between said fuel chamber and said fuel and air mixture conduit for transfer of fuel from said chamber to said mixture conduit, a gasket secured to said diaphragm at its margin, a cover plate clamped against the peripheral margin of said diaphragm and engaging said gasket outwardly of said loop to hold said diaphragm in position in said chamber, a portion of said cover plate constituting a stop engageable by said diaphragm plate to limit outward movement of said diaphragm plate and outward flexing of said diaphragm and, means adhesively bonding said diaphragm plate and said gasket to said diaphragm.

3,273,871
CARBURETOR VAPOR VENTING DEVICE
Albert H. Winkler, Elmira, N.Y., assignor to The Bendix Corporation, Elmira Heights, N.Y., a corporation of of Delaware
Filed Mar. 22, 1963, Ser. No. 267,254
5 Claims. (Cl. 261—43)



1. A carburetor for an internal combustion engine, comprising:

a mixture passage;

a fuel reservoir;

means for supplying fuel from the reservoir to the mixture passage in accordance with the quantity of air flow through the mixture passage;

a throttle valve in the mixture passage, said throttle valve adapted for movements between closed and opened positions for controlling the fuel-air mixture discharged from the mixture passage;

a source of vacuum;

a housing member;

a first port in the housing, including a valve member, communicating with the atmosphere;

a second port in the housing communicating with the mixture passage;

means for communicating between the reservoir and the housing;

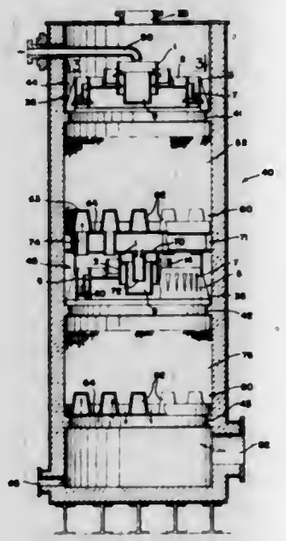
a suction actuated member slidably supported in the housing, said suction actuated member adapted to open one of the ports and to concomitantly close the other of the ports;

means communicating vacuum from the source of vacuum to the housing with a predetermined value of communicated vacuum adapted to motivate the suction actuated member;

means for asserting a biasing force on the suction actuated member in opposition to the force exerted by the predetermined value of communicated vacuum whereby said member opens the first port and closes the second port; and,

throttle control means for overcoming the biasing force on the suction actuated member whereby said member closes the first port and opens the second port when the throttle valve is opened a predetermined amount and the vacuum from the source of vacuum is below the predetermined value and insufficient to motivate said member, said control means including a loose lever means and a pick-up lever means for engaging said loose lever means.

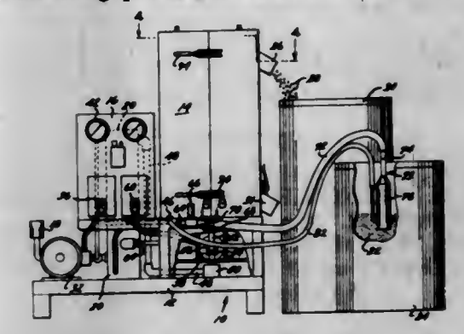
3,273,872
DISTRIBUTOR PLATE
John S. Eckert, Silver Lake, Ohio, assignor to The United States Stoneware Company, Tallmadge, Ohio, a corporation of Ohio
Filed Jan. 28, 1963, Ser. No. 254,189
9 Claims. (Cl. 261—96)



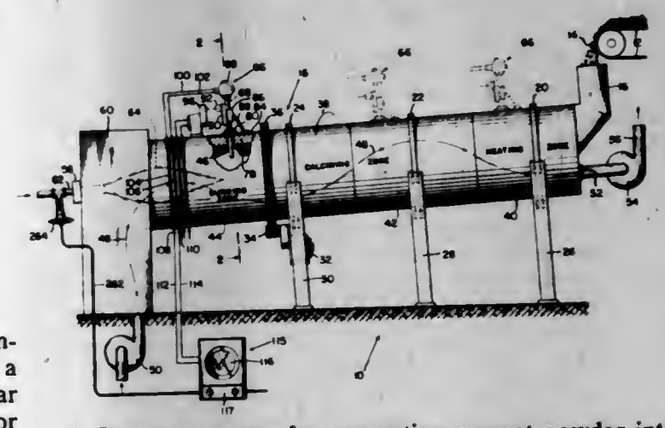
1. A distributor plate which comprises at least two concentric circular weir walls, each wall having therein a series of downwardly narrowing openings, an annular floor between the walls and contacting each, with the floor contacting the first wall below the openings therein and contacting the second wall at a position between the tops and the bottom of the openings therein whereby when liquid is on the floor the bottoms of the downwardly narrowing openings restrict and regulate the amount of liquid which flows through the first wall while liquid is simultaneously flowing through the upper parts of the openings in the second wall.

3,273,873
APPARATUS FOR DRY HEAT PRE-EXPANSION OF EXPANDABLE POLYSTYRENE AND LIKE PRODUCTS
Ivan J. Stanchel, 10740 Cumpston St., North Hollywood, Calif.
Filed Nov. 13, 1962, Ser. No. 237,081
3 Claims. (Cl. 263—26)

1. Apparatus for expanding polystyrene beads comprising: a housing in which said beads are expanded, said housing having an encompassing sidewall, a closed top and a closed bottom wall; an outlet port in said housing adjacent its top through which the expanded beads are discharged; an inlet port in said bottom wall through which unexpanded beads enter said housing; air distribution means located in said housing for establishing a dry-heat zone therein and for suspending said beads within said housing; an agitator rotatably mounted in said housing superjacent said material inlet port for moving said beads in suspended condition through said dry-heat zone to said outlet port; means for rotating said agitator, said air distribution means connected to said agitator adjacent the lower end thereof for rotation therewith and directing pre-heated moisture free air into unexpanded beads entering said housing, a second supply of pre-heated air, and an aspirator connecting said inlet port and said second air supply to a supply of unexpanded beads for drawing said beads into said housing.



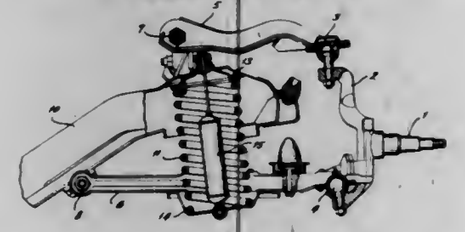
3,273,874
CONTROLLING APPARATUS
Ernest Hucke, Glenside, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 12, 1963, Ser. No. 330,166
2 Claims. (Cl. 263—33)



1. In an apparatus for converting cement powder into cement clinker which comprises a cement powder drying kiln having a silicon carbon wall, a driving means operably connected to rotate the kiln, a cement powder supply duct communicating with one end of the kiln, means for introducing a flow of air into the other end of the kiln, a burner for introducing a flame into the last-mentioned end of the kiln to heat the air and cement clinker, an outlet at the last-mentioned end of the kiln to remove clinker therefrom, the improvement comprising a self-cleaning temperature-sensing probe having a hollow elongated well portion operably mounted on the outer wall of the kiln and for physical surface-to-surface non-rotatable sliding contact with a silicon carbon wall portion of said kiln that forms an opening therein, a potentiometric measuring and indicating means comprising a temperature-sensing element positioned in the well to sense the temperature through an inner closed end thereof, a controller operably connected with the temperature-sensing element to produce a control signal whose magnitude is varied in accordance with changes occurring in the temperature sensed by the probe, electromechanical means operably connected with the well portion, to intermittently move the probe and its temperature-sensing element through the wall portion toward and away from the center of the kiln toward an in-kiln position in which a tip of the inner closed end of the well and a portion of its side wall extending therefrom are exposed to the atmosphere within the kiln and an out-

of-kiln position in which only the tip is exposed to the cement powder being processed into clinker while the kiln is being moved by the kiln rotating means, and said controller being operably connected to the burner to transmit the control signal thereto to alter the intensity of the flame thereof in accordance with the magnitude of the signal when the well and its temperature-sensing element is positioned in its out-of-kiln position.

3,273,875
SHOCK SPRING KIT FOR FRONT SUSPENSION
Janis Dumpis, St. Ann, Mo., assignor to Champ-Items, Inc., St. Louis, Mo., a corporation of Missouri
Filed Dec. 11, 1963, Ser. No. 329,707
5 Claims. (Cl. 267—8)



1. The combination with a telescoping type of shock strut having a cylindrical body with a closed lower end, a lower end support on said body of a width to project outwardly of said body, a neck of smaller diameter than said body between said lower end support and the closed lower end of said body, a reciprocating stem smaller in diameter than said cylindrical body and projecting axially of said cylindrical body opposite from said lower end support, and an upper end support on said stem wider than said stem, of

(a) a coil spring with an internal diameter to slip freely over said cylindrical body from said stem end,

(b) a spring seat for one end of said coil spring mounted on said stem,

(c) a cup having a circular spring seat for the other end of said coil spring disposed around and in spaced relation to the cylindrical body of said shock strut, said cup being apertured to surround said neck, and

(d) wedging means for said cup engaging said lower end support and clamping said cup in position on said shock strut with the inside of said cup pressed axially of said shock strut against the bottom of said cylindrical body to firmly position said cup with respect to said shock strut and provide a stable spring seat.

3,273,876
ADJUSTABLE SHOCK ABSORBER AND AUTOMATIC CONTROL MECHANISM THEREFOR
Jerry M. Hannan, San Rafael, Calif.
Continuation of application Ser. No. 393,024, Aug. 31, 1964. This application July 1, 1965, Ser. No. 471,786
18 Claims. (Cl. 267—11)

1. The combination with a hydraulic shock absorber including:

(a) a cylinder filled with liquid;

(b) a piston having bleed passages therein and being slidable in said cylinder;

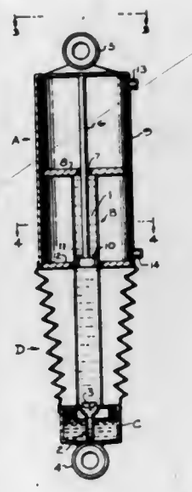
(c) a piston rod secured to said piston and having its free end projecting from one end of said cylinder;

(d) means for receiving any excess fluid from said cylinder as said piston rod moves into said cylinder and for returning it as the rod is moved out of the cylinder; and

(e) attaching means at the free end of said rod and at the end of said cylinder disposed opposite to the end from which said rod extends for securing said shock absorber to two relatively moving parts of a vehicle; of

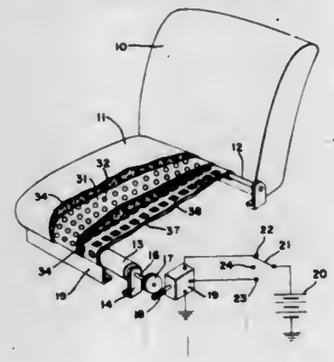
(f) an air-receiving cylinder having a diameter greater than the diameter of said hydraulic cylinder; said air cylinder having an end slidably receiving said hydraulic cylinder and having its other end secured to said piston rod;

(g) the end of said hydraulic cylinder received in said air cylinder having an outer diameter equal to the inner diameter of the air cylinder and being slidable in the air cylinder and functioning as a second piston to divide the air cylinder into two compartments; and



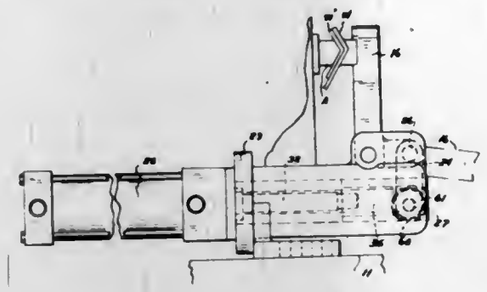
(h) ports at the ends of the air cylinder and communicating with said compartments, whereby air entering one of said compartments will enlarge it and cause movement of said second piston in said air cylinder toward the end of said air cylinder that slidably receives said hydraulic cylinder for increasing the effective length of said hydraulic shock absorber, and air entering the other compartment will cause the said second piston to move toward the opposite end of said air cylinder for decreasing the effective length of said hydraulic shock absorber.

3,273,877
SEAT STRUCTURE
Rodger E. Geller and Harry Otto Waag, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,923
3 Claims. (Cl. 267—89)



1. Seat structure for vehicle installation, comprising, in combination, transverse support means including opposite elevated portions, a bottom diaphragm portion that extends across said support means, a polymer foam means on said bottom diaphragm portion, a further perforated diaphragm portion embedded in said polymer foam means and also extending across said support means, and rotatable means at one of said elevated support portions through which both said diaphragm portions are secured as a "winding" device for the purpose of adjusting firmness of said polymer foam means with said diaphragm portions.

3,273,878
POWER CLAMP
Leland F. Blatt, Grosse Pointe Woods, Mich. (24121 Mound Road, Warren, Mich.)
Filed Mar. 11, 1964, Ser. No. 351,005
4 Claims. (Cl. 269—32)



1. A unitary clamping means including a horizontally arranged rectangular cross-sectional tube having a closed end and an open end;

a tube rod in said tube passing through its closed end;

pneumatic means unitary with said tube and having a piston rod connected to said tube rod for moving the tube rod along its axis and the axis of the tube;

a carrier secured to said tube rod adjacent the open end of the tube and disposed in the tube for reciprocating movement therein;

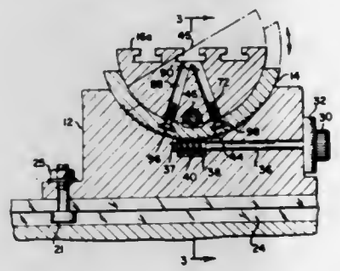
a clamp;

means pivotally connecting the carrier to the clamp;

said carrier being of rectangular cross-section and substantially completely filling said tube to provide an air cushion in said tube to the side of said carrier between the carrier and the closed side of the tube; and

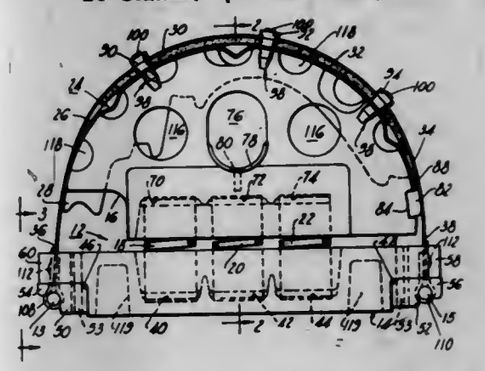
friction reducing guide rollers on and carried by said carrier enabling frictionless reciprocation of said carrier in said tube.

3,273,879
COMPOUND SINE PLATE
Olaf J. Floren, 8331 West Ave., E–12, Lancaster, Calif.
Filed Sept. 13, 1963, Ser. No. 308,891
6 Claims. (Cl. 269—61)



1. A universal holder for supporting a work-piece during processing comprising: a base block defining a concave spherical surface; a concave-convex spherical shell mating in said concave spherical surface of said base block; means for clamping said shell to said base block in various locked positions of angular displacement of said shell about one axis of rotation; a first gearing means for driving said shell about said one axis of rotation; a spherically convex work-holder mating within the concave surface of said shell; means for clamping said work-holder to said shell in various locked positions of angular displacement about an other axis which is in space quadrature with said one axis; and a second gearing means for driving said work-holder about said other axis.

3,273,880
BRAKE SHOE AND LINING HOLDING FIXTURE
Alfred Wesstrom and John K. Nice, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Continuation of application Ser. No. 246,261, Dec. 20, 1962. This application June 4, 1964, Ser. No. 372,654
10 Claims. (Cl. 269—254)



5. A holding fixture for use in bonding brake lining to a brake shoe comprising:

a base member;

an upper member having a portion adapted to support a brake shoe and associated brake lining;

a pressure member provided with end portions secured to said base member, at least one of which end portions is readily detachable from said base member to permit movement of said pressure member relative to said base member for loading and unloading said brake shoe and associated lining relative to said upper member supporting the same; said upper member and said pressure member being so positionable one with respect to the other as to receive said brake shoe and associated lining therebetween;

and resilient means operatively connected to said base member and said upper member for urging the same apart to load said pressure member and compress said lining against said shoe.

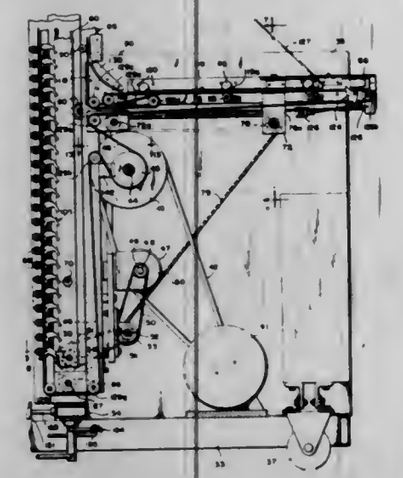
3,273,881
WELDING CRUTCH
Jeffrey N. Kiefer, 1836 Da Cola Shores Road, Conesus, N.Y.
Filed Nov. 19, 1963, Ser. No. 324,612
10 Claims. (Cl. 269—321)



1. A welding crutch comprising an elongated arm including a laterally directed portion on one end adapted to be engaged by a portion of a worker's body such as his arm or leg for the purpose of applying axial thrust to said arm, said elongated arm including guide means adapted to support and slidingly engage a length of welding rod with said rod generally paralleling said arm and projecting outwardly beyond the other end of said arm, said elongated arm further including gripping means adapted to grip said rod and to prevent axial shifting of said rod relative to said arm, whereby the extended end of said rod, secured to a patching plate behind a hole in

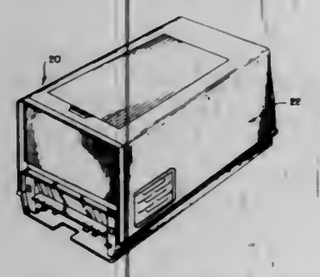
a piece of sheet metal or the like, may have axial thrust applied thereto through said arm to pull said patching plate into light frictional engagement with the rear surfaces of said piece of sheet metal while said workman utilizes his two hands to support a torch and a fusing metal rod to tack said patching plate to said piece of sheet metal to close said hole.

3,273,882
SHEET COLLATING DEVICE
Bernard A. Pearson, Seattle, Wash., assignor to Norfin, Inc., Seattle, Wash., a corporation of Washington
Filed May 23, 1963, Ser. No. 282,692
15 Claims. (Cl. 270—58)



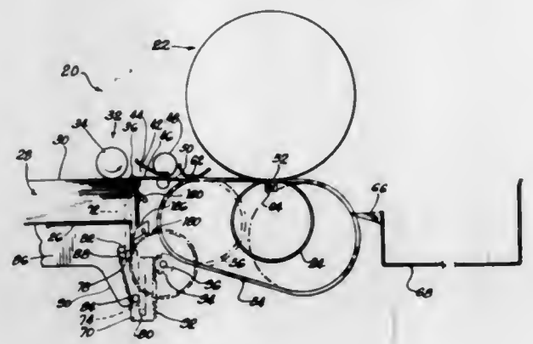
1. In combination, a pair of laterally spaced endless conveyor tapes having gradually diverging generally horizontal travel courses and gradually diverging upward travel courses, said tapes being closer together at the lower ends of their upward travel courses than at the divergent ends of their horizontal travel courses, guide means for guiding said tapes in converging courses from the divergent ends of their horizontal courses to the lower ends of their upward travel courses, means for moving said tapes along said courses in the direction of divergence of the horizontal and upward travel courses, and means for holding a thin flexible sheet against said tapes to convey it and at the same time laterally tension it by said tape divergence.

3,273,883
PAPER FEED APPARATUS HAVING STACK SELECTING MEANS
Roger Baronnie, Park Ridge, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed May 1, 1964, Ser. No. 364,249
5 Claims. (Cl. 271—9)



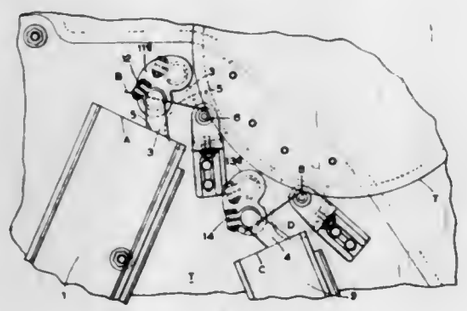
1. Apparatus for storing and feeding paper sheets comprising a paper storage compartment having a floor and an exit slot, feeding means normally adapted to engage and move through said slot the topmost one of a first stack of paper supported on said floor, shelf means movably mounted for supporting a separate second stack of paper within said compartment above said first stack, said shelf means being movable to selectively position said second stack in position to be engaged by said feed means or permit said feed means to engage said first stack.

3,273,884
AUTOMATIC STOP MECHANISM FOR ARRESTING MANUAL RAISING OF FEED TABLES
George J. Zahradnik, North Riverside, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed May 27, 1964, Ser. No. 370,584
15 Claims. (Cl. 271—22)



2. In a mechanism for handling sheets, the combination comprising a table for holding a stack of the sheets, means supporting said table for raising and lowering movement, a manually rotatable shaft having an operative connection to said table for raising said table, a stop ratchet wheel on said shaft, a stop pawl movable against said ratchet wheel for arresting the raising movement thereof, an element engageable by and movable upwardly with the top of the stack on said table, and means operable by upward movement of said element for moving said stop pawl into engagement with said ratchet wheel.

3,273,885
MECHANISM FOR SEPARATING SHEETS OF FLEXIBLE MATERIAL FROM A PACK OR STACK THEREOF
Dennis Stanley Silver, London, England, assignor to Purdy Machinery Company Limited, London, England
Filed June 22, 1964, Ser. No. 376,961
11 Claims. (Cl. 271—27)



1. A labelling machine including a stationary magazine for holding a pack of labels, a surface arranged to circulate uniformly for receiving labels uniformly and

transferring them to a position at which they are to be applied to objects, a picking head mounted to oscillate to-and-fro along a predetermined path between a first limit position of travel adjacent the magazine at which the picking head picks a label from the pack, and a second limit position of travel adjacent the surface at which the picking head delivers the label to the surface, retaining means for causing each label to adhere to said picking head at said magazine and for releasing the label for attachment to said surface, and a driving means for imparting oscillating movement to said picking head between said first and second limit positions, said driving means comprising, an eccentric device mounted to rotate uniformly about a fixed axis, a linkage means for connecting said eccentric device to said picking head to convert the rotary movement of said eccentric device into oscillating movement of said picking head, said eccentric device defining two dead center positions during each revolution at which the said linkage means and the picking head momentarily stop while reversing their direction of travel, the movement of said picking head being directly, positively responsive, through the said linkage means to the movement of the said eccentric device and the said first and second limit positions of the picking head occurring when the eccentric device is at the dead center positions.

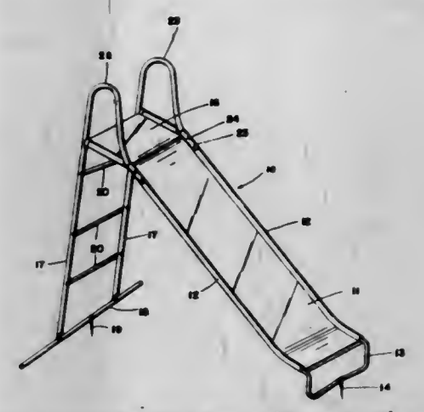
3,273,886
REVERSE TRANSPORT FOR FLEXIBLE SHEETS
Ruel E. Taylor, Jr., South Windham, Maine, assignor to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts
Filed Dec. 9, 1964, Ser. No. 417,182
6 Claims. (Cl. 271—45)



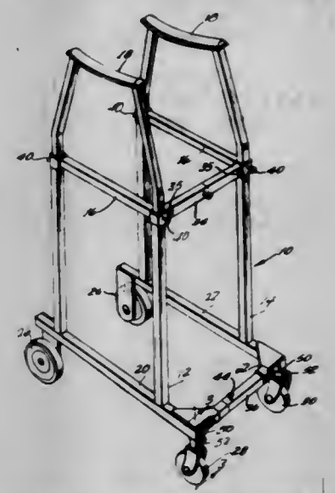
1. A reverse transport for flexible sheets comprising a first tape transport having a bottom run extension along which sheets delivered by said first tape transport travel without underlying support, a second tape transport having a top run underlying said bottom run and converging therewith to place said top and bottom runs in substantially the same plane at the end of said extension, said top run traveling in the direction opposite to the direction of said bottom run, and means located in the region near said end of said extension for transferring said flexible sheets traveling in one direction with said bottom run to said top run of said second tape transport to be traveling in the opposite direction on said top run of said second tape transport.

3,273,887
PLAY SLIDE
Daniel P. Grudoski, Hartstown, Pa., assignor to Blazon, Inc., Akron, Ohio, a corporation of Ohio
Filed Apr. 14, 1964, Ser. No. 359,570
4 Claims. (Cl. 272—56.5)

1. A play slide comprising an inclined bed portion and an integrally formed, substantially horizontal platform portion, a pair of ladder rails, first means connecting said ladder rails to one end of said platform portion, said ladder rails having end portions that extend in the direction of said inclined bed portion, second means connecting said end portions to said bed portion at the juncture between said bed portion and its integrally formed, substantially horizontal platform portion, said first and second connecting means being the only connection between said rails and said platform and bed portions.



3,273,888
ADJUSTABLE INVALID WALKER
Charles Lester Burns, Rte. 3, Unionville, Mo.
Filed Dec. 16, 1964, Ser. No. 418,694
4 Claims. (Cl. 272—70.4)

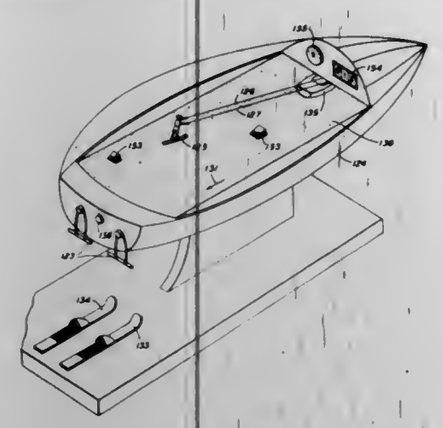


1. An adjustable invalid walker comprising a left frame and a right frame of complementary construction, including a pair of fore and aft supporting wheels and an arm pad on each frame, the forward pair of said wheels being swivel mounted, the rear pair of said wheels being fixedly mounted, means adjusting the height of the arm pad on each frame, means mounting said frames for horizontal movement relative to each other for varying the width between the frames, means mounting said frames for pivotal movement relative to each other whereby the tops of said frames can move toward each other and the bottoms of said frames can move apart and alternatively the tops can move away from each other and the bottoms toward each other, means for securing said frames in selected positions of said horizontal movement, and means for securing said frames in selected positions of said pivotal movement.

3,273,889
GAME APPARATUS FOR SIMULATING SKIING
Robert L. Brass, Colts Neck, and Alexander Feiner, Holmdel, N.J., assignors to Orbicon, Ltd., New York, N.Y., a corporation of New York
Original application Dec. 6, 1961, Ser. No. 157,354, now Patent No. 3,159,400, dated Dec. 1, 1964. Divided and this application Apr. 8, 1964, Ser. No. 358,327
10 Claims. (Cl. 273—1)

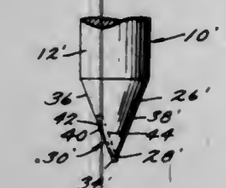
1. A game comprising an endless moving surface, an elongated member positioned on said surface, means in-

cluding at least one of said surface and said elongated member for causing said member to be subjected to a varying amount of frictional resistance depending on the direction of motion of said member relative to the direction of motion of said surface, a control element,



indirect mechanical linkage means coupling said control element to said elongated member and including at least one cross-coupling member, and means for imparting to said cross-coupling member a motion independent of said control element.

3,273,890
GOLF TEE HAVING WRITING MATERIAL PROTRUDING FROM THE LOWER PORTION THEREOF
William J. Williams, P.O. Box 279, Owensboro, Ky.
Filed July 2, 1965, Ser. No. 469,296
8 Claims. (Cl. 273—33)



1. A golf tee comprising: an elongated body region; means defining a golf ball support at one end of said elongated body region; means defining a tapered region adjacent and leading to the other end of said elongated body region, the smaller diameter end of said tapered region being farthest from said other end; and a piece of writing material mounted in said tapered region, part of the exterior of said piece of writing material being exposed in said tapered region whereby said piece of writing material can be rubbed against a score card to record scores; the tapered region being defined by a generally frustoconically curved outer peripheral surface, and said piece of writing material comprising a rod of pigment and binder having the longitudinal axis thereof canted with respect to the longitudinal axis of said golf tee thereby exposing said rod above said tapered region smaller diameter end.

3,273,891
GOLF CLUB ATTACHABLE MIRROR DEVICE FOR DETERMINING PUTTING DISTANCES
Earl D. Grim, Jr., 6 Chestnut Terrace, Cherry Hill Township, Camden County, N.J.
Filed Aug. 13, 1963, Ser. No. 301,707
1 Claim. (Cl. 273—163)

A golf practice device adapted to be demountably attached to a substantially smooth continuous surface on the head of a golf club on any material without any alteration of said golf club, said continuous surface being other than the ball striking surface of said head, said device comprising, in combination:

an integral bracket comprising two planar parts disposed to form a dihedral angle therebetween,

a mirror on one of said planar parts,

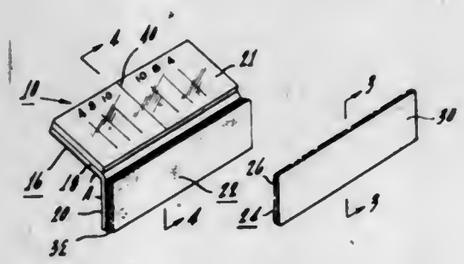
first and second detachably interlockable bracket mounting materials,

said first material comprising an adhesive for mounting it on the other of said planar parts,

said second material comprising an adhesive for mounting it on said continuous surface,

said first and said second materials being adapted to stick to each other, whereby said bracket can be adhered to said head,

said dihedral angle being such that said mirror makes an angle of substantially 225° with said striking surface when said bracket is adhered to said head,

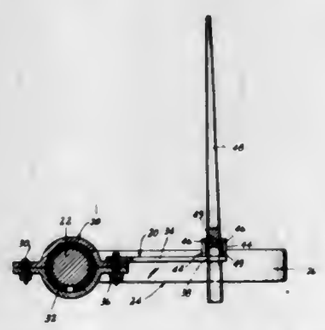


lines on said mirror, said lines being calibrated to indicate the distance said golf ball is from said mirror when said golf ball, at a distance from said mirror, is viewed in said mirror, said lines being disposed in pairs symmetrically about a center line, each pair of symmetrically disposed lines being spaced to indicate a different distance said golf ball is from said mirror when the image of said golf ball in said mirror is included between a respective pair of lines,

numbers associated with said pairs of lines and corresponding to said distances, and

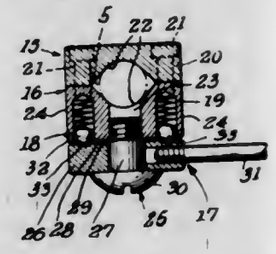
said second material being completely removable from said continuous surface of said head so that said golf club is preserved in its original condition when said material is removed therefrom, whereby said golf club may be any conventional club suitable for use in games wherein alterations in a club are forbidden.

3,273,892
GOLF PUTTER SIGHTING ATTACHMENT
Ray E. Nolting, Rte. 3, Box 400, Chesterfield, Mo.
Filed Jan. 6, 1964, Ser. No. 335,827
1 Claim. (Cl. 273—163)



In combination, a putting aid for attachment to a putter comprising a bracket including means for gripping a putter shaft, a pointer, and linkage depending from said bracket, said pointer being pivotally suspended from the lower end of said linkage, said linkage having attached to its lower end means supporting opposed trunnions, said trunnions being spaced from the linkage, said pointer including means pivotally receiving said trunnions, said trunnions and linkage being formed to permit said pointer to pivot from horizontal use position to vertical inoperative position, said pointer having a portion which extends rearwardly of the trunnions and is adapted to bear against the linkage when such pointer is in its horizontal use position.

3,273,893
PUTT-ALIGNING DEVICE
John B. Duncan, Woodland Hills, Calif., assignor of one-third to James D. Easton, Van Nuys, Calif.
Filed Aug. 11, 1964, Ser. No. 388,897
1 Claim. (Cl. 273—163)



In a putt-aligning device having a mounting body adapted to encircle the shank of a putter and be clamped thereto,

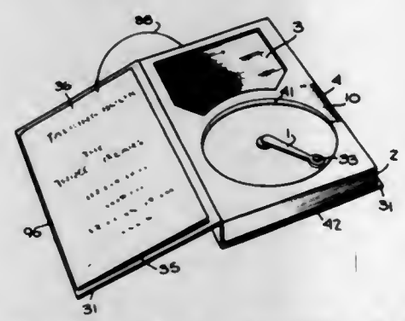
(a) a shoulder extending from a face of said body,

(b) a pointer unit rotationally mounted on said shoulder and provided with an elongated indicator that extends radially from the axis of said shoulder, and

(c) detent means interengaging the body and pointer unit to releasably engage the latter and retain the same in a selected set angular position relative to the shank on which the body is clamped,

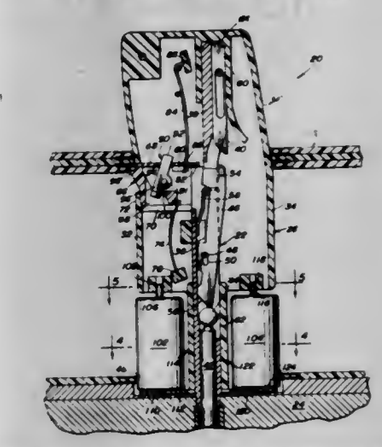
(d) said detent means comprising a plurality of seats formed in the pointer unit adjacent the shoulder and at least two spring-biased balls carried by the body and directed to enter said seats according to the selected angular position above mentioned.

3,273,894
TALKING BOOK APPARATUS
Phillip E. Clawson, San Leandro, Calif., assignor to Nial K. Castle and Kay Janet Castle
Filed July 5, 1963, Ser. No. 292,981
14 Claims. (Cl. 274—9)



1. A talking book apparatus comprising: a generally flat housing having upper and lower covers hinged thereto, said housing and covers being configured to simulate a book; a booklet having a plurality of pages mounted on the inner face of said upper cover and having a story printed thereon; a record in said housing having said story recorded thereon in voice pronounciation of the words printed in said booklet; means in said housing for reproducing the sound recorded on said record; and manually operable drive means for said record and reproducing means accessible to an operator from the top of said housing and only when said upper cover is open whereby an operator may manipulate said booklet pages while reading the story material thereon and simultaneously operate said record and reproducing means to reproduce the recorded sound of said story material in synchronism with the reading thereof.

3,273,895
ADAPTER SPINDLE FOR RECORD CHANGERS
Richard W. Simpson, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Nov. 22, 1963, Ser. No. 325,690
18 Claims. (Cl. 274—10)

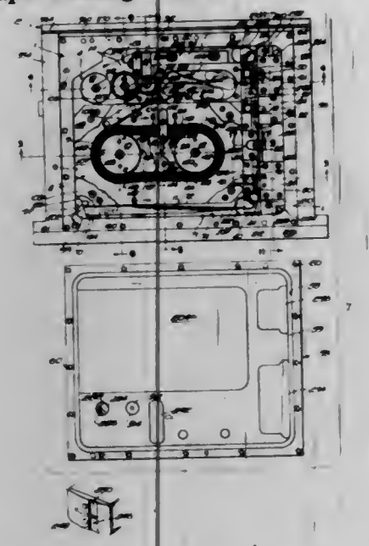


1. In an adapter spindle of the type designed to slip over a small diameter center spindle of a record changer for supporting a stack of large centerhole records and for dropping such records one at a time to a turntable for playing, which small diameter center spindle is of the type having record ejecting means embodied therein, the improvement comprising, in combination, an adapter housing having an aperture in one side thereof, record feeding means mounted in said housing and movable horizontally so as to project outwardly of said housing through said aperture, said horizontally movable record feeding means consisting of a single record supporting shelf member and a single separator blade member disposed above said shelf, said shelf being slidably mounted in said housing for movement between a normal extended operative position wherein it is adapted to support a stack of records on said adapter spindle and a retracted inoperative position, said separator blade being slidably mounted in said housing above said shelf for movement between a normal retracted inoperative position and an extended position wherein it is adapted to project between the lowermost and the next-to-lowermost records in a stack of records supported on said adapter spindle, said blade being positioned in the path of movement of said ejecting means of said small diameter spindle so as to be engageable and movable thereby to its extended position, and reverse motion translating means interconnecting said blade and said shelf for moving said shelf to its retracted position when said blade is moved by said ejecting means to its extended position.

3,273,896
TAPE RECORDER AND TAPE STORAGE MAGAZINE THEREFOR
Paul F. Maeder, Rumford, East Providence, R.I., assignor, by mesne assignments, to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Original application Feb. 17, 1960, Ser. No. 9,264, now Patent No. 3,155,335, dated Nov. 3, 1964. Divided and this application May 10, 1963, Ser. No. 279,397
4 Claims. (Cl. 274—11)

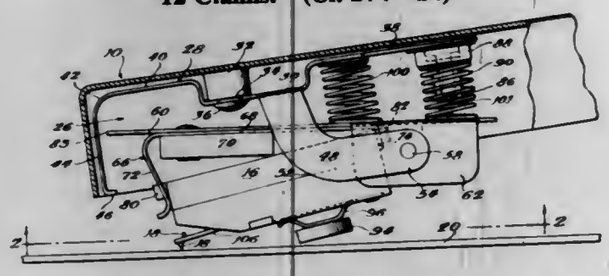
1. A transducing head for a data storage mechanism having a tape contacting surface, said surface having a recess extending across its face transversely to the direc-

tion of tape travel, the walls of said recess forming with the tape a fluid flow passage, one side of which is formed by the tape, the leading end of said one side with respect to the movement of the tape forming with a first wall of said recess adjacent said leading end a first angle, the trailing end of said one side with respect to the movement of the tape forming with a second wall of said



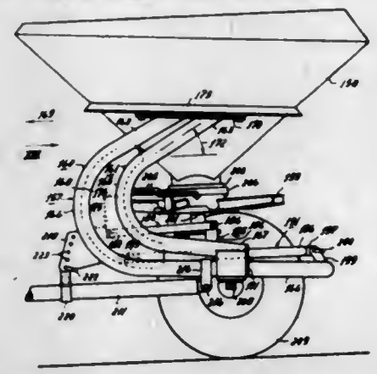
recess adjacent said trailing end a second angle which is substantially smaller than said first angle whereby said passage diverges in the direction from the trailing end to the leading end thereof and the flow of fluid from the trailing end of said passage to the leading end thereof caused by said tape movement creates a suction on said tape.

3,273,897
PHONOGRAPH WITH NOVEL TONE ARM AND PICKUP CARTRIDGE ASSEMBLY
Gerrald K. Farrington, Niles, and Harold F. Mosier, Jr., Buchanan, Mich., assignors to Electro-Voice, Incorporated, Buchanan, Mich., a corporation of Indiana
Filed June 13, 1963, Ser. No. 287,545
12 Claims. (Cl. 274—24)



10. An assembly adapted to be mounted on the tone arm of a phonograph for reproducing grooved records comprising a carriage and a pickup cartridge mounted on the carriage having a stylus adapted to follow a record groove extending from the cartridge, said carriage including a bracket adapted to be mounted in a fixed position on the phonograph tone arm, an elongated plate mounted on the bracket for pivotal movement relative to the bracket about an axis disposed in a plane parallel to the plane of the record groove when the tone arm is in playing position, the axis of elongation of the plate being disposed normal to the pivotal axis, the cartridge being mounted on the side of the plate adapted to confront the record and on one side of the pivotal axis with the stylus disposed in a plane normal to the pivotal axis and depending from the cartridge for engaging a record, stop means operatively associated with the carriage and the bracket for limiting pivotal movement of the plate between two limits, the second limit positioning the cartridge closer to the carriage than the first limit, means operative between the bracket and the plate for establishing a torque about the pivotal axis in a direction toward the first limit, said torque exerting a force component on the stylus varying from a value less than the tracking force of the cartridge when the plate is disposed in the position of the first limit to a value greater than the tracking force of the cartridge when the plate is disposed in the position of the second limit, a pad mounted on the cartridge between the stylus and the pivotal axis and extending to the side of a plane passing through the pivotal axis and the tip of the stylus opposite from the plate, said pad being adapted to engage the surface of a record when the plate of the carriage is disposed in the position of the second limit and the stylus being adapted to engage the surface of the record when the plate is disposed in the position of the first limit, said stylus also being adapted to engage the surface of the record when the plate is disposed between the first and second limits and the torque exerted on the plate exerts a force component on the stylus approximately equal to the tracking force of the cartridge.

3,273,898
IMPLEMENTS FOR SPREADING POWDERED OR GRANULAR MATERIALS
Cornelis van der Lely, Zug, Switzerland, and Ary van der Lely, Maasland, Netherlands, assignors to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company
Filed Oct. 25, 1963, Ser. No. 318,968
Claims priority, application Netherlands, Nov. 7, 1962, 285,225; June 5, 1963, 293,680; Sept. 6, 1963, 297,620
18 Claims. (Cl. 275—8)

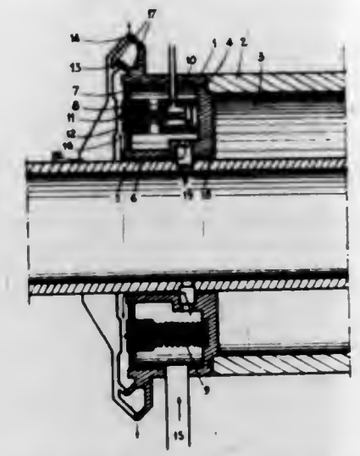


5. An implement for spreading powdery or granular material comprising a frame, a hopper for said material mounted on the frame, a rotary spreading member on the frame below said hopper, said hopper having a discharge opening communicating with said spreading member, said frame being substantially C-shaped in side elevation with its open ends facing rearwardly to permit discharge of material of said spreading member over a wide area without interference from said C-shaped frame, the hopper and the spreading member being swingably related to each other through hinge means on the C-shaped frame to increase the distance between the discharge opening of the hopper and the spreading member and permit cleaning of the spreader.

3,273,899
ROTARY SEAL WITH CONTINUOUS GAS FLOW-EXCLUSION OF INGRESS
Edmond P. Warnery, Boulogne, Seine, France, assignor to The Compagnie Francaise Thomson-Houston, Paris, France, a corporation
Filed Apr. 2, 1963, Ser. No. 270,073
Claims priority, application France, Apr. 12, 1962, 894,202, Patent 1,331,393
18 Claims. (Cl. 277—3)

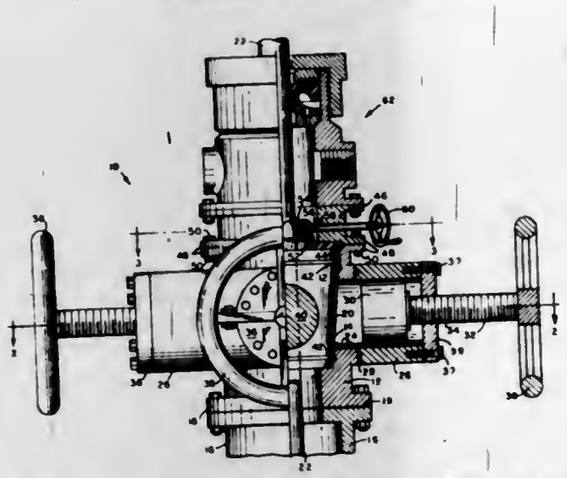
1. A rotary-seal arrangement interposable between two adjacent, relatively rotatable members defining an interior space to be protected against ingress of foreign

materials, said arrangement comprising means defining a fluid-flow passage from said interior space to the exterior, cooperating sealing means respectively carried by said members and relatively displaceable towards and away from each other so as positively and selectively to seal off, and to open, said passage, means connected with said interior space for applying a gaseous fluid under pressure, thereto, means operable in the absence of rela-



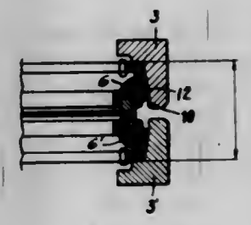
tive rotation between the members to displace said cooperating sealing means toward one another positively to seal off said passage, and means operable during relative rotation between the members to displace said sealing means away from each other to permit continuous discharge of said gaseous fluid through the passage, said gaseous fluid constituting the sole sealing medium operative during relative rotation of said members.

3,273,900
PACKING DEVICE WITH ROTATABLE PLUG
Frederick A. Street, Tulsa, Okla., assignor of twenty-five percent to Head & Johnson, Tulsa, Okla., a partnership composed of James R. Head and Paul H. Johnson
Filed Mar. 18, 1963, Ser. No. 265,789
9 Claims. (Cl. 277—9)



1. A packing device adaptable for packing a shaft comprising, in combination:
a body portion having an axial opening therein, said body portion having at least two ram openings therein intersecting said axial opening;
packing rams slidably positioned in said ram openings;
a plug member encompassed by said body portion having its external configuration adaptable for rotatably engaging said axial opening of said body portion, said plug member having an axial opening adaptable for receiving said shaft and said plug member having at least two packing openings intersecting said axial opening and wherein said plug member may be rotated within said body portion to substantially align said ram openings in said body portion with said packing openings of said plug member whereby said packing rams may enter said packing openings of said plug member to engage said shaft;
and means extending externally of said body portion to rotate said plug member.

3,273,901
AXIAL SHAFT SEAL
Johann Schmengler, Gutenbergstrasse 13, Hemmingen-Westerfeld, Germany
Filed June 11, 1963, Ser. No. 287,085
3 Claims. (Cl. 277—92)

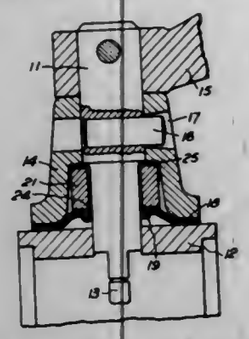


1. An axial shaft seal, particularly for sealing track roller bearings of crawler tractors, comprising
two flexible annular sealing bodies of elastic material of a truncated cone configuration,
a sealing ring secured to each of said sealing bodies,
said sealing rings engaging each other,
support members having a recess,
each of said support members receiving the corresponding of said sealing bodies in said recess,
said support members having an annular groove at their inner face,
said sealing bodies having a collar received in and supported by the corresponding groove of said support members,
said recess in said support members being of conical shape,
said collar of said sealing rings being likewise of conical shape,
said collar being inwardly bent in its cross-section, and
said sealing bodies extending inwardly and joining said collar such that upon axial pressure on said sealing rings the cross-section of said collar is stretched, simultaneously engaging the inner side walls of the recess in said support members.

3,273,902
SEALING OF SPINDLES
Frederick William Billson, Cwmbran, England, assignor to Saunders Valve Company Limited, Monmouthshire, England, a British company
Filed June 25, 1963, Ser. No. 290,432
Claims priority, application Great Britain, July 11, 1962, 26,697/62
7 Claims. (Cl. 277—95)

1. A seal for sealing against fluid pressure a spindle to a casing in relation to which it makes a rotational movement about its axis, comprising a centrally apertured elastic and flexible diaphragm incorporating a rib around the edge of its central aperture, the diaphragm in its free condition being substantially dished with a slight reverse curvature in the zone which runs into the rib, the diameter of the aperture being slightly less than that of the spindle whereby the rib engages the spindle with a grip sufficient to minimize leakage at low pressure but not so great as to prevent the spindle from rotating in relation to the rib, means sealing the outer margin of the diaphragm to

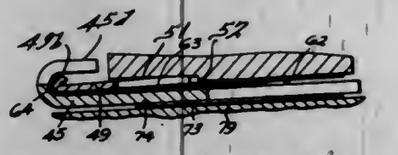
the casing, the diaphragm being mounted with the convexity due to its dished form towards the low pressure side of the seal, and supporting means in the casing having a supporting surface and supporting the diaphragm on the low pressure side, the supporting surface having substantial clearance around the spindle and being shaped to leave a small space around the spindle between the supporting surface and the diaphragm into which pressure acting on the high pressure side of the seal tends to force the rib against the spindle, and said rib projecting toward the high pressure side of the seal.



3,273,903
REGENERATOR SEAL FOR A GAS TURBINE ENGINE

William I. Chapman, Birmingham, James H. Whitfield, Madison Heights, Clinton P. Atwood, Warren, and William A. Ziemke, Jr., Livonia, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,318
23 Claims. (Cl. 277—96)



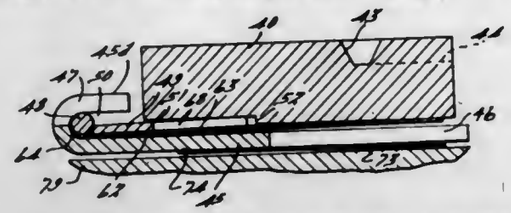
1. In a seal for the regenerator of a gas turbine engine, rubbing means having an inner sealing surface adapted to engage a mating surface of said regenerator to define a seal between high and low pressure gases, base means confronting an outer side of said rubbing means opposite said sealing surface and being movable toward and from the same, bridge means engaging said outer side of said rubbing means, resilient sealing means engaging said bridge means and base means to effect a fluid seal therebetween, said resilient sealing means lapping the engagement between said bridge means and rubbing means and engaging the latter's outer side in fluid sealing relationship, said base means and resilient sealing means comprising a bellows type seal open to said high pressure gases to enhance said fluid sealing relationship.

3,273,904
REGENERATOR SEAL WITH DIAPHRAGM SUPPORT

William I. Chapman, Birmingham, James H. Whitfield, Madison Heights, Clinton P. Atwood, Warren, and William A. Ziemke, Jr., Livonia, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,466
20 Claims. (Cl. 277—96)

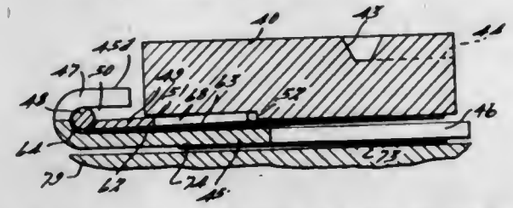
1. In a seal for the regenerator of a gas turbine engine, rubbing means having an inner sealing surface adapted to engage a mating surface of said regenerator to define a seal between high and low pressure gases, base means confronting an outer side of said rubbing means opposite said sealing surface and being movable toward and from the same, bridge means engaging said outer side of said rubbing means, resilient sealing means including a flexible diaphragm and a flexible diaphragm support, said diaphragm support having one edge confined between portions of said bridge means and base means to effect a fluid seal therebetween and extending from said one edge to overlap the engagement between said bridge means and rubbing means and engage the latter's outer side, said diaphragm being wedged between said support and base means adjacent said one edge and extending therefrom in juxtaposition with said support and beyond the latter in juxtaposition with said outer side of said rubbing means to engage the latter in fluid sealing relationship, said base means and resilient sealing means comprising a bellows type seal open to said high pressure gases to enhance said fluid sealing relationship.



3,273,905
REGENERATOR SEAL WITH BRIDGE AND WIRE

William I. Chapman, Birmingham, James H. Whitfield, Madison Heights, Clinton P. Atwood, Warren, and William A. Ziemke, Jr., Livonia, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,843
18 Claims. (Cl. 277—96)



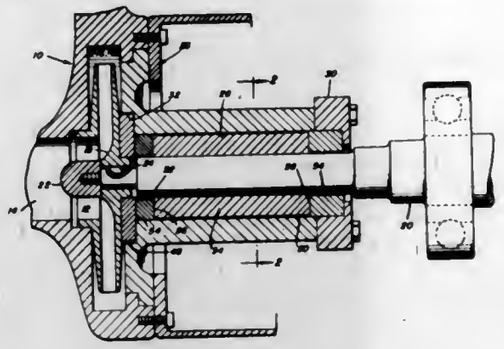
1. In a seal for the regenerator of a gas turbine engine, rubbing means having an inner sealing surface adapted to engage a mating surface of said regenerator to define a seal between high and low pressure gases, base means confronting an outer side of said rubbing means opposite said sealing surface, a wire extending longitudinally of said seal adjacent said base means, a portion of said base means formed around said wire to grip the latter, a bridge member of rigid material extending from said wire to said rubbing means and spacing the same, said bridge member being freely supported for pivotal movement at one end by said rubbing means and at it opposite end by said wire and base means, resilient sealing means engaged between said wire and base means to effect a fluid seal therebetween along said wire, said resilient sealing means overlapping the engagement between said bridge member and rubbing means and engaging the latter's outer side in fluid sealing relationship, said base means and resilient sealing means comprising a bellows type seal open to said high pressure gases to enhance said fluid sealing relationship.

3,273,906
ROTATING SHAFT SEAL

James A. Pennington, Brownsville, Tex.
(4410 E. Xyler St., Tulsa, Okla.)

Filed Aug. 15, 1963, Ser. No. 302,279
7 Claims. (Cl. 277—134)

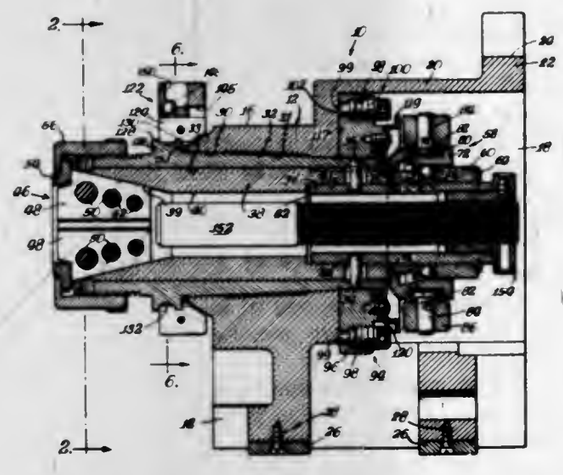
1. In combination with a housing from which a shaft is journaled and including a bore through which said shaft projects, a seal assembly for forming a seal between said shaft and the portions of said housing defining said bore, said assembly comprising first and second forms of seal members encircling said shaft and alternately spaced longitudinally thereof, each of said first form of seal members being carried by said shaft for rotation therewith and defining a diametric enlargement thereof and each of said second form of seal members comprising a generally cylindrical member stationarily secured in said bore and defining a diametrically reduced portion thereof, the outer and inner surfaces of said first and second members, respectively, being oppositely threaded, there being minimum operating clearance between the threads on said first and second members and said bore and said shaft, respectively, the adjacent ends of said first and second forms of seal members including opposing complementary generated and spaced end faces with at least portions thereof disposed in minimum spaced relation.



3,273,907
FIXTURE

Kurt E. Voderberg, 531 Lake Ave., Wilmette, Ill., and Theodore R. Lang, 6312 N. Monticello, Chicago, Ill.

Filed Mar. 2, 1964, Ser. No. 348,657
4 Claims. (Cl. 279—5)

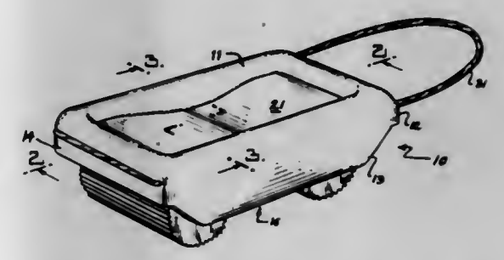


1. A work holding fixture comprising a housing having a main body portion with a bore therethrough, a hollow rotatable outer spindle extending through and outwardly beyond both ends of said bore, a hollow inner spindle axially slidable in and substantially coextensive in length with said outer spindle, said inner spindle having an inner conical surface at one end thereof and radial slots adjacent the other end thereof, a work holding device engageable with the inner conical surface of said inner spindle, collar means on said outer spindle at one end thereof and engaging said work holding device for preventing axial movement of the latter in one direction, a sleeve member at one end thereof extending into said other end of said inner spindle, radial pin members extending through said slots in said inner spindle and secured at their ends in said outer spindle and said sleeve member, and means carried by said sleeve member for moving said inner spindle axially relative to said work holding device for effecting actuation of the latter to clamp a workpiece therein.

3,273,908
SAND CART

John D. Geiser, Jr., 39 Scotch Pine Drive, Central Islip, N.Y.

Filed Apr. 4, 1966, Ser. No. 539,760
1 Claim. (Cl. 280—79.2)



A conveyance for use on sand to support articles, comprising:

a body of generally rectangular configuration formed integrally of molded plastic and having four sides depending downwardly forming a cavity therebetween with a bed member formed integrally with and extending between the four sides, each of the sides being substantially thicker along their uppermost edges for providing structural strength,

the bed member having a central portion recessed downwardly from the uppermost edges a small distance relative to the depth of the cavity underneath,

two of the sides opposite each other depending downwardly a greater distance than the other two sides and each having two spaced apart grooves opening downwardly,

two elongated rollers each having axles extending concentrically from opposite ends, the rollers being received up within the cavity, the extending axles being received within respective ones of the grooves, and

flexible means attached to the body for pulling the conveyance by hand.

3,273,909
INDEPENDENT WHEEL SUSPENSION

Josef Müller, Stuttgart-Riedenberg, and Alf John Müller, Stuttgart-Bad Cannstatt, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Nov. 27, 1964, Ser. No. 414,287
Claims priority, application Germany, Nov. 30, 1963, D 43,057
7 Claims. (Cl. 280—96.2)

1. An arrangement for adjusting the caster of a wheel guided by means of a guide member, especially for motor vehicles, comprising:

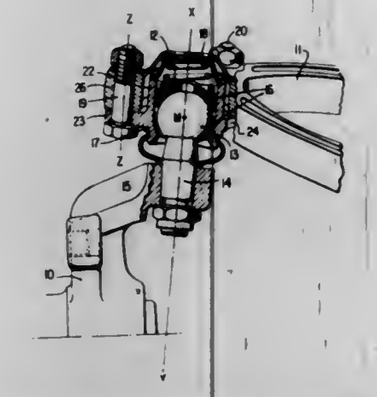
wheel guide means,

wheel carrier means,

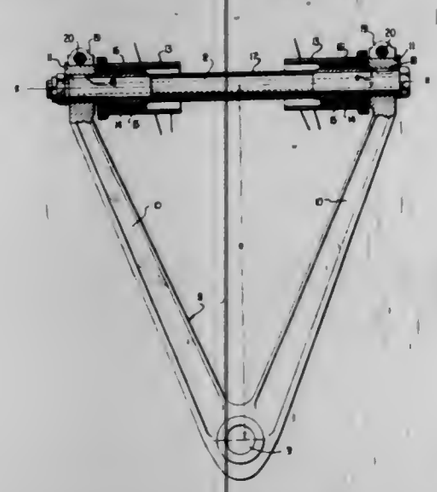
and universal joint means including ball joint means operatively connecting said wheel carrier means with said wheel guide means to effectively provide a steering pin axis,

the joint portion on the side of the wheel guide means of said universal joint means including a joint piece engaging with said ball joint means, and further

means for adjustably connecting said joint piece with said wheel guide means for selective movement about a pivot axis at least approximately parallel to the steering pin axis and offset therefrom in the transverse direction of the vehicle so as to pass beyond said ball joint means.

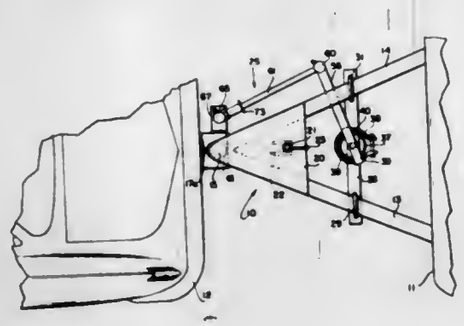


3,273,910
WHEEL SUSPENSION
Walter Willingshofer, Hofingen, Wurttemberg, and Alf John Müller, Stuttgart-Bad Cannstatt, Germany, assignors to Daimler-Benz, Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 6, 1964, Ser. No. 409,390
Claims priority, application Germany, Nov. 9, 1963, D 42,898
12 Claims. (Cl. 280—96.2)



1. An arrangement for the adjustment of the camber of an independently suspended wheel, comprising:
wheel suspension means including cross guide means,
said cross guide means having a pivot axis and including two cross guide arm portions arranged in an approximately fork-shaped manner,
and means operatively connecting the two cross guide arm portions with each other in such a manner as to enable adjustment of the camber of the wheel including bearing bolt means between the two guide arm portions, eccentric means between a respective cross guide arm portion and said bearing bolt means, and means rigidly connecting the eccentric means with the two parts consisting of said bearing bolt means and the associated guide arm portion including further means for adjustably connecting the eccentric means with one of said two parts so as to be adjustable about said pivot axis,
said means operatively connecting said two cross arm portions with each other further comprising a juncture portion connecting adjacent ends of said cross-arms, said juncture portion comprising a joint member adapted to rotatably receive a steering pin joint member,
said means rigidly connecting the eccentric means with said bearing bolt means comprising key means, and said means connecting the eccentric means with the associated guide arm portion comprising clamping means carried by the divergent ends of said arm portions and engaging said eccentric means.

3,273,911
TRAILER STABILIZING DEVICE
John R. Waldie, 7866 Claybeck, Sun Valley, Calif.
Filed Oct. 7, 1964, Ser. No. 402,249
8 Claims. (Cl. 280—446)



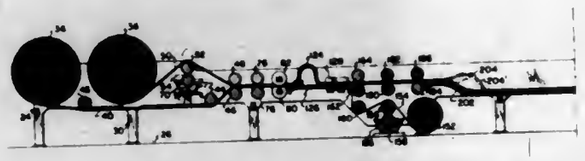
1. A trailer stabilizing device for preventing swaying motion of a trailer connected to its towing vehicle by a pivot connection comprising:
a tow arm connected to said vehicle and extending rearwardly thereof;
tow means extending from the front of said trailer and pivotally connected to said tow arm by said pivot connection;
a mounting bar rigidly connected to said tow means;
a shaft rotatably mounted in said bar and extending on opposite sides thereof;
brake means supported by said mounting bar and comprising a circular brake band rigidly connected to one end of said shaft;
a split sleeve member surrounding said brake band and carrying a brake lining in engagement with said band;
means connected to the end of said sleeve member for tightening said sleeve member against said brake band;
and linkage means for connecting the other end of said shaft with said vehicle to provide a brake force between said band and lining against swaying of said trailer.

3,273,912
OFF-ROAD MOTOR VEHICLE WITH OPPOSITE SWINGING AXLES
Clarence V. Crockett, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 2, 1963, Ser. No. 270,053
4 Claims. (Cl. 280—104)

1. A vehicle comprising a body portion, a front and rear axle rotatably mounting wheels, first means rigid with the front axle and extending towards the rear axle, second means rigid with the rear axle and extending towards the front axle, third means connecting said first and second means and serving as a support for said body portion, a differential gearing arrangement operatively associated with said first, second and third means for positively positioning the latter about the longitudinal axis of said vehicle upon relative rotation of said axles about said axis, said differential gearing arrangement comprising side gears rigidly connected with said first and second means and pinion gears rotatably connected to said third means.

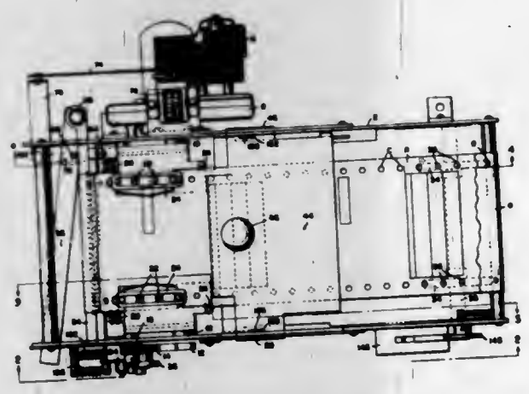


3,273,913
BOOK COVER BOARDS AND BOARD STRUCTURES AND APPARATUS AND METHOD FOR MAKING THE SAME
Edward K. Mullen and Leewood C. Carter, Union County, N.J., assignors to Book Covers, Inc., Newark, N.J., a corporation of New Jersey
Filed May 27, 1965, Ser. No. 459,397
10 Claims. (Cl. 281—29)



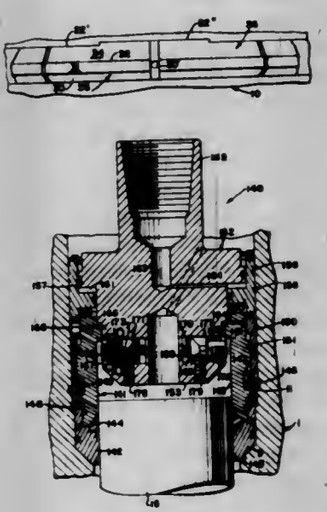
1. A cover board structure for books, said structure comprising a first leaf board portion, a second leaf board portion, a spine board portion disposed between said first and second leaf board portions, and a hinge material portion on one side of said cover board structure including a pair of hinge material strips, each of said strips being bonded to one of said first and second leaf board portions and a minor portion of said spine board portion.

3,273,914
MACHINE FOR PRODUCING AND ISSUING BUSINESS FORMS
Joseph C. Wagner, Timonium, Md., assignor to Universal Controls, Inc., Towson, Md., a corporation of Maryland
Filed Oct. 15, 1964, Ser. No. 403,979
5 Claims. (Cl. 282—16)



1. A machine for the production of transaction forms comprising means delimiting a write-in area, means providing a backing surface below said area, a member movable to close and open said area, means for guiding and feeding at least two superimposed paper strips across said area above said backing surface and below said movable member so that when matter is written on a portion of the uppermost of said sheets exposed in said write-in area it is reproduced on the lower of said sheets, means for latching the movable member in open position, control means effecting a cycle of operation involving release of said movable member from said latching means and closure thereof, and predetermined feed of said strips, and means driven by the lower of said strips during each feed thereof to an extent to measure its movement and effective to prevent operation by said control means whenever the lower strip is not fed to the predetermined extent in any cycle of operation.

3,273,915
REMOTELY INSTALLED WELL DEVICES AND WELLHEAD ASSEMBLIES INCLUDING THE SAME
Robert Bishop, Edward E. Castor, Michael A. Walker, and William W. Word, Jr., Houston, Tex., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Aug. 19, 1963, Ser. No. 302,836
2 Claims. (Cl. 285—18)



1. In a well device for remote installation, the combination of
an outer tubular member having an internal upwardly facing transverse seat and an inwardly opening transverse annular groove located above said seat;
an inner member adapted to be inserted downwardly into said outer member and having
a downwardly facing transverse annular shoulder to engage said seat for support of said inner member on said outer member, and
a transverse annular outwardly opening groove located above said shoulder and disposed to face said inwardly opening groove when said shoulder is engaged with said seat;
a plurality of arcuate latch elements arranged in a circular series in said outwardly opening groove and each disposed for movement generally radially of said inner member;
each of said latch elements being biased outwardly and having a tip portion to engage in said inwardly opening groove to latch said inner member against upward movement relative to said outer member, said tip portion having an upwardly directed face extending transversely of said inner member for engagement beneath a

similar, downwardly directed face of said inwardly opening groove,

said inner member having a diameter above said outwardly opening groove which is smaller than the inner diameter of said outer member above said inwardly opening groove, whereby an annular upwardly opening space is provided between said inner and outer members,

said latch elements each having a downwardly and outwardly slanting, upwardly directed cam face disposed to cross said annular space when the latch element is engaged in said inwardly opening groove,

the upper one of the side walls of said outwardly opening groove being provided with a dependent peripheral lip disposed to retain said latch elements within said outwardly opening groove, said dependent lip being interrupted to provide a gate dimensioned to allow introduction of said elements individually into said outwardly opening groove;

means fixed to said inner member and projecting into said outwardly opening groove between adjacent ones of said latch elements to prevent said elements from shifting to positions in which one thereof registers with said gate;

a rigid annular member surrounding said inner member above said outwardly opening groove;

said rigid member having a thickness such as to substantially fill said annular space and thereby block said space against entry of debris; and

means releasably securing said rigid annular member to said inner member to normally retain said rigid annular member against downward movement;

the upper end portion of said rigid annular member being disposed for engagement by a downwardly actuated annular element of a retrieving tool whereby, when said inner member is disposed with said shoulder engaging said seat and said latch elements engaged in said inwardly opening groove, said annular member can be released and driven downwardly through said annular space to engage said cam faces and so cam said latch elements inwardly to disengage the same from said inwardly opening groove;

said inner member being hollow to accommodate a downwardly inserted retrieving tool and including internally disposed, inwardly directed latch means by which such tool can be connected thereto.

3,273,916
UNITARY FLEXIBLE METALLIC CONNECTOR
Lloyd E. Tillery, 1507 Melbourne, Dallas, Tex.
Filed Mar. 13, 1961, Ser. No. 95,204
6 Claims. (Cl. 285—226)



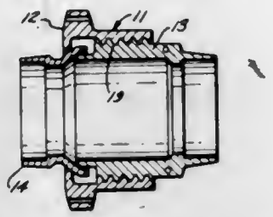
1. A flexible coupling comprising:

(a) a central spiral grooved corrugated metallic tube,

(b) cylindrical end portions each of diameter corresponding approximately with the root of the spiral groove, and

(c) an annular frusto-conical transition zone between each of said end portions and said central portion with said spiral groove ending in the transition zones, the maximum diameter of said zones corresponding approximately with the crests on the central spiral portion.

3,273,917
COUPLING HAVING CONCENTRIC SPHERICAL SURFACES SEALED BY LINE CONTACT
Richard O. Chakroff, 298 Park Blvd., Worthington, Ohio
Filed Aug. 25, 1961, Ser. No. 133,974
6 Claims. (Cl. 285—263)



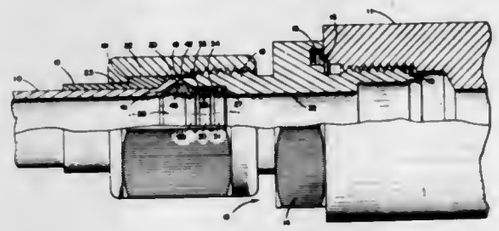
1. A coupling assembly for connecting in fluid tight relationship a pair of generally oppositely extending fluid conduits notwithstanding possible longitudinal misalignment of said fluid conduits, comprising

a pair of tubular axially adjustable solid clamping devices one of which is a female clamping device and the other of which is a male clamping device and one of which is to be connected in fluid tight sealed relationship with one of said fluid conduits; and

an intermediate solid tubular coupling member, clamped between said clamping devices, having an outer face formed as an annular segment of an external spherical surface which engages the female clamping member at a single line of tangency, having an inner face formed as an annular segment of an internal spherical surface which engages the male clamping member at a single line of tangency, and arranged to be secured in fluid tight sealed relationship with the other of said fluid conduits;

the spherical surfaces of the outer face and of the inner face being segments of two spheres both of which have a common center and wherein any displacement of said lines of tangency relative to each other occurs along concentric arcs.

3,273,918
SEALED COUPLING
Philip H. Legarra, 1701 Sepulveda Blvd., Manhattan Beach, Calif., and Elton C. Hallett, 2021 Sabrina Terrace, Corona Del Mar, Calif.
Filed Apr. 20, 1964, Ser. No. 360,915
13 Claims. (Cl. 285—332.3)



1. A sealed coupling arrangement comprising

a first member to be connected,

a second member to be connected,

said members having bores therein

and having interengaging surfaces for interconnecting said bores,

an axially compressible sealing member,

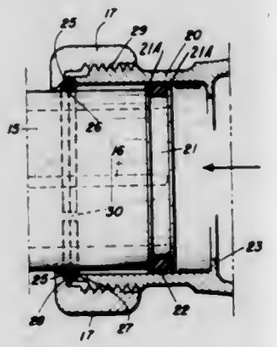
said sealing member having a first surface sealingly engaging said first member adjacent the bore thereof and a second surface sealingly engaging said second member adjacent the bore of said second member,

said first member including an abutment

said sealing member engaging said abutment inwardly of said second surface thereof,

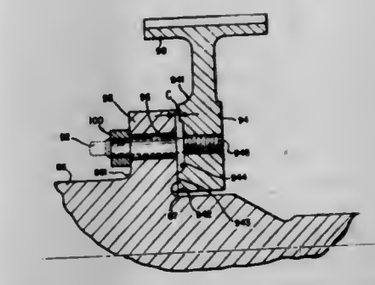
and being relatively rigid between said second surface and said abutment for acting as a stop upon said interengagement of said first and second members, and means holding said first and second members together, with the movement of said first and second members toward each other limited by said engagement of said second surface of said sealing member and said abutment of said first member.

3,273,919
ADJUSTABLE PLUMBING FITTINGS
Henry R. Billeter, Deerfield, and Axel B. Nelson, Mount Prospect, Ill., assignors to Sloan Valve Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 16, 1965, Ser. No. 440,147
4 Claims. (Cl. 285—340)



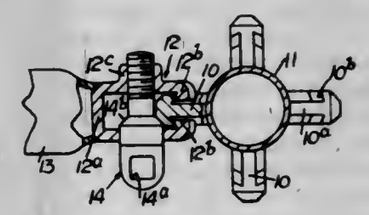
1. In a plumbing fitting, an adjustable connection for use between a flush valve and a control valve to compensate for variations in the relative position of the valves, said connection comprising a tubular fitting threaded at one end into the flush valve and having its other end slidably and adjustably inserted in the outlet end of said control valve to a position depending upon the relative distance between the valves, the adjacent walls of said tubular fitting and said control valve being slightly spaced apart, the end of said fitting having spaced apart flanges formed thereon extending outward from the side of said fitting into close proximity to the walls of said control valve, an O-ring recessed in said fitting between said flanges and in slidable leak-proof contact with the walls of said control valve, a locking ring around said fitting slidable thereon and closely embracing the same and bridging the space between said fitting and said control valve, said locking ring having a sharp edge in slidable contact with said fitting, a coupling nut threaded upon the outside of said control valve outlet and having a clamping edge portion closely slidable along the outside surface of said fitting, said clamping nut adapted to slide and force said locking ring along said fitting into engagement with the end of said control valve outlet to a position on said fitting depending upon the relative distance between the flush valve and control valve, the contacting surfaces between said locking ring and with said coupling nut and the end of said control valve outlet being tapered whereby tightening of said coupling nut forces the sharp edge of said locking ring into biting and locking engagement with the surface of said fitting, said locking ring bridging the space between said fitting and control valve outlet, one of said flanges adapted to engage and be stopped by said locking ring to prevent outward sliding movement and blow-out of said fitting from said control valve outlet, in case said coupling nut becomes loose under high pressures whereby said fitting remains locked in said control valve outlet and said O-ring maintains a leak-proof seal therein.

3,273,920
COMBINATION SHAFT AND HUB ASSEMBLY FOR CENTRIFUGAL COMPRESSOR
James H. Anderson, Spring Garden Township, and Marinus J. Spruitenburg, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 8, 1963, Ser. No. 271,200
2 Claims. (Cl. 287—52)



1. A combination shaft and hub assembly comprising a shaft having a radially extending flange; an annular hub having a central, circular opening, said hub being positioned on said shaft so that a portion of said shaft extends through said opening; means defining a first abutment surface on said hub in abutting engagement with a portion of said flange, means defining a second abutment surface on said hub spaced radially inwardly from said first abutment surface; said second abutment surface abutting a second portion of said flange and being axially spaced from said first abutment surface so as to engage said second portion of said flange prior to the engagement of said first abutment surface and said flange; a plurality of circumferentially spaced, threaded fasteners securing said hub to said flange and cooperating therewith so as to hold the hub and the flange in tight engagement, said hub being deformed in the vicinity of said second abutment surface when said hub is secured by said fastening elements, the diameter of said hub opening being initially greater than the diameter of said portion of the shaft extending therethrough, but being reduced in final assembly and thereby binding upon said shaft when the engagement of said second abutment surface with said flange is effective to deform the radially inner portion of said hub.

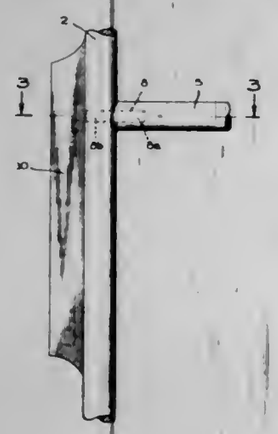
3,273,921
JOINT FOR USE IN SCAFFOLDING
George Bernard Arthur Young, Lichfield, and Kenneth John Cadman, Sutton Coldfield, England, assignors to Rapid Metal Developments Limited, Birmingham, England
Filed June 2, 1964, Ser. No. 371,926
Claims priority, application Great Britain, June 4, 1963, 30,694/63; Aug. 2, 1963, 22,116/63
3 Claims. (Cl. 287—53.5)



1. A joint for use in scaffolding comprising a bracket of channel shaped form having a web portion secured to one scaffold member, a pair of spaced side portions extending from said web portion, and a pair of inturned

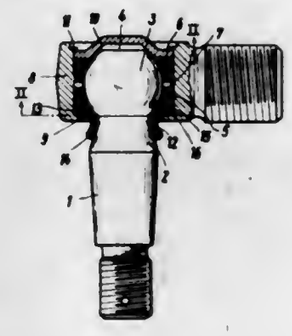
flanges on edges of the side portions spaced from the web portion, said flanges having internal engaging surfaces directed towards the web portion; a rotatable member extending between said side portions of the bracket at a position intermediate said inturned flanges and said web portion and comprising a screw-threaded portion engaged in a nut portion integrally formed on one of said side portions of the bracket, and an enlarged head projecting through a hole in the other of said side portions and a frustoconical cam portion between the screw-threaded portion and the head and disposed between the side portions of the bracket; and a lug of T-shaped section comprising a web secured along one edge to another scaffold member and a pair of flanges projecting in opposite directions from the web at an opposite edge thereof, said flanges being bevelled along their external edges at an angle corresponding to the angle of the frustoconical cam portion and having their inner faces inclined to the web of the lug at an acute angle greater than the angle of said frustoconical cam portion, the engaging surfaces of flanges on the bracket being inclined to the side portions thereof at an equal angle and being engaged against the faces of the flanges on the lug adjacent the web thereof, and the cam portion of the rotatable member being engaged against one of the bevelled edges of the flanges of the lug; and the joint being releasable by turning of the rotatable member to displace the latter axially so as to permit disengagement of the bracket from the lug.

3,273,922
FURNITURE CONSTRUCTION
John C. Rasor, Youngstown, Ohio, assignor to The General Fireproofing Company, Youngstown, Ohio, a corporation of Ohio
Filed Sept. 21, 1964, Ser. No. 397,727
1 Claim. (Cl. 287—54)



In an article of furniture having a plurality of legs and at least one load supporting rail member joined between said legs, said legs and rail member of solid metal rod construction of a diameter no greater than one-half inch, the improvement comprising, a joint formed between an end of said rail member and one of said legs, said rail member disposed normal to and in abutment with said leg, the end face of said rail concaved to mate with the abutting surface of said leg, said leg and the adjacent end of said rail member provided with aligned bores, said leg bore extending substantially throughout the diameter of said leg, a metal pin having one end disposed transversely through said leg bore and having its other end axially disposed within said rail bore and retained within said bores by a press fit, and a stiffener comprising a thin flat bladed member longitudinally attached to the surface of said leg and extending above and below said pin.

3,273,923
BALL JOINT
Jürgen Ulderup, Lemforde (Hann.), No. 207, Germany
Filed July 31, 1963, Ser. No. 298,903
Claims priority, application Germany, Aug. 3, 1962, L 42,618; Dec. 24, 1962, U 9,479
2 Claims. (Cl. 287—87)

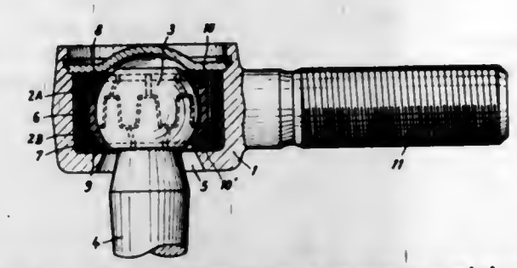


1. A ball joint comprising:
(a) a female member having a generally cylindrical socket provided with a reduced opening at one end defined by an inwardly extending annular flange;
(b) a male member having a ball portion receivable in said socket and a neck extending substantially axially from said socket portion through said end thereof;
(c) antifriction bearing means in said socket in engagement with said ball portion, said bearing means including a pair of axially spaced annular bodies having generally spheroidal seats and bearing axially upon said ball portion on opposite sides of a diametral plane therethrough;
(d) an annular resiliently compressible elastomeric seal disposed in said opening and bridging said neck and said socket at said opening while pressing axially upon said ball portion to urge it against said bearing means, said seal having an annular outwardly extending flange overlying said inwardly extending flange of said socket and disposed between said inwardly extending flange and said bearing means while clamped thereby in said socket, a collar portion extending axially outwardly from said opening along said neck, and a layer of an elastomeric foam disposed intermediate said bearing means and said outwardly extending flange and also along the outer periphery of said outwardly extending flange, said outwardly extending flange being compressed between said bearing means and said inwardly extending flange; and
(e) closure means at the other end of said socket whereby said bodies and said seal are retained under compression between said inwardly extending flange and said closure means.

3,273,924
BALL AND SOCKET JOINT
Gottfried Maxeiner, Dusseldorf, Germany, assignor to A. Ehrenreich & Cie, Dusseldorf-Oberkassel, Germany
Filed Jan. 28, 1964, Ser. No. 340,727
Claims priority, application Germany, Jan. 29, 1963, E 24,249
2 Claims. (Cl. 287—90)

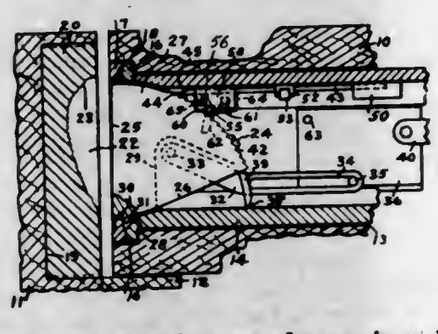
1. A ball and socket joint comprising in combination
a stud having a ball head at one end,
a hollow housing having a bore extending therethrough, said housing having an inturned flange portion at one end of said bore defining an opening for said stud,
closure means for closing said housing at the other end of said bore,
bearing cups of synthetic material disposed against said ball head,

retaining ring means disposed around said bearing cups and positioned axially of said stud between said inturned flange portion and said closure means,



a resilient sleeve disposed between said retaining ring means and the inner wall of said housing, and said retaining ring means has an inturned flange at each edge extending over said bearing cups and an elastic rubber ring lodged between each inturned ring flange and the edge of the adjacent bearing cup.

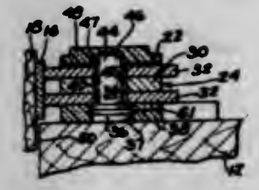
3,273,925
LATCHES AND LOCKS
Percy R. Graham, 7342 24th Ave. NW., Seattle, Wash.
Filed Apr. 20, 1964, Ser. No. 360,974
7 Claims. (Cl. 292—201)



1. In latch and lock means for use in a door, a bolt housing capable of being embedded in a door; a bolt of permanently magnetized material having its inner end portion pivotally supported by said housing for swinging movement of its outer end portion between a retracted position and a position in which it protrudes from said housing; ratchet teeth on the outer end portion of said bolt; and a pawl in the housing said pawl being constructed of material capable of being magnetically attracted to said bolt and having a movable end portion positioned to rest on said ratchet teeth.

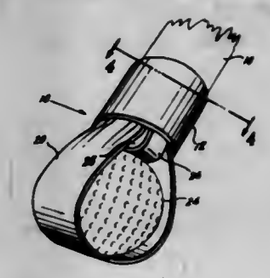
3,273,926
MAGNETIC CATCH ASSEMBLY
Raymond L. Pietsch, Flint, Mich., assignor to Engineered Products Company, Flint, Mich., a corporation of Michigan
Filed Nov. 20, 1963, Ser. No. 325,014
3 Claims. (Cl. 292—251.5)

2. A magnetic catch comprising a housing having vertically spaced top and bottom walls integrally connected together by side walls to form a magnet enclosure, said housing comprising a one-piece plastic molded member having an apertured mounting flange for mounting the housing on a supporting surface with said bottom wall disposed generally parallel to and closely adjacent said mounting surface, a magnet unit disposed in said housing, said magnet unit comprising a magnet having a pair of pole pieces at the opposite poles of the magnet, said pole pieces disposed one adjacent the top wall of the housing and one adjacent the bottom wall of the housing with the magnet sandwiched therebetween, said pole pieces extending outwardly of the housing along an open side thereof, said magnet unit having a vertically extending through passageway therein, said top and bottom walls of the housing each having an opening therein registering with the ends of the certical passageway in the magnet unit, the opening in the top wall comprising a blind hole and the opening in the bottom wall comprising a through hole, and a pin extending vertically through said passage-



way with its upper end extending into and interengaged with said blind hole, the opening in the bottom wall having a circumferential groove therein and the lower end portion of the pin having a circumferentially extending rib thereon interengaging with said groove to hold the magnet unit assembled with the housing.

3,273,927
GOLF BALL RETRIEVER
Lesley J. Carlson, 2023 E. 29th, Des Moines, Iowa
Filed Mar. 16, 1965, Ser. No. 440,083
5 Claims. (Cl. 294—19)

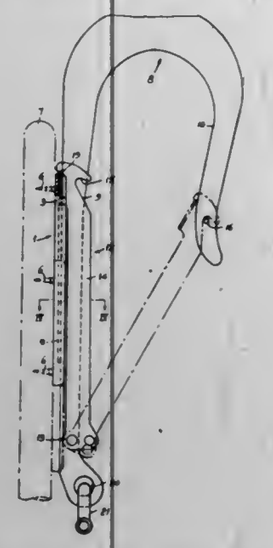


1. In a golf ball retriever,
a collar for removable attachment to a handle,
a strap secured at respective ends to said collar so as to define a golf ball encircling and retaining loop, and
a second strap smaller than the other strap and secured at respective ends to said collar so as to define a loop disposed to extend partially into said first mentioned loop and serving to abut any golf ball encircled by said first mentioned loop.

3,273,928
DEVICES FOR USE IN MOORING BOATS
Vladimir Marcel Wisniewski, Finchley, London, England, assignor to Development, Manufacture & Trade Company Limited, London, England, a British company
Filed Feb. 5, 1964, Ser. No. 342,671
6 Claims. (Cl. 294—19)

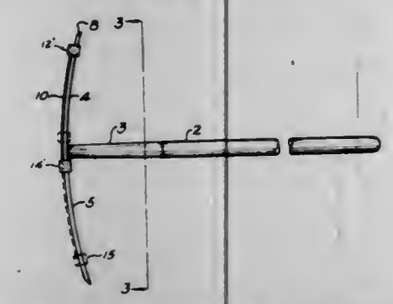
1. A mooring device or the like, comprising an elongated support having an end; an elongated socket member secured to said support adjacent said end and having a pair of longitudinally extending grooves; a hook having a hook element and an elongated shank portion of substantially square cross-section, said shank portion having a pair of spaced flanges projecting in a common plane and slidably receivable in said grooves; a gate member movably secured to said shank portion so as to be shiftable between a locking position in which it engages a free end portion of said hook element and an open position in which said gate member is spaced from said free end portion, said gate member having a U-shaped cross-

section and in said open position partly surrounding said shank portion; and cooperating retaining means on said



socket member and said gate member for maintaining the latter in said open position when said flanges are received in said grooves.

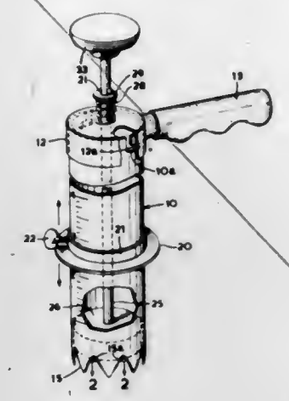
3,273,929
GARDEN TOOL FOR REMOVING WEEDS
Lawrence R. Shurtz, 858 W. 8th St., Mesa, Ariz.
Filed July 27, 1964, Ser. No. 385,376
1 Claim. (Cl. 294—50)



A garden tool for removing weeds comprising an elongated flat head plate of rectangular configuration and longitudinally curved with a centrally disposed handle extending at a right angle from one face of said head plate, one end of said head plate having a V notch with the sides thereof converging inwardly from the end edge thereof, and a slidable knocker plate of rectangular configuration and longitudinally curved, transverse crossbars secured to opposite ends of said knocker plate with the opposite ends of said bars folded over and around the opposite side edges of said head plate to permit slidable movement of said knocker plate on said head plate, said crossbars being disposed on opposite sides of the jointure of said central handle with said head plate to limit slidable movement of said knocker plate along the longitudinal axis of said head plate, said knocker plate being substantially shorter than said head plate to knock weeds out of said V notch when said tool is shaken.

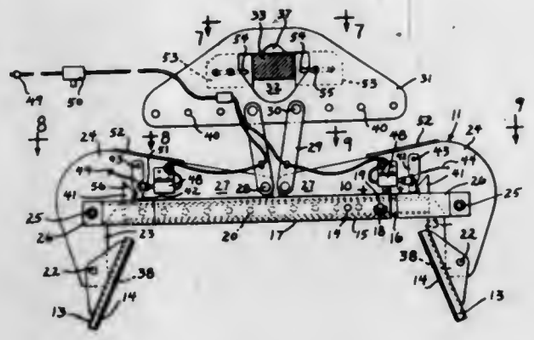
3,273,930
SOIL-EXTRACTING IMPLEMENTS
Adam P. Gottfried, 528 Bedford Park Ave., Toronto 12, Ontario, Canada
Filed July 13, 1964, Ser. No. 382,312
6 Claims. (Cl. 294—50.5)

1. A hand operated soil extracting implement for preparing a hole in the ground preparatory to planting, comprising: an elongated cylindrical barrel having a transversely extending handle secured adjacent to the upper end thereof; an annulus of downwardly extending inwardly curved tooth members forming the lower end of the implement, the perforate annular juncture zone of said tooth members with the barrel having a greater outside diameter than the adjacent lower end of the barrel, said curved teeth extending in a radially inward direction



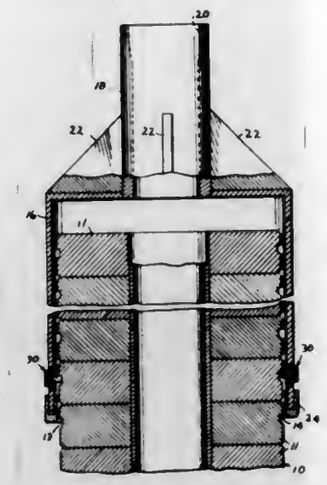
to provide an inner diameter less than the inner diameter of said barrel in the zone adjacent thereto, whereby owing to the perforate annular juncture the implement may be readily withdrawn from the soil, and owing to the incurved teeth the plug of soil thus removed is substantially loosely packed in the barrel and may be readily removed therefrom.

3,273,931
LIFTING GRAB
Leslie M. Caldwell and John W. Remington, Rockford, Ill., assignors to The Caldwell Company, Inc., Rockford, Ill., a corporation of Illinois
Filed Jan. 4, 1965, Ser. No. 433,245
20 Claims. (Cl. 294—81)



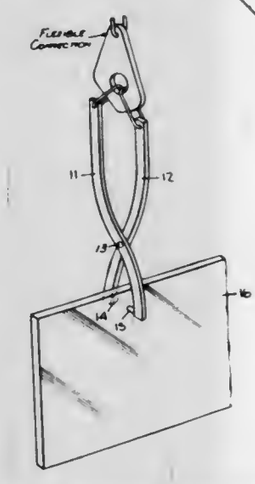
1. A lifting device comprising, in combination, a substantially horizontal elongated spreader bar, a pair of bell-crank levers pivotally connected to the opposite ends thereof, each having a substantially vertical clamp portion at one end and a substantially horizontal actuating portion at the other end, grab pads mounted on the clamp portions for engagement with diametrically opposite sides of an object to be lifted, the actuating portions of said levers extending substantially horizontally inwardly toward each other over opposite ends of said spreader bar, a lifting bale above and in spaced relation to said actuating portions and adapted to be lifted, and a pair of upright links pivotally connected at their lower ends to the inner ends of said actuating portions pivotally connected at their upper ends to the lifting bale.

3,273,932
FISHING TOOL
Donald L. Burner, Norman, Okla., assignor to Acme Tool, Inc., Oklahoma City, Okla., a corporation of Kansas
Filed July 6, 1964, Ser. No. 380,469
3 Claims. (Cl. 294—86.33)



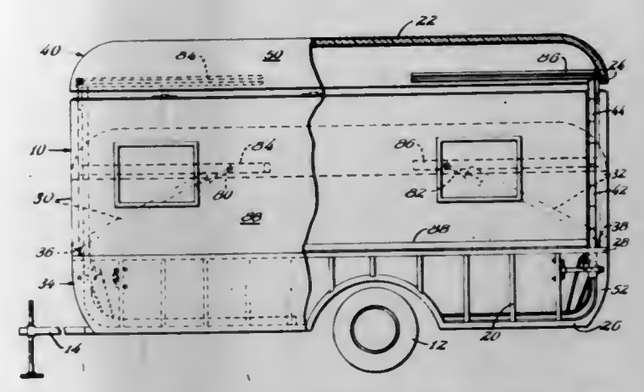
1. A fishing tool for drill collar weights, including: an elongated casing adapted to be lowered into a borehole, and encompass a column of drill collar weights, said casing having a series of teeth formed on its lower end; and a plurality of gripping members slidably positioned in circumferential spaced relation within the wall of said casing adjacent its lower toothed end, said gripping members comprising a body member secured within the wall of said casing, said body member having an aperture therein, a finger slidably received by the aperture in said body member and projecting inwardly of the inner wall surface of said casing, a shield secured to the outwardly disposed surface of said body member in overlapping relation with respect to the aperture therein, and a spring interposed between said shield and said finger and normally urging the latter inwardly of said casing into drill collar contacting and gripping position.

3,273,933
SELF-GRIPPING TONGS
Friedrich Jochim, Herzogenrath, Germany, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Dec. 10, 1963, Ser. No. 329,496
11 Claims. (Cl. 294—118)



1. Tongs adapted to suspend glass plates and the like which have arms pivoted together and gripping tips carried by the arms, the arms and tips being arranged to urge the tips toward each other when the tongs is suspended, in which the tips are constituted of crystalline grains embedded in a binder and projecting therefrom.

3,273,934
FOLDING TRAVEL TRAILER
Leo J. Hagenson, Grantsburg, Wis., assignor to Rolite, Inc., Grantsburg, Wis., a corporation of Wisconsin
Filed Jan. 20, 1964, Ser. No. 338,901
13 Claims. (Cl. 296—26)

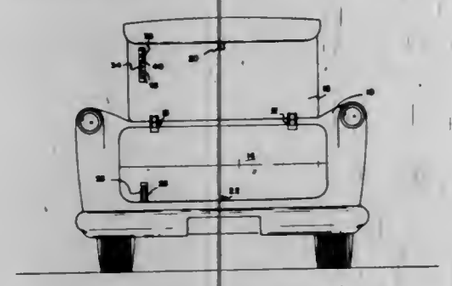


1. A collapsible and expandable house trailer having two sections in superimposed edge abutting relation,
(a) telescoping support means secured opposedly between said sections to hold said sections in spaced apart relations,
(b) means engageable with said first means to move said sections toward and away from each other,
(c) a pair of opposed end walls and side walls hingedly secured about coplanar oppositely parallel horizontal axes to the lower said section,
(d) means pivotally and rollably securing said end walls to said upper section whereby said walls are adapted to move toward and away from said lower section in correspondence with similar movement of said upper section,
(e) each said wall movable from a generally horizontal lying position to an upstanding generally vertical position,
(f) upper ends of said upstanding side walls and opposed portions of said upper section having cooperable aligning means including longitudinally extending tongue and groove members extending substantially from end to end of said side walls and opposed portions adapted to cooperate,
(g) said tongue members being adapted to reside within said groove of said groove members when the upper ends of said side walls abut in alignment with corresponding portions of said upper sections, said side walls and corresponding upper sections being aligned thereby and in which said telescoping means secured opposedly between said sections include racks formed of a series of rigid links pivotally connected and having ends which abut when the links are in alignment and having spaced teeth on said links, said tongue members extending longitudinally of the ends of said side walls.

3,273,935
AUTOMOBILE COMPARTMENT LOCK MEANS
Gordon L. Carson, 1829 E. Thomas Road, Apt. 41, Phoenix, Ariz.
Filed Nov. 13, 1964, Ser. No. 411,023
5 Claims. (Cl. 296—76)

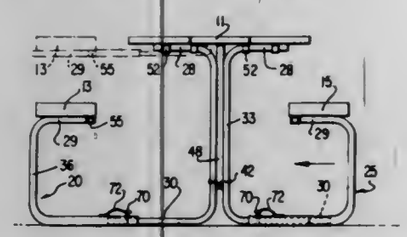
1. In an automobile trunk lock means the combination of: an automobile body; a trunk compartment in the rearward portion thereof; a compartment cover horizontally

pivotally mounted on said body and disposed to pivot upwardly into open position relative to said compartment; lock means accessible externally of said compartment and disposed to lock said cover in downwardly closed fixed position; second lock means disposed and connected to said body and said cover to permit only partial upward opening movement of said cover relative to said body; a first strap of said second lock means secured to said body; a second strap secured to said cover; one of said straps having an elongated slot therein disposed generally in a vertical direction; auxiliary lock means interconnecting



said first and second straps; a member of said auxiliary lock means in said slot and relatively slidable longitudinally therein to permit a limited relative movable connected relation between said first and second straps, said first and second straps and said auxiliary lock means disposed inside said compartment whereby the release or failure of said first mentioned lock means may permit only partial opening of said cover relative to said compartment and to thereby provide access of a person externally of said compartment to said auxiliary lock means internally of said compartment.

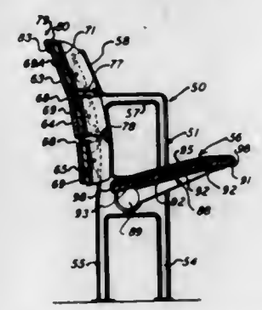
3,273,936
COMBINED TABLE AND BENCH ASSEMBLY
Kenneth L. Deavers, Eckstine Road, Rte. 1, Box 29, Williamsport, Md.
Filed Oct. 14, 1964, Ser. No. 403,839
2 Claims. (Cl. 297—159)



1. A collapsible article of furniture of the picnic-table type having a table and a bench supported at each end thereof by a G-shaped leg member which provides an upper horizontal portion supporting said table and rotatable thereunder, and an intermediate horizontal portion supporting said bench and slidable thereunder, said leg members having a telescoping lower horizontal portion to provide for movement of said bench from a position underlapping said table to a position remote from said table.

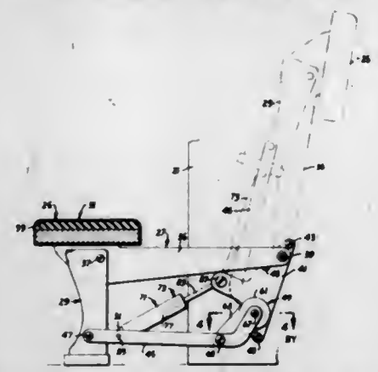
3,273,937
WEATHER PROTECTED CHAIRS
Paul G. Anderson, Ontario, Calif., assignor of twenty-five percent to Freeman A. Parsons, and of twenty-five percent to Floyd H. Wells, both of San Bernardino, Calif., and of twenty-five percent to Byron V. Curry, Arcadia, Calif.
Filed Mar. 24, 1965, Ser. No. 458,303
3 Claims. (Cl. 297—219)

1. A chair comprising a chair frame having vertical uprights, each of said uprights having a vertically extending channel opening toward the center of the chair, a plurality of horizontally extending vertically spaced, wooden back members affixed to the vertical uprights to define a chain back such that a front flange of each channel overlies the side ends of the back members, a plurality of resilient back pads each extending horizontally across a chair back member, a water-repellent back sheath overlying the resilient back pads, an upper sheath cap flange extending across the upper edges of the upper back member and the upper resilient back pad and extending downwardly adjacent the rear surface of the upper back member, a plurality of horizontally-extending rearward indentations in the chair back sheath, each indentation intervening between pairs of adjacent resili-



ent back pads and contacting the horizontal edge of each of adjacent wooden back members, a plurality of fasteners extending through the back sheath and the back members of the chair back, a seat frame mounted for pivotal motion with respect to the vertical uprights, a plurality of horizontally-extending wooden seat members fixed to the seat frame, a resilient seat pad overlying the seat members, a water-repellent seat sheath covering the surface of the seat pad remote from the seat members, downwardly depending seat sheath flanges extending across the vertical edges of the seat pad and the seat members, and fastening means extending through the seat sheath and into the seat members so as to secure the seat sheath to the seat.

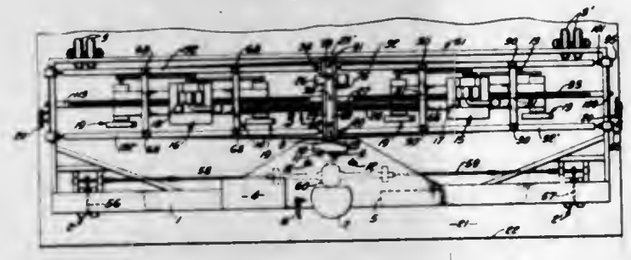
3,273,938
SWINGABLE SUPPORT DEVICE
Arno M. Jacobi, Belmont, Calif., assignor to Walter Jacobi & Sons, Inc., Belmont, Calif., a corporation of California
Filed June 17, 1965, Ser. No. 464,814
11 Claims. (Cl. 297—426)



1. A supporting device adapted to be connected to furniture, comprising a resting member, at least one leg pivotally connected to said resting member, a first arm secured at one end to said resting member, a bracket adapted to be connected to said furniture, said arm being pivotally connected at its other end to said bracket, a second arm pivotally connected at one end to said leg, means pivotally supporting the other end of said second arm, said device being adapted for movement between an operative position wherein said resting member is generally horizontal and said leg is substantially normal to said resting member, and a retracted position wherein said rest-

ing member and said leg are swung out of operative position and said leg is swung out of its substantially normal position relative to said resting member, spring means connected to one of said arms biasing the device toward said retracted position, and control means connected between said bracket and one of said arms adapted to oppose said spring means for dampening the movement of said resting member as the latter is swung toward said retracted position and being adapted to oppose the gravitational forces exerted on the device as the latter is swung toward the operative position.

3,273,939
CONCRETE SAWING MACHINE
Cecil W. Hatcher, West Covina, Calif., assignor to Concut, Inc., El Monte, Calif., a corporation of California
Filed Feb. 4, 1964, Ser. No. 342,431
14 Claims. (Cl. 299—39)



1. A concrete sawing machine comprising a vehicle having a main frame, a central support arising from said frame, a track means laterally extending from opposite sides of said central support, an outer support on said frame for the outer end of each of said track means, means providing a tilt connection between each end of each track means and its respective supports, a carriage for each of said track means, each carriage having a power driven saw spindle means for traversing said carriages on their said track means, means for raising or lowering said track means, and means for adjusting the upright tilt of each of said track means with respect to the other track means.

3,273,940
MINING PICK
Pierre Belugou, Paris, France, assignor to Charbonnages de France, Paris, France, a public institution of France
Filed June 8, 1964, Ser. No. 373,391
Claims priority, application France, June 20, 1963, 938,804, Patent 1,368,318
3 Claims. (Cl. 299—81)



1. An improved mining pick associated with a water-injection device, said pick comprising: a water-intake conduit discharging perpendicularly into a spraying conduit pierced right through the body of said pick, and spraying conduit having a cylindrical middle portion which has a length less than its diameter and a divergent portion at each extremity of said spraying conduit; a nozzle on said intake conduit, and discharging into said spraying conduit, said nozzle having a section smaller than that of said spraying conduit.

3,273,941
RESILIENTLY MOUNTED WHEEL BALANCING WEIGHTS
Frank O. Skidmore, Cuyahoga Falls, Ohio, assignor to Donald Gottwald, Akron, Ohio
Filed Oct. 28, 1964, Ser. No. 406,984
7 Claims. (Cl. 301—5)

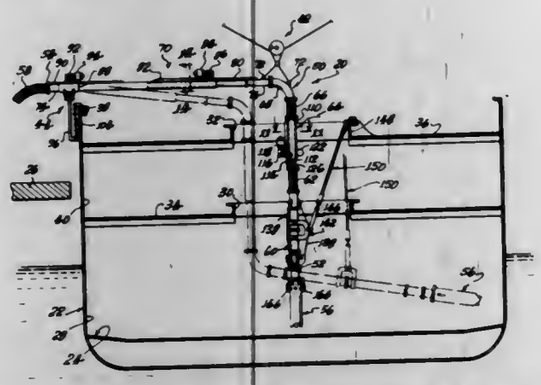


5. In combination,
a wheel having a rim with an axially extending flange,
a pneumatic tire mounted on the rim and retained by the flange, said tire having an extended arcuate heavy area of gradually distributed unbalance,
a metal strip moldable by finger pressure positioned on a radially inward surface of the rim to uniformly counterbalance statically and dynamically the extended arcuate heavy area of the tire, said metal strip being heavier than the amount of weight necessary to counterbalance the tire if it were concentrated at a point on the rim at the center of the metal strip,
a deformable resilient water repellent layer of substantially the same length and width as the metal strip positioned between the strip and the rim, said layer being at least $\frac{1}{32}$ inch in thickness, and
pressure sensitive adhesive means to secure said strip to said resilient layer, and said resilient layer to said surface of the rim, whereby the deformable resilient layer eliminates shock to the adhesive means during wheel operation by providing a floating mounting of the strip to the rim.

3,273,942
VACUUM BULK CARGO UNLOADING SYSTEM FOR SHIPS
Glen W. McFarland, 101 Ocean Ave., Seal Beach, Calif.
Filed Sept. 17, 1964, Ser. No. 397,112
4 Claims. (Cl. 302—17)

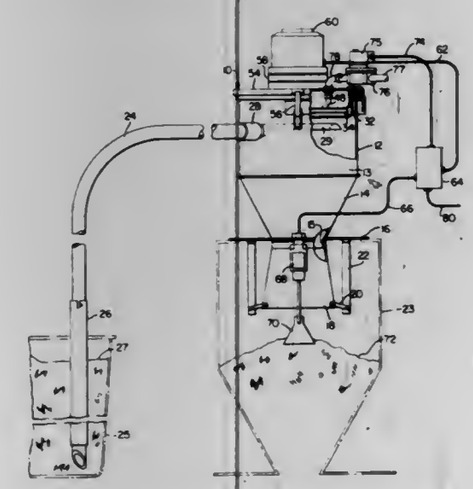
1. In a vacuum conveyor system for unloading bulk cargo from a hold of a ship through a hatchway formed in a deck above the hold, the ship being equipped with hoisting gear, the combination of:
(a) a duct having an inlet end positionable within the hold and having an outlet end positionable adjacent one side of the ship and connectible to a vacuum source;
(b) universal mounting means connected to said duct adjacent said outlet end thereof for supporting said duct for universal movement relative to the ship;
(c) means on said duct intermediate said inlet and outlet ends thereof for connecting said duct to the ship's hoisting gear;

(d) said duct including extensible and contractible and flexible sections to render said inlet end of said duct maneuverable within the hold; and



(e) inlet means connected to said inlet end of said duct for feeding the bulk cargo into said duct.

3,273,943
MATERIAL TRANSPORTING DEVICE
John D. Russell, Franklin, Pa., assignor to Conair, Incorporated, Franklin, Pa.
Filed Dec. 11, 1962, Ser. No. 243,825
5 Claims. (Cl. 302—59)

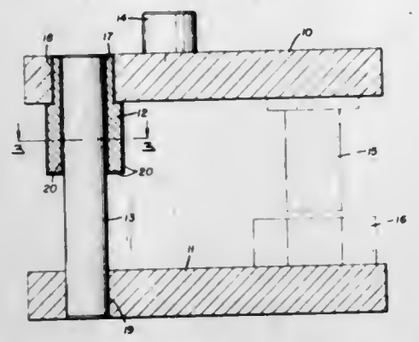


1. A transporting device for granular material comprising, a vertically extending material receiving housing having a selectably openable discharge opening in a lower portion thereof and an outlet opening in an upper portion thereof, a hollow material inlet communicating with said housing at a location spaced upwardly of said discharge opening, a filter member comprising a hollow porous disk having a deformable outer periphery and extending completely across said housing at a location spaced upwardly from said inlet and downwardly from said outlet to divide the interior of said housing into upper and lower interior portions; means located within said housing engageable with said deformable outer periphery of said filter member to provide a peripheral air seal between said upper and lower interior portions; means carried by an upper portion of said housing for creating a vacuum within said upper interior portion of said housing with the air in said lower interior portion of said housing evacuating upwardly through said filter member and said outlet opening, said filter member having a completely enclosed chamber therein extending transversely across said housing, passageway means extending from within said chamber to an externally accessible portion of said housing, and selectively operable control means connected to said passageway means to control flow of pressurized air through said passageway into said chamber.

ERRATUM

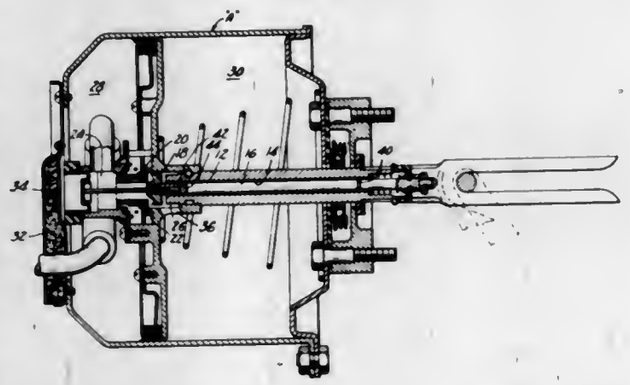
For Class 303—9 see:
Patent No. 3,273,950

3,273,944
DIE SET HAVING ALUMINUM OXIDE BEARING SURFACE
Edwin J. Hammon, Bedford Heights, Ohio, assignor to Fountainhead Industries, Inc., Maple Heights, Ohio, a corporation of Ohio
Filed Oct. 2, 1963, Ser. No. 313,331
6 Claims. (Cl. 308—4)



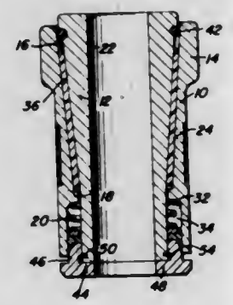
1. A die set comprising a pair of punch and die-supporting plates arranged for relative movement toward and from one another; a plurality of relatively spaced apart, substantially aluminum-free metal, guide pins carried by and projecting outwardly from one of said plates; a plurality of relatively spaced apart, tubular guide bushings carried by the other of said plates and telescoping said guide pins; and a layer of amorphous aluminum oxide carried by each of said bushings and defining a bearing surface for each of said pins.

3,273,945
BEARING FOR PNEUMATIC SERVOMOTOR
Edward E. Hupp, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Continuation of application Ser. No. 100,408, Apr. 3, 1961, which is a continuation of application Ser. No. 561,186, Jan. 25, 1956. This application Jan. 16, 1964, Ser. No. 338,064
1 Claim. (Cl. 308—4)



In guide structure and the like: a generally tubular member having a longitudinally extending chamber with longitudinally spaced apart surfaces of revolution, a rod in said chamber and also having longitudinally spaced apart surfaces of revolution, said surfaces of said rod having a diameter appreciably less than said surfaces of said tubular member and being positioned opposite to respective surfaces of said tubular member to form first and second sets of generally concentric surfaces with the respective surfaces of said tubular member, with a fluid passageway formed by the differing diameters of said chamber and rod surfaces, the surface of said rod being formed with longitudinally spaced grooves, first and second pieces of cold drawn wire positioned between said surfaces of respective sets, each of said wires having a diameter less than the clearance between the surfaces between which it is positioned by an amount providing a running reciprocatory fit, each of said wires being bent into a torus shaped spring whose normal condition provides an interference fit with respect to its receiving groove, said torus shaped spring being snapped into said grooves to concentrically space and at two points contact said member and rod, one within the other, and said rod and member being reciprocable longitudinally of each other, whereby each piece of wire is retained in its groove and a clearance is maintained between the tips of said springs and the opposing surface such that said fluid passageway is open from one end of said tubular member to the other.

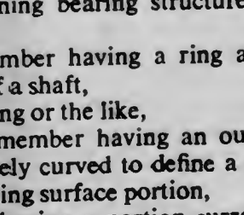
3,273,946
IDLER ARM REPAIR BUSHING
Theodore C. Gerner, 1800 S. Broadway, Oklahoma City 9, Okla.
Filed Dec. 21, 1962, Ser. No. 246,631
6 Claims. (Cl. 308—70)



3. An adjustable slack take-up bearing bushing assembly comprising concentric outer and inner members having cooperating tapered conical bearing surfaces, a bearing sleeve rotatably interposed between said member surfaces, said sleeve having conical internal and external surfaces cooperatively and movably engaged with said surfaces of said inner and outer members respectively, sealing means interposed between said members at their opposite ends enclosing said sleeve, resilient means within said outer member for yieldingly and axially urging said inner member surface into wear take-up engagement with said sleeve and the latter into wear take-up engagement with said outer member surface.

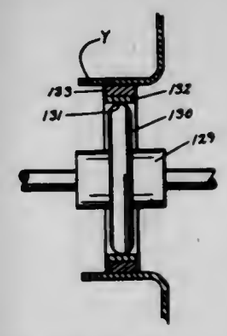
3,273,947
BEARING STRUCTURE
George W. Hoddy, Gerald L. Hoddy, and Raymond A. Hoddy, Owosso, Mich., assignors to Universal Electric Company, Owosso, Mich., a corporation of Michigan
Application May 24, 1962, Ser. No. 197,398, now Patent No. 3,223,464, dated Dec. 14, 1965, which is a division of application Ser. No. 753,695, Aug. 7, 1958, now Patent No. 3,063,761, dated Nov. 13, 1962. Divided and this application Feb. 4, 1965, Ser. No. 430,297
3 Claims. (Cl. 308—72)

1. A self-aligning bearing structure for a shaft comprising
a bearing member having a ring and a bore for the reception of a shaft,
a motor housing or the like,
said housing having a portion thereof circumscribing a cylindrical supporting surface,
said bearing member having an exterior surface,
radially yieldable means on said exterior surface portion having an outer perimeter with at least some portions which are transversely curved to define a substantially spherical contacting surface portion,
said spherical contacting surface portion having its center aligned substantially on the axis of the cylindrical supporting surface and having a diameter substantially equal to the diameter of the cylindrical supporting surface,



said radially yieldable means having limited radial resiliency sufficient to accommodate dimensional variations but insufficient to permit any substantial movement of the center of the bearing member so that the center of the bearing member is maintained in position,
said cylindrical supporting surface having a longitudinal extent sufficient to permit relatively unrestrained axial movement of said bearing member relative to said supporting surface.

3,273,948
BEARING STRUCTURE
George W. Hoddy, Gerald L. Hoddy, and Raymond A. Hoddy, Owosso, Mich., assignors to Universal Electric Company, Owosso, Mich., a corporation of Michigan
Application May 24, 1962, Ser. No. 197,398, now Patent No. 3,223,464, dated Dec. 14, 1965, which is a division of application Ser. No. 753,695, Aug. 7, 1958, now Patent No. 3,063,761, dated Nov. 13, 1962. Divided and this application Feb. 4, 1965, Ser. No. 430,424
4 Claims. (Cl. 308—72)



1. A self-aligning bearing structure for a shaft comprising
a bearing member having a ring and a bore for the reception of a shaft,
a motor housing or the like,
said bearing member having an outer perimter which is transversely curved to define a substantially spherical contacting surface portion,
said housing having a portion surrounding said spherical contacting surface portion,
radially yieldable means interposed between said housing portion and said spherical contacting surface portion,
said radially yieldable means circumscribing a generally cylindrical supporting surface,
said spherical contacting surface portion having its center aligned substantially on the axis of the cylindrical supporting surface and having a diameter substantially equal to the diameter of said cylindrical supporting surface,

said radially yieldable means having limited radial resiliency sufficient to accommodate dimensional variations but insufficient to permit any substantial movement of the center of the bearing member so that the center of the bearing member is maintained in position,

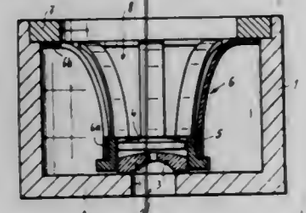
said cylindrical supporting surface having a longitudinal extent sufficient to permit relatively unrestrained axial movement of said bearing member relative to said supporting surface.

3,273,949

SHOCK-ABSORBING BEARING FOR SMALL MECHANISMS

Roger Matthey, Le Locle, Switzerland, assignor to Parechoc S.A., Canton of Vaud, Switzerland, a firm of Switzerland

Filed Apr. 7, 1964, Ser. No. 357,921
Claims priority, application Switzerland, May 9, 1963, 5,817/63
4 Claims. (Cl. 308—158)



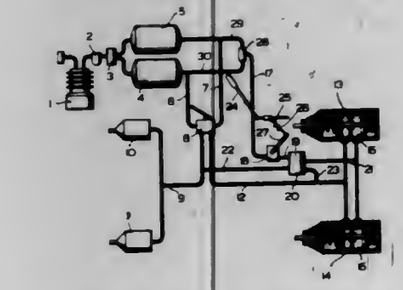
1. In a shock-absorbing bearing for small mechanisms, comprising a bearing support and a bearing body located within the said support, and a return spring acting on the said bearing body, said spring being in the shape of a circular body formed by the rotation around a geometrical axis of a curved generating line and having a substantially tubular extremity for carrying said bearing body and an opposite extremity located approximately in a plane perpendicular to the axis of said spring and bearing on said bearing support, said spring being provided with longitudinal elongated apertures to define elastically-deformable flexible blades therebetween for allowing the tubular part of said spring to be displaced in any direction, with said spring absorbing the axial as well as the radial shocks to which said bearing body is subject.

3,273,950

BRAKING INSTALLATION FOR VEHICLES

Oskar Vielmo, Stuttgart-Sonnenberg, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Sept. 17, 1964, Ser. No. 397,132
Claim priority, application Germany, Sept. 17, 1963, B 73,543
10 Claims. (Cl. 303—9)



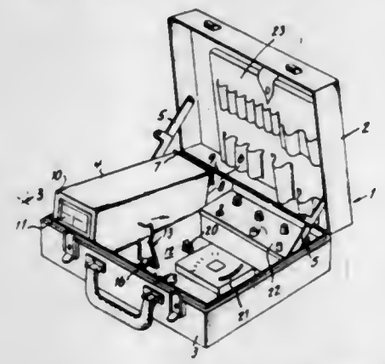
1. In a braking assembly for vehicles, in combination, a braking unit including fluid-pressure brake means and spring-pressure brake means; a source of fluid pressure; conduit means communicating with said source of fluid pressure and said fluid-pressure brake means for supplying fluid under pressure to said fluid-pressure brake means so as to actuate the latter when the fluid pressure of the fluid supplied to said fluid-pressure brake means is increased to a predetermined pressure; operator actuated valve means in said conduit means for opening the latter to increase the fluid pressure of fluid supplied to said fluid-pressure brake means to brake the vehicle with the fluid-pressure brake means of said unit; and means maintaining said spring-pressure brake means inoperative while the fluid pressure of said fluid in said conduit means supplied to said fluid-pressure brake means during actuation of said valve means is at least equal to said predetermined pressure but responding automatically to actuation of said operator actuated valve means upon a drop of pressure of the fluid in said conduit means below said predetermined pressure for rendering said spring-pressure brake means automatically operative.

3,273,951

PORTABLE INSTRUMENT UNIT

Robert E. Miller, Milford, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 15, 1965, Ser. No. 448,462
5 Claims. (Cl. 312—319)



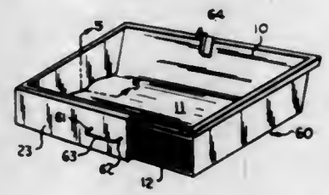
1. A portable instrument unit comprising an attache type case and a front face viewable instrument, a hinge connected between the back of said instrument and the inner rear wall of the base of said case, and manually operable means connected to the base of said case and to said instrument for positioning the front end of said instrument in raised or nested position within the base of said case.

3,273,952

METHOD OF MAKING FURNITURE DRAWERS OR THE LIKE AND ARTICLE PRODUCED THEREBY

Louis E. Himelreich, Louisville, and Warren A. Dillen, Jeffersontown, Ky., assignors to H. J. Scheirich Company, Louisville, Ky., a corporation of Kentucky

Filed July 14, 1964, Ser. No. 382,444
5 Claims. (Cl. 312—330)



1. In a method for producing furniture drawers and the like, the steps comprising; providing as a stock intermediate an elongated member having a bottom portion and front and rear wall portions integral therewith and upstanding from said bottom portion in spaced relation to each other and defining therebetween an unobstructed space in which the contents of the drawer may later be stored, cutting said elongated member transversely thereof to form a detached member adapted for use as the central body portion of a drawer, thereafter rigidly affixing a pair of drawer side wall members to the respective ends of said detached member, and thereafter rigidly affixing to the exterior of said front wall portion a front member covering the space between the front ends of said side wall members, thus to form a drawer.

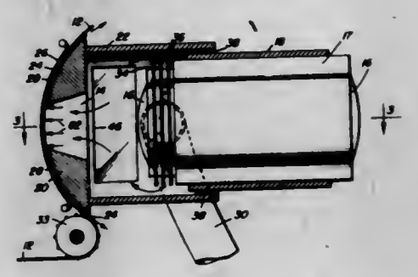
3,273,953

MOTION PICTURE PROJECTOR FILM FOCUS STABILIZATION AND LENS COOLING MEANS

Lawrence W. Davee, 153 Westervelt Ave., Tenafly, N.J.

Filed Feb. 26, 1965, Ser. No. 435,425
22 Claims. (Cl. 352—222)

1. Film focus stabilizing means in a motion picture projection apparatus having a curved film gate having a light aperture therethrough, means for intermittently feeding the film along curved film gate shoes extending longitudinally on opposite edges of said film gate and past the light aperture, and film gate spring trap shoes maintaining the longitudinal opposite side edges of the feeding film against said curved film gate shoes and past said light aperture; said stabilizing means comprising a pressure chamber including said curved film gate and the film in said light aperture as one wall thereof, means for continuously providing a generally uniform air pressure in said pressure chamber against substantially the entire surface of the film in said light aperture, said pressure chamber being open to the atmosphere only through said light aperture and along the throats provided by the surface of the feeding film between said curved film gate shoes, the inner sides of the curved film gate shoes, and the film gate surface.



CHEMICAL

3,273,954

MIXTURES OF QUATERNARY AMMONIUM DYE ASSISTANTS AND DYEING RETANNED LEATHER THEREWITH

Hubert Wachsmann, Basel-Land, Jakob Bindler, Riehen, and Max Erny, Gelterkinden, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,662
Claims priority, application Switzerland, Sept. 14, 1962, 10,946/62
8 Claims. (Cl. 8—12)

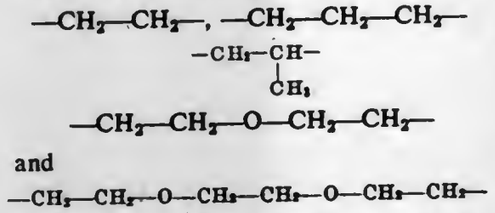
1. An aqueous dyeing liquor for the dyeing of re-tanned leather in deep color shades, comprising, as essential ingredients

(1) an anionic leather dyestuff,

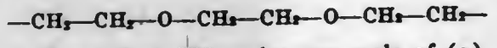
(2) a shade-deepening mixture consisting essentially of

(I) the quaternized salt of a condensation product of

(a) an aliphatic amine containing, per molecule, from one to six amino nitrogen atoms, one lipophilic N-substituent being a member selected from the group consisting of alkyl with from 10 to 20 carbon atoms and alkenyl with from 10 to 20 carbon atoms, and, between every two adjacent amino nitrogens in amines with more than one nitrogen atom, a linking member selected from the group consisting of



and



(b) from 10 to 200 moles, per mole of (a), of ethylene oxide, and

(c) from 0 to 2 moles, per mole of (a), of a member selected from the group consisting of styrene oxide and propylene oxide,

quaternized with a member selected from the group consisting of the esters of a strong acid with one of the following: a lower saturated aliphatic alcohol, benzyl alcohol, phenyl-ethyl alcohol, chlorobenzyl alcohol, bromobenzyl alcohol and lower alkyl-benzyl alcohol; and

(a) a quaternary salt of an organic tertiary monoamine having per molecule from 1 to 2 alkyl radicals of at least 10 and not more than 30 carbon atoms, said alkyl radical being a substituent of the amino nitrogen atom, the remaining nitrogen bonds being substituted with lower alkyl, and

(II) a basic fixing agent selected from the group consisting of

(b) the condensation product of

(α) a polytertiary polyamine with from 2 to 5 amino nitrogen atoms, two to four of which are tertiary nitrogen atoms, and with a linking alkylene chain of 2 to 3 carbon atoms between every two adjacent amino nitrogen atoms, with

(β) a straight-chain aliphatic dihalide, the halogen atoms of which are of an atomic number ranging from 17 to 53 and the aliphatic chain of which is of 2 to 6 carbon atoms interrupted by from 0 to 2 oxygen atoms, the molar ratio of (α) to (β) ranging from about 2:3 to 3:2,

said quaternizing salt defined under (I) being present in said dyeing liquor in an amount of from about 0.1 to 3% by weight, and said basic fixing agent defined under (II) being present in said dyeing liquor in an amount of from about 005 to not more than 1.5% by weight, calculated on the weight of the wet leather being dyed which has been pressed out to a water content of about 50%.

3,273,955

PROCESS FOR REDUCTION OF VAT ANTHRAQUINONE DYESTUFFS

Dieter Goerrig, Lohmar, Postfach 2, Siegkreis, Germany, and Friedrich Schubert, Neuried, Eberhard Weise, Cologne-Mulheim, and Manfred Soll and Konrad Lang, Leverkusen, Germany; said Schubert, Weise, Soll, and Lang assignors to said Goerrig

No Drawing. Continuation of application Ser. No. 765,737, Oct. 7, 1958, now Patent No. 3,118,724, dated Jan. 21, 1964. This application Jan. 14, 1964, Ser. No. 337,521
Claims priority, application Germany, Oct. 11, 1957, F 24,153
3 Claims. (Cl. 8—34)

1. In a process for the reduction of a vat anthraquinone dyestuff with an alkali-metal borohydride, the improve-

ment which consists in carrying out the reduction in the precence of a catalytic proportion of a catalyst selected from the group consisting of

(a) metal complex compounds from which the metal on which they are based can be separated in the presence of a reducing agent at a redox potential between 0 and −1.5 volts at a pH value between 8 and 15,

(b) water-soluble anthraquinone compounds which form a component of an organic redox system the potential of which lies between 0 and −1.5 volts at a pH value between 8 and 15, and where the reduction of this organic redox system involves hydrogenation and its oxidation involves dehydrogenation, and mixtures of these compounds.

3,273,956

METHOD OF TREATING ACRYLONITRILE SYNTHETIC FIBERS

Yoshimasa Fujita, Saidaiji, and Nobuhiro Tsutsui, Okayama, Japan, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,524
Claims priority, application Japan, Aug. 19, 1961, 36/30,223
12 Claims. (Cl. 8—55)

1. A process for retarding the dyeability of an acrylonitrile polymer fiber containing acid groups and which is highly substantive to cationic dyes, said process comprising immersing such fiber in an aqueous solution of a water-soluble salt of a multivalent metallic ion selected from the group consisting of magnesium, calcium, barium, chromium, zinc, cobalt, nickel, aluminum, tin, and lead with an anion selected from the group consisting of nitrates, sulfates, chlorides, and organic acid residues prior to exposure of such fiber to cationic dyes.

3,273,957

METHOD OF RETARDING WATER SURFACE EVAPORATION

Nicky Beredjick, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed June 28, 1962, Ser. No. 205,878
7 Claims. (Cl. 21—60.5)

1. In the method for retarding the evaporation of water from an evaporating surface thereof which comprises forming and maintaining an evaporation retardant film of a water-insoluble C_{12-24} aliphatic alcohol on said evaporating surface, the improvement consisting of forming said film by applying to said evaporating surface a liquid solution consisting of about 0.01–2 percent by weight of the total composition of said C_{12-24} aliphatic alcohol dissolved in a C_{1-5} alkanol.

3,273,958

PROCESS FOR THE PREPARATION OF SODA ASH

Guy D. Peverley, Green River, Wyo., assignor to Intermountain Research & Development Corporation, Cheyenne, Wyo.

Filed Nov. 27, 1962, Ser. No. 240,279
4 Claims. (Cl. 23—63)

1. A process for the preparation of soda ash from crude trona which comprises dissolving crude trona and crude soda ash in water to form an aqueous solution of sodium carbonate and sodium bicarbonate having a molar ratio of sodium carbonate to sodium bicarbonate greater than 1:1, clarifying and filtering the said aqueous solution to remove insolubles, heating and evaporating water from the filtered solution to form a slurry of sodium carbonate monohydrate and sodium sesquicarbonate crystals in mother liquor, separating the said crystals from the mother liquor, recycling the mother liquor to the evaporation step, calcining the said crystals to soda ash and recovering the soda ash.

3,273,959

PROCESS OF RECOVERING SODIUM CARBONATE FROM THE MOTHER LIQUOR BLEED

Warren Standish Miller, Fullerton, Calif., assignor, by mesne assignments, to Intermountain Research & Development Corporation, Cheyenne, Wyo., a corporation of Wyoming

Filed June 16, 1965, Ser. No. 469,040
5 Claims. (Cl. 23—63)

1. A process for the production of soda ash from crude trona which comprises dissolving the trona in a recycling mother liquor to form an aqueous solution of sodium sesquicarbonate containing sodium chloride, evaporating water from the sodium sesquicarbonate solution to form a major slurry of sodium sesquicarbonate crystals in a mother liquor, bleeding off a portion of the mother liquor from the slurry when the mother liquor contains approximately 6% sodium chloride, evaporating water from the bleed stream until the sodium chloride content is near its saturation point to form a minor slurry of sodium sesquicarbonate and sodium carbonate monohydrate crystals in a mother liquor, separating the mother liquor of high sodium chloride content from the minor slurry of crystals, discarding the minor mother liquor, recycling the sodium sesquicarbonate and sodium carbonate monohydrate crystals from the minor slurry to the major slurry of sodium sesquicarbonate in mother liquor from which the bleed stream has been removed, wherein the said monohydrate crystals dissolve in the major slurry of sodium sesquicarbonate crystals, separating the mother liquor and the sodium sesquicarbonate crystals in the major slurry which contains only sodium sesquicarbonate crystals, recycling the major mother liquor to dissolve more trona, calcining the sodium sesquicarbonate crystals separated from the major slurry to soda ash and recovering the said soda ash.

3,273,960

CAKING RESISTANT MONOCALCIUM PHOSPHATE, MONOHYDRATE AND PROCESS FOR ITS MANUFACTURE

Norman Earl Stahlheber, Columbia, Ill., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 17, 1961, Ser. No. 147,127
4 Claims. (Cl. 23—108)

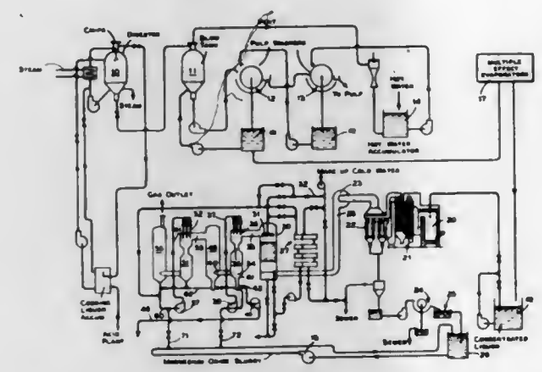
1. A process for manufacturing a particulated monocalcium orthophosphate monohydrate composition which is resistant to caking, which process comprises intermixing with said monocalcium orthophosphate monohydrate from about 0.2 to about 10 weight percent of a finely divided alkaline earth metal hyperphosphate, whereby the normal tendency of said monocalcium orthophosphate monohydrate to cake is inhibited; at least about 80 weight percent of the particles of said finely divided alkaline earth metal hyperphosphate being small enough to pass through a U.S. Standard 100 mesh screen; said alkaline earth metal hyperphosphate being the product resulting from reacting together a material selected from the group consisting of alkaline earth metal bases and alkaline earth metal carbonates with a superphosphoric acid containing initially from about 71 to about 85 weight percent of phosphorus, calculated as P_2O_5; said product being characterized as containing at least about 30 weight percent polyphosphates having more than one phosphorus atom in their molecules, and being at least about 65 weight percent in the amorphous condition.

3,273,961

REGENERATION OF MAGNESIUM BISULPHITE PULPING LIQUOR AND ABSORPTION OF SULPHUR DIOXIDE DURING REGENERATION

Charles E. Rogers and Robert E. Matty, Alliance, Ohio, and Edward L. Ralston, Flossmoor, Ill., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 12, 1963, Ser. No. 261,931
4 Claims. (Cl. 23—131)



1. The method of treating a magnesium base residual sulphite pulp liquor which comprises concentrating the residual liquor by evaporation, burning the combustible organic constituents of the concentrated liquor in suspension to obtain a dry ash consisting mainly of magnesium oxide and combustion gases containing SO_2, mixing said magnesium oxide with water to form a slurry of magnesium hydroxide, passing said combustion gases through a venturi-like SO_2 absorption zone in intimate direct co-current contact with a constantly moving atomized magnesium bisulphite-monosulphite liquid in an acid state containing magnesium monosulphite in an amount in excess of the normal solubility of the monosulphite in the liquid and at a temperature in the range between 100° F. and the dew point temperature of the said hot combustion gases to form magnesium bisulphite in the liquid, said excess monosulphite being in the form of a suspension of reactive microscopic crystals, separating the liquid containing magnesium bisulphite from said combustion gases, discharging a portion of the magnesium bisulphite containing liquid from said absorption zone to a storage zone, withdrawing the remainder of said magnesium bisulphite containing liquid from said absorption zone, and mixing said withdrawn liquid with a controlled amount of said magnesium hydroxide slurry to form magnesium monosulphite in excess of the normal solubility of the monosulphite in the bisulphite containing liquid in the acid state while recirculating said mixed liquid to a successive absorption zone to absorb gaseous SO_2 in said liquid, said excess monosulphite being in the form of a suspension of reactive microscopic crystals.

3,273,962

PROCESS FOR PRODUCING OXIDES IN THE FORM OF HOLLOW SHELLS

Robert J. Walsh, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,591
2 Claims. (Cl. 23—140)

1. A process for the production of a hollow shell form of at least one of the oxides of aluminum, zirconium, zinc, magnesium, nickel, iron, cobalt, copper, manganese, chromium and vanadium, which comprises atomizing a solution of a salt selected from the class consisting of sulfates, nitrates, acetates and oxalates of the said metal in an organic solvent selected from the class consisting of alcohols and ketones having less than 5 carbon atoms in the molecule into a combustible gas flame, with the weight ratio of combustible gas relative to the weight of the salt solution being not more than 0.6, and therein decomposing the said salt with the evolution of a gas to form hollow spheres of the said oxide the said oxidation being conducted by means of an oxidizing flame at a flame temperature of from 900° C. to 1150° C. for a period of time of from 0.1 second to 0.01 second and thereafter cooling and collecting the product at a temperature in the range of from 50° C. to 350° C.

2. A process for the production of hollow shell particles of at least one oxide of the group consisting of aluminum, zirconium, zinc, magnesium, nickel, iron, cobalt, copper, manganese, chromium and vanadium oxides, the said hollow shell particles having an average particle diameter of from 1 to 10 microns, which comprises atomizing a solution of a salt selected from the class consisting of the sulfates, nitrates, acetates and oxalates of the said metals in water into a combustible gas flame, and therein decomposing the said salt with the evolution of a gas to form hollow spheres of the said oxide, and the said oxidation being conducted by means of an oxidizing flame at a flame temperature of 900° C. to 1150° C. for a period of time of from 0.5 second to 0.001 second and with the weight ratio of combustible gas relative to the weight of the salt solution being within the range of from 0.1 to 0.6, and thereafter cooling and collecting the product at a temperature in the range of from 50° C. to 350° C.

ERRATUM

For Class 23—153 see:
Patent No. 3,273,713

3,273,963

PROCESS FOR GENERATING SILICON TETRAFLUORIDE

Elton F. Gunn, Jr., Monroe, La., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

Filed Jan. 17, 1963, Ser. No. 252,153
12 Claims. (Cl. 23—182)

1. The method of generating mixtures of SiF_4 and water vapor substantially free from HF which comprises vaporizing an aqueous solution of predominantly fluosilicic acid, thereby forming a vapor mixture of SiF_4, HF and water, contacting said vapor mixture with crystalline silica maintained in an essentially dry state at a temperature above the condensation point of the vapors but less than about 450° F., thus converting the HF of the vapor mixture to additional SiF_4 and water vapor and thereby producing a reformed vapor mixture of SiF_4 and water that is substantially free of HF while having a water content substantially in excess of the amount produced by the aforesaid conversion of HF to SiF_4 and water vapor.

3,273,964

PROCESS FOR PRODUCING BROMINE FROM A MIXTURE OF HYDROGEN BROMIDE AND OLEFINIC HYDROCARBON

Armand J. De Rosset, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 28, 1963, Ser. No. 262,817
9 Claims. (Cl. 23—216)

1. A method for producing bromine from a mixture of hydrogen bromide and olefinic hydrocarbon which comprises contacting said mixture with a composite of an oxide of a metal selected from the group consisting of magnesium, calcium and zinc and an oxide of a metal of Group IV–B of the Periodic Table at conditions to

sorb the hydrogen bromide in said composite, and thereafter contacting the composite containing sorbed hydrogen bromide with an oxygen-containing gas at conditions effective for the oxidation of the sorbed hydrogen bromide.

3,273,965
PROCESS OF PREPARING A BURDEN FOR USE IN ELECTRO-THERMAL FURNACES

Friedbert Ritter, Buschhof, near Konigswinter, Germany, Franz Rodis, deceased, late of Bad Hersfeld, Germany, by Hildegard Rodis, nee Arend, heiress, Konrad Reuter, Augsburg, Germany, and Hugo Querengasser, Hermulheim, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, a corporation of Germany

No Drawing. Continuation of application Ser. No. 186,566, Feb. 23, 1962, which is a division of application Ser. No. 624,750, Nov. 28, 1956. This application Apr. 20, 1965, Ser. No. 450,263

Claims priority, application Germany, Dec. 2, 1955, K 27,495

1 Claim. (Cl. 23—223)

In the process of producing phosphorus in an electrothermal furnace, the improvement comprising (1) providing at least one electrically conducting substance in the form of both lumpy and fine-grained particles, the fine-grained particles constituting from 50–85% by weight of the electrically conducting substance, the fine-grained particles having a grain size of 6 to substantially less than 10 mm., the lumpy particles having a grain size of 10 to 50, and the electrically conducting substance being selected from the group consisting of anthracite, crude lignite, high bituminous lignite coal, and coke; (2) providing electrically non-conducting substances in the form of both lumpy and fine-grained particles, said fine-grained particles constituting from 15–80% by weight proportion of the electrically non-conducting substances, said electrically non-conducting substances being phosphate rock and quartz gravel, the fine-grained phosphate rock particles having a grain size of substantially less than 10 mm., the lumpy phosphate rock particles having a grain size of 10 to 40 mm., the fine grain quartz gravel particles having a grain size of substantially less than 6 mm., and the lumpy quartz particles having a grain size of 6 to 50 mm.; (3) compressing the fine-grained electrically conducting and electrically non-conducting particles into briquets having an electric conductivity smaller than the electrically conducting substance alone; and (4) introducing the briquets and the lumpy electrically conducting and electrically non-conducting particles into the electrothermal furnace.

3,273,966
PURIFICATION OF SULFUR

Jack L. Bowling, St. Albans, and Ernst J. Solberg, Charleston, W. Va., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 15, 1963, Ser. No. 323,926

8 Claims. (Cl. 23—229)

1. The process of purifying sulfur containing iron and sulfur chloride impurities which comprises, contacting the crude sulfur in the liquid phase with water and maintaining the molten sulfur and water in intimate contact with each other at a temperature of at least about 120° C. and under a superatmospheric pressure of at least about 15 p.s.i.g. for a contact time sufficient for the water to react with chlorides to produce hydrochloric acid and for the hydrochloric acid to dissolve iron impurities, separating the water containing dissolved impurities from the molten sulfur and releasing the pressure on the molten sulfur and releasing the pressure on the molten sulfur to flash-off residual water and volatile impurities.

3,273,967
METHOD FOR DETERMINING PROCESSABILITY OF TAR SAND

Omer L. Wilson, Tulsa, Okla., assignor to Cities Service Research and Development Company, a corporation of Delaware

No Drawing. Filed May 7, 1963, Ser. No. 278,751

8 Claims. (Cl. 23—230)

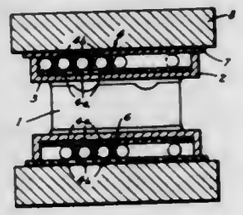
1. A method for determining the processability of tar sand which comprises collecting samples of tar sand from an exploration zone, analyzing a plurality of samples for their content of a member selected from the group consisting of iron and zinc, and correlating the analyses with the sample locations in said exploration zone to determine the location having the higher content of said member and hence the more easily processable tar sand.

3,273,968
HEAT-BURST MICROCALORIMETER

Theodor H. Benzinger, Holly Oaks, Tilden Lane, Rockville, Md.

Filed Mar. 23, 1960, Ser. No. 17,232

15 Claims. (Cl. 23—253)



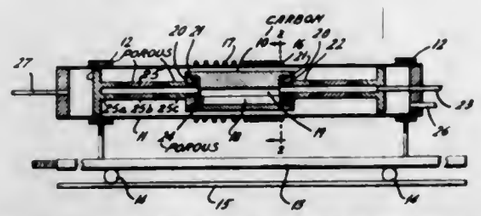
1. For use in a heat-burst microcalorimeter, the subcombination of a reaction vessel, a helical conductor made of a first metal, each turn thereof having a corresponding half-length portion plated with a second metal whereby a first and second series of oppositely polarized thermal junctions are formed, said helical conductor being coiled about the surface of said reaction vessel such that said first series of thermal junctions senses the temperature of said vessel at a multiplicity of points, means for maintaining said second series of thermal junctions at a substantially constant temperature, said means for maintaining said second series of thermal junctions at a substantially constant temperature including a hollow metallic cylindrical heat sink, said second series of thermal junctions being in thermal contact with the inner wall of said heat sink.

3,273,969
APPARATUS FOR GROWING FLUORIDE CRYSTALS

Valdeko H. Sirgo, Elkins Park, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Dec. 5, 1963, Ser. No. 328,264

8 Claims. (Cl. 23—273)



1. In an apparatus for growing fluoride crystals, a horizontally-movable assembly comprising a horizontally-disposed porous-walled crystal-growing inner chamber and a similarly-disposed outer chamber, stationary heating means outside said outer chamber to effect crystal growth in said inner chamber as said assembly is moved, means for introducing reactive gas into said inner chamber as an ambient for the crystal growth, the porosity of said inner

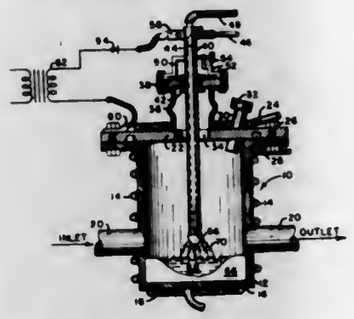
chamber permitting the excess of said gas to diffuse through the wall of the inner chamber into the outer chamber, and means for separately introducing and continuously flowing an inert gas into and through said outer chamber to protect said inner chamber and to carry away the reactive gas that has entered the outer chamber.

3,273,970
GETTERING DEVICE

John C. Priscu and Linden E. Snyder, Las Vegas, Nev., assignors to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware

Filed Dec. 17, 1962, Ser. No. 245,249

5 Claims. (Cl. 23—277)



1. A gettering device comprising;
(a) a cooled container,
(b) a body of reactive metal in said container,
(c) an electrode suspended above the said reactive metal body in said container,
(d) means for maintaining the bottom of said electrode spaced arcing distance above the top of the said body of reactive metal in said container,
(e) means for supplying electric current between said electrode and said body of reactive metal in said container in amount to maintain an electric arc therebetween of intensity sufficient to maintain a pool of said reactive metal molten within a skull of solid reactive metal in said container, and,
(f) means for contacting the surface of the molten portion of said reactive metal with gas to be gettered.

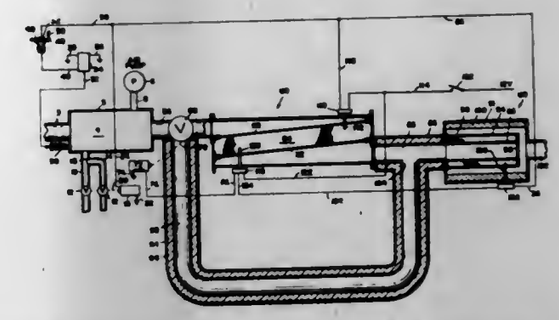
3,273,971
APPARATUS FOR IMPROVING THE PURIFICATION OF EXHAUST GASES FROM AN INTERNAL COMBUSTION ENGINE

Paul E. Baddorf, Chester Springs, and Jacques H. Houdry, Villanova, Pa., assignors to Oxy-Catalyst, Inc., Berwyn, Pa., a corporation of Pennsylvania

Filed Sept. 26, 1963, Ser. No. 312,256

2 Claims. (Cl. 23—288)

1. In combination with an engine having an exhaust system provided with an exhaust pipe for conveying exhaust gases from the engine, air supply means and an exhaust purifier having an inlet in communication with the exhaust pipe and an outlet and containing an oxidation catalyst for the oxidation of the oxidizable constituents of the exhaust gases, the improvement comprising:
means forming a combustion chamber upstream of the exhaust purifier,
means to introduce an air-fuel mixture into the combustion chamber,
igniting means in said combustion chamber to ignite the air-fuel mixture,
a by-pass conduit having its inlet end connected to the exhaust pipe upstream of the exhaust purifier and downstream of the air supply means and of the combustion chamber,
valve means controlling the exhaust pipe and by-pass line and normally closing off the by-pass line and directing the flow of exhaust gases to the exhaust purifier,
means forming a reaction chamber in communication with said by-pass line and with the outlet of the exhaust purifier,
ceramic material in said reaction chamber for contact by gases passing through the reaction chamber,
means responsive to a predetermined minimum temperature of the oxidation catalyst to stop the introduction of the air-fuel mixture into the combustion chamber and deactivate the igniting means,



means responsive to a predetermined maximum temperature of the oxidation catalyst to shift the valve means to a by-pass condition to stop the flow of gases to the exhaust purifier and cause the gases to flow through the by-pass conduit and the reaction chamber, and
means responsive to a predetermined minimum temperature of the refractory material during the flow of gases through the by-pass conduit to cause the reintroduction of the air-fuel mixture into the combustion chamber and the reactivation of the igniting means.

3,273,972
SULPHURIC ACID LEACHING OF URANIUM-BEARING MATERIAL

Robert A. Campbell, James D. Elliott, James R. Fisher, and Val Opratko, Elliot Lake, Ontario, Canada, assignors to Rio Algom Mines Limited, Toronto, Ontario, Canada, a corporation of Canada

No Drawing. Filed Dec. 14, 1962, Ser. No. 244,571

7 Claims. (Cl. 23—322)

1. A method of extracting uranium values from uranium-bearing materials which comprises (1) preparing an aqueous concentrate of sulphide minerals from a finely-divided aqueous slurry of said sulphide minerals; said aqueous-sulphide concentrate having a solids content of less than 31% by weight with the sulphide minerals containing a sufficient amount of sulphur to form acidic reagents of sulphuric acid and sulphates for leaching uranium from its ore; (2) treating said aqueous concentrate of sulphide minerals in the presence of an effective amount of oxygen and oxygen-containing gases at a temperature ranging from about 130–180° C. and at a pressure ranging from about 35 p.s.i.g. to 280 p.s.i.g. to obtain said acidic-leaching reagents; and (3) subsequently treating uranium-bearing materials with the acidic-leaching reagents at atmospheric pressures to obtain the uranium values.

3,273,973
METHOD FOR PROCESSING ALUMINUM-CONTAINING NUCLEAR FUELS

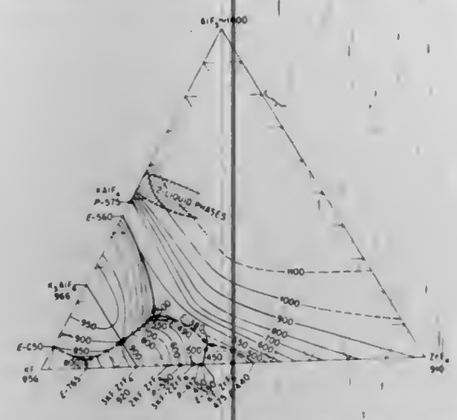
Roy E. Thoma, Jr., Melvin R. Bennett, and Jacob W. Ullmann, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 31, 1964, Ser. No. 356,338

10 Claims. (Cl. 23—324)

7. A method for the separation and recovery of fuel values from aluminum-containing nuclear fuels containing said fuel values and fission products therein compris-

ing the steps of dissolving said fuels in a molten fluoride salt solvent of $KF\text{-}ZrF_4$ at a temperature no greater than 658° C. to form a melt while passing anhydrous hydrogen fluoride through said melt, then passing fluorine gas



through said melt while maintaining the temperature of said melt between 500–600° C. to thereby convert said dissolved fuel values to the volatile hexafluoride and thereafter separately recovering said volatilized hexafluoride product.

3,273,974

FLUIDIZATION OF SINTERABLE FINES

John D. Gabor, Western Springs, Ill., and Manfred G. Baerns, Hannover, Germany, assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,984

6 Claims. (Cl. 23—352)

5. A method of fluidizing and reacting uranosic oxide fines of about 4 to 20 microns in diameter with fluorine gas to yield uranium hexafluoride, comprising: mixing said uranosic oxides fines with alumina particles of about 200 to 300 microns in diameter to form a bed of about 30 weight percent alumina, said bed being about 15 inches in depth; introducing nitrogen gas into said bed at a velocity of about 0.4 to 0.5 foot per second with respect to the cross-section of the bed, thereby fluidizing a lower portion of said bed and creating a zone of agitation in an upper portion of said bed about 9 inches from the bottom of said bed; and introducing fluorine gas into said fluidized bed at a level corresponding to the level of said zone of agitation.

6. A method of fluidizing and reacting uranyl fluoride fines of about 10 microns in diameter with fluorine gas to yield uranium hexafluoride, comprising: mixing said uranyl fluoride fines with alumina particles of about 200 to 300 microns in diameter to form a bed of about 40 weight percent alumina, said bed being about 4 feet in depth; introducing nitrogen gas into said bed at a velocity of about 1.2 to 1.4 feet per second with respect to the cross-section of the bed, thereby fluidizing a lower portion of said bed and creating a zone of agitation in an upper portion of said bed about 2 feet from the bottom of said bed, and introducing fluorine gas into said fluidized bed at a level corresponding to the level of said zone of agitation.

3,273,975

PRODUCTION OF CHLORODIFLUORAMINE

Mervin D. Marshall, Fombell, Pa., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed July 7, 1960, Ser. No. 41,444

1 Claim. (Cl. 23—356)

A method of producing chlorodifluoramine, $ClNF_2$, which comprises reacting dinitrogen tetrafluoride, N_2F_4, with sulfur dichloride, SCl_2, and recovering the chlorodifluoramine thus formed.

3,273,976

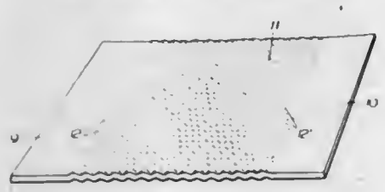
SHEET STEEL AND SECTIONS, TUBES AND COMPOSITE CONSTRUCTIONS MANUFACTURED THEREFROM

Alfred Wogerbauer, Linz, Austria, assignor to Vereinigte Österreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria

Filed Mar. 16, 1964, Ser. No. 351,932

Claims priority, application Austria, Mar. 19, 1963, A 2,166/63

6 Claims. (Cl. 29—180)



1. Strain hardened sheet steel having a yield point of more than 50 kg./mm., a tensile strength of more than 55 kg./sq. mm., and an elongation of at least 8%, the sheet steel being made of steel having a carbon content of less than 0.30% and being provided with a ridge-and-groove profile in which the inner radius of curvature of the grooves is smaller than three times the sheet thickness and the ratio of depth to pitch of the ridge-and-groove profile amounts to 1:15 to 1:3.

3,273,977

BEARING OF SINTERED METAL CONTAINING INTERSTITIAL SOLID LUBRICANT

William J. Davis, Wyomissing, Pa., assignor, by mesne assignments, to The Polymer Corporation, a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 187,183, Apr. 13, 1962. This application June 1, 1964, Ser. No. 371,734

3 Claims. (Cl. 29—182.5)

1. An article of manufacture comprised of sintered metal and a solid lubricant held within the interstices of such sintered metal, said metal being selected from the class consisting of copper and silver and said solid lubricant being thermally degraded polytetrafluoroethylene.

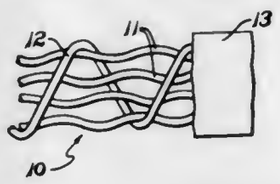
3,273,978

REINFORCING ELEMENT

Francis Victor Frederic Paul, Paris, France, assignor to Pneumatiques et Caoutchouc Manufacture Kleber-Colombes, Paris, France, a corporation of France

Filed May 9, 1962, Ser. No. 193,539

5 Claims. (Cl. 29—191)



1. A reinforcing element for elastomeric articles comprising an assembly of a plurality of metallic filaments extending in generally parallel juxtaposed relationship with each filament having undulations transversely of its length and with at least some of the undulations of adjacent filaments noncoincident thereby providing interstices between adjacent filaments penetrable by elastomer, and at least one filament helically wrapped in spaced convolutions about said plurality of generally parallel filaments, the spacing of said convolutions being sufficient to permit penetration by elastomer.

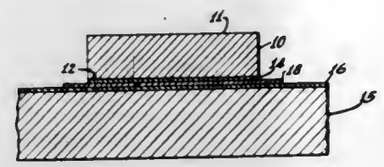
3,273,979

SEMICONDUCTIVE DEVICES

Alfred S. Budnick, New Providence, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 6, 1964, Ser. No. 380,427

10 Claims. (Cl. 29—195)



1. The method of making a semiconductor device assemblage, comprising the steps of:

preparing a silicon die having at least one major face, and having a layer of germanium on said one major face;

positioning a gold-germanium alloy preform on a metallic body;

disposing said die and said preform with said germanium layer in contact with said preform; and,

heating the assemblage of said die, said preform, and said metallic body to a temperature sufficient to bond said die to said body.

3,273,980

OPERATION OF FUEL OIL BURNERS

William M. Le Suer and Casper J. Dorer, Jr., Cleveland, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,292

10 Claims. (Cl. 44—63)

1. In the operation of a hydrocarbon fuel burner assembly equipped with a filter screen through which the fuel passes and in which the fuel is characterized by the presence therein of a small amount of a soap-like contaminant having a tendency to form deposits on said filter screen, the improvement comprising preventing the formation of said deposits which comprises incorporating in the fuel at least about 0.0001% by weight of a salt of (A) a basic amino reactant selected from the class consisting of (1) ammonia, (2) amines having up to about 30 carbon atoms and selected from the class consisting of alkylamines, arylamines, and heterocyclic amines, and (3) partially acylated polyamines obtained by the reaction at a temperature above about 100° C. of one mole of an alkylene polyamine having n amino groups with up to $(n-1)$ equivalents of an aliphatic hydrocarbon carboxylic acid having at least about 12 carbon atoms with (B) at least about one equivalent, per equivalent of (A), of an acidic, phosphorus-containing reactant prepared by the process comprising the reaction of phosphorus pentoxide with from about 2 to about 4 moles of a hydroxy compound selected from the class consisting of olefin polymer-substituted phenols wherein the olefin polymer substituent has a molecular weight of at least about 250 and the condensation products of said phenols with an epoxide selected from the class consisting of hydrocarbon epoxides and polar-substituted hydrocarbon epoxides.

3,273,981

ANTI-WEAR OIL ADDITIVES

Michael J. Furey, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 16, 1963, Ser. No. 295,546

7 Claims. (Cl. 44—66)

1. A hydrocarbon middle distillate boiling in the range from 50° to about 750° F. containing dissolved therein between about 0.001 and about 1.0 wt. percent of an additive mixture comprising a polycarboxylic acid of between about 9 and about 42 carbon atoms per molecule between the carboxylic acid groups and a partial ester of a polyhydric alcohol of between about 3 and about 8 carbon atoms per molecule and containing between about 3 and about 6 hydroxyl groups per molecule and a C_{12} to C_{22} fatty acid.

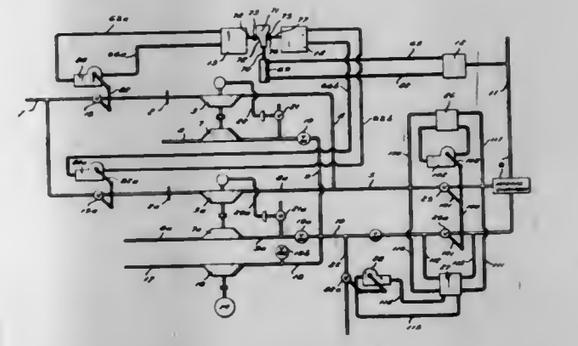
3,273,982

GAS MIXING METHOD AND APPARATUS

Edwin C. McDonald and Franklin E. Stephens, Cleveland, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Continuation of application Ser. No. 98,186, Mar. 24, 1961. This application Feb. 24, 1965, Ser. No. 440,056

7 Claims. (Cl. 48—180)



1. The method of mixing gases which comprises the steps of passing a high pressure gas through a single, continuously variable volume valve means, expanding said gas in a chamber and discharging the gas at a lower, predetermined, constant pressure into a mixing chamber having an outlet conduit, utilizing the energy released by the expansion of the high pressure gas to draw a lower pressure gas into a chamber, compress it therein to a higher, predetermined, constant pressure and discharge it into said mixing chamber, maintaining substantially constant the predetermined ratio of the gases flowing into said mixing chamber by venting excess compressed gas, maintaining substantially constant the pressure drop in the gases flowing to said mixing chamber, withdrawing mixed gases from said mixed chamber in widely varying volumes and controlling the volume of said high pressure gas passing through said valve means in accordance with variations in the pressure of gases in said mixing chamber and thereby varying the volume of gases discharged into said mixing chamber in direct proportion to the volume of gases withdrawn therefrom.

3,273,983

FUEL VAPORIZER CARBURETOR

Clemente Miñoza, Diliman, Quezon City, Philippines, assignor of one-fifth to Felipe LL. Santillan, Quezon City, Philippines

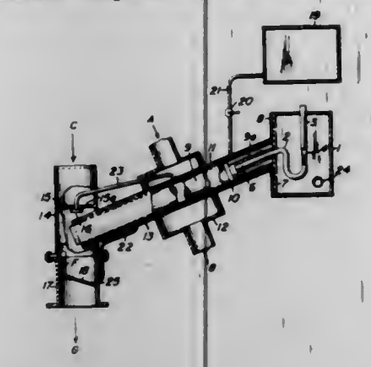
Filed Nov. 20, 1961, Ser. No. 154,107

Claims priority, application Republic of the Philippines, Jan. 27, 1961, 3,449

12 Claims. (Cl. 48—180)

6. In a fuel carburetor system for internal combustion engines and said system including fuel vaporizing means; a mixer tube assembly for mixing and feeding to the cylinders of said engines a selectively proportioned fuel-air mixture, said mixer tube assembly comprising a vertically arranged tubular member having an air inlet at its upper end and outlet means for connecting said tube to the inlet manifold of the engine at the other end, baffle means disposed within said tube and spaced from the upper end thereof to define upper and lower chambers, said baffle means including a venturi throat and at least

one air passageway, first and second conduit means communicating between said venturi throat and fuel vaporizing means and between said lower chamber and said fuel vaporizing means respectively for introduction of said

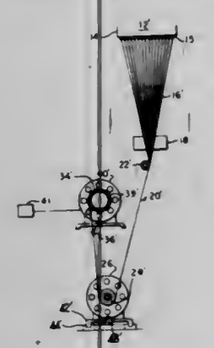


vaporized fuel into the respective chambers, and throttle means in said lower chamber for varying the internal pressure within said chamber to vary the passage of vaporized fuel through one or the other of said first and second conduit means.

3,273,984
GRINDING WHEEL
Roy S. Nelson, Sterling, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
No Drawing. Filed July 18, 1963, Ser. No. 296,100
2 Claims. (Cl. 51—296)

1. A grinding wheel of organic resin bonded abrasive grains consisting of between 30 and 50% by volume of abrasive, more than 20% but not more than 68% pores and at least 2% bond, said bond consisting of a principal bond which is essentially a shellac bond containing a minor amount of phenol formaldehyde resin, and a stabilizer bond in the amount of 10 to 20% by weight of said principal bond selected from the group consisting of diglycidyl ether epoxy resins, epoxylated novolac resins, and unsaturated polyester resins.

3,273,985
PRODUCTION OF FIBER GLASS STRAND
Russell L. Small, Pittsburgh, and Warren W. Drummond, Allison Park, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1962, Ser. No. 176,734
2 Claims. (Cl. 65—2)

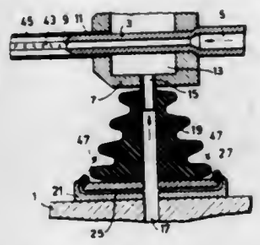


1. A method of producing continuous glass fiber strand which comprises,
(a) withdrawing glass fibers from a pool of molten glass,
(b) moving said glass fibers over and in contact with the curved surface of a rotating cylindrical member connected to the drive shaft of a constant-speed motor, said rotating member being at a first location spaced from the location of said fiber withdrawal,
(c) operating said constant-speed motor to apply a substantially constant withdrawal force on said fibers to withdraw the fibers at a substantially constant linear rate of speed,
(d) thereafter at a second location spaced from the first location and the location of fiber withdrawal, laying said fibers in a plurality of layers on a rotating tubular surface connected to the drive shaft of a constant torque electric motor, thereby progressively increasing the distance between the axis of said rotating tubular surface and the outermost layer of fibers laid thereon,
(e) operating said constant-torque motor to apply a second force on said fibers of less magnitude than said withdrawal force to exert a tension in the fibers throughout the length thereof between the first and second locations, said tension being positive and less than that exerted by said withdrawal force between the pool of molten glass and the said first location,
(f) driving said constant-torque motor at a constant input voltage to decrease said second force progressively in direct proportion to the increase in distance between the axis of said rotating tubular surface and the outermost layer of fibers, whereby the product of said second force and said distance is maintained substantially constant as said second force and said distance vary.

ERRATUM

For Class 65—6 see:
Patent No. 3,273,358

3,273,986
METHOD AND DEVICE FOR SEALING TOGETHER GLASS PARTS
Kurt Zukowski, Haaren, near Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 20, 1962, Ser. No. 218,042
Claims priority, application Germany, Aug. 29, 1961, P 27,781
4 Claims. (Cl. 65—40)

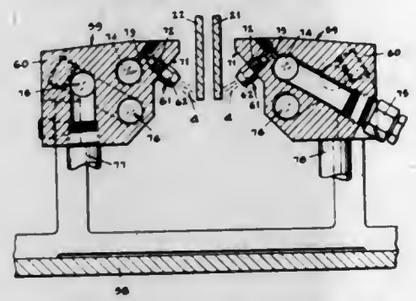


1. A method of sealing glass parts together comprising the steps, heating the glass parts to soften the same, conducting an electric current through a jet of ionized gas to the heated glass parts and seal them together; and enveloping the jet of ionized gas conducting the electric current with a current of nonionized gas coaxial with the jet to limit the surface area on which the ionized gas strikes the sealing area and to aid in cooling the area of the glass parts surrounding that struck by the jet of ionized gas.

3,273,987
COATING FIBROUS GLASS YARNS
Alfred Marzocchi, Cumberland, R.I., and William H. Otto, Coronado, Calif., assignors to Owens-Corning Fiberglas Corporation, Toledo, Ohio, a corporation of Delaware
Filed June 19, 1961, Ser. No. 117,893
10 Claims. (Cl. 65—60)

1. The method of applying a coating material, of a type made more fluid by heat, to a yarn which comprises directing the yarn along a linear path, continuously applying heat to the yarn in a first section of such path to uniformly heat the yarn, in a second section of the path following immediately thereafter continuously depositing coating material upon the yarn, said material being fluidized by the heat of the yarn, and then in a final section of the path setting the coating material on the yarn.

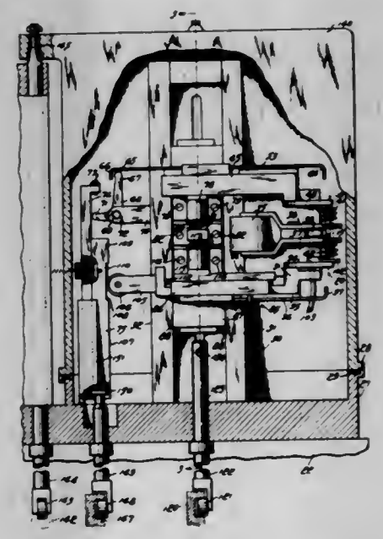
3,273,988
APPARATUS FOR PRODUCING ALL-GLASS MULTIPLE SHEET GLAZING UNITS
Harry N. Dean, Perrysburg, John C. Morgan, Jr., Toledo, and Lester H. Flaherty, Maumee, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed July 6, 1964, Ser. No. 380,249
5 Claims. (Cl. 65—152)



1. In apparatus for producing all-glass multiple sheet glazing units, supporting and conveying means to support two sheets of glass in spaced face-to-face relation and to carry them along a definite path through a heating chamber, a heating assembly disposed in said chamber adjacent said path, said heating assembly having directing means disposed on opposite sides of said path to direct heating flames toward said path, said directing means being disposed adjacent areas of said sheets located inwardly of the marginal edge portions thereof to direct said flames in an angular direction away from the inner portions of the sheets and onto said marginal edge portions thereby to bring said portions to the fusion temperature of glass as the sheets are carried thereby, and means disposed adjacent said path beyond said burner assembly to engage the heated marginal edge portions of the sheets and to urge them into fusion contact with one another.

3,273,989
APPARATUS FOR ASSEMBLING SWITCHES
Nicholas F. Gubitose, Emmaus, and Jack J. Monahan, Allentown, Pa., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 20, 1963, Ser. No. 332,101
11 Claims. (Cl. 65—154)

1. In an apparatus for assembling a switch having a pair of contacts extending within a glass sleeve, an assembly unit which comprises:
a housing with an open top,
a carriage frame mounted in the housing and extending upwardly through the open top,
a stationary chuck mounted at a given position on the frame for receiving a glass sleeve,
upper and lower gripping jaws for receiving upper and lower contacts for the switch,
upper and lower carriages for the upper and lower gripping jaws disposed respectively above and below the stationary chuck and supported for simultaneous opposing movement relative to each other by the carriage frame,
means cooperatively associated with the lower carriage to support the lower gripping jaws for lateral movement,
heating coils supported by the carriage frame and disposed respectively above and below the chuck and in substantial axial alignment therewith to receive the ends of the glass sleeve and cause sealing of the ends of the sleeve at given intervals,
means disposed at the feeding station to feed upper and lower contacts to the upper and lower jaws and a glass sleeve into the heating coils and the chuck,
means for simultaneously advancing the carriages to locate the upper and lower jaws in a position to receive their respective upper and lower contacts and to retract the carriages to locate the jaws in a position such that they are in substantial alignment with the stationary chuck,
means for moving the carriages simultaneously for causing the upper and lower jaws to move in opposing relationship towards the chuck for locating the inner ends of their respective contacts in the glass sleeve,
means for moving the lower carriage laterally to cause the lower jaws to move the lower contact out of alignment with the upper contact and thereby position the inner ends of the contacts in overlapping relationship,

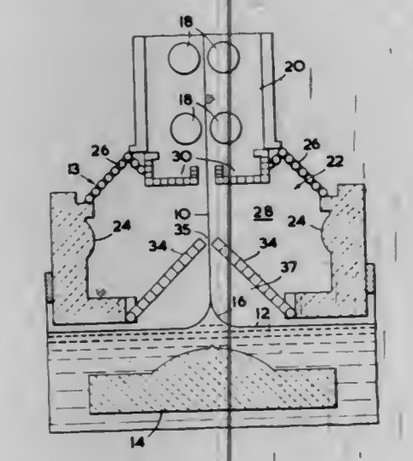


a hood,
means to open the hood prior to the unit entering a feeding station for receiving the contacts and glass sleeve,
means to close the hood after the unit leaves the feeding station, the hood closing the open top of the housing and cooperating with the housing, when closed, to completely enclose the frame and structure therein,
means to move the carriages relative to each other for positioning the jaws to receive their contacts and to return the carriages to positions toward the chuck to locate the inner ends of the contacts in overlapping positions in the glass sleeve, and
means operable to move the lower carriage laterally to cause the lower jaws to move the lower contact out of alignment with the upper contact as they are moved into an overlapping position.

3,273,990
GLASS DRAWING APPARATUS WITH PIVOTAL COOLER
Jean M. Peeters, St. Laurent, Quebec, Canada, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa.
Filed May 23, 1960, Ser. No. 30,900
Claims priority, application Canada, Mar. 25, 1960, 795,380
1 Claim. (Cl. 65—202)

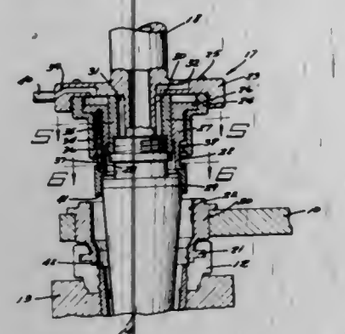
Apparatus for drawing sheet glass from a meniscus at a free surface of a bath of molten glass comprising a draw-

ing kiln adapted to contain the bath of molten glass, a pair of horizontally spaced L blocks, a drawing machine above said drawing kiln, a pair of coolers pivotally secured to adjacent edges of said L blocks and inclined upwardly and inwardly with respect to the level of said bath, directly to overlie the free surface of said bath, said coolers serving to define a drawing chamber closely surrounding the critical zone of formation of said sheet glass, the upper extremities of said coolers being at least as efficiently cooled as any other portions of said coolers and being



located immediately adjacent opposite surfaces of said sheet glass to define a constricted channel located in the vicinity of the terminus of said zone of formation, said coolers extending downwardly and outwardly to a horizontal plane passing through said meniscus, said channel serving for passage of said sheet glass to said drawing machine and for control of flow of air to and from said chamber, said chamber being substantially sealed against access of air thereto and emergence of air therefrom other than by way of said constricted channel.

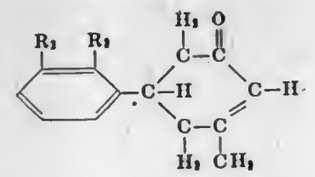
3,273,991
PRESSING PLUNGER FOR GLASS PARISONS
Robert R. Denman, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Original application Apr. 10, 1961, Ser. No. 101,749, now Patent No. 3,203,778, dated Aug. 31, 1965. Divided and this application Mar. 1, 1965, Ser. No. 435,995
5 Claims. (Cl. 65—307)



1. A plunger assembly adapted to be inserted axially through a stationary neck ring and an annular alignment bushing comprising an elongated plunger, a vertically reciprocable support for said plunger, means for connecting the upper end of said plunger to the support, a member connected to said support having spaced concentric walls surrounding said connecting means and forming an annular chamber, said support having an annular piloting surface adapted to cooperate with said alignment bushing, an annular thimble adapted to seat against the top surface of said neck ring in surrounding relationship with the upper end of said plunger, an annular piston slidably received within said chamber, said piston having a downwardly extending sleeve portion and being axially movable with respect to said plunger, means for engaging said sleeve with said thimble, and means for introducing fluid under controlled pressure to the top of said chamber in said support whereby said thimble is held against said neck ring with a constant force regardless of movement of the plunger relative thereto.

3,273,992
HERBICIDAL USE OF SUBSTITUTED METHYLCYCLOHEXENONES
Gino R. Treves, Princeton, N.J., and Kenneth L. Hill, Lyndonville, and Kenneth P. Dorschner, Middleport, N.Y., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 6, 1962, Ser. No. 171,346
4 Claims. (Cl. 71—2.3)

1. The method of destroying weeds in the presence of desired crop species which comprises applying an herbicidal amount and concentration, to the locus to be protected, of a compound having the formula



in which (A) one of R_2 and R_3 is selected from the group consisting of chlorine, bromine, fluorine, methoxy, ethoxy and allyloxy and the other is hydrogen, and (B) R_2 and R_3 are selected from the group consisting of chlorine, bromine or fluorine.

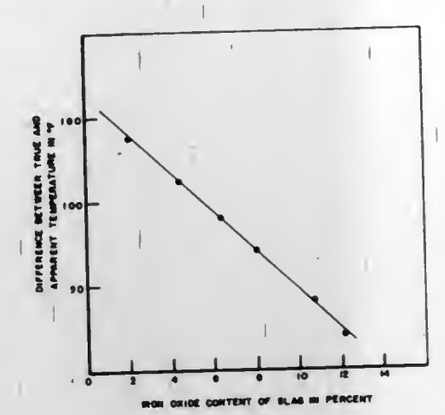
3,273,993
PROCESS OF REDUCTION ROASTING OF IRON ORE WITH METALLIC IRON
Norwood B. Melcher, Minneapolis, Minn., assignor to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed Jan. 30, 1964, Ser. No. 341,462
15 Claims. (Cl. 75—1)

1. A method for reduction of non-magnetic iron ore comprising mixing said ore with metallic iron-containing material and heating said mixture to elevated temperature in an atmosphere selected from the group consisting of CO_2 gas, water vapor, and a mixture of CO_2 gas and water vapor to effect a reaction in which said ore is reduced at least in part to magnetic iron oxide.

3,273,994
FOUNDRY MELTING METHOD
William H. Moore, Purchase, N.Y., assignor to Meehanite Metal Corporation, a corporation of Missouri
Filed Jan. 13, 1964, Ser. No. 337,197
3 Claims. (Cl. 75—43)

1. The process of rapidly determining the iron oxide content of a foundry slag utilized in the melting of iron and steel, comprising the steps of, constructing a calibration curve by selecting a plurality of different calibration slag samples and for each sample chemically measuring the iron oxide content and also measuring the true and apparent temperatures and plotting iron oxide values on a first axis and the difference between true and apparent temperatures on a second axis to form the calibration curve, measuring the true and apparent temperature of the foundry slag, projecting the difference between true

and apparent temperature from the second axis and at right angles thereto to its intersection with the previously constructed calibration curve and then projecting this

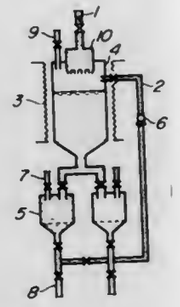


point on the curve to the first axis and in a direction at right angles thereto to determine the iron oxide content of the foundry slag without the necessity of chemical analysis.

3,273,995
RECOVERY OF ZINC FROM ZINC DIE-CAST SCRAP
John A. Ruppert, Washington, D.C., and Paul M. Sullivan, Adelphi, Md., assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed May 22, 1964, Ser. No. 369,644
13 Claims. (Cl. 75—63)

1. A method for removal of aluminum from a zinc-aluminum alloy comprising forming a melt of the alloy; treating the molten alloy with a flux comprising an iron halide and maintaining the iron halide in contact with the molten alloy for a time sufficient to achieve the formation of (1) an aluminum halide and (2) an iron-aluminum intermetallic compound; removing any excess flux from the surface of the melt and separating the iron-aluminum intermetallic compound from the residual molten zinc.

3,273,996
METHOD FOR MANUFACTURING ALUMINUM
Hachiro Ikeda, Nagoya, and Juntaro Yurimoto and Hirosuke Ryu, Niihama-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
Filed Sept. 2, 1964, Ser. No. 393,933
Claims priority, application Japan, Oct. 29, 1960, 35/43,546
17 Claims. (Cl. 75—68)



10. A method for continuously manufacturing aluminum which comprises heating a complex compound of an alkylaluminum compound and an alkali metal compound in a heating zone to a temperature between 180° C. and 300° C., the alkylaluminum compound having the formula of $(R^1R^2CH—CH_2)_2AlY$ wherein each of R^1 and R^2 is selected from the group consisting of hydrogen atom and alkyl radicals, and Y is selected from the group consisting of hydrogen atom and $R^1R^2CH—CH_2$- radicals, and the alkali metal compound having the formula of MZ wherein M stands for an alkali metal and Z is selected from the group consisting of alkyl radicals, hydrogen atom, halogen atom and ⅓ AlF_6 radical, continuously supplying an amount of a fresh alkylaluminum compound corresponding to the amount of the consumed alkylaluminum compound moiety to the heating zone while taking out the aluminum produced by the decomposition from the heating zone together with reaction mass, separating the said aluminum from the said reaction mass, and recycling the remaining reaction mass into the heating zone to make the complex compound in the heating zone from the alkali metal compound included in the said reaction mass and the said supplied alkylaluminum compound.

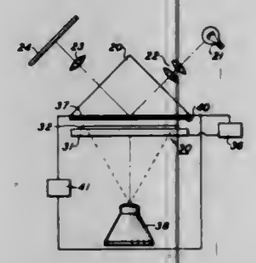
3,273,997
WET PROCESS FOR THE SEPARATION, ISOLATION, AND RECOVERY OF CERTAIN METALLIC AND NON-METALLIC CONSTITUENTS OF WASTE SLAG FROM REVERBERATORY REFINING OF COPPER PYRITIC TYPE ORES
Harold W. Wilson, El Paso, Tex., assignor of fifty percent to Wilson Laboratories, Inc., ten percent to Jack W. Flowers, ten percent to James H. Maxey, ten percent to David C. Casey, ten percent to Wesley D. Rogers, Jr., and ten percent to Vernon E. Thompson
Continuation of application Ser. No. 333,333, Dec. 26, 1963. This application Feb. 28, 1964, Ser. No. 348,063
8 Claims. (Cl. 75—108)

1. A wet process for the separation, isolation and recovery of the acid soluble metallic and non-metallic values in waste slag resulting from the reverbratory refining of copper pyritic type ores which comprises:
crushing the slag;
adding a warm solution of at least one mineral acid to said crushed slag, said solution having a normality of 4 at the time it is added to the slag;
mixing the slag and acid for not less than 8 minutes under conditions such that the two are not permitted to reach a temperature of 175° F., whereby the formation of silica gel is avoided;
separating the resulting solution from the solid insoluble residue; and
recovering the soluble iron, lead, copper, calcium, silicon, zinc and aluminum values originally present in said slag from said solution.

3,273,998
CHILL-CAST DUCTILE IRON ROLLING MILL ROLLS
Roy J. Knoth, Westfield, N.J., Robert D. Schelleng, Suffern, N.Y., and Charles R. Isleib, Berkeley Heights, N.J., assignors to The International Nickel Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 13, 1964, Ser. No. 367,214
11 Claims. (Cl. 75—128)

11. An alloy ductile iron having a high combination of wear resistance, hardness, strength and toughness containing about 3% to about 3.3% carbon, about 1.6% to about 2.2% silicon, about 0.3% to about 1% manganese, about 3.5% to about 5.1% nickel, about 0.15% to about 0.9% chromium, about 0.4% to about 1% molybdenum, a small amount up to about 0.1% magnesium to control the occurrence of graphite therein to the spheroidal form, and the balance essentially iron.

3,273,999
IMAGE DEFORMATION UTILIZING A PRISM
Harold E. Clark, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed July 2, 1962, Ser. No. 206,991
5 Claims. (Cl. 96—1.1)

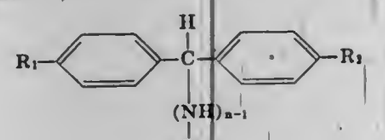


1. The method of projecting a facsimile of an original image comprising the steps of:
(a) deforming in a facsimile configuration corresponding to an electrostatic latent image of an original image the interface formed by a substantially flat surface of a transparent medium including a prismatic element and a second medium of a lower index of refraction than said transparent medium;
(b) directing a beam of light into said transparent medium toward said interface at an angle whereby the pattern of light totally internally reflected by said interface in the absence of said deformation of said interface is altered to produce a reflected light pattern corresponding to said deformation; and
(c) focusing said altered reflected pattern on a viewing screen.

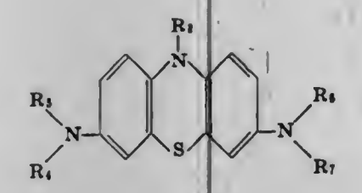
3,274,000
ELECTROPHOTOGRAPHIC MATERIAL AND METHOD
Robert Joseph Noe, Marcel Jan Libeer, and Jean Marie Nys, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed Jan. 19, 1965, Ser. No. 426,681
Claims priority, application Belgium, Feb. 19, 1960, 39,580
19 Claims. (Cl. 96—1.5)

1. A method of forming developed electrostatic images comprising the steps of (1) exposing to a pattern of light a uniformly, electrostatically charged photoconductive insulating layer on a support which comprises (a) a polymeric binder, and dispersed therein (b) a leucobase of a dye selected from the group consisting of diaryl methane dyes and triaryl methane dyes; and (2) developing the electrostatic charge image.

2. Electrophotographic material comprising a photoconductive layer and an electroconductive backing member in intimate surface contact therewith, said photoconductive layer consisting essentially of at least one organic compound corresponding to one of the following general formulae:



and



wherein:
each of R_1 and R_2 represents a member selected from the group consisting of hydroxyl, an alkoxy radical and an amino group,
R_3 is a member selected from the group consisting of hydrogen, hydroxyl, a monocyclic aryl radical and a heterocyclic radical containing a single hetero atom,
n is an integer from 1 to 2,
each of R_4, R_5, R_6 and R_7 represents a member selected from the group consisting of hydrogen and lower alkyl, and
R_8 is a member selected from the group consisting of hydrogen and a benzoyl group.

3,274,001
PROCESS FOR THE PRODUCTION OF INTEGRAL COLOR CORRECTION MASKS
Karl-Heinz Menzel, Vaihingen (Enz), Wurttemberg, Ottmar Wahl, Baden-Baden, and Gerhard Kuhn, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Dec. 29, 1964, Ser. No. 421,988
Claims priority, application Germany, Jan. 30, 1964, A 45,117
3 Claims. (Cl. 96—9)

1. In the process of producing integral color masking images in a multilayer color photographic material by developing with a primary aromatic amino color-forming developer an imagewise exposed multilayer color photographic material comprising a silver halide emulsion layer sensitive to blue light and containing a color coupler that reacts with the oxidation products of said developer to form a yellow dye, a silver halide emulsion sensitive to green light and containing a color coupler that reacts with the oxidation products of said developer to form a magenta dye, and a silver halide emulsion layer sensitive to red light and containing a color coupler that reacts with the oxidation products of said developer to form a cyan dye, and treating the developed material with at least one aqueous bath containing a diazonium salt, the improvement according to which the diazonium salt is a diazonium salt of an aminosalicylic acid.

3,274,002
STABILIZER FOR SILVER HALIDE EMULSIONS
Vere Maffet, New Brunswick, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 27, 1963, Ser. No. 334,033
6 Claims. (Cl. 96—109)

1. A photographic layer comprising a dispersion of light-sensitive silver halide grains in a water-permeable, macromolecular organic colloid binder containing 0.1 to 100 grams of a stabilizing agent selected from the group consisting of the calcium salt of pantothenic acid, pantothenoyl lactone and DL-pantothenal per mole of silver halide.

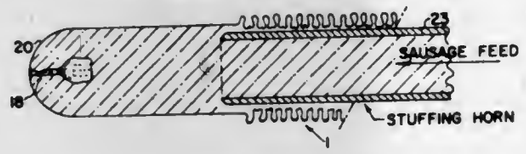
3,274,003
FORMULATIONS FOR INFANT FEEDING
Frederick William Zilliken, Kapittelweg, Netherlands, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 5, 1964, Ser. No. 387,772
6 Claims. (Cl. 99—54)

1. A composition comprising cow's milk solids and up to 5.0% by weight of a compound which will effectively promote the growth of *Lactobacillus bifidus*, said compound being selected from the group consisting of N-octanoyl-d-glucosamine, N-benzoyl-d-glucosamine and N-carboethoxy-d-glucosamine said percentage being based on the solids content of the composition.

3,274,004
LAMINATED FOOD PACKAGE
Howard Curler and Glenn E. Lineburg, both of New London, Wis., assignors, by mesne assignments, to Curwood, Inc., a corporation of Delaware
Original application May 14, 1963, Ser. No. 280,200. Divided and this application Apr. 21, 1964, Ser. No. 361,484
5 Claims. (Cl. 99—171)

2. An hermetically sealed food package of the type having nonconformed ends and characterized by its resistance to flex cracking and pinhole development for extended periods of time under severe handling conditions, said package consisting of a laminated wrapper of Saran-coated cellophane sandwiched between and bonded with an ethylene polymer to an outer layer of oriented polypropylene and bonded also to an inner layer of polyethylene, and a food product within the package.

3,274,005
SHIRRED SAUSAGE CASING WITH END CLOSURE
Clarence M. Alsys, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 1, 1964, Ser. No. 356,510
8 Claims. (Cl. 99—176)



1. A method of closing an end of a shirred strand of synthetic tubular meat casing to render said end substantially closed to the passage of meat emulsion therethrough, which comprises turning a portion of the casing inwardly within the bore of said strand and forming a closure of the casing portion positioned therein.

3,274,006
BOROSILICATE GLASS MELTING METHOD
Charles L. McKinnis, Granville, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
No Drawing. Filed June 29, 1960, Ser. No. 39,452
20 Claims. (Cl. 106—50)

1. In a continuous method for producing borosilicate glass fibers containing at least one alkaline earth metal oxide and at least 2 percent of boric oxide, the combined content of alkaline earth metal oxide and boric oxide comprising at least 4 percent of the glass composition, balance silica and other glass-forming ingredients, which method includes the steps of charging batch constituents into a suitable melting tank, and heating the batch constituents to effect vitrification thereof, while withdrawing streams of the vitreous material from the tank and forming fibers from such streams, the improvement comprising the steps of adding all of the boric oxide to the batch as an alkaline earth metal borate comprising an amount of boric oxide sufficiently low that such borate forms a single liqnid phase upon fusion, but sufficient boric oxide to supply the proportion thereof required without also supplying an excess of an alkaline earth metal oxide, and simultaneously increasing the rate of charging of the batch constituents and correspondingly increasing rate of withdrawal of the streams of the vitreous material from the tank to rates at which foam in the melting tank prevents withdrawal of the streams of the vitreous material therefrom when the boric oxide is charged in an uncombined form.

19. In a continuous method for producing borosilicate glass fibers consisting essentially of from about 50 percent to about 75 percent of silica, from about 2 percent to about 15 percent of boric oxide, from about 2 percent to about 25 percent of at least one alkaline earth metal oxide, from about 0 percent to about 15 percent of at least one alkali metal oxide, from about 0 percent to about 10 percent of titania, as much as about 1 percent of iron oxide, and from about 0 percent to about 3 percent of fluorine, which method includes the steps of charging batch constituents into a suitable melting tank to formulate a composition within the indicated proportions. and heating the batch constituents to effect vitrification thereof, while withdrawing streams of the vitreous material from the tank and forming fibers from such streams, the improvement comprising the steps of adding essentially all of the alkaline earth metal oxide to the batch as at least one alkaline earth metal compound selected from the group consisting of silicates and aluminates.

3,274,007
HIGH-TEMPERATURE RESISTANT SELF-HEALING COATING AND METHOD OF APPLICATION
Francis L. Jones, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,175
7 Claims. (Cl. 106—55)

1. A self-healing heat-resistant coating composition for arc plasma spraying consisting essentially of:
a refractory oxide dry-mixed with silicon wherein the proportion of silicon is between in the order of 20 percent to 40 percent by weight of the composition.

3,274,008
REFRACTORY COMPOSITIONS AND METHODS OF PREPARATION
Victor A. Braunwarth, Alexander Gordon Nickle, and Norman W. F. Phillips, Arvida, Quebec, Canada, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of the Dominion of Canada
Filed Dec. 23, 1963, Ser. No. 332,546
20 Claims. (Cl. 106—65)

1. A fired refractory cement consisting essentially of a mixture of —325 mesh size alumina particles whereof a minor fraction constituting at least about 2% of said mixture are particles smaller than 1 micron and the remainder are particles larger than about 1 micron; and as a binder for said mixture of aluminum particles, the residue produced upon firing of an aqueous solution of an aluminum salt selected from the class consisting of aluminum chloride, aluminum chlorohydrate, aluminum sulfate, aluminum nitrate, and aluminum phosphate, said binder being present in a proportion effective to hold the mixture together as a strong integral mass.

3,274,009
REFRACTORY COMPOSITION
Luther M. Foster, Chappaqua, N.Y., and George Long, Naperville, Ill., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 9, 1965, Ser. No. 431,458
2 Claims. (Cl. 106—65)

1. A vitrified refractory composition having a crystal structure which is at least 90% cubic and consisting essentially of alumina and 9% to 12% by weight of aluminum nitride.

3,274,010
CERAMIC ADHESIVE COMPOSITION
Orval G. Caldwell, Los Angeles, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Feb. 18, 1963, Ser. No. 259,466
1 Claim. (Cl. 106—71)

An adhesive composition for forming laminates of thin porous highly refractory sheets comprising an aqueous

slurry consisting essentially of approximately 60 to 95% by weight of water and the following ingredients in the approximate percentages by dry weight indicated:

(a) 2–6 of bentonitic clay,

(b) 70–90 of a compound consisting of 60.8 SiO_2, 23.3 Al_2O_3, 0.07 Fe_2O_3, 0.6 CaO, 0.1 MgO, 10.0 Na_2O, 4.5 K_2O and 0.6 ignition loss said compound being known as a fine grained syenite and

(c) 10–30 of a compound consisting of 61.90 SiO_2, 0.59 Al_2O_3, 0.56 Fe_2O_3, 0.17 CaO, 30.41 MgO, 0.16 Na_2O and K_2O and 5.38 ignition loss said compound being known as a fine grained, carbonate free talc.

3,274,011

CLAY PRODUCTS AND AQUEOUS SYSTEMS CONTAINING SAME

James B. Duke, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

Filed Oct. 4, 1963, Ser. No. 313,742
6 Claims. (Cl. 106—72)

1. A method for reducing the high shear viscosity of kaolinite which consists essentially of:

forming a slurry consisting essentially of a kaolinite and an aqueous solution of hydrofluoric acid having a concentration less than 1 percent, said slurry containing about 5 to 40 pounds HF per ton of said kaolinite,

agitating said slurry,

separating the kaolinite from the aqueous phase and washing the kaolinite to eliminate free acid.

3,274,012

POLYMERIC COMPOSITION COMPRISING HEXOSE SUGAR AND ALKALI METAL SALTS

Ronald H. Cooper, Clare, and Robert D. Goodenough, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 4, 1964, Ser. No. 416,099
9 Claims. (Cl. 106—162)

1. A composition for the preparation of a non-hygroscopic thermosetting polymer which comprises; a mixture of from about 55 to about 65 parts by weight of a hexose saccharide sugar and from about 45 to about 35 parts by weight of an acidic salt selected from the group consisting of alkali metal hydrogen sulfates and mono-substituted alkali metal orthophosphates, and water from about 20 to about 40 weight percent as based on the total composition weight.

3,274,013

SHRINKABLE REGENERATED CELLULOSE BAND INCORPORATED WITH TRANSLUCENT MICACEOUS FLAKES

Irving Paul Batt, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,833
15 Claims. (Cl. 106—168)

1. A shrinkable, cellulosic article having incorporated therein from 3 to 65%, based on the weight of cellulose, of a pigment composition consisting essentially of translucent micaceous flakes having on the surface thereof a translucent layer of metal oxide particles of at least one of the group consisting of titanium dioxide, zirconium dioxide, hydrous titanium dioxide, and hydrous zirconium dioxide particles.

3,274,014

STABILIZED YARN COMPOSITIONS

Robert C. Harrington, Jr., and James L. Smith, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,156
9 Claims. (Cl. 106—177)

1. A man-made filament yarn composed essentially of a fiber-forming composition selected from the group consisting of cellulose esters, acrylonitrile copolymers, polyesters and poly-alpha-olefins stabilized against deterioration from ultraviolet light containing 0.1 to 5%, based on the weight of the yarn, of a salt selected from the group consisting of (1) metal salts of monoalkyl, monoaryl and dialkyl acid phosphates; (2) metal alkyl phosphonates and metal alkyl (alkyl phosphonates), and (3) metal dialkyl phosphites, said alkyl and aryl groups containing from 1 to 18 carbon atoms and said metal being selected from the group consisting of zinc, chromium and aluminum.

3,274,015

DRYING OIL BASED COATING COMPOSITIONS AND METHOD OF IMPROVING SAME

Nathaniel Willis, Chicago, Ill., assignor, by mesne assignments, to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed May 9, 1963, Ser. No. 279,292
6 Claims. (Cl. 106—252)

1. A method of reducing water sensitivity of a drying oil based paint which comprises adding, as a percentage of the drying oil content of said paint, up to about 10 percent by weight of the reaction product of ammonia and a mixture comprising from about 20 to about 80 molar percent of dimethyldichlorosilane and the balance of said mixture being vinyltrichlorosilane.

3,274,016

PROCESS FOR MANUFACTURE OF SOLID COMPOSITIONS COMPRISING ASPHALT AND CLAY CONTAINING SOILS

Dilworth T. Rogers, Summit, and John C. Munday, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 24, 1963, Ser. No. 289,869
3 Claims. (Cl. 106—281)

1. A process for the manufacture of a hard bituminous solid composition which comprises the steps of:

(a) mixing a clay with an excess of water to form a slurry, said clay being one which expands in the presence of water or other polar material,

(b) adding a salt of a nitrogenous base until said clay separates from the water and floats,

(c) removing the clay from the water and drying it at a temperature of from 220° to 240° F.,

(d) mixing the treated clay with from 8 to 20 wt. percent of a bituminous binder,

(e) compressing the mixture to 80 to 98% of its theoretical density, and

(f) curing the compressed mixture at a temperature of from 300° to 500° F. for from 4 to 80 hours.

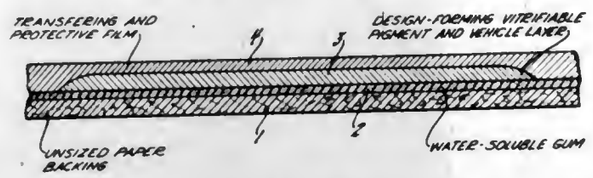
3,274,017

VITRIFIABLE DECALCOMANIA

Enrique Pereira Borrajo, Belgrano 919, Buenos Aires, Argentina

Filed Jan. 4, 1965, Ser. No. 423,039
6 Claims. (Cl. 117—3.2)

1. In a vitrifiable decalcomania, a design layer consisting of a vitrifiable pigment and a reversibly fusible solid vehicle, said vehicle consisting essentially of a mixture of beeswax 16%, cetyl alcohol 8%, solid paraffin wax 24%, liquid paraffin wax 41%, carnauba wax 1%, spermaceti 2%, WW resin 5% and Venetian turpentine 3%, said vehicle being capable of returning to liquid state upon application of heat prior to volatilizing upon further application of heat.

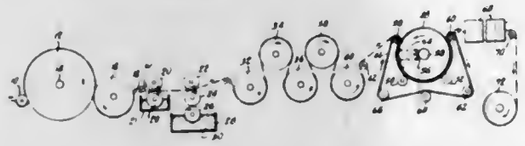


3,274,018

METHOD FOR PRODUCING A DECORATIVE NONWOVEN FABRIC

Gordon D. Russell, Chateauguay Heights, Quebec, and Edmund J. Sklejka, Montreal North, Quebec, Canada, assignors to Johnson & Johnson, a corporation of New Jersey

Filed Feb. 18, 1965, Ser. No. 438,174
4 Claims. (Cl. 117—11)



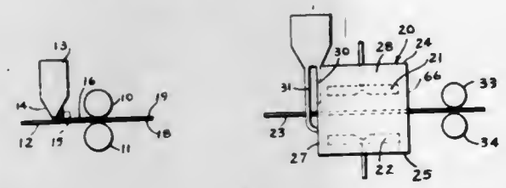
1. A method of making a decorative bonded nonwoven fabric from a fibrous web of uniformly distributed overlapping and intersecting fibers which comprises: applying a settable bonding material to said fibrous web in a predetermined pattern of areas, setting said bonding material to bond the fibrous web, and applying rearranging forces to the entire bonded fibrous web to rearrange the fiber portions only in the unbonded areas into a network of openings and fiber bundles.

3,274,019

IMPREGNATION AND COATING WITH SPLIT-OFFS OF VERMICULITE AND PRODUCTS THEREOF

Paul F. La Vine, St. Paul, Minn., assignor of one-half to Alton V. Oberholtzer, White Bear Lake, Minn.

Filed Nov. 6, 1964, Ser. No. 411,178
9 Claims. (Cl. 117—16)



1. In a method of providing metal with a coating of a composite of metal oxides and silica material, the steps consisting essentially of

heating the metal to a temperature sufficient to open the pores of said metal,

and treating the heated metal in an atmosphere of a powder of fine crystalline material of a particle size which passes through about a 400 to a 500 mesh sieve and consisting essentially of an oily feeling composite of a uniformly appearing crystalline form of metal oxides and silica material prepared by heat-expanding vermiculite to produce exfoliated vermiculite and by-product dust fines consisting essentially of metal oxides and silica material and screening and separating said dust fines from said exfoliated vermiculite,

thereby effecting an embedding of the said fine crystalline material into the pores of the surface of the metal while heated to said temperature,

and providing a thin tightly adherent coating of the said metal oxides and silica material on said metal material.

3,274,020

FILMS MADE FROM HIGHLY HYDROLYZED POLYVINYL ALCOHOL

Charles A. Heiberger, Princeton, and Daniel S. Dixler, Berkeley Heights, N.J., assignors, by mesne assignments, to Cumberland Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 15, 1962, Ser. No. 173,362
13 Claims. (Cl. 117—68)

1. A thin transparent film characterized by an oxygen permeability of at most about 0.03 cc./100 in.²/day at 72° F. and 50% relative humidity, comprising a base sheet formed from polyvinyl alcohol having a degree of hydrolysis of at least 99.8%, said base sheet having a thickness of about 0.0001 to about 0.01 inch, and an adherent water-proof polymeric coating on at least one side thereof.

3,274,021

STANNATE COATING BATH AND METHOD OF COATING ALUMINUM WITH TIN

Jan C. Jongkind, Roseville, and Peter G. Kenedi, Detroit, Mich., assignors, by mesne assignments, to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 27, 1962, Ser. No. 190,805
17 Claims. (Cl. 117—130)

1. The method of treating aluminum by immersion plating to form a surface layer of tin thereon which comprises immersing said aluminum in an aqueous bath containing water, an anion of a polyhydroxy carboxylic acid in amount of 0.01–0.25 mole per liter calculated as salt, and a stannate salt selected from the group consisting of sodium stannate and potassium stannate; maintaining said aluminum in said bath for time sufficient to deposit a surface layer of tin thereon; and withdrawing said aluminum from said bath.

3,274,022

PALLADIUM DEPOSITION

Richard N. Rhoda, Westfield, N.J., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 26, 1963, Ser. No. 267,947
6 Claims. (Cl. 117—130)

4. A process for the electroless deposition of palladium which comprises establishing an aqueous bath containing about 1 to about 20 grams per liter of divalent palladium, about 0.04 to about 0.50 gram per liter of unsymmetrical dimethylhydrazine, an amine selected from the group consisting of ammonia, aminoethyl ethanolamine and amylamine in an amount equivalent in molar concentration to about 100 to about 350 grams per liter of ammonia and a stabilizing agent selected from the group consisting of ammonium chloride, ammonium sulfate and ethylenediaminetetraacetic acid in an amount equivalent in molar concentration to up to about 80 grams per liter of ethylenediaminetetraacetic acid and placing a body having a catalytic surface in contact with said aqueous bath while maintaining the temperature of said bath at about 68° C. to about 100° C. to effect a deposition of metallic palladium from said bath on said surface and while replenishing said bath with unsymmetrical dimethylhydrazine to maintain the concentration thereof within said range of about 0.04 to about 0.50 gram per liter.

3,274,023
SCUFF RESISTANT LEATHER

Joseph A. Bassett, Topsfield, and Malcolm H. Battles, Andover, Mass., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed July 25, 1960, Ser. No. 44,859
6 Claims. (Cl. 117—142)

1. A method of treating grain leather to impart to the grain surface thereof scuff resistant properties while maintaining desirable flexibility and water vapor transmission characteristics of said leather as well as good break in said leather, comprising: applying to the grain side of said leather a modified unplasticized polyamide resin, which impregnates the grain layer of said leather substantially with said resin, the amount of said polyamide resin being sufficient to penetrate said grain layer, said modified polyamide resin being the reaction product of a polyamide of polymeric fat acids and an alkylene polyamine and an aliphatic monoepoxide having 4–18 carbons.

3,274,024
ENERGY CONVERTER

Robert Matteson Hill, Palo Alto, and Burnell Vincent Dore, Sunnyvale, Calif., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Nov. 16, 1962, Ser. No. 238,299
4 Claims. (Cl. 117—200)

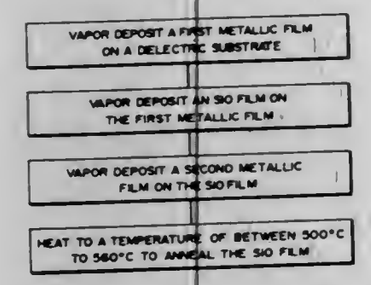


1. A device comprising first and second electrically conductive layers, a thin film or barrier having a thickness within the range of 20 to 1000 angstroms interposed therebetween, and a cathodoluminescent phosphor layer associated with said first and second layers and said barrier.

3,274,025
METHOD OF FORMING AN ELECTRICAL CAPACITOR

Sotirios Ostis, St. Paul, Minn., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Dec. 13, 1963, Ser. No. 330,412
3 Claims. (Cl. 117—217)



1. In the method of forming an electrical capacitor comprising the steps of vapor depositing in vacuo on a dielectric substrate successive films of metal, silicon monoxide, and metal in the order named, the improvement comprising heating the capacitor so formed to a temperature ranging from about 500° C. to about 560° C. to anneal said film of silicon monoxide thereby decreasing the dissipation factor of said capacitor.

3,274,026
COATED PLASTIC ARTICLES

Arthur S. Nyquist, Darien, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 19, 1962, Ser. No. 203,450
18 Claims. (Cl. 117—138.8)

1. A heat- and pressure-consolidated article, prepared from a thermosetting aminoplast resinous composition, coated with a substantially insoluble and infusible cured, adherent, stain-resistant composition comprising the resinous reaction product of:

(A) from about 10% to about 70% by weight of a highly alkoxymethylated melamine having from about 3 to 6 methylol groups, of which from about 3 to 6 are alkylated with a lower alkyl group, and having not more than about one unalkylated methylol group, and correspondingly

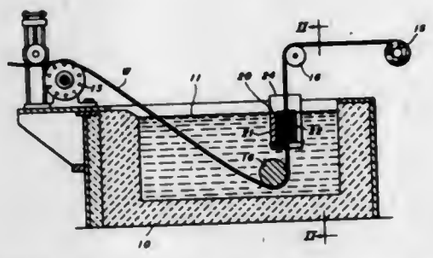
(B) from about 90% to about 30% by weight of an epoxy resinous material obtained by reacting a polyhydric phenol with an epihalohydrin,

the percentages of said (A) and (B) each being based on the total weight of said (A) and (B).

3,274,027
METHOD AND APPARATUS FOR APPLYING HOT-DIPPED METAL COATING TO WIRE

Richard A. Nickola, Cleveland Heights, and Gordon T. Spare, Chardon, Ohio, assignors to United States Steel Corporation, a corporation of New Jersey

Filed Dec. 14, 1961, Ser. No. 159,278
2 Claims. (Cl. 117—114)



2. A method for applying hot-dipped metal coating to wire comprising inducing oscillation in the wire, immersing the oscillating wire in a bath of molten metal, passing the wire around a sinker roll, located in the wire path beyond the oscillation induction means, and withdrawing the wire upwardly from the bath through a mass of hard balls surrounding the wire and disposed at and below the surface of the bath metal whereby to dampen oscillations not damped by the sinker roll and to provide a mechanical wiping action to prevent the adherence of oxide particles.

3,274,028
MANUFACTURE OF NICKEL ELECTRODES

Yutaka Okinaka, Madison, and Dennis R. Turner, New Providence, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 7, 1965, Ser. No. 424,072
8 Claims. (Cl. 136—29)

1. A method for activating a foraminous nickel electrode which comprises impregnating the electrode with nickel hydroxide, immersing the electrode in a carbonate solution having a carbonate normality in the range 1 N to 8 N and cycling the electrode through complete discharge, complete charge and overcharge prescribed by the following:

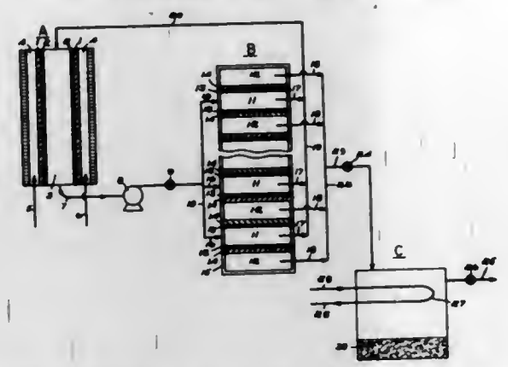
$$TC = 2.5 \text{ to } 7$$

where T is the time of the cycle in hours and C is the ratio of charge-discharge current to electrode capacity and C varies from ½ to 2.

3,274,029
RECOVERING WATER FORMED IN A FUEL CELL AND APPARATUS THEREFOR

Robert M. Lurie, Waltham, Mass., and David J. Goldstein, Haifa, Israel, assignors to Ionics, Incorporated, Cambridge, Mass., a corporation of Massachusetts

Filed Sept. 12, 1962, Ser. No. 223,010
12 Claims. (Cl. 136—86)



1. The method of recovering potable water from the electrolyte solution of a fuel cell for use under space flight conditions, said water being formed therein by the reaction of a fuel and oxidant material comprising: passing said electrolyte under pressure into alternate distillation chambers of a membrane distillation unit, said distillation chambers being separated and defined from the adjacent alternate vapor chambers by semi-permeable membranes, said membranes consisting of a hydrophilic organic plastic material selectively permeable to water and substantially impermeable to dissolved salts, maintain at least a partial vacuum in said vapor chambers causing water of the electrolyte solution to pass through said membranes into said vapor chambers as a water vapor therein, withdrawing said vapor from said vapor chambers, and condensing said vapor to recover the water.

8. The apparatus for recovering potable water formed in the electrolyte of a fuel cell for use under space flight conditions, said cell comprising spaced porous catalytic electrodes having an electrolyte solution between the same and comprising: the combination of said fuel cell with a membrane distillation unit provided with means for withdrawing the electrolyte from said fuel cell into a manifold with means for passing said electrolyte into alternate distillation chambers of said distillation unit, said distillation chambers being separated and defined from the adjacent alternate vapor chambers by semi-permeable membranes, said membranes consisting of hydrophilic organic plastic material selectively permeable to water and substantially impermeable to dissolved salts, means for maintaining at least a partial vacuum in said vapor chambers, means for withdrawing the electrolyte from said distillation chambers and recirculating the same back to the electrolyte chamber of said fuel cell, means for withdrawing the water vapor passing into said vapor chamber from said distillation chambers, and means for recovering the same for further use.

3,274,030
PHOTOCELL WITH COOLING MEANS AND METHOD OF USING SAME

Robert E. Salomon, North Hills, Glenside, Pa., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed July 2, 1963, Ser. No. 292,798
10 Claims. (Cl. 136—89)

1. A photoelectric device which provides a high photovoltaic output in the presence of ultra-violet light, comprising

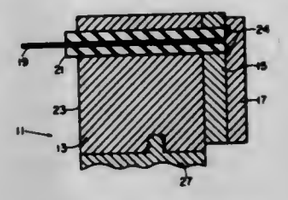
(a) a metal base electrode selected from the group consisting of zirconium and niobium,

(b) an oxide coating of said base electrode on at least one surface thereof,

(c) a thin metallic coating on said oxide coating,

(d) means for cooling said base electrode to a temperature no greater than about −130° C., and

(e) said device constructed for exposure to ultra-violet light.



4. The method of increasing the photovoltaic output of a photocell having a metal base electrode selected from the group consisting of zirconium and niobium, an oxide coating of said base electrode on at least one surface thereof, a thin metallic coating on said oxide coating, comprising exposing said photocell to ultra-violet light and cooling said photocell to a temperature no greater than about −130° C.

3,274,031
FUEL CELL ELECTRODE AND METHODS OF PREPARATION

Henri J. R. Maget, Marblehead, and Gerald Frank Wheeler, Salem, Mass., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,692
20 Claims. (Cl. 136—120)

1. A fuel cell electrode formed of a plurality of catalyst particles consisting essentially of titanium and at least one noble metal selected from the group consisting of platinum, palladium, iridium, and rhodium, each of said particles having a plurality of asperities formed in the surface thereof by the removal of a portion of said titanium, said asperities containing a predominant amount of said noble metal in an active condition, said particles, prior to the formation of said asperities, consisting essentially of from 4–25% of at least one of said noble metals and the remainder titanium.

10. A method for forming a catalytic fuel cell electrode including:

(1) preparing an alloy consisting essentially of from 4–25% of at least one noble metal selected from the group consisting of platinum, palladium, iridium, and rhodium and the remainder titanium,

(2) forming said alloy into particles,

(3) etching the surface of said particles with hydrofluoric acid to remove at least a portion of said titanium from said surface so as to produce a plurality of asperities containing a predominant amount of said noble metal in an active condition, and

(4) binding the particles with polytetrafluoroethylene film to form an electrode structure.

3,274,032
PROTECTIVE COATING

Richard L. Every, Ralph Le Roy Grimsley, and Olen L. Riggs, Jr., Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,285
11 Claims. (Cl. 148—6.14)

11. The method of forming a corrosion resistant coating on a ferrous metal surface which comprises the steps of:

immersing said metal surface into a solution comprising from about 2500 to about 3000 parts by weight of a compound chosen from the group consisting of meta-nitrobenzaldehyde and para-nitrobenzaldehyde per million parts by weight of said solution, a solvent chosen from the group consisting of ethanol and ace-

tone, and an acid chosen from the group consisting of sulfuric and hydrochloric acid, said acid being present in the solution in a concentration from about 0.25 to about 1.0 normal; and

maintaining said metal surface immersed within said solution for at least 4 hours.

3,274,033
ULTRASONICS
Stanley E. Jacke, Ridgefield, Conn., assignor, by mesne assignments, to Branson Instruments, Incorporated, a corporation of Delaware
No Drawing. Filed Aug. 12, 1963, Ser. No. 301,592
1 Claim. (Cl. 148—12.9)

The method of reducing residual stress in weldments of titanium alloys substantially containing, by weight, 2.5 to 3.5 percent aluminum, 10 to 11 percent chromium, 12.5 to 14 percent vanadium, .05 percent maximum carbon, .08 percent maximum nitrogen, .025 percent maximum hydrogen, and the balance essentially titanium by manually pressing a high intensity ultrasonic transducer producing ultrasonic energy at a frequency of approximately twenty kilocycles per second directly against the bead of the weld at room temperature.

3,274,034
SEMICONDUCTOR MATERIAL OF PERYLENE AND FERRIC CHLORIDE HAVING A P-N JUNCTION
Martin S. Frant and Roger Eiss, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey
No Drawing. Original application Oct. 9, 1962, Ser. No. 229,496, now Patent No. 3,231,500, dated Jan. 25, 1966. Divided and this application Apr. 9, 1965, Ser. No. 470,273
1 Claim. (Cl. 148—33)

A semiconducting body comprising a first portion of a semiconducting complex of perylene and ferric chloride in which said ferric chloride is in excess of an equimolar amount, said first portion having n-type conductivity, and a second portion comprising a semiconducting complex of perylene and ferric chloride in which said perylene is in excess of an equimolar amount, said second portion having p-type conductivity, the interface between said first portion and said second portion defining a p-n junction within said body.

3,274,035
METALLIC COMPOSITION FOR PRODUCTION OF HYGROSCOPIC SMOKE
Lohr A. Burkardt and William G. Finnegan, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed June 15, 1964, Ser. No. 375,402
4 Claims. (Cl. 149—40)

1. The composition which produces hygroscopic smoke comprising an admixture of the following ingredients:

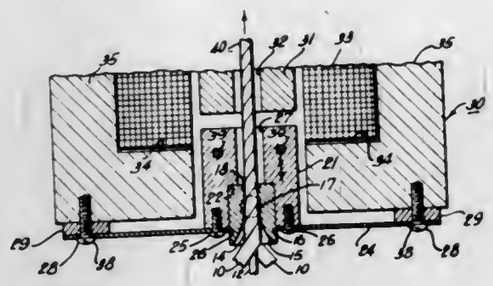
Ingredients:	Percent by weight
Lithium carbonate	19.34
Hexachloroethane	20.66
Aluminum	20.50
Potassium perchlorate	39.50

3,274,036
ARC ETCHING
Merritt B. Andrews, Southwick, Mass., and Harry A. Hokanson, Manchester, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
No Drawing. Filed Aug. 2, 1962, Ser. No. 214,211
2 Claims. (Cl. 156—2)

1. The method of pretreating a thermoelectric element prior to bonding said element to a metallic substance, said element having opposed bare end faces which faces constitute contact surfaces, and being formed from lead telluride semimetallic alloy comprising the steps of cleansing the contact surfaces by subjecting the surfaces to concentrated nitric acid bath, depleting the surface of tellurium by bombarding the surface with a concentrated emittance of electrons, and again subjecting the surface to a concentrated nitric acid bath.

2. The method of pretreating a thermoelectric element prior to bonding said element to a metallic substance, said element having opposed bare end faces which faces constitute contact surfaces, and being formed from lead telluride semimetallic alloy comprising the steps of cleansing the contact surface by subjecting the surface to a concentrated nitric acid bath, depleting the surface of tellurium by subjecting the surface to an electromachining treatment, and again subjecting the surface to a concentrated nitric acid bath.

3,274,037
METHODS AND APPARATUS FOR INSULATING CONDUCTORS
Charles E. Nixon, Sayville, N.Y., assignor to Inso Electronic Products, Inc., Nutley, N.J., a corporation of Delaware
Filed Aug. 13, 1963, Ser. No. 301,774
17 Claims. (Cl. 156—52)

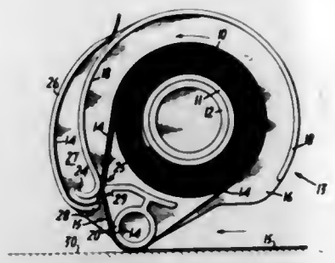


1. The method of treating a covering of plastic insulation tape surrounding an electrical conductor for purposes of increasing the dielectric strength and uniformity of the insulation tape covering comprising the steps of moving a conductor surrounded by a covering of insulation tape through a converging surface, exerting a squeezing action on the insulation tape by said converging surface, and relatively oscillating said converging surface back and forth with respect to the insulation tape and conductor moving through the converging surface.

4. Apparatus for treating plastic insulation covering on conductors comprising a die member having a die opening therethrough defining a die surface converging toward the axis of said opening, a movable mounting for said die member adapted to reciprocate back and forth in a direction parallel with the axis of said die opening, and reciprocating drive mechanism for reciprocating said die member back and forth parallel with said axis.

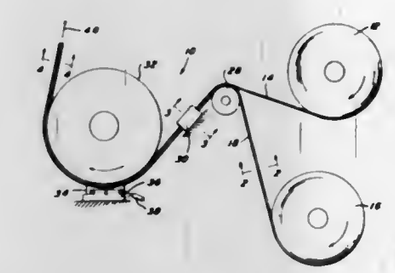
3,274,038
DISPENSING DEVICE
Andrew B. Karn, 420 E. 86th St., New York, N.Y.
Filed Jan. 14, 1963, Ser. No. 251,385
18 Claims. (Cl. 156—247)

1. A method of dispensing a release-type pressure-sensitive adhesive from a roll of tape including a waste liner and a release-type pressure-sensitive adhesive releasably mounted on and radially outward of the liner with respect to contiguous portions thereof in the roll, comprising withdrawing a lead portion of said tape; pressing said tape against a surface zone and advancing said roll relative to a surface to apply the adhesive thereto and separate it from said waste liner; passing said waste liner at least partially around and in overlying relation to and in engagement and driving relation with a circumferential portion of the roll, passing said waste liner



and the underlying tape through a path having a fixed portion spaced radially outward from the periphery of said roll and separating said waste liner from said underlying tape at said portion and directing it away from said zone and roll.

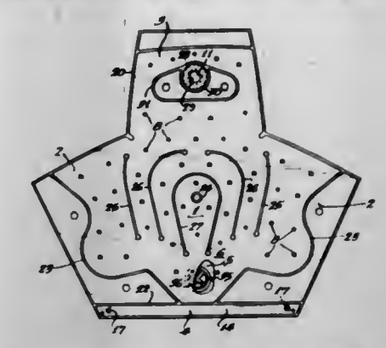
3,274,039
METHOD OF MAKING PRINTING RIBBON
Walter Ploeger, Jr., North Bellmore, N.Y., assignor to Filmon Process Corporation, New York, N.Y., a corporation of New York
Original application Apr. 16, 1962, Ser. No. 187,736. Divided and this application Jan. 25, 1965, Ser. No. 427,744
9 Claims. (Cl. 156—251)



1. A method of making a laminated printing ribbon comprising the steps of overlapping first and second laminated ribbons each of which has a layer of impervious flexible plastic material which is heat sealable and inert with respect to ink, said overlapping step being accomplished in a manner so that the layers of impervious flexible plastic material of each ribbon are overlying one another in direct abutting contact and extending in the same direction, then heat sealing an ink impervious weld through each layer of each ribbon substantially parallel to and spaced from side edges of each ribbon, cutting the ribbons along the weld to provide third and fourth ribbons with each of the third and fourth ribbons containing a part of the first and second laminated ribbons and then flattening said third and fourth ribbons so that the third and fourth ribbons are substantially planar.

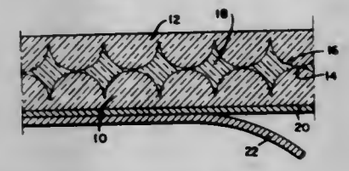
3,274,040
HAIR DRIER
Worthy L. Chambers, Wilmette, and Gilbert R. Wolter, Elmhurst, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Apr. 6, 1961, Ser. No. 101,241, now Patent No. 3,168,382, dated Feb. 2, 1965. Divided and this application Mar. 20, 1964, Ser. No. 353,479
1 Claim. (Cl. 156—258)

A method of forming a hair dryer cap, comprising cutting three spaced, aligned and peripherally positioned flaps in two superposed sheets of flexible plastic sheet material and connecting said sheets together continuously along their outermost edges by heat sealing said outermost edges together, folding each adjacent pair of connected flaps in the same direction and connecting them together continuously along their contiguous edges by



heat sealing said continguous edges together, and forming a plurality of spaced and continuous connections between said sheets in their central portions in a direction extending between two opposite pairs of flaps and toward the third thereof.

3,274,041
METHOD OF MAKING SHEET MATERIAL
Edwin R. Gill, Jr., Millerton, N.Y., assignor to Karl W. Flocks, Washington, D.C.
Original application Mar. 24, 1960, Ser. No. 17,342, now Patent No. 3,155,764, dated Nov. 3, 1964. Divided and this application Sept. 29, 1964, Ser. No. 406,954
3 Claims. (Cl. 156—292)



1. A method of producing a flexible weatherproof reflex light reflector sheet comprising embossing inner faces of an outer and a lower web of flexible water resistant light transmitting material to form each web into a lamina having a smooth outer surface and an inner surface embossed with a plurality of outwardly projecting rounded projections in an all-over pattern covering the surface so embossed, applying an adhesive light transmitting material having an index of refraction substantially lower than the index of refraction of said outer and lower webs to the embossed surfaces, bringing said coated embossed surfaces together with the adjacent projections on the two webs in alignment with the faces of said aligned projections in the two webs being separated not more than 0.4 time the radius of the rounded projections and with the adhesive completely filling the spaces between the said webs, and curing said adhesive while said webs are maintained in their respective positions.

3,274,042
METHOD OF FORMING HOT PRESS PLYWOOD AND PRODUCT
Daniel P. Gilboe, Minneapolis, and Lynn C. Adolphson, St. Paul, Minn., assignors to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware
No Drawing. Filed Apr. 27, 1962, Ser. No. 190,782
10 Claims. (Cl. 156—328)

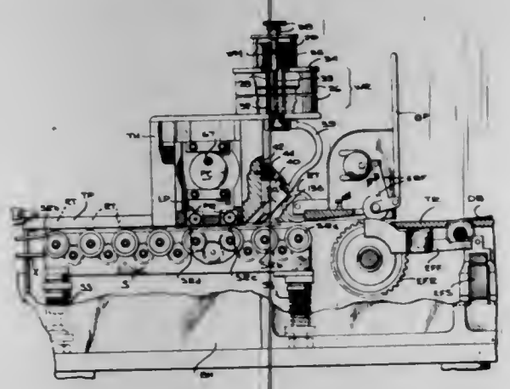
10. A method of laminating sheets of material comprising

(A) coating a wooden sheet with a mixture, having a pH of at least 12, which is stable at room temperature and which will react to form an adhesive material when subjected to an elevated temperature and pressure comprising

(1) soya protein,
(2) water, and
(3) the reaction product of an aldehyde and a primary amine selected from the group consisting of
(a) acetaldehyde-ammonia,
(b) formaldehyde-ethylenediamine,
(c) acetaldehyde-ethylamine, and
(d) acetaldehyde-aniline;

(B) placing the coated sheet in a surface-to-surface relation with another sheet;
(C) pressurizing the sheets at a pressure of 100 to 200 p.s.i.; and
(D) heating the pressurized sheets at a temperature of about 240° to 300° F. for a period of about 2 to 6 minutes.

3,274,043
LABELING MACHINE
Kurt Rudolf Schneider, Bainbridge, N.Y., assignor to Eureka-Carlisle Company, a corporation of Delaware
Filed Jan. 29, 1962, Ser. No. 169,439
14 Claims. (Cl. 156—357)

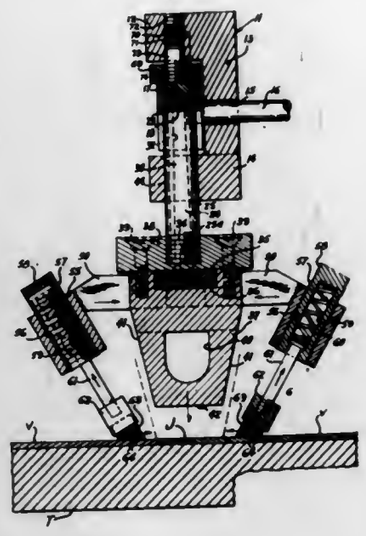


1. Moistening apparatus comprising a support, means for moving articles in succession along the support with a selected part of a surface of each article moving along a predetermined path, a reservoir for liquid mounted on the support above the level of the said path, a duct for conveying liquid downward from the reservoir, a nozzle fixed on the support and connected for supply through said duct and having an orifice positioned at a distance from said path for forming a liquid bead at the end of the nozzle during the flow of water from the reservoir, said bead extending from the nozzle for contact with the part of the article surface in said path for wetting the same, a valve effective when closed for preventing liquid flow through the duct and thereby establishing a hydraulic seal to prevent formation of a bead at the nozzle orifice and means on the support for preventing contact of the article with the nozzle end and means for varying the opening time of said valve for adjusting the area of application of the bead upon the article surface.

2. An apparatus as in claim 1, wherein said varying means includes means responsive to the moving articles and effective to procure opening and closing of the valve in timed relation to movement of the article whereby the liquid is deposited from said nozzle within the area of said selected part and for a limited length thereon.

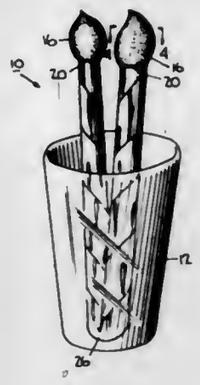
3. An apparatus as in claim 2, including means for feeding and placing gummed labels on the wetted area, means for preventing the movement of the articles, and means responsive to the presence of a label ready for such placing and effective for overriding the preventing means and procuring the advancement of an article for actuating said article responsive means.

3,274,044
COMBINATION FACE VENEER ASSEMBLER
Starling Trimen Efird, 1604 Lakewood Drive, High Point, N.C.
Filed Jan. 2, 1963, Ser. No. 249,048
6 Claims. (Cl. 156—556)



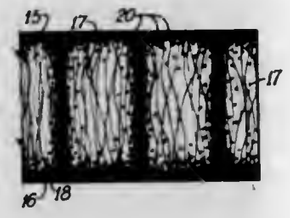
1. A combination face veneer assembler comprising a support, an elongated heating element mounted for vertical movement thereunder, transverse connecting rods slidably mounted on said heating element, rubber tipped spring biased clamping fingers carried by said arms, first cam means for lowering said heating element towards veneer pieces to be assembled, second cam means for simultaneously moving said transverse rods and hence said clamping fingers inwardly toward the center of said heating element to bias the veneer pieces together, and means for actuating said first and second cam means.

3,274,045
DECORATIVE DINING NAPKINS
Irving Smith, 1201 Evergreen Ave., Flushing, N.Y.
Filed May 22, 1963, Ser. No. 282,437
5 Claims. (Cl. 161—7)



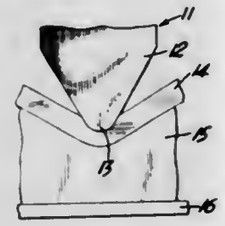
1. A decorative dining napkin of a flexible and semi-limp material adapted to be folded to imitate a three-dimensional object in a fanciful manner, said napkin comprising a substantially rectangular flat blank decorated in accordance with the motif of said three-dimensional object, said blank having a corner cut out to an outline of an upper prominent component of said object, said outline having undercut portions on opposite sides thereof to define a constricted neck connecting the outline to the body of the blank and including an intermediate portion of greater transverse dimension that that of the neck so that said intermediate portion overhangs the neck in edge relief whereby when the body of the napkin is transversely arched to any specific radius of curvature, the neck will be similarly arched and the outline will be arched to a greater radius of curvature.

3,274,046
COMBINED FIBER AND CELLULAR ARTICLE
Richard F. Shannon, Lancaster, and Philip W. Sullivan, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation of application Ser. No. 765,563, Oct. 6, 1958. This application June 1, 1964, Ser. No. 371,317
5 Claims. (Cl. 161—36)



1. An article of manufacture comprising, as a core material, a plurality of bodily separate masses of intermeshed vitreous fibers, which masses are disposed in closely adjacent, side-by-side relationship, the fibers in said masses being bonded to one another at points of contact by a first binder material, first and second bodies of a hardened binder intimately associated with, bonded to, and supporting fibers in each of said masses of core material, adjacent each of two opposed surfaces of each mass, one of said binder bodies substantially filling voids between fibers adjacent each of said opposed surfaces and extending a distance sufficient to provide a high strength region of combined binder and core material, and a rigid foam extending into juxtapositions of adjacent masses of fibers to interconnect the same, said rigid foam laterally bridging the individual fibers of said regions at points intermediate the points of connection of said fibers by said first binder.

3,274,047
LOCALLY DEFORMED AND LOCALLY DELAMINATED SCORES AND THE METHOD AND APPARATUS FOR MAKING SAME
Francis J. Sloan, Cranford, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 1, 1963, Ser. No. 269,652
16 Claims. (Cl. 161—46)



10. As an article of manufacture a pre-scored plastic container blank in a single ply oriented styrene polymer sheet having at least two integral panel members with a score between said integral panel members, said score being characterized by localized deformation and localized delamination of the plastic blank along the line of the score such that the score consists of plurality of deformed and delaminated layers of plastic, each deformed and delaminated layer of plastic having a thickness less than that of the plastic sheet.

3,274,048
RAPID SETTING ADHESIVE COMPOSITIONS
Walter B. Armour, Plainfield, and Walter C. Kania, Colonia, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 22, 1962, Ser. No. 218,515
8 Claims. (Cl. 161—184)

1. An aqueous adhesive composition comprising (a) an emulsion copolymer of vinyl acetate with a comonomer selected from the group consisting of glycidyl acrylate and glycidyl methacrylate and (b) trimethylol phenol.

6. A laminate comprising at least two laminae which are adhesively bound with a film consisting of a dried residue of an aqueous adhesive composition comprising (a) an emulsion copolymer of vinyl acetate with a comonomer selected from the group consisting of glycidyl acrylate and glycidyl methacrylate and (b) trimethylol phenol.

3,274,049
PROCESS FOR PULPING BAGASSE WITH AMMONIUM HYDROXIDE AND OXYGEN
Marcel Mathew Gaschke, Toms River, and Marshall L. Spector, Livingston, N.J., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Feb. 25, 1965, Ser. No. 435,367
1 Claim. (Cl. 162—65)

A process for pulping of bagasse to produce fibrous pulp which comprises treating bagasse in an aqueous alkaline solution containing ammonium hydroxide as essentially the sole alkaline producing reagent and having a pH from about 9 to about 12.2, dispersing a free oxygen-containing gas through said aqueous alkaline solution, the partial pressure of the oxygen being between about 25 and about 250 pounds per square inch, maintaining the aqueous reaction medium at a temperature between about 130° C. and about 150° C. for a digestion time between about 0.5 and about 1.5 hours, to produce fibrous pulp in a yield not less than 40 weight percent expressed on the basis of dried and depithed bagasse.

3,274,050
PITCH CONTROL IN PULP AND PAPERMAKING
Stanley J. Buckman, John D. Pera, and William P. Purcell, Memphis, Tenn., assignors to Buckman Laboratories, Inc., Memphis, Tenn., a corporation of Tennessee
No Drawing. Filed Apr. 29, 1963, Ser. No. 276,199
12 Claims. (Cl. 162—190)

1. A pitch control process which comprises adding to the aqueous fluids of a pulp or papermaking system a composition consisting essentially of an N,N-dimethylamide of a straight-chain carboxylic acid, characterized in that said acid contains 18 carbon atoms and at least one carbon to carbon double bond, at a rate which provides a concentration of said amide of at least 0.2 p.p.m. in said aqueous fluids.

3,274,051
METHODS FOR KILLING PLANT FUNGI
Masaru Kado, Takeo Tsubol, and Taizo Maeda, Shimizu, and Eiichi Yoshinaga, Ogasa-gun, Japan, assignors to Ihara Chemicals Company Limited, Shimizu, Japan, a corporation of Japan
No Drawing. Filed July 27, 1964, Ser. No. 385,489
Claims priority, application Japan, Aug. 30, 1963, 38/45,411; Feb. 5, 1964, 39/5,692
1 Claim. (Cl. 167—30)

Method of killing plant fungi comprising applying thereto S-benzyl-O.O-diethylthiolophosphate.

3,274,052

PREPARATION OF PESTICIDE GRANULES

Jerome Yaffe, El Cerrito, and Robert E. Sellers, Fresno, Calif., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 19, 1963, Ser. No. 288,895
21 Claims. (Cl. 167—42)

1. The process for preparing concentrated granular pesticides which comprises the step of coating the surface of granular carrier particles with toxicant, said toxicant comprising 25–85% by weight of the final product, by spraying molten droplets of a normally solid toxicant composition upon the surface of said granular carrier particles during said coating step, said particles being maintained in motion and at a temperature below the temperature at which the toxicant composition solidifies, whereby the molten toxicant solidifies on contact with the surface of the granular carrier particles and forms an adherent coating on the outer surface of said particles.

3,274,053

SENNOSIDE DERIVATIVES AND PHARMACEUTICAL COMPOSITIONS CONTAINING SAME

Alfred Halpern, Great Neck, and Mortimer D. Sackler, New York, N.Y., assignors to Synergistics, Inc., a corporation of New York

No Drawing. Filed June 4, 1962, Ser. No. 199,605
48 Claims. (Cl. 167—65)

1. A molecule selected from the group consisting of:
(a) Sennoside A tannate
(b) Sennoside B tannate
(c) molecules having the structure RX, wherein R is a moiety selected from the group consisting of Sennoside A tannate and Sennoside B tannate and X is a moiety selected from the group consisting of metallo ions, ammonium ions, and pharmaceutically acceptable amines, and
(d) the molecules having the structure SY wherein S is a moiety selected from the group consisting of Sennoside A and Sennoside B and Y is a moiety selected from the group consisting of primary aliphatic amines, secondary aliphatic amines, cyclic amines, heterocyclic amines, choline and betaine.

40. A pharmaceutical composition comprising a pharmaceutical carrier and from 2 to 75 mg. of sennoside equivalent of a compound selected from the group consisting of Sennoside A tannate, Sennoside B tannate, amine sennoside, amine sennoside tannate, metallo sennoside tannate, ammonium sennoside tannate and a composition of botanical origin containing Sennoside A tannate, Sennoside B tannate, amine sennoside, amine sennoside tannate, metallo sennoside tannate, ammonium sennoside tannate and mixtures of the same.

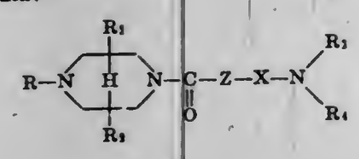
3,274,054

ANTIVIRAL COMPOSITIONS AND METHOD OF ADMINISTRATION

Andrew Stephen Tomcufcik, Tappan, Robert Bruce Angier, Pearl River, Martin Forbes, New City, and Howard Frederick Lindh, Monsey, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 28, 1963, Ser. No. 291,282
11 Claims. (Cl. 167—65)

1. A method of treating virus infections in warm blooded animals which comprises administering to said animals an antiviral composition comprising an edible carrier and from 5 to about 500 mg. per kg. based on body weight of said animal, of a substituted piperazine of the formula:



wherein R is selected from the group consisting of hydrogen and lower alkyl, R_1 and R_2 are selected from the group consisting of hydrogen and lower alkyl, R_3 and R_4 are lower alkyl, X is lower alkylene, Z is selected from the group consisting of oxygen and sulfur and acid addition and quaternary salts thereof.

3,274,055

ACID ADDITION SALTS OF MORPHOLINE ETHANOL

Alfred Halpern, Great Neck, Lake Success, N.Y., assignor to Synergistics Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,164
9 Claims. (Cl. 167—65)

1. An acid salt of N-morpholine ethanol selected from the group consisting of N-morpholine ethanol tartrate, N-morpholine ethanol malate, N-morpholine ethanol maleate, N-morpholine ethanol glutamate, N-morpholine ethanol salicylate, N-morpholine ethanol nicotinate and N-morpholine ethanol citrate.

3,274,056

METHODS FOR LOWERING BLOOD CHOLESTEROL AND COMPOSITIONS OF ALKALI METAL 2-METHOXYESTRA - 1,3,5(10)-TRIEN-3-OL-17-ONE SULFATE

Edward Warren Cantrall, New City, N.Y., Ruddy Littell, Rivervale, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,376
6 Claims. (Cl. 167—65)

1. A method of lowering blood cholesterol in warm-blooded animals which comprises administering to said animal from 1 mg. to 10 mgs. per kg. of body weight of an alkali metal 2-methoxyestra-1,3,5(10)-trien-3-ol-17-one sulfate.

3,274,057

STABLE HEXYLRESORCINOL COMPOSITIONS

Max A. Cherkas, Philadelphia, and Wayne M. Grim, Chalfont, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 30, 1963, Ser. No. 319,968
2 Claims. (Cl. 167—65)

1. A stabilized germicidal composition suitable for administration as an aerosol consisting essentially of about 0.01 to 0.5% by weight hexylresorcinol, about 5 to 50% by weight anhydrous ethanol, about 15 to 60% by weight trichloromonofluoromethane, and a maximum of about 0.03% by weight ascorbyl palmitate.

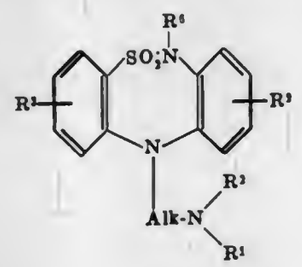
3,274,058

5,5-DIOXODIBENZO[1,2,5]THIADIAZEPINES DERIVATIVES AND METHOD OF USE

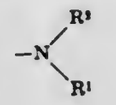
Abraham Weber, Paris, France, assignor to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Dec. 6, 1963, Ser. No. 328,460
13 Claims. (Cl. 167—65)

1. A compound selected from the group having the formula and the acid addition salts thereof



wherein
R^3 is from one to two substitutents selected from the group consisting of hydrogen, halogen, methyl, trifluoromethyl, alkoxy, alkylthio, and alkylsulfonyl and contains up to four carbon atoms;
R^6 is selected from the group consisting of lower alkyl having one to four carbon atoms, and benzyl;
R^9 is selected from the group consisting of hydrogen, halogen, methyl, trifluoromethyl, dimethylamino, dimethylsulfamyl, carbalkoxy, alkylthio, alkylsulfonyl, alkoxy, and alkanoyl, and contains up to four carbon atoms;
Alk is selected from the group consisting of ethylene and tirmethylene haviing up to one alkyl substituent containing up to two carbon atoms;



is selected from the group consisting of pyrrolidino, piperidino, morpholino, thiamorpholino, 4-R^4-piperazino, and amino wherein
R^1 and R^4 are selected from the group consisting of alkyl, hydroxyalkyl having up to four carbon atoms and alkanoxyalkyl having up to seven carbon atoms, and
R^2 contains up to four carbon atoms and is alkyl.

8. The therapeutic process which comprises administering to a mammalian host a dose of from 0.1 mg. to 100 mg. of a compound claimed in claim 1 per kilogram of body weight of said host.

3,274,059

STABLE-ENHANCED PLASMIN SOLUTIONS

Maurel N. Richard, Gwynedd Valley, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,030
4 Claims. (Cl. 167—73)

1. A stabilized solution of plasmin having enhanced proteolytic activity consisting essentially of
(1) a solution of Cohn alcohol Fraction III–3 having an initial plasminogen concentration within the range of from about 5 micrograms per ml. of solution to about 500 micrograms per ml. of solution,
(2) an amount of streptokinase within the range of from about one to about ten units thereof per microgram of said solution, and
(3) an amount of lysine within the range of from about 125 micrograms per ml. to about 2000 micrograms per ml. of said solution.

3,274,060

TREATMENT OF MULTIPLE SCLEROSIS WITH OXYTOCIN

Charles D. Bossinger, Kankakee, Ill., assignor to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 23, 1962, Ser. No. 196,882
8 Claims. (Cl. 167—74)

1. In treatment for multiple sclerosis, the parenteral administration to a human being afflicted with multiple sclerosis of a hormone substance consisting predominantly of oxytocin said hormone substance containing sufficient oxytocin to provide said human being with at least from about 5 to about 100 USP units of oxytocin per 12 hours.

3,274,061

PROCESS FOR STABILIZING SHELLAC COATING

Gene W. Johnston, Morris Plains, Ranjit I. Malani, East Orange, and Morton W. Scott, Livingston, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,209
8 Claims. (Cl. 167—82)

1. The process for stabilizing the disintegration time of a shellac coating on an orally ingestible product, which comprises heating said shellac coated orally ingestible product at a temperature of 65°–70° C. for at least 16 hours.

3,274,062

DIAGNOSTIC REAGENT

Kingdon Lou, North Hollywood, Calif, assignor to Hyland Laboratories

No Drawing. Filed Aug. 20, 1963, Ser. No. 303,421
4 Claims. (Cl. 167—84.5)

1. A method for the manufacture of a high cholesterol control standard for diagnostic use comprising the steps of:
(a) Adding calcium ions to a serum of non-elevated cholesterol content.
(b) Adding further to said serum a water soluble salt of a sulfated poly-galacturonic acid methyl ester methyl glycoside.
(c) Collecting the resultant precipitate of beta-lipoprotein and purifying said precipitate by dialysis.
(d) Dissolving said precipitate in a serum of non-elevated cholesterol content to thereby form a physiologic serum of high cholesterol content.

3,274,063

COSMETIC CREAM

Hans Alfred Nieper, Aschaffenburg, and Georg Escherich, Melsungen, Hesse, Germany, assignors to Firma Marbert-Kosmetik, Roeber and Sendler, Dusseldorf, Germany

No Drawing. Filed June 21, 1961, Ser. No. 118,495
Claims priority, application Germany, July 24, 1958, N 15,392; Sept. 22, 1958, N 15,614
4 Claims. (Cl. 167—91)

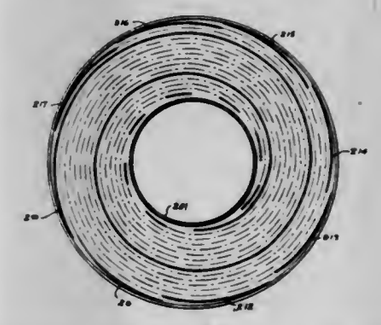
1. A cosmetic preparation containing a cosmetic fatty cream base and incorporated therein about 0.05 to 10 percent by weight of magnesium aspartate, said magnesium aspartate enhancing the skin-softening effect of said cosmetic fatty base.

3,274,064

ACTIVATION ANALYSIS NUCLEAR REACTOR AND SPOOL-LIKE FUEL ELEMENT THEREFOR

Byron H. Leonard, Jr., Ladue, Mo., assignor to Internuclear Company, Clayton, Mo., a corporation of Missouri

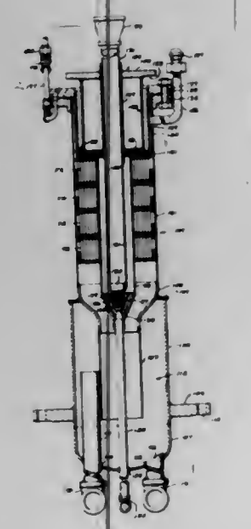
Filed Oct. 24, 1960, Ser. No. 64,438
26 Claims. (Cl. 176—20)



10. A nuclear reactor adapted for activation analysis purposes comprising a pressure vessel containing a moderator, a core tank mounted in said pressure vessel submerged in the moderator and containing a plurality of nuclear fuel bearing assemblies, a plurality of nozzles

supported adjacent the upper portion of said core tank and directed upwardly at an angle to the vertical, a cooling loop for the moderator including a plurality of connected lines with an interconnected pump for producing a circulation of moderator to and from said pressure vessel, a pair of branch inlets from said coolant loop one of which discharges to said pressure vessel and the other of which is a source of fluid pressure connected to supply said nozzles so as to produce an upward directed swirling fluid motion above said upward and angularly directed nozzles, a regulator means having a negative buoyancy mounting a strong absorber of neutrons projecting in the direction of said plurality of nuclear fuel bearing assemblies, a surface on said regulator means disposed above said nozzles and acted on by the upward swirling fluid motion to suspend said regulator means in a given position in the moderator with respect to said nozzles and with respect to said nuclear fuel bearing assemblies and produce rotation thereof and thereby a gyroscopic stabilizing effect, and a control valve in the branch discharging to said pressure vessel for indirectly controlling the position of said regulator means.

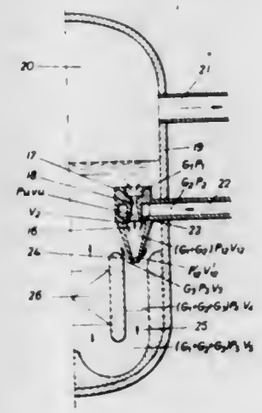
14. A spool-like fuel assembly for a nuclear reactor comprising a cylindrical hub, circular flanges secured in spaced axial relationship on said cylindrical hub and a



plurality of fuel elements in the form of plates of spiral configuration held at their edges between opposed faces of said spacer flanges to form spiral fluid passages, fluid inlet passages in said cylindrical hub communicating with the space between said flanges to admit a flow of moderator to the spiral paths formed between said fuel element plates and a cylindrical weir extending from the periphery of the lower flange upwardly adjacent the outlet of the spiral fluid passages between said fuel elements for maintaining a substantial portion of said fuel elements submerged in fluid during flow of fluid from said inlet passages over said cylindrical weir.

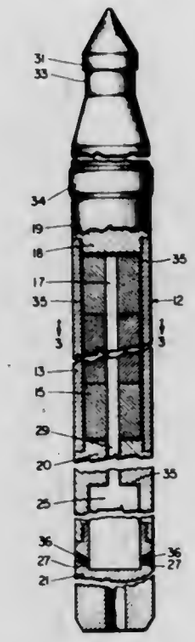
23. A nuclear reactor adapted for activation analysis purposes comprising a pressure vessel containing a moderator, a closed core tank mounted in said pressure vessel submerged in the moderator and containing a plurality of nuclear fuel bearing assemblies disposed in a first part to form vertical passage means and a sump part below said first part, an outlet connection with one of said vertical passage means extending from said first part into said sump part, means to provide an air chamber in said sump part arranged with respect to said outlet connection to prevent flow from said air chamber through said outlet connection back to said first part, a primary coolant loop connected to discharge moderator into said pressure vessel, a secondary coolant loop pressurized by the head of moderator in said pressure vessel for supplying moderator to other of said vertical passage means in said first part of said closed core tank for maintaining said nuclear fuel assemblies at least partially submerged and a connection between said parts of said core tank for returning the moderator to said pressure vessel from said sump part, means including a normally closed scram line connected to said first part of said core tank for maintaining the air chamber in said sump part and means to vent said scram line to atmosphere to discharge the moderator in said first part of said core tank to said sump part.

3,274,065
NUCLEAR REACTOR WITH JET PUMP ARRANGEMENT FOR OBTAINING FORCED LIQUID CIRCULATION
Birger Christian Kierulf and Thörbjörn Westrum, Kjeller, near Lillestrom, Norway, assignors to Institutt For Atomenergi, near Lillestrom, Norway
Filed May 14, 1963, Ser. No. 280,402
Claims priority, application Norway, May 18, 1962, 144,430; Mar. 27, 1963, 148,049
2 Claims. (Cl. 176—61)



1. A nuclear reactor including a closed tank containing a reactor core, a volume of liquid less than the volume of the internal space of the said tank and means providing forced circulation of such liquid in a liquid flow circuit passing the said reactor core, such circulation providing means including a conduit comprising a cooling system and a pump and extending externally of the said tank from an upstream end to a downstream end of said conduit, the said upstream end extending in fluid tight manner through the wall of said tank into the upper portion of the said tank and the said downstream and extending in fluid tight manner through the wall of said tank into the lower portion of the said tank, the said means further including an elongated hollow member situated inside the said tank in the said volume of liquid and in communication with the said downstream end of the said externally extending conduit, the said hollow member defining a chamber therein and being provided, at one end, with an inlet mouth of restricted area in communication with the said volume of liquid at a point of the said liquid flow circuit downstream of the said reactor core, said inlet mouth being followed by and communicating with a portion having a diverging cross sectional area, said portion extending into and communicating with said chamber, said chamber receiving the said downstream end of the said externally extending conduit through an opening of restricted cross sectional area, communicating with the downstream end of said externally extending conduit, the said chamber being defined by converging walls and being provided with an outlet mouth at the converging end of said walls, said converging end of said walls communicating with said liquid flow circuit at a location upstream of the said reactor core, the said means further including a passage of restricted cross sectional area included in the said liquid flow circuit and encircling the said converging end of said walls.

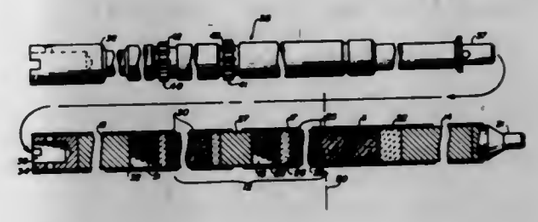
3,274,066
UNPURGED FUEL ELEMENT
Lloyd R. Zumwalt, La Jolla, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 5, 1965, Ser. No. 493,280
5 Claims. (Cl. 176—68)



1. A non-purged fuel element for a nuclear reactor, which fuel element comprises a fuel element body section made of graphite and having a cavity formed therein, the entire internal wall surface of said cavity having been treated to provide therein a layer of material selected from the group consisting of silicon carbide and zirconium carbide, said layer forming a closed shell within said fuel element body section having excellent resistance to the passage of fission products, opening means in said fuel element body section leading to said cavity which provides the only entry to the interior of said shell, nuclear fuel material disposed within said cavity, fission product trapping means in connection with said fuel element body section, said fission product trapping means being in fluid communication with the interior of said shell through said opening means, and vent means connecting said fission product trapping means in fluid communication with the exterior of said fuel element whereby internal pressure caused by fission product formation within said shell is relieved by venting fission products through said trapping means into the fluid coolant stream flowing exterior of the fuel element.

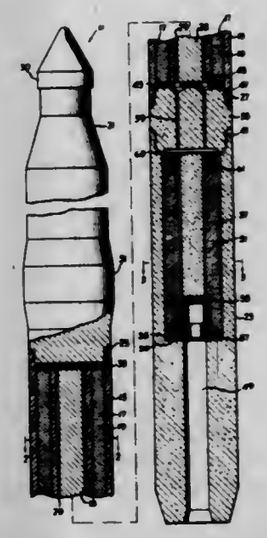
3,274,067
FUEL ROD DESIGN
Paul Greebler, Kenneth M. Horst, Eugene E. Olich, and Bertram Wolfe, all of San Jose, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 7, 1965, Ser. No. 462,145
3 Claims. (Cl. 176—68)

1. In a fuel element for obtaining a thermal expansion coefficient of reactivity approaching zero and facilitating control of the rapidly rising reactivity of a nuclear reactor through the use of the Doppler broadening effect, the combination comprising an elongated tubular cladding having upper and lower closed ends defining a fissile fuel zone within said cladding, a plurality of from two to five serially arranged fuel segments in said zone, each segment having one end immovably fixed relative to said cladding within said fuel zone and with the free end of at least one of said segments together with a proximate fixed end of a second segment and the free end of the uppermost segment together with one end of said fuel zone defining void spaces of a length greater than the maximum thermal



expansion length of said fuel segment at any temperature below the melting point of said fuel, resilient restoring means disposed within said void spaces, each restoring means affixed proximate one end thereof relative to said cladding, with the other end bearing against the free end surface of fuel segment to maintain the fixed end in position with respect to said cladding to permit each of said segments to thermally expand and contract in unison in the same direction.

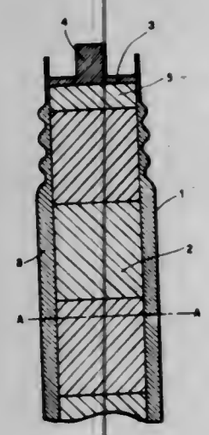
3,274,068
FUEL ELEMENT
Stanley L. Koutz and Richard F. Turner, San Diego, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed July 22, 1964, Ser. No. 384,564
11 Claims. (Cl. 176—69)



2. In a fuel element for a nuclear reactor, which fuel element has a body section formed of a refractory material of a high thermal conductivity and which also has means for providing a purge flow of gas through the body section, a body of nuclear fuel material disposed within the fuel element body section, which body of nuclear fuel comprises a matrix of moderator material

and a plurality of packets dispersed within said matrix, said packets including a mixture of nuclear fuel granules of a particle size less than about 10 microns and a refractory substance, whereby fission products from said nuclear fuel granules are released into said refractory substance in said packets and said matrix of moderator material remains free from recoil damage and dimensionally stable.

3,274,069
FUEL RODS FOR NUCLEAR REACTORS
Lucien Alfille, Brussels, Belgium, assignor to European Atomic Energy Community-Euratom, Brussels, Belgium
Filed June 17, 1963, Ser. No. 288,081
Claims priority, application Belgium, June 20, 1962, 494,456
9 Claims. (Cl. 176—72)

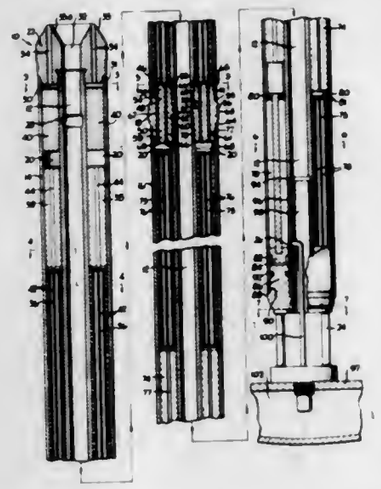


1. A fuel element for nuclear reactors cooled by a heat-carrying pressurized fluid, comprising:
a mechanically expansible and contractible elastic steel sheath having a thickness smaller than 0.1 mm.;
said sheath formed with means to allow axial and radial expansion and contraction thereof;
nuclear fuel material within said sheath and surrounded by the said sheath with a clearance greater than one tenth of one millimeter;
plugs closing the ends of said sheath;
a heat conductive filling material having a minimum neutron cross section and viscous at least at the operating temperatures of said reactor, said filling material completely filling any space between said sheath, plugs and fuel material and balancing by hydrostatic deformation thereof the pressure of the said heat carrying pressurized fluid acting externally upon said sheath for any mechanical and thermal stresses induced by the said fuel material.

3,274,070
FUEL ELEMENT WITH IMPROVED PURGE GAS ARRANGEMENT
Francis E. Vanslager, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,497
8 Claims. (Cl. 176—76)

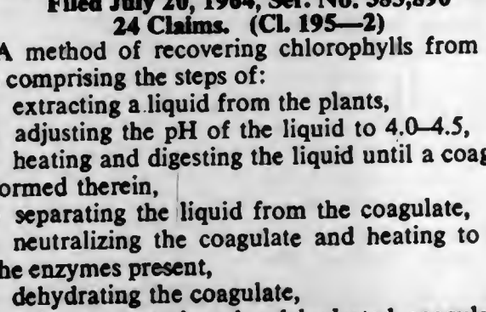
1. A fuel element for use in a nuclear reactor comprising, a plurality of body pieces each of which includes a bore extending longitudinally therethrough and a plurality of fuel chambers in the walls thereof, fissionable fuel disposed in said fuel chambers, means retaining said body pieces in coaxial alignment with one another, said means having a bore therethrough allowing communication between said bores in said body pieces, said means having a passageway therethrough communicating between said chambers in said body pieces, interengaging means on said retaining means and on said body pieces preventing longitudinal movement of said body pieces relative to said retaining means, means for passing a coolant gas through said bores of said body pieces, and means for passing a coolant gas into said chamber of one of said body pieces, whereby said coolant gas will flow into said chamber of one of said body pieces and through said retaining means into said chamber of another of said body pieces.

7. A connector for joining two elongated body pieces in coaxial alignment as a part of a fuel element, at least one of which body pieces contains a fuel chamber wherein fissionable fuel is disposed, and which body pieces also have recesses which terminate in beveled wall portions and which have one threaded wall, which connector comprises a generally cylindrical member having terminal portions at each end which are adapted to respectively engage an end of each of the elongated body pieces and thereby maintain the two body pieces coaxially aligned, threads on said terminal portions for mating with the threads on the recess-defining walls to prevent any longitudinal movement of the body pieces relative to said member, and beveled surfaces on said terminal portions so located to be adapted to frictionally engage the beveled wall portions of the recess-defining walls and create a gas-tight seal therebetween when said mating threads are interengaged, said member having a passageway extending therethrough for connecting the fuel chamber in gas-tight fluid communication with a chamber in the other body piece whereby a purge flow of gas can be established through the fuel chamber and through said member without leaking at said connector.



3,274,071
LATCH DEVICE FOR NUCLEAR FUEL
Stanislaw A. Janusz and John Pawliw, Peterborough, Ontario, Canada, assignors to Atomic Energy of Canada Limited, Ontario, Canada
Filed Sept. 30, 1964, Ser. No. 400,512
3 Claims. (Cl. 176—77)

2. The combination of a pair of fuel sections of a fuel rod assembly of a nuclear reactor and an elongated latch device for releasably interconnecting said fuel sections end-to-end, each said fuel section having an end support member and one of said fuel sections having in one of its ends a cavity sufficiently large to receive said latch device, a radially inwardly projecting annular lip surrounding the mouth of said cavity, said latch device comprising an elongated spindle having a base portion, a plurality of resilient collet fingers projecting from said base portion in parallel relation surrounding said spindle, and means for mounting said base portion on an end of the other of said fuel sections to project axially therefrom, said fingers having outwardly facing latching flanges on their free ends for engagement with said lip, said fingers being mounted for spring compression radially inwardly to release said flanges from said lip with said spindle limiting such radially inward compression of said collet fingers.



3,274,072
METHOD FOR TREATING PAPAYA PLANTS TO RECOVER DESIRED CONSTITUENTS THEREFROM
Everette M. Burdick, 4821 Ronda St., Coral Gables, Fla.
Filed July 20, 1964, Ser. No. 383,697
7 Claims. (Cl. 195—2)

1. A method of treating papaya plants to recover desired constituents therefrom comprising the steps of:
(a) extracting a liquid from the plants;
(b) adjusting the pH of the liquid to the range of approximately 4.0 to 4.5;
(c) digesting the liquid at not more than approximately 55° C. until a coagulate is formed therein;
(d) separating the liquid from the coagulate;
(e) treating the liquid to separate the proteolytic enzymes therefrom;
(f) treating the remaining liquid to separate carpaines therefrom;
(g) treating the coagulate to recover carotenoids therefrom; and
(h) treating the remaining coagulate to recover the chlorophylls therefrom.

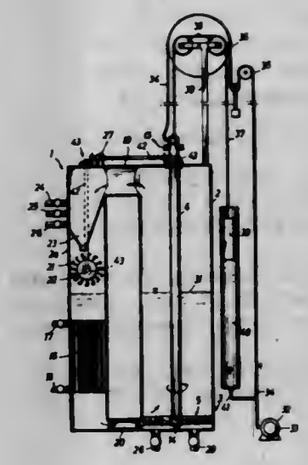
3,274,073
METHOD FOR RECOVERING CHLOROPHYLLS FROM PAPAYA PLANTS
Everette M. Burdick, 4821 Ronda St., Coral Gables, Fla.
Filed July 20, 1964, Ser. No. 383,890
24 Claims. (Cl. 195—2)

1. A method of recovering chlorophylls from papaya plants comprising the steps of:
(a) extracting a liquid from the plants,
(b) adjusting the pH of the liquid to 4.0–4.5,
(c) heating and digesting the liquid until a coagulate is formed therein,
(d) separating the liquid from the coagulate,
(e) neutralizing the coagulate and heating to destroy the enzymes present,
(f) dehydrating the coagulate,
(g) solvent extracting the dehydrated coagulate with hydrocarbon solvents having a boiling range of approximately 65° C. to approximately 85° C. for separation of carotenoids from the chlorophyll containing coagulate,
(h) solvent extracting the coagulate with a solvent to recover the chlorophylls from the residue,
(i) separating the solvent from the chlorophylls, and
(j) refining the separated chlorophylls.

3,274,074
PREPARATION OF SALICYCLIC ACID BY MICROBIOLOGICAL OXIDATION OF NAPHTHALENE IN THE PRESENCE OF A BORON COMPOUND
James E. Zajic and William J. Dunlap, Oklahoma City, Okla., assignors to Kerr-McGee Oil Industries, Inc., a corporation of Delaware
No Drawing. Filed Oct. 24, 1963, Ser. No. 318,508
15 Claims. (Cl. 195—51)

1. A process for preparing salicylic acid comprising cultivating a microorganism capable of oxidizing naphthalene to salicylic acid to the genus Pseudomonas in an aqueous nutrient medium containing naphthalene and an added boron compound to thereby microbiologically oxidize the naphthalene to salicylic acid.

3,274,075
DEVICE FOR AERATING FERMENTING LIQUIDS IN PARTICULAR FOR THE PRODUCTION OF BAKERS' YEAST
Hans Kersting, Am Heidkamp 19, Ratingen, Germany
Filed Oct. 14, 1964, Ser. No. 403,773
Claims priority, application Germany, Oct. 15, 1963, K 51,088
11 Claims. (Cl. 195—142)

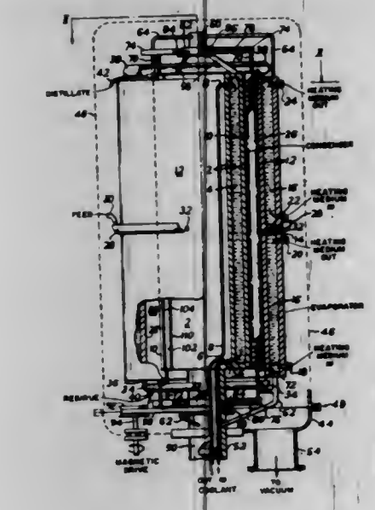


1. In a device for aerating fermenting liquids in particular for the production of bakers' yeast, the improvement comprising: an upright fermentation vessel, an air feed pipe extending in the direction of the longitudinal axis of said fermentation vessel, a series of aerating elements connected to and having openings leading from said pipe, said elements extending radially from said pipe, said elements comprising hollow bodies having porous walls, said elements being arranged in a helically-spiral imbricated pattern, the overlapping edges of said elements being spaced to provide passages for flow of fermentation liquid therebetween, said elements being each set at a predetermined angle to the longitudinal axis of said fermentation vessel.

3,274,076
FRACTIONATING STILLS
Peter Ridgway Watt, Reigate, Surrey, England, assignor to Vitamins Limited, London, England, a British company
Filed Feb. 19, 1963, Ser. No. 259,544
Claims priority, application Great Britain, Mar. 1, 1962, 8,059/62
13 Claims. (Cl. 202—187)

1. A molecular fractionating still, comprising a stationary convex first heat transfer surface surrounded by a stationary concave second heat transfer surface, one of said surfaces being a surface of a coolable condenser and

the other of said surfaces being a surface of a heatable evaporator, said surfaces being surfaces of revolution about the same vertical axis, at least one liquid transfer element mounted for rotation about said axis between



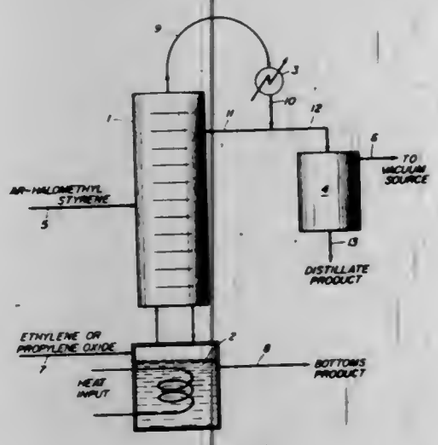
said surfaces and in scraping contact with the condenser surface and having a plurality of inclined channels for transferring liquid from the condenser surface to higher points on the evaporator surface.

3,274,077

DISTILLATION OF CRUDE Ar-HALOMETHYLSTYRENES IN PRESENCE OF AN ALKYLENE OXIDE

David Solomon Hoffenberg, Norwalk, and Harry Francis Cosway, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Sept. 18, 1962, Ser. No. 224,517
8 Claims. (Cl. 203—8)



1. A process of purifying crude ar-halomethylstyrene to obtain the desired ar-halomethylstyrene product in greater than 95% purity, which comprises subjecting said crude material to vacuum distillation in a column fabricated from and packed with a non-ferrous material, said distillation being carried out in the presence of 0.005 to 2%, based on the weight of the crude material, of a member selected from the group consisting of ethylene oxide and propylene oxide and about 0–5%, based on the weight of the crude material, of a carbocyclic nitroaromatic compound.

3,274,078

PROCESS FOR TREATING THE SURFACE OF ALUMINIUM OR ALUMINIUM ALLOY WITH AN ORGANOHYDROGENPOLYSILOXANE

Yuji Tsuji, Shinagawa-ku, Tokyo-to, Japan, assignor to Tokyo Shibaura Denki Kabushiki Kaisha, Kawasaki-shi, Japan, a joint-stock company

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,963
Claims priority, application Japan, Oct. 6, 1961, 36/35,865
3 Claims. (Cl. 204—35)

1. Process for treating the surface of a metal consisting essentially of comprising the steps of forming a porous film of aluminum oxide by electrolytically anodizing said metal, applying an organohydrogenpolysiloxane onto said porous film of aluminum oxide immediately after said anodizing step and then heating said thus-treated metal surface.

3,274,079

BATH AND PROCESS FOR THE ELECTRODEPOSITION OF NICKEL AND NICKEL-COBALT ALLOYS

Frank Passal, Detroit, Mich., assignor, by mesne assignments, to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1962, Ser. No. 211,128
14 Claims. (Cl. 204—43)

1. The process for electrodepositing a nickel plate by passing a current from an anode to a cathode to be plated which comprises electrodepositing said nickel plate from an aqueous bath consisting essentially of operative amounts of 10.5 to 73 g./l. nickel ion Ni^{++}, 2.43 to 36.5 g./l. ammonium ion NH_4^+, 17.0 to 120 g./l. sulfate ion $SO_4^=$, and 2.57 to 38.5 g./l. fluoride ion F^-.

5. The process for electrodepositing a nickel-cobalt alloy plate by passing a current from an anode to a cathode to be plated which comprises electrodepositing said nickel-cobalt alloy plate from an aqueous bath consisting essentially of operative amounts of 10.5 to 73 g./l. nickel ion Ni^{++}, 0.21 to 19.0 g./l. cobalt ion Co^{++}, 2.43 to 17.0 g./l. ammonium ion NH_4^+, 17.3 to 150 g./l. sulfate ion $SO_4^=$, and 2.57 to 18.0 g./l. fluoride ion F^-.

3,274,080

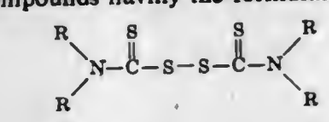
BRIGHTENERS AND PROCESS FOR CYANIDE ZINC ELECTRODEPOSITION

Robert E. Harrover, Jr., North Huntingdon Township, Westmoreland County, Pa., assignor, by mesne assignments, to Cowles Chemical Company, Shaker Heights, Ohio, a corporation of Ohio

No Drawing. Filed May 25, 1962, Ser. No. 197,598
17 Claims. (Cl. 204—55)

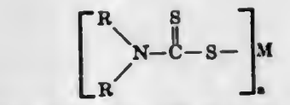
1. An aqueous alkaline zinc cyanide plating solution for electrodepositing zinc containing zinc ions and at least one brightener compound selected from the group consisting of compounds haviny the formulas

(1)



and

(2)



where R is selected from the group consisting of monovalent and divalent saturated substituted and unsubstituted hydrocarbon radicals having from 1 to 4 carbon atoms and the substituents are selected from the group consisting of $—NH_2$, —OH and $—COOR_1$, and R_1 is selected from the group consisting of H, NH_4 and alkali metal salts, M is selected from the group of monovalent and divalent materials consisting of NH_4, CH_3NH_3, $(CH_3)_2NH_2$, Na, K, Ca, Zn, Mg, Cd, Ni, Fe, Co, Mo and Mn and *n* is equal to the valence of M.

3,274,081

ELECTROCHEMICAL PROCESS FOR MAKING FLUORINE-CONTAINING CARBON COMPOUNDS

Wilbur H. Pearlson, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Sept. 20, 1962, Ser. No. 225,150
7 Claims. (Cl. 204—59)

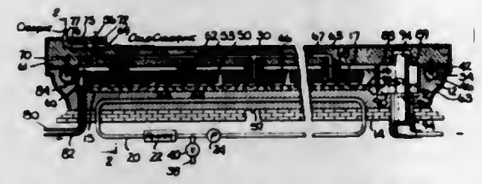
1. In a process for the electrochemical fluorination of an organic acid halide starting compound utilizing anhydrous liquid hydrogen fluoride, the improvement which comprises introducing into the electrochemical cell as the starting compound a partially chain halogen-substituted organic acid halide in which the halogen substitution is only fluorine and having attached to the acid halide radical an open chain comprising at least two skeletal atoms, which skeletal atoms are only carbon and not more than one hetero atom and that one hetero atom separated from the acid halide radical by at least one carbon atom, and having at least one of said skeletal carbon atoms of the chain selected from the group consisting of a hydrogen bearing carbon atom and an unsaturated carbon atom.

3,274,082

GAS REMOVAL FROM ELECTROLYTIC CELLS

Joshua Szechtman, deceased, late of Byram, Conn., by Rebecca Szechtman, executrix, Byram, Conn., assignor to Chlormetals Incorporated, a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,597
7 Claims. (Cl. 204—60)



1. A process for producing chlorine which comprises electrolyzing a molten metal chloride salt in a substantially airtight electrolysis zone maintained at a pressure close to but not exceeding the existing atmospheric pressure and at a temperature sufficient to maintain said salt in a molten state, whereby gaseous chlorine is evolved, withdrawing from said zone evolved gaseous chlorine at substantially the temperature existing in said zone, co-mingling said evolved gaseous chlorine with a second stream consisting essentially of substantially pure chlorine, said second stream having a greater linear velocity and at least twice the mass of said evolved chlorine stream, and withdrawing from said process the co-mingled chlorine streams in the gaseous phase at a temperature of less than about 500° F., said second chlorine stream having sufficient mass and having a sufficiently low temperature relative to said evolved chlorine to produce a temperature in said co-mingled chlorine stream of less than about 500° F. in the absence of any indirect heat exchange.

3,274,083

ELECTROLYTIC PRODUCTION OF TITANIUM

Linden E. Snyder, Las Vegas, Nev., assignor to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 13, 1963, Ser. No. 280,090
7 Claims. (Cl. 204—64)

1. In a process in which titanium metal is produced by electrolysis of a titanium halide in a cell having an anode and a cathode characterized by a perforated surface facing said anode, the said perforated cathode surface separating a fused halide salt electrolyte in said cell into a catholyte and an anolyte, the improvements comprising;

(a) passing electric current through said cell between said anode and said cathode, meanwhile,

(b) during an initial period introducing $TiCl_4$ into said catholyte at a rate to provide a current to $TiCl_4$ ratio at all times greater than 9 faradays per mol of $TiCl_4$, and for a time sufficient to deposit a porous titanium structure on said cathode, and,

(c) subsequently gradually increasing the rate of introduction of $TiCl_4$ into said catholyte while maintaining a rate just below a rate which would cause the presence of an appreciable amount of $TiCl_4$ in the chlorine by-product from said cell, until a steady state condition of operation is attained during which $TiCl_4$ is introduced at a rate to provide a current to $TiCl_4$ ratio of from 4.5 to 7 faradays per mol of $TiCl_4$.

3,274,084

ELECTROLYTIC REDUCTIVE COUPLING PROCESS

Manuel M. Baizer, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 1, 1965, Ser. No. 468,997
8 Claims. (Cl. 204—72)

1. The method of producing a reduced, coupled product which comprises subjecting an aqueous solution of α,β-olefinic ketone in contact with a cathode to electrolysis, the said aqueous solution containing a quaternary ammonium salt, and recovering a reduced, coupled product of said ketone from the aqueous solution.

3,274,085

GALVANIC ANODE

Herbert C. Rutemiller and Allen M. Montgomery, Cleveland, Ohio, assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 25, 1963, Ser. No. 275,497

1. A thermally treated galvanic anode composed of an aluminum base alloy consisting essentially of aluminum, from 3.5% to 9.0% of zinc, from 0.05% to 0.20% tin, and from 0.02% to 0.08% boron, the alloy containing a total of not over 0.50% of all impurities, said anode having a homogeneous internal structure resulting from a solution heat treatment and rapid cooling to room temperature and characterized by a more electronegative solution potential than the same anode without boron.

3,274,086

IRRADIATED RUBBERY ELASTOMERIC ETHYLENE-ALKYL ACRYLATE INTERPOLYMERS

James E. Potts, Millington, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 29, 1962, Ser. No. 206,148
9 Claims. (Cl. 204—159.14)

1. A method for producing ethylene-alkyl acrylate copolymers of low melt index which comprises the step of irradiating a normally solid ethylene-alkyl acrylate interpolymer having an initial melt index between 1 and 70 and containing from 5 to 40 weight percent of combined alkyl acrylate and a major amount of combined ethylene with ionizing radiation in an amount from about 0.5 to 50 megareps commensurate with the initial melt index of the copolymer such that the resulting irradiated copolymer has a melt index less than 1.0.

3,274,087

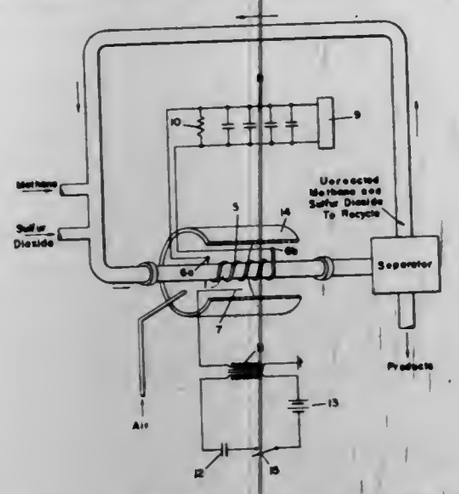
PROCESS FOR THE PREPARATION OF ETHANE BY FLASH PHOTOLYSIS

James L. Lauer, Penn Wynne, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 3, 1962, Ser. No. 241,620
2 Claims. (Cl. 204—162)

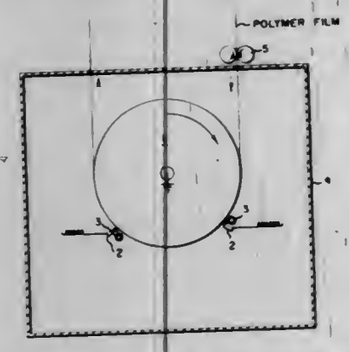
1. Method for preparing ethane which comprises sub-

jecting a mixture of methane and sulfur dioxide at a total partial pressure of from 10 mm. to 1000 mm. of mer-



cury to multiple flashes of ultraviolet radiation sufficient to provide from 100 to 50,000 joules of energy.

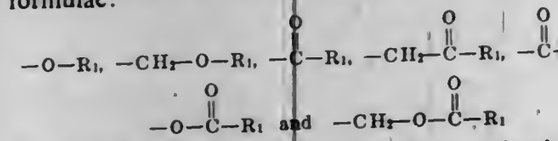
3,274,088
SURFACE TREATMENT OF POLYMERIC SHAPED STRUCTURES
Leon E. Wolinski, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 27, 1961, Ser. No. 127,242
16 Claims. (Cl. 204—165)



1. A process for modifying and improving the surface characteristics of shaped structures of fluorocarbon polymers which comprises subjecting the surface of a shaped structure of a fluorocarbon polymer containing at least 5 mole percent of recurring structural units having the formula:



wherein $-X_1$ is a monovalent radical selected from the group consisting of —H, —F, —Cl and $-CF_3$; and $-X_2$ is a monovalent radical selected from the group consisting of —H, —F, $-R_1$ and R_2, wherein $-R_1$ is a radical selected from the group consisting of aryl and alkyl radicals having 1 to 8 carbon atoms and $-R_2$ is a radical selected from the group consisting of radicals of the formulae:

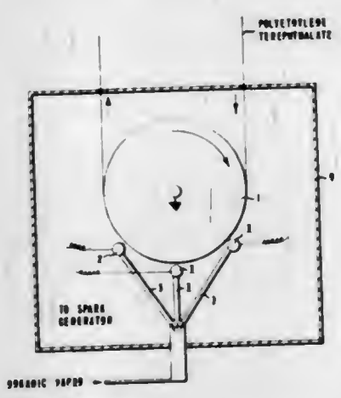


to the action of an electrical discharge maintained at a voltage in excess of 2000 volts and having an energy level below 15 electron volts in a gaseous atmosphere having a moisture content not in excess of 3.5 grams per cubic meter, measured at 25° C.

3,274,089
SURFACE TREATMENT OF POLYMERIC SHAPED STRUCTURES
Leon E. Wolinski, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 318,149
7 Claims. (Cl. 204—165)

1. A process for modifying and improving the surface characteristics of polymeric shaped structures which comprises subjecting the surface of a polymeric shaped structure to the action of an electrical discharge maintained at a voltage in excess of 2000 volts and having an energy level below 15 electron volts, in a gaseous atmosphere at substantially atmospheric pressure consisting essentially of the vapor of an organic agent having a vapor pressure of at least one millimeter of mercury at 60° C., in a gaseous carrier medium which will sustain the electrical discharge, said organic agent constituting less than about 5% by volume of said atmosphere and selected from the group consisting of polymerizable organic compounds, non-polymerizable organic compounds having replaceable hydrogen atoms, and perhalohydrocarbons having a bond disassociation energy for the carbon halogen bond below 100 kilocalories.

3,274,090
METHOD OF PRODUCING NON-FOGGING FILMS
Leonard Edward Amborski, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 18, 1962, Ser. No. 224,400
6 Claims. (Cl. 204—165)

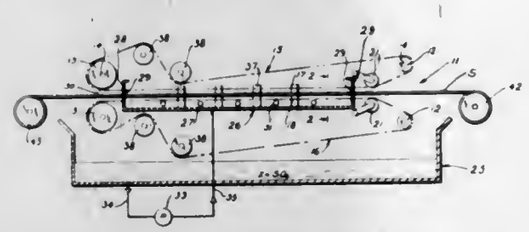


1. A process for improving the water-wettability of the surface of polyethylene terephthalate film which comprises subjecting the surface of said film to the action of an electrical discharge having an energy level below 15 electronvolts, in a gaseous atmosphere saturated with, as the sole active ingredient, the vapor of an organic agent selected from the group consisting of dimethyl formamide, triethyl phosphite, vinyl ethyl ether, acetone, and N-aminopropylmorpholine whereby to render said surface water wettable to a degree such that the contact angle for said surface is no more than about 10°.

3,274,091
METHOD OF PRODUCING NON-FOGGING FILMS
Leonard Edward Amborski, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 18, 1962, Ser. No. 224,399
6 Claims. (Cl. 204—165)

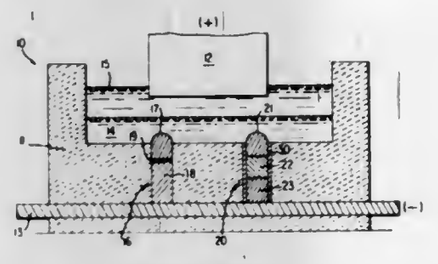
1. A process for improving the water-wettability of the surface of a normally hydrophobic, organic polymeric film which comprises subjecting the surface of said film to the action of an electrical discharge having an energy level below 15 electron volts, in a gaseous atmosphere saturated with, as the sole active ingredient, the vapor of an organic agent selected from the group consisting of acrylic acid and diethyl maleate, whereby to render said surface water wettable to a degree such that the contact angle for said surface is less than 15°.

3,274,092
APPARATUS FOR ELECTROPLATING NARROW STRIPS
Israel H. Marantz, New York, N.Y., assignor to Columbia Cable & Electric Corporation, Brooklyn, N.Y., a corporation of New York
Filed Aug. 28, 1962, Ser. No. 219,869
5 Claims. (Cl. 204—224)



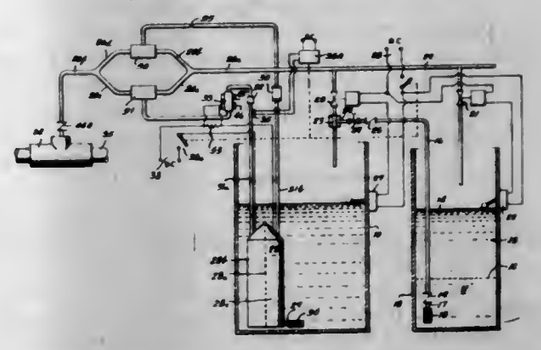
1. Equipment for electroplating the edges of a narrow elongated strip of metal which comprises a pair of elongated masking belts having spaced vertically aligned parallel runs extending in substantially a horizontal plane between which the metal strip extends, each of said masking belts being of magnetic material and having a non-metallic surface, whereby the parallel runs will adhere to the top and bottom surfaces of said metal strip to mask such surfaces, a tank positioned beneath the parallel runs of said masking belts, said metal strip and the associated portions of the parallel runs of the masking belt adhering thereto, being positioned in said tank, means to effect an electroplating action to the exposed edges of the metal strip in said tank and means to advance the metal strip and the masking belts while said electroplating action is taking place.

3,274,093
CATHODE CONSTRUCTION FOR ALUMINUM PRODUCTION
Curtis J. McMinn, Florence, Ala., assignor to Reynolds Metal Company, Richmond, Va., a corporation of Delaware
Filed Aug. 29, 1961, Ser. No. 134,609
9 Claims. (Cl. 204—243)



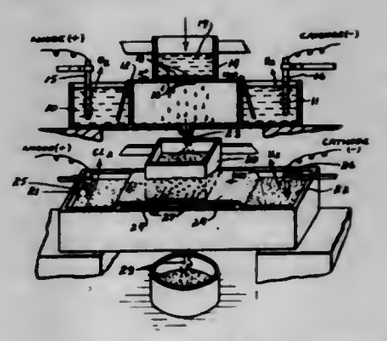
1. An electrolytic cell for the production of aluminum, including a cathode construction comprising a collector bar having a surface adapted for contact with the molten contents of the cell and a stem portion adapted for connection to a cathode voltage supply, said stem portion of the collector bar comprising a section of cermet material having a metal component and containing a refractory hard metal ceramic constituent, said metal component being distributed substantially throughout the cermet, the proportion of said refractory hard metal constituent relative to the metal component of the cermet being graded lengthwise of that section.

3,274,094
APPARATUS FOR THE CHLORINATION OF WATER
Alfred Klein, Brooklyn, N.Y., assignor, by mesne assignments, to Chemagnetics Controls, Inc., New York, N.Y., a corporation of New York
Filed Feb. 24, 1965, Ser. No. 434,823
The portion of the term of the patent subsequent to October 5, 1982, has been disclaimed
15 Claims. (Cl. 204—275)



1. Apparatus for the introduction of hypochlorite into a water supply line so that the flow rate of hypochlorite added is relatively independent of the flow rate in said water supply line and including a chamber for holding a dilute salt bath, said apparatus comprising electrolyzing means immersed in said dilute salt bath and adapted to electrolyze said salt solution into separate constituents by passing electric current therethrough, one of said constituents constituting an electrolyzed liquid and the other of said constituents constituting electrolyzed chlorines; combining means for combining said electrolyzed liquid and said electrolyzed chlorine outside said electrolyzing chamber to form hypochlorite; and regulating means responsive to the flow rate in said water supply line to control said introduction of hypochlorite to said water supply line so as to maintain the flow rate thereof substantially independent of the flow rate in said water supply line, said regulating means comprising a valve having an orifice variable within a range of open values and means sensitive to flow rate in said supply line adapted to increase and decrease the cross-section of said orifice in inverse response to variation in said rate, said regulating means being interposed in the fluid circuit between said electrolyzing chamber and said water supply line.

3,274,095
MEANS FOR TRANSFER OF IONS
Laurence Meyers, Rego Park, N.Y.
(3736 High Vista Drive, Dallas, Tex. 75234)
Filed Jan. 17, 1962, Ser. No. 166,750
2 Claims. (Cl. 204—301)



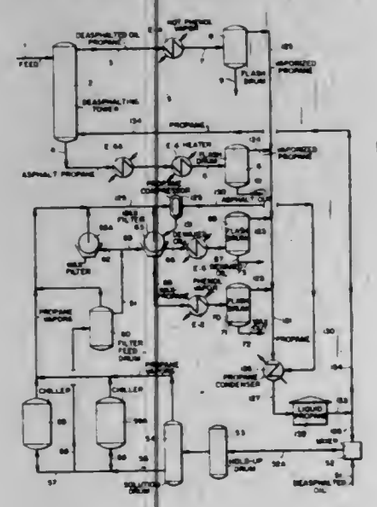
1. In an apparatus for the modification of water containing dissolved salts, the combination comprising: means for collecting and feeding water transversely through a perforated area of a cation exchange mat, two separate chambers for respectively giving and receiving cations,

said cation exchange mat extending longitudinally between said chambers, the opposite non-perforated end portions of said cation exchange mat being partially immersed in each of said respective chambers, and, second means for receiving and feeding the fluid from said perforated area of said cation exchange mat transversely through a perforated area of an anion exchange mat, two separate chambers for respectively giving and receiving anions, said anion exchange mat extending longitudinally between said chambers, the opposite non-perforated end portions of said anion exchange mat being partially immersed in each of said respective chambers, and, second whereby each of said mats provides paths for the continuous flow of ions longitudinally therethrough and means for the flow of fluid transversely therethrough.

3,274,096
SOLVENT RECOVERY IN COMBINED SOLVENT REFINING PROCESS

James D. Bushnell, Berkeley Heights, John L. Ehrler, Landing, and Harold N. Weinberg, East Brunswick, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Sept. 27, 1962, Ser. No. 227,123
2 Claims. (Cl. 208—34)



1. An improved process for refining lubricating oil fractions and for vaporizing, condensing and recovering vaporizable solvents used in conjunction with said refining process which comprises in combination—

(a) a propane deasphalting step, a phenol extraction step, and a propane dewaxing step, wherein

(b) the phenol extract and nonaromatic phenol raffinate phases from the phenol extraction step are separately heated to a temperature at which hot phenol vapors are selectively removed and combined, cooled and condensed; and wherein

(c) a deasphalted oil/propane phase and the asphalt/propane phase are separated by the propane deasphalting step, and a dewaxed oil/propane phase, and the slack wax/propane phase are separated by the propane dewaxing step, and

(d) propane is removed from the respective separated phases by heating the separated phase and flashing the propane from the respective phases,

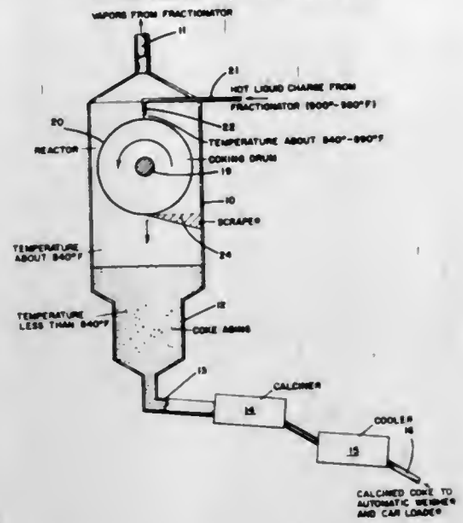
(e) the improvement which comprises cooling and condensing the hot phenol vapors by indirect heat transfer between the hot phenol vapors and the relatively cool deasphalted oil/propane phase, the dewaxed oil/propane phase and the slack wax/propane phase, simultaneously heating said phases and vaporizing the propane therefrom—

(f) separating, condensing and collecting the vaporized propane and collecting said condensed phenol.

3,274,097
METHOD AND APPARATUS FOR CONTROLLING CARBON CRYSTALLIZATION

James A. Biehl, Robinson, Ill., assignor to Marathon Oil Company, a corporation of Ohio

Filed Oct. 4, 1965, Ser. No. 496,738
9 Claims. (Cl. 208—46)



1. A continuous process for producing coke having a high index of graphitic crystallinity, which comprises treating a residuum obtained from fractionation of crude oil without aromatic addition by preheating in a furnace to a maximum temperature of about 920° F., continuously introducing the preheated liquid at a reduced temperature of about 890° F. in a thin stream onto the top of a moving coking surface in a coking vessel maintained at near atmospheric pressure, moving carbon coke in a thin layer out of contact with said stream immediately after it is formed on said surface so as to prevent deposit of additional liquid thereon, and discharging the formed carbon coke from the coking surface into a storage area in the coking vessel maintained out of contact with said entering stream.

3,274,098
HYDROREFINING OF PETROLEUM CRUDE OIL AND CATALYST THEREFOR

John G. Gatsis, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 13, 1963, Ser. No. 323,273
10 Claims. (Cl. 208—264)

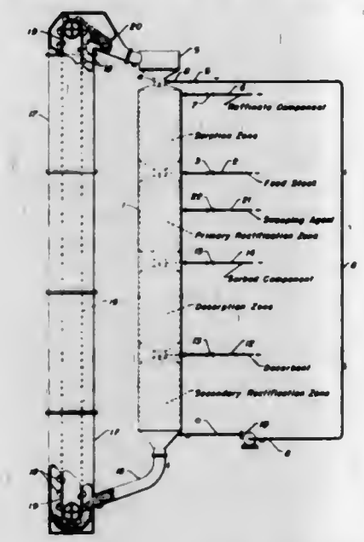
5. A process of hydrorefining a hydrocarbon charge stock which comprises forming the reaction product of an oxide of molybdenum and hydrogen peroxide, commingling said reaction product with said hydrocarbon charge stock, distilling the resulting mixture to remove water, thereby forming a colloidal suspension of said reaction product within said charge stock and thereafter reacting said colloidal suspension with hydrogen at a temperature above about 225° C. and at a pressure greater than about 500 pounds per square inch gauge.

3,274,099
CONTINUOUS SOLID-FLUID CONTACTING PROCESS

Donald B. Broughton, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Feb. 19, 1963, Ser. No. 260,345
7 Claims. (Cl. 208—310)

1. An improvement in the process for continuously separating the components of a fluid mixture of compounds, at least one component of which is selectively sorbed from the mixture by contact with a solid sorbent and at least one other component of which is relatively less sorbed on the solid, in which process said mixture in fluid phase is charged into a bed of solid sorbent particles maintained in continuous, cyclic and effectively countercurrent flow relative to the fluid phase, raffinate is withdrawn from the bed of particles at a point downstream from the point of charging feed stock, desorbent which displaces sorbate component from the solid sorbent is charged into said bed of sorbent particles at a point downstream from the point of withdrawing raffinate, sorbate in admixture with desorbent is withdrawn from the fluid stream at a point downstream from the point at which desorbent is charged into the process flow, a portion of

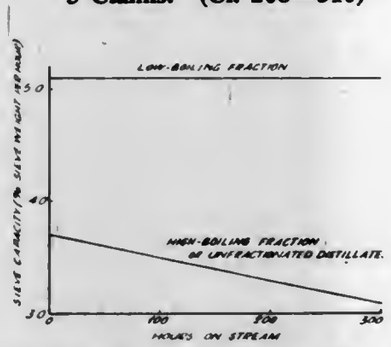


said raffinate stream and a portion of said sorbate stream continuously refluxed into the next adjacent downstream portion of sorbent relative to the points of withdrawing said sorbate and said raffinate streams from the sorbent, the improvement in said process which comprises charging a raffinate-type compound having a boiling point which differs sufficiently from the boiling point of said raffinate component to be separable from said raffinate component by distillation into the fluid phase at a point between the feed stock inlet and the sorbate outlet, while maintaining the fluid phase in contact with the solid sorbent continuously in equilibrium with the solid sorbent throughout the process cycle.

3,274,100
SEPARATION PROCESSES USING MOLECULAR SIEVES

Alan Arthur Yeo and Roger Templeton Lewis Mowll, Sunbury-on-Thames, Middlesex, England, assignors to The British Petroleum Company Limited, London, England, a joint-stock corporation of Great Britain

Filed Apr. 23, 1963, Ser. No. 275,128
Claims priority, application Great Britain, May 2, 1962, 16,827/62
3 Claims. (Cl. 208—310)

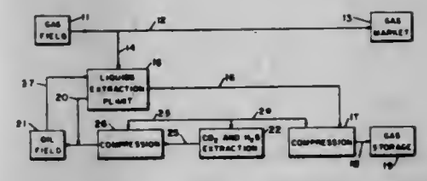


1. A process for separating straight-chain hydrocarbons from petroleum fractions boiling above C_{10} and containing molecular sieve deactivating hydrocarbons comprising fractionating the feedstock at a temperature within the range of 220–300° C. to obtain a lower-boiling fraction substantially free of deactivating hydrocarbons and a higher-boiling fraction containing substantially all the deactivating hydrocarbons and treating each fraction with a 5 A. molecular sieve in separate systems to extract straight-chain hydrocarbons.

3,274,101
SOLVENT RECOVERY PROCESS

Robert C. West and Frank H. Hunter, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company, a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,736
9 Claims. (Cl. 208—340)



1. A method for processing natural gas which comprises

(a) transmitting natural gas through a gas transmission line from a gas producing area to a gas marketing area;

(b) withdrawing a portion of the gas passing through said transmission line at an intermediate point between said gas producing area and said gas marketing area and extracting ethane and higher hydrocarbons from the gas withdrawn from said transmission line;

(c) passing the ethane and higher hydrocarbons extracted from the gas withdrawn from said transmission line to an oil field for use in an oil recovery operation;

(d) compressing the dry gas remaining after ethane and higher hydrocarbons have been extracted from the gas withdrawn from said transmission line and injecting said dry gas into a gas storage reservoir during periods of low demand for gas;

(e) recovering compressor combustion gases produced in the compression of said dry gas, extracting carbon dioxide and hydrogen sulfide from said combustion gases, and passing the extracted carbon dioxide and hydrogen sulfide to said oil field for use in said oil recovery operation during periods of low market demand for gas;

(f) returning the dry gas remaining after ethane and higher hydrocarbons have been extracted from the gas withdrawn from said transmission line to said transmission during periods of high market demand for gas;

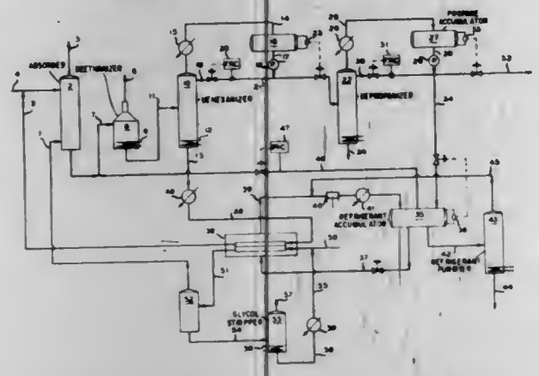
(g) withdrawing gas from said gas storage reservoir, compressing the gas withdrawn from said reservoir, treating the gas withdrawn from said reservoir for the extraction of carbon dioxide and hydrogen sulfide, and passing the treated gas to said gas marketing area during periods of high market demand for gas; and,

(h) recovering compressor combustion gases produced in the compression of said gas withdrawn from said storage reservoir, extracting carbon dioxide and hydrogen sulfide from the recovered combustion gases, and passing the extracted carbon dioxide and hydrogen, together with carbon dioxide and hydrogen sulfide extracted from said gas withdrawn from said gas storage reservoir, to said oil field for use in said oil recovery operation during periods of high market demand for gas.

3,274,102
NATURAL GAS SEPARATION WITH REFRIGERANT PURIFICATION

Douglass L. Brazell, Bill E. Greenfield, and Harold W. Barber, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 16, 1963, Ser. No. 302,556
5 Claims. (Cl. 208—341)



1. A gasoline absorption process comprising:
introducing a natural gas stream to an absorption zone;
introducing lean oil to said absorption zone;
countercurrently contacting said stream with said oil in said absorption zone to effect absorption of the hydrocarbon components in said stream by said oil;
passing the resulting rich oil from said absorption zone to a deethanizing zone for removing ethane and lighter materials;
passing the deethanized rich oil to a stripping zone for removal of the absorbed hydrocarbons from the oil;
withdrawing the resulting lean oil from said stripping zone;
withdrawing the resulting vaporized hydrocarbons from said stripping zone and condensing same;
passing the condensed hydrocarbons to a depropanizing zone for removing propane and lighter materials;
withdrawing the resulting depropanized hydrocarbons from said depropanizing zone as the gasoline fraction product;
withdrawing the resulting vaporized hydrocarbons from said depropanizing zone and condensing same as an impure propane product;
passing a portion of said condensed impure propane product to a refrigeration system;
passing said natural gas stream and said lean oil prior to said introducing steps in indirect heat exchange relationship with said impure propane to cool said stream and lean oil and to vaporize said impure propane;
compressing the thus vaporized said impure propane;
condensing the thus compressed impure propane and recycling same to said heat exchange relationship; and
withdrawing and passing noncondensible material from said condensed impure propane to said deethanizing zone for removal of the noncondensibles and recovery of propane.

3,274,103
FILTRATION

Loyd W. Adams, Dumas, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Apr. 15, 1963, Ser. No. 272,879
4 Claims. (Cl. 210—23)

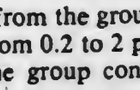
1. A filtration process which comprises coating a filter with a mixture of (1) a solid polymer of 1-olefins containing from 2 to 8 carbon atoms per molecule and (2) a filter aid material, and passing through the resulting coated filter a fluid mixture containing at least one liquid constituent which is immiscible with at least one of the other constituents, whereby said one liquid constituent is separated from said at least one other constituent.

3,274,104
SOLVENT EXTRACTION PROCESS

Charles E. Hamilton, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 1, 1963, Ser. No. 277,144
11 Claims. (Cl. 210—39)

7. A method which comprises passing an aqueous stream containing organic pollutants through a bed of activated charcoal to load the bed with adsorbed organic pollutants and thereafter eluting the wet charcoal bed with a solvent admixture of one part of



wherein R_1 is selected from the group consisting of hydrogen and methyl with from 0.2 to 2 parts of R_2OH wherein R_2 is selected from the group consisting of methyl and 2-propyl groups.

3,274,105
FIRE EXTINGUISHING COMPOSITION

Norbert Mevel, Antony, France, assignor to Societe d'Etudes Chimiques pour l'Industrie et l'Agriculture S.E.C.P.I.A., Paris, France

No Drawing. Filed July 15, 1963, Ser. No. 295,213
Claims priority, application France, Aug. 3, 1962, 905,979, Patent 1,338,454
10 Claims. (Cl. 252—2)

1. A method of extinguishing a fire, which method comprises the step of contacting the source of the fire with an aqueous solution containing about 300-600 grams/liter of potassium acetate and in addition a sufficient quantity of tetrapotassium pyrophosphate to increase the extinguishing effect of said potassium acetate, said solution having a pH higher than 7.

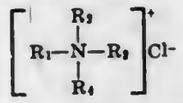
7. A process for the preparation of an aqueous potassium acetate fire extinguishing solution, which process comprises gradually adding acetic acid to an aqueous mixture of potassium carbonate and potassium hydroxide, the molar ratio K_2CO_3/KOH of the mixture being about 0.5:1 to about 1.25:1, the quantity of acetic acid being sufficient to neutralize said mixture, said solution having a pH above 7.

3,274,106
FREEZE-THAW STABILIZERS FOR QUATERNARY AMMONIUM COMPOUNDS

Leon D. Smiens, Minneapolis, Minn., assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,565
6 Claims. (Cl. 252—8.75)

1. A composition consisting essentially of a major amount of a fatty quaternary ammonium chloride compound and a minor amount sufficient to impart freeze-thaw stability to the composition of a dialkyl sulfate salt of a fatty amine, said fatty quaternary ammonium chloride compound having the formula:



wherein R_1 is selected from the group consisting of alkyl, arylalkyl and cycloalkyl, having saturated or unsaturated hydrocarbon chains of 12 to 26 carbon atoms, R_2 and R_3 are selected from the group consisting of R_1 and alkyl of 1 to 8 carbon atoms, and R_4 is an alkyl of 1 to 8 carbon atoms, and said dialkyl sulfate salt of a fatty amine having the formula:

$$[R_5R_6NHR']^+[R''SO_4]^-$$

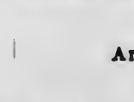
wherein R_5 is selected from the group consisting of saturated and ethylenically unsaturated alkyls of 8 to 26 carbon atoms, R_6 is selected from the group consisting of hydrogen and saturated or unsaturated alkyls of 1 to 26 carbon atoms and R' and R'' are alkyls of 1 to 8 carbon atoms.

3,274,107
LUBRICANT COMPOSITION CONTAINING A SULFIDE

Glenn R. Wilson, Cambridge, Mass., Kenneth L. McHugh, Kirkwood, Mo., and John O. Smith, Swampscott, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 30, 1963, Ser. No. 277,021
11 Claims. (Cl. 252—46.4)

1. A lubricant composition consisting essentially of a base fluid comprising a polyphenyl ether and an adjuvant amount of a lubricity improving compound, said polyphenyl ether containing from 3 to 7 benzene rings joined by oxygen as ether linkages and said compound being an aryl Group V element sulfide of the formula



where Ar is an aryl radical, V' is an element selected from the group consisting of phosphorus and antimony, X is a radical selected from the class consisting of aryl and aliphatic hydrocarbon radicals, and Y is a radical selected from the class consisting of aryl hydrocarbon radicals and chlorine radicals.

3,274,108
LUBRICANT COMPOSITIONS CONTAINING POLYESTER ADDITIVES

George Wolfram, Des Plaines, and Theodore H. Szawlowski, Wonder Lake, Ill., and Louis A. Joo, Johnson City, Tenn., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Apr. 15, 1963, Ser. No. 272,863
11 Claims. (Cl. 252—48.6)

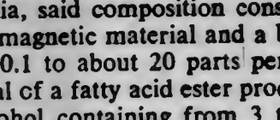
1. An adhesive lubricating composition comprising a mineral lubricating oil and a fluid polyester formed by the reaction of (1) complex carboxylic acids obtained by metalation, carbonation and acidification of aromatic compounds that are characterized by containing about 0.5 to 4.5 weight percent of combined sulfur, about 1.7 to 5.0 aromatic rings per mean aromatic molecule and molecular weights of about 300 to 750 and that are from the group consisting of (a) solvent extracts obtained in the solvent extraction of mineral lubricating oil using a solvent selective for aromatic compounds, (b) hydrogenated solvent extracts, (c) FCC recycle stock, and (d) mixtures thereof; (2) a dibasic acid having about 2 to 20 carbon atoms in the hydrocarbon portion thereof; and (3) a polyol having about 2 to 20 carbon atoms in the hydrocarbon portion thereof, said fluid polyester containing unreacted carboxyl groups and being unsaturated and unpolymerized and being present in an amount sufficient to impart adhesiveness and cohesiveness to the composition.

3,274,109
COMPOSITION OF MATTER HAVING IMPROVED OXIDATIVE STABILITY

George P. Touey and Herman E. Davis, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 21, 1965, Ser. No. 473,857
15 Claims. (Cl. 252—56)

1. A composition of matter having improved oxidative stability comprising (A) an organic substance selected from the group consisting of edible fats, edible oils, gasoline and lubricating oils, (B) an amount sufficient to promote oxidative deterioration of said organic substance of a metal ion selected from the group consisting of copper, cobalt, iron, nickel and manganese, and (C) from about 0.0001 to about 0.5% by weight of said organic substance of a metal deactivator having the following chemical formula:



wherein R is a member selected from the group consisting of propylene and butylene radicals and x is an integer of from 2 to 10.

3,274,110
FERRITE PROCESS

Allan Getto, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 21, 1962, Ser. No. 246,340
2 Claims. (Cl. 252—62.5)

1. The process of sintering a rectangular hysteresis loop ferrite structure of the ferrospinel system to enhance rectangularity of the hysteresis characteristic by the steps of:
preparing an intimate mixture of manganese, copper and ferric oxides wherein on a mol basis the major proportion of said mixture is manganese oxide, the minor proportion of said mixture is copper oxide and the proportion of iron oxide is therebetween;
calcining said mixture at a temperature in the range between 600° C. to 1000° C.;
firing said mixture at a temperature in the range between 1100° C. to 1500° C. to produce solid state reactions within said mixture to provide same with a spinel crystal structure; and,
annealing said ferrite mixture by cooling said fired mixture from said firing temperature to a temperature above 600° C. which is sufficiently high to enhance oxygen absorption, said cooling being carried out in a controlled oxidizing ambient consisting essentially of air that includes from ½% to 5% by volume of water vapor.

3,274,111
MAGNETIC RECORDING MEDIUM WITH SELF-CONTAINED LUBRICANT

Tomohiko Sada, Nakano-ku, Tokyo, and Minoru Nishida, Ichikawashi, Chiba-ken, Japan, assignors to Sony Corporation, Shingawaku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 5, 1963, Ser. No. 306,687
Claims priority, application Japan, Sept. 17, 1962, 37/40,269
6 Claims. (Cl. 252—62.5)

1. A magnetic composition for use in magnetic recording media, said composition consisting essentially of a powdered magnetic material and a binder together with from about 0.1 to about 20 parts per 100 parts of magnetic material of a fatty acid ester produced from a monohydroxy alcohol containing from 3 to 12 carbon atoms and at least one saturated monobasic fatty acid containing from 12 to 16 carbon atoms.

3,274,112
ANTICORROSION AND ANTIFREEZE COMPOSITIONS CONTAINING AN ALKALI METAL SALT OF 2,3-DIHYDRO-1,4-DITHIIN-5,6-DICARBOXYLIC ACID

Dale C. Blomstrom, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 12, 1963, Ser. No. 272,546
4 Claims. (Cl. 252—78)

1. The process of protecting a ferrous metal surface against corrosion by water which comprises continuously

contacting the same with an aqueous liquid consisting essentially of an aqueous solution of at least 0.02 percent by weight, based on the weight of the liquid medium, of an alkali metal 2,3-dihydro-1,4-dithiin-5,6-dicarboxylate.

3,274,113

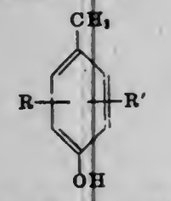
OXIDATION RESISTANT HYDRAULIC OIL

William H. Reiland, Jr., Havertown, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Aug. 28, 1963, Ser. No. 305,213
10 Claims. (Cl. 252—78)

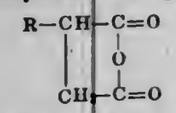
1. An oxidation resistant hydraulic oil comprising a major amount of a mineral oil and

(a) 0.1 to 2.0 weight percent of a hindered phenol having the general formula



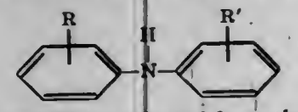
wherein R and R′ are alkyl radicals containing from 1 to 8 carbon atoms,

(b) 0.001 to 0.5 weight percent of an oil soluble alkylated succinic anhydride having the general formula

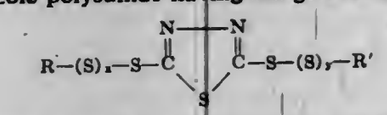


wherein R is an alkyl radical containing from 6 to 20 carbon atoms, and

(c) 0.001 to 2.0 weight percent of an oil soluble material selected from the group consisting of an aromatic secondary amine having the general formula



wherein R and R′ are selected from the group consisting of hydrogen and alkyl radicals containing 1 to 20 carbon atoms, a sulfurized terpene and a 1,3,4-thiadiazole polysulfide having the general formula



wherein R and R′ are hydrocarbon radicals selected from the group consisting of ethyl, propyl, butyl, hexyl, octyl, nonyl, decyl, dodecyl, tridecyl, hexadecyl, octadecyl, cyclohexyl, phenyl, tolyl, benzyl, styryl, and naphthyl, and wherein x and y are integers in the range of from 0 to 8 and wherein the sum of x and y is at least 1 and ranges up to about 16.

3,274,114

PROCESS FOR DETARNISHING AND INHIBITING COPPER AND COPPER ALLOYS

Tibor Thomas Grof, 6517 Landover Road, # 203, Cheverly, Md.

No Drawing. Filed Nov. 4, 1965, Ser. No. 506,407
3 Claims. (Cl. 252—100)

1. A method of detarnishing and inhibiting further tarnishing of a material selected from the group consisting of copper and copper alloys which comprises treating said material with a composition consisting essentially of (a) 5–40% by weight of sulfamic acid (b) 5–40% by weight of a compound selected from the group consisting of

(1) water soluble hexavalent chromium salts of the anions $—Cr_2O_7$ and $—CrO_4$ and the cations sodium, potassium and ammonium and

(2) chromic acid,

and (c) water to bring the total weight percentage up to 100 percent.

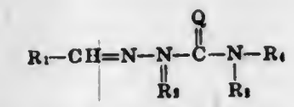
3,274,115

GERMICIDAL COMPOSITIONS

Walter J. Sydor, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Apr. 26, 1962, Ser. No. 190,257, now Patent No. 3,182,082, dated May 4, 1965. Divided and this application Dec. 26, 1962, Ser. No. 247,289
10 Claims. (Cl. 252—106)

1. A germicidal detergent composition comprising a detergent selected from the group consisting of anionic and nonionic detergents and from 0.1 to 5.0% by weight of the detergent of a germicidal compound of the formula:



wherein R_1 is a halogenated ortho-hydroxyaryl radical of less than three 6-membered rings, in which the halogen has an atomic number between 16 and 36, R_2 is a member selected from the group consisting of hydrogen and lower alkyl, R_3 is selected from the group consisting of hydrogen, lower alkyl, cycloalkyl, monocyclic ar(lower alkyl) and monocyclic aryl, R_4 is aryl of less than three 6-membered rings, and Q is selected from the group consisting of O and S; and each aryl moiety in the compound if it is substituted beyond the required substitution in R_1 has the substituents chosen from the group consisting of lower alkyl, lower alkoxy, chloro, bromo and nitro.

3,274,116

IODINE DETERGENT SOLUTION

Jack F. Mills, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,063
5 Claims. (Cl. 252—106)

1. An aqueous germicidal solution of one part by weight of elemental iodine, about 5 to about 15 parts by weight of a water-soluble organic anionic detergent selected from the group consisting of the alkali metal and ammonium higher alkylbenzenesulfonates, higher alkyldiphenyl ether sulfonates and higher primary alkylsulfates and which is soluble in water at least to the extent of about 25 g. per 100 g. of solution, and about 5 to about 15 parts of a lower alkyl monoether of ethylene glycol.

3,274,117

POURABLE AND FREE-FLOWING DETERGENT, WETTING, AND EMULSIFYING COMPOSITIONS

Werner Stein, Dusseldorf-Holthausen, Herbert Weiss, Cologne-Dentz, and Otto Koch, Hilden, Rhineland, Germany, assignors to Henkel & Cie G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed May 7, 1963, Ser. No. 278,780
Claims priority, application Germany, May 17, 1962, H 45,806; Aug. 31, 1962, H 46,801; Jan. 23, 1963, H 48,069
10 Claims. (Cl. 252—161)

1. A surface active composition characterized by outstanding pouring and free-flowing properties comprising (a) about 5–65 weight percent of a salt of an α sulfo fatty acid having 10–24 carbon atoms in its molecule; and (b) about 35–95 weight percent of a surface active α sulfo fatty acid ester salt, the fatty acid radical component of which has 10–24 carbon atoms, the alcohol radical component being derived from a member selected from the group consisting of monovalent alcohols having

1–18 carbon atoms and polyvalent alcohols having 2–4 carbon atoms in their molecules, the cations of said salt being selected from one member of the group consisting of Na, K, Mg, and NH_4 cations.

3,274,118

PREPARATION OF STABLE NON-PYROPHORIC ORGANOMETALLIC COMPOSITIONS

Conrad W. Kamienski and Dennis H. Lewis, Bessemer City, N.C., assignors to Lithium Corporation of America, Inc., New York, N.Y., a corporation of Minnesota

No Drawing. Filed Jan. 22, 1962, Ser. No. 167,966
The portion of the term of the patent subsequent to Apr. 30, 1980, has been disclaimed
2 Claims. (Cl. 252—182)

1. A new and useful composition of matter which is semi-solid to solid at room temperature consisting essentially of (a) at least one semi-solid to solid carrier selected from the group consisting of petroleum, paraffin waxes, diphenyl ether and hydroquinone-1,4-diphenyl ether, and (b) from about 15 to 50 weight percent of an organometallic compound which is normally unstable when exposed to moisture, said organometallic compound being generally uniformly distributed throughout said carrier, said organometallic compound being selected from the group consisting of alkylsodium and alkylpotassium, dialkylberyllium, dialkylmagnesium, dialkylcalcium and dialkylzinc, trialkylboron and trialkylaluminum, the alkyl radicals containing from 3 to 8 carbon atoms; trimethylenedisodium, trimethylenedipotassium, tetramethylenedisodium, tetramethylenedipotassium, pentamethylenedisodium, pentamethylenedipotassium, hexamethylenedisodium and hexamethylenedipotassium.

3,274,119

TRANSPARENT SOAP BAR

Seymore Goldwasser, Teaneck, and Frederick V. Ryer, Oradell, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,225
7 Claims. (Cl. 252—368)

1. A process for preparing a transparent soap bar which comprises working a liquid neat soap composition having about 5% to about 24% total trans-oleic acid radicals therein based upon total fat charge to convert mechanical energy into heat energy and to cause a rise in temperature to within a range of about 100° to 110° F. whose moisture content and salt content have been adjusted prior to the end of the working step to provide 14% to 17.5% moisture and about 0.2% to 0.8% water-soluble, soap-compatible alkali metal salt in the finished bar; and compacting the soap composition into bar form.

2. A transparent soap bar prepared by the process of claim 1.

3,274,120

CATALYST COMPOSITION HAVING INCREASED HYDROXYL GROUPS BOUND THERETO AND METHOD FOR PRODUCING SAME

Victor D. Aftandilian, Watertown, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,081
20 Claims. (Cl. 252—432)

8. A process for increasing the number of hydroxyl groups chemically bound to the surface of a finely-divided inorganic solid which comprises

(a) reaction hydroxyl groups originally chemically bound to the surface of a finely-divided solid with a compound conforming to the formula

$$TR_q$$

wherein T is a metal chosen from the group consisting of the elements of Groups III and IVa; each R is any radical chosen from the group consisting of alkyl, aryl, alkoxy, aryloxy, dihydrocarbon substituted amino and the halogen; and q is a number from 3 to 4; and

(b) hydrolyzing the resulting surface structures.

3,274,121

TRILITHIUM PHOSPHATE ISOMERIZATION CATALYST

Gerard Schneider, Caluire, Rhone, France, assignor to Progil, Paris, France, a society

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,322
Claims priority, application France, Sept. 12, 1962, 909,208
5 Claims. (Cl. 252—437)

3. A process for preparing a trilithium orthophosphate catalyst, having a lithium to phosphorus atomic ratio of from 3.1 to 3.3, which comprises:

(a) mixing, within less than one minute, an aqueous solution of a water-soluble lithium compound with an aqueous solution of sodium orthophosphate, potassium orthophosphate, ammonium orthophosphate, or orthophosphoric acid;

(b) maintaining the pH of the resulting mixture between 7 and 14, and its temperature between 0° and 100° C., to precipitate said trilithium orthophosphate catalyst;

(c) separating the precipitate thus formed from said mixture;

(d) washing the precipitate with water; and

(e) drying the fine crystalline precipitate.

3,274,122

PREPARATION OF PARTIALLY SULPHIDED NICKEL CATALYSTS

Peter Desmond Holmes and Kenneth Hugh Bourne, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Feb. 20, 1963, Ser. No. 260,046
Claims priority, application Great Britain, Mar. 5, 1962, 8,390/62
7 Claims. (Cl. 252—439)

1. A process for the production of a catalyst which comprises contacting a nickel compound on a support, which compound is capable of conversion to elemental nickel, under conditions such that finely divided, or dispersed, elemental nickel is formed, contacting the elemental nickel at a temperature in the range 0–200° C., with an organic sulphur compound selected from the group consisting of thiophenes, thiacycloalkanes and dialkylmonosulphides, whereby the nickel is partially sulphided with from 1 to 40 mol percent of sulphur based on the elemental nickel content of the catalyst, and thereafter contacting the partially sulphided nickel catalyst with a free oxygen-containing gas at a temperature below 250° C. to effect surface oxidation of the nickel component of the catalyst.

3,274,123

ACETYLENE CONTAINER FILLER AND METHOD

John P. Coyne, Hillsborough, and George E. Haddeland, Mill Valley, Calif., assignors, by mesne assignments, to American Cryogenics, Inc., San Francisco, Calif., a corporation of Delaware

No Drawing. Filed July 23, 1963, Ser. No. 298,523
2 Claims. (Cl. 252—446)

1. An improved method for compounding a dimensionally stable acetylene container filler comprising: presoaking charcoal in water and subjecting the charcoal-water mixture to vacuum conditions for at least part of the pre-soaking period, adding finely divided silica to said pre-soaked charcoal with agitation and in an aqueous medium, applying a vacuum to said charcoal-silica com-

bination and adding a lime slurry thereto with agitation, removing the vacuum following said lime slurry addition, and adding asbestos with mixing until all of said ingredients form a homogeneous mass, the ingredients in said mass being approximately in accordance with the following formula:

	Ratio by weight
Water to solids	3.45
Silica to lime	1.75
Asbestos, percent of solids by weight	18.40
Charcoal	18.40

3,274,124

PROCESS OF PREPARING A SILICA-ALUMINA SUPPORTED GROUP VIII METAL HYDROCRACKING CATALYST

Mark J. O'Hara, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,349
6 Claims. (Cl. 252—451)

1. A process for the preparation of a silica-alumina supported Group VIII metal hydrocracking catalyst which comprises commingling an alkali metal silicate solution with a sufficient quantity of a mineral acid solution to form an acidic-salt-containing silica sol, first gelling and aging the resultant salt-containing sol under acid conditions, and then adding an alkaline reagent and further aging the resultant gel under basic conditions, commingling the resultant aged gel with an aluminum salt solution, precipitating a silica-alumina composite therefrom by the addition of a basic precipitant sufficient to raise the pH to at least 8, water washing the freshly precipitated, undried silica-alumina composite sufficiently to remove from about 10% to about 90% but not all of the water soluble salts therefrom, drying said water washed silica-alumina composite at a temperature of from about 200° F. to about 500° F., further water washing the resultant dried silica-alumina composite sufficiently to remove the remaining water soluble salts therefrom, calcining the thus purified silica-alumina composite at a temperature of from about 800° F. to about 1400° F., and impregnating the calcined silica-alumina composite with a Group VIII metal catalytic component.

3,274,125

REGENERABLE ADSORBENT GELS AND THE METHOD OF THEIR PREPARATION

Richard G. Clarke, Hartford, Richard H. Groth, South Windham, and Edward J. Duzak, Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Filed Mar. 24, 1961, Ser. No. 98,003
The portion of the term of the patent subsequent to July 21, 1981, has been disclaimed
10 Claims. (Cl. 252—466)

1. A regenerable adsorbent for carbon dioxide gas which comprises the oxide of a first metal selected from the group consisting of lithium, zinc, bivalent iron, nickel, copper, cobalt, manganese, magnesium, calcium, barium, cadmium, and mixtures of the foregoing, in combination with an oxide of a trivalent metal selected from the group consisting of iron, aluminum and chromium, the molar ratio of said first metal to said trivalent metal being in the range of 0.25 to 5 to 99.75 to 95, said adsorbent having a specific surface for adsorption of pure carbon dioxide at 1 atmosphere pressure and 0° C. of at least about 100 $m.^2/gm.$ and being capable of desorbing at least about 30 percent by volume of the carbon dioxide adsorbed at 0° C. and 1 atmosphere pressure when exposed to a vacuum of 10^{-4} atmosphere at 25° C.

4. A method for preparing a regenerable carbon dioxide adsorbent which comprises establishing an aqueous solution comprising between about 0.1 and 4.0 moles per liter of a solution comprising a carbonate of a member selected from the group consisting of alkali metal and ammonium, adding thereto at least one salt of a first metal selected from the group consisting of lithium, zinc, bivalent iron, nickel, copper, cobalt, manganese, magnesium, calcium, barium, cadmium, including mixtures of the foregoing, and one salt of a trivalent metal selected from the group consisting of aluminum, iron and chromium, including mixtures of the foregoing, continuing addition of said salts until there has been added an amount of salt which is 0 to 10 percent less than the amount stoichiometrically required to react with the carbonate ions in the solution, maintaining the temperature of the solution between about 0° and 35° C., but high enough to sustain evolution of carbon dioxide, separating the gel from the resulting solution and dehydrating the gel at temperatures less than 110° C.

3,274,126

POLYEPOXY ETHERS AND CURED RESINS OBTAINED THEREFROM

Roy T. Holm, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1962, Ser. No. 183,746
14 Claims. (Cl. 260—2)

1. Polyepoxy compounds of the formula

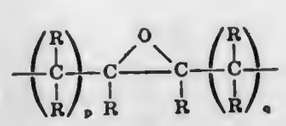
G—O—A—O—G

wherein

(1) At least one G group is a monovalent monoepoxycycloalkyl radical of from 4 to 20 carbon atoms and having from 4 to 6 ring carbon atoms,

(2) Every non-cycloalkyl G group is hydrogen and

(3) A is a divalent linear radical of the formula



where p and q are integers from 1 to 4 and R is selected from the group consisting of hydrogen and a C_1–C_4 alkyl group.

7. A process for preparing polyexpoxide compounds of the formula:

G—O—A—O—G

12. A curable composition comprising

(a) 15% to 85% by weight of a polyepoxy compound of the formula:

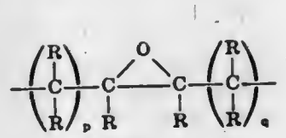
G—O—A—O—G

wherein

(1) At least one G group is a monovalent monoepoxycycloalkyl radical of from 4 to 20 carbon atoms and having from 4 to 6 ring carbon atoms,

(2) Every non-cycloalkyl G group is hydrogen and

(3) A is a divalent linear radical of the formula



where p and q are integers from 1 to 4 and R is selected from the group consisting of hydrogen and a C_1–C_4 alkyl group, and

(b) 15% to 85% by weight of a polyglycidyl ether of 2,2-bis(4-hydroxyphenyl)dimethylmethane.

3,274,127

PYROLYSIS OF A 1,4-DIMETHYL BENZENE NUCLEARLY-SUBSTITUTED WITH AT LEAST ONE GASEOUS HALOGEN ATOM

Michael Mojzesz Szwarc, Syracuse, N.Y., assignor to Pullman, Incorporated, Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 18, 1962, Ser. No. 210,859
7 Claims. (Cl. 260—2)

1. In the manufacture of solid polymers which have high heat stability, high resistance to acids and high resistance to organic solvents, the process which comprises pyrolyzing a halogenated 1,4-dimethyl benzene which is nuclear-substituted with at least one atom of a gaseous halogen selected from the group consisting of fluorine and chlorine; by heating the vapors of such a compound to a temperature above 700° C. but below those at which excessive decomposition occurs, at a partial pressure not substantially exceeding 150 mm. Hg absolute and a total pressure not substantially exceeding 400 mm. Hg absolute, for a time not substantially exceeding 1 second, followed by cooling the resulting vapors to a temperature at which a solid polymer is formed.

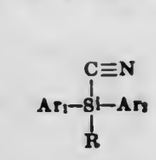
3,274,128

SILICON-CONTAINING POLY(NITRILOMETHYLIDYNES)

Iral B. Johns, Marblehead, Mass., assignor, by mesne assignments, to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 30, 1964, Ser. No. 341,414
4 Claims. (Cl. 260—2)

1. The method of polymerizing a diarylsilane cyanide which comprised compressing and heating a reaction mass consisting essentially of a diarylsilane cyanide of the formula



in which Ar_1 and Ar_2 are aromatic hydrocarbon radicals of from 6–18 carbon atoms joined to the silicon atom by an aromatic ring carbon atom, and R is a substituent selected from the class consisting of hydrocarbon radicals of up to 18 carbon atoms and cyano radicals, at a temperature of above about 200° C. and a pressure above about 1000 kg./sq. cm.

3,274,129

POLYMERIZATION OF EPOXIDES

Frederick E. Bailey, Jr., Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 29, 1959, Ser. No. 823,364
10 Claims. (Cl. 260—2)

1. A polymerization process which comprises contacting a lower olefin oxide with from about 0.1 to about 10.0 weight percent, based on the said lower olefin oxide, of a catalyst selected from the group consisting of phosphates, aluminates, borates and molybdates of divalent metals having an atomic number greater than 11 and less than 57 of Group II of the Periodic Table; at a temperature in the range of from about 50° to about 150° C. for a period of time sufficient to produce a solid polymer of said lower olefin oxides having a reduced viscosity value of from 0.57 to 12.3 determined at a concentration of 0.2 gram of polymer per 100 milliliters of acetonitrile at 30° C.

3,274,130

PHOSPHORUS POLYURETHANE PLASTICS PREPARED FROM HYDROXYL PHOSPHORUS COMPOUNDS

Gunther Oertel, Cologne-Flittard, Otto Bayer, Leverkusen, and Gunther Braun, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 22, 1962, Ser. No. 181,782
Claims priority, application Germany, Mar. 29, 1961, F 33,541
5 Claims. (Cl. 260—2.5)

1. A polyurethane plastic prepared by a process which comprises reacting an organic polyisocyanate with an hydroxyl phosphorus compound prepared by a process which comprises reacting a secondary N-hydroxy alkyl aryl amine having the formula Ar—NH—R—OH wherein Ar is an aromatic radical and R is an alkylene radical with a phosphohalide in the presence of an acid binding agent at a temperature within the range of about 20 to about 150° C. and in such proportions that there is one hydroxyl group of the N-hydroxy alkyl aryl amine for each phosphorus to halogen bond of the phosphohalide and reacting the resulting product with an alkylene oxide to prepare an hydroxyl phosphorus compound having a molecular weight of from about 400 to about 10,000.

3,274,131

POLYMERIC COMPOSITIONS HAVING PERCHLOROCOUMALIN CHEMICALLY COMBINED THEREIN

Edward Leon, Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Mar. 4, 1963, Ser. No. 262,371
18 Claims. (Cl. 260—2.5)

1. An organic polymeric composition of a polymer selected from the group consisting of an epoxy resin, a polyester resin of a polycarboxylic compound and a polyhydric alcohol, a polymer of an alkene, and a polymer of a cycloalkene having up to two fused rings, said composition having chemically combined therein a Diels-Alder adduct of perchlorocoumalin and an olefinic compound selected from the group consisting of alkenes, cycloalkenes having up to two fused rings, carboxylic compounds containing aliphatic carbon-to-carbon unsaturation and selected from the group consisting of a carboxylic acid, a carboxylic anhydride, a carboxylic acid ester and a carboxylic acid halide, and mixtures thereof.

2. A composition comprising an epoxy resin and a Diels-Alder adduct of perchlorocoumalin and a carboxylic compound containing aliphatic carbon-to-carbon unsaturation and selected from the group consisting of a carboxylic acid, a carboxylic anhydride, a carboxylic acid ester and a carboxylic acid halide.

15. The process which comprises reacting perchlorocoumalin with a polymer which contains aliphatic carbon-to-carbon unsaturation and which is selected from the group consisting of an unsaturated polyester resin of a polycarboxylic compound and a polyhydric alcohol, a polymer of an alkene, and a polymer of a cycloalkene having up to two fused rings, to form a cross-linked polymer.

3,274,132

PROCESS OF POLYMERIZING AND FOAMING CAPROLACTAM

John W. Gilberson, Woodstown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,803
6 Claims. (Cl. 260—2.5)

1. A process for the polymerization of ϵ-caprolactam to poly-ϵ-caprolactam which comprises heating said lactam in the presence of a lactam base salt prepared by

the reaction of a base with a lactam and a cocatalyst having the formula



wherein the R's are selected from at least one of the group consisting of hydrogen, aliphatic, cycloaliphatic and aryl radicals of up to 18 carbon atoms, X comprises a 5-membered heterocyclic ring having two conjugated double bonds and at least two ring nitrogen atoms, one of which is bonded to said



at a temperature between the melting point of said ε-caprolactam and the melting point of said poly-ε-caprolactam.

3,274,133

SELF-EXTINGUISHING EXPANDABLE POLYMERS CONTAINING VOLATILE HYDROCARBON, ORGANIC BROMIDE, AND N-NITROSO SECONDARY AMINE

Alvin R. Ingram, Murrysville, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed May 9, 1963, Ser. No. 279,155
7 Claims. (Cl. 260—2.5)

1. A self-extinguishing expandable polymer of styrene having been rendered capable of expansion by the incorporation therein of a volatile aliphatic hydrocarbon boiling in the range of −10 to 81° C. and having dispersed throughout (1) from 0.5 to 5 percent by weight of an organic bromide having a plurality of bromine atoms attached to carbon atoms of a radical selected from the group consisting of cyclohexyl and aliphatic radicals, said bromine atoms constituting at least 30 percent by weight of said bromide (2) and from 0.1 to 3 percent by weight of an N-nitroso secondary amine which evolves gas at a temperature of 150—180° C. when heated in a mixture consisting of 9 percent by weight of said N-nitroso secondary amine, 5 per cent by weight pentabromoethane and 86 percent by weight triethylbenzene.

3,274,134

VERY SOFT URETHANE VULCANIZATES WHICH COMPRISE A FULLY SATURATED URETHANE PREPOLYMER AND AN ORGANOTIN COMPOUND

Thomas Ramos, 536 Fort Washington Ave., New York, N.Y.

No Drawing. Filed Sept. 14, 1961, Ser. No. 138,202
3 Claims. (Cl. 260—18)

1. A soft polyurethane vulcanizate, which comprises a mixture, in the proportions in parts by weight, of

(a) 100 parts of a preformed fully saturated urethane polymer which is the reaction product of poly (1,4-oxybutylene) glycol and tolylene diisocyanate of approximately 2000 molecular weight and containing about 4.0 to 4.3 percent by weight of isocyanate groups,

(b) from about 5 to 55 parts of a chlorinated paraffin,

(c) about 20 to 55 parts of a polyol having a molecular weight at least about as high as that of castor oil, and

(d) about 10 to 30 parts of an organotin compound selected from the group consisting dibutyltin dilaurate, dibutyltin di-2 ethyl hexoate, stannous 2-ethyl hexoate and stannous octoate.

3,274,135

BARIUM-CADMIUM ORGANIC COMPLEXES AS STABILIZERS FOR HALOGEN-CONTAINING RESINS

George R. Norman, Lyndhurst, and William M. Le Suer, Cleveland, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,788
13 Claims. (Cl. 260—23)

1. A stabilized halogen-bearing polymeric composition comprising a halogen-bearing polymeric material containing an amount, sufficient to stabilize said polymeric material against deterioration, of a barium- and cadmium-containing organic complex made by the process which comprises preparing a mixture comprising:

(A) from about 0.1 to about 50 equivalents of an alcohol,

(B) one equivalent of an aliphatic monocarboxylic acid compound selected from the group consisting of aliphatic monocarboxylic acids containing an average of at least about 6 carbon atoms and the barium and cadmium salts thereof,

(C) at least about 0.1 equivalent of a barium base, and

(D) at least about 0.1 equivalent of a cadmium base, the amount of barium base and cadmium base in the mixture being sufficient to provide a total of at least about 1.1 equivalents of barium and cadmium per equivalent of component (B),

removing substantially all water from said mixture and then treating said mixture with at least about $(x-y)$ equivalents of carbon dioxide, where x represents a total equivalents of barium and cadmium in the mixture and y represents the equivalents of component (B).

3,274,136

PREPARATION OF REINFORCED RESINS USING GLASS FIBERS COATED WITH PLASTICIZED VINYL CHLORIDE POLYMERS

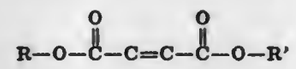
William K. Glesner, Clifford F. Thompson, and Donald P. Kubisiak, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 7, 1962, Ser. No. 242,920
16 Claims. (Cl. 260—23.5)

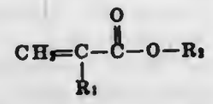
1. The process for preparing reinforced resin laminates comprising the sequential steps of:

(I) uniformly coating unsized glass fiber reinforcing material with from between about 3 and 15 weight percent based on the weight of said reinforcing material of a homogeneous polymeric binder composed of (1) between about 50 and 80 weight percent of a vinyl chloride polymer containing at least about 85 weight percent of vinyl chloride in the polymer molecules, and (2) complementarily between about 50 and 20 weight percent of a plasticizer for said vinyl chloride polymer and subsequently fusing said polymeric binder to said reinforcing material;

(II) impregnating said coated reinforcing material with a polymerizable fluid composition comprising from 40 to 60 weight percent of vinyl chloride polymer containing at least about 95 weight percent of vinyl chloride in the polymer molecules intimately incorporated with from 60 to 40 weight percent of a monomeric composition composed essentially of (A) from 60 to 95 weight percent of a monovinyl aromatic hydrocarbon of the benzene series containing from 8 to 10 carbon atoms in the molecule, and (B) at least 5 weight percent of an unsaturated ester selected from the group consisting of (a) fumaric acid esters having the general formula:



wherein R and R' each represents an alkyl radical containing from 2 to 8 carbon atoms, and (b) acrylic and methacrylic acid esters having the general formula:



wherein R_1 represents hydrogen and the methyl radical and R_2 is a member of the group consisting of cyclohexyl and alkyl radicals containing from 4 to 12 carbon atoms; and

(III) curing the composition by polymerization of the monomers in the presence of from about 0.2 to 2 percent by weight of an organic peroxide polymerization catalyst.

16. The process of claim 1, wherein said polymerizable fluid composition contains not more than 10 weight percent of a polyethylenically unsaturated organic monomer which is copolymerizable with said monovinyl aromatic hydrocarbon.

3,274,137

ANTIFOULING PROTECTIVE COATING COMPOSITIONS

John R. Saroyan, P.O. Box 1388, Vallejo, Calif., and Hing D. Dear, 535 Grant Ave., San Francisco, Calif.

No Drawing. Filed May 4, 1962, Ser. No. 192,604
3 Claims. (Cl. 260—27)

3. An antifouling protective coating composition comprising, by weight, non-volatile ingredients comprising from about 82% to about 97.5% cuprous oxide, from about 1.7% to about 10.5% polyisobutylene, the approximate average molecular weight of which does not exceed essentially 50,000, from 0% to about 15% rosin, and volatile ingredients comprising solvent in an amount from about 20% to about 130% of the non-volatile ingredients.

3,274,138

PETROLEUM MULCH FILM

Robert H. Salvesen, Clark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,096
1 Claim. (Cl. 260—28.5)

A petroleum mulch having improved moisture retention properties comprising about 50 wt. percent asphalt, about 50 wt. percent water and about 1 wt. percent oxidized polyethylene having a molecular weight of about 2500.

3,274,139

HIGHLY REACTIVE ALKALINE PHENOL-FORMALDEHYDE CONDENSATES

Alan L. Lambuth, Bellevue, Wash., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 27, 1963, Ser. No. 290,907
8 Claims. (Cl. 260—29.3)

1. A process for preparing a condensation product in aqueous alkaline medium which comprises (a) initially contacting 1 hydroxyl equivalent proportion of a phenol selected from the group consisting of phenol, methylene bisphenols, and mixtures thereof, with from 2.1 to 3.25 molar proportions of formaldehyde and from 0.3 to 0.6 molar proportion of an alkali metal hydroxide at a temperature of from 160° F. to reflux for from 15 to 45 minutes, the relative proportion of alkali metal hydroxide being chosen so as to constitute from 12 to 20 mol percent based upon the formaldehyde, (b) adjusting the mixture to a temperature of from 140° F. to reflux and maintaining said temperature until a 70° F. viscosity of from 100 to 50,000 MacMichael #26d units is attained, (c) adding a further quantity of alkali metal hydroxide in a proportion such that the total alkali metal hydroxide in the mixture is no more than 0.8 molar proportion per hydroxyl equivalent porportion of the phenol while maintaining the mixture at a temperature of from 140° F. to reflux until a 70° F. viscosity of from 25 to 5000 MacMichael #26d units is attained, (d) adding in from 1 to 4 further increments sufficient alkali metal hydroxide to raise the total alkali metal hydroxide in the mixture to from 1.0 to 2.0 molar proportions per hydroxyl equivalent proportion of the phenol, heating the mixture at a temperature of from about 140° F. to reflux to attain 70° F. viscosities of from 25 to 150 MacMichael #26d units between each incremental addition and (e) rapidly cooling the mixture to room temperature.

3,274,140

PRODUCTION OF POLYMER SOLUTIONS

Graham John Brealey, Coventry, England, assignor to Courtaulds Limited, London, England, a British company

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,770
Claims priority, application Great Britain, Nov. 28, 1961, 42,438/61
5 Claims. (Cl. 260—29.6)

1. In the production of solutions of acrylonitrile polymers containing at least 80 percent by weight of acrylonitrile units by dissolving a polymerisable material containing such a quantity of acrylonitrile as is necessary to give the desired polymer in an aqueous solution of an inorganic thiocyanate and polymerising said polymerisable material in the presense of a free-radical-forming initiator, the improvement which comprises carrying out said polymerisation in the presence also of a 0.05 to 2.0 percent, based on the weight of the polymer solution, of a secondary alcohol containing from 3 to 5 carbon atoms.

3,274,141

FILM-FORMING COPOLYMER EMULSION

Gustav Pieper, Cologne-Stammheim, and Heino Logemann, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 18, 1963, Ser. No. 296,109
Claims priority, application Germany, July 21, 1962, F 37,388
2 Claims. (Cl. 260—29.7)

1. An aqueous emulsion of a film-forming acrylonitrile copolymer with self-crosslinking properties of (1) 50 to 60 percent by weight of acrylonitrile, (2) 15 to 20 percent by weight of styrene, (3) 15 to 20 percent by weight of butadiene, (4) 2 to 7 percent by weight of a member selected from the group consisting of acrylic acid and methacrylic acid, and (5) 2 to 7 percent by weight of a member selected from the group consisting of acrylamide and methacrylamide, said copolymer emulsion containing and emulsifier in an amount between 0.25 and 1% by weight based on the weight of monomers.

3,274,142

RUBBER-MERCAPTAN BLENDS AND METHOD FOR THEIR PREPARATION

Paul F. Warner, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 1, 1962, Ser. No. 176,801
12 Claims. (Cl. 260—30.2)

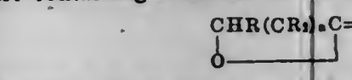
1. As a new composition of matter, a blend consisting essentially of about 95–60 weight parts of a liquid dithiol which has the general formula HS—R—SH wherein R is an organic radical containing from 1–20 carbon atoms, and about 5–40 weight parts of a non-halogenated rubbery polymer selected from the group consisting of homopolymers of conjugated dienes, and copolymers of conjugated dienes with monomers having an ethylenic linkage copolymerizable therewith.

3,274,143
LACTONE POLYESTERS AS PLASTICIZERS FOR VINYL RESINS

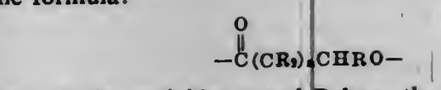
Fritz Hostettler, Charleston, W. Va., and Donald M. Young, New York, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,154
23 Claims. (Cl. 260—32.2)

1. A plasticized composition comprising a major portion of a mixture of a plasticizable resin of the group consisting of polyvinyl chloride, polyvinyl butyral, copolymers of vinyl chloride with monoethylenically unsaturated monomers copolymerizable therewith, and copolymers of acrylonitrile with monethylenically unsaturated monomers copolymerizable therewith; and, as the plasticizer therefor, a lactone polyester which has an average molecular weight of from about 300 to 9000; said lactone polyester being formed by the reaction of an admixture containing a lactone of the formula:



wherein n is an integer of from four to six, wherein at least $n+2R$ variables are hydrogen, and wherein the remaining R variable are of the group consisting of hydrogen, alkyl, cycloalkyl, alkoxy, and single ring aromatic hydrocarbon radicals, none of the said R variables having more than 12 carbon atoms; and an organic functional initiator having at least one reactive hydrogen substituent and being of the group consisting of alcohols, amines, polyols, polyamines, amino alcohols, polycarboxylic acids, hydroxycarboxylic acids, and aminocarboxylic acids; said lactone being in molar excess with relation to said inititator; said initiator being capable of opening the lactone ring whereby said lactone is added to said initiator as a substantially linear group thereto; said lactone polyester possessing, on the average, at least two of said linear groups, each of said linear groups having the formula:



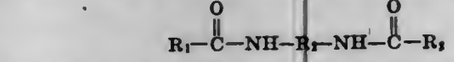
wherein the variables n and R have the aforesaid meanings.

3,274,144
LUBRICATED POLYCARBONATE COMPOSITIONS

Henno Keskkula and Cleowa A. Leatherman, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 2, 1962, Ser. No. 163,873
8 Claims. (Cl. 260—32.6)

1. A composition of matter comprising a synthetic organic polycarbonate and from about 0.1 percent to about 10 percent of a compound of the general formula



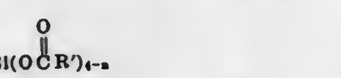
in which R_1 and R_3 are higher aliphatic hydrocarbon radicals having from 10 to 23 carbon atoms and R_2 is a lower alkylene group having from 2 to 8 carbon atoms.

3,274,145
NOVEL SILOXANE COMPOSITIONS

Wayne P. Dupree, St. Charles, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Sept. 4, 1962, Ser. No. 221,314
8 Claims. (Cl. 260—37)

2. A stable, storable composition comprising (A) the reaction product of (1) an essentially diorganopolysiloxane having a viscosity of at least 100 cs. at 25° C., in which siloxane the terminal radicals are in part hydroxyl radicals and in part triorganosiloxane radicals such that more than half of the said terminal radicals are hydroxyl radicals, the organic radicals of the said siloxane and said triorganosiloxane radicals each being selected from the group consisting of monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals, and said diorganopolysiloxane being a mixture consisting essentially of a hydroxyl endblocked diorganopolysiloxane and a diorganopolysiloxane being endblocked on one end with a triorganosiloxane group and on the other end by a hydroxyl group, and (2) at least one mol per mol of silicon-bonded hydroxyl radicals of polysiloxane (1) of a silane of the formula



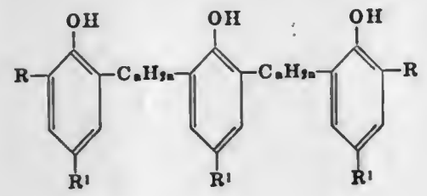
wherein R is selected from the group consisting of monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals, R′ is selected from the group consisting of hydrogen and alkyl radicals and n has a value from 0 to 1 inclusive, which reaction product is stable in the absence of moisture, and which, upon exposure to moisture, cures to a coherent, rubbery solid and (B) a filler.

3,274,146
POLYPROPYLENE STABILIZATION

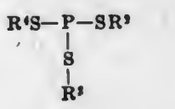
Marilyn T. Lecher, Glen Mills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Dec. 5, 1961, Ser. No. 157,275
17 Claims. (Cl. 260—41)

1. A light and heat stable composition comprising solid, isotactic, substantially crystalline polypropylene and a stabilizing quantity of each of of (A) carbon black, (B) a compound having the formula:



wherein n is 1 to 3, and each of R and R^1 is a alkyl radical containing 1 to 16 carbon atoms, and (C) a compound having the formula:



wherein each of R^2, R^3 and R^4 is a hydrocarbon radical containing 6 to 20 carbon atoms selected from the group consisiting of alkyl, aryl and cycloalkyl radicals, said stabilizing quantity being sufficient to provide a synergistic stabilizing effect by the combination of components (A), (B) and (C).

3,274,147
COMPOSITIONS FROM LIQUID CONJUGATED DIENE POLYMERS

Robert P. Zelinski and Charles W. Strobel, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 15, 1961, Ser. No. 109,864
12 Claims. (Cl. 260—41.5)

1. A method of making a polymeric product which comprises mixing a first polymer of a conjugated diene having 4 to 8 carbon atoms per molecule, said first polymer having a molecular weight in the range of 1000 to 20,000 and at least 2 terminally reactive groups per molecule,

said terminal groups containing at least one reactive element bonding selected from the group consisting of O—H, S—H, N—H, S—X, OC—X, SC—X, RC—X, C═O, C═S and C≡N wherein X is halogen and R is selected from the group consisting of carbonyl, thiono, ethenylene and a carbon in an aromatic ring, with a plasticizing amount of a second homopolymer of 1,3-butadiene, said second polymer having a viscosity in the range of about 10 to 500 poises at 77° F. and up to 15 percent of its unsaturation in the vinyl form, up to 55 percent in the trans form, and from 35 to 85 percent of its unsaturation in the cis form, and curing the resulting mixture by reacting said terminally reactive groups of said first polymer with a polyfunctional organic compound selected from the group consisting of alcohols, acids, acid anhydrides, halides, amines, ketones, isocyanates, epoxides and aziridinyl compounds.

3,274,148
FRACTURE SUPPORT AGENTS MADE BY CYCLIZING AND CURING RUBBERY PELLETIZED BUTADIENE COPOLYMERS

William J. Sparks, Westfield, and Leon S. Minckler, Jr., Metuchen, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed May 13, 1964, Ser. No. 367,026
5 Claims. (Cl. 260—41.5)

1. A continuous method for preparing hard pelletized fracture supports which comprises:

continuously passing a polymer of conjugated diolefin through a plurality of treating zones comprising the following successive steps:

(a) pelletizing said polymer,

(b) effecting partial cure of said pelletized polymer under pressure in the presence of a curing agent at a temperature between 200 and 400° F. and a pressure between 20 and 1000 p.s.i.g. for a period of time between one minute and 17 hours,

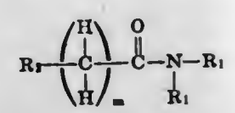
(c) effecting cyclization of said partially cured pellets by passing said partially cured pellets through a heating zone under conditions of substantially plug flow at a temperature between 300 and 650° F. and a pressure between atmospheric and 1000 p.s.i.g. for a period of time between 5 minutes and 24 hours.

3,274,149
OXYMETHYLENE POLYMERS STABILIZED WITH AMINO SUBSTITUTED AMIDES

Frank M. Berardinelli, South Orange, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 13, 1963, Ser. No. 258,126
8 Claims. (Cl. 260—45.8)

1. A polymer composition comprising an oxymethylene polymer having a melting point of at least 150° C. and a stabilizing amount of a compound having the structure



wherein m is an integer from two to seven; R_1 is hydrogen or a lower alkyl having up to about five carbon atoms; R_2 is amino, lower alkyl-substituted amino, lower alkylamido-substituted amino, 4-morpholinyl, lower alkyl-substituted-4-morpholinyl, N-piperazinyl, N′-alkylamido-substituted-N-piperazinyl, lower alkyl-substituted-N-piperazinyl, N-imidazolidinyl, N′-lower alkylamido-substituted-N-imidazolidinyl, lower alkyl-substituted-N-imidazolidinyl, 4- anilinyl, lower alkyl-substituted anilinyl, 4-piperidinyl, lower alkyl-substituted piperidinyl, lower alkylamido-substituted piperidinyl.

3,274,150
POLYAMIDES STABILIZED WITH ALKALI METAL IODIDES IN COMBINATION WITH PHENYLENE DIAMINES OR A BIS PHENOL

Melvin Myron Baevsky, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 24, 1962, Ser. No. 232,875
3 Claims. (Cl. 260—45.9)

1. A composition of matter comprising a polyamide containing from 0.1–5% by weight of an inorganic antioxidant selected from the group consisting of sodium and potassium iodide and from 0.1–5% by weight of an organic antioxidant for rubber, said antioxidant having a boiling point above 270° C. and being selected from the group consisting of 4,4′-butylidene-bis-6-tertiary butyl-m-cresol, N-isopropyl-N′-phenyl-p-phenylenediamine, N,N′-naphthyl-p-phenylenediamine, N-cyclohexyl-N′-phenyl-p-phenylenediamine and 2,2′-methylene-bis(4-ethyl-6-tertiary butyl phenol).

3,274,151
POLYAMIDES CONTAINING A COMBINATION OF (1) A PHENOL, (2) A PHOSPHORUS ACID SALT OR ESTER, (3) A MANGANESE SALT, AND (4) A DICARBOXYLIC ACID AS STABILIZERS

Walter Settele, Lucerne, Switzerland, assignor to Societe de la Viscose Suisse, Emmenbrucke, Switzerland, a Swiss body corporate

No Drawing. Filed Nov. 21, 1962, Ser. No. 239,327
3 Claims. (Cl. 260—45.75)

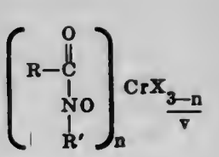
1. Synthetic polyamide compositions which are substantially free from colour and of good stability against discolouration by heat and light, in which have been incorporated during polycondensation (1) between 0.02 and 0.2% of a compound selected from the class consisting of 2,5-di-tert-butyl-hydroquinone, 2,2′-methylene-bis-(4-methyl-6-tert-butyl-phenol), 2,2′-methylene-bis-(4-ethyl-6-tert-butyl-phenol), and 4,4′-butylidene-bis-(6-tert-butyl-m-cresol), (2) between 0.05 and 0.5% of triphenyl phosphate, (3) between 20 and 80 parts of manganese per million parts of said polyamide composition in the form of a compound selected from the class consisting of manganous lactate, manganous oxalate, and manganous hypophosphite, and (4) between 0.2 and 1.0% of a member of the class consisting of adipic acid, sebacic acid, and terephthalic acid, the proportions being based on the total weight of the composition.

3,274,152
POLYOLEFINS OF IMPROVED LIGHT STABILITY AND DYE RECEPTIVITY CONTAINING CHROMIUM SALTS OF HYDROXAMIC ACIDS

Albert S. Matlack, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 27, 1963, Ser. No. 261,499
5 Claims. (Cl. 260—45.75)

1. A polyolefin selected from the group consisting of polyethylene and a stereoregular polymer of a mono-α-olefin having from 3 to 6 carbon atoms containing a small amount of a chromium salt of a hydroxamic acid, said salt having the formula



wherein R is a radical selected from the group consisting of hydrogen, hydrocarbon, oxyhydrocarbon and substituted amino radicals, R′ is a radical selected from the

group consisting of hydrogen, hydrocarbon, oxyhydrocarbon and substituted sulfonyl radicals, and not more than one of said radicals R and R' is hydrogen, X is an anion, n is an integer from 1 to 3, and v is the valence of said anion.

3,274,153
METHOD OF POLYMERIZING HYDROXYLATED ORGANOSILICON COMPOUNDS

James Franklin Hyde and Elmer M. Schultz, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed May 2, 1962, Ser. No. 191,738
12 Claims. (Cl. 260—46.5)

1. A method of polymerizing organosilicon compounds containing silicon-bonded hydroxyl radicals which method comprises contacting (1) an organosilicon compound having an average per silicon atom of 1.98 to 2.01 inclusive substituent groups selected from the group consisting of monovalent hydrocarbon radicals, perfluoroalkylethyl radicals, haloaryl radicals and cyanoalkyl radicals, and an average per molecule of two SiOH groups, any remaining valences of said organosilicon compound being satisfied with substituents selected from the group consisting of divalent oxygen atoms, divalent hydrocarbon radicals and divalent haloarylene radicals, with (2) a compound of the structure



wherein

R is selected from the group consisting of monovalent hydrocarbon radicals, monovalent halohydrocarbon radicals, halogen atoms, and monovalent hydrocarbonoxy radicals, each R group containing up to about 10 carbon atoms,
m is an integer from 0 to 3 inclusive, and
n is an integer from 1 to 3 inclusive,
$m+n$ is an integer from 1 to 4 inclusive

until the desired degree of polymerization is obtained.

7. A method of polymerizing organosilicon compounds containing silicon-bonded hydroxyl radicals which method comprises contacting (1) an organosilicon compound having an average per silicon atom of 1.98 to 2.01 inclusive substituent groups selected from the group consisting of monvalent hydrocarbon radicals, perfluoroalkylethyl radicals, haloaryl radicals and cyanoalkyl radicals, and an average per molecule of two SiOH groups, any remaining valences of said organosilicon compound being satisfied with substituents selected from the group consisting of divalent oxygen atoms, divalent hydrocarbon radicals and divalent haloarylene radicals, with (2) a compound of the structure



wherein

R is selected from the group consisting of monovalent hydrocarbon radicals, monovalent halohydrocarbon radicals, halogen atoms, and monovalent hydrocarbonoxy radicals, each R group containing up to about 10 carbon atoms,
M is a tetraorganonitrogen radical, the organic radicals of said nitrogen radical being selected from the group consisting of monovalent alkyl and aryl radicals attached directly to the said nitrogen atom,
m is an integer from 0 to 3 inclusive, and
n is an integer from 1 to 3 inclusive,
$m+n$ is an integer from 1 to 4 inclusive

until the desired degree of polymerization is obtained.

3,274,154
POLYMERIZATION OF CYCLIC SILOXANES

Thomas Charles Kendrick and David Randall Thomas, Dinas Powis, Glamorgan, Wales, assignors to Midland Silicones Limited, London, England

No Drawing. Filed July 17, 1963, Ser. No. 295,837
Claims priority, application Great Britain, Aug. 2, 1962, 29,722/62
8 Claims. (Cl. 260—46.5)

1. A method of polymerizing cyclic diorganosiloxanes of the general formula $(RR'SiO)_n$ where each R and each R' are individually selected from the group consisting of hydrogen atoms, monovalent hydrocarbon radicals, monovalent halogenated hydrocarbon radicals and aminoalkyl radicals and n is an integer having a value of at least 3, consisting essentially of contacting the cyclic diorganosiloxanes with (1) an anhydrous acid having a dissociation constant in aqueous solution of at least 10^{-5} and (2) a halide selected from the group consisting of halides of Al, Si, P, Sc, Ti, V, Ga, Ge, As, Y, Zr, Nb, In, Sn, Sb, Tl, Hf, Ta, Pb, Bi, Fe, Co, Ni, Ru, Rh, Pd, Os, Ir and Pt, and substituted covalent halide phenyldichlorophosphine, at a temperature up to 100° C.

3,274,155
ORGANOSILICON COMPOSITIONS

Frederick C. Saunders, Llandough, Cowbridge, Glamorgan, and Derek S. Caldwell, Penarth, Glamorgan, Wales, assignors to Midland Silicones Limited, London, England

No Drawing. Filed Aug. 5, 1964, Ser. No. 387,767
Claims priority, application Great Britain, Sept. 8, 1963, 31,526/63
11 Claims. (Cl. 260—46.5)

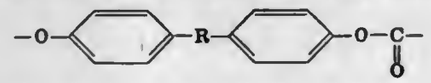
1. A composition of matter consisting essentially of the product formed by reacting
(A) pyromellitic dianhydride with
(B) an amino-organosiloxane having at least two units selected from the group consisting of R_2SiO, $RSiO_{1.5}$ and $R_3SiO_{0.5}$ wherein each R is a monovalent organic radical selected from the group consisting of hydrocarbon radicals, halogenated hydrocarbon radicals, cyanoalkyl radicals, alkoxy radicals and amino organic radicals of the formula $—Z—NH_2$ wherein Z is a divalent organic radical containing atoms selected from the group consisting of carbon atoms, hydrogen atoms, oxygen atoms, nitrogen atoms, halogen atoms and sulfur atoms and bonding the amino group to a silicon atom through a silicon-carbon bond, said siloxane having at least two monovalent organic radicals per molecule which are amino organic radicals.

3,274,156
CHLORINATED POLYCARBONATES

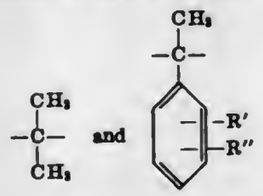
Kenneth P. Perry, Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 10, 1964, Ser. No. 336,872
10 Claims. (Cl. 260—47)

1. A polycarbonate having the recurring structural unit

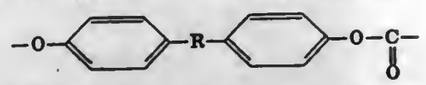


wherein R is at least one group selected from the group consisting of bivalent groups of the formulas

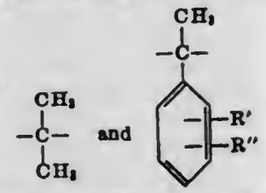


wherein R' and R'' are selected from the group consisting of hydrogen atoms and chlorine atoms, and wherein a portion of the hydrogens of the methyl groups of said bivalent groups are replaced with chlorine atoms to form a random distribution of $—CH_2Cl$ groups, $—CHCl_2$ groups and unchlorinated methyl groups.

4. The process for preparing the polymers of claim 1 comprising introducing chlorine into a solution of a polycarbonate having the recurring structural unit



wherein R is at least one group selected from the group consisting of bivalent groups of the formulas



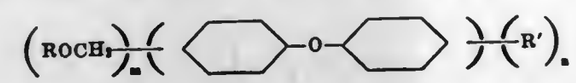
wherein R' and R'' are selected from the group consisting of hydrogen atoms and chlorine atoms in the presence of a chlorination promoter selected from the group consisting of ultraviolet radiation, visible light, and a free-radical catalyst.

3,274,157
CONDENSATION PRODUCTS OF ALKOXYMETHYLATED DIAROMATIC ETHERS

James D. Doedens, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,792
7 Claims. (Cl. 260—47)

1. A solid polymerized composition of matter obtained by heating, in the presence of a condensation catalyst, an alkoxymethylated diaryl ether having the general formula:



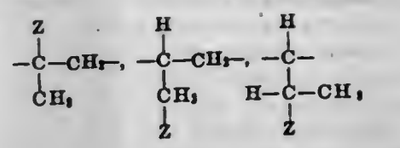
wherein R is selected from the group consisting of methyl, ethyl, propyl and butyl radicals, R' is selected from the group consisting of alkyl, alkoxy and halogen radicals wherein the alkyl group contains from 1 to 4 carbon atoms, m is a number from 1 to 4 representing an average alkoxymethyl functionality and n is an integer from 0 to 2.

3,274,158
OLEFIN COPOLYMER MODIFIED WITH A HYDROXYBENZOIC ACID

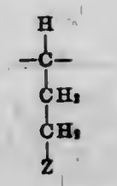
Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 24, 1965, Ser. No. 458,372
3 Claims. (Cl. 260—62)

1. A modified copolymer of 65–99 mole percent of ethylene and 1–35 mole percent of propadiene, said modification being by reaction with a hydroxyl-containing aromatic acid selected from the group consisting of salicyclic acid, metahydroxybenzoic acid and para-hydroxybenzoic acid to provide 1–35 mole percent of a random selection of recurring units selected from the group consisting of



and



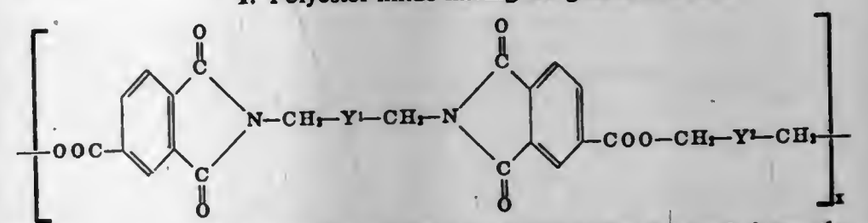
where Z is hydroxybenzoyl.

3,274,159
POLYESTER IMIDES OF TRIMELLITIC ANHYDRIDE

Rudolph W. Kluiber, Bernardsville, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 7, 1963, Ser. No. 249,611
4 Claims. (Cl. 260—75)

1. Polyester imide having the general formula:



wherein Y^1 and Y^2 are individually selected from the group consisting of
(a) divalent radical of the formula $—(CH_2)_n—$, wherein n is an integer from 0 to 8, inclusive;
(b) divalent ether radical of the formula

$$—(CH_2)_n—O—(CH_2)_n—$$

where n is an integer from 1 to 3 inclusive;
(c) divalent ether radical of the formula

$$—(CH_2—O—C_3H_6—O—CH_2)—;$$

and x is an integer such that the polyester imide has a reduced viscosity, measured at 50° C. as a 0.2 gram sample in 100 milliliters of p-chlorophenol, of from 0.4 to about 20.

3,274,160
POLYURETHANES FROM A THREE COMPONENT PREPOLYMER

Konrad Ellegast, Leichlingen, and Artur Reischl and Erwin Müller, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 29, 1961, Ser. No. 134,589
Claims priority, application Germany Sept. 2, 1960
9 Claims. (Cl. 260—77.5)

1. A process for the preparation of a polyurethane which comprises preparing a prepolymer by reacting an organic polyisocyanate with a mixture containing a polyhydric alcohol having at least two and not more than three hydroxyl groups and an organic compound having a plurality of alcoholic hydroxyl groups, said organic compound having a molecular weight above about 800 and selected from the group consisting of hydroxyl polyesters, polyhydric polyalkylene ethers, polyhydric polythioethers and polyacetals, said polyhydric alcohol having a molecular weight below about 500; the amount of said organic compound is such that an excess of from about

300 to about 900 percent of said polyisocyanate is present when calculated on the basis of the hydroxyl groups of said organic compound and is such that from about 150 to about 300 percent excess of said polyisocyanate is present after reaction with all the hydroxyl groups of said mixture containing said polyhydric alcohol and said organic compound and subsequently reacting said prepolymer with additional polyhydric alcohol to bring about crosslinking and produce a hard, elastic NCO terminated polyurethane casting by placing the final mixture into a mold and allowing it to cure.

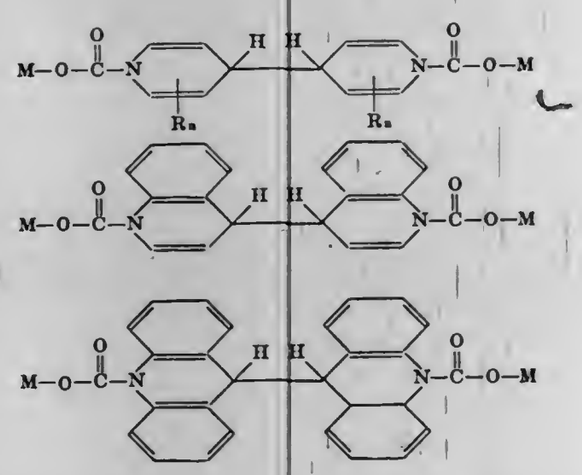
3,274,161
POLYMERS OF N,N'-TETRAHYDRO-BIPYRIDYL-BIQUINOLYL AND -BIACRIDYL DICARBOXYLIC ACID DERIVATIVES

Walter E. Kramer, Niles, and Louis A. Joo and Robert M. Haines, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Original application May 13, 1960, Ser. No. 28,866, now Patent No. 3,147,262, dated Sept. 1, 1964. Divided and this application Jan. 9, 1964, Ser. No. 356,345

5 Claims. (Cl. 260—77.5)

1. A polymer produced by reaction of a strong mineral acid in aqueous solution with a compound selected from the group consisting of



and

wherein M is an alkali metal, R is an unsubstituted lower alkyl radical and *n* in an integer from 0 to 3, the substituents on both rings being identical.

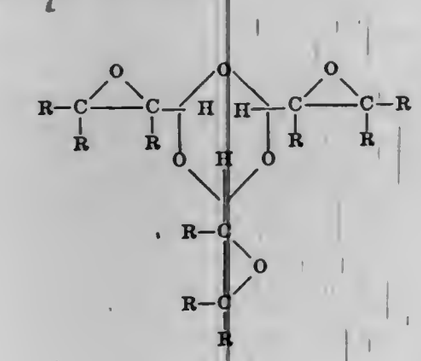
3,274,162
EPOXY TRIOXANES

Elliot Bergman, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 8, 1963, Ser. No. 257,096

16 Claims. (Cl. 260—78.4)

1. The 2,4,6-tris(1,2-epoxyalkyl)-trioxane having the formula



where R is selected from the group consisting of hydrogen, alkyl having from 1 to 10 carbon atoms, and aryl having 6 to 10 carbon atoms.

7. The infusible product obtained by heating the compound of claim 1 with a polycarboxylic acid anhydride selected from the group consisting of dodecenylsuccinic anhydride, methylnadic anhydride, phthalic anhydride and hexahydrophthalic anhydride.

3,274,163
PRODUCTION OF POLYCHLOROESTERS CONTAINING MONOFUNCTIONAL HALOGENATED ALCOHOLS

Gunther Elfers, Grosse Ile, and Pauls Davis, Gibraltar, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,667

56 Claims. (Cl. 260—78.4)

1. A polyester of

(1) at least one organic dicarboxylic acid anhydride,

(2) at least one vicinal alkylene oxide selected from the group consisting of

(a) an alkylene oxide containing from 2 to 18 carbon atoms inclusive, selected from the group consisting of saturated alkylene oxides and alkylene oxides which are free from other than aromatic unsaturation, and

(b) an alkylene oxide as defined in (a) but containing from 3 to 4 carbon atoms and at least 1 halogen atom, each halogen having an atomic weight of 19 to 80 inclusive and having from 1 to 2 alkyl groups attached to at least 1 carbon atom of the oxirane ring, said alkyl groups having up to 2 carbon atoms, and

(3) a halogenated monofunctional alcohol having the following general formula:

$$C_nH_{2n+1-z}Y_zOH$$

wherein *n* is an integer of from 1 to 11, *z* is an integer from 1 to 23, and Y is a halogen having an atomic weight of 19 to 80 inclusive.

41. The reaction product of

I. a polyester of

(1) at least one organic dicarboxylic acid anhydride,

(2) at least one vicinal alkylene oxide selected from the group consisting of

(a) an alkylene oxide containing from 2 to 18 carbon atoms inclusive, selected from the group consisting of saturated alkylene oxides and alkylene oxides which are free from other than aromatic unsaturation, and

(b) an alkylene oxide as defined in (a) but containing from 3 to 4 carbon atoms and at least 1 halogen atom, each halogen having an atomic weight of 19 to 80 inclusive and having from 1 to 2 alkyl groups attached to at least 1 carbon atom of the oxirane ring, said alkyl groups having up to 2 carbon atoms, and

(3) a halogenated monofunctional alcohol having the following general formula:

$$C_nH_{2n+1-z}Y_zOH$$

wherein *n* is an integer of from 1 to 11, *z* is an integer from 1 to 23, and Y is a halogen having an atomic weight of 19 to 80 inclusive, and

II. a compound selected from the group consisting of isocyanates, and inorganic and organic acid chlorides.

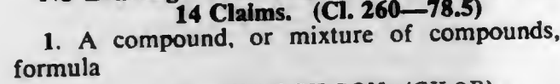
3,274,164
POLYMERIZABLE SUBSTITUTED-4-PENTENAMIDE MONOMERS, POLYMERS THEREOF, AND METHODS FOR MAKING AND USING THESE COMPOSITIONS

Melvin D. Hurwitz, Southampton, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed July 5, 1963, Ser. No. 293,582

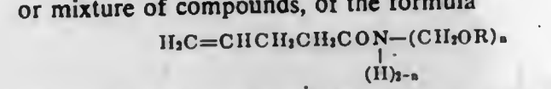
14 Claims. (Cl. 260—78.5)

1. A compound, or mixture of compounds, of the formula



wherein R is selected from the group consisting of H and alkyl having 1 to 18 carbon atoms, and *n* is a number having an average value of about 0.8 to 2.0.

5. A thermosettable addition polymer of a compound, or mixture of compounds, of the formula



wherein R is selected from the group consisting of H and alkyl having 1 to 18 carbon atoms, and *n* is a number having an average value of about 0.8 to 2.0.

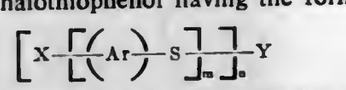
3,274,165
METHOD FOR PREPARING LINEAR POLYARYLENE SULFIDE

Robert W. Lenz, Dedham, Mass., and Carl E. Handlovits and William K. Carrington, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 10, 1965, Ser. No. 454,644

10 Claims. (Cl. 260—79)

1. A process which comprises reacting by heating a metal salt of a halothiophenol having the formula



wherein X represents a halogen atom having an atomic number from 35 to 53 in a position other than ortho to the sulfur molecule, Ar represents an aromatic hydrocarbon radical of the benzene series, Y represents a metal ion selected from the group consisting of alkali metal, alkaline earth metal, and the transition metals copper, gold and silver, *n* represents an integer equal to the valence of metal ion Y, *m* represents an integer from 1 to about 6 and recovering a polyarylene sulfide having a molecular weight above that of the monomer employed.

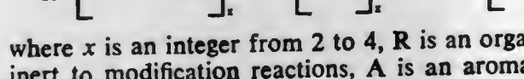
3,274,166
MODIFYING HYDROCARBON POLYMERS WITH POLY(DIAZO) COMPOUNDS

David S. Breslow and Harold M. Spurlin, Wilmington, Del., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed June 19, 1963, Ser. No. 288,896

18 Claims. (Cl. 260—85.1)

1. The process of modifying a hydrocarbon polymer which comprises heating said polymer in admixture with from about 0.01% to about 20% based on the weight of the polymer of a poly(diazo) compound selected from the group consisting of



where *x* is an integer from 2 to 4, R is an organic radical inert to modification reactions, A is an aromatic radical inert to modification reactions, R' is selected from the group consisting of hydrogen, alkyl, aryl and —COOZ radicals where Z is selected from the group consisting of alkyl and aryl radicals and R'' is selected from the group consisting of hydrogen, alkyl and aryl radicals said heating being at the decomposition temperature of said poly(diazo) compound whereby chemical bonding is effected between the polymer molecules.

3,274,167
PREPARATION OF POLYETHYLENE IN THE PRESENCE OF A 2-BUTENE CHAIN TRANSFER AGENT

Kenneth W. Doak, Wyckoff, N.J., and Archie Hill, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed July 3, 1963, Ser. No. 292,737

5 Claims. (Cl. 260—88.2)

3. In the polymerization of ethylene at temperatures of 250–300° C. and pressures of 20,000–50,000 p.s.i.g. in the presence of a catalytic amount of an oxygen initiator, the improvement comprising controlling the molecular weight of the polyethylene product, as reflected by the melt index thereof, by polymerizing ethylene in the presence of 0.05–1.5 percent by volume butene-2, based on the ethylene, the melt index increasing within the range of 0.15–40 as the amount of butene-2 present is increased, and providing sufficient oxygen initiator during the polymerization to compensate for the presence of the butene-2 and to maintain a predetermined temperature within the range of 250–300° C. at a predetermined pressure of 20,000–50,000 p.s.i.g. in the presence of a predetermined amount of butene-2 within the above indicated range, thereby providing a product of the desired molecular weight characterized by improved optical properties and physical strength and a density of at least 0.919 g./cc.

3,274,168
METHOD FOR PREPARING POLY(t-BUTYL CROTONATE) AND POLYCROTONIC ACID USING ORGANO-LITHIUM CONTAINING CATALYST SYSTEMS

Mary Lucy Miller, New York, and John Skogman, Yonkers, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 21, 1964, Ser. No. 384,247

9 Claims. (Cl. 260—89.3)

1. A process which comprises homopolymerizing t-butyl crotonate by contacting t-butyl crotonate with a catalyst system selected from the group consisting of (1) from about 0.01% to 2.0%, by weight, based on the weight of said t-butyl crotonate, of those having the formula

LiR

wherein R is selected from the group consisting of amyl and sec.-butyl radicals, (2) from about 0.01% to 2.0%, by weight, based on the weight of said t-butyl crotonate, of an alkyl lithium in admixture with about 0.01% to about 1.0%, by weight, based on the weight of said t-butyl crotonate, of lithium hydride, said alkyl group having from 4 to 5 carbon atoms, inclusive, and (3) an organic ether solvent solution of the product produced by reacting lithium with a fused ring aromatic hydrocarbon in the presence of said solvent, said product having an active lithium concentration of from about .01% to 2.0%, by weight, based on the weight of said t-butyl crotonate, at a temperature ranging from about −50° C. to +50° C., in an inert atmosphere and under substantially anhydrous conditions.

3,274,169
POLYMERIZATION CATALYST SYSTEM AND PROCESS

Robert O. Lindblom, Pleasant Hill, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 3, 1962, Ser. No. 242,871

36 Claims. (Cl. 260—93.7)

17. A polymerization process comprising the step of polymerizing an olefinic compound having no more than

30 carbon atoms therein selected from the class consisting of olefins having a $CH_2=CH-$ group and derivatives thereof in which each derivative group is selected from the class consisting of cycloalkyl, aryl and haloaryl groups, in which haloaryl groups each halogen atom is attached directly to the aromatic nucleus of the aryl group, at a temperature of room temperature to 250° C., at a pressure of atmospheric pressure to 20,000 pounds per square inch, in the presence of a catalyst composition comprising the reaction product obtained upon mixing the following four components:

(A) A lithium derivative of an alkanolamine of no more than 60 carbon atoms having the formula $LiOZNR_2$ wherein Z is a divalent radical selected from the class consisting of OR', OLi, and NR_2'' radicals, said divalent radical having at least 2 and no more than 4 carbon atoms between said valencies; R' represents a radical selected from the class consisting of hydrogen, alkyl and acyl radicals having no more than 20 carbon atoms therein; R represents a radical of the class consisting of hydrogen, alkyl radicals and derivatives of alkyl radicals in which the derivative radicals are each selected from the class consisting of OR', OLi and NR_2'' radicals; R'' represents a radical selected from the class consisting of hydrogen, alkyl radicals and derivatives of alkyl radicals in which the derivative radicals are each selected from the class consisting of OR', OLi and RN_2''' radicals; and R''' represents a radical selected from the class consisting of hydrogen and alkyl radicals; said alkyl radicals represented by R, R'' and R'' each having no more than 20 carbon atoms therein, the total number of carbon atoms in said compound being no more than 60, the number of lithium atoms and nitrogen atoms each being no more than 3, and the number of oxygen atoms being no more than 6;

(B) An aryl mercaptan,

(C) A compound selected from the class consisting of halides, oxides, alcoholates and esters of metals of the periodic groups IV(b), V(b), VI(b), VIII and manganese, and

(D) A component selected from the class consisting of metals of periodic groups I, II, III, IV(b), V(b) and VI(b) and derivatives thereof in which each derivature group is selected from the class consisting of hydrogen and hydrocarbon radicals.

3,274,170
CARBOXYLIC ACID AMIDES

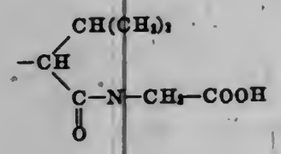
Ivar Ugi, Leverkusen, Klaus Offermann, Munich, and Friedrich-Karl Rosendahl, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 27, 1963, Ser. No. 261,518
Claims priority, application Germany, Mar. 9, 1962, F 36,223
3 Claims. (Cl. 260—112.5)

3. A carboxylic acid amide of the formula



wherein R_1 stands for a member selected from the group consisting of 1-(N-formyl-benzylamino)-cyclohexyl and N-methylene-phthalimide and R_2 stands for

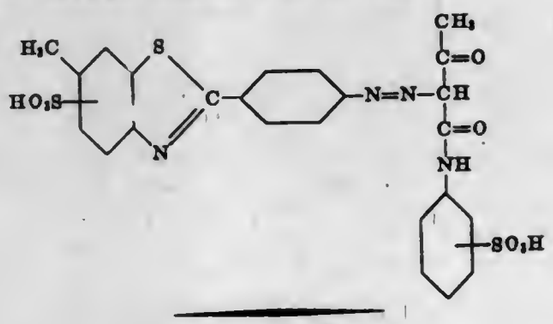


3,274,171
MONOAZO DYESTUFFS CONTAINING A BENZOTHIAZOLE NUCLEUS

Norman L. Anderson, Hamburg, and Alvin C. Litke, Buffalo, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,179
6 Claims. (Cl. 260—158)

1. A monoazo dyestuff of the formula

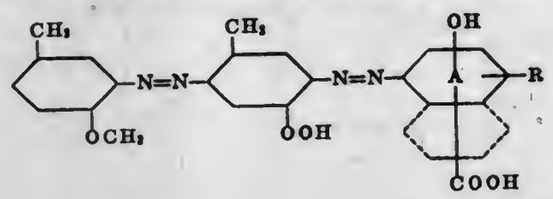


3,274,172
DISAZO DISPERSE DYESTUFFS

Eiji Koike and Fujio Kanazawa, Toyonaka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., and to Toyo Spinning Co., Ltd., both of Osaka, Japan, both corporations of Japan

No Drawing. Filed Aug. 16, 1963, Ser. No. 302,735
Claims priority, application Japan, Sept. 24, 1962 37/41,813
1 Claim. (Cl. 260—187)

A disazo disperse dyestuff having the general formula,



wherein A represents a nucleus selected from the group consisting of benzene and naphthalene nuclei, and R is selected from the group consisting of hydrogen atom and methyl radical.

3,274,173
FLUORO, NITROBENZYL SULFONYL AMIDE COLORANTS

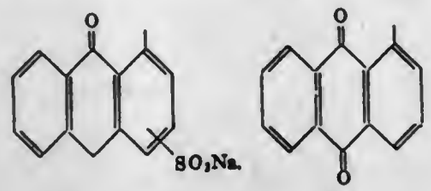
Joseph W. Dehn, Jr., Great Neck, N.Y., Edward Gancher, Clifton, N.J., and Harold J. Kubefuss and Paul Resnick, Brooklyn, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,532
6 Claims. (Cl. 260—205)

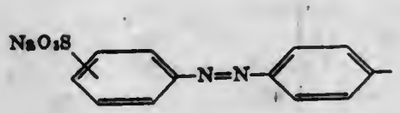
1. A reactive colorant having the structural formula



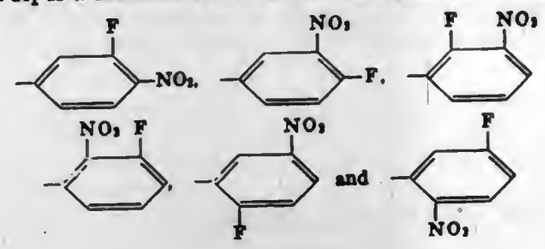
where R is a member selected from the group consisting of



and



and R_1 is a member selected from the group consisting of



3,274,174
N-1,1-DIHYDROFLUOROALKYL-N'-ALKYLENE UREA

Heinz Enders, Stadtbergen, near Augsburg, and Hans Karl Wiest, Gersthofen, near Augsburg, Germany, assignors to Chemische Fabrik Pfersee G.m.b.H., Augsburg, Germany, a firm of Germany

No Drawing. Filed Feb. 1, 1963, Ser. No. 255,690
Claims priority, application Germany, Feb. 14, 1962, C 26,226
6 Claims. (Cl. 260—239)

1. N-1,1-dihydrofluoroalkyl-N'-alkylene urea.

3,274,175
PENICILLIN DERIVATIVES

Hugh Colin Richards, David Frank Spooner, and John Rosindale Housley, Nottingham, England, assignors to Boots Pure Drug Company Limited, Nottingham, England, a British company

No Drawing. Filed Nov. 26, 1962, Ser. No. 240,149
Claims priority, application Great Britain, Dec. 7, 1961, 43,865/61; Mar. 7, 1962, 8,805/62
5 Claims. (Cl. 260—239.1)

1. A penicillin compound selected from the group of acids of the formula

and the non-toxic salts thereof in which Z is selected from the group consisting of hydroxy, lower alkoxy, benzyloxy, phenoxy, amino, lower alkyl amino, di-lower alkyl amino, benzyl amino, anilino and N-methyl anilino and R is a divalent heterocyclic radical of a formula selected from the group consisting of

in which R^1 and R^2 are selected from the group consisting of hydrogen and lower alkyl.

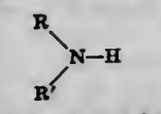
3,274,176
NOVEL PREPARATION OF ENAMINES AND NOVEL PRODUCTS

Jacques Dubé, Eaubonne, France, assignor to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Oct. 14, 1964, Ser. No. 403,936
Claims priority, application France, Oct. 18, 1963, 951,070
16 Claims. (Cl. 260—239.5)

1. A process for the preparation of 1,3-diamino-$\Delta^{3,5}$-steroids of the androstane and pregnane series of the formula

wherein X represents the remainder of the steroid molecule and R and R' are selected from the group consisting of lower alkyl, hydroxy lower alkyl, cyclohexyl, benzyl, phenyl, anilino and tolyl and when R and R' are taken together with the nitrogen atom they form a 5 to 6 member heterocyclic group which comprises reacting a 3-keto-$\Delta^{1,4}$-steroid with a secondary amine of the formula



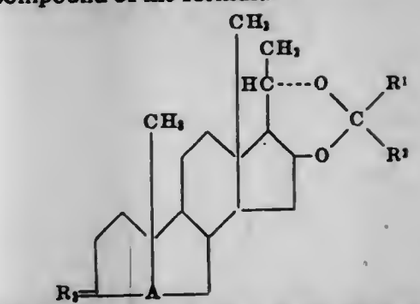
wherein R and R' have the above definition in the absence of a solvent and a catalyst at temperatures up to reflux temperatures to form the corresponding 1,3-diamino-$\Delta^{3,5}$-steroid.

3,274,177
METADIOXANE DERIVATIVES OF PREGNANE COMPOUNDS

Katsura Morita, Ikeda, Hayao Nawa, Nishitomatsu, Amagasaki, and Takuichi Miki, Mukosho, Amagasaki, Japan, assignors to Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan

No Drawing. Filed Aug. 1, 1962, Ser. No. 213,885
Claims priority, application Japan, Apr. 25, 1962, 37/17,007
24 Claims. (Cl. 260—239.55)

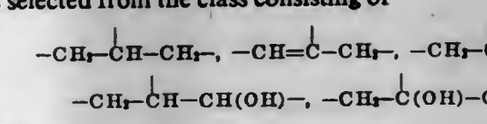
8. A compound of the formula



wherein R^1 and R^2 are selected from the class consisting of hydrogen, loweralkyl having not more than five carbon atoms, a carboxy-(lower)alkyl having not more than five carbon atoms, (lower)alkoxycarbonyl-(lower)alkyl of which the lower alkoxy has up to two carbon atoms and the lower alkyl has up to four carbon atoms, lower alkoxy having not more than two carbon atoms and a polymethylene having from four to five carbon atoms, said polymethylene including both R^1 and R^2; R^3 is selected from the class consisting of hydroxyl together with hydrogen, a lower aliphatic acyloxy together with hydrogen, and oxo; and



is selected from the class consisting of



and



3,274,178
METHOD FOR PREPARING 16α-HYDROXYPREGNENES AND INTERMEDIATES OBTAINED THEREIN

Percy L. Julian, Oak Park, and Arthur Magnani, Wilmette, Ill., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 28, 1964, Ser. No. 371,106
7 Claims. (Cl. 260—239.55)

1. The method of preparing 4-pregnene-16α,17α,21-triol-3,20-dione 21-acetate 16,17-acetonide comprising:

(1) reacting 5-pregnene-3β,16α,17α-triol-20-one with about 2 moles of bromine to form a mixture of 5,6, 21-tribromopregnane-3β,16α,17α-triol-20-ones,

(2) reacting said tribromopregnanetriolone with from

about 2–3 moles of an alkali metal iodide to form 21-iodo-5-pregnene-3β,16α,17α-triol-20-one,

(3) reacting said 21-iodopregnenetriolone with an alkali metal acetate to form 5-pregnene-3β,16α,17α, 21-tetrol-20-one 21-acetate,

(4) reacting said pregnenetetrolone acetate with an excess of acetone in the presence of a member selected from the group consisting of iodine and perchloric acid to form the 16,17-acetonide,

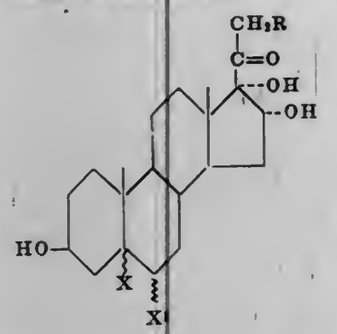
(5) reacting said acetonide with about one mole of bromine to form the 5,6-dibromide,

(6) oxidizing said dibromide with Jones reagent at below about room temperature to give 5,6-dibromopregnane-16α,17α,21-triol-3,20-dione 16,17-acetonide 21-acetate,

(7) reacting said dibromopregnanetrioldione with zinc-acid to give 5-pregnene-16α,17α,21-triol-3,20-dione 16,17-acetonide 21-acetate, and

(8) isomerization of said pregnenetrioldione under acid conditions to complete the formation of 4-pregnene-16α,17α,21-triol-3,20-dione 21-acetate 16,17-acetonide.

7. A compound of the structure:



in which

X and X' are members selected from the group consisting of bromine or when taken together with the carbon atoms to which they are attached, vinylene; and

R is a member selected from the group consisting of hydrogen and bromine, at least R being bromo or X and X^1 being both bromo.

3,274,179

3-HALOETHYNYL-3-HYDROXY DERIVATIVES OF THE ANDROSTANE-17-ONE AND PREGNANE-20-ONE SERIES

Burton G. Christensen, Scotch Plains, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,276

8 Claims. (Cl. 260—239.55)

1. 3-haloethynyl-3-hydroxy-androstane-17-ones.

3. 17-alkylenedioxy-3-haloethynyl-3-hydroxy-androstane-17-ones.

3,274,180

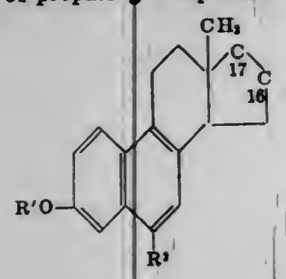
METHOD OF PREPARING PREGNAPENTAENES

Milton David Heller, New City, N.Y., Robert Herman Lenhard, Ridgefield Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 15, 1964, Ser. No. 382,936

20 Claims. (Cl. 260—239.55)

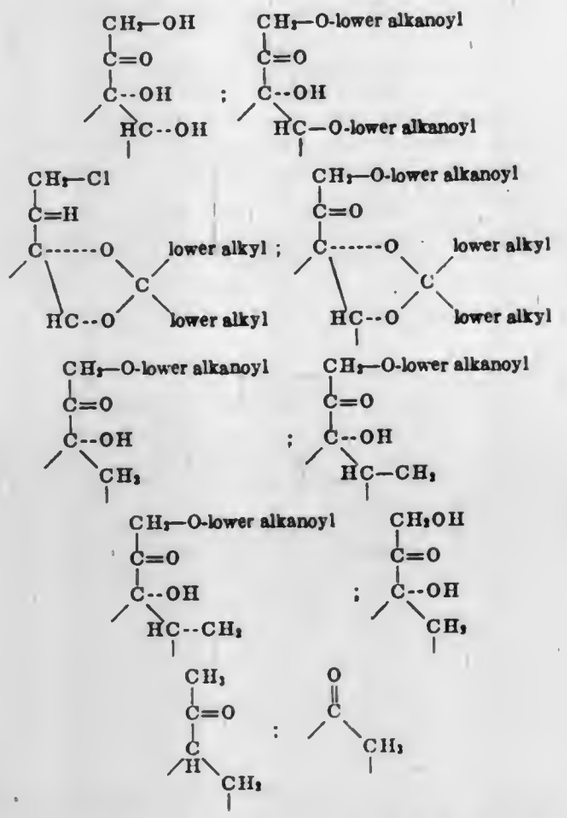
1. A method of preparing compounds of the formula:



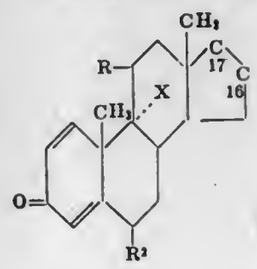
wherein R' is selected from the group consisting of hydrogen and lower alkanoyl, R^2 is hydrogen, methyl, fluoromethyl, difluoromethyl, trifluoromethyl or fluorine and



is selected from the group consisting of



which comprises contacting a steroid of the formula:



wherein R_2 and

is as defined above and X is selected from the group consisting of chlorine and bromine and R is selected from the group consisting of hydroxyl and chlorine, with a weak base at a temperature within the range of about 15° C. to about 160° C. and recovering said product therefrom.

3,274,181

PROCESS FOR OXYGENATION OF ORGANIC COMPOUNDS

Christopher S. Foote and Sol Wexler, Los Angeles, Calif., assignors to The Regents of The University of California, a corporation of California

No Drawing. Filed Sept. 18, 1964, Ser. No. 397,602

12 Claims. (Cl. 260—239.55)

1. A process for oxygenating an organic compound selected from the group consisting of compounds containing at least 1 carbon-carbon double bond with a total of 3 to 4 organic electron-donating moieties attached to the carbon atoms of said double bond, compounds with at least 2 conjugated carbon-carbon double bonds in cisoid configuration, and polycyclic aromatic compounds with at least 3 linearly-fused aromatic rings, which comprises mixing said organic compound, hydrogen peroxide, and a positive halogen compound, and subsequently isolating an organic product containing additional chemically-bonded oxygen.

3,274,182

PROCESS FOR REDUCING 19-METHYL-1,4-DIEN-3-ONES TO CORRESPONDING 19-NOR-3-OXY-1,3,5(10)-TRIENES

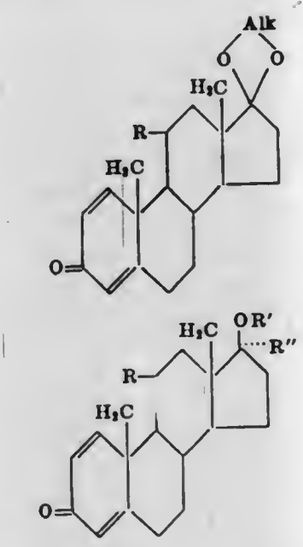
Hugh L. Dryden, Jr., Deerfield, and Gayle M. Webber, Evanston, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,095

Claims priority, application Canada, Dec. 28, 1963, 892,254

20 Claims. (Cl. 260—239.55)

1. In a process for converting a steroidal 19-methyl-1, and dried in air to afford 3,11β-dihydroxyestra-1,3,5(10)-triene, the step which consists of contacting a member of the group consisting of compounds of the formulas



androsta-1,4-diene-3,-17-dione 17-17-dimethyl ketal, 11β-hydroxyandrosta-1,4-diene - 3,17 - dione 17,17 - dimethyl ketal, and 22α-spirosta-1,4-dien-3-one with a member of the group consisting of alkali metals and mixtures thereof in the presence of a solvent and a radical anion precursor, said solvent being a member of the group consisting of lower aliphatic ethers, fully alkylated polyhydric alcohols, acetals, cyclic ethers, tertiary amines, and benzene, said radical anion precursor being a member of the group consisting of biphenyl, naphthalene, methylnaphthalene, dimethylnaphthalene, phenanthrene, terphenyl, anthracene, acenaphthene, fluoranthene, dibenzofuran, and benzophenone, Alk in the first formula being an alkylene radial containing more than 1 and fewer than 6 carbon atoms and R therein being a member of the group consisting of hydrogen and hydroxyl and, in the second formula, R being defined as before, R' being a member of the group consisting of hydrogen and a tetrahydropyranyl radical, and R'' being a member of the group consisting of hydrogen and a lower alkyl radical containing fewer than 3 carbon atoms.

20. The process of converting 22α-spirosta-1,4-dien-3-one to the corresponding 19-nor-3-oxy-22α-spirosta-1,3,5(10)-triene which comprises heating a solution of said 22α-spirosta-1,4-dien-3-one in an inert solvent under nitrogen with a mixture of diphenylmethane and a continuous excess of the radical anion solution obtained by heating lithium with biphenyl in the presence of tetrahydrofuran under nitrogen.

3,274,183

3-(17β-HYDROXY-1,4-DIMETHYLESTRA-1,3,5(10)-TRIEN - 17α - YL)PROPIONIC ACID LACTONE AND INTERMEDIATES

Leland J. Chinn, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,297

5 Claims. (Cl. 260—239.57)

1. 3 - (17β-hydroxy-1,4-dimethylestra-1,3,5(10)-trien-17α-yl)propionic acid lactone.

3,274,184

METHOD FOR THE PREPARATION OF 2-STYRYLOXAZOLE COMPOUNDS

Harold Godfred Thompson, Whitehouse Station, N.J., and Martin Barry Bochner, Vienna, W. Va., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,883

17 Claims. (Cl. 260—240)

1. A method for preparing a 2-styryloxazole compound which comprises the steps of:

(1) forming a reaction mixture comprising (a) a 2-methyloxazole compound selected from the group consisting of substituted and unsubstituted 2-methylbenzoxazoles and substituted and unsubstituted 2-methylnaphthoxazoles, the substituents of said substituted oxazoles being selected from the group consisting of lower alkyl, lower alkoxy, hydroxy, carboxy, cyano, nitro and halogen radicals, (b) an aryl aldehyde selected from the group consisting of substituted and unsubstituted benzene aldehydes and substituted and unsubstituted naphthalene aldehydes, the substituents of said substituted aldehydes being selected from the group consisting of lower alkyl, lower alkoxy, hydroxy, carboxy, cyano, nitro and halogen radicals, (c) a sulfonic acid, (d) a di(lower alkyl) derivative of an alkanoyl amide selected from formamide and acetamide and (e) an inert solvent; the proportions of 2-methyloxazole and aryl aldehyde employed being from substantially stoichiometric proportions to a small excess of the aldehyde and the proportions of the sulfonic acid and alkanoyl amide derivative being, respectively, from about 0.05 to about 2 moles and from about 0.5 to about 5 moles, per mole of the 2-methyloxazole;

(2) heating the reaction mixture at reflux temperature to effect the condensation of the 2-methyloxazole with the aryl aldehyde;

(3) removing water of condensation from the reaction mixture, and

(4) recovering the 2-styryloxazole product from the reaction mixture.

3,274,185

PHTHALAZINE DERIVATIVES

Max V. Sigal, Jr., Gayton, England, Paolo Marchini, Charlottesville, Va., and Buford L. Poet, Bristol, Tenn., assignors to The S. E. Massengill Company, Bristol, Tenn.

No Drawing. Original application Oct. 8, 1963, Ser. No. 314,640. Divided and this application May 3, 1965, Ser. No. 462,162

6 Claims. (Cl. 260—240)

3. 6,7-dimethoxy-1,4-dihydroxy phthalazine.

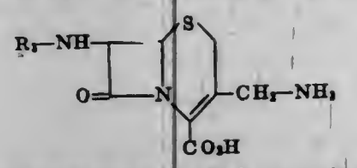
6. 1-(3',4',5' - trimethoxybenzylidene) - 2-(3'',4''-dimethoxybenzyl)phthalazinyl hydrazine.

3,274,186
DERIVATIVES OF CEPHALOSPORIN C AND THEIR SYNTHESIS

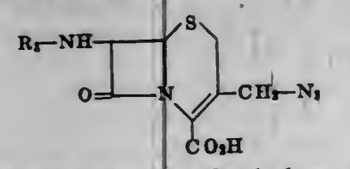
Michael Derek Barker, Barnet, and Gordon Alan Somerfield, Beaconsfield, England, assignors to Glaxo Laboratories Limited, Greenford, England, a British company

No Drawing. Filed July 5, 1963, Ser. No. 293,171
Claims priority, application Great Britain, July 11, 1962, 26,675/62
19 Claims. (Cl. 260—243)

1. A process for producing a compound selected from the group consisting of compounds of the formula:

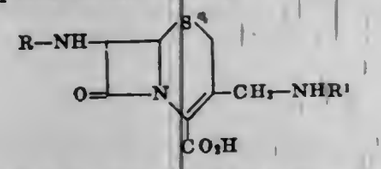


in which R^3 is carboxylic acyl which comprises the step of reducing a compound selected from the group consisting of compounds of the formula:



wherein R^3 has the meaning defined above, by catalytic hydrogenation using a precious metal catalyst selected from the group consisting of platinum and palladium.

5. A compound of the formula



and salts thereof in which R is selected from the group consisting of

(a) $R^2(CH_2)_nCO$— where R^2 is phenyl, nitrophenyl, chlorophenyl, bromophenyl, lower alkyl phenyl, lower alkoxy phenyl, cycloalkyl or thienyl, and *n* is an integer from 1 to 4,

(b) R^3CO— where R^3 contains from 2 to 7 carbon atoms and is alkyl, alkylthioalkyl or alkoxyalkyl,

(c) R^4CO— where R^4 contains from 2 to 7 carbon atoms and is alkenyl, alkylthioalkenyl, alkenylthioalkyl, alkoxyalkenyl or alkenyloxyalkyl,

(d) $R^2X(CH_2)_nCO$— where R_2 and *n* are as defined above and X is oxygen or sulphur,

(e) $R^2(CH_2)_nS(CH_2)_m CH_2CO$— where R_2 and *n* are as defined above and *m* is 0 or an integer from 1 to 4, and

(f) R^2CO— where R^2 is as defined above,

and in which R^1 is hydrogen or an acyl group selected from the group consisting of

(g) $R^5(CH_2)_nCO$— where R_5 is the same as R^2 or lower alkyl pyridyl,

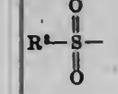
(h) R^6CO— where R^6 is the same as R^3 or hydrogen,

(i) R^4CO— where R^4 is as defined above,

(j) $R^2X(CH_2)_nCO$— where R^2, *n* and X are as defined above,

(k) $R_2(CH_2)_nS(CH_2)_mCH_2CO$— where R_2, *n* and *m* are as defined above,

(l) R^7CO— where R^7 is the same as R^2, nicotinyl, isonicotinyl, quinaldinyl, quinoline-8-carbonyl, benzyloxy or lower alkoxy, and

(m) 

where R^8 is lower alkyl phenyl, lower alkyl, phenyl or pyridyl,

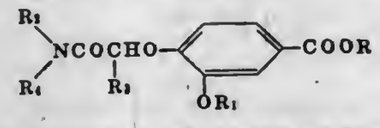
or is —CXNHR^9 where X is as defined above and R^9 is phenyl, cycloalkyl, lower alkoxy phenyl, lower alkenyl or lower alkyl.

3,274,187
3-ALKOXY-4-[α(N-SUBSTITUTED-CARBAMYL)-ALKOXY]-BENZOIC ACID ESTERS

Rudolf Hiltmann, Hartmund Wollweber, Friedrich Hoffmeister, and Wolfgang Wirth, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 19, 1962, Ser. No. 245,658
Claims priority, application Germany, Dec. 21, 1961, F 35,614
14 Claims. (Cl. 260—247.2)

1. A chemical compound of the formula:



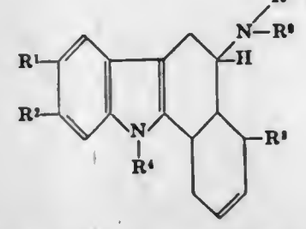
wherein R is lower alkyl; R_1 is selected from the group consisting of methyl and ethyl; R_2 is selected from the group of hydrogen, methyl and ethyl; R_3 is selected from the group consisting of hydrogen and lower alkyl; R_4 is lower alkyl; and R_3 and R_4 when joined with the nitrogen atom form a heterocyclic member selected from the group consisting of pyrrolidino, piperidino, morpholino, 2-oxopyrrolidino, and 2-oxopiperidino.

3,274,188
5-AMINOBENZOCARBAZOLES

Stephen Sallay, Wynnewood, Montgomery, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,092
9 Claims. (Cl. 260—247.5)

1. A compound selected from the group consisting of (1) a compound having the formula:



wherein R^1 and R^2 are selected from the group consisting of hydrogen, lower alkyl and lower alkoxy; R_3 is selected from the group consisting of hydrogen, lower alkyl and lower alkoxy; R^4 is selected from the group consisting of hydrogen, lower alkyl and benzyl; and R^5 and R^6 are selected from the group consisting of hydrogen, lower alkyl, dimethylaminoethyl and R^5 and R^6 together form a radical selected from the group consisting of morpholino, thiomorpholino, piperidino, piperazino, and pyrrolidino; and (2) the pharmaceutically acceptable, nontoxic acid addition salts thereof.

3,274,189
NOVEL COMPOSITIONS FOR TREATING TEXTILES AND PROCESS FOR MAKING SAME UTILIZING PHOSPHORIC ACID

Louis W. Smith, Danville, Va., assignor to Dan River Mills, Incorporated, Danville, Va., a corporation of Virginia

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,851
3 Claims. (Cl. 260—248)

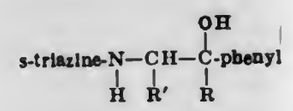
1. Process for making a readily curable, textile crease-proofing composition comprising adding phosphoric acid to 1,3-dimethylol-3,4,5,6-tetrahydro-5(2-hydroxyethyl)-s-triazin-2-one, said phosphoric acid being added in an amount in the range of about 0.04 to about 0.2 mol of phosphoric acid per mol of said 1,3-dimethylol-3,4,5,6-tetrahydra-5(2-hydroxyethyl)-s-triazin-2-one, thus forming said composition.

3,274,190
β-HYDROXYPHENETHYL-AMINO-s-TRIAZINE

Allan Poe Gray and Donald Elmer Heitmeier, Decatur, Ill., assignors to Neisler Laboratories, Inc., Decatur, Ill., a corporation of Delaware

No Drawing. Original application Oct. 30, 1961, Ser. No. 148,716, now Patent No. 3,192,216, dated June 29, 1965. Divided and this application May 12, 1965, Ser. No. 458,514
3 Claims. (Cl. 260—249.5)

1. A chemical compound having the formula



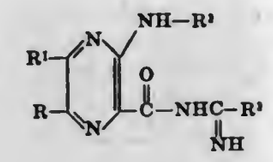
wherein s-triazine is the s-triazine ring attached to the β-hydroxyphenethylamino moiety by a ring carbon atom, the substituents on the s-triazine and phenyl rings being selected from the group consisting of hydrogen, and not more than one halo, lower-alkyl, lower alkoxy, methylenedioxy, amino, nitro, trihalomethyl, hydroxy, mercapto, lower-alkylthio and carboxy, R is selected from the group consisting of hydrogen, lower-alkyl, benzyl and phenyl and R′ is selected from the group consisting of hydrogen and methyl.

3,274,191
N-(3-AMINOPYRAZINOYL) BENZAMIDINES AND PROCESS FOR PREPARING

Edward J. Cragoe, Jr., and John B. Bicking, Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 15, 1963, Ser. No. 323,886
14 Claims. (Cl. 260—250)

1. A compound selected from the group consisting of a N-(3-aminopyrazinoyl)benzamidine having the structural formula

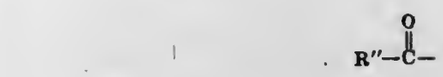


and pharmaceutically acceptable salts thereof wherein

R is selected from the group consisting of hydrogen, halo trifluoromethyl, lower alkyl, and phenyl;

R^1 is selected from the group consisting of hydrogen and lower alkyl;

R^2 is selected from the group consisting of hydrogen and



wherein R″ is selected from the group consisting of lower alkyl and phenyl;

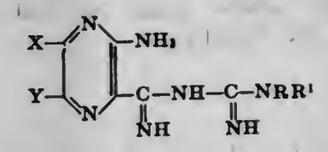
R^3 is selected from the group consisting of phenyl and halophenyl.

3,274,192
DERIVATIVES OF PYRAZINE AND A METHOD FOR THEIR PREPARATION

Edward J. Cragoe, Jr., Lansdale, and James H. Jones, Blue Bell, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,868
17 Claims. (Cl. 260—250)

7. (3 - amino-5-X-6-Y-pyrazinimidoyl) guanidine compounds having the structural formula



wherein X is selected from the group consisting of hydrogen, amino, mono-lower aliphaticamino and di-lower-aliphaticamino; Y is selected from hydrogen, chloro, bromo and iodo; and R and R^1 separately are selected from the group consisting of hydrogen, lower alkyl, hydroxy-lower alkyl, and phenyl-lower alkyl.

3,274,193
PURIN-6-YLTRIMETHYLAMMONIUM CHLORIDE AND PROCESSES OF MAKING IT

Jerome P. Horwitz, Oak Park, and Vainutis Vaitkevicius, Inkster, Mich., assignors to the United States of America as represented by the Secretary of Health, Education, and Welfare

Filed Nov. 26, 1962, Ser. No. 239,944
3 Claims. (Cl. 260—254)

1. Purin-6-yltrimethylammonium chloride.

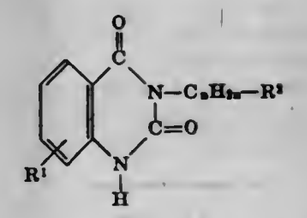
2. In a process for synthesizing purin-6-yltrimethylammonium chloride, the steps of preparing a solution of 6-chloropurine in N,N-dimethylformamide, bubbling trimethylamine through this solution, cooling the solution at room temperature, removing the solid precipitate from the cooled solution and then washing the removed precipitate with N,N-dimethylformamide and then with ether.

3,274,194
QUINAZOLINEDIONE DERIVATIVES

Shin Hayao, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,168
6 Claims. (Cl. 260—256.4)

1. A compound selected from the group consisting of a compound of the formula



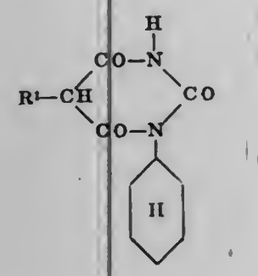
wherein R_1 is a member selected from the group consisting of hydrogen, chloro, nitro and lower alkanoyl amino; *n* is a number from 0 to 6 inclusive; and R_2 is a member selected from the group consisting of piperazyl, 4-phenyl-1-piperazyl; 4-(chlorophenyl)-1 piperazyl; 4-phenyl lower alkyl -1-piperazyl; pyridyl; 1-piperidyl; 4-phenyl-1-piperidyl; piperazinium methosulfate; 4-phenyl piperazinium methosulfate; 4-phenyl-1 lower alkyl-1-piperazinium methosulfate; 4-chlorophenyl-1 lower alkyl-1-piperazinium; morpholino; 2,3,4,5-tetrahydro 1,4(1H)benzodiazepin-4-yl; and 2,3,4,5-tetrahydro-1 lower alkyl-1, 4(1H)benzodiazepin-4-yl; and pharmacologically acceptable acid additions salts thereof.

3,274,195
BARBITURIC ACID DERIVATIVES

Shigeo Senda, Gifu, Hajime Fujimura, Kyoto, and Hiroshi Izumi, Gifu, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed June 18, 1964, Ser. No. 376,219
Claims priority, application Japan, Oct. 5, 1961, 36/36,324; Apr. 26, 1962, 37/17,087; July 26, 1962, 37/31,819
13 Claims. (Cl. 260—257)

1. A member selected from the class consisting of compounds of the formula



wherein R^1 stands for a hydrocarbon residue having up to six carbon atoms, their alkali metal salts and their alkaline earth metal salts.

3,274,196
PROCESS FOR THE PREPARATION OF 5-HALO-3,6-DISUBSTITUTED URACILS

Wallace W. Thompson, Wilmington, and Rollin H. Wallick, Claymont, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,802
1 Claim. (Cl. 260—260)

A process for the preparation of 5-halo-3,6-disubstituted uracils, said process comprising the steps of

(a) heating a 3,6-disubstituted uracil in an aqueous medium to a temperature of from 60° C. to 110° C. in a liquid medium;
(b) continuously adding a halogen selected from the group consisting of chlorine and bromine to said liquid medium, at said temperature;
(c) measuring the oxidation-reduction potential of the reaction mass during said addition of halogen;
(d) ceasing the addition of halogen when a rapid change occurs in the oxidation-reduction potential of the reduction mass;
(e) cooling the resulting reaction mass; and
(f) recovering the resulting solid 5-halo-3,6-disubstituted uracil from the reaction mass.

3,274,197
SULFO PHTHALOYLACRIDONES

Kurt Weber and Max Staeuble, Basel, Paul Hugelshofer, Otelfingen, Zurich, and Istvan Hari, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Nov. 28, 1961, Ser. No. 155,464
Claims priority, application Switzerland, Nov. 29, 1960, 13,356; Jan. 30, 1961, 1,065; Nov. 1, 1961, 12,649
4 Claims. (Cl. 260—276)

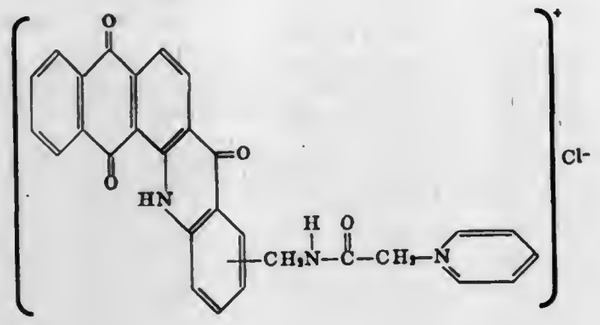
2. α-Sulfothenoylamino phthaloylacridone whose amine group bears the sulfothiophene carboxylic acid bound to the nitrogen atom of the amino group through its —CO— group.

3,274,198
QUATERNARY ANTHRAQUINONE DYESTUFFS

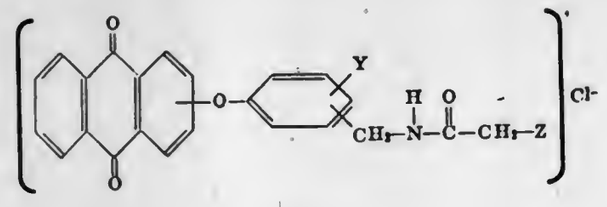
Melvin N. Turetzky, Wayne, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 14, 1963, Ser. No. 287,770
9 Claims. (Cl. 260—276)

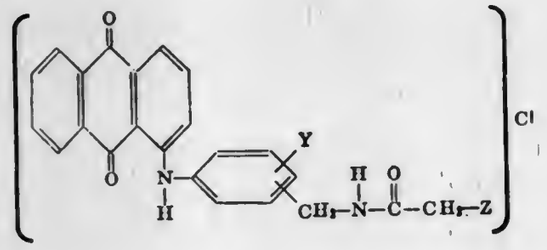
4. The quaternary of the formula:



9. The quaternary compounds selected from the formulae:



and



wherein Y represents a member selected from the group consisting of hydrogen and an electron donor selected from the group consisting of methyl, methoxy and methylthio and Z represents a quaternary nitrogen group.

3,274,199
QUATERNARY AMMONIUM SALTS OF HIGHER ALPHA-SULFO FATTY ACIDS

Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 17, 1964, Ser. No. 352,664
4 Claims. (Cl. 260—286)

3. Di(lauryl isoquinolinium) alpha-sulfo-stearate.

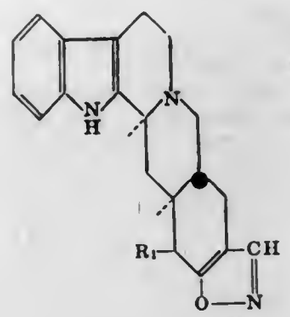
4. The salt of an alkyl quaternary ammonium compound and an alpha-sulfo-fatty acid selected from the group consisting of alpha-sulfo-decanoic acid, alpha-sulfo-octanoic acid, alpha-sulfo-lauric acid, alpha-sulfo-myristic acid, alpha-sulfo-palmitic acid, alpha-sulfo-stearic acid, alpha-sulfo-arachidic acid, and alpha-sulfo-behenic acid said alkyl quaternary ammonium compound having a phenol coefficient of at least 100 with respect to both *Staphylococcus aureus* and *Salmonella typhosa* at 20° C. and having at least one alkyl having 8 to 22 carbon atoms.

3,274,200
YOHIMBANOISOXAZOLES

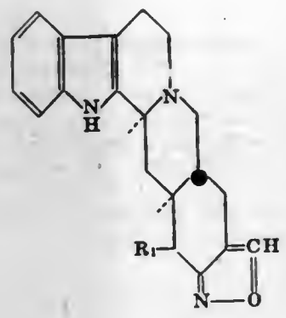
John Shavel, Jr., Mendham, and Maximilian Von Strandtmann, Rockaway Township, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Oct. 24, 1961, Ser. No. 147,172
5 Claims. (Cl. 260—288)

1. A member selected from the group consisting of compounds of the formulas:



and



and mixtures thereof wherein R_1 is a member selected from the group consisting of hydrogen and methyl, and the pharmaceutically acceptable nontoxic acid addition salts selected from the group consisting of maleate, fumarate, benzoate, succinate, methyl-sulfonate, sulfonate, citrate, tartrate, salicylate, malate, cinnamate, hydrochloride, hydrobromide, phosphate, methyliodide, ethylbromide, n-hexylbromide, benzylchloride, methylsulfate, ethylsulfate and methyl p-toluene sulfonate.

3,274,201
2-LOWER ALKYL 1,2,3,4,4a,9a-HEXAHYDRO-9H-INDENO[2,1-c]PYRIDINES

Marshall D. Draper, Woodland Hills, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Aug. 12, 1965, Ser. No. 479,290
9 Claims. (Cl. 260—290)

1. 2 - lower alkyl - 4a-phenyl-1,2,3,4,4a,9a-hexahydro-9H-indeno[2,1-c]pyridine.

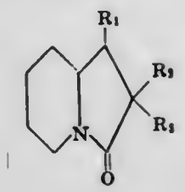
8. 3 - benzyl-1-methyl-4-phenyl-1,2,5,6-tetrahydropyridine.

3,274,202
CERTAIN OCTOHYDRO-3-OXO-INDOLIZINES

Richard Joseph Mohrbacher, Fort Washington, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed Apr. 2, 1963, Ser. No. 269,879
7 Claims. (Cl. 260—294)

1. A compound having the formula



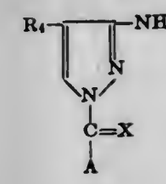
wherein R_1 is a member selected from the group consisting of hydrogen and phenyl, R_2 is a member selected from the group consisting of hydrogen and benzyl and R_3 is a member selected from the group consisting of hydrogen, carboxyl and lower alkoxycarbonyl, with the proviso that when one of R_1 and R_2 is hydrogen, the other substituent is a group other than hydrogen.

3,274,203
1-CARBAMYL AND THIOCARBAMYL-3-AMINO-4-NONSUBSTITUTED AND SUBSTITUTED PYRAZOLES

Clifford L. Dickinson, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

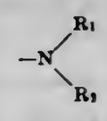
No Drawing. Filed May 31, 1963, Ser. No. 284,323
19 Claims. (Cl. 260—294)

1. A compound selected from compounds of the formula



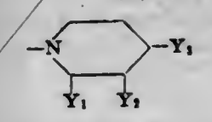
where

X is selected from the group consisting of oxygen and sulfur;
A is selected from the group consisting of



wherein R_1 is methyl; and R_2 is selected from the group consisting of alkyl of 1 through 6 carbons where the alkyl is joined to the carbamyl nitrogen by a carbon selected from the group consisting of a primary and a secondary carbon of said alkyl; alken-2-yl of 3 through 6 carbons where the alken-2-yl is joined to the carbamyl nitrogen by a carbon selected from the group consisting of a primary and a secondary carbon of said alken-2-yl; alkoxyalkyl of 2 through 6 total carbons; dimethylamino; and dialkylaminoalkyl where each of the alkyl groups in the dialkyl portion has 1 through 2 carbons and the remaining alkyl group has 1 through 4 carbons with a total of 3 through 7 in said dialkylaminoalkyl group;

morpholino;
pyrrolidino;
piperidino;
dehydropiperidino;
azabicyclononidino; and
a substituted piperidino group of the structure



wherein Y_1 is selected from the group consisting of hydrogen and methyl, Y_2 is selected from the group consisting of hydrogen, methyl, ethyl and —$COOR_5$ where R_5 is alkyl of 1 through 4 carbons; and Y_3 is selected from the group consisting of hydrogen, alkyl of 1 through 6 carbons, hydroxyalkyl of 2 through 6 carbons, trifluoromethyl, —$COOR_6$ where R_6 is alkyl of 1 through 4 carbons, dialkylaminoalkyl of 3 through 7 carbons where each of the alkyl groups in the dialkyl portion has 1 through 2 carbons and the remaining alkyl group has 1 through 4 carbons, pyrrolidinomethyl, and hydrocarbon aralkyl of 7 through 9 carbons;
R_3 is selected from the group consisting of hydrogen, formyl, acetyl, propionyl; and
R_4 is selected from the group consisting of hydrogen, chlorine, bromine, fluorine, alkyl of 1 through 3 carbons, and trifluoromethyl.

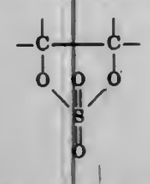
8. 1-N-(4 - methylpiperidino)carbonyl-3(5)-formamido-4-chloropyrazole.

3,274,204
PREPARATION OF SULFATO-BETAINE-TYPE COMPOUNDS

Donald L. Klass, Barrington, and Vincent Brozowski, Mundelein, Ill., assignors, by mesne assignments, to The Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Aug. 1, 1960, Ser. No. 46,362
12 Claims. (Cl. 260—294.8)

1. A method of preparing inner salts comprising reacting an oxirane containing 2–60 carbon atoms with sulfur trioxide to form a cyclic sulfate ester of the formula



in which the unsatisfied valences of the carbon atoms are connected to a material selected from the group consisting of hydrogen and hydrocarbon radicals, and reacting the resulting ester with a tertiary amine.

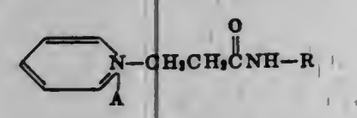
2. A method in accordance with claim 1 in which the ester is ethylene sulfate and in which the tertiary amine is pyridine.

3,274,205
QUATERNARY AMMONIUM DERIVATIVES OF N-ALKYLCARBAMOYLETHYL COMPOUNDS

Norbert M. Bikales, Livingston, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,913
2 Claims. (Cl. 260—295)

1. A quaternary ammonium compound of the formula:



wherein R is the residue of an olefin having from about 6 to 40 carbon atoms and A is an anion.

3,274,206
PROCESS FOR THE PRODUCTION OF PYRIDINE ALDEHYDES

Godfrey Wilbert, Carmel, Louis Scarano, Middletown, and Bernard F. Duesel, Yonkers, N.Y., assignors to Nepera Chemical Co., Inc.

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,099
9 Claims. (Cl. 260—297)

1. A method for the preparation of pyridine aldehydes which comprises, subjecting the corresponding nitrile maintained in an aqueous acid reaction medium containing a hydrogenation catalyst selected from the group consisting of palladium and platinum dioxide, to controlled hydrogenation by the action of an approximately equal molar amount of molecular hydrogen based on the quantity of said nitrile, wherein the reaction temperature is less than about 70° C.

3,274,207
PROCESSES FOR PREPARING THIAZOLE CARBOXYLIC ACIDS

Janos Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 2, 1961, Ser. No. 142,000
7 Claims. (Cl. 260—302)

1. The method for producing a thiazole carboxylic acid from the corresponding halomethylthiazole which comprises treating a monohalomethylthiazole with an acid selected from the group consisting of sulfuric acid, phosphoric acid, hydrochloric acid and hydrobromic acid in an aqueous medium, wherein the amount of acid used when the halogen acids are employed is less than 4 moles per mole of said thiazole, to form a hydroxymethylthiazole, and contacting said hydroxymethylthiazole with a mixture of nitric acid and sulfuric acid.

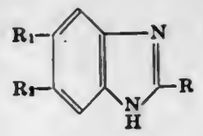
7. The method for producing a thiazole-carboxylic acid which comprises contacting a compound selected from the group consisting of hydroxymethylthiazoles, and thiazole-aldehydes with a mixture of nitric acid and sulfuric acid.

3,274,208
PROCESSES FOR PREPARING 2-THIAZOLYL-BENZIMIDAZOLE COMPOUNDS

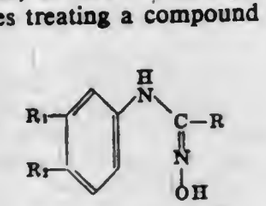
Robert E. Jones, North Muskegon, Mich., and George Gal, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,874
3 Claims. (Cl. 260—302)

1. The process for making a 2-substituted benzimidazole of the formula



where R is a thiazolyl, thiadiazolyl or isothiazolyl ring, the point of attachment of said ring to the benzimidazole nucleus being at a carbon atom of said heterocyclic ring, and R_1 and R_2 are hydrogen, loweralkyl, loweralkoxy, loweralkylthio, phenoxy, phenylthio, halo, phenyl, halophenyl or thienyl, provided that when both R_1 and R_2 are other than halo, at least one of R_1 and R_2 is hydrogen, that comprises treating a compound of the formula



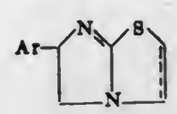
where R, R_1 and R_2 are as defined above, with an alkyl or aryl sulfonyl halide in the presence of a base.

3,274,209
CERTAIN 6-SUBSTITUTED-IMIDAZO [2,1-b] THIAZOLE COMPOUNDS

Alfons Herman Margaretha Raeymaekers, Beerse, near Turnhout, Denis Cyriel Irene Corneel Thienpont, Antwerp, and Paul Joseph Alfred Walter Demoen, Vosselaar, near Turnhout, Belgium, assignors to Janssen Pharmaceutica N.V., a corporation of Belgium

No Drawing. Filed Apr. 7, 1965, Ser. No. 446,408
10 Claims. (Cl. 260—306.7)

1. An imidazo [2,1-b] thiazole selected from the group consisting of



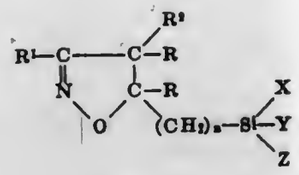
and the therapeutically acceptable acid addition salts thereof, wherein the dotted line between the 2- and 3-positions of the imidazo [2,1-b] thiazole nucleus represents an optional bond and Ar is a member selected from the group consisting of thenyl, furyl, phenyl, halophenyl, nitrophenyl aminophenyl, trifluoromethylphenyl, naphthyl and benzyl, provided that, when said Ar is benzyl, a saturated bond exists between the 2- and 3-positions of the imidazo [2,1-b] thiazole nuclus.

3,274,210
NEW SILICON-CONTAINING ISOXAZOLES AND ISOXAZOLINES

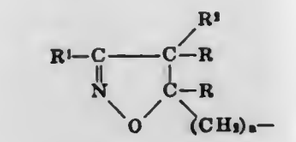
Christian Henri Yves Fritsch and Marcel Joseph Celestin Lefort, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed July 20, 1964, Ser. No. 383,928
Claims priority, application France, July 24, 1963, 942,515; Nov. 8, 1963, 953,193
16 Claims. (Cl. 260—307)

1. A compound of the formula:



in which the R substituents when taken separately represent hydrogen atoms and when taken together represent a single bond, R^1 is a member selected from the class consisting of phenyl and lower alkyl, R^2 is a member selected from the class consisting of hydrogen and tri (lower alkyl)silyl, *n* is an integer at least 0 and at most 1, and X, Y, and Z are each members selected from the class consisting of lower alkyl, lower alkoxy, lower alkanoyloxy, and chloro, and when R^2 is hydrogen, in the case of X, a radical of formula:



3,274,211
N-ALKYLATION OF AMIDES AND IMIDES

Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 4, 1964, Ser. No. 342,549
9 Claims. (Cl. 260—326)

1. A process for the N-alkylation of a compound selected from the group consisting of amides and imides containing only the one functional group and having a hydrogen atom attached to the nitrogen atom which comprises reacting said compound with a carbonyl compound selected from the group consisting of aldehydes and ketones in which carbonyl is the only functional group at a hydrogen pressure of from about atmospheric to about 100 atmospheres and at a temperature of from about 60° C. to about 250° C. under acidic reaction conditions and in the presence of a platinum catalyst.

3,274,212
1,3-DIALKYLPROLINES

Barney J. Magerlein, Portage, and Robert D. Birkenmeyer, Comstock Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 15, 1964, Ser. No. 375,301
4 Claims. (Cl. 260—326.3)

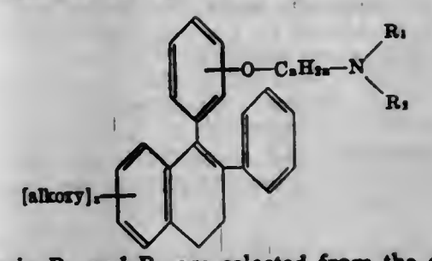
1. N - acetyl-2,2-dicarboethoxy-3-propyl-5-hydroxypyrrolidine.

3,274,213
ALKOXY-SUBSTITUTED 2-PHENYL-1-(TERTIARY-AMINOALKOXY)PHENYL-3,4-DIHYDRONAPHTHALENES

Daniel Lednicer, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Sept. 5, 1961, Ser. No. 135,767. Divided and this application July 23, 1963, Ser. No. 296,939
8 Claims. (Cl. 260—326.5)

1. A compound selected from the class consisting of (a) compounds having the formula:



wherein R_1 and R_7 are selected from the class consisting of lower-alkyl from 1 to 8 carbon atoms, inclusive, and together with the nitrogen atom, a member selected from the class consisting of pyrrolidino, 2-methylpyrrolidino, 2,2-dimethylpyrrolidino, piperazino, 4-methylpiperazino, 2,4-dimethylpiperazino, morpholino, piperidino, 2-methylpiperidino, 3-methylpiperidino, hexamethyleneimino, homopiperazino and homomorpholino, C_nH_{2n} represents alkylene from 2 to 6 carbon atoms, inclusive, alkoxy has from 1 to 8 carbon atoms, inclusive, and *x* is an integer from 1 to 4, inclusive;

(b) the nontoxic pharmacologically acceptable acid addition salts of compounds of the above formula;

(c) the N-oxides of compounds of the above formula;

(d) the nontoxic pharmacologically acceptable acid addition salts of N-oxides of compounds of the above formula; and

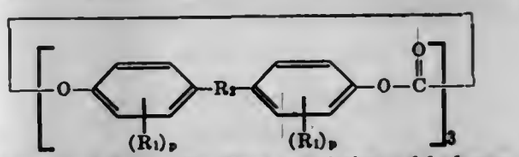
(e) quaternary ammonium salts of compounds of the above formula, selected from the class consisting of lower-alkyl quaternary ammonium halides, lower-alkenyl quaternary ammonium halides, lower-alkyl quaternary ammonium sulfates, aralkyl quaternary ammonium halides, and lower-alkyl quaternary arylsulfonates.

3,274,214
AROMATIC CARBONATES

Robert J. Prochaska, Stockbridge, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,292
4 Claims. (Cl. 260—340.2)

1. A cyclic aromatic carbonate polymer having the structure



where

R_1 is selected from the class consisting of halogen and alkyl;

R_2 is an alkylidene group; and

p is a whole number from 0 to 2.

3,274,215
MONOALKYL ADIPATE-4-LACTONES BY ALCOHOLYSIS OF 1,4-DICYANOBUTENE-1

Norman Eugene West, Vienna, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,175
8 Claims. (Cl. 260—343.6)

1. A process for the preparation of a monoalkyl

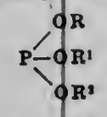
adipate-4-lactone, in which the alkyl group contains from one to four carbon atoms, by admixing 1,4-dicyanobutene-1 with a mixture of an excess, based on 1,4-dicyanobutene-1, of an alkanol containing from one to four carbon atoms, of water, and of sulfuric acid and heating the agitated mixture under reflux at a temperature above 100° C. until substantially all of the 1,4-dicyanobutene-1 has been consumed.

3,274,216
STABILIZATION OF LACTONES

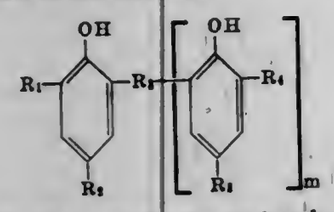
William F. Goldsmith, South Charleston, and David F. Marples, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 2, 1963, Ser. No. 313,188
7 Claims. (Cl. 260—343)

1. A stabilized composition of matter comprising an epsilon-caprolactone and, incorporated therein, a stabilizing amount of a triorgano phosphite of the formula



wherein R, R^1 and R^2 are each selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl, and alkaryl, each containing up to about 18 carbon atoms and an alkylated phenol of the formula



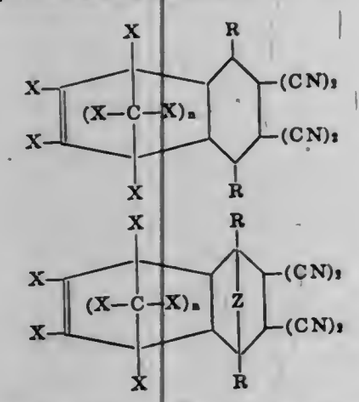
wherein R_1, R_2, R_4, and R_5 are each selected from the group consisting of hydrogen, alkyl, cycloalkyl, alkoxy, hydroxy, and hydroxyalkylene, each containing up to about 12 carbon atoms; *m* has a value of from 0 to 1, inclusive; and R_3, depending upon the value of *m*, is selected from the group consisting of hydrogen, alkyl, alkylene, cycloalkyl, cycloalkylene, alkoxy, alkyleneoxy, hydroxy, and oxy, each containing up to about 12 carbon atoms, with the proviso that at least one of the aforementioned R_1 through R_5 must be alkyl or alkoxy.

3,274,217
HALO-SUBSTITUTED TETRACYANOOCTAHYDROALKANONAPHTHALENES

Robert A. Dombro, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 29, 1963, Ser. No. 284,000
6 Claims. (Cl. 260—346.2)

6. A compound having the formula:



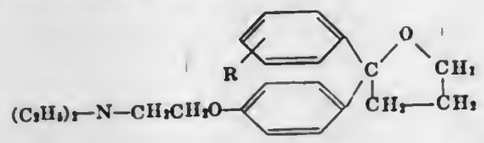
wherein X is hydrogen, chlorine or bromine, at least one X being chlorine or bromine, R is hydrogen, chlorine, bromine or alkyl containing from 1 to about 3 carbon atoms, Z is a member selected from the group consisting of methano, ethano, oxy and thioxy, and *n* is an integer of from 1 to 2.

3,274,218
SUBSTITUTED TETRAHYDROFURANS

James Harold Short, Lake Forest, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 20, 1964, Ser. No. 391,037
8 Claims. (Cl. 260—347.7)

1. A compound of the formula



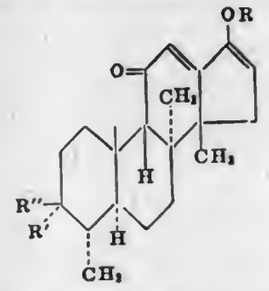
in which R is a member of the group consisting of halogen, loweralkyl and loweralkoxy.

3,274,219
4α,8α,14β-TRIMETHYL-12,16-ANDROSTADIENES

Gerald W. Krakower, Elizabeth, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 16, 1964, Ser. No. 397,034
3 Claims. (Cl. 260—397.45)

1. A compound of the formula



wherein R is acyl, wherein the acyl radical is of a hydrocarbon carboxylic acid of less than twelve carbon atoms; R'' is hydrogen; R' is acyloxy wherein the acyl radical is of a hydrocarbon carboxylic acid of less than twelve carbon atoms; and together R' and R'' is oxo (O=).

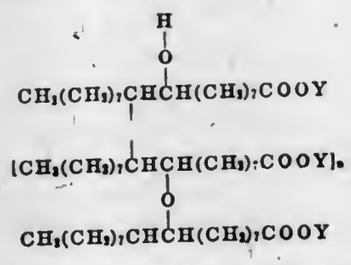
3,274,220
POLYETHER ALCOHOLS, POLYETHER ACIDS AND SALT DERIVATIVES AND METHOD OF PRODUCTION

Walter M. Budde, Minneapolis, Minn., assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Nov. 28, 1956, Ser. No. 624,725
14 Claims. (Cl. 260—404.5)

1. Ammonium salts of polymerized epoxy higher fatty acids.

2. The polymer of the structure:



wherein Y is a metal ion and *n* is an integer of from 1 to 12.

9. Polymerized epoxy higher fatty alcohols having poly ether linkages and free alcohol groups.

3,274,221
REACTION PRODUCT AND PROCESS FOR THE PRODUCTION THEREOF

Sol B. Radlove, 5220 W. Van Buren St., Chicago, Ill.

No Drawing. Filed Dec. 15, 1961, Ser. No. 160,421
10 Claims. (Cl. 260—410.9)

1. The method of producing an additive having utility in shortenings which comprises admixing inert hydrocarbon solvent which forms azeotropic mixtures with water at temperatures below 150° C. with an aqueous solution of alkali metal salt of monomeric monohydroxy aliphatic monocarboxylic acid containing 2 to 5 carbon atoms in the aliphatic hydrocarbon group, heating the admixture to remove solvent-water azeotropes until the mixture is substantially dehydrated, mixing substantially dehydrated mixture under substantially anhydrous conditions with a halide of a saturated fatty acid containing 16 to 20 carbon atoms in substantially equimolar proportions, heating such mixture to a temperature in the range between about 100° C. and 200° C. whereby a product with acid number in the range between 161.5 and 168.2 is obtained, removing any solvent remaining in the reaction mixture after completion of reaction heating, and separating the substantially solvent free reaction mixture from alkali metal halide.

3,274,222
LEAD STABILIZERS FOR POLYVINYL CHLORIDE AND POLYVINYL CHLORIDE COPOLYMERS

Alfred Szczepanek, Duren-Rolsdorf, Germany, assignor to Firma Chemische Fabrik Hoesch K.-G.

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,934
Claims priority, application Germany, Jan. 4, 1961, C 23,093
12 Claims. (Cl. 260—414)

1. A lead stabilizer for polyvinyl chloride and copolymers of polyvinyl chloride, obtained by reacting a basic lead salt which, in an aqueous suspension, has a pH value in excess of 6 with p-tert. octyl phenol, p-tert. nonyl phenol, p-tert. dodecyl phenol, o-tert. butyl phenol, 2,4-dibutyl phenol, and p,p'-secondary butylidene diphenol, in an aqueous medium at an elevated temperature.

6. A lead stabilizer according to claim 1, wherein the basic lead salt is a basic lead salt of an organic acid.

11. A lead stabilizer according to claim 1, wherein the basic lead salt is selected from the group consisting of: tetrabasic lead sulfate, tribasic lead sulfate, dibasic lead phosphite, monobasic lead phosphite, basic lead carbonate, dibasic lead stearate, dibasic lead phthalate, monobasic lead stearate, tetrabasic lead salicylate, tribasic lead maleate; and $13PbO \cdot PbSO_4 \cdot 4Pb(C_{17}H_{35}COO)_2$.

3,274,223
ORGANO-TITANIUM-ALUMINUM COMPOUNDS

Darrell C. Feay, Berkeley, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,529
10 Claims. (Cl. 260—429.5)

1. An organo-titanium-aluminum compound of the class having the general formula

$$(cp)_2Ti[CH_2Al(CH_3)X]_2$$

wherein cp is a cyclopentadienyl moiety selected from the group consisting of cyclopentadienyl and alkylcyclopentadienyl radicals and X is a substituent of the class consisting of halogen and lower alkoxy radicals.

3. A method of making an organo-titanium-aluminum compound by interacting a bis(cyclopentadienyl)titanium (IV) compound and at least one methylaluminum compound of kinds such that, on the basis of one mole of the titanium compound and two moles of the aluminum compound, there are supplied six methyl groups and two X groups in accordance with the relationship

$$(cp)_2TiG_2+Al(CH_3)_2G+Al(CH_3)_2G$$

wherein cp is a cyclopentadienyl moiety selected from the group consisting of cyclopentadienyl and alkylcyclopentadienyl radicals, two of the G's are methyl, the other two G's are X, and X is a substituent of the class consisting of halogen and lower alkoxy radicals, and carrying out the interacting at a reaction temperature not above about 135° C. until about two moles of methane have evolved per mole of starting $(cp)_2TiG_2$ compound.

3,274,224
STABILIZED TETRAETHYL LEAD ANTIKNOCK BLENDS

Herman E. Collier, Jr., Newark, Del., and John D. Sterling, Jr., Wenonah, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 25, 1963, Ser. No. 297,687
3 Claims. (Cl. 260—437)

1. An antiknock blend which consists essentially of
(A) tetraethyl lead,
(B) about 1 to about 2 theories, based on the lead, of a lead scavenger which consists of ethylene dichloride, and
(C) about 0.67% to about 1% by weight, based on the blend, of a turpentine which consists essentially of about 60% to about 80% by weight of alpha-pinene and about 35% to about 2% by weight of beta-pinene, the rest being monocyclic terpene hydrocarbons.

3,274,225
METHOD FOR PRODUCING ORGANIC POLYISOCYANATES SUBSTANTIALLY FREE OF SEDIMENT

James H. Saunders, Bridgeville, Pa., and Eugene L. Powers, New Martinsville, W. Va., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Jan. 4, 1963, Ser. No. 249,331
4 Claims. (Cl. 260—453)

1. A method of producing an aromatic polyisocyanate which is substantially free of sediment which comprises
(a) phosgenating a polyamine obtained by a process which comprises reacting an aromatic amine with a member selected from the group consisting of aldehydes and ketones to prepare an aromatic polyisocyanate,
(b) heating the resulting aromatic polyisocyanate to a temperature of at least about 225° C. for a maximum of about one minute, and
(c) quenching the reaction mixture containing said aromatic polyisocyanate to a temperature below about 50° C. in less than about three minutes.

3,274,226
BIS(ALKOXYISOCYANATOPHENYL)METHANE COMPOUNDS

Frank Long, Trevor, Wrexham, and Ryland James Roberts, Glynceiriog, near Wrexham, Wales, assignors to Monstanto Chemicals Limited, London, England, a British company

No Drawing. Filed July 30, 1963, Ser. No. 298,569
Claims priority, application Great Britain, Aug. 28, 1962, 32,962/62
4 Claims. (Cl. 260—453)

1. A compound selected from the group consisting of bis(2-alkoxy-5-isocyanatophenyl)methane, bis(2-alkoxy-3-isocyanatophenyl)methane, and bis(3-alkoxy-4-isocyanaotophenyl)methane wherein said alkoxy group has from 2 to 10 carbon atoms.

3,274,227
TRIHALOMETHYLATION OF POLARIZED DOUBLE BONDS

Heinz G. Viehe, Beersel-Linkebeek, Belgium, assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 12, 1962, Ser. No. 201,766
10 Claims. (Cl. 260—465)

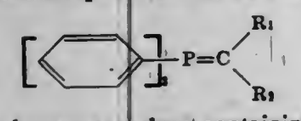
1. A method for trihalomethylation of an organic compound having at least one polarized double bond, said organic compound being selected from the group consisting of hydrocarbyl aldehydes and ketones, methyl and ethyl esters of α,β-unsaturated hydrocarbyl carboxylic acids, and α,β-unsaturated hydrocarbyl nitriles which comprises contacting a trihalomethane selected from the group consisting of trichloromethane, tribromomethane and triiodomethane with said organic compound in liquid ammonia at a temperature below about −10° C. and in the presence of a strong base in an amount ranging from about 0.01 mole to about 2 moles of said strong base per mole of trihalomethane.

3,274,228
TRIPHENYLPHOSPHINEMETHYLENE COMPOUNDS

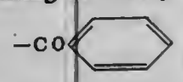
James J. Pappas, Flushing, N.Y., and Edward Gancher, Clifton, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed July 29, 1963, Ser. No. 298,396
4 Claims. (Cl. 260—465)

1. The compound represented by the formula



wherein R_1 is a benzene nucleus containing from 1 to 3 nitro groups as substituents and R_2 is a member selected from the group consisting of —CN, $—CO_2CH_3$, and

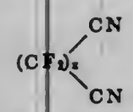


3,274,229
DEHYDRATION OF PERFLUORINATED AMIDES TO PREPARE A PERFLUORINATED NITRILE

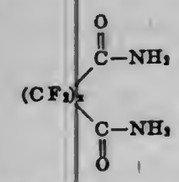
Carl J. Verbanic, Louisville, Ky., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed June 17, 1963, Ser. No. 288,464
10 Claims. (Cl. 260—465.2)

1. A process for preparing a perfluorinated nitrile having the formula



wherein x is an integer from two to four, which comprises reacting with heat the corresponding perfluorinated amide having the formula



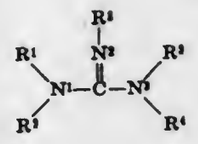
wherein x is an integer from two to four with a material selected from the group consisting of benzotrichloride and xylene hexachloride in the presence of a metallic halide Lewis acid catalyst therefor, the reaction with benzotrichloride being conducted at a molar ratio of greater than 3 moles of benzotrichloride per mole of the perfluorinated amide, and the reaction with xylene hexachloride being conducted at a molar ratio of greater than 1.5 moles of xylene hexachloride per mole of the perfluorinated amide.

3,274,230
PENTASUBSTITUTED GUANIDINES CONTAINING CYANO GROUPS

Robert A. Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 18, 1962, Ser. No. 224,541
6 Claims. (Cl. 260—465.5)

1. A compound represented by the following structural formula



in which each of:

R^1, R^2, R^3 and R^4 are radicals selected from the class consisting of C_1–C_8 alkyl, C_3–C_8 alkenyl and C_1–C_4 alkoxy-C_1–C_4 alkyl; and

R^5 is a member selected from the class consisting of cyanoethyl and cyanovinyl.

3,274,231
COMPOSITIONS AND METHODS OF STABILIZING UNSATURATED ORGANIC NITRILES

Tadahiro Kobayashi, Fuji-shi, Japan, assignor to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed June 13, 1963, Ser. No. 287,516
Claims priority, application Japan, Sept. 13, 1962, 37/39,410; Nov. 10, 1962, 37/50,472, 37/50,473; Jan. 30, 1963, 38/3,286; Apr. 10, 1963, 38/17,627
8 Claims. (Cl. 260—465.9)

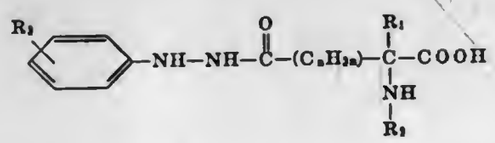
1. A composition consisting essentially of a nitrile compound selected from the group consisting of acrylonitrile, methacrylonitrile and dimethylacrylonitrile, and 0.5 to 2,000 p.p.m. of at least one stabilizer selected from the group consisting of acetonethiosemicarbazone, acetophenonethiosemicarbazone, acetaldehydethiosemicarbazone, acetylthiosemicarbazide, phenylthiosemicarbazide, formylthiosemicarbazide, carbaminylthiosemicarbazide, thiosemicarbazide, acetonesemicarbazone, acetaldehydesemicarbazone, acetylsemicarbazide, phenylsemicarbazide, iononesemicarbazone and semicarbazide.

3,274,232
ARYLHYDRAZIDES

Jack W. Hinman, Portage, and Ronald B. Kelly, Cooper Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Original application Aug. 4, 1961, Ser. No. 129,222. Divided and this application Dec. 23, 1964, Ser. No. 420,786
4 Claims. (Cl. 260—471)

1. Compounds represented by the formula:



wherein R_3 is selected from the group consisting of hydrogen, methylol, halogen, carboxy, alkyl of 1 to 4 carbon atoms, inclusive, and alkoxy of 1 to 4 carbon atoms, inclusive, R_1 is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive, R_2 is selected from the group consisting of carboallyloxy, carbobenzyloxy and tosyl, and n is an integer from zero to 7, inclusive.

3,274,233
PROCESS OF PREPARATION OF UNSATURATED TRICYCLIC ESTERS

Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, and Bernard Goffinet, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Dec. 19, 1962, Ser. No. 245,656
Claims priority, application France, Dec. 27, 1961, 883,154
9 Claims. (Cl. 260—473)

1. A process for the preparation of a lower alkyl ester of 1-oxo-8-lower alkyl-4,5-(4'-methoxybenzo)-$\Delta^{3(9)}$-hydrindene-3-carboxylic acid which comprises the steps of dissolving 2-cyano-2-lower alkyl-6-methoxytetralone-1 and a di-lower alkyl succinate, in solution in a solvent amount of a disubstituted amide of an alkanoic acid, adding a solid, anhydrous alkali metal alkanolate, reacting the reactants at a temperature between about −15° C. and +15° C., hydrolyzing the reaction product, acidifying the reaction mixture with a strong organic carboxylic acid and recovering said lower alkyl ester of 1-oxo-8-lower alkyl-4,5-(4'-methoxybenzo)-$\Delta^{3(9)}$-hydrindene-3-carboxylic acid.

3,274,234
PROCESS FOR PREPARING C_{1-6} ALKYL PHENYLCYCLOHEXYLGLYCOLATES

Louis Spiegler, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 26, 1963, Ser. No. 267,945
3 Claims. (Cl. 260—473)

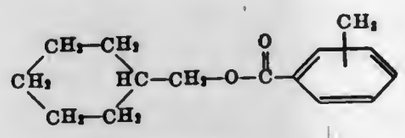
1. A process for preparing a C_{1-6} alkyl phenylcyclohexylglycolate, which process comprises the steps of (a) treating a C_{1-6} alkyl benzilate at a temperature within the range of 75° C. to about 150° C. and pressure sufficient to liquefy said benzilate with hydrogen in water in the presence of a rhodium based catalyst and (b) recovering the resulting alkyl phenylcyclohexylglycolate.

3,274,235
CYCLOHEXYLMETHYL TOLUATES

Henry E. Hennis, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 7, 1962, Ser. No. 222,213
4 Claims. (Cl. 260—476)

1. Compound of the formula



3,274,236
HALO-SUBSTITUTED CARBOXYLIC ACID ESTERS OF NITRO ALKANOLS

Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,451
6 Claims. (Cl. 260—487)

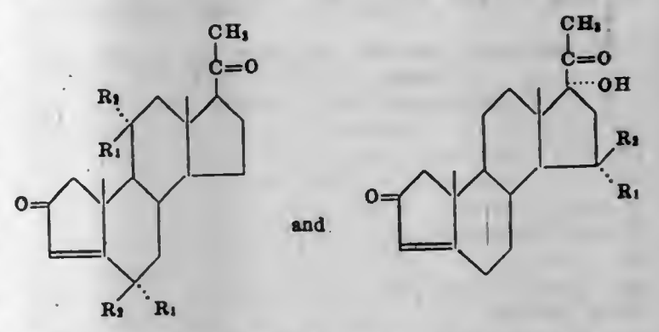
1. An ester of a halo-substituted saturated aliphatic carboxylic acid containing from 2 to about 18 carbon atoms and in which the halogen is selected from the group consisting of fluorine, chlorine and bromine and a nitro polyalkanol containing from 2 to about 12 carbon atoms.

3,274,237
A-NORPREGN-3-ENE DERIVATIVES

Edward Joseph Becker, Princeton, and Robert S. Robison, North Brunswick, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,187
8 Claims. (Cl. 260—488)

1. A compound selected from the group consisting of steroids of the formulae:



wherein R_1 is hydrogen, R_2 is selected from the group consisting of hydroxy and the acyloxy radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms and together R_1 and R_2 are oxo.

3,274,238
PRODUCTION OF UNSATURATED ESTERS BY OXIDATION OF OLEFINS

Hugo Kojer, Munich, Reinhard Jira, Munich-Pasing, Jürgen Smidt, Munich-Solln, and Heinz Stangl, Munich, Germany, assignors to Consortium für Elektrochemische Industrie G.m.b.H., Munich, Germany

No Drawing. Filed July 23, 1963, Ser. No. 296,902
Claims priority, application Germany, July 26, 1962, C 27,559
4 Claims. (Cl. 260—497)

1. In a process for the production of ethylenically unsaturated esters of the formula:

$$RCOOCX{=}CX_2$$

from a carboxylic acid of the formula RCOOH and an olefin of the formula $CHX{=}CX_2$ wherein R is lower alkyl and each X is selected from the group consisting of hydrogen and alkyl in the presence of a catalyst combination comprising a palladium salt, a salt of a multivalent heavy metal selected from the group consisting of iron, copper, manganese, cobalt, tin, lead, antimony and vanadium in their higher valent stage, as an oxidizing agent for metallic palladium, and a lower mono-alkanoic acid salt of a metal selected from the group consisting of alkali metals and alkaline earth metals, the steps of reacting the olefin with the carboxylic acid under superatmospheric pressure of 2.5 to 50 atmospheres at a temperature between 70 and 170° C. in a reaction space in contact with the catalyst combination maintained in said reaction space, the degree of oxidation of the catalyst combination being less than 0.2, periodically reducing said pressure in said reaction space substantially and distilling off the ester produced from the reaction space at such reduced pressure.

3,274,239
FLUOROCARBON ETHERS

Stanley Selman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 31, 1962, Ser. No. 220,858
6 Claims. (Cl. 260—514)

1. A fluorocarbon ether compound having the general formula



where R''$_f$ is a perfluoroalkylene group of three to eight carbons, n is an integer from zero to twenty inclusive and Y is a group selected from the class consisting of the hydroxyl and the fluorine group.

3,274,240

SYNTHESIS OF 3-SUBSTITUTED ALKANOIC ACID COMPOUNDS

Henry E. Fritz, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,691
9 Claims. (Cl. 260—515)

1. A process for producing an alkanoic acid compound substituted in the 3-position by a polycyclic organic radical, which comprises heating at 150° C. to 350° C. a mixture of (a) a member selected from the group consisting of indene having at least one hydrogen atom on the 1-position, fluorene having at least one hydrogen atom on the 9-position, and 1,2,3,10b-tetrahydrofluoranthene having hydrogen atom on the 10b-position, (b) an alkali metal acrylate of the formula $CH_2{=}CRCO_2M$ wherein R is selected from the group consisting of hydrogen, alkyl of from 1 to 6 carbons and phenyl, and M is an alkali metal and (c) a catalytic amount of a strong base derived from an alkali metal.

3,274,241

PREPARATION OF NAPHTHALENE-2,6-DICARBOXYLIC ACID

Raymond Wynkoop, Gladwyne, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,716
7 Claims. (Cl. 260—515)

1. Method of preparing naphthalene-2,6-dicarboxylic acid which comprises heating an alkali metal dihydronaphthalene dicarboxylate in which the alkali metal is selected from the group consisting of potassium, rubidium and cesium and the carboxylate groups are positioned other than in the 2,6-arrangement on the dihydronaphthalene nucleus to a temperature in the range of 350–530° C. in an atmosphere of carbon dioxide at a partial pressure of 50–1000 p.s.i., in the presence of an unsaturated hydrocarbon hydrogen acceptor having a hydrogenation Kp of at least 10^{14}, in the presence of a first catalyst selected from the group consisting of oxides and salts of cadmium, zinc and mercury and in the presence of a second catalyst selected from the group consisting of Raney nickel, Raney cobalt, palladium, platinum and halides of nickel, cobalt, palladium and platinum, whereby alkali metal naphthalene-2,6-dicarboxylate is formed, and converting the dicarboxylate to naphthalene-2,6-dicarboxylic acid by means of mineral acid.

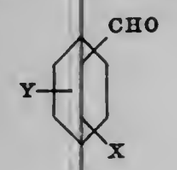
3,274,242

PREPARATION OF AROMATIC ACID CHLORIDES BY VAPOR PHASE CHLORINATION OF AROMATIC ALDEHYDES

Robert W. Etherington, Jr., Pennington, and William F. Brill, Skillman, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed May 24, 1962, Ser. No. 197,237
10 Claims. (Cl. 260—544)

1. A process for preparing aromatic acid chlorides which comprises reacting in the vapor phase at a temperature above 225° C. chlorine with an aromatic aldehyde of the formula



wherein X is selected from the group consisting of hydrogen, halogen, —CH_3 and —CHO, and Y is selected from the group consisting of hydrogen, halogen and —CHO, and wherein chlorine is present in a molar ratio from about 10 to greater than one mol of chlorine per mol of aromatic aldehyde at a partial pressure of said aromatic aldehyde equivalent to less than one-third atmosphere.

3,274,243

PREPARATION OF ALKANOIC THIOAMIDES

Everett E. Gilbert, Morris Township, Morris County, and Edmund J. Rumanowski, Jersey City, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 7, 1963, Ser. No. 256,824
3 Claims. (Cl. 260—551)

1. A process for preparing an alkanoic monothioamide which comprises adding H_2S to an alkanoic mononitrile while employing in the reaction mixture tetramethylguanidine, said tetramethylguanidine being employed in at least about 1:10 molecular proportions of amine:nitrile employed in the reaction mixture whereby the amine-H_2S salt is provided in the reaction mixture in at least 1:10 molecular proportions with the nitrile therein upon including H_2S in the reaction mixture; maintaining temperatures in the range of 35° C. to reflux and about atmospheric pressures; and terminating the reaction in not over 8 hours.

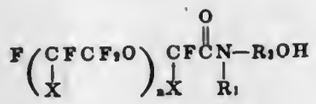
3,274,244

POLYFLUOROPOLYOXA-ALKANAMIDOALKYL COMPOUNDS

Alan K. Mackenzie, West Redding, Conn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 14, 1963, Ser. No. 287,780
3 Claims. (Cl. 260—561)

1. A polyfluoropolyoxa-alkanamidoalkanol of the formula



wherein X is a member of the group consisting of F and CF_3, n is an integer from 2 to 6, R_1 is a member selected from the group consisting of hydrogen and C_1 to C_4 alkyl, and R_2 is a C_2 to C_4 alkylene.

3,274,245

RECOVERY OF ACRYLAMIDE FROM ITS SALT BY VAPORIZATION WITH AN INERT GAS

William Patrick Bobsein, Plainfield, and Joseph Fidelis Mellor, Jr., Westfield, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 9, 1963, Ser. No. 293,884
6 Claims. (Cl. 260—561)

1. A process for isolating acrylamide from a neutralization mixture resulting from the neutralization of acrylamide sulfate with a base comprising vaporizing the acrylamide by contacting said mixture with an inert gas having a temperature in excess of 20° C., and subsequently recovering acrylamide from said gas-containing acrylamide.

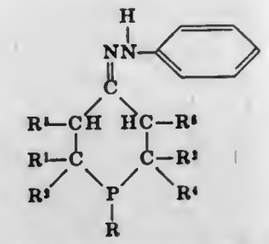
3,274,246

PHOSPHORINANONE-PHENYLHYDRAZONES

Richard Parke Welcher, Old Greenwich, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Original application Dec. 22, 1961, Ser. No. 161,438, now Patent No. 3,225,103, dated Dec. 21, 1965. Divided and this application Aug. 9, 1965, Ser. No. 485,971
4 Claims. (Cl. 260—566)

1. A 4-phosphorinanone, phenylhydrazone of the formula



wherein R is a member selected from the group consisting of substituted and unsubstituted, branched and straight chain alkyl having from 1 to 18 carbon atoms, cycloalkyl, substituted and unsubstitued aryl; said substituents for alkyl being selected from the group consisting of lower alkoxy, phenyl and cyano, and said substituents for aryl being selected from the group consisting of halogen and lower alkyl; R^1, R^2, R^3 and R^4 each represent a member selected from the group consisting of hydrogen, lower alkyl, phenyl, chloro-substituted phenyl, lower alkyl-substituted phenyl, cyclohexyl and lower alkoxyalkyl; and R^5 and R^6 each represent a member selected from the group consisting of hydrogen, lower alkyl and phenyl.

3,274,247

PROCESS FOR THE PREPARATION OF DIPHENYLMETHANE DIAMINES

Marcel Repper, Le Clou, Melle, France, assignor to Societe Toulousaine de Produits Chimiques "Tolochimie," Paris, France, a corporation of France

No Drawing. Filed June 14, 1963, Ser. No. 287,779
Claims priority, application France, July 5, 1962, 903,087
3 Claims. (Cl. 260—570)

1. A process for the production of 4,4'-diamino diphenylmethane which consists essentially of reacting formaldehyde with a molar excess of up to 6 moles of aniline per mole of formaldehyde in the presence of from about 0.15 to about 0.5 equivalent of hydrochloric acid per mole of formaldehyde.

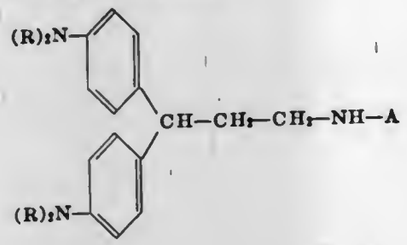
3,274,248

N-1,1-BIS-[AMINOPHENYL]-PROPYL-AMINES AND SALTS THEREOF

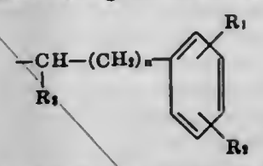
Kálmán Harsányi, Dezsö Korbonits, Kálmán Takács, László Tardos, György P. Leszkovszky, and Ilona Erdély, all of Budapest, Hungary, assignors to Chinoin Gyógyszer-és Vegyészeti Termékek Gyára RT., Budapest, Hungary, a firm

No Drawing. Filed Aug. 1, 1963, Ser. No. 299,181
Claims priority, application Hungary, Aug. 16, 1962, CI-409
9 Claims. (Cl. 260—570)

1. A material selected from the group consisting of compounds having the formula:



wherein R is selected from the group consisting of hydrogen, oxygen, and lower alkyl radicals containing from about 1 to about 4 carbon atoms, and A is selected from the group consisting of cyclo-hexyl, indanyl, 3-phenyl indanyl, and radicals having the formula:



wherein R_1 and R_2 are selected from the group consisting of hydrogen, hydroxy, and alkoxy radicals, R_3 is a short chain alkyl radical and n is an integer from about 0 to about 3 and salts thereof.

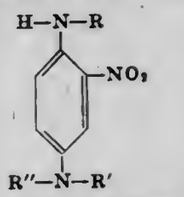
3,274,249

DERIVATIVES OF 1,4-DIAMINO-2-NITRO-BENZENES

Walter H. Brunner, Easton, Pa., and Alexander Halasz, Norwalk, Conn., assignors to Clairol Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,403
14 Claims. (Cl. 260—573)

1. Compounds of the formula:



wherein R is a member selected from the group consisting of alkyl of 1 to 8 carbon atoms, cycloalkyl of 4 to 6 carbon atoms, aryl, alkaryl and aralkyl of 6 to 8 carbon atoms and monohydroxy alkyl having from 1 to 4 carbon atoms; and R' is member selected from the group consisting of a saturated aliphatic hydrocarbon radical having from 1 to 4 carbon atoms and a hydroxyalkyl radical having from 1 to 4 carbon atoms and R'' is selected from the group consisting of hydrogen and hydroxyalkyl having from 1 to 4 carbon atoms, provided that R'' is hydroxyalkyl only when R' is also hydroxyalkyl and further provided that at least one of R and R' is a hydrocarbon radical.

3,274,250

N-PHENYL-N'-(1,2-DIMETHYLPROPYL)-p-PHENYLENEDIAMINES

Paul Schneider, Opladen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 8, 1963, Ser. No. 322,524
Claims priority, application Germany, Nov. 21, 1962, F 38,366
1 Claim. (Cl. 260—576)

N-phenyl - N' - (1,2 - dimethylpropyl) - p - phenylenediamine.

3,274,251

PRODUCTION OF UNSYMMETRICAL DIMETHYLHYDRAZINE

Paul Besson, La Chambre, Savoie, and Gilbert Luiset, Saint-Etienne-de-Cuines, Savoie, France, assignors to Societe d'Electro-Chimie d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a French company

No Drawing. Filed May 31, 1963, Ser. No. 284,306
Claims priority, application France, Aug. 17, 1962, 907,177
7 Claims. (Cl. 260—583)

1. The process for producing unsymmetrical dimethylhydrazine which comprises preparing a solution of dimethylnitrosoamine in an organic solvent for the dimethylnitrosoamine and said dimethylhydrazine, the weight ratio

of the dimethylnitrosoamine to the sum of the dimethylnitrosoamine and said solvent being less than one, contacting said solution with sodium in the presence of water at a temperature in the range between about 0° and about 100° C. to produce hydrogen and sodium hydroxide, thereby concurrently hydrogenating the dimethylnitrosoamine in situ to the unsymmetrical dimethylhydrazine, the amount of water and sodium used being sufficient to produce at least the stoichiometric amount of hydrogen for the hydrogenation, separating the two resultant immiscible liquid phases consisting of an organic phase containing the unsymmetrical dimethylhydrazine and an aqueous phase containing sodium hydroxide solution, and recovering the unsymmetrical dimethylhydrazine from said organic phase.

3,274,252
PROCESS FOR TERTIARY AMINE OXIDES AND HYDROXYLAMINES
Harry Elmer Albert and Paul Gordon Haines, Lafayette Hill, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed July 9, 1963, Ser. No. 293,906
5 Claims. (Cl. 260—583)

1. The process of oxidizing in an aqueous system a trilower alkylamine employing as oxidizer essentially stoichiometric amounts of hydrogen peroxide, said oxidation being carried out at a temperature between about 20° and 75° C. in the presence of 0.05 to 1.0 weight percent of the amine of an alkali metal tungstate as catalyst, and in the presence of 0.02 to 1% by weight of the amine of an alkali metal pyrophosphate and thereafter pyrolyzing the oxidation product by distilling the aqueous mass and collecting as distillate N,N-di-lower alkylhydroxylamine.

5. The process of preparing triethylamine oxide which comprises oxidizing triethylamine at a temperature between about 20° and 75° C. in an aqueous system with an essentially stoichiometric amount of hydrogen peroxide and having present in the reaction medium 0.05 to 1.0% by weight of the triethylamine of sodium tungstate as catalyst and 0.02 to 1% by weight of the amine of sodium pyrophosphate.

3,274,253
AMMONOLYSIS PROCESS
Kenneth H. Markiewitz, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 18, 1963, Ser. No. 296,103
3 Claims. (Cl. 260—585)

1. In the catalytic ammonolysis of aliphatic alcohols, which undergo ammonolysis reaction in the presence of hydrogenating catalyst, with ammonia in liquid phase to yield predominantly primary amines the improvement which comprises adding to the reaction system a minor proportion of a compound selected from the group consisting of alkali metal hydroxides, weak acid salts of alkali metal hydroxides and aluminum alkoxides.

3,274,254
OXIDATION OF CYCLOHEXANE
William Leslie Seddon, Sale, England, assignor to Petrocarbon Developments Limited, London, England, a British company
Filed Dec. 27, 1962, Ser. No. 247,629
Claims priority, application Great Britain, Dec. 28, 1961, 46,532/61
5 Claims. (Cl. 260—586)

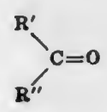
1. A process for the manufacture of cyclohexanol and cyclohexanone by oxidising liquid cyclohexane with gaseous oxygen in a reaction zone into which liquid cyclohexane and an oxygen-containing gas are separately introduced and from which issues a mixture of hot residual gases and unreacted cyclohexane vapor, condensing the unreacted cyclohexane vapor in the residual gases leaving the reaction zone, and returning the said unreacted cyclohexane to the reaction zone, wherein liquid cyclohexane is introduced into said oxygen-containing gas before said oxygen-containing gas is supplied to said reaction zone and wherein said mixture of hot residual gases and unreacted cyclohexane vapor is subjected to indirect heat exchange with the mixture of oxygen-containing gas and cyclohexane being supplied to the reaction zone, and by the said heat exchange at least a part of the cyclohexane vapor to be condensed is condensed and liquid cyclohexane is vaporized in the oxygen-containing gas.

3,274,255
OXIDATION OF ISOBUTYLENE TO METHACROLEIN
William F. Brill, Skillman, and Alfio J. Besozzi, East Brunswick, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed June 27, 1963, Ser. No. 290,912
5 Claims. (Cl. 260—604)

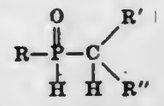
2. A process for producing methacrolein which comprises contacting isobutylene at about 0.5 to 3.0 mols of oxygen per mol of isobutylene at reaction temperatures between about 400° and 700° C. for about 0.05 to about 0.5 second with a copper-phosphate catalyst containing atoms of copper and phosphorus in an atomic ratio of copper to phosphorus of about 1 to 1 to 3 to 1, the said catalyst having been activated at temperatures ranging from 200° C. to 700° C. by contacting the catalyst with an organic polybromide compound selected from the group consisting of ethylene dibromide, trimethylene bromide, tetramethylene bromide, pentamethylene bromide, ethylidene bromide and tetrabromoethane.

3,274,256
SYMMETRICAL AND UNSYMMETRICAL ORGANOPHOSPHORUS COMPOUNDS
Sheldon A. Buckler and Martin Epstein, Stamford, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Mar. 1, 1962, Ser. No. 176,816
5 Claims. (Cl. 260—606.5)

1. A method which comprises bringing together into intimate contact a primary phosphine of the formula RPH_2 and a carbonyl compound of the formula



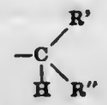
in the presence of a concentrated mineral acid and producing a secondary phosphine oxide of the formula



R in the above formulae representing a member of the group consisting of substituted and unsubstituted alkyl having from 1 to 18 carbon atoms, aryl, aralkyl, parahalosubstituted phenyl and cycloalkyl, said substituents for alkyl being selected from the group consisting of cyano and lower alkoxy; R′ representing a member selected from the group consisting of alkyl having from 1 to 8 carbon atoms, and phenyl; R″ represents a member selected from the group consisting of alkyl having from 2 to 8 carbon atoms and phenyl, and R′ and R″ taken together with



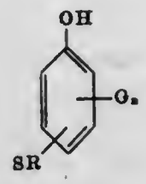
represent cyclohexyl; and the sum of the steric substituent constants, E_s, of the moieties R— and



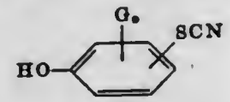
being below about —1.50 at 25° C.

3,274,257
SYNTHESIS OF (ALKYLTHIO) PHENOLS
Walter Reifschneider, Midland, and Jacqueline S. Kelyman, Auburn, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 17, 1963, Ser. No. 288,512
3 Claims. (Cl. 260—609)

1. Method of preparing phenolic thioethers of the general formula



which comprises contacting a compound of the formula



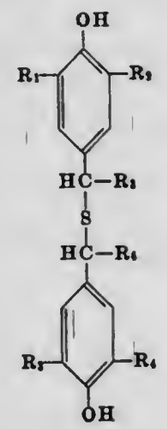
with a compound of the formula

HOR

in the presence of a base wherein G is loweralkyl, loweralkenyl, loweralkynyl, cycloalkyl of from 5 to 6, both inclusive, carbon atoms, ar-loweralkyl, aryl of 6 carbon atoms, loweralkoxy, aryloxy of 6 carbon atoms, nitro, cyano, amido, amino, loweracyloxy, or halo; R is loweralkyl, loweralkenyl, loweralkynyl, cycloalkyl being of from 5 to 6, both inclusive, carbon atoms, halo loweralkyl, ar-loweralkyl, or loweralkanoyl; and in the compound HOR the HO radical is bonded to a carbon atom to which at least one hydrogen is also bonded; and *n* is an integer of from 0 to 4, both inclusive.

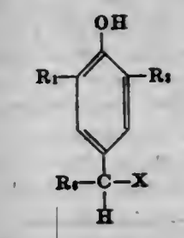
3,274,258
HYDROXYBENZYL THIOETHERS AND METHOD OF PREPARATION
Joseph D. Odenweller, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Sept. 1, 1960, Ser. No. 53,353
6 Claims. (Cl. 260—609)

1. A compound having the formula:

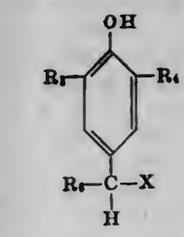


wherein R_1 and R_3 are independently selected alkyl radicals each having from one to 12 carbon atoms, R_2 and R_4 are independently selected alpha-branched alkyl radicals each having from 3 to 12 carbon atoms, and R_5 and R_6 are independently selected from the group consisting of hydrogen, alkyl radicals having from one to 12 carbon atoms and mononuclear aryl radicals having from 6 to 12 carbon atoms.

6. A process for preparing benzyl thio ethers which comprises reacting a compound of the formula:



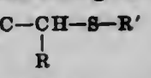
wherein R_1 is an alkyl radical having from 1–12 carbon atoms, R_2 is an alpha-branched alkyl radical having from 3–12 carbon atoms, R_5 is selected from the group consisting of hydrogen, alkyl radicals having from 1–12 carbon atoms and mono-nuclear aryl radicals having from 6–12 carbon atoms and X is halogen, first with thiourea and then chlorine to produce a benzyl sulfonyl chloride, reducing said benzyl sulfonyl chloride with sulfuric acid and metallic zinc to form a benzyl thiol, and reacting said benzyl thiol with a compound having the formula:



wherein R_3 is an alkyl radical having from 1–12 carbon atoms, R_4 is an alpha-branched alkyl radical having from 3–12 carbon atoms, R_6 is selected from the group consisting of hydrogen, alkyl radicals having from 1–12 carbon atoms and mono-nuclear aryl radicals having from 6–12 carbon atoms and X is halogen.

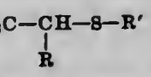
3,274,259
2,2,2-TRINITRO ETHYL ALKYL SULFIDES
Paul F. Hartman, Clifton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed June 17, 1954, Ser. No. 437,578
6 Claims. (Cl. 260—609)

1. A chemical compound having the formula



wherein R is selected from the group consisting of alkyl, benzyl, furyl and phenyl radicals and R′ is selected from the group consisting of alkyl and lower alkenyl radicals.

6. The process of making a chemical compound having the formula



wherein R is selected from the group consisting of alkyl, benzyl, furyl and phenyl radicals and R′ is selected from the group consisting of alkyl and lower alkenyl radicals, which comprises bringing together at a temperature of from room temperature to 100° C. an aldehyde, R—CHO wherein R is as already defined, and a mercaptan, R′—SH wherein R′ is as already defined in the presence of nitroform.

3,274,260
METHOD FOR PRODUCING MONOALKYL ETHERS OF DIHYDRIC PHENOLS

Joseph Levy, Paramus, N.J., and Alvin Friedman, New York, N.Y., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,419
3 Claims. (Cl. 260—613)

1. A process for the production of the monomethyl ether of hydroquinone which comprises reacting hydroquinone with dimethyl sulfate at a temperature of from about 65° C. to about 100° C. in admixture with from about 4 to 8 parts by weight per part of hydroquinone of an inert, water-immiscible solvent selected from the group consisting of benzene, lower alkyl substituted benzenes and halogenated hydrocarbons while gradually adding to the reaction mixture an aqueous alkali metal hydroxide solution, and separating the resultant hydroquinone monomethyl ether from the reaction mixture.

3,274,261
PROCESS OF PRODUCING ORTHO-FORMIC ACID METHYL ESTER

Arnold Lenz, Cologne-Stammheim, and Karl Hass and Hans Epler, Luelsdorf-Feldmuehle, Post Troisdorf, Germany, assignors to Feldmuehle Papier- und Zellstoffwerke A.G., Dusseldorf-Oberkassel, Germany, a corporation of Germany

No Drawing. Filed Feb. 7, 1962, Ser. No. 171,557
Claims priority, application Germany, Feb. 16, 1961, F 33,216
9 Claims. (Cl. 260—615)

1. In a process of producing ortho-formic acid methyl ester, the steps which comprise suspending a solid, finely comminuted methylate of a metal selected from the group consisting of sodium, of potassium and of mixtures thereof in an organic liquid which is substantially inert to the reaction mixture and in which said methanolate is insoluble, adding chloroform slowly and gradually to said suspension at an elevated temperature in the range of about 50° C. to about 125° C., and separating the ortho-formic acid methyl ester from the reaction mixture.

7. In a process of producing ortho-formic acid methyl ester, the steps which comprise suspending a solid finely pulverized metal methylate selected from the group consisting of sodium methylate, potassium methylate, and mixtures thereof in ortho-formic acid methyl ester, adding slowly and gradually about the equimolecular amount of chloroform to said suspension while maintaining the temperature between about 60° C. and about 80° C., distilling off the resulting ortho-formic acid methyl ester and the ester used as suspending agent from the metal chloride, and recycling part of the distilled ester as suspending agent in a succeeding reaction.

3,274,262
METHOD FOR IMPROVING THE CONVERSION OF AROMATIC CARBOXYLIC ACIDS TO PHENOLS

Denton M. Albright and Charles Perlaky, Penn Hills Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed Oct. 23, 1962, Ser. No. 232,595
9 Claims. (Cl. 260—621)

1. In a catalytic oxidation of a monocarboxlyic acid to a phenolic compound, said acid being one of the benzene series having at least one unsubstituted position on the benzene ring adjacent the carboxyl group, the steps of bringing said acid and a catalyst into contact with oxygen-containing gas, adding to the reaction mixture of said acid, catalyst and oxygen, at least about 0.8% by weight of said acid, of an inhibitor to formation of a tar-like by-product in said catalytic oxidation, said inhibitor being chosen from the group consisting of 4,4'-bis(2,6-di-tert-butylphenol), 4,4'-methylenebis(6-tert-butyl-o-cresol), 4,4'-thiobis(3-methyl-6-tert-butylphenol), tetramethylthiuram disulfide, N,N'-di-β-naphthyl-p-phenylene-diamine and copper dimethyldithiocarbamate and, recovering a phenolic compound therefrom.

3,274,263
PROCESS FOR OLEFIN HYDROFORMYLATION

Charles R. Greene and Robert E. Meeker, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1961, Ser. No. 134,852
5 Claims. (Cl. 260—632)

1. In the process for the production of hydroformylation products wherein an olefinic hydrocarbon is reacted with carbon monoxide and hydrogen in a reaction zone at a temperature of from about 100 to about 300° C., and a pressure of from about atmospheric to about 1000 p.s.i.g., in the presence of a complex catalyst consisting essentially of a complex of cobalt with carbon monoxide and a trialkyl phosphine biphyllic ligand, the improvement which consists essentially of introducing into said reaction zone a monocarboxylic alkanoic acid higher boiling than said hydroformylation products and having from 6 to 18 carbon atoms to the molecule, passing effluent from said reaction zone into a separating zone, distilling a vapor fraction comprising hydroformylation products and unconverted reactants from a liquid fraction comprising said complex catalyst and said monocarboxylic alkanoic acid in said separating zone, recycling at least a part of said liquid fraction from said separating zone to said reaction zone, and controlling the rate of introduction of said monocarboxylic alkanoic acid into said reaction zone to maintain a mol ratio of said monocarboxylic acid to said catalyst complex in said reaction zone in the range of from about 0.1 to 1 to about 10 to 1.

3,274,264
FLUORODINITROALKANE PREPARATION

Mark Graff, William E. McQuistion, and James W. Sterling, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,835
7 Claims. (Cl. 260—644)

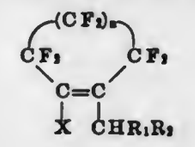
1. The method for preparing fluorodinitroalkanes which comprises continuously and concurrently feeding a stream comprising an aqueous solution of an alkali metal salt of a dinitroalkane and a stream comprising a gas mixture comprising an inert gas and gaseous fluorine into a reactor, allowing said dinitroalkane salt and said gas mixture to react under alkaline conditions and continuously withdrawing a fluorodinitroalkane product.

3,274,265
FLUORINATED ORGANIC COMPOUNDS

John Colin Tatlow and Robert Stephens, Birmingham, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain

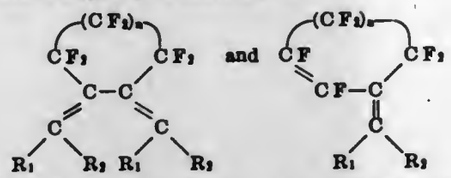
No Drawing. Filed Nov. 23, 1962, Ser. No. 239,780
Claims priority, application Great Britain, Nov. 27, 1961, 42,293/61
10 Claims. (Cl. 260—648)

1. Process for the production of a polyfluoroalicyclic compound having conjugated unsaturation including at least one group of formula $=CR_1R_2$ connected to a nuclear carbon atom, wherein R_1 and R_2 are selected from the group consisting of hydrogen, fluorine and lower alkyl groups, the radical CR_1R_2 having a maximum of 5 carbon atoms which comprises dehydrohalogenating a corresponding alicyclic compound of the structure



wherein n is an integer of from 1 to 2 and R_1 and R_2 have the aforementioned significance and X is selected from the group consisting of fluorine and an α-haloalkyl group with an alkali metal fluoride selected from the group consisting of sodium, potassium and lithium fluorides at a temperature between 200–600° C. until dehydrohalogenation by 1:4 elimination is effected.

6. A polyfluoroalicyclic compound of a structure selected from the group consisting of



wherein n is an integer of from 1 to 2 and R_1 and R_2 are selected from the group consisting of hydrogen, fluorine and lower alkyl groups, the radical CR_1R_2 having a maximum of 5 carbon atoms.

7. 3-methylene-octafluorocyclohexene.

3,274,266
PROCESS FOR THE PRODUCTION OF TETRABROMOCYCLODODECENE

Karl Mönkemeyer and Hermann Sauer, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,646
Claims priority, application Germany, Mar. 30, 1963, C 29,532
4 Claims. (Cl. 260—648)

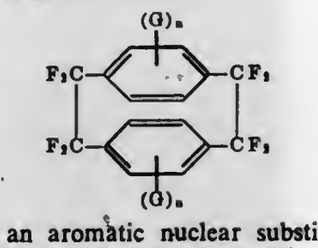
1. Process for the production of tetrabromocyclododecene which comprises reacting bromine with cyclododecatriene in a mole ratio within the range from 2:1 to 2.2:1 in the presence of propionic acid, the weight ratio of cyclododecatriene to total propionic acid being within the range from 1:4 to 1:16, at temperatures within the range from −25 to 0° C.

3,274,267
CYCLIC α-PERFLUORO-DI-p-XYLYLENES

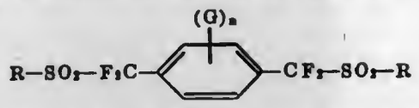
Sui-Wu Chow, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,860
13 Claims. (Cl. 260—649)

1. Process for the preparation of cyclic α-perfluoro-di-p-xylylenes having the structure:

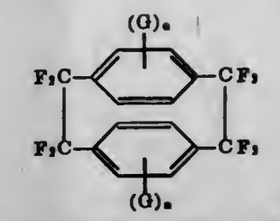


wherein G is an aromatic nuclear substituent selected from the group consisting of hydrocarbon and halo and n is a number from 0 to 3, inclusive, which comprises pyrolyzing a bis-sulfone having the general formula



wherein G and n are as defined above and R is a hydrocarbyl group containing up to about six carbon atoms, inclusive, at temperatures between about 600° C. and 900° C. and at partial pressures of said bis-sulfone less than about 20 mm. Hg, cooling and bringing the resulting pyrolyzed vapors in intimate mixture with an inert organic solvent maintained at a temperature of from about 50° C. to about 250° C. and recovering said cyclic α-perfluoro-di-p-xylylene from said solvent.

12. Cyclic α-perfluoro-di-p-xylylene having the structure



wherein G is an aromatic nuclear substituent selected from the group consisting of hydrocarbon and halo and n is a number from 0 to 3, inclusive.

3,274,268
METHOD OF MAKING α-CHLOROBIBENZYLS, STILBENES AND RELATED COMPOUNDS

Donald F. Hoeg, Mount Prospect, and Donald I. Lusk, Chicago, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

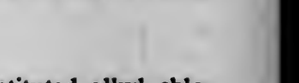
No Drawing. Filed Oct. 11, 1963, Ser. No. 315,684
7 Claims. (Cl. 260—649)

1. A method of making α,β-substituted chloroethanes of the formula



wherein R is selected from the group consisting of phenyl, substituted phenyl wherein the substituents are selected from the group consisting of methyl, halogen, and methoxy, vinyl and lower alkyl substituted vinyl groups and R' is selected from the group consisting of hydrogen and alkyl, said method comprising the step of

reacting an α-substituted alkyl chloride of the formula

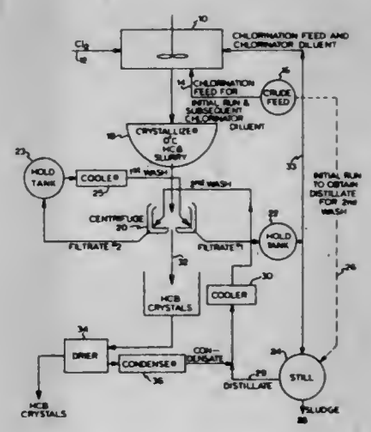


wherein R and R' of said α-substituted alkyl chloride is as defined for the α,β-substituted chloroethanes, with a lower alkyllithium compound in a solution of tetrahydrofuran at a temperature of between about −100° C. and about 0° C.

3,274,269
PROCESS FOR PREPARING HEXACHLORO-BENZENE

Robert S. Cohen, Dover, Ohio, assignor to Dover Chemical Corporation, Dover, Ohio, a corporation of Ohio

Filed Apr. 30, 1963, Ser. No. 276,939
10 Claims. (Cl. 260—650)



6. A process of producing hexachlorobenzene from a raw material selected from benzene and chlorinated benzenes having less than six ring-substituted chlorine

atoms, comprising: reacting said raw material with chlorine to form a chlorinated material containing hexachlorobenzene; adding to said chlorinated material after said reaction and prior to crystallization of hexachlorobenzene therefrom a diluent selected from said raw material and said chlorinated material from which hexachlorobenzene and at least a portion of the tarry residues have been removed; and crystallizing hexachlorobenzene from the resulting mixture.

9. A process of separating hexachlorobenzene from a tarry mass containing hexachlorobenzene, used catalyst and at least one compound selected from benzene and chlorinated benzenes having less than six ring-substituted chlorine atoms, comprising: adding to said tarry mass a liquid diluent selected from benzene and chlorinated benzenes having less than six ring-substituted chlorine atoms; and crystallizing hexachlorobenzene from the resulting mixture; said process being characterized by the absence of a chlorination step between the addition of said liquid diluent and said crystallization step.

3,274,270

PYROLYSIS OF SODIUM TRIBROMOACETATE

John E. Harris, Boston, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,887
4 Claims. (Cl. 260—654)

1. The method which comprises heating anhydrous sodium tribromoacetate in the absence of a solvent to a temperature of about 200° C., in an inert, oxygen-free atmosphere, at sub-atmospheric pressures, and condensing the volatilized reaction product at a temperature below about 0° C.

4. The method of producing carbon tetrabromide and tetrabromoethylene which comprises heating anhydrous sodium tribromoacetate to about 200° C., in an inert, oxygen-free atmosphere, under a vacuum of below about 1 mm. Hg, condensing the volatile reaction products at a temperature below about 0° C., and warming the condensate to a temperature of between 0° and 50° C., sufficient to liquefy the condensate.

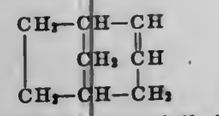
3,274,271

PROCESS FOR THE PREPARATION OF BICYCLO-(3,2,1)-OCTENE-(2)

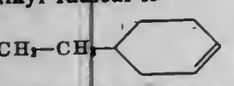
Karl Heinz Müller and Peter Borner, Kamen, Westphalia, Germany, assignors to Schering Aktiengesellschaft, Berlin, Germany

No Drawing. Filed Feb. 11, 1963, Ser. No. 257,738
Claims priority, application Germany, Feb. 21, 1962, Sch 31,020
3 Claims. (Cl. 260—666)

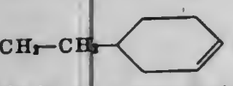
2. A process for the preparation of bicyclo-(3,2,1)-octene-(2)



comprising heating aluminum trialkyl compounds, in which at least one alkyl radical is



and the rest of the alkyl radicals is selected from the group consisting of



and lower alkyl radicals, to a temperature in the range of 130° C. to 350° C. and separating the bicyclo-(3,2,1)-octene-(2) from the reaction mixture, the aluminum trialkyl compound being heated together with an alpha-olefin.

3,274,272

PROCESS FOR THE PRODUCTION OF CYCLOHEXENE AND METHYLCYCLOHEXENE

Masataka Amagasa, Komegafukuro, Uwacho, Sendai-shi, Japan, and Tadashi Yamaguchi, Nakajima-cho, Sendai-shi, Japan

No Drawing. Filed July 23, 1963, Ser. No. 296,927
Claims priority, application Japan, July 28, 1962, 37/31,927, 37/31,929
18 Claims. (Cl. 260—666)

1. A process for the production of cyclohexene which consists essentially of: admixing liquid ammonia, a substance selected from the group consisting of alkali metals and alkaline earth metals, and benzene; and subjecting the mixture to reduction.

3,274,273

DEHYDROHALOGENATION PROCESS

George R. Lester, Mount Prospect, and Cecelia J. Adams, Chicago, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,321
10 Claims. (Cl. 260—666)

1. A method of dehydrohalogenating an alkyl halide and simultaneously separating hydrogen halide from the dehydrohalogenation reaction mixture at reaction conditions, which method comprises contacting the alkyl halide with a hydrogen halide sorptive catalytic composite at dehydrohalogenation conditions, said catalytic composite comprising an oxide of a metal selected from the group consisting of magnesium, calcium and zinc, and an oxide of a metal selected from the group consisting of copper and cerium, sorbing the hydrogen halide on the catalytic composite and recovering an olefinic hydrocarbon.

3,274,274

ADAMANTANE PROCESS

Harold E. Cupery, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,890
3 Claims. (Cl. 260—666)

1. In a process for preparing adamantane by the isomerization of trimethylenenorbornane with $AlCl_3$ and HCl the improvement of maintaining process conditions at atmospheric pressure and at 70° to 120° C. for one to four hours while agitating trimethylenenorbornane with 0.1 to 0.7 mole of hydrochloric acid and 0.4 to 0.95 mole of aluminum chloride per mole of trimethylenenorbornane to yield a reaction mixture containing adamantane.

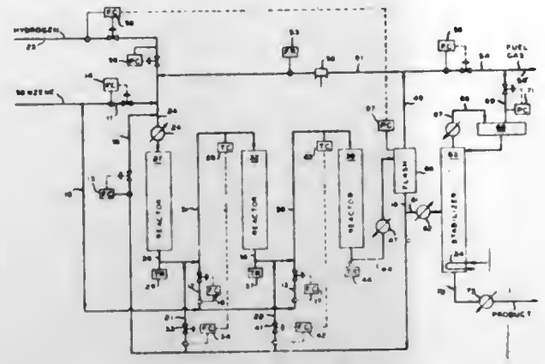
3,274,275

METHOD FOR PRODUCTION OF CYCLOHEXANE

John F. Hutto, Ray D. Garlington, and John T. Cabbage, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 26, 1963, Ser. No. 326,120
7 Claims. (Cl. 260—667)

1. A process for the production of cyclohexane, which process comprises: contacting a mixture comprising benzene, an excess of hydrogen, and cyclohexane diluent with a hydrogenation catalyst under hydrogenating conditions in a plurality of contacting zones, said hydrogen being passed in series flow through each of said contacting zones, individual portions of said benzene being passed in parallel into individual contacting zones of said plurality of contacting zones, and individual portions of said cyclohexane diluent being passed in parallel into individual contacting zones of said plurality of contacting zones; regulating the amount of cyclohexane diluent thus supplied to each of said contacting zones to control the temperature therein so that the temperature in each of said contacting zones does not exceed about 600° F.; withdrawing resulting reaction mixture effluent containing the unreacted portion of said hydrogen from each of said contacting zones; passing said effluent from each of



said contacting zones except the last contacting zone to a succeeding contacting zone without separation of unreacted hydrogen therefrom; and recovering cyclohexane product from the effluent from said last contacting zone.

3,274,276

PREPARATION OF CYCLOALKYL AROMATIC COMPOUNDS

James J. Louvar, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 29, 1963, Ser. No. 284,015
9 Claims. (Cl. 260—668)

1. A process for the preparation of a non-condensed cycloalkyl aromatic compound which comprises treating an aromatic compound with hydrogen in the presence of an alkylation-hydrogenation catalyst comprising aluminum chloride and platinum or palladium at a temperature of from about 25° C. to about 50° C., and recovering the resultant cycloakyl aromatic compound.

3,274,277

PREPARATION OF DIPHENYL

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,825
17 Claims. (Cl. 260—670)

1. A process for preparing a diaryl derivative of an aromatic hydrocarbon which comprises heating the aromatic hydrocarbon together with ethylene and an alkaline-acting catalyst comprising a metal selected from the group consisting of alkali metals and alkaline earth metals on a high surface area support at a temperature of from about 125° C. to about 200° C., said aromatic hydrocarbon being devoid of alkyl substituents containing an alpha hydrogen.

3,274,278

PREPARATION OF DETERGENT ALKYLATES

Brij L. Kapur and Raymond D. Eccles, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed Nov. 4, 1963, Ser. No. 321,337
8 Claims. (Cl. 260—671)

1. An improved process for preparing detergent alkylates which comprises reacting a chlorination product of from 0.1–0.8 atom of chlorine per mole of an alkane selected from the group consisting of C_{10}–C_{16} normal paraffins and mixtures thereof with a substantial stoichiometric excess of benzene in the presence of $AlCl_3$ catalyst and an added amount of a diphenyl substituted higher alkane.

3,274,279

REMOVAL OF REACTION PRODUCTS OF WATER, BORON FLUORIDE, ETC. FROM HYDROCARBONS

Ernest L. Pollitzer, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 31, 1962, Ser. No. 198,768
12 Claims. (Cl. 260—674)

1. A process for removing the reaction products of water, boron fluoride, and a boron fluoride-modified substantially anhydrous inorganic oxide from a substantially anhydrous hydrocarbon stream containing the same which comprises contacting said stream with a removal agent comprising a metal hydride selected from the group consisting of lithium hydride, sodium hydride, potassium hydride, rubidium hydride, cesium hydride, calcium hydride, strontium hydride and barium hydride, in a reaction zone at reaction conditions including a temperature of from about 0° to about 300° C. and a pressure of from about atmospheric to about 200 atmospheres, reacting at least a portion of said reaction products with said removal agent, and recovering purified hydrocarbon.

3,274,280

PREPARATION OF ALPHA-OLEFINS

David W. Marshall and Wayne R. Sorenson, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed Nov. 23, 1962, Ser. No. 239,771
17 Claims. (Cl. 260—677)

1. A process for preparing alpha-olefins which consists essentially of reacting an allylic halide with an organometal compound selected from the group consisting of AlR_3 and $(RO)_y$—Al—R_z, wherein R is a hydrocarbon radical selected from the group consisting of alkyl, aryl, aralkyl, cycloalkyl and alkaryl; $y+z$ equals three, and y is at least about 1.0; and recovering a reaction product comprising alpha-olefin.

3,274,281

PROCESS FOR REMOVING NITRIC OXIDE FROM GAS MIXTURES CONTAINING HYDROGEN AND HYDROCARBONS

Josef Hirschbeck and Josef Riedl, Burgkirchen, Bavaria, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,820
Claims priority, application Germany, Dec. 7, 1962, F 38,489
4 Claims. (Cl. 260—677)

1. Process for removing nitric oxide from gaseous olefin-containing hydrocarbon mixtures by catalytic hydrogeneration with simultaneous conversion of the acetylene hydrocarbons present into olefins, which comprises passing the gaseous mixtures at a temperature in the range of 180° C. to 250° C. over a catalyst containing chromium oxide and nickel, the nickel content being 5–15%, calculated on the content of Cr_2O_3.

3,274,282

CATALYSTS AND THE HYDROGENATION OF UNSATURATED HYDROCARBONS USING SAID CATALYSTS

Kenneth Hugh Bourne and Peter Desmond Holmes, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Original application Oct. 11, 1960, Ser. No. 61,832. Divided and this application Aug. 31, 1964, Ser. No. 438,803
3 Claims. (Cl. 260—677)

1. A process for the selective hydrogenation of acetylenes which comprises; passing a feedstock mixture of an

olefin containing a minor proportion of an acetylene with a molecular hydrogen-containing gas over a selective hydrogenation caltayst at a reaction temperature in the range of 0–200° C.; said catalyst formed by impregnating a porous catalyst base with a solution of nickel formate; heating the impregnated porous catalyst base under non-oxidising conditions at a temperature of between about 150–300° C. sufficient to decompose the nickel formate and liberate metallic nickel whereby metallic nickel is deposited on said base and a catalyst thereby formed; and substantially simultaneuosly with said heating sweeping out volatile decomposition products of the nickel formate by means of a stream of non-oxidising gas over the catalyst at a high flow rate of at least 500 vol./vol/hour.

3,274,283

PRODUCTION OF CONJUGATED DIOLEFINES

James Robert Bethell, Epsom Downs, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Apr. 16, 1962, Ser. No. 187,980
Claims priority, application Great Britain, May 19, 1961, 18,257/61
16 Claims. (Cl. 260—680)

1. A process for the production of a conjugated diolefine which comprises reacting a mono-olefine selected from the group consisting of butene-1, butene-2, 2-methyl-butene-1 and 2-methylbutene-2, at an elevated temperature, in the vapor phase, with a molecular oxygen containing gas over a catalyst consisting of the mixture obtained by depositing phosphoric acid on tin oxide.

3,274,284

DEHYDROGENATION PROCESS

Olin C. Karkalits, Jr., and Clyde A. Leatherwood, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed Mar. 5, 1963, Ser. No. 262,842
7 Claims. (Cl. 260—680)

1. An improved process for the dehydrogenation of organic compounds which comprises: heating in a dehydrogenation zone at a temperature of at least 400° C. a mixture of an organic compound to be dehydrogenated, oxygen, and at least about 0.0001 mol of ammonium halide per mol of said organic compound to form a gaseous dehydrogenation zone effluent at a temperature of greater than 400° C., said effluent comprising dehydrogenated organic compound, steam and ammonium halide; quenching the said effluent with an aqueous quench; in a first separating step separating from the quenched effluent a non-gaseous phase comprising at least about 25 mol percent of the ammonium halide and a gaseous phase comprising steam, the unsaturated organic compound and the remainder of the ammonium halide; in a second step condensing from about 20 to 75 mol percent of the steam from the said gaseous phase to form a condensate containing condensed steam and ammonium halide and a vapor phase comprising the unsaturated organic compound and the uncondensed steam, the ratio of the mols of ammonium halide contained in the said condensate to the mols of ammonium halide remaining in the said vapor phase being at least 10 percent greater than the ratio of the mols of steam condensed in said second step to the mols of steam remaining in said vapor phase, at least 80 mol percent of the ammonium halide originally present in the said dehydrogenation zone effluent having been removed from the gaseous phase in the first and second separation steps; and separating the unsaturated organic compound product from the said vapor phase of the second step.

3,274,285

PROCESS FOR DEHYDROGENATING

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed June 11, 1965, Ser. No. 463,372
16 Claims. (Cl. 260—680)

1. The method for dehydrogenating aliphatic hydrocarbons of 4 to 6 carbon atoms which comprises heating in the vapor phase at a temperature of from about 450° C. to 850° C. an aliphatic hydrocarbon of 4 to 6 carbon atoms with oxygen in a molar ratio of at least one-fourth mol of oxygen per mol of said hydrocarbon and chlorine in a molar ratio of less than 0.5 mol of chlorine per mol of said hydrocarbon, the partial pressure of said hydrocarbon being equivalent to less than about one-fifth atmosphere at a total pressure of one atmosphere, with a material selected from the group consisting of metals, salts, oxides and hydroxides of cobalt and mixtures thereof in a catalytic amount, the ratio of the gram mols of the said oxygen to the gram atoms of said chlorine being at least 1.50.

3,274,286

PROCESS FOR THE REMOVAL OF ACETYLENIC HYDROCARBONS FROM HYDROCARBON MIXTURES CONTAINING DIOLEFINES

Manfred Reich, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed Jan. 23, 1964, Ser. No. 339,576
Claims priority, application Germany, July 10, 1963, C 30,407
2 Claims. (Cl. 260—681.5)

1. A mixer catalyst composition consisting essentially of from 5 to 50% by weight of a metal selected from the group consisting of copper and copper chromite, from 0.01 to 20% by weight of at least one element selected from the group consisting of group VIII of the periodic system of Mendeleeff, silver and zinc, and from 0.1 to 50% by weight of a compound selected from the group consisting of the oxides and hydroxides of the elements of groups Ia and IIa of the periodic system of Mendeleeff and a carrier in amount constituting at least 40% by weight of the mixed catalyst.

2. A process for the reduction of the acetylenic hydrocarbon content of a hydrocarbon mixure containing it and a diolefine by selective hydrogenation in the gas phase which comprises passing the hydrocarbon mixture in the form of gas and a quantity of hydrogen which is at least molecularly equivalent to said acetylenic hydrocarbon content at a temperature within the range from 30° to 250° and at a pressure within the range from 0.2 to 30 atmospheres over and in contact with the catalyst composition defined in claim 1.

3,274,287

HYDROCARBON CONVERSION PROCESS AND CATALYST

Richard N. Moore and James F. Roth, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,552
16 Claims. (Cl. 260—683.3)

1. A process for the dehydrogenation of acyclic saturated hydrocarbons to form mono-ethylenically unsaturated hydrocarbons which comprises contacting said acyclic saturated hydrocarbons in the presence of 0.5 to 5 moles of hydrogen per mole of hydrocarbon at an elevated temperature, a pressure and contact time sufficient to produce said mono-ethylenically unsaturated hydrocarbons, with a catalyst comprised of 0.02 to 2.0 percent by weight of a noble metal dispersed on a low acidity alumina support having an acidity factor of no greater than 2.0, said low acidity alumina having a surface area of at least 10 square meters per gram and a macropore volume of at least 0.05 cc./gram, said noble metal being highly dispersed on said low acidity support and distributed on said support sufficiently to produce a local noble metal concentration profile such that at least 50 percent by weight of the total noble metal present in a catalyst particle is present in a local concentration of no greater than twice that of the total concentration of noble metal in said catalyst particle.

3,274,288

PREPARATION OF ORGANOPOLYSILOXANE RESINS

Glyn I. Harris and Hedley S. B. Marshall, Dinas Powis, Glamorgan, Wales, assignors to Midland Silicones Limited, London, England

No Drawing. Filed Dec. 24, 1963, Ser. No. 333,167
15 Claims. (Cl. 260—825)

1. A process for the preparation of organosilicon compositions having a ratio of organic groups to silicon atoms in the range from 1.01 to 1.85 comprising forming a mixture of the hydrolysis products of at least one diorganodichlorosilane of the formula R_2SiCl_2 and at least one silane of the general formula $RSiCl_nX_{3-n}$ wherein n has a value of from 1 to 2 inclusive, R represents a monovalent radical selected from the group consisting of hydrocarbon radicals and substituted hydrocarbon radicals and X is an alkoxy radical which is less easily hydrolyzable than the chlorine atoms under the conditions of the hydrolysis reaction, said hydrolysis being carried out under conditions wherein the pH value of the hydrolysis medium is maintained within the range from 5.5 to 9.0 at a temperature of from 0–25° C.

3,274,289

HOMOGENEOUS BLENDS OF POLYAMIDES WITH CARBOXYLATE COPOLYMERS CONTAINING A NEUTRAL MONOMER COMPRISING BUTADIENE-1,3, VINYL CHLORIDE, OR A MIXTURE OF BUTADIENE-1,3 AND METHYL METHACRYLATE

James David Murdock, St. Hilaire, Quebec, Norman Nelan, Scarborough, Ontario, and Gordon Hart Segall, St. Hilaire, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Original application May 2, 1960, Ser. No. 25,832, now Patent No. 3,236,914, dated Feb. 22, 1966. Divided and this application Sept. 14, 1964, Ser. No. 396,413
Claims priority, application Great Britain, May 12, 1959, 16,275/59
3 Claims. (Cl. 260—857)

1. A homogeneous blend of from 1 to 99 parts of a linear polymeric carbonamide which contains recurring carbonamide groups as an integral part of the polymer chain, said carbonamide groups being separated by at least two carbon atoms, and from 99 to 1 parts of a substantially linear synthetic copolymer containing from 98 to 50 parts by weight of a neutral monomer whose polymer is normally substantially incompatible with said linear polymeric carbonamide and from 2 to 50 parts by weight of an α,β-ethylenically unsaturated carboxylic acid, said neutral monomer being selected from the group consisting of butadiene-1,3, vinyl chloride and a mixture of butadiene-1,3 and methyl methacrylate.

3,274,290

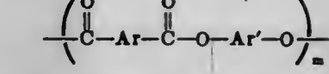
RIGID, SEGMENTED COPOLYESTERS HAVING RECURRING AROMATIC SULFONATE ESTER UNITS

Eugene P. Goldberg, Highland Park, and Frank Scardiglia, Arlington Heights, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 25, 1963, Ser. No. 318,841
10 Claims. (Cl. 260—860)

1. A rigid tough linear segmented block copolymer consisting essentially of

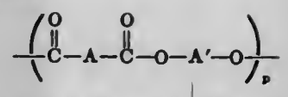
(1) recurring aromatic carboxylate ester structural units of the formula



(2) recurring aromatic sulfonate ester structural units of the formula

$$+O_2S—Ar''—SO_2—O—Ar'''—O+_n$$

and (3) recurring aliphatic polyester structural units of the formula



wherein Ar, Ar', Ar'', and Ar''' are bivalent aromatic radicals, A and A' are bivalent aliphatic radicals, m and n are positive integers equal to at least one, and p is a positive integer equal to at least 5, said aliphatic polyester units of said copolymer having a molecular weight of between about 500 and about 20,000.

3,274,291

MIXTURES OF UNSATURATED POLYESTERS AND MONOMERIC ETHYLENE COMPOUNDS COPOLYMERIZABLE THEREWITH CONTAINING COBALT SALTS AND A MEMBER OF THE GROUP OF ARSINES, STIBENES, AND PHOSPHINES

Karl Raichle, Krefeld-Urdingen, and Hans Rudolph, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed June 8, 1962, Ser. No. 200,947
Claims priority, application Germany, July 5, 1961, F 34,347
10 Claims. (Cl. 260—863)

1. A polymerization mixture which is hardenable at room temperature by the addition of a ketone peroxide polymerization initiator comprising:

(A) An unsaturated polyester prepared from an α,β-unsaturated dicarboxylic acid and a polyhydric alcohol, said polyester having an acid number below about 50

(B) A monomeric ethylenically unsaturated compound co-polymerizable therewith

(C) A cobalt accelerator

(D) From 0.01 to 0.1 percent by weight of a member selected from the group consisting of phosphines, arsines and stibines and

(E) An acidic green-coloration inhibitor.

2. A polymerization mixture which is hardenable at room temperature by the addition of a ketone peroxide polymerization initiator comprising:

(A) An unsaturated polyester prepared from an α,β-unsaturated dicarboxylic acid and a polyhydric alcohol, said polyester having an acid number above about 50

(B) A monomeric ethylenically unsaturated compound co-polymerizable therewith

(C) A cobalt accelerator and

(D) From 0.01 to 0.1 percent by weight of a member selected from the group consisting of phosphines, arsines and stibines.

3,274,292
UNSATURATED POLYESTERS PREPARED FROM COMPLEX SULFUR-CONTAINING CARBOXYLIC ACIDS DERIVED FROM PETROLEUM

Louis A. Joo, Johnson City, Tenn., and Theodore H. Szawlowski, Wonder Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,356
20 Claims. (Cl. 260—867)

1. The reaction product of a predominantly monocarboxylic acid fraction of mixed mono-, di- and polycarboxylic acids derived from solvent extracts obtained in the solvent extraction of mineral lubricating oils using a solvent selective for aromatic compounds by metalation of said solvent extracts to form the alkali metal adduct, carbonation of said adduct to form the alkali metal salt of the corresponding carboxylic acids, fractionation of said salt to recover the predominantly monocarboxylic acid salt and acidification of said salt fraction to form the free monocarboxylic acid fraction, said monocarboxylic acid fraction being characterized by an average molecular weight of about 300 to 750, and containing about 1.0 to 4.5 weight percent of combined sulfur in heterocyclic form and an average of 1.7 to 5.0 aromatic rings per mean aromatic molecule, and a polyol and an unsaturated dibasic acid under esterification conditions at a temperature of about 350° to 500° F.

3,274,293
CROSS-LINKED HALOGENOUS POLYESTER COMPOSITIONS PREPARED FROM ALKYLENE OXIDES AND MONOFUNCTIONAL HALOGENATED ALCOHOLS

Gunther Elfers, Grosse Ile, and Pauls Davis, Gibraltar, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,685
70 Claims. (Cl. 260—869)

1. A cross-linked polyester resin which is the reaction product of

(I) an ethylenically unsaturated polyester of

(1) a dicarboxylic organic anhydride selected from the group consisting of

(a) ethylenically unsaturated dicarboxylic acid anhydrides and

(b) mixtures of the ethylenically unsaturated dicarboxylic acid anhydride and a member of the group consisting of saturated dicarboxylic acid anhydrides and dicarboxylic acid anhydrides free of other than aromatic unsaturation, the total amount of ethylenically unsaturated dicarboxylic material being present in amount of at least about 40% by weight of the total amount of dicarboxylic material as defined in (b), and

(2) at least one vicinal alkylene oxide selected from the group consisting of

(a) an alkylene oxide containing from 2 to 18 carbon atoms inclusive, selected from the group consisting of saturated alkylene oxides which are free from other than aromatic unsaturation, and

(b) an alkylene oxide as defined in (a) but containing from 3 to 4 carbon atoms and at least 1 halogen atom, each halogen having from 1 to 2 alkyl groups attached to at least 1 carbon atom of the oxirane ring, said alkyl groups having up to 2 carbon atoms, and

(3) a halogenated monofunctional alcohol having the following general formula:

$$C_nH_{2n+1-z}Y_zOH$$

wherein n is an integer of from 1 to 11, z is an integer from 1 to 23, and Y is a halogen having an atomic weight of 19 to 80 inclusive,

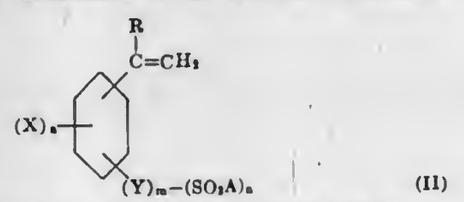
(II) an ethylenically unsaturated cross-linking agent, said cross-linked polyester being characterized by a relatively high order of non-flammability and chemical resistance.

3,274,294
COMPOSITIONS COMPRISING GRAFT COPOLYMERS ON POLYESTER SUBSTRATES OF ONE OR MORE MONOMERS FROM THE GROUP INCLUDING VINYL LACTAMS, SULFONATED ALKENYL AND/OR α-HALO ALKENYL AROMATICS, SULFONATED OLEFINS, SULFONATED ACRYLATES AND METHACRYLATES, VINYL PYRIDINES, AMINATED ALKENYL AROMATICS, AMINATED ACRYLATES AND METHACRYLATES, AND MONOMERIC POLYGLYCOL ETHERS OF ALKENYL AROMATICS

George W. Stanton, Walnut Creek, and Teddy G. Traylor, Del Mar, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 22, 1962, Ser. No. 206,127
9 Claims. (Cl. 260—873)

1. Dye receptive graft copolymer composition compound of (1) a polyester polymer substrate which is a fiber-forming polymer having as an essential ingredient in the polymer chain recurring units of an aromatic nucleus having chemically attached thereto to carbon atoms in its chain, as graft copolymerized substituents thereon, a minor proportion of up to about 20 weight percent based on the weight of the composition, of units consisting of (2) a polymerized monomer selected from the group of monomers consisting of vinyl lactam monomers (I); sulfonated aromatic monomers of the structural formula:



(II)

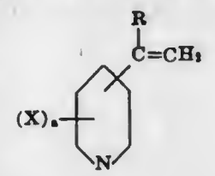
wherein R is selected from the group consisting of hydrogen, and methyl, X is individually selected from the group consisting of hydrogen, chlorine, bromine, and alkyl radicals containing from 1 to 8 carbon atoms, Y is selected from the group consisting of bivalent and trivalent hydrocarbon radicals containing 1 to 4 carbon atoms, A is selected from the group consisting of hydrogen, alkali metals, and alkyl radicals containing 1 to 5 carbon atoms, a is an integer from 1 to 4; m has a numerical value in whole units of 0 to 1, n is an integer from 1 to 2, sulfonated olefin monomers of the structural formula:

$$CH_2=CZ-(Y)_m-(SO_3A)_n \quad \text{(III)}$$

wherein Z is selected from the group consisting of hydrogen, chlorine, bromine, carboxyl radicals, carboxymethyl radicals, sulfo radicals, cyano radicals, aryl radicals containing from 6 to 12 carbon atoms, and alkyl radicals containing from 1 to 8 carbon atoms, and Y, A, m and n are as defined above for monomer (II); sulfonated acrylate and methacrylate monomers of the structural formula:

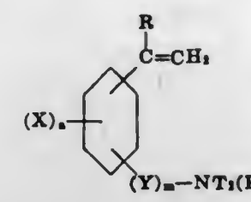
$$CH_2=CR-CO-Q-Y-(SO_3A)_n \quad \text{(IV)}$$

wherein Q is selected from the group consisting of divalent sulfur, oxygen and amide nitrogen, and R, Y, A and n are as defined above for monomer (II); vinyl pyridine monomers of the structural formula:



(V)

wherein R, X and a are as defined above for monomer (II); aminated alkenyl aromatic monomers of the structural formula:

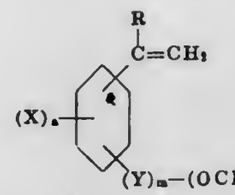


(VI)

wherein T is independently selected from the group consisting of hydrogen, alkyl radicals from 1 to 4 carbon atoms and hydroxyethyl radicals, U is a common anion and R, X, Y, a and m are as defined above for monomer (II); aminated acrylate and methacrylate monomers of the structural formula:

$$CH_2=CR-CO-Q-Y-NT_2(RU)_m \quad \text{(VII)}$$

wherein R, Q, Y, T, U and m are as defined above for monomers (II), (IV) and (VI); and monomeric polyglycol ethers of alkenyl aromatics of the structural formula:



(VIII)

wherein b has an average numerical value between about 1 and 40, and R, X, Y, T, a and m are as defined above for monomers (II), (IV) and (VI).

3,274,295
BLOCK COPOLYMERS OF VINYLIDENE COMPOUNDS AND PERFLUORINATED NON-VINYL MONOMERS

William P. Baker, Jr., Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 13, 1965, Ser. No. 495,728
10 Claims. (Cl. 260—879)

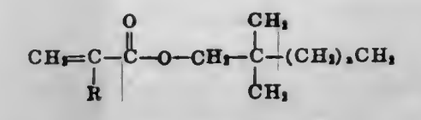
1. A normally solid thermoplastic block copolymer having as a non-recurring central segment, a polymer of a monomer selected from the group consisting of conjugated dienes, esters of acrylic and alpha-substituted acrylic acids, ethylenically unsaturated nitriles, vinyl pyridines, methylene malonates and aryl-substituted olefins, said central segment being composed of at least 10 units of said monomer and having attached at each end a polymeric segment of a perfluorinated monomer selected from the group consisting of thiocarbonyl difluoride, tetrafluoroethylene epoxide and tetrafluoroethylene episulfide, said monomer being devoid of groups containing an active hydrogen atom as determined by the Zerewitinoff test, and said perfluorinated monomer constituting 0.5 to 98% of the sum of the moles of said block copolymer.

3,274,296
GRAFT POLYMERS OF 2,2-DIMETHYL ALKYL ACRYLATE MONOMER ON A POLYMERIC VINYLIDENE CHLORIDE BACKBONE

Hugh J. Hagemeyer, Jr., Alden E. Blood, and Marvin B. Edwards, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 12, 1963, Ser. No. 308,377
6 Claims. (Cl. 260—883)

1. A resinous graft copolymer of (1) from 5–55% by weight of a monomeric compound having the general formula:



wherein x represents an integer of from 1–11 and R represents a member selected from the group consisting of a hydrogen atom and a methyl group, and (2) from 95–45% by weight of a preformed copolymer consisting of at least 80% by weight of vinylidene chloride and not more than 20% by weight of at least one monoethylenically unsaturated compound containing a —CH=C< group.

2. A resinous graft copolymer of (1) from 15–45% by weight of a 2,2-dimethyl hexyl acrylate, and (2) from 85–55% by weight of a preformed copolymer consisting of not more than 80% by weight of vinylidene chloride and not more than 20% by weight of N-2,2-dimethylbutyl methacrylamide.

3,274,297
GRAFT POLYMERS OF VINYL CHLORIDE ON A BACKFORE COPOLYMER OF VINYL ALCOHOL AND VINYL 2,2-DIMETHYLALKANOATE

Hugh J. Hagemeyer, Jr., Alden E. Blood, and Marvin B. Edwards, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 12, 1963, Ser. No. 308,374
8 Claims. (Cl. 260—884)

1. A resinous graft copolymer of (1) from 20–50% by weight of monomeric material selected from the group consisting of (a) vinyl chloride and (b) a mixture consisting of at least 70% by weight of vinyl chloride and the remainder of the vinyl ester of a 2,2-dimethylalkanoic acid containing from 5–16 carbon atoms, and (2) from 80–50% by weight of a preformed copolymer consisting of at least 50% by weight of vinyl alcohol and the remainder of the vinyl ester of a 2,2-dimethylalkanoic acid containing from 5–16 carbon atoms.

4. A resinous graft copolymer of (1) from 20–50% by weight of monomeric material selected from the group consisting of (a) vinyl chloride and (b) a mixture of at least 70% by weight of vinyl chloride and the remainder of the vinyl ester of a 2,2-dimethylalkanoic acid containing from 5–16 carbon atoms, (2) from 80–50% by weight of a preformed copolymer consisting of at least 50% by weight of vinyl alcohol and the remainder of the vinyl ester of a 2,2-dimethylalkanoic acid containing from 5–16 carbon atoms and (3) from 0.5–1.0% by weight of a cross-linking agent selected from the group consisting of divinylbenzene, diallyl phthalate, allyl acrylate, triallyl cyanurate and ethylene glycol diacrylate.

3,274,298
COATING COMPOSITION FOR COMPOSITE PACKAGING SHEETS

John T. Massengale, West Chester, and Walter T. Koch, Drexel Hill, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

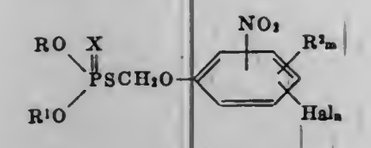
No Drawing. Filed June 1, 1964, Ser. No. 371,812
5 Claims. (Cl. 260—898)

1. A coating composition comprising an organic solvent solution of a blend of (1) from about 65 to 98% by weight of a copolymer of from 80 to 92 parts vinylidene chloride and from 20 to 8 parts acrylonitrile with (2) from about 35 to 2% by weight of an interpolymer of from 70 to 90 parts of vinylidene chloride, from 5 to 25 parts of a monomer selected from the group consisting of methacrylic acid, acrylic acid and mixtures thereof and

from 0 to 10 parts of a monomer selected from the group consisting of acrylonitrile, lower alkyl acrylates and lower alkyl methacrylates.

3,274,299
O,O-DIALKYL NITROPHENOXYMETHYL-PHOSPHOROTHIOATES
Edward N. Walsh, Chicago Heights, Ill., and John G. Brady, Campbell, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of New York
No Drawing. Filed May 17, 1963, Ser. No. 281,324
5 Claims. (Cl. 260—951)

1. A compound having the formula:

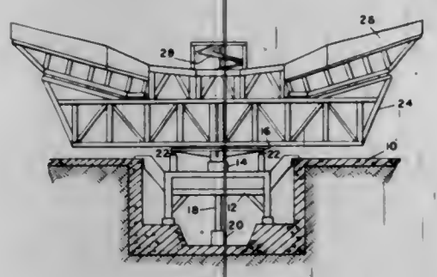


wherein R, R^1, and R^2 are 1 to 4 carbon alkyl, X is a member selected from the group consisting of oxygen and sulfur, Hal represents a halogen atom, and m and n are integers from 0 to 3 inclusive, with the sum of $m+n$ not greater than 3.

3,274,300
PREPARATION OF O,O-DIALKYL PHOSPHORODITHIOATES
John R. Van Wazer, La Due, and Kurt Moedritzer, Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,610
5 Claims. (Cl. 260—981)

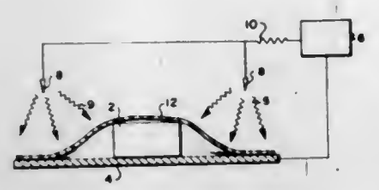
1. Process for the preparation of O,O-dialkyl phosphorodithioates which comprises mixing and contacting phosphorus sulfide as a solid solution with an excess of sulfur such that the total sulfur/phosphorus atomic ratio is from 2.6 to 4.0 with an alcohol having from 1 to 20 carbon atoms at a temperature which is substantially that of the boiling point of the said alcohol, the proportion of the said alcohol being in approximately stoichiometric relationship to the phosphorus present.

3,274,301
SPIN CASTING PARABOLOIDAL SURFACES
John F. Kulp, Jr., Malvern, Pa., assignor to General Electric Company, a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,182
5 Claims. (Cl. 264—1)



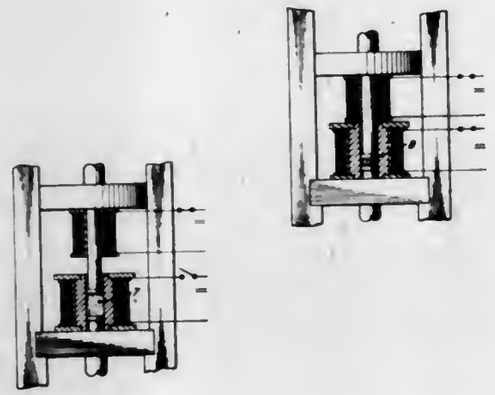
1. A method for producing a cast paraboloidal surface comprising:
depositing a liquid resin formulation in an open topped container;
said resin formulation including a volatile hardener;
maintaining above the surface of said resin formulation an atmosphere rich in said hardener; and
rotating said container at a substantially constant speed about a vertical axis while said resin formulation is permitted to cure.

3,274,302
METHOD OF EMPLOYING ELECTROSTATIC MEANS IN A HEAT SHRINKING PROCESS
Kelvin G. Anderson, Greer, and Ivan F. Churchill, Greenville, S.C., assignors to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed May 6, 1964, Ser. No. 365,272
6 Claims. (Cl. 264—22)



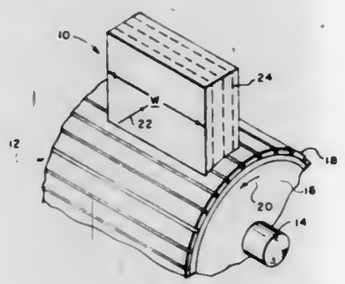
1. A method for heat shrinking a dielectric thermoplastic heat shrinkable material about an object comprising:
(a) placing said object on an electrically chargeable support,
(b) placing said material over at least a portion of said object, the peripheral portions of said material extending beyond the periphery of said object,
(c) electrostatically charging said material sufficient to attract the peripheral portions of said material toward said support and restrain movement of said material and,
(d) heating at least a portion of said material to heat shrinking temperatures sufficient for the shrink energy of the film to overcome the restraining force of the electrostatic charge and to shrink the material about at least a portion of the object.

3,274,303
METHOD AND APPARATUS FOR MAKING MAGNETICALLY ANISOTROPIC PERMANENT MAGNETS
Werner Müller, Bad Godesberg, Germany, assignor to Magnetfabrik Bonn Gewerkschaft Windhorst, Bonn, Germany
Filed Dec. 18, 1962, Ser. No. 245,610
Claims priority, application Germany, Dec. 21, 1961, M 51,256
3 Claims. (Cl. 264—24)



1. A method of making magnetically anisotropic permanent magnets comprising subjecting a powder of a permanent ferromagnetic material placed in a confined space to a magnetic force which lifts particles of said magnetic powder so as to expand said powder and render said particles more mobile, then applying a magnetic field across said expanded powder, thereby orienting said particles while in said mobile condition, and finally compacting said powder in said confined space while said magnetic field is applied.

3,274,304
METHOD OF MAKING IMPURITY-TYPE SEMICONDUCTOR ELECTRICAL CONTACTS
Jackson C. Horton and Harry M. King, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Nov. 26, 1963, Ser. No. 326,299
3 Claims. (Cl. 264—27)

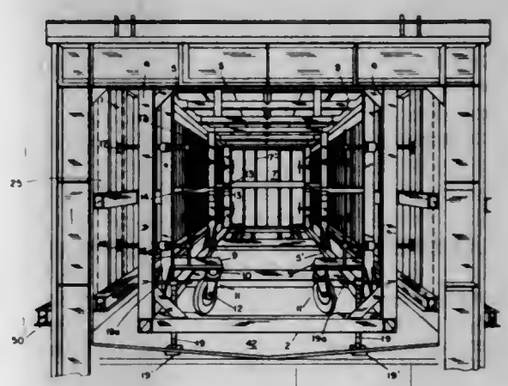


1. A method of making an impurity-type semiconductor electrical contact brush, comprising:
(a) mixing from 15 to 99 percent by volume of powdered molybdenum disulphide with from 1 to 85 percent by volume of a powdered metal selected from a group of copper, silver, and mixtures thereof;
(b) placing said mixture in a mold;
(c) compacting said mixture by pressure applied in one direction at approximately 3500 pounds per square inch;
(d) firing said mixture at a sufficiently high temperature and for a period of time to convert said mixture into a sintered block of overly doped anisotropic molybdenum disulphide;
(e) removing said block from said mold for cooling to ambient temperature;
(f) shaping said block into the desired form of an electrical contact brush so that its plane of laminations are substantially perpendicular to and have a maximum width along the surface to be contacted by said brush;
(g) passing an electrical current through said block of sufficient strength to product a temperature rise of from 80 to 100 degrees centigrade; and
(h) removing said electrical current and allowing said block to cool to ambient temperature thereby producing a lattic reorientation due to intrinsic heating and thereby lowering the specific resistivity of said brush.

3,274,305
METHOD OF FORMING CONCRETE ROOFS
Thomas W. Short, Realty and Trust Bldg., Kerrville, Tex.
Filed Oct. 22, 1965, Ser. No. 501,277
8 Claims. (Cl. 264—31)

1. A method of forming a concrete roof by means of a trailer having a pair of longitudinally disposed upwardly extending support members operatively secured at their bases to the trailer and having a longitudinal bar extending between the upper ends of the support members with a pair of roof forms pivotally connected to the longitudinal bar wherein the roof forms assume a predetermined axis irrespective of the alignment of the trailer with respect to that axis comprising steps of:
transporting the trailer to a building site with the roof forms in a collapsed transporting position operatively and pivotally connected to the trailer, the axis of the trailer being disposed from the predetermined central axis of the roof forms;
stably supporting the trailer on the ground;
laterally adjusting with respect to the trailer the upper end of at least one support member independently of the upper end of the other support member so as to laterally align the central axis of the roof forms as defined by the longitudinal bar irrespective of the lateral misalignment of the trailer at the building site;
supporting the roof forms on the trailer while moving the roof forms into an upwardly extended position of support; and
pouring concrete on the upper surface of the roof forms to form a concrete roof.

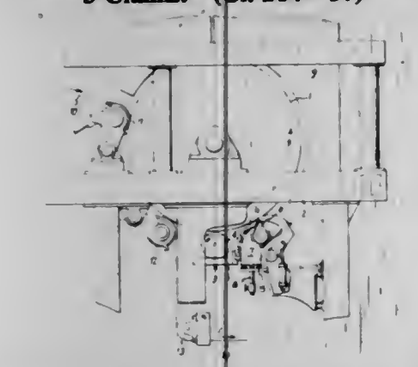
3,274,306
METHOD FOR CASTING CONCRETE STRUCTURES
Lorenz Kesting, Lunen-Brambauer, Germany, assignor to Bauunternehmung Lorenz Kesting, Lunen-Brambauer, Germany, a corporation of Germany
Filed Jan. 8, 1964, Ser. No. 336,556
Claims priority, application Germany, Jan. 9, 1963, B 70,264
2 Claims. (Cl. 264—34)



1. A method of producing concrete structures having a plurality of angularly adjoining walls, comprising the steps of:
(a) forming a generally flat concrete foundation slab having a plurality of edges;
(b) disposing a movable inner-form body having spreadable upright wall-forming panels and a roof-forming panel upon said foundation slab;
(c) shifting said wall-forming panels laterally to dispose them substantially in the region of said edges of said foundation slab and affixing outer-form members to said body in spaced relationship with said panels so as to define therewith mold chambers for the roof and walls of a structure to be cast with said mold chambers terminating at said edges of said slab;
(d) pouring concrete into said chambers and permitting said concrete to set therein to form walls of said structure in situ substantially contiguous with said slab and a roof substantially monolithically connected with said walls;
(e) detaching said outer-form members from said body and withdrawing said panels inwardly on said body from engagement with the walls and roof of the structure formed upon setting of said concrete; and

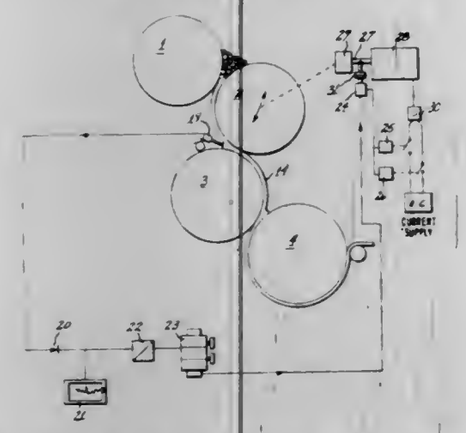
(f) shifting said body unitarily with said panels thereon out of said structure.

3,274,307
METHOD AND MEANS FOR CONTROLLING FOAMING OF CLAY COATING COMPOSITION DURING APPLICATION
Frank D. Bergstein, Wyoming, and Alfred B. Kleingers, Jr., and Leonard Back, Middletown, Ohio, assignors to Bergstein Packaging Trust, Middletown, Ohio, a corporation of Ohio
Filed Mar. 1, 1962, Ser. No. 176,605
3 Claims. (Cl. 264—37)



1. A method for removing foam and entrained air bubbles from a slurry of casting composition recovered as an incident of a casting operation, which method comprises continuously collecting the recovered slurry of casting composition in a vessel which is relatively deep as compared to its width, maintaining said vessel essentially filled with said casting composition, subjecting the vessel and the casting composition therein to vibration at a frequency on the order of from 2000 to 5000 vibrations per minute, and continuously withdrawing casting composition from the lowermost portion of said relatively deep vessel.

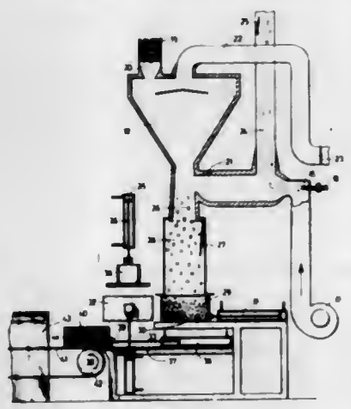
3,274,308
CALENDER BANK SIZE AUTOMATIC CONTROL SYSTEM
John Thomas Freeman, Freehold, N.J., and Carl William Sanders, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,220
7 Claims. (Cl. 264—40)



1. A calendar roll apparatus for continuously preparing viscous sheet material comprising
(A) detector means for signalling the bank size of said material formed by the nip of said calender roll;
(B) means of creating a deviation signal representing the difference between said bank size signal and a preset signal for the optimum bank size; and
(C) control means for governing the nip size by moving said calendar roll a distance dependent upon a correction signal representing the difference between a signal corresponding to the actual nip size and said deviation signal.

3. A method for preparing continuous sheets of photopolymeric material which comprises
(A) feeding said material between calendar rolls capable of being adjusted to change the nip size;
(B) producing a signal representing the actual calender bank size in said nip;
(C) comparing the actual bank signal with a preferred bank size signal and forming a deviation signal for any difference in said bank signals; and
(D) adjusting said calender roll nip utilizing said deviation signal to give said preferred calender roll bank size.

3,274,309
METHOD FOR PRODUCING BUILDING ELEMENTS AND ESPECIALLY BUILDING STONES OF SINTERED MATERIAL OR THE LIKE
Walter Schreieck, 52 Hauptstrasse, Trosdorf, Upper Franconia, Germany
Filed June 1, 1965, Ser. No. 460,434
2 Claims. (Cl. 264—42)



1. The method of producing light-weight building elements of predetermined size and shape and of cellular structure by molding granulated bloated mineral material after heating said material to a state wherein the interior of the granules is bloated while the outer surface is plasticized, comprising the steps of feeding a batch of unbloated granulated material into a reaction chamber, introducing a stream of hot gas into the chamber, introducing a stream of hot gas into the chamber, maintaining the granules of the batch in suspension in the stream of hot gas until the granules reach the state in which the interior is bloated and the outer surface plasticized, arresting the flow of the stream of hot gas into said reaction chamber, withdrawing the bloated batch from said reaction chamber, immediately filling the bloated granules of the batch into at least one mold of predetermined size and shape, compacting the granules within said mold for increasing the density of the molded material, cooling the molded material to a stable condition and removing the thus produced light-weight building element from the mold.

3,274,310
METHOD OF MAKING A POROUS CERAMIC PRODUCT
Lou Kohl, Palatine, Ill., assignor, by mesne assignments, to The Celotex Corporation, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Mar. 19, 1964, Ser. No. 353,261
6 Claims. (Cl. 264—43)

1. The method of making a porous ceramic product comprising the steps of forming a shaped wet mass of expanded mineral aggregate in particulate form carrying a thin aqueous clay coating of between 50 and 300×10^{-7} cm. in thickness on the particles, said mass having a water content of from about 9% to 26% by volume of the dry ingredients, placing said shaped wet mass into a furnace whose temperature is within the range of between 1450° F. and 1700° F., and maintaining said wet mass at a surface temperature within said range for a time period, the duration of said time period being from a minimum of 8 minutes at said temperature of 1700° F. to a maximum of 60 minutes at said temperature of 1450° F.

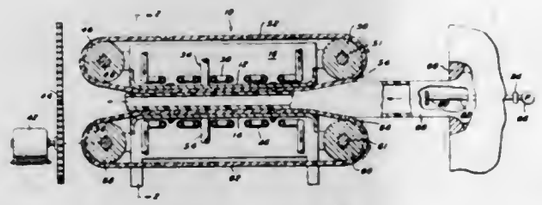
3,274,311
METHOD OF MOLDING ALUMINA
David R. Watson, Benton, Kizhakke G. Hrishikesan, Little Rock, and Jerome S. Deutscher, Benton, Ark., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
No Drawing. Filed Apr. 25, 1963, Ser. No. 275,496
11 Claims. (Cl. 264—63)

1. Process for the manufacture of a sintered alumina body which comprises the steps of forming a mixture of alumina and from about 0.5% to about 2.0% by weight of the alumina of at least one fatty acid, finely and intimately dry grinding said mixture, forming the ground mixture into a green compact, and firing said compact at a temperature not in excess of about 3000° F. to obtain said sintered alumina body.

3,274,312
PROCESS FOR PREPARING DYE-RECEPTIVE SHAPED ARTICLES
Mario Compostella, Emanuele Del Mauro, and Giovanni Latella, Terni, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy
No Drawing. Filed Dec. 17, 1962, Ser. No. 244,943
Claims priority, application Italy, Dec. 21, 1961, 22,809/61
7 Claims. (Cl. 264—78)

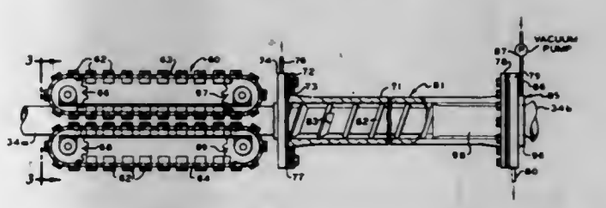
1. In the process for preparing dye-receptive shaped articles by extruding a mix containing (1) an olefin polymer and (2) a basic nitrogen polycondensate, obtained from (a) at least one amine selected from the group consisting of primary aliphatic amines containing 3–30 carbon atoms and secondary aliphatic amines containing 4–60 carbon atoms, (b) epichlorohydrin and (c) at least one member selected from the group consisting of aliphatic, aromatic and heterocyclic-bis secondary diamines, and stretching said shaped articles, the improvement which comprises transforming said mix into granules by sintering at a temperature of from 80° C. to about 170° C. before said extrusion step.

3,274,313
METHOD OF MAKING A HOLLOW ELONGATED PLASTIC ARTICLE
Harry J. Harp, Jr., Jenkintown, Pa., assignor to Union Carbide Corporation, a corporation of New York
Filed July 23, 1964, Ser. No. 387,265
4 Claims. (Cl. 264—89)



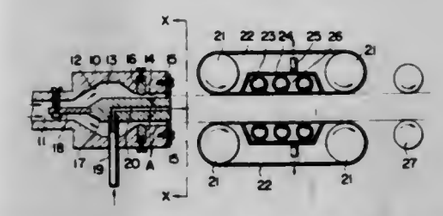
1. A method of making a hollow elongated article of a thin wall structure from a biaxial orientatable plastic material comprising the steps of extruding a hollow tubular member from said plastic material, directing said tubular member to a passage of the size and configuration of the article to be formed while passing it through a space which is sufficient to allow longitudinal stretching of said tubular member, maintaining a low pressure within said tubular member which is just sufficient to prevent its collapse as it is being passed through said space, stretching said tubular member in the longitudinal direction by pulling said tubular member through said space at a greater linear rate of speed than that at which it is extruded, passing said tubular member into said passage while maintaining it in the deformable state, drawing said tubular member against the walls of said passage by applying a vacuum around the periphery and along the length of said tubular member thereby reshaping it in the transverse direction to the size and configuration of the article to be formed, and cooling said tubular member as it is being reshaped within said passage so that said tubular member attains a state of rigidity prior to emergence from said passage.

3,274,314
THERMOPLASTIC FILM PRODUCTION
Jimmie E. Hudson, Bartlesville, Okla., and Clayton E. Ogier, Boulder, Colo., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,538
3 Claims. (Cl. 264—92)



1. A process for eliminating longitudinal stretching of a thin flexible tubular film in a tubular heating zone which heats said tubular film to orientation temperature so that said film can be biaxially oriented beyond said heating zone, the process comprising creating a sufficient vacuum between said tube and the boundary of said tubular heating zone at the outlet end of said zone to draw said tubular film against said boundary to produce a drag on said film while in contact with said boundary, said drag being sufficient to substantially prevent longitudinal stretching of said film while in said heater, without substantial cooling of said film.

3,274,315
PROCESS FOR UNITIZED CONSTRUCTION OF SYNTHETIC RESIN BOARD OR CYLINDER
Yuzo Kawamura, Toyonaka-shi, Osaka-fu, Japan, assignor to Tokan Kogyo Co., Ltd.
Filed Feb. 25, 1963, Ser. No. 260,425
3 Claims. (Cl. 264—93)

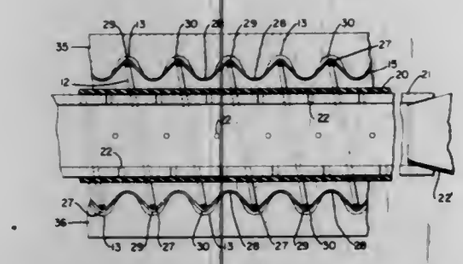


1. A method for making a resin board having a cellular structure of spaced spheres comprising the steps of extruding a thermoplastic resin in the cross-section selected, and injecting air into the extruding resin at spaced intervals of time to form said spheres.

2. A method for making a resin board having spaced boundary layers and a plurality of cells therebetween comprising the steps of continuously extruding a thermoplastic

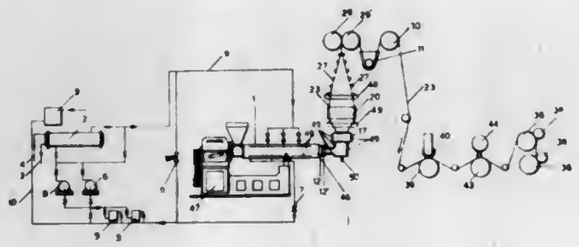
resin to produce a plurality of longitudinally extending chambers between spaced boundary layers, continuously injecting air under a predetermined pressure into the chambers formed by the extruding resin, stopping the movement of the extruded shape for a predetermined time while continuing to extrude resin to thereby form a dividing wall in each chamber defining one wall of a cell, then moving the extruded mass a distance equal to the preselected length of cell and forming additional dividing walls by stopping movement of the extruded shape for a predetermined time while continuing to extrude resin, and continuing the formation of dividing walls as aforesaid for the length of the board.

3,274,316
METHOD OF MAKING REINFORCED CORRUGATED HOSE
Paul A. Songer, Denver, Colo., assignor to The Gates Rubber Company, Denver, Colo., a corporation of Colorado
Filed July 20, 1964, Ser. No. 383,816
7 Claims. (Cl. 264—94)



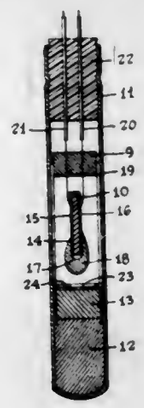
2. The method of manufacturing a spirally reinforced hose and molding said hose in a mold having a pitch defined by a spiral trough in the mold and having a diameter defined by the diameter of crests in the mold and by the diameter of troughs in the mold comprising the steps of: placing a spiral reinforcing member having axially spaced turns over a radially expandable form having on the surface thereof a spiral guide of a pitch identical to the pitch defined by the spiral trough of the mold; diametrically expanding said form to a diameter greater than the diameter defined by the crests of the mold but less than the diameter defined by the trough of the mold and aligning said reinforcing member with the axially spaced turns of the reinforcing member corresponding with the helical guide on the form; securing to the surface of said spiral reinforcing member a retention member thereby holding the spaced turns of the spiral reinforcing member in a fixed pitch and diametric relationship; separately forming a cylindrically shaped tube from elastomeric rubber and having a diameter less than the diameter of a cylinder described by the inner surface of the secured spiral reinforcing member; placing a length of said elastomeric tube around a hollow mandrel having orifices and to which hollow mandrel portion is attached a fluid pressure source; placing the secured spiral reinforcement over the elastomeric tube; enclosing the elastomeric tube with the secured spiral reinforcing member thereover between corrugated mold halves having smooth cylindrical end portions with the turns of the spiral reinforcing member in alignment with the troughs of the mold, the crests of which mold halves are of a diameter less than the diameter of the spiral reinforcing member but greater than the diameter of the elastomeric tube and the troughs of which are of a diameter greater than the diameter of the secured reinforcing member; simultaneously applying heat and fluid pressure to the interior of the elastomeric tube thereby forcing said elastomeric tube to conform to the mold interior and completely embedding said spiral reinforcement within the elastomeric tube and continuing said heating until component parts are completely vulcanized into a unitary hose structure.

3,274,317
METHOD AND APPARATUS FOR EXTRUSION OF PLASTIC MATERIAL
Mario Batosti, Milan, and Antonio Belloni, Padova, Italy, assignors, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy
Filed July 26, 1963, Ser. No. 297,876
11 Claims. (Cl. 264—95)



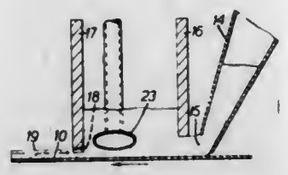
1. The method of manufacturing tubular plastic material which comprises pumping a heat liquified plastic material into an extrusion means with a variable speed motor, extruding the heated plastic material through a die plate means, with external circumferential undulations, externally cooling said extrusion means, expanding said extruded material into a tubular configuration by blowing said extruded material with compressed air, flattening the expanded tube, cooling the extruded material in two separate stages subsequent to the blowing operation and prior to the flattening operation, additionally cooling the tube material during the flattening operation and subsequently subjecting the tube material to a water bath followed by winding said tube on spools.

3,274,318
METHOD OF MAKING STATIC-RESISTANT DETONATOR PLUG
Matthew L. Spillane, Tomaqua, and George J. Heimberger, Lehighton, Pa., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Original application Feb. 6, 1962, Ser. No. 171,421, now Patent No. 3,194,160, dated July 13, 1965. Divided and this application Oct. 8, 1964, Ser. No. 409,340
3 Claims. (Cl. 264—104)



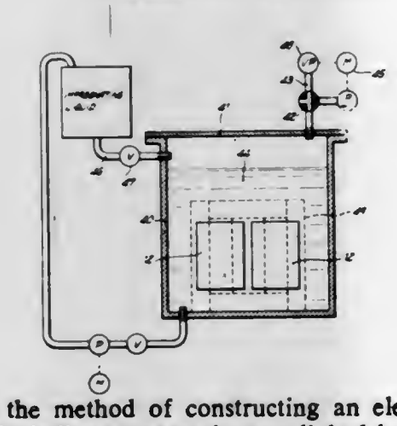
1. A method of producing a protective plug which comprises the steps of admixing finely divided aluminum with a melt of polyethylene, said aluminum present in amounts of from about 70 to about 80% by weight of the total mix, allowing the resultant mix to harden, grinding the hardened mix, and pressure forming by injection molding at a temperature above the melting point of the polyethylene to form a cohesive compacted mass.

3,274,319
MANUFACTURE OF RIBBED POROUS PLASTIC SHEETING
Joseph Clegg, Dagenham, Essex, England, assignor to Pritchett & Gold and E.P.S. Company Limited, Essex, England, a company of Great Britain
Filed Nov. 5, 1963, Ser. No. 321,505
Claims priority, application Great Britain, Nov. 7, 1962, 42,046/62
8 Claims. (Cl. 264—126)



1. A method of producing plastic strip from a powder, which includes a layer of the powder on a travelling support under a stationary die which engages the powder to form the surface of the emerging layer, discharging air into the layer of powder approaching the die to render it fluid as it reaches the die and subsequently subjecting the layer to heat treatment to form the strip.

3,274,320
METHOD OF ENCAPSULATING TRANSFORMER
Hubert Reber, Zanesville, Ohio, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,108
3 Claims. (Cl. 264—135)

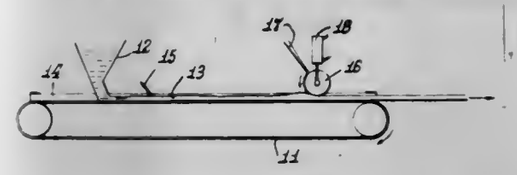


1. In the method of constructing an electrical transformer including a magnetic core linked by an encapsulated cylindrical coil having concentric layers of conductor turns, the steps of providing porous insulation between said conductor layers of said coil, immersing said coil in a liquid insulating dielectric impregnant, whereby said impregnant displaces air within the interstices of said coil, draining said liquid impregnant from said coil except that retained by capillary attraction within the interstices in said porous insulation, enveloping said coil in thermosetting encapsulating resin in liquid form, and curing said thermosetting resin.

3,274,321
METHOD OF MAKING CLEAR CELLULOSE FILMS FROM GREEN VISCOSE
John L. Justice, Wallingford, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
No Drawing. Filed Mar. 28, 1961, Ser. No. 98,734
4 Claims. (Cl. 264—189)

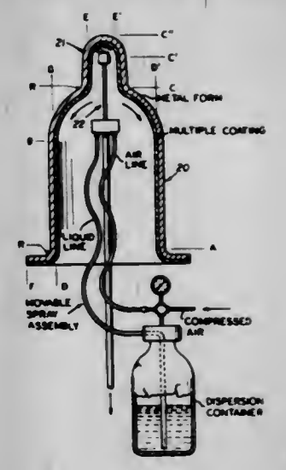
1. A method of forming clear films from green viscose comprising coagulating a pellicle of viscose having a common salt test index of at least 5 in a coagulating bath containing from about 0.5 to about 2% by weight based on the bath of an aldehyde selected from the group consisting of formaldehyde and glyoxal in the absence of zinc salts.

3,274,322
METHOD OF FLOW FORMING POLYURETHANE AND LIKE MATERIAL
John A. Scudder, Chicago, Ill., assignor to Chemechanical, Inc., South Holland, Ill., a corporation of Illinois
Filed Mar. 9, 1964, Ser. No. 350,194
8 Claims. (Cl. 264—213)



1. The method of forming belts, tires, O-rings, strips and similar products from polyurethane and like material comprising the successive steps of: flowing a quantity of polyurethane in a readily flowable state on to a supporting surface moving at a controlled rate of travel in relation to the flow rate of the polyurethane; subjecting the so applied polyurethane to a doctoring action thereby to effect a preliminary shaping of said product in a state of partial cure and having an exposed surface; flowing on to the exposed surface of the moving, preliminarily shaped polyurethane product a liquid force-transmitting medium; subjecting the preliminarily shaped polyurethane product to external pressure exerted on said exposed surface in a manner as effects dynamic flow of the polyurethane and final shaping of the preliminarily shaped product to that of the desired product by shear action developed and transmitted by and through said medium; and finally curing the finally shaped polyurethane product to a physically stable condition.

3,274,323
HIGH IMPERMEABILITY COATINGS AND SUPPORTED FABRICATED OBJECTS OF POLYTETRAFLUOROETHYLENE
John Petriello, North Babylon, N.Y., assignor to Dilectrix Corporation, Farmingdale, N.Y.
Filed May 3, 1962, Ser. No. 192,213
3 Claims. (Cl. 264—308)



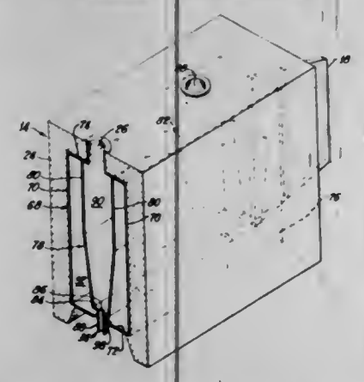
1. A process for producing a highly impermeable multilayer structure of fused polytetrafluoroethylene comprising the steps of baking each successive layer for a minimum of 5 minutes at the temperature of 380 to 385° C., followed by a final baking time of minimum of 60 minutes, and a maximum cooling rate to ambient conditions of 20 degrees centigrade per minute.

ELECTRICAL

3,274,324
APPARATUS FOR FORMING HEAT-SOFTENABLE MATERIALS

Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Original application Oct. 30, 1961, Ser. No. 148,460, now Patent No. 3,192,023, dated June 29, 1965. Divided and this application Feb. 26, 1965, Ser. No. 446,445
7 Claims. (Cl. 13—6)

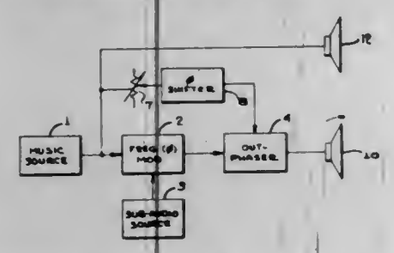


1. In apparatus for forming fibers from heat-softenable materials, a container for molten material, said container having a wall, a first planar aperture in said wall, container means including means defining a hollow elongated orifice having ends and a medial exterior portion between said ends, said medial exterior portion being disposed in said planar aperture in fluid sealing relation, and at least one second planar aperture in said wall in tangential contact with said exterior surface.

3,274,325
MUSIC ENHANCEMENT

Hyman Hurvitz, 1313 Juniper St. NW., Washington, D.C.

Filed May 17, 1963, Ser. No. 281,214
11 Claims. (Cl. 84—1.23)



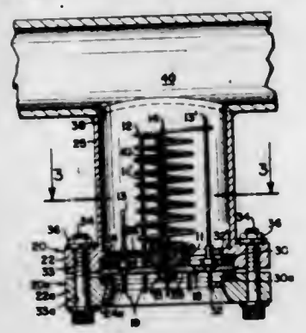
1. In combination, a source of a wide audio band representing music, modulation means responsive to said wide audio band for generating a modulated band containing at least said wide audio band and two side bands for each frequency of said wide audio band separated by a sub-audio separation, and means for at least partially out-phasing said audio wide band from said modulated band.

3,274,326
NUDE ION GAGE ASSEMBLY

Robert A. Morris, Commack, and Robert F. Salat, East Northport, N.Y., assignors to Vactronic Lab. Equipment, Inc., East Northport, N.Y.

Filed May 1, 1962, Ser. No. 191,499
5 Claims. (Cl. 174—18)

1. A nude ion gage assembly comprising:
a ceramic base having an upper and lower sealing surface that is smooth and substantially flat and provided with a plurality of apertures extending therethrough, said base serving as the mounting plate of an ion gage;
electrically conductive supports extending through said apertures;
means sealing said supports to said ceramic base;
first and second metal retainer members each having two smooth and substantially flat sealing surfaces, said members being of generally hollow configuration;
said retainer members being disposed in confronting relation, said base being interposed between said confronting retainer members whereby said conductive supports are disposed within the bore of at least one of said members;
a first annular member interposed between one of the sealing surfaces of said first retaining member and said upper sealing surface of said ceramic base;
a second annular member interposed between the other of the sealing surfaces thereof said second retainer member and said lower sealing surface of said ceramic base, said electrically conductive supports being disposed inwardly of said annular members;



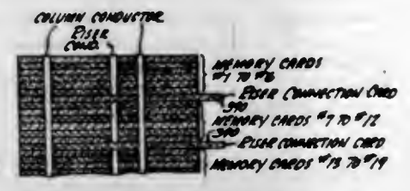
said first and second annular members having upper and lower axially extending annular knife edges abutting respective confronting sealing surfaces of said retaining members and said ceramic base, said annular members being formed of copper of a hardness less than that of said first and second retaining members and said ceramic base, respectively; and
clamping means urging said first and said second retaining members towards each other to thereby tightly abut said first annular member disposed between said upper surface of said ceramic base and said first retainer, and to also tightly abut said second annular member disposed between said lower surface of said ceramic base and said second retainer, whereby minute deformation of said respective upper and lower edges of said first and second annular members takes place without appreciable deformation of the sealing surface of said base and said retainer members, said annular members thereby serving as seals interposed between the respective areas inwardly of said annular members and the areas outwardly of said annular members.

3,274,327
MULTILAYER CIRCUIT CONNECTION

Hans F. Schnitzler, Levittown, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 11, 1963, Ser. No. 294,302
8 Claims. (Cl. 174—68.5)

1. In combination,
a stack of insulator circuit cards, each having a printed circuit on one surface thereof, and each having a group of first holes in corresponding positions on the cards through which conductors pass which connect to the circuit on all cards, and each having a group of second holes in corresponding positions on the cards, the second holes receiving conductors which respectively connect to circuits on different cards, whereby the number of cards which can be stacked is normally limited by the number of second holes;

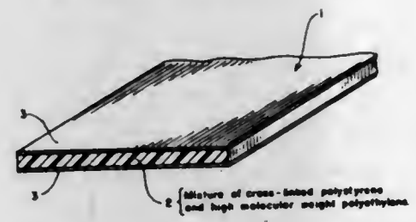


spacer cards located in the stack which are formed with holes in positions corresponding to the first holes in the circuit cards, with the conductors in the first holes passing therethrough, but which are imperforate and are formed with printed conductors in the areas of the spacer cards aligned with the second holes in the circuit cards; and
conductors in the second holes which engage the printed conductors of the spacer cards and the insulator circuit cards.

3,274,328
DIELECTRIC FOR CIRCUIT BOARD AND STRIP LINES

William J. Davis, Wyomissing, Pa., assignor, by mesne assignments, to The Polymer Corporation, a corporation of Pennsylvania

Filed June 6, 1963, Ser. No. 286,126
6 Claims. (Cl. 174—68.5)

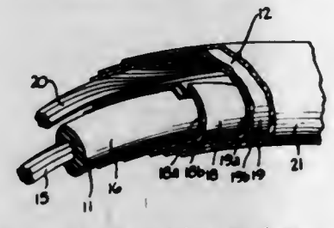


2. A low loss dielectric material consisting essentially of an intimate mixture of cross linked polystyrene and a high molecular weight, antioxidant-free polyethylene, said mixture being fused together into a form stable article.

3,274,329
SHIELDED CORDS

Frank E. Timmons, Richmond, Ind., assignor to Belden Manufacturing Company, Chicago, Ill., a corporation of Illinois

Filed May 6, 1964, Ser. No. 365,475
5 Claims. (Cl. 174—69)

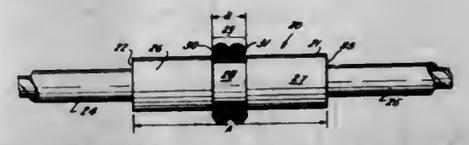


1. A shielded cord comprising at least one insulated wire, dual superimposed tapes spirally served about said insulated wire, said tapes each being served with longitudinal edge portions thereof overlapping and including an insulating layer and a metallic layer, the metallic layers being faced toward each other and an uninsulated drain wire disposed between said superimposed tapes in contact with both of said facing metallic layers.

3,274,330
INSULATED CABLE SPLICE

Stephen P. Becker, Poughkeepsie, N.Y., and Bertram A. Fulton, Lynnfield, Mass., assignors to Fargo Mfg. Company, Inc., Poughkeepsie, N.Y., a corporation of New York

Filed Apr. 24, 1964, Ser. No. 362,256
5 Claims. (Cl. 174—84)

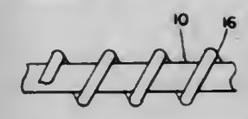


1. A cable connector for electrically connecting the facing ends of first and second cables including in combination a cylindrical body formed of an electrically conductive deformable material, first and second adjacent crimpable sections longitudinally displaced on said body, first and second cavities within said first and second crimpable sections respectively, first and second respective entrances to said cavities for receiving respective ends of said first and second cables, an elastomeric insulating sleeve having a longitudinal dimension greater than the longitudinal dimension of said connector, first and second ends of said insulating sleeve rolled toward one another providing a rolled length of said sleeve less than the length of said connector, a zone of said connector encircled by said sleeve longitudinally displaced from said first and second crimpable sections between said first cavity entrance and said first crimpable section whereby said cable ends can be retained within said respective crimpable sections and said sleeve extended to its full length overlying said connector and said cavity entrances to provide insulation of said sleeve and sealing at said cavity entrances said zone consisting of parallel cylindrical depressed portions of said connector providing parallel cylindrical channels receiving said first and second ends of said sleeve respectively in its rolled condition with said second end of said sleeve of greater length than said first end.

3,274,331
ELECTRICAL CONNECTOR WITH PRE-APPLIED SOLDER

Mark F. Quigley, 84 Beacon St., Boston, Mass.

Filed Oct. 12, 1960, Ser. No. 62,298
4 Claims. (Cl. 174—94)



1. As an article of manufacture, a flexible sleeve-like connector assembly for joining opposing related free ends of a pair of oppositely directed electrical leads consisting of an electrical conducting wire and heat responsive fluxed bonding material for effecting a mechanically bonded electrical connection between said sleeve-like connector unit and said respective electrical leads, said electrical conducting wire and said fluxed bonding material being helically coiled to form a flexible, hollow tube-like unit open at its ends and of an internal diameter adapted to grippingly encompass the respective free ends of the electrical leads to supportingly maintain said flexible sleeve-like connector and said electrical leads in position before and during application of heat thereto, said fluxed bonding material being disposed at least between turns of said conducting wire which are disposed to encompass the respective ends of said electrical leads whereby upon encircling association of said tube-like unit with the opposing related ends of said electrical leads and application of heat selectively to the opposite ends of said tube-like unit and the respec-

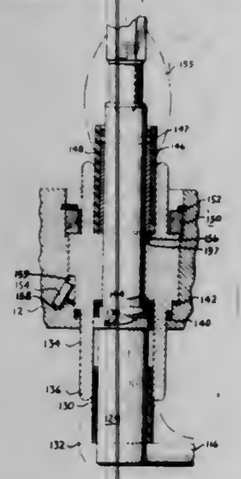
tive opposing ends of said electrical leads the fluxed bonding material will melt and flow to effect a mechanical bond and electrical connection between said conducting wire and said respective electrical leads, said fluxed bonding material comprising a flux carrying solder wire structurally distinct from said conducting wire in that the flux carrying solder wire is in independent side by side relationship to said conducting wire and at least portions of which are disposed between adjacent turns of said electrical conducting wire.

3,274,332
ELECTRICAL LEAD SEAL FOR PRESSURE VESSEL

Ralph O. Eis, Lawrence R. Tomhave, and James A. Walsh, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Original application Dec. 4, 1962, Ser. No. 242,272. Divided and this application May 3, 1965, Ser. No. 471,779

1 Claim. (Cl. 174—152)



A readily disassembled electric conductor lead seal assembly insertable in a substantially cylindrical walled aperture in a pressure vessel, said assembly comprising:

(a) a cylindrical stud of conductive metal positioned coaxially within the aperture in the pressure vessel and having first and second ends oppositely protruding respectively therefrom;

(b) a metal sleeve on said first end secured by a removable pin to said stud, said metal sleeve extending partially into the aperture and having a tongue extending from the innermost extremity thereof;

(c) first and second axially spaced insulating sleeves on said metal sleeve and said second end of the stud, respectively;

(d) a hollow ceramic sleeve having portions of the inner surface thereof in engagement with said first insulating sleeve, a central portion of said stud, and said second insulating sleeve, respectively;

(e) a groove in the inner surface of said ceramic sleeve accommodating said tongue to limit relative rotation between said stud and said ceramic sleeve;

(f) a shoulder on said stud intermediate said insulating sleeves and an O-ring engaging said shoulder to provide a pressure-tight seal between said stud and said ceramic sleeve;

(g) cooperating shoulders in the wall of said aperture and on said ceramic sleeve, respectively, and an O-ring between said cooperating shoulders providing a pressure-tight seal between the wall of said aperture and said ceramic sleeve; and

(h) means projecting from the wall of said aperture into a corresponding groove in said ceramic sleeve to limit relative rotation between said wall and said ceramic sleeve;

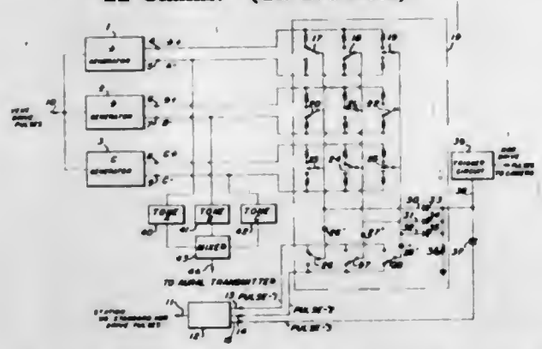
(i) whereby an insulated lead seal is provided without bonding or otherwise permanently fixing the principal components thereof together, facilitating ease of disassembly and component replacement.

3,274,333
SCRAMBLED TELEVISION SYSTEM

William J. Shanahan, New York, N.Y., assignor to Skiatron Electronics & Television Corporation, New York, N.Y., a corporation of New York

Filed Oct. 23, 1952, Ser. No. 316,485

22 Claims. (Cl. 178—5.1)



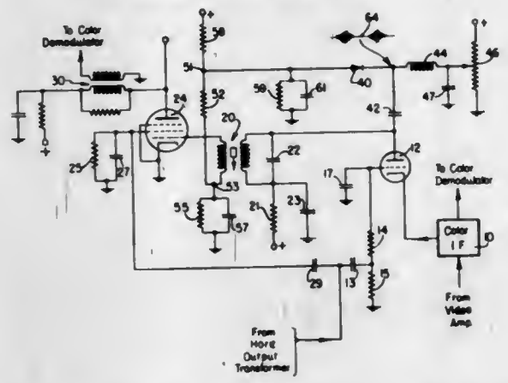
11. A replaceable element for a scrambled television system of the type having a transmitter and at least one receiver and wherein decoding is completed by injection of independently derived decoding information at the receiver, the element having at least one printed code circuit thereon forming said independent decoding information, and means secured to said element and obscuring at least a part of said one printed circuit for preventing detection of the code related to said printed circuit.

3,274,334
HUE CONTROL CIRCUITS FOR COLOR TELEVISION RECEIVERS

Robert B. Hansen, Arlington Heights, and Henry C. Waldschmidt, Matteson, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Oct. 28, 1963, Ser. No. 319,471

7 Claims. (Cl. 178—5.4)



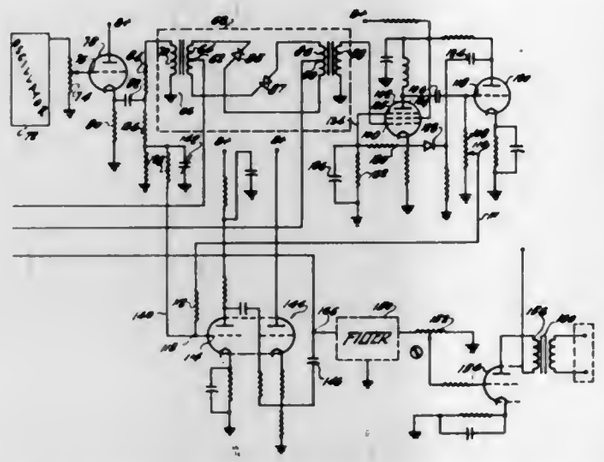
1. In a color television receiver for reproducing a color image in response to a received composite color television signal, which signal includes a chroma signal having color subcarrier sideband components and a color burst reference signal, said receiver including a color demodulator and a color burst separator for deriving a color burst signal from said chroma signal, said color burst separator including signal translating circuit means having a resonant circuit tuned to the frequency of said color burst reference signal for supplying same to said color demodulator, the combination including, a phase shifting network for shifting the phase of the color burst reference signal appearing across said resonant circuit, said phase shifting network including a diode and a capacitor connected in series and coupled across said resonant circuit, means for applying a fixed bias voltage to one side of said diode, and means for applying a variable bias voltage to the other side of said diode, said diode presenting a variable resistance in series with said capacitor to shift the phase of said color burst reference signal, said phase shift being determined by the conduction of said diode as established by the difference between said fixed bias voltage and said variable bias voltage, whereby said variable bias voltage provides hue control for said reproduced image.

3,274,335
FACSIMILE AUTOMATIC BACKGROUND CONTROL

Dudley Gray, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed July 8, 1963, Ser. No. 293,429

17 Claims. (Cl. 178—7.1)



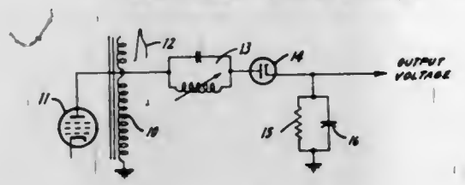
1. In a system for converting light variations into electric signals, the combination of a photoelectric device, means for directing light to be converted into said photoelectric device, a subcarrier-frequency signal source, a modulator circuit in which the output signals of said photoelectric device modulates the subcarrier-frequency signal, variable gain amplifying means for amplifying the modulated signal, means responsive to the maximum amplitude peaks of said amplifier output for inversely affecting the gain of said amplifying means, and means including said subcarrier signal source for summing the amplified modulated signal with a constant amplitude oppositely phased carrier-frequency signal, whereby the amplitude of the summation signal is indicative of said light variations.

3,274,336
HIGH VOLTAGE CIRCUIT

John P. Pietrolewicz, Pennsauken, N.J., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed May 18, 1962, Ser. No. 195,785

16 Claims. (Cl. 178—7.5)



1. A circuit for providing a manually-variable high D.C. voltage from a source of time-spaced high-voltage pulses occurring at a predetermined frequency, comprising: a manually-tunable parallel-resonant circuit, a diode and a load impedance, all connected in series to said source, said resonant circuit being tunable over a range of frequencies; and means for deriving said high D.C. voltage from across said impedance.

12. In a television receiver having a deflection system, a direct-current (D.C.) voltage supply for providing a high voltage of adjustable magnitude comprising: means for deriving from said deflection system a recurring high-potential pulse having a recurrence frequency corresponding to a characteristic frequency of said deflection system; means for developing an alternating-current (A.C.) signal component having a frequency approximately equal to an integral multiple, greater than one, of the frequency of said pulse; a rectifier having a load circuit for developing a D.C. potential; means for concurrently applying said pulse and said A.C. component to said rectifier to develop in said load circuit a D.C. potential having a magnitude related to the combined magnitudes of said pulse and said A.C. component; and means for varying the relative phase of said pulse and said A.C. component to control the magnitude of the D.C. potential developed in said load circuit.

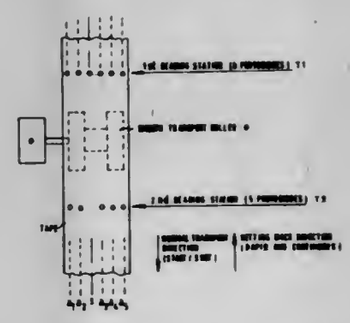
3,274,337
DEVICE FOR READING SIGNALS FROM A TAPE

Petrus Ludovicus Maria van Berkel, Voorburg, Netherlands, assignor to De Staat der Nederlanden, ten deze Vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed Sept. 26, 1962, Ser. No. 226,358

Claims priority, application Netherlands, Oct. 2, 1961, 269,828

7 Claims. (Cl. 178—17)



1. A tape reading mechanism for a simplex telegraph circuit with automatic error detection and correction means, said tape containing groups of the same number of symbols which symbols are individually and successively transmitted by the telegraph circuit according to a protected code so that errors in each symbol can be immediately detected upon reception, said groups of symbols being associated with characteristic whereby between each group one of two answer-back signals are transmitted to indicate correct and incorrect reception of each group for controlling said error correction means, said mechanism compising:

(A) means (Tr3) for driving said tape forwardly in steps for successively reading each symbol of each group,

(B) means (*t*1) for stopping said driving means at the end of each group for the transmission of one of two answer-back signals,

(C) a trailing reading means (T1) and at least one forward reading means (T2) for reading said tape, each reading means being spaced apart from the other reading means along said tape a distance corresponding to that required for recording one group of symbols on said tape,

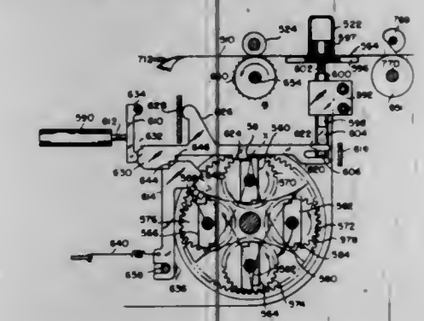
(D) means (10) for counting the number of symbols in each group,

(E) means (Tr1) for controlling said trailing reading means when an answer-back signal indicating correct reception has been received,
(F) means (HD, *g*) for immediately switching to and controlling said forward reading means when an answer-back signal indicating incorrect reception has been received,
(G) means (HD, *f*) for switching back to said trailing reading means after said group of signals has been repeated and the correct reception indicating answer-back signal therefor has been received, and
(H) means (Tr2) for controlling said driving means controlled by said counting means for reversing said tape the distance corresponding to said group, simultaneously with the switching back to said trailing reading means.

3,274,338
TELEGRAPHIC RECORDER HAVING PLANETARY OPERATOR

Clayton H. Clark, Mundelein, Ill., and Carl P. Anderson, Homer, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York

Original application Dec. 6, 1961, Ser. No. 157,540. Divided and this application May 14, 1964, Ser. No. 367,410
39 Claims. (Cl. 178—17)

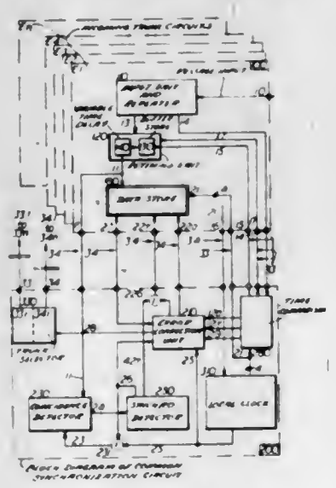


1. A recording device for receiving coded data information signals and recording manifestations of such data information on a record medium, comprising:
(a) a planetary mechanism including at least a carrier, a ring type sun gear and at least one planet component comprising a recording operator means rotatably mounted on said carrier and in gear meshed drive with said sun gear to that each rotation of said carrier causes said recording operator means to pass through at least one repetitive multiple peak cycloidal path;
(b) power means including an electric motor and drive means connected between said motor and said carrier to provide continual rotation of said carrier when said motor is energized;
(c) recording mechanism, adapted to impart record data on a record medium positioned adjacent said planetary mechanism, including at least one recording means disposed approximate the circular path which includes all of said cyclodial peaks and normally located adjacent a position of intersection with a peak of said cycloidal path;
(d) selecting means coacting with said recording means enabling a relative repositioning of said recording means into a predetermined cyclodial peak in the path of movement of said operator means to assure operative engagement of said operator means with said recording means at one of said cyclodial peak positions with a subsequent resetting of the position of said recording means to avoid operative engagement between said recording means and an operator means as the latter moves through the said one cyclodial peak; and
(e) feed means enabling a relative movement between a record medium and said recording mechanism to enable a successive spaced recording of data on the record medium.

3,274,339
TIME DIVISION MULTIPLEX TRANSMISSION SYSTEMS

Michel Jean Herry, Aulnay-sous-Bois, Jean Pierre Le Corre, Sainte-Genevieve-des-Bois, and Guy Raphael Yelloz, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed May 9, 1962, Ser. No. 193,395
Claims priority, application France, May 10, 1961, 861,422, Patent 1,301,275
6 Claims. (Cl. 179—15)



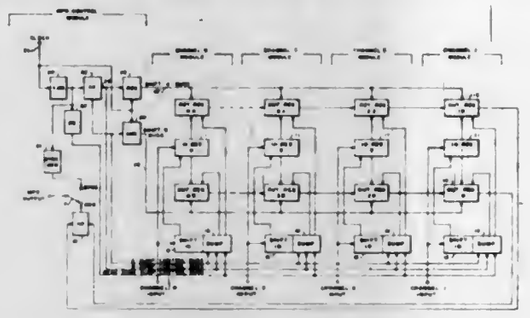
1. A pulse code modulation time division multiplex telephone switching system comprising a plurality of trunklines incoming from a distant location to an associated local trunk circuit, means whereby each of said trunklines carry a plurality of time positioned channels, means for transmitting samples of intelligence in pulse code modulated form over said lines during discrete time channels, the transmission characteristics of said lines sometimes causing time fluctuations of signals in said channels, means associated with each of said trunks for receiving and storing the pulse code modulations of said samples in locations corresponding to the time positions of channels carrying said intelligence, a local clock, means for cyclically connecting each incoming trunkline to a circuit for detecting synchronization variations between incoming signals and the output of said local clock, means in each of said trunk circuits for extracting a time reference signal from each of said incoming signals, means for comparing the output of said local clock to the extracted time signal, and means for retiming the pulse code modulations of incoming signal responsive to a detection of an excessive time fluctuation between said extracted reference signal and the output of said local clock, whereby said received signal reappears in the part of the time channel that is reserved for transmission of said intelligence.

3,274,340
DIGITAL DATA MULTIPLEXING AND DEMULTIPLEXING

John Michael Balderston and William G. Burke, Jr., Bowie, Md., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed June 20, 1962, Ser. No. 203, 998
15 Claims. (Cl. 179—15)

1. A multiplexing system for digital data comprising, a multiplexer having a plurality of channels each having an input register capable of storing a predetermined number of pulses, different pulse data sources in said channels each connected to one of said registers, a plurality of first output shift registers each connected to one input register, a plurality of second output shift registers each connected to one input register, each output register having a number of stages connected in series and capable of storing the number of pulses stored by the input register to which it is connected, said input and output registers including gating means connecting the input register to each stage of the first and second output registers separately, all first output registers being connected in series, all second output registers being connected in series, an

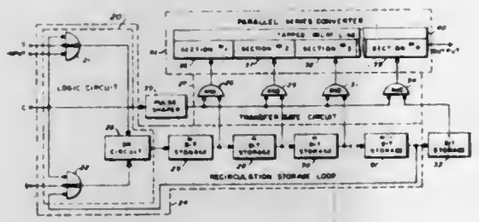


output circuit connected to the outputs of the first and second registers in parallel, dump control means for simultaneously transferring the pulses stored in the input registers through said gating means to the first output registers, means for serially shifting the pulses in said first output registers therethrough at a constant rate to the output circuit, dump control means for thereafter simultaneously transferring the pulses stored at a predetermined later time in the input register through said gating means to the second output registers, and means for serially shifting the pulses in said second output registers therethrough at a constant rate to said output circuit.

3,274,341
SERIES-PARALLEL RECIRCULATION TIME COMPRESSOR

Willard B. Allen, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 17, 1962, Ser. No. 245,328
12 Claims. (Cl. 179—15.55)

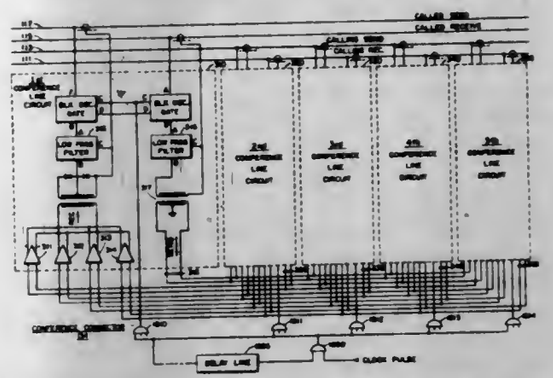


5. A series-parallel recirculation time compressor comprising in combination:
means for receiving, intermittently storing, and recirculating a binary signal within an electrical loop,
means for converting a plurality of parallel signals into a serial signal,
and means interconnecting the outputs of said receiving, storing, and recirculating means and the respective inputs of the aforesaid converting means for timely transferring the signals stored therein thereto.

3,274,342
COMMON CHANNEL COMMUNICATION SYSTEM CONFERENCE CIRCUIT

Barrie Brightman, Webster, N.Y., assignor, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed Jan. 4, 1962, Ser. No. 164,247
7 Claims. (Cl. 179—18)

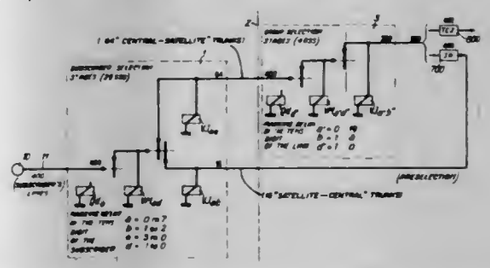


1. In a communication system, a first and second plurality of stations, a common communication channel, first means responsive to predetermined signals from a calling one of said first plurality of stations for connecting said calling one of said first plurality of stations and one of said second plurality of stations to said common communication channel in a time position in a repetitive time frame, said first means responsive to subsequent signals from said calling one of said first plurality of stations for connecting a selected called one of said first plurality of stations and a second one of said second plurality of stations to said common communication channel in an individual time position in said respective time frame, each of said second plurality of stations having an output signal terminal and a plurality of input signal terminals, and second means for connecting the output terminal of each of said second plurality of stations to a separate one of said input terminals on each of the other of said second plurality of stations.

3,274,343
REMOTE STAGE SWITCHING NETWORK

Pierre M. Lucas, 20 Rue Henri-Tariel, Issy-les-Moulineaux, France, and Jean F. Duquesne, 41 Rue Esquirol, Paris, France

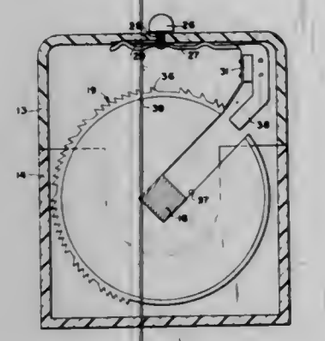
Filed June 28, 1963, Ser. No. 291,401
Claims priority, application France, June 30, 1962, 902,612
6 Claims. (Cl. 179—18)



1. An electronically controlled switching network comprising crossbar subscribers' selection stages forming satellite exchanges and crossbar group selection stages forming a central exchange spaced apart from one another, junctors located in said central exchange constituting terminal circuits of preselection routes through the subscribers' selection stages and input circuits of final routes through the group selection stages and subscribers' selection stages in cascade, satellite-central trunks between said subscribers' selection stages and said junctors, connection lines between said junctors and said group selection

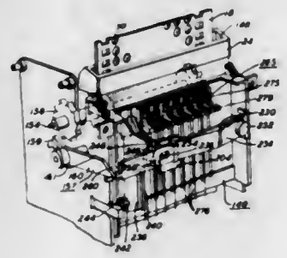
stages, central-satellite trunks between said group selection stages and said subscribers' selection stages, said subscribers' selection stages having row electromagnets and column electromagnets operating crosspoints connecting subscribers to said junctors and said central-satellite trunks to subscribers, said group selection stages having row electromagnets and column electromagnets operating crosspoints connecting said junctors to said central-satellite trunks, a subscriber searching device, first means controlled by said subscriber searching device for operating the row electromagnets of the subscribers' selection stages, a central-satellite trunk searching device, second means controlled by said central-satellite trunk searching device for operating the row electromagnets of the group selection stages, a plurality of preselection wires between the subscribers' selection stages and the junctors, means controlled by said first row electromagnet operating means for marking a number of said preselection wires, a first electronic selector for selecting one among said marked preselection wires and marking the junctor connected thereto, whereby the column electromagnets of the subscribers' selection stages adapted to connect a given calling subscriber to the marked junctor are derived from the selected preselection wire, a first plurality of final selection wires between the subscribers' selection stages and the group selection stages, means controlled by said first row electromagnet operating means for marking a number of said first plurality of final selection wires, a second plurality of final selection wires inside the group selection stages, means controlled by said second row electromagnet operating means for marking a number of said second plurality of final selection wires, a second electronic selector for selecting one first and one second wire among said marked final selection wires whereby the column electromagnets of the subscribers' selection stages and of the group selection stages adapted to connect a given called subscriber to the marked junctor are derived from the selected final selection wires and means for energizing said column electromagnets.

3,274,344
AUTOMATIC DIALING DEVICE
Charles C. Young, New Rochelle, N.Y., assignor, by mesne assignments, to Prestodial, Inc., New York, N.Y., a corporation of New York
Filed June 14, 1963, Ser. No. 287,856
8 Claims. (Cl. 179—90)



7. An automatic dialing mechanism comprising, a shaft, means for rotating said shaft, at least one code storage means mounted on said shaft, said code storage means being a circular cam having teeth placed sequentially on the periphery thereof in accordance with the coded information to be stored, said cam having a square slot therein which extends from the periphery through the center for mounting said cam on said shaft, said cam having a shoulder for maintaining said switch means in a contact position with said teeth, said shaft being square shaped in that portion upon which said code storage means is mounted, a means for positioning said code storage means relative to said shaft, a switch means mounted so as to be in contact relationship with one of said code storage means and a pulsing means connected to said switch means whereby the actuation of said switch means by any of said code storage means sequentially pulses said pulsing means in accordance with the stored information on said code storage means.

3,274,345
CALL TRANSMITTER
James H. Ham, Jr., and Willard E. Hostetler, Indianapolis, James F. Ritchey, Carmel, and Warren R. Tolman, Indianapolis, Ind.; said Tolman assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York, and said Ham, Hostetler, and Ritchey assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 1, 1963, Ser. No. 291,770
3 Claims. (Cl. 179—90)



3. An integrated call and data transmitter permitting either manual or automatic operation, the automatic operation being responsive to a code bearing medium having each digit of a number to be called or data to be transmitted spacedly encoded thereon, the call and data transmitter comprising:

an alternating current signal generator including a resonant circuit adapted to resonate at discrete frequencies, an amplifying means for sustaining the resonating of the resonant circuit, and switching means for enabling the amplifying means;

manual means for operating the signal generator comprising a plurality of pushbuttons, each pushbutton being associated with a different digit, and each pushbutton being operative to select a discrete frequency of the resonant circuit and actuate the switching means; and

automatic means for operating the signal generator comprising means for sensing the coding on the code bearing medium, means for moving the code bearing medium and the sensing means relative to one another, means for initiating the operation of the moving means, the actuation of the initiating means operating the switching means, and the relative movement between the code bearing medium and the sensing means causing the periodic actuation of the sensing means by the coding on the code bearing medium, the actuated sensing means being operative to select a discrete frequency of the resonant circuit.

3,274,346
AUTOMATIC TELEPHONE DIALING APPARATUS
Maurice Silber, 16129 Tupper Ave., Los Angeles, Calif.
Continuation of application Ser. No. 155,609, Nov. 29, 1961. This application Aug. 5, 1965, Ser. No. 480,544
7 Claims. (Cl. 179—90)

1. Apparatus for successively rotating the rotatable dial of a telephone to positions respectively determined

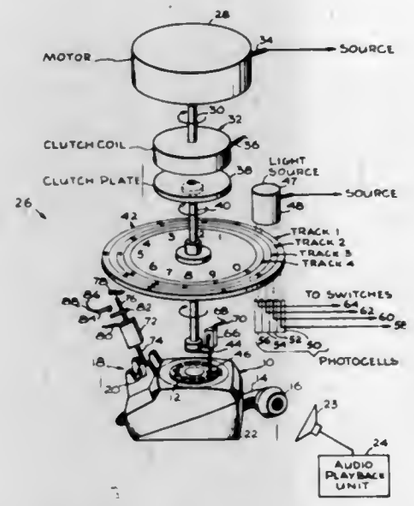
by a series of coded digits stored in a memory device comprising:

a shaft;

finger means extending from said shaft and inserted into a hole in said dial for coupling said shaft to said dial;

a control circuit including first and second sets of switches;

read means associated with said memory device for controlling the orientation of said first set of switches in accordance with said stored digits;

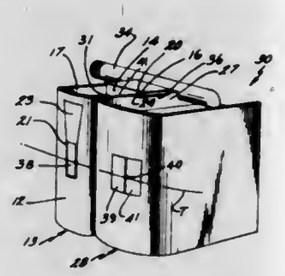


coded means carried by said shaft operatively coupled to said second set of switches for controlling the orientation of said second set of switches in accordance with the rotational position of said shaft;

rotating means operatively engageable with said shaft for rotating said shaft; and

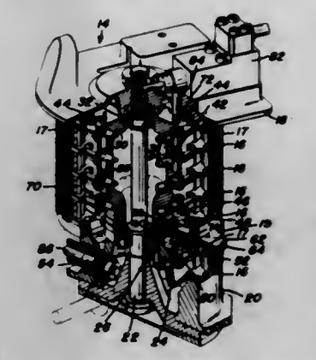
means responsive to a predetermined orientation relationship between said first and second sets of switches for disengaging said rotating means from said shaft.

3,274,347
MEANS FOR MOUNTING AN ERASER HEAD TO A RECORD HEAD
Leo W. Page, Potterville, Mich., assignor to Michigan Magnetics, Inc., Vermontville, Mich., a corporation of Michigan
Filed Mar. 4, 1963, Ser. No. 262,524
4 Claims. (Cl. 179—100.2)



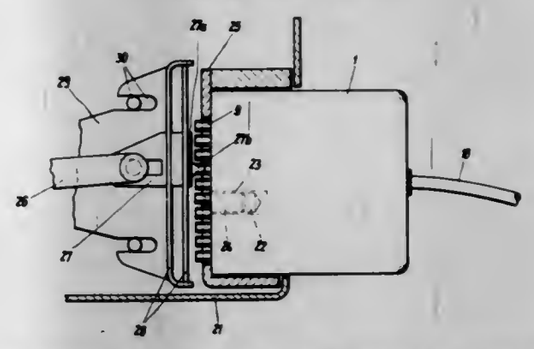
1. A head assembly for tape recorders, comprising: a first head having a shield member disposed in a plane generally normal to the plane of a tape passing over said head; and a second head having prong means flexibly formed thereon, said prongs extending laterally from said second head; said prong means being dimensioned to engage edges of said shield member to hold said second head in a fixed predeterminable position with respect to said first head.

3,274,348
LOAD STATUS INDICATOR
Arthur G. Blomquist, Golden Valley, Ludolph Larsen, Minneapolis, Milton C. Neuman, Champlin, and Palmer G. Wermager, Robbinsdale, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 22, 1962, Ser. No. 197,565
7 Claims. (Cl. 200—5)



1. A device for indicating the contents of a storage area comprising a plurality of groups of switches each group thereof corresponding to a predetermined portion of said storage area, a switch actuator for each switch, a cam assembly including a plurality of positionable cams selectively engageable with said actuators, and mechanical and hydraulic means on said device for transmitting motions of storage area monitoring apparatus to said cams whereby the presence and condition of objects stored in a predetermined portion of said storage area is indicated by resultant switch actuation.

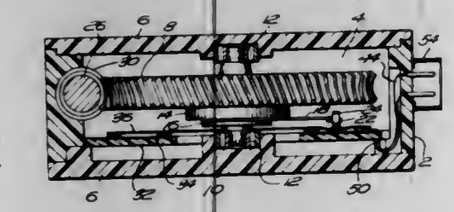
3,274,349
MEMORY AND CONTROL DEVICE FOR COMPUTING MACHINES OR THE LIKE
Horst Priebs, Bielefeld, Germany, assignor to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed Jan. 28, 1964, Ser. No. 341,167
Claims priority, application Germany, Feb. 2, 1963, A 42,233
7 Claims. (Cl. 200—5)



1. A business-machine memory device for reading and storing data from respective positions of displaceable machine elements, comprising a multiplicity of electrically conducting switching members arranged in parallel rows, each row corresponding to one of the respective displaceable machine elements to be responded to, and the number of members in each row corresponding to the maximum of the bits of data storable in said row; a housing structure common to said switching members and having a front face from which said rows of members are accessible externally of the housing, said housing forming a plug-in connector detachably seatable in a business machine with said front face positioned to face the displaceable machine elements to be responded to; said switching members in each row being selectively actuable by one of the respective machine elements in the seated

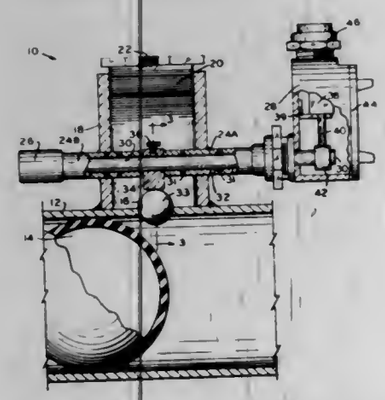
conditions of said housing; an interlock mechanism for each of said rows of members connected in said housing with the members of said respective rows of members for retaining previously selected members in each of said rows actuated until actuation in the respective rows of other ones of said members, said mechanisms being adapted to release said previously selected members when said other ones of said members are actuated; and electric leads connected to said members and extending out of said housing for providing selectively closed circuits depending upon which of said switching members are activated at a time.

3,274,350
FRICTIONLESS CONTACT CONSTRUCTION FOR ELECTRICAL DEVICES
Eugene H. Mongeau, Harvard, Mass., assignor to Acton Laboratories, Inc., Acton, Mass., a corporation of Massachusetts
Filed Mar. 18, 1964, Ser. No. 352,929
12 Claims. (Cl. 200—11)



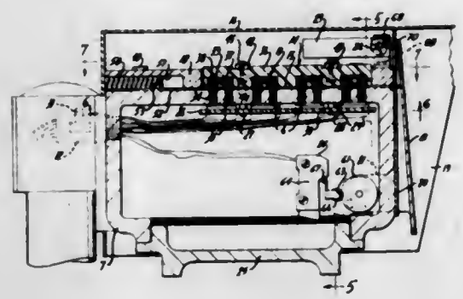
9. A switch comprising a stiff sheet of insulating material having on one surface thereof a conductive element, a diaphragm of laminated construction positioned parallel to and spaced from said conductive element, said sheet and the edges of said diaphragm sealed together, said diaphragm comprising an inner layer of gold and an outer layer of a hard high fatigue resistant spring alloy essentially comprising cobalt, nickel, chromium and iron, and a band of a flexible insulating material cemented to the outer surface of said alloy layer.

3,274,351
SWITCH FOR DETECTING PISTON IN FLUID FLOW LINE
Joseph C. Halpine and Bernard M. Moroney, Tulsa, Okla., assignors to Halmor Industries, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Dec. 13, 1963, Ser. No. 330,434
2 Claims. (Cl. 200—61.41)



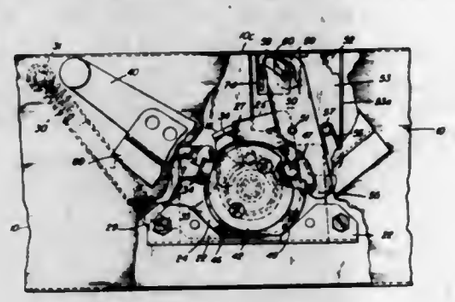
1. A piston detector switch adapted to be positioned on a pipe having a small diameter opening in the upper surface thereof to detect the passage of a piston in the pipe moving in either direction, said piston detector switch comprising:
a hollow upstanding body member sealably affixed to said pipe encompassing said opening in said pipe;
a tubular shaft housing affixed to and communicating with the interior of said body member and extending substantially in a plane parallel the plane of said pipe;
a shaft rotatively supported in said shaft housing having one end thereof extending within said hollow body member;
a ball of a diameter slightly larger than the diameter of said opening in said pipe, said ball loosely and rotatively positioned in said opening in said pipe and within said hollow body member whereby a portion of said ball normally protrudes within the interior of said pipe;
an actuator cam member affixed at one end to said shaft within said hollow body member, said actuator cam member extending to engage the upper surface of said ball whereby the displacement of said ball rotates said shaft;
an enclosed switch housing supported to and communicating with said tubular shaft housing, the other end of said shaft terminating within said switch housing;
a microswitch having an actuator plunger extending therefrom, the microswitch supported in said switch housing and adjacent said shaft; and
a switch cam affixed to said shaft within said housing, said cam engaging said switch actuator plunger to depress said actuator plunger upon the rotation of said shaft by the displacement of said ball.

3,274,352
MAGNETIC CARD READER
Robert W. Ryno and Gilbert A. Schwibinger, Milwaukee, Wis., assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed July 6, 1964, Ser. No. 380,347
11 Claims. (Cl. 200—46)



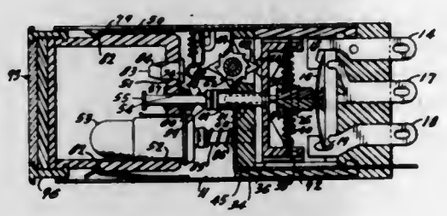
11. A control apparatus responsive to one of a plurality of code cards each of which carries a plurality of flux controlling means arranged in different patterns within a general pattern comprising,
a plurality of magnetically actuated switches arranged in a predetermined spaced planar pattern corresponding to said general pattern and having terminal means for connection in a code circuit,
a plurality of magnets mounted in a spaced aligned generally parallel plane with respect to said plane of the switches and in the same general pattern with a predetermined constant gap therebetween, said magnets establishing individual operating flux fields coupled one each to each of the several switches and operable to actuate the same, and
support means for supporting any one of said code cards within the gap between the switches and the magnets and establishing actuation of the switches in accordance with the pattern of the flux controlling means whereby only certain selected switches are actuated by each code card to provide a related coded output.

3,274,353
COVER AND SWITCH INTERLOCK
Daniel F. Daly, Newington, and Joseph M. O'Malley, West Hartford, Conn., assignors to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Continuation of application Ser. No. 2,395, Jan. 14, 1960. This application June 5, 1963, Ser. No. 286,443
9 Claims. (Cl. 200—50)



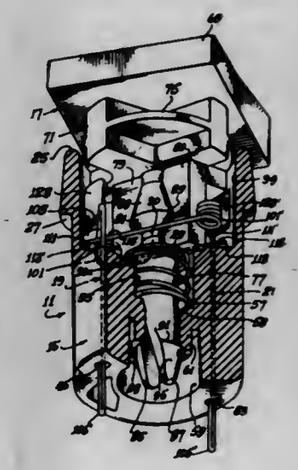
4. The combination of electric switch operating mechanism with a box having an openable cover, comprising contact operating means within the box movable between two positions, means including manual operating means operable from outside the box to operate said contact operating means, latching means entirely within the box operable by said manual operating means, said latching means and said manual operating means being movable into three positions, means on the cover engaged by said latching means to hold the cover closed when said manual operating means and said latching means are in one position, and other means on said cover and latching means whereby said manual operating means upon movement into a third position operates said other means to hold said cover closed while said manual operating means and said latching means are in said third position.

3,274,354
SWITCH MECHANISM
Curtis Ray Stevens, La Mirada, Calif., assignor to Master Specialties Company, Gardena, Calif., a corporation of California
Filed July 15, 1964, Ser. No. 382,912
15 Claims. (Cl. 200—76)



1. A switch comprising: a housing having a forwardly and rearwardly extending chamber, two pairs of facing contacts, said contacts lying generally in a forwardly and rearwardly extending plane with one contact of each pair being positioned generally forwardly of the other contact of each pair, a laterally extensive one-piece switch blade having opposite ends positioned between the facing contacts of respective pairs of contacts, a switch blade holder loosely supporting the center of said switch blade, and an overcenter device actuating said switch blade holder to snap said blade between a position wherein said switch blade engages the forward members of each pair of contacts to a position wherein said switch blade engages the rear members of each pair of contacts, the contacts of one pair of facing contacts being formed by a generally U-shaped notch in a single contact member.

3,274,355
CAM OPERATED SNAP SWITCH HAVING WIRE CONTACTS
James R. Francy, Los Angeles, Calif., assignor to Scantlin Electronics, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 430,954
14 Claims. (Cl. 200—77)



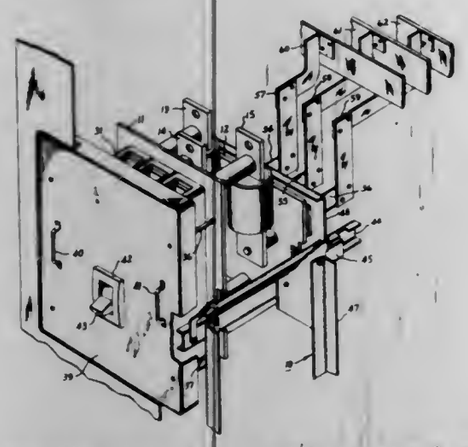
1. A switch comprising:
a switch housing;
an actuator shaft mounted for movement in said housing;
a fixed contact mounted in said housing adjacent said actuator shaft, said fixed contact being free of physical integration with said actuator shaft;
a conductive wire in said housing substantially rigidly mounted at one section of its length, at least a portion of said wire between said section and one end thereof defining a movable arm which extends generally transversely of said actuator shaft, said arm being engageable with said actuator shaft and carrying a movable contact, said fixed contact being mounted in the path of movement of said movable contact, said movable contact being engageable with said fixed contact;
means for biasing said arm toward said actuator shaft; and
cam means on said actuator shaft engageable with said arm and responsive to said movement of said actuator shaft for snapping said movable contact into and out of engagement with said fixed contact.

3,274,356
DRAW-OUT FUSED SWITCH-GEAR APPARATUS
Joseph Edwin Godfrey, West Hartford, Conn., assignor to General Electric Company, a corporation of New York
Filed Mar. 1, 1965, Ser. No. 435,876
5 Claims. (Cl. 200—114)

1. Draw-out electrical switching apparatus comprising:
(a) a front insulating plate having a front and rear surface;
(b) a rear insulating plate having a front and rear surface;
(c) means rigidly interconnecting said front and rear insulating plates in parallel spaced relation to each other to form a draw-out frame assembly;
(d) a plurality of rear line terminals mounted on said rear surface of said rear insulating plate;
(e) a plurality of rear load terminals mounted on said rear surface of said rear insulating plate;
(f) a plurality of front line terminals mounted on said front surface of said front insulating plate;
(g) a plurality of front load terminals mounted on said front surface of said front insulating plate;

(h) a plurality of electrical conducting means between said front and rear insulating plates each interconnecting one of said front line terminals and a corresponding one of said rear line terminals by means extending through said front and rear insulating plates respectively;

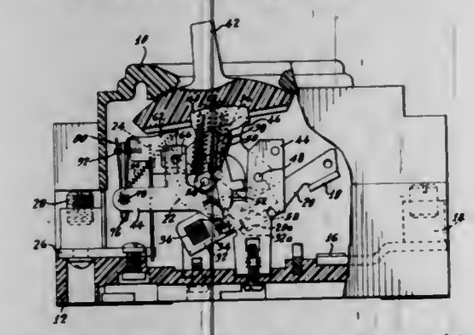
(i) a plurality of electrical fuses supported between said insulating plates and each connected between one of said front load terminals and a corresponding one of said rear load terminals by conductive means extending through said front and rear insulating plates respectively,



(j) an electrical circuit control device mounted on said front surface of said front insulating plate and interconnected between said front line terminals and said front load terminals, and

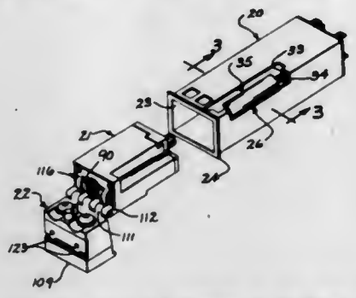
(k) means carried by said frame assembly for slidably guiding said assembly for movement with respect to a relatively stationary support structure.

3,274,357
CIRCUIT BREAKER HAVING AMBIENT TEMPERATURE COMPENSATION
Alfred E. Maier, Colonia, and Henry S. Wingard, Cranford, N.J., assignors to Federal Pacific Electric Company, a corporation of Delaware
Filed Dec. 1, 1964, Ser. No. 415,117
9 Claims. (Cl. 200—116)



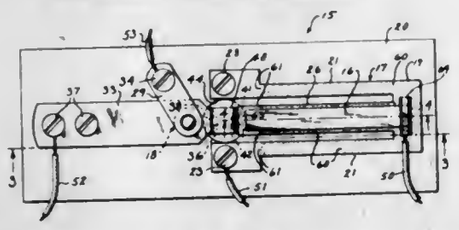
1. A circuit breaker having a pair of separable contacts, operating means for opening and closing said contacts, said operating means including a releasable member, means releasable restraining said releasable member, and a current responsive bimetal for causing said restraining means to effect automatic opening of the contacts by said operating means in response to an overcurrent, said releasable restraining means including a trip member, a pair of ambient temperature responsive bimetals having confronting secured ends fixed to said trip member and having confronting movable ends, said movable ends having means providing only transverse constraint therebetween, said trip member and said temperature compensating bimetals constituting means for transmitting tripping forces applied by said current responsive bimetal in the direction to release said releasable member, said ambient temperature compensating bimetals being mounted to deflect in the same direction as one another and being disposed to provide compensation for the effects on said current-responsive bimetal produced by ambient temperature changes.

3,274,358
INDICATOR LIGHT HAVING A PIVOTALLY-CONNECTED LIGHT HOUSING BLOCK AND A LENS COVER SECTION SLIDABLY MOUNTED THEREON
Don M. Hallerberg, San Pedro, Calif., assignor to Master Specialties Company, Gardena, Calif., a corporation of California
Filed July 29, 1963, Ser. No. 298,090
8 Claims. (Cl. 200—121)



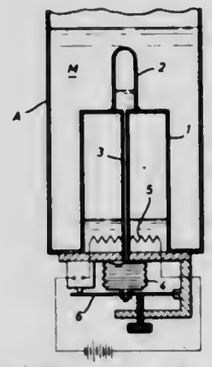
1. In an electrical lamp assembly, a hollow light block having an end surface which surrounds an internal lamp receiving opening, said light block having a pair of external opposite side surfaces which are generally parallel and which contain parallel grooves therein, a filter section overlying the end surface of said light block, said filter section having shoulder portions which abut the sidewalls of said internal opening and prevent relative movement therebetween, and a lens cover section overlying said filter section, said lens cover section having one side which does not appreciably overlie side surfaces of said filter section and light block, an opposite side surface which overlies the opposite side of said lens cover section and light block, and a pair of connecting sides which are provided with channel sections which project into said parallel grooves in the external surface of said light block to lock said filter section and lens cover section in place.

3,274,359
THERMAL RELAY
Richard E. Riebs, Hales Corners, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,402
2 Claims. (Cl. 200—122)



1. A thermal relay including a flat elongated generally E-shaped bimetallic element having three adjacent disposed substantially parallel legs, one end of each of said legs being joined by a common end portion, a first coating covering a substantial elongate portion of one surface of the central one of said legs and extending from said one end to a terminal position short of the other end thereof, said first coating comprising an electrical insulating material, a second elongate coating disposed on said central leg and consisting of electrical resistance material, said second coating being disposed on said first coating and extending from the one end of said central leg past said terminal position and onto the other end of said element for electrically engaging said element, said first coating electrical insulating the remainder of said resistance coating from said element, first electrical terminal means electrically connected to said resistance coating adjacent said one end, and second electrical terminal means connected to the other end of one of the outer ones of said legs.

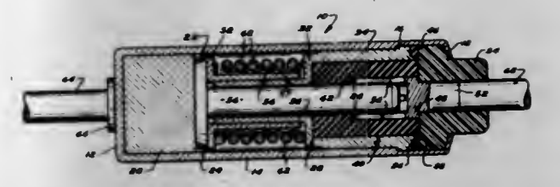
3,274,360
TEMPERATURE-RESPONSIVE CONTROL MECHANISM FOR HEATING APPARATUS
Willi Brandl, Schurbungert 12, Zurich, Switzerland
Filed May 26, 1964, Ser. No. 370,257
Claims priority, application Germany, May 28, 1963, B 72,081
4 Claims. (Cl. 200—122)



1. A control mechanism for a heating apparatus comprising a container holding a medium to be heated, an evacuated chamber disposed within said container surrounded by said medium and partly filled with a liquid, a heating element in said chamber effective, when energized, to generate steam from said liquid and thereby to heat the walls of said chamber, said heated walls being effective to heat said medium, energizing means for said heating element, disconnectable means forming an operative connection between said energizing means and said heating element, actuating means for said disconnectable means effective to interrupt said connection and halt the energization of said heating element only upon the successive attainment of predetermined temperatures in said chamber and of said medium, control means for said actuating means comprising a heat sensitive element having a lower part disposed within said chamber and an upper part within said medium, said parts being interconnected and including means producing pressure on said actuating means varying in accordance with the temperatures of said parts, said parts being influenced by the temperatures of said chamber and said medium, respectively, one of said parts being operatively connected with said actuating means, said two parts comprising means facilitating said successive attainment of said predetermined temperatures, first in said chamber and subsequently of said medium, said last-named means including differences in the relative surface areas of said two parts.

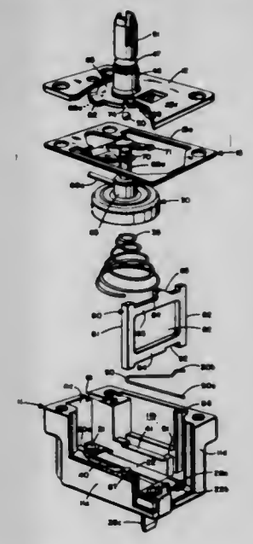
3,274,361
THERMAL FUSE UTILIZING AN ELECTRICALLY CONDUCTIVE PELLET
Gerald F. Ebensteiner and Gregory J. Rusinyak, Minneapolis, Minn., assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Apr. 7, 1965, Ser. No. 446,225
4 Claims. (Cl. 200—123)

1. A thermal fuse comprising an elongated casing, a fusible pellet of electrically conductive material disposed within said casing at one end thereof, a fixed electrical contact element disposed within said casing at the other end thereof, a movable contact element having an enlarged head engaging said pellet and a shank having its free end engaging said fixed contact, a fixed sleeve member having a tubular baffle portion closely encircling said shank, said shank being free to slide relative to said baffle portion, a movable sleeve member having a tubular baffle



portion closely encircling said first baffle portion provided with a flange abutting said enlarged head, said second baffle portion being free to slide relative to said first baffle portion, and a coil spring acting against said flange so as to bias said movable contact element toward said pellet and away from said fixed contact to effect separation of said contact elements when said pellet becomes molten due to a sufficient rise in temperature.

3,274,362
ADJUSTABLE FLUID PRESSURE OPERATED ELECTRIC SWITCH
Charles Frendock, Red Bank, N.J., assignor to The Wilcolator Company, Elizabeth, N.J., a corporation of Delaware
Filed July 15, 1964, Ser. No. 382,799
4 Claims. (Cl. 200—140)



1. A condition responsive switch comprising:

(a) housing means including a hollow body and a cover secured thereto,

(b) contact means in said housing means,

(c) condition responsive expansible power means in said housing means for operating said contact means in response to predetermined condition changes,

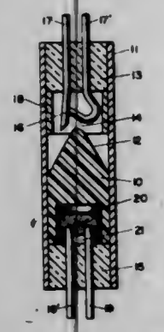
(d) a control shaft extending through said cover and rotatable to vary contact operating response of said power means to said predetermined condition changes,

(e) a washer mounted on said shaft by a splined connection for axial movement and rotation therewith, said washer having a aperture in one face thereof,

(f) biasing means comprising a pair of spring arms each supported at one end and extending on opposite sides of said shaft and engaging said one surface of said washer for urging said washer into engagement with said cover for frictionally opposing rotation of said shaft, and

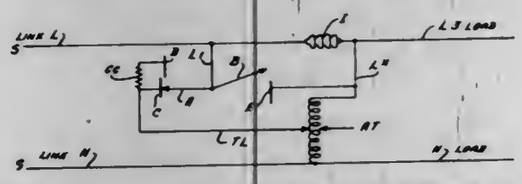
(g) one of said spring arms having a raised part engaging said washer and adapted to at least partially enter said aperture when said washer is rotated to bring said aperture into registration with said raised part to provide tactile indication of at least one rotative position of said shaft.

3,274,363
ELECTRICAL SWITCH HAVING DEFORMABLE CONTACT MEMBERS
Robert McGirr, Orwigsburg, and Benjamin A. Gay, Tamaqua, Pa., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 228,923
2 Claims. (Cl. 200—142)



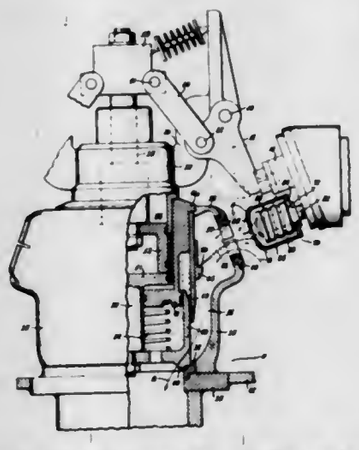
1. A normally closed switch comprising
an outer shell,
a symmetrical pointed wedge member the sides of which converge to an apex and moveable along a line positioned within said shell,
a pair of contacting electrode members positioned and permanently secured within said shell,
at least a portion of one electrode member of said pair bent back on itself and positioned across the path of travel of the point of said wedge member and so slanted with respect to the path of travel of said wedge member as to be pried away from the other electrode member upon movement of said wedge,
said portion composed of a metal deformable into a permanent set,
said wedge member moveable
from a first position wherein the wedge member is not disruptive of contact between said electrodes
to a second position wherein the wedge member contacts said portion and deforms said portion into a permanent set and permanently separates said electrode members by wedging the nonconducting striking surface of said wedge therebetween, and
electrically actuated squib means to drive said wedge member from said first position to said second position.

3,274,364
BY-PASS SWITCH FOR OPERATION WITHOUT INTERRUPTING SERVICE
Robert S. Sullivan, Lahore, West Pakistan, Pakistan, and Thomas B. Ortwig, Florissant, Mo., assignors to Kearney-National Inc., a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 190,880
6 Claims. (Cl. 200—146)



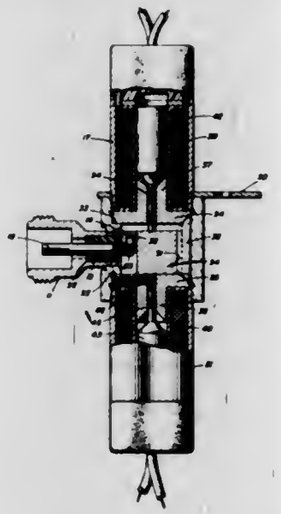
1. In a disconnect type of electric switch the combination comprising, (1) a base, (2) a pair of insulators mounted in spaced relation on said base, (3) a fixed contact supported by each of said insulators, (4) a third insulator located between said pair of insulators and supporting a hinge connection, (5) a movable contact member rockably supported on said hinge mounting for movement of its opposite ends alternately into and out of engagement with said fixed contacts, (6) an electric terminal connection to said movable contact, (7) an electric terminal connection to each of said fixed contacts, (8) an auxiliary contact mounted on said switch and permanently electrically connected with one of (3) and (4), (9) an impedance element permanently electrically connected in series circuit relation between said auxiliary contact and the one of (3) and (4) to which said auxiliary contact is permanently electrically connected, and (10) means operative during rocking movement of said movable contact member in the direction which breaks its engagement with one of said fixed contacts and makes its engagement with the other of said fixed contacts to successively:
(a) complete an electrical circuit from said movable contact member through said auxiliary contact to energize said impedance element before said movable contact member breaks engagement with said one fixed contact,
(b) break engagement between said movable contact member and said one fixed contact while free of contact with the other fixed contact,
(c) make engagement between said movable contact member with the other fixed contact while said auxiliary contact maintains the said impedance element energized, and
(d) break the electrical circuit through said auxiliary contact and said impedance while said movable contact member is in engagement with said other fixed contact.

3,274,365
GAS BLAST CIRCUIT BREAKER OF THE AXIAL BLAST TYPE WITH MAGNETIC MEANS FOR ROTATING AN ARC TERMINAL
John W. Beatty, Newtown Square, Pa., assignor to General Electric Company, a corporation of New York
Filed Aug. 16, 1963, Ser. No. 302,613
8 Claims. (Cl. 200—148)



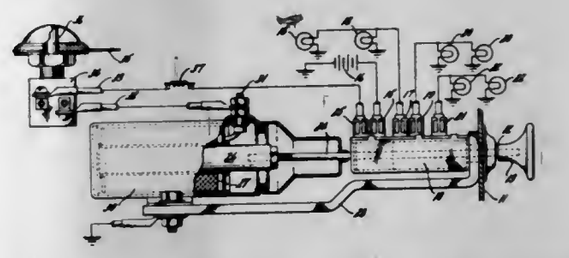
1. An electric circuit breaker of the axial-blast, gas-blast type comprising:
(a) a pair of electrodes between which an arc is established during circuit interruption,
(b) an orifice having an opening through which said arc is adapted to extend when present between said electrodes,
(c) means for causing a stream of gas to pass through said orifice opening axially of the arc about the periphery of said arc,
(d) portions of said gas stream flowing closely adjacent to the outer periphery of the electrode located upstream from said orifice but separating from the surface of said electrode in a region facing the orifice opening, whereby to define a stagnation zone in said latter region,
(e) said arc having an upstream terminal that is held captive in said stagnation zone during a circuit interrupting operation,
(f) magnetic means for rotating said upstream terminal about a point on said upstream electrode while said upstream arc terminal is held captive in said stagnation zone,
(f') said upstream electrode comprising a generally cup-shaped member surrounding said magnetic means with the base of said cup-shaped member facing downstream with said stagnation zone positioned on said base, means for forcing current flowing through said cup-shaped member to an arc terminal in said stagnation zone to flow from the outer periphery of said cup-shaped member radially inwardly, thereby developing a radially-inwardly acting magnetic force on said arc to help hold the arc in said stagnation zone.
(g) said cup-shaped member having a central region of said base disposed within said stagnation zone in which said magnetic means has relatively weak arc rotating abilities,
(h) and means for preventing entry of said upstream arc terminal into said central region.

3,274,366
CONSTANT IMPEDANCE COAXIAL LINE SWITCH
Russell E. Horton, Forestville, Conn., assignor to The Bendix Corporation, Farmington, Conn., a corporation of Delaware
Filed July 27, 1964, Ser. No. 385,281
6 Claims. (Cl. 200—153)



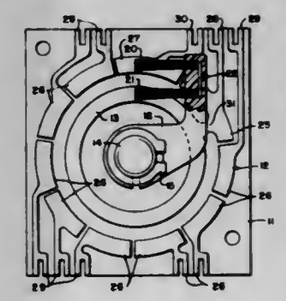
1. A single pole-double throw switch for coaxial lines comprising:
a hollow switch body,
connectors for an input coaxial line and a pair of output coaxial lines either of which may be selectively connected to said input line, said connectors providing extensions for the inner conductors of said lines to enter said switch body at the same level,
a first contact element within said body at a higher level than said extended inner conductors and overlying the ends of the extensions for said input line and one of said output lines,
a second contact element within said body at a lower level than said extended inner conductors and underlying the ends of the extensions for said input line and the other of said output lines,
a carrier supporting both of said contact elements with vertical spacing sufficient for said first contact element to clear said input and said one output ends upon engagement of said second contact element with said input and said other output ends, and
means for vertically reciprocating said carrier to establish alternate connection of said input line to one or the other of said output lines.

3,274,367
AUTOMOBILE LIGHT SWITCH
William R. Clark, 10800 Cumberland Road, Noblesville, Ind.
Filed July 6, 1964, Ser. No. 380,229
7 Claims. (Cl. 200—161)



1. In an automobile having a closed body and exterior lights controlled by a switch located within the automobile body and embodying a main reciprocable control member having first and second end portions projecting in opposite directions from a switch housing, said first end portion being within the automobile body to permit the control member to be moved between a first position in which the switch turns the lights off and a second position in which it turns the lights on, the combination with said main control member of a movable auxiliary control member having a portion located outside the automobile body, and means operatively connected to the second end portion of said main control member and actuatable by movement of said auxiliary control member for moving said main control member from its second to its first position, said means being inoperative to move the main control member from its first to its second position.

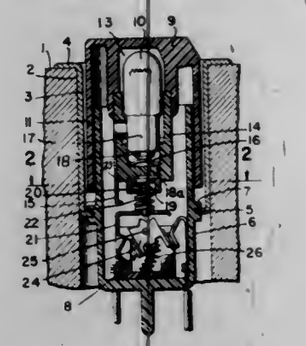
3,274,368
LAMINATED DISTRIBUTOR BRUSH
Jerome L. De Boo, Barrington, and Geoffrey B. Lutz, Evanston, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,877
8 Claims. (Cl. 200—166)



1. The combination with a plurality of brush contacting surfaces, of a distributor brush comprising:
a first layer of generally L-shaped, resilient wires positioned adjacent each other in a substantially straight row;
a second layer of generally L-shaped, resilient wires positioned adjacent each other in a substantially straight row, and

means holding the layers in a position where they bear upon the contacting surfaces with sufficient force to flex all of the wires of both layers and to merge the two layers into a single row of wires.

3,274,369
SERVICE SIGNAL LIGHT
John B. Quinn, 450 N. Rossmore Ave., Los Angeles, Calif.
Filed Nov. 12, 1964, Ser. No. 412,279
7 Claims. (Cl. 200—167)



1. A service signal light adapted to be mounted within a service counter for providing light beams of different intensity at least two directions comprising

elongated button means having a first end with a substantially central cavity therein, said first end having a plurality of areas with different light transmitting properties therethrough, said button means having a second end forming a skirt,

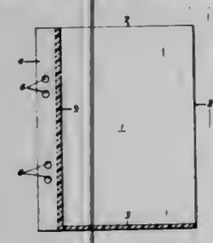
a light bulb mounted within said cavity and adjacent said first end of said button means for emitting light through said areas of said first end,

mounting means coupled within said button means for maintaining said light bulb within said cavity and having electrical contacts coupled with contacts of said bulb,

casing means, at least said second end of said button means being mounted substantially coaxially with respect to said casing means, and

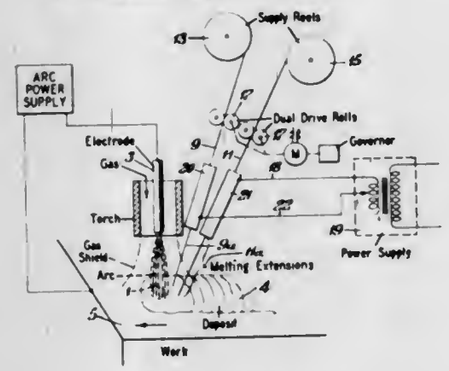
switch means mounted in said casing means, said mounting means coupling said button means with said switch means to operate said switch means to "on" and "off" positions upon successive movements of said button means, and said contact means of said mounting means adapted to complete an energizing circuit to said bulb through said switch means.

3,274,370
HIGH FREQUENCY WELDING APPARATUS
Eckhard Klaus Heine, Stockholm, Sweden, assignor to Olof Fridlund, Molndal, Sweden, a manufacturer
Filed Jan. 3, 1964, Ser. No. 335,494
Claims priority, application Sweden, Jan. 14, 1963, 399/63
3 Claims. (Cl. 219—10.53)



1. High frequency welding apparatus for welding in one single operation step of a cover or the like of very thin double-folded pastic material, one edge of which has a thicker plastic edge-strip, characterized by the one welding electrode being constituted of an L-shaped tool, where the one branch which is located closest to the thicker material and intended for the welding thereof to the thin plastic films is completely uncovered and where the other branch which is intended for the welding of two thin plastic films to each other is covered by a rubber layer, the opposite electrode in both cases being covered by a layer of a material, which is isolating with respect to the high frequency to such an extent, that a break-down is avoided, and which is heat isolating and has a high loss-factor.

3,274,371
METHOD OF DEPOSITING METAL
August F. Manz, Union, and John F. Saenger, Jr., Springfield, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed June 1, 1965, Ser. No. 460,441
25 Claims. (Cl. 219—137)



1. Process for depositing metal which comprises:

(a) heating a zone of a workpiece with an energy source having a magnetic field associated therewith;

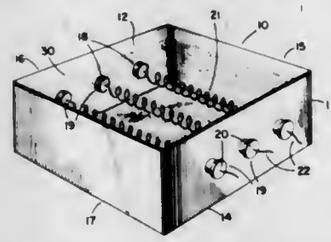
(b) feeding at least two consumable wires into the so-heated zone;

(c) providing current through said wires in the extension portions thereof;

(d) positioning such wires in the vicinity of such energy source so that the magnetic field of such energy source interacts in a predetermined mode with the magnetic fields created by said current flowing in said wires;

(e) controlling the feed rate, the current, and the extension of said wires so that such wires melt in the so-heated zone without the establishment of an arc off the ends of said wires.

3,274,372
SOLID VAPORIZATION
Rudolph Frank, La Mirada, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif.
Filed July 27, 1964, Ser. No. 385,509
2 Claims. (Cl. 219—271)

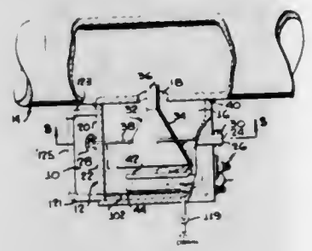


1. A simple, efficient vaporizer adapted to deposit a thin film of vaporized solid uniformly over a large area without the emission of solid particles comprising:

(a) a shallow refractory container having a large area open top, said container having a top area of at least about four square inches and a depth of less than about one inch; and

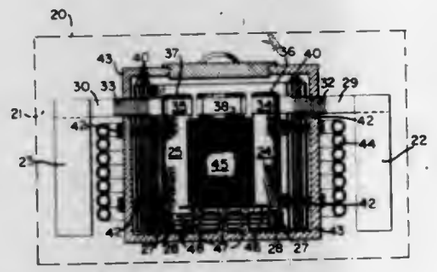
(b) a series of at least three spaced helical coils mounted in said container substantially halfway between the top and bottom of said container and extending substantially parallel to the bottom wall of said container and substantially parallel to each other, said coils being adapted to be completely enclosed by the solid charge in said container and to heat said solid charge internally adjacent to but spaced from its top surface over substantially the same area as the top surface.

3,274,373
STEAM DRAIN AND REHEAT DEVICE
James W. Maddox, Newport News, Va., assignor to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Filed Sept. 10, 1963, Ser. No. 307,860
10 Claims. (Cl. 219—272)



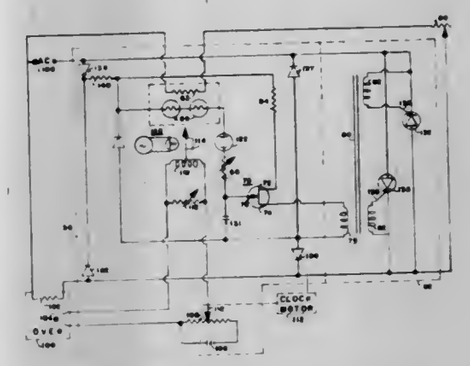
1. A liquid heating and vaporizing device comprising a closed bottom receptacle having its upper end open and adapted to be connected to and in communication with the low point of a vapor container, said receptacle comprising upper and lower sections, joined in a hermetically sealed joint, an open ended conical baffle in said receptacle, means supporting said baffle in spaced relation to the bottom and sides of the receptacle, said means including radially extending arms on said baffle, the ends of which are secured to the sides of the receptacle at said joint, and electrically controlled heating and vaporizing means positioned in said receptacle beneath the said baffle and substantially within the vertical projection of the peripheral lower edge thereof.

3,274,374
ELECTRICAL HEATING ELEMENTS
Wilfrid G. Matheson, Marblehead, James P. Clune, Danvers, and Theodore J. Pricenski, Ipswich, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed May 7, 1963, Ser. No. 278,660
11 Claims. (Cl. 219—426)



5. In a high temperature electric discharge furnace having a hollow cathode disposed therein, the improvement which comprises: an anode disposed inside said cathode and spaced therefrom, said anode being a generally cylindrical plexus formed of a multiplicity of intertwisted helical convolutions of refractory metal wires.

3,274,375
THERMOSTATIC OVEN CONTROLLER WITH AUTOMATIC RESET
Philip B. Beltz, Wilmington, Del., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Apr. 16, 1964, Ser. No. 360,205
6 Claims. (Cl. 219—501)



1. A temperature control system comprising:

an oven,

an electrical heating means for said oven,

temperature control means for sensing when the temperature of said oven deviates from a set point,

power means adapted to receive alternating current energy,

a switch having a pair of current conducting electrodes and a gate electrode, said current conducting electrodes interconnecting said power means and said heating means,

a timing capacitor,

means for periodically charging said timing capacitor at a varying rate.

means for varying the magnitude of said rate including a resistance element having a negative temperature coefficient of resistance and a variable impedance means responsive to said temperature control means serially connected to said timing capacitor,

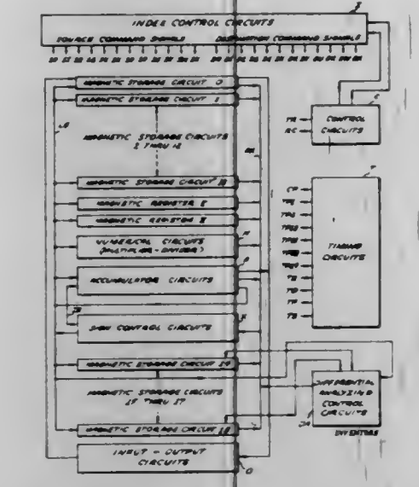
trigger circuit means connected to said timing capacitor for passing a gating signal to said gate electrode whenever the charge across said timing capacitor equals a predetermined value, and

additional heating means responsive to the energy supplied to said electrical heating means for varying the temperature of said resistance element, thereby to vary the response characteristic of said oven to temperature changes.

3,274,376
DIGITAL DIFFERENTIAL ANALYZER IN CONJUNCTION WITH A GENERAL PURPOSE COMPUTER
David C. Evans and Maurice W. Horrell, Playa Del Rey, Calif., assignors to The Bendix Corporation, a corporation of Delaware
Filed May 18, 1955, Ser. No. 509,271
19 Claims. (Cl. 235—150.31)

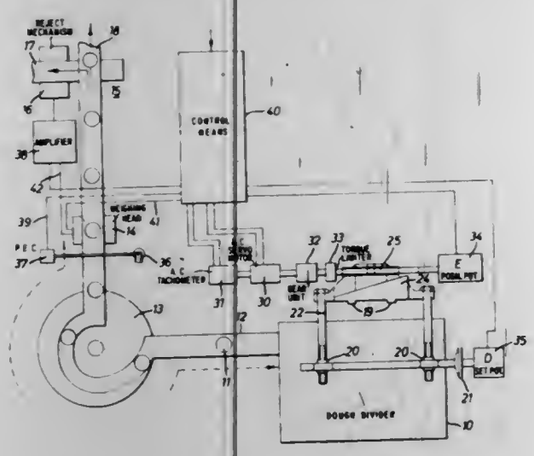
2. A computing system comprising: a plurality of storage means for storing signal representations of numerical information; arithmetic circuit means for performing arithmetic and logic operations with respect to signal representations of numerical information whereby to form representations of the results of said arithmetic operations; integration control means for combining signal

representations of numerical information such as to effect the performance of the process of integration of numerical information so combined whereby to form representations of results of said process of integration; an input-output system adapted to receive and transmit various



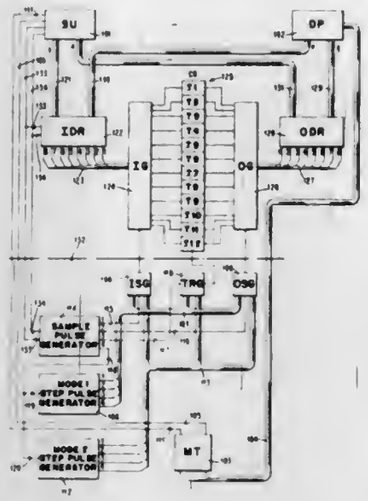
signal representations of numerical information; and transfer means for selectively effecting the movement of signal representations of numerical information between said storage means, said arithmetic circuit means, said integration control means, and said input-output system.

3,274,377
INTEGRATED ERROR CORRECTING SYSTEMS
Peter P. Morison, Cambridge, England, assignor to Spillers Limited, a British company
Filed Aug. 14, 1962, Ser. No. 216,823
Claims priority, application Great Britain, Aug. 17, 1961, 29,669/61
21 Claims. (Cl. 235—151.13)



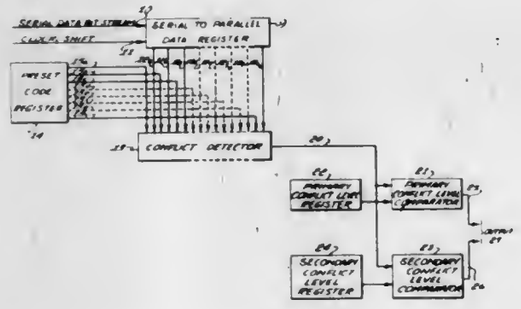
1. An error correcting system comprising integrating means responsive to a predetermined number of successive error signals each indicative of the degree and direction of departure of selected characteristics of a unit or package from a predetermined desired value and providing an integrated output signal determined by the sum of said error signals, a storage means, a first servo mechanism responsive to said integrated output signal for driving said storage means and a second servo mechanism adapted to be connected to apparatus to be controlled and responsive to said storage means for effecting an error correcting adjustment of said apparatus.

3,274,378
DATA TRANSFER AND CONVERSION CIRCUIT
John K. Crawford and Chester M. Pietras, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 28, 1961, Ser. No. 162,788
9 Claims. (Cl. 235—154)



1. A data transfer and conversion circuit for converting a first group of bytes, each having a particular number of binary bits to a second group of bytes, said groups having the same number of bits, but their respective bytes having different numbers of binary bits with a non-integer multiple relationship, comprising:
a conversion register having a plurality of bit storage positions, said register having a maximum bit storage capacity which is less in number than the number of bits in each of said first or second group, said positions being inactive when available for storage of binary bits, or active when unavailable for storage of binary bits;
means for gating each byte of said first group in succession to selected inactive register positions thereby rendering them active;
and means for selectively gating output bytes in succession from active register positions.

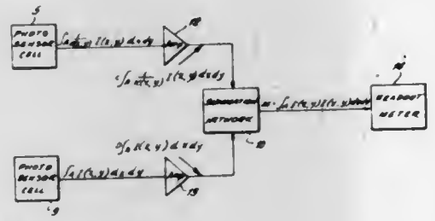
3,274,379
DIGITAL DATA CORRELATOR
Karl Hinrichs, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Apr. 15, 1963, Ser. No. 273,010
18 Claims. (Cl. 235—177)



16. A digital data correlator comprising
means for registering a group of n bits in an incoming bit stream,

means for registering a group of n bits corresponding to a predetermined code pattern,
means for determining the number of conflicts between said respective bit groups,
means for presetting a first conflict level,
first means for comparing the number of conflicts with said first preset conflict level,
means for presetting a second conflict level, and
means for comparing the number of conflicts with said second preset conflict level.

3,274,380
OPTICAL-ANALOG INTEGRATOR
Saul Moskowitz, Brooklyn, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed May 4, 1962, Ser. No. 192,526
2 Claims. (Cl. 235—183)



1. An optical-analog integrator for evaluating integrals of the form:

$$M=\int_A f(x,y)\ I(x,y)dxdy$$

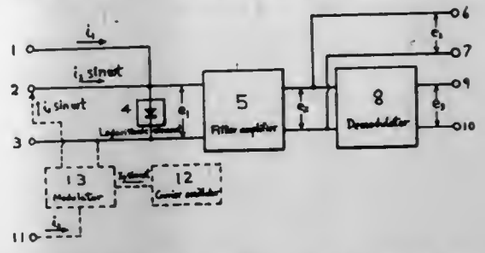
wherein $f(x,y)$ is a noninfinite function of variables x and y over an area A, and $I(x,y)$ is a variable intensity distribution over the area A comprising first means for producing an image of an object, second means for producing an image of said object, an optical filter having a variable density, and first and second photosensitive means responsive to the intensity of radiation from said first and second image-producing means; said optical filter being interposed between said first image-producing means and its said respective photosensitive device; the output of said first and second photosensitive devices each being connected to amplifying means and a common summation means; the output of said summation means being equivalent to the evaluation of said integral; said optical filter representing the function $1/K(x,y)$ over the area of said first means for producing an image; said first photosensitive device having an output related to:

$$\int_A (1/K(x,y))I(x,y)dxdy$$

said second photosensitive device related to: $\int_A I(x,y)dxdy$.

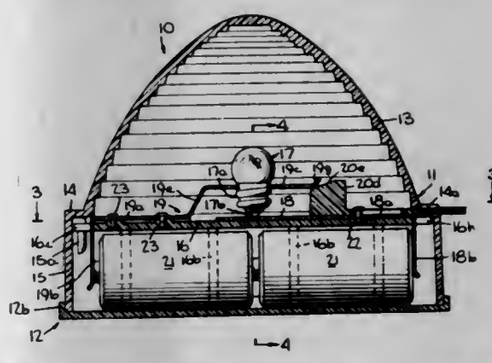
3,274,381
DIVISION CIRCUIT
Noboru Amano, Mito-City, and Naoaki Wakayama, Naka-gun, Ibaraki-ken, Japan, assignors to Nihon Genshiryoku Kenkyu Sho, Tokyo, Japan, a corporation of Japan
Filed Sept. 11, 1962, Ser. No. 222,834
Claims priority, application Japan, Nov. 18, 1961, 36/41,655
5 Claims. (Cl. 235—196)

1. A division circuit comprising means to introduce an alternating current proportional to a dividend and a current proportional to a divisor simultaneously into a logarithmic element, the voltage across said element being proportional to the logarithm of the current flowing through said element, means to pass only the component of the A.C. fundamental wave from the voltage



appearing across said element, and means to amplify and to demodulate said component.

3,274,382
PORTABLE BATTERY POWERED SAFETY LIGHT AND REFLECTOR PLATE CONSTRUCTION THEREFOR
Lazzaro A. Fattori, 84 Rose Ave., Woodcliff Lake, N.J.
Filed May 1, 1964, Ser. No. 364,242
6 Claims. (Cl. 240—10.6)

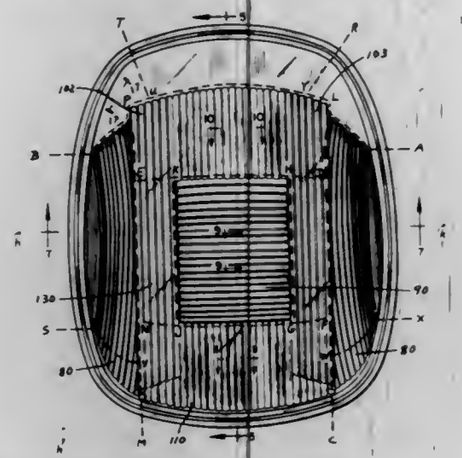


1. A portable battery powered safety light having a two-piece casing of molded plastic comprising a light transmitting dome-shaped housing open at a bottom thereof and fitted with a removable bottom closure plate, a reflector plate of molded plastic mounted in said housing spaced above said bottom closure plate and having a dome-facing surface and an opposite bottom-facing surface, the latter having snap-in battery supporting means, a battery mounted in said supporting means, said dome-facing surface mounting a lamp, a switch and conductor elements to the battery, said switch having operating means extending through an opening in said housing, said reflector plate, battery, lamp and switch forming an operative removable unit, the latter being removable through said housing open bottom upon removal of said closure plate, and means cooperating with said housing and reflector plate for snap-in removal and retention of the latter in said mounted position in the housing.

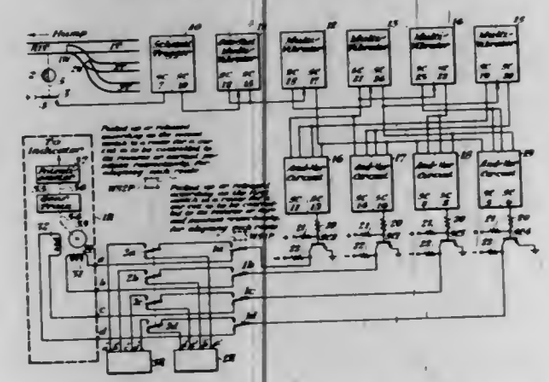
3,274,383
LUMINAIRE
William H. Dorman, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 371,273
7 Claims. (Cl. 240—106)

1. A refractor of a generally semi-ovate form having a generally flat rim forming its periphery, said refractor being symmetric about a longitudinal plane perpendicular to the plane of said rim, said refractor comprising on each side of said longitudinal plane a side portion, said side portions being symmetric about said longitudinal plane, each said side portion comprising an inner surface and an outer surface, one of said surfaces comprising a plurality of prisms having edges lying in planes substantially perpendicular to said longitudinal plane and having convex surfaces and the other said surface comprising a

plurality of prisms having edges in the form of arcs of circles which are concave in the direction of said rim and which have centers at points on the sides of said rim opposite said arcs and having bases at their sides nearest said rim.



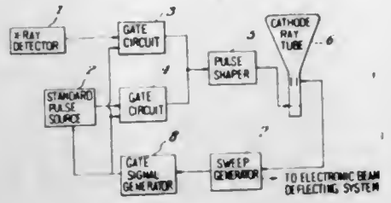
3,274,384
RAILWAY CAR COUNTER
William A. Robison, Jr., Pittsburgh, and Adolf G. Pokrant, Braddock Hills, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed July 12, 1962, Ser. No. 209,341
9 Claims. (Cl. 246—247)



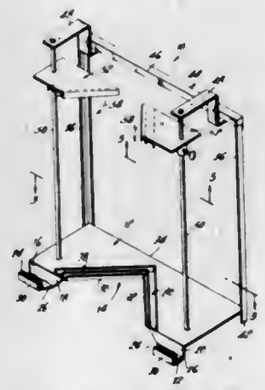
1. A railway car counting system for a storage track comprising,
means for producing a signal representative of each axle of each railway car entering the storage track,
solid state electronic means responsive to each signal for counting the number of cars routed to said storage track,
and means including a motor having a pair of stator windings and a rotor responsive to said counting means for producing an output representing the number of empty car spaces remaining in said storage track.

3,274,385
SCANNING X-RAY MICROANALYSER
Hiroshi Tomita, Iwata-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo, Japan, a joint-stock company of Japan
Filed Feb. 18, 1963, Ser. No. 259,211
Claims priority, application Japan, Feb. 23, 1962, 37/6,436
4 Claims. (Cl. 250—49.5)

1. A scanning X-ray microanalyser comprising a cathode-ray tube for producing scanned X-ray image in a first part of the screen of said cathode ray tube, means for producing standard pulses of predetermined counting rate, and means for creating, in a second part of the screen of said cathode-ray tube, at least, one image with standard brightness for comparison with the brightness of the scanned X-ray image, said image being created in response to said standard pulses.



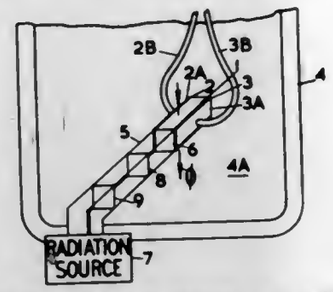
3,274,386
APPARATUS FOR PRODUCING WIDE ANGLE X-RAY PHOTOGRAPHS
Leon J. Corbin, 1369 Rosedale Ave., Bronx, N.Y.
Filed May 14, 1962, Ser. No. 194,492
3 Claims. (Cl. 250—66)



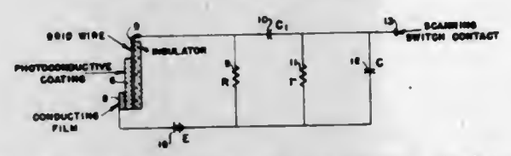
1. A radiography film cassette fixture comprising an elongated base provided with a pair of track means disposed in substantially right angular relation, a pair of laterally spaced track means extending parallel to the longitudinal axis of said base, and a pair of bracket means each provided with a track means, and means mounting said bracket means for vertical adjustment relative to said base and for angular adjustment relative to said base for selectively positioning each bracket track means in overlying alignment with one of said angularly related track means and with one of said laterally spaced track means whereby to selectively position a film cassette between each bracket track means and the associated one of said angularly related track means or to position film cassette between said pair of laterally spaced track means and both of said bracket track means.

3,274,387
INFRARED DETECTOR COMPRISING A COOLED SEMI-CONDUCTOR DISPOSED IN A MAGNETIC FIELD
Ernest Henry Putley, Malvern, England, assignor to National Research Development Corporation, London, England
Filed Aug. 21, 1961, Ser. No. 132,913
Claims priority, application Great Britain, Aug. 22, 1960, 28,946/60
15 Claims. (Cl. 250—83.3)

1. A photoconductive cell for detecting radiation in the waveband 0.1 to 8 mm. comprising, in combination, a mass of very pure semiconductor material having conduction leads connected thereto to establish a current path through said material, means for establishing a magnetic field of at least 2000 gauss through the mass at least substantially normal to said current path defined in the material by the conduction leads, means for cooling the semiconductor mass, and radiation transmitting means for transmitting radiation from at least part of the waveband 0.1 to 8 mm. to a region of the current path in the mass traversed by the magnetic field.



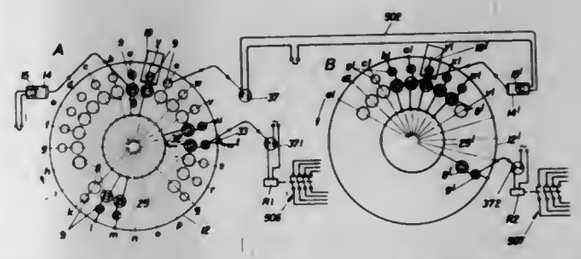
3,274,388
INFRARED DETECTOR AND SYSTEM FOR TRANSIENT SIGNALS
Maurice Distel, Red Bank, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 28, 1950, Ser. No. 176,512
9 Claims. (Cl. 250—83.3)



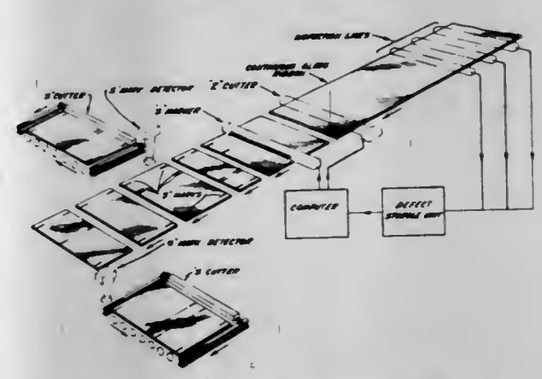
9. A radiation detecting and translating device comprising a plurality of horizontally aligned photoconductive elements having a maximum sensitivity in the infrared radiation band between 0.8 and 5 microns; a source of potential connected to said elements; a separate load impedance in series with each of said elements and said source of potential; output means for each of said impedances, each output means comprising a resistance-capacitance circuit for blocking the relatively steady voltage caused by background radiation and for passing the varying voltage caused by transient radiation, and a storage capacitor connected to be charged by said varying voltage; and means for sequentially scanning said storage capacitors including a multielement make-break type switch.

3,274,389
ELECTRIC IMPULSE STORING DEVICES AND PACKAGING MACHINES COMPRISING SUCH DEVICES
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed Mar. 7, 1963, Ser. No. 263,594
Claims priority, application Germany, Mar. 10, 1962, Sch 31,107
8 Claims. (Cl. 250—205)

1. An electric impulse storing device comprising a rotatable member, means for rotating said member, a plurality of main photocells, an equal plurality of electric circuits, an equal plurality of electric main light sources, said main photocells and said main light sources being fixed to said rotatable member, in a circular configuration about the axis of rotation of said member, each of said main light sources being associated with one of said main photocells for illuminating the same, and being arranged in axial opposition to its associated photocell, each of said electric circuits including one of said main light sources and its associated main photocell for energizing a main light source when its associated photocell is illuminated, input means including a stationary electric auxiliary light source arranged to be energized in response to an electric impulse to be stored, said main light sources and said associated photocells being rotatable jointly with said rotatable member relatively to and past said auxiliary light source which is arranged for illuminating. When energized, an adjacent one of said plurality of photocells, a stationary auxiliary photocell arranged for being illuminated by any one of said main light sources when energized and when in a predetermined first position relative to said auxiliary photocell, an auxiliary electric circuit, which includes said auxiliary photocell, for creating a control effect in dependence on the illumination of said auxiliary photocell, means for intercepting light from any one of said main light sources to its associated main photocell when in a predetermined second position subsequent to said first position, and angularly displaceable mounting means for setting the angular spacing between said auxiliary light source and said auxiliary photocell to vary the time during which electric impulses are stored.

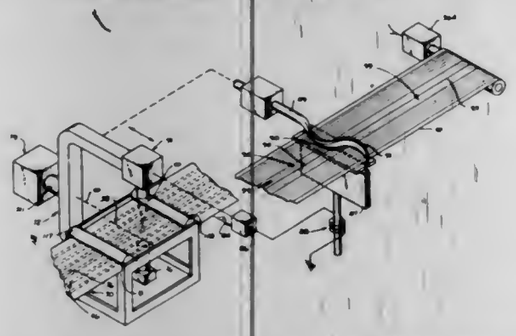


3,274,390
GLASS CUTTING CONTROL APPARATUS
Forrest K. Umbel, Verona, Pa., assignor to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania
Filed June 16, 1961, Ser. No. 125,329
7 Claims. (Cl. 250—219)



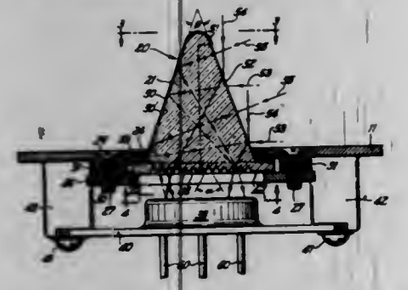
2. In apparatus for reading information from a continuously moving record where bits of data are stored at a series of points comprising a set on said record, the combination comprising, detection means for producing a signal denoting either the presence or absence of bits of data at each data point passing said detection means, pulse generating means operated in accord with said record movement for generating a synchronizing pulse as each data point passes said detection means, a set of output channels corresponding, respectively, to said record data points, means operated by said synchronizing pulses for feeding successive signals from said detection means to the respective channels corresponding to the data points, and means for adjusting the rate of emission of pulses from said pulse generating means to synchronize the latter with said record movement.

3,274,391
APPARATUS FOR MONITORING THE SPACING BETWEEN A PLURALITY OF ELEMENTS ARRANGED IN A SERIES
Alfred Heinz, Raritan Township, Hunterdon County, N.J., assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 371,617
15 Claims. (Cl. 250—219)



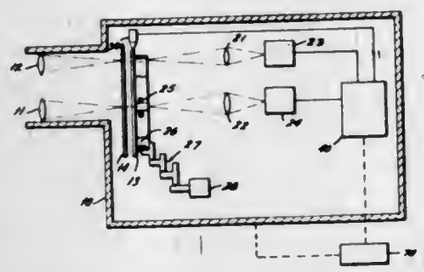
1. Apparatus for monitoring the spacing of a plurality of elements arranged in a series, which comprises:
means for directing a beam of radiation toward one of the elements;
drive means for causing relative movement at a selected rate between the elements and said directing means to render the elements effective to modify said beam of radiation and produce a train of pulses of radiation at a rate indicative of the spacing of the elements;
recording means having a section for receiving marks, the reception of said marks by said section being indicative of a predetermined spacing of the elements;
means actuated by said drive means at a rate proportional to said selected rate for cyclically conditioning said section for reception of said marks; and
means responsive to said train of pulses for marking said conditioned section to indicate conformity of the spacing of the elements to said predetermined spacing.

3,274,392
LIGHT COLLECTOR FOR PHOTOSENSITIVE LUMINAIRE CONTROL
Donald W. Harling, Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,810
6 Claims. (Cl. 250—227)



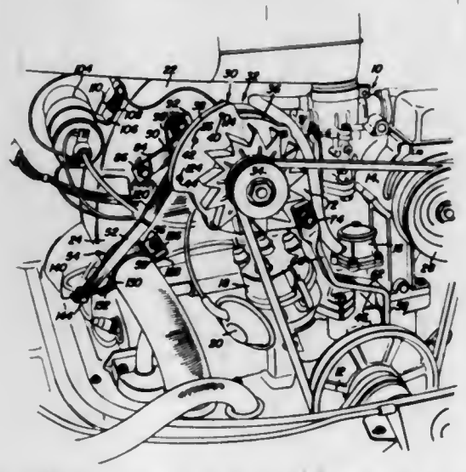
5. A luminaire having an outer housing, an aperture in said housing, a photosensitive cell disposed within said housing and adjacent said aperture, a light collecting member consisting of a solid body of transparent material having a substantially symmetrical conical configuration, said light collecting member extending through said aperture and having its base disposed within said housing and in opposed relation to said photosensitive cell, one side of the conical portion of said light collecting member having a reflective surface provided thereon so that light rays may enter said collector only through the opposite side thereof and so that said light rays will be reflected toward said base portion by said reflective surface, said base portion having a plurality of annular V-in-cross-section concentric grooves formed therein, the apex angle of said conical light collecting member being approximately 40 degrees and the apex angle of each of the grooves being approximately 60 degrees.

3,274,393
SINGLE MODULATION STAR TRACKER
Jacob S. Zuckerbraun, New York, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Oct. 10, 1962, Ser. No. 229,645
9 Claims. (Cl. 250—233)



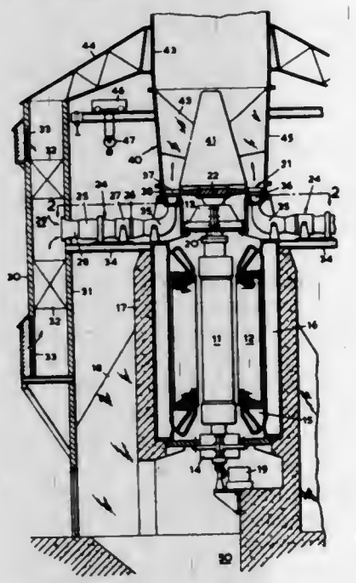
1. A tracking mechanism for tracking a source of radiation comprising a telescope objective means, a scanning means, and a photosensing means; said scanning means comprising a raster movable with respect to a masked aperture, said aperture being centered in the optical axis of said telescope objective means; said raster having a series of spaced lines opaque to said radiation spaced by areas transparent to said radiation; said aperture having a width equal to the width of one opaque area plus one transparent area of said raster; said photosensing means receiving the radiation passed through said aperture and modulated by said raster; said raster disk being rotated at a constant speed with respect to said aperture.

3,274,394
ALTERNATOR MOUNTING ASSEMBLY FOR VEHICLES
Roland R. Maheu, Minot, Maine
(767 Minot Ave., Auburn, Maine)
Filed July 24, 1964, Ser. No. 384,979
4 Claims. (Cl. 290—1)



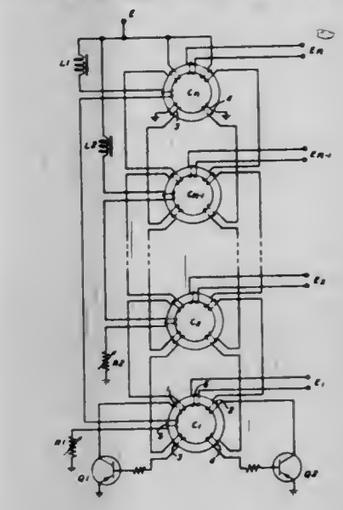
1. In combination, a generator including a mounting case and a rotatable input shaft journaled from said case for rotation about an axis extending between opposite ends of said case with one end of said shaft projecting outwardly of one end of said case and having a driven wheel thereon, an internal combustion engine of the type including an output shaft having a drive wheel thereon and a fan shroud spaced axially in one direction along said shaft relative to said drive wheel and including a first portion spaced laterally to one side of the axis or rotation of said output shaft and extending transversely thereof and a second portion projecting away from said first portion in the opposite direction, and a generator mounting assembly for mounting said generator in the area spaced laterally to said one side of the last-mentioned axis and disposed between parallel planes containing said drive wheel and said portions of said shroud, respectively, with the axis of rotation of said input shaft generally paralleling the axis of rotation of said output shaft and said wheels aligned with each other, said mounting assembly including a first elongated bracket secured between said case and said engine and second and third elongated brackets secured between said case and said shroud, said first bracket extending at generally right angles relative to said axes and extending between said case and said engine and generally paralleling and disposed on one side of and adjacent a plane containing said shafts adjacent said second bracket being secured to and extending between said case and said first portion of said shroud and generally paralleling said axes, and said third bracket being secured to and extending between said case and said second portion of said shroud, disposed on the side of the last-mentioned plane remote from said first bracket, and extending at generally right angles relative to said axes and said last-mentioned plane.

3,274,395
TURBOGENERATORS
Waheeb Rizk, Whetstone, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Mar. 2, 1964, Ser. No. 348,723
Claims priority, application Great Britain, Mar. 8, 1963, 9,290/63
5 Claims. (Cl. 290—52)



1. A stationary turbogenerator installation including an electric generator having a vertically-disposed generator stator and a generator rotor mounted to rotate about a vertical axis in said stator, an axial-flow turbine having a turbine rotor and a turbine stator, said turbine rotor being above said generator rotor and including a shaft directly connected to said generator rotor to rotate therewith about said vertical axis, and said turbine rotor further including a ring of rotor blades, said turbine stator having a ring of stationary nozzle guide vanes cooperating with said ring of rotor blades and below said rotor blades, at least three gas turbine gas-producer units spaced around said vertical axis, each gas turbine gas-producer unit having an air intake, a compressor, combustion equipment, a turbine, and an exhaust in flow series, a plurality of curved ducts each having a circular inlet portion connected to the exhaust of a gas-turbine gas producer unit and each having an arcuate annularly-extending outlet portion defining a vertical flow passage below said ring of nozzle guide vanes and registering with part of said ring of nozzle guide vanes to discharge directly thereto, and exhaust stack means disposed above said turbine rotor.

3,274,396
MULTI-WAVEFORM GENERATOR
John M. Eubanks, Greensboro, N.C., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 16, 1962, Ser. No. 195,227
6 Claims. (Cl. 307—88)



1. A multi-waveform generator of the relaxation oscillator type comprising two circuit branches in which current repetitively flows first in one branch and then in the other one, a plurality of saturable cores each having a hysteresis characteristic such that it is capable of being switched to either of two opposite states of saturation through an unsaturated portion of said characteristic, means initially biasing a first group of said cores to different degrees of saturation in one of their two saturable states and a second group comprising an equal number of the remaining cores to different degrees of saturation in the other of their saturable states, means coupling all of said cores to said two circuit branches so that an increasing current in one of said branches successively switches all of said cores from a first one of their said states to the other one and an increasing current in the other branch successively switches all of them back again to said first state, and an output winding on at least one of said cores in which a voltage pulse is generated each time the core is switched from one saturable state to the other.

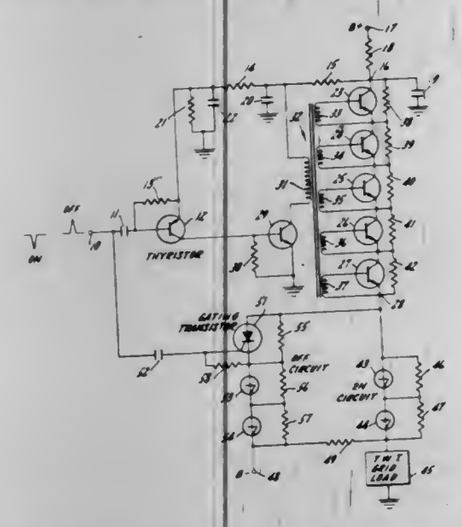
3,274,397
SOLID STATE AND HYBRID MODULATORS
Earl H. Heckman, Severna Park, and Martin L. Jones, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 18, 1963, Ser. No. 259,470
9 Claims. (Cl. 307—88.5)

1. A modulating circuit comprising:
a load circuit having a negative bias thereon from a negative voltage source through a biasing resistor;
a first circuit including a plurality of 4-layer semiconductor switching diodes in a series string coupled in series with a first electron emission means having

conduction control electrode means, this series string of diodes and electron emission means being coupled between a positive voltage source and said load circuit with said first electron emission means adjacent said voltage source and said diodes adjacent said load;

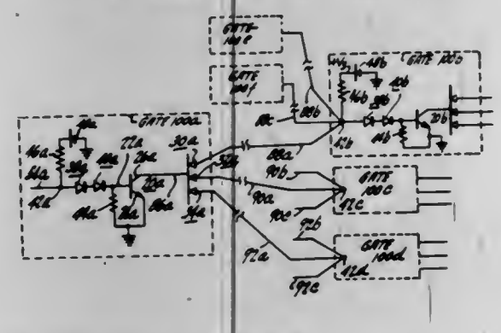
induction means coupling said series string of diodes and electron emission means to switch same into conduction upon the application of a first pulse thereto;

a second circuit including a second electron emission means having conduction electrodes coupled to said diodes and first electron emission means string and



to said negative voltage source, said second electron emission means also having a conduction control electrode coupled to receive a second pulse thereon to place said second electron emission means into conduction to apply said negative voltage source to said diodes and first electron emission string switching off conduction from said positive voltage source through said string and to said load circuit reducing the voltage across said biasing resistor to said biasing voltage whereby switching of conduction and nonconduction in said diodes and first electron emission means string produces modulating voltages on said load circuit having fast rise and fall leading and trailing edges.

3,274,398
LOGIC CIRCUITS
Morton Silverberg, Riverton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 1, 1963, Ser. No. 269,500
14 Claims. (Cl. 307—88.5)



11. The combination comprising:

a first logic circuit including a transistor connected in the grounded emitter configuration and having a base and a collector; an input node; at least one level shift diode connected between the input node and the base and having a diffusion capacitance that varies as a function of diode current, said diode also having an operating region of substantially constant voltage; bias means connected between said node and circuit ground for normally biasing the transistor into saturation, said level shift diode clamping the voltage at said node at V_1 volts when the transistor is in saturation; and a number of output diodes each having one electrode integral with said collector and being poled to pass collector current, the voltage at the other electrode of each of said output diodes having a value $|V_2| \neq |V_1|$ when the transistor is in saturation;

a signal line having its output end connected at said input node and having a finite characteristic impedance Z_0;

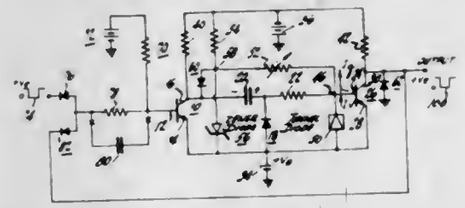
a plurality of switch means each being connected to a different tap along the length of said signal line and each being selectively operable between an open condition and a closed condition in which a voltage of V_2 volts is applied at the respective tap; and

said bias means supplying a current

$$I \cong \frac{V_1 - V_2}{Z_0}$$

to said signal line when any of said input switches is in the closed condition.

3,274,399
TRIGGER CIRCUIT
Alfredo S. Sheng, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 25, 1963, Ser. No. 318,940
6 Claims. (Cl. 307—88.5)



3. The combination comprising:

a first amplifying device and a second amplifying device each having control, output and common electrodes;

means for applying operating potentials between the output and common electrodes of each said amplifying device;

a capacitor and an element of resistance serially connected between the output electrode of the first amplifying device and the control electrode of the second amplifying device;

a negative resistance diode connected between the control and common electrodes of said second amplifying device;

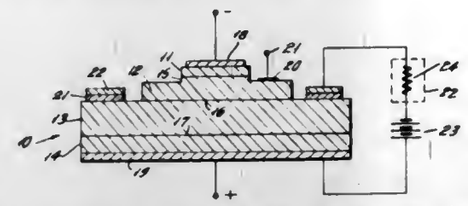
bias means connected at the control electrode of said second amplifying device;

feedback means connected between the output electrode of the second amplifying device and the control electrode of the first amplifying device; and

means for applying an input signal at the control electrode of said first amplifying device.

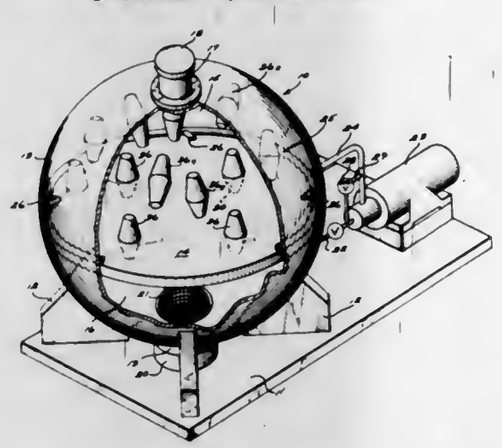
3,274,400
TEMPERATURE COMPENSATED SILICON CONTROLLED RECTIFIER
Harold Weinstein, Van Nuys, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Jan. 17, 1964, Ser. No. 338,473
1 Claim. (Cl. 307—88.5)

A semiconductor device comprising a wafer of semiconductor material having a first, second, third and fourth conductivity layers of alternate N and P conductivity types defining first, second and third junctions; a cathode electrode connected to said first layer and insulated from said second, third and fourth layers; a gate electrode connected to said second layer and insulated from said first, third and fourth layers; a dielectric layer connected to a portion of said third layer and an anode



electrode connected to said fourth layer and insulated from said first, second and third layers; said dielectric layer having a conductive layer thereon; and circuit means including a voltage source and a temperature sensitive impedance in series therewith; said circuit means being connected across said conductive layer and said anode electrode.

3,274,401
SELF-REPAIRING AND SELF-SUSTAINING SYSTEM
Richard R. Landers, Beachwood, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 20, 1961, Ser. No. 153,445
8 Claims. (Cl. 307—92)



1. A self-repairing and sustaining system comprising

(a) a source of energy,

(b) a work load,

(c) a circuit for receiving energy from said source and transmitting the same to said work load,

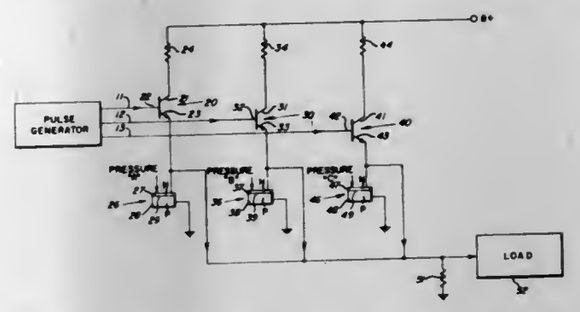
(d) an operating element in said circuit rendered inoperative and displaceable therefrom in response to failure therein,

(e) at least one additional operative element in said system but not in said circuit, and

(f) means automatically operative to displace said operating element when rendered inoperative and to replace the same with an operative element and comprising a fluid medium for moving said additional operative element into the position in said circuit of the element rendered inoperative.

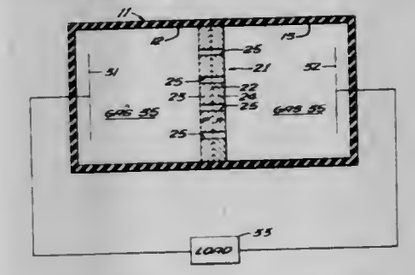
3,274,402
SENSING AND MULTIPLEXING SYSTEMS
Clark F. Crocker, South Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,561
4 Claims. (Cl. 307—119)

2. A system comprising a plurality of parallel connected diode force sensors coupled to a common load, said force sensors including a barrier region responsive to a force being applied to said sensor, generator means for selectively producing signals, a source of reference potential, a plurality of transistor switches each having base, collector, and emitter electrodes, each of said base electrodes connected to said generator means, each of said collector electrodes connected to said source of reference potential, each of said emitter electrodes con-



nected to a different one of said sensors, each of said signals causing one of said transistor switches to conduct for selectively electrically biasing the connected semiconductor sensor in a reverse breakdown condition to place the connected sensor in a low impedance condition thereby shunting said sensor in the low impedance condition to said common load, said transistor switches being normally in the nonconductive condition for maintaining said sensors in a high impedance condition.

3,274,403
GASEOUS THERMOCOUPLE UTILIZING A SEMICONDUCTOR
Lloyd T. De Vore, Santa Barbara, Calif., assignor to Hoffman Electronics Corporation, a corporation of California
Filed May 26, 1961, Ser. No. 112,969
6 Claims. (Cl. 310—4)

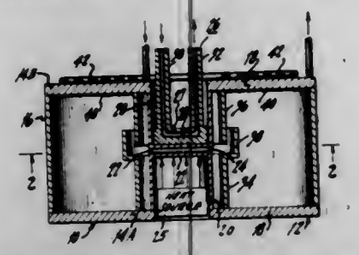


1. A gaseous thermocouple comprising: a chamber divided into first and second compartments by a semiconductor having p-type and n-type regions separated by a p-n junction, said semiconductor being pierced by a plurality of perforations, and said semiconductor being sufficiently thin to permit the passage of positive ions through said perforations; an easily ionizable gas in each of said first and second compartments; first and second electrode surfaces in said first and second compartments, respectively; and means for coupling each electrode surface to an external load.

3,274,404
ELECTRON TUBES AND METHODS OF OPERATION THEREOF FOR ENERGY CONVERSION
Arie L. Eichenbaum, Levittown, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 30, 1961, Ser. No. 156,064
12 Claims. (Cl. 310—4)

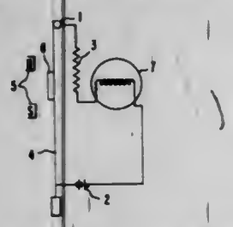
1. The method of operating an electron tube comprising two similar juxtaposed electrodes at least one of which comprises thermionic electron emissive material, comprising the steps of heating said one electrode and

the emissive material thereof to an operating temperature above that at which said material evaporates substantially while maintaining the other electrode at a lower temperature than said evaporation temperature to receive the condensate of said evaporated material thereon,



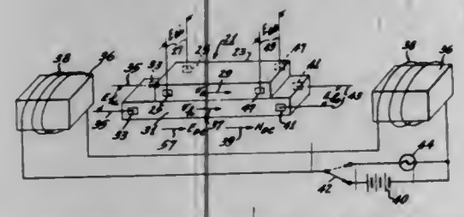
and thereafter heating said other electrode and the emissive material thus condensed thereon to an operating temperature above that at which said material evaporates while maintaining the said one electrode at a lower temperature than said evaporation temperature to receive condensate of said material thereon.

3,274,405
ENERGY CONVERSION DEVICES
Thomas J. Swoboda, Chester County, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 17, 1964, Ser. No. 352,539
12 Claims. (Cl. 310—4)



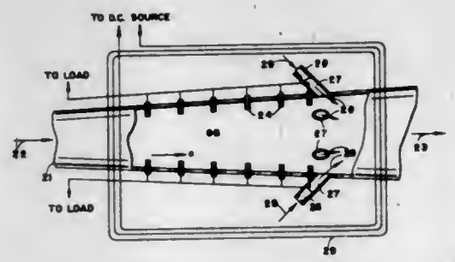
1. A device for producing useful work in the form of at least one of mechanical energy and electrical energy from applied heat energy which comprises a structure having an energy-transforming component which undergoes a reversible first-order solid-phase-to-solid-phase transition within a narrow temperature range below its Curie point, said transition resulting in a sharp change in the magnetic saturation induction, electrical resistivity and dimension of said energy-transforming component, said structure having means responsive to at least one of said magnetic saturation induction, electrical resistivity and dimension for converting said applied heat energy to at least one of mechanical energy and electrical energy.

3,274,406
ACOUSTIC-ELECTROMAGNETIC DEVICE
Henry S. Sommers, Jr., Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 31, 1963, Ser. No. 255,237
17 Claims. (Cl. 310—8.1)



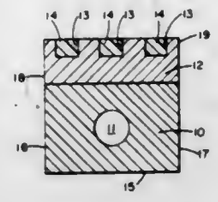
1. An acoustic-electromagnetic device comprising means for generating an acoustic wave, a piezoelectric medium for supporting the propagation of said acoustic wave along a path therein and means for supporting the propagation of an electromagnetic wave with at least a component thereof propagating in said path in the same direction as said acoustic wave, said electromagnetic wave supporting means having associated therewith magnetic field means for maintaining said electromagnetic wave at a velocity related to the velocity of said acoustic wave for selectively transferring energy from one of said waves to the other.

3,274,407
APPARATUS FOR MAGNETOHYDRODYNAMICALLY GENERATING ELECTRIC ENERGY
Thomas R. Brogan, Arlington, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Feb. 2, 1961, Ser. No. 86,818
6 Claims. (Cl. 310—11)



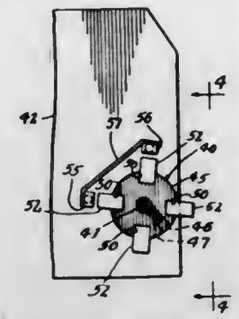
1. In a magnetohydrodynamic generator, apparatus for reducing short circuit end effects adjacent the downstream terminal point of oppositely disposed electrodes located within a duct for conveying a hot, electrically conductive gas through a magnetic field at an angle to said electrodes comprising: a plurality of hollow members extending through and secured to opposite sides of said duct at about the downstream terminal zone of said electrodes; and means for maintaining said members at a reduced temperature with respect to the temperature of said gas whereby as a portion of said gas passes over each said members its conductivity is decreased to reduce the flow of current therethrough.

3,274,408
HIGH TEMPERATURE ANISOTROPIC NONCONSUMABLE ELECTRODE
Jean F. Louis, Brookline, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed May 14, 1963, Ser. No. 280,273
13 Claims. (Cl. 310—11)



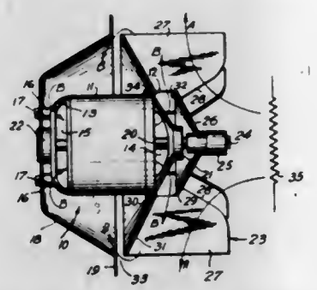
7. An electrode for conducting electrical current in an MHD device between a conductor and a hot electrically-conductive gas having a temperature of about 2000° F. comprising:
(a) an elongated and relatively narrow electrically conductive metallic member having at least one recess extending substantially the length of said member; and
(b) a heat resistant filler material electrically conductive at the operating temperature of said gas and an insulator at a temperature substantially less than the said operating temperature of said gas fixedly disposed in said recess and exposed to said gas.

3,274,409
REED DRIVING MECHANISM
George D. Henninger, Chicago, Ill., assignor to Amglo Corporation, Chicago, Ill., a corporation of Illinois
Filed June 7, 1963, Ser. No. 286,262
1 Claim. (Cl. 310—46)



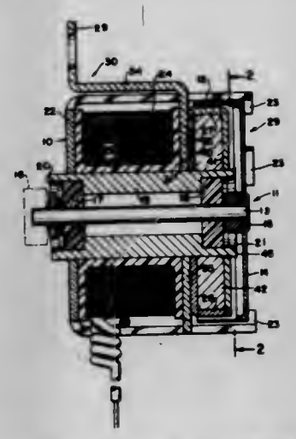
Reed driving mechanism for a direct current constant speed motor having a switch-actuating vibrating reed with a bar of magnetic material at its free end, said mechanism comprising:
magnet holding means of nonmagnetic material adapted to be mounted rigidly on the motor shaft adjacent the free end of said reed;
a plurality of bar magnets secured to said magnet holding means in uniformly spaced relation circumferentially, an end of each bar magnet located to travel adjacent the bar of magnetic material at the free end of said reed and thereby drive the reed at its characteristic frequency of vibration;
a magnetic means in effective relation with the travel path of said bar magnets for causing said magnet holding means to come to rest with a magnet in proximity to the bar of magnetic material on said reed, said magnetic means including a plurality of bars of magnetic material parallel to, and spaced radially outwardly from the travel path of, said bar magnets, the angular separation of said bars being substantially the same as that of the bar magnets that are adjacent said bars when said magnet holding means comes to rest; and
a plate of magnetic material connecting said bars of magnetic material.

3,274,410
COOLING ARRANGEMENT FOR MOTOR-FAN UNIT
Jean Ivan Ragnar Bolvie, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 17, 1963, Ser. No. 331,266
Claims priority, application Sweden, Dec. 21, 1962, 13,886/62
11 Claims. (Cl. 310—62)



1. In combination with an electric motor having a rotatable shaft extending from one end; a fan wheel comprising a central disk secured on said shaft and being spaced from said one end of the motor, and fan blades extending outward from the edge of said disk and projecting axially beyond said edge at the side of said disk facing toward said one end of the motor so that, upon rotation of said fan wheel, said blades create a vacuum intermediate said disk and said one end of the motor for producing a continuous flow of cooling air through the motor from the other end of the latter to said one end, the motor being of the enclosed type having a housing with bearing brackets at the opposite ends in which said shaft is supported, said bearing brackets having openings therein for permitting said flow of cooling air through the motor, said fan wheel further including an annular plate joined to said blades and having its inner periphery axially spaced from the edge of said disk in the direction toward said one end of the motor so as to define a first annular gap between said edge of the disk and said inner periphery of the annular plate for the outward passage therethrough of the flow of cooling air, said inner periphery of the annular plate extending closely around the bearing bracket of the motor at said one end of the latter; and further comprising a shell opening axially and receiving said motor with said one end of the latter extending from the shell, said shell having an edge extending along the outer periphery of said annular plate and spaced from the latter to define a second annular gap therebetween through which air is drawn into said shell to make up said flow of cooling air through the motor with said air drawn into the shell being constituted at least in part, of air passing outwardly from said first annular gap.

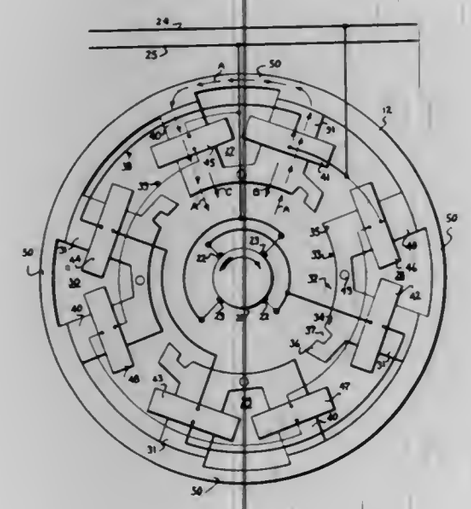
3,274,411
MICRO-MINIATURE MOTOR STRUCTURE
Richard J. Kavanaugh, Bristol, Conn., assignor to Consolidated Electronics Industries Corporation, Waterbury, Conn., a corporation of Delaware
Filed Apr. 1, 1964, Ser. No. 356,410
6 Claims. (Cl. 310—164)



1. In a minature hysteresis-type synchronous motor having a cylindrical core, a rotor, a magnet winding mounted on and surrounding the front portion of the core, an outer cylindrical field ring enclosing said magnet in flux linking relation with said magnet winding and having rearwardly axially projecting integral outer pole elements arrayed in a first cylindrical configuration, said outer pole elements defining a predetermined number of symmetrically arrayed spaces therebetween, a stator subassembly comprising:
(a) a mounting strap having a central disc-like portion and at least one radially extending reference portion associated therewith,
(b) a first inner pole piece having a plurality of symmetrically arrayed rearwardly projecting inner pole elements,
(c) a second inner pole piece having a plurality of symmertcially arrayed forwardly projecting inner pole elements,
(d) said inner pole elements being laterally butted to define a plurality of inner pole element pairs equal in number to the spaces between said outer poles.

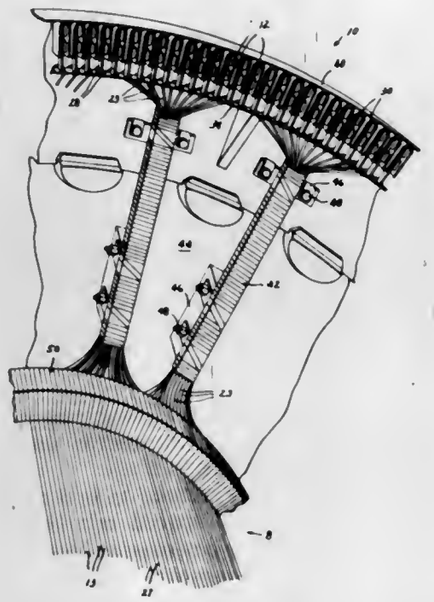
(e) said disc-like portion having a plurality of lineup teeth each having an outer width substantially equal to the width of the spaces between the outer pole elements in said cylindrical field ring,
(f) said lineup teeth and said reference portion being equiangularly spaced about the periphery of said disc-like portion to coincide with said spaces between the outer pole elements,
(g) said reference portion being a width substantially equal to the combined width of said inner pole element pairs,
(h) said disc-like portion having a central bore therein,
(i) one of said inner pole pieces being affixed to said mounting strap with at least one of its pole elements flush with an edge of said reference portion,
(j) said strap being supported on said core with said inner pole elements in flux linking relation with said winding and with said lineup teeth in the spaces between said outer pole elements,
(k) whereby said inner butted pole elements are aligned in a second cylindrical configuration symmetrically opposite the spaces between said outer pole elements.

3,274,412
COMPOUND DIRECT CURRENT MOTORS
Alec Fisher, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Sept. 18, 1963, Ser. No. 309,837
5 Claims. (Cl. 310—186)



1. A compound direct current motor comprising:
(a) an armature;
(b) a plurality of magnetizable members arranged to coact with said armature, each of said members including a core and a pole shoe region terminating near said armature and defining spaced apart, mechanically integrated main and commutating pole shoes;
(c) first magnetic excitation means arranged on a first core portion of each of said magnetizable members for providing a magnetomotive force which is proportional to motor current, said means being a winding connected in series with the armature circuit of said motor and providing commutating pole shoe flux and a component of the main pole shoe flux;
(d) and a second magnetic excitation means associated with each of said magnetizable members, said second magnetic excitation means being a permanent magnet disposed adjacent and in contact with a portion of the main pole shoe of each of said magnetizable members.

3,275,413
COMMUTATOR RISER CONSTRUCTION
Theodore R. Adriance, Jr., Delanson, and Edward P. Smith, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 4, 1963, Ser. No. 327,922
6 Claims. (Cl. 310—234)

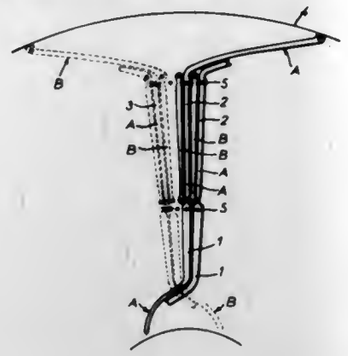


4. A rotor for a dynamoelectric machine comprising:
a shaft supporting a commutator and an armature having coils in slots disposed in its peripheral surface,
commutator riser-like connections interconnecting segments in the commutator with leads extending axially outwardly from the coils in the armature,
said commutator comprising a multiplicity of individual segments having a projection on one end thereof and being spaced by insulation from a similar projection on the next adjacent commutator segment,
a banding tape wound on the outer peripheral surface of the projections for preventing commutator segment displacement during armature operation,
said riser-like connections comprising a multiplicity of flexible conductors assembled into separate groups and each being attached at one end to a projection and at its other end to the corresponding lead for a coil in the armature,
said riser-like connections extending inwardly in a general axial direction from both the commutator projections and the coil leads,
means assembling the riser-like connections in each of said groups into an integrated mass, and
a bracket securing each of said groups of riser-like connections to said armature for preventing their displacement during armature operation.

3,274,414
ELECTRICAL WINDINGS
René A. Bidard, Paris, France, assignor to Compagnie Electro-Mecanique, Paris, France, a company of France
Filed Oct. 4, 1963, Ser. No. 313,929
Claims priority, application France, Oct. 11, 1962, 911,958
5 Claims. (Cl. 310—268)

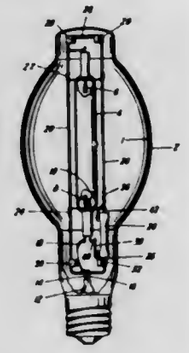
1. An electrical winding assembly comprising a thin support of insulating material having two substantially planar parallel faces, a multiplicity of bare lamellar electric conductors extending flat on said faces, at least a lengthwise portion of each conductor being divided into associated portions of reduced width, half of said portions

of each conductor extending over the opposite faces of said support, means extending from one face of said insulating support to the other face thereof for connecting said conductors to each other at the ends thereof, and



means extending through said insulating support for electrically interconnecting said associated portions of each respective conductor to minimize eddy current losses in operation.

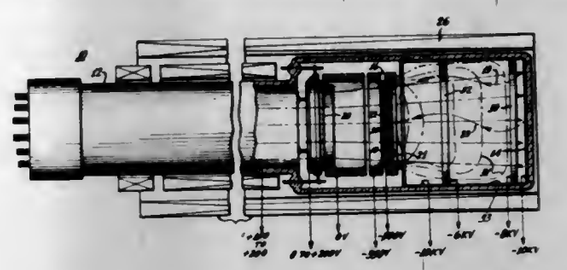
3,274,415
GASEOUS DISCHARGE LAMP WITH A REDUCED AND UNREDUCED ACTUATOR
Martha J. B. Thomas, Woburn, Mass., and Frank P. Durkee, Derry, N.H., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,767
8 Claims. (Cl. 313—25)



1. A high pressure mercury lamp comprising a mercury arc tube, an outer jacket around said arc tube, said outer jacket containing on its inside wall a coating which includes an ultraviolet excitable phosphor and means for supporting said arc tube and supplying operating current thereto, at least a part of said coating comprising a phosphate and an unreduced activator, and said outer jacket containing a source of reducing agent in an amount effective to reduce said unreduced activator to activating state and thereby produce additional activated phosphor during operation of the lamp.

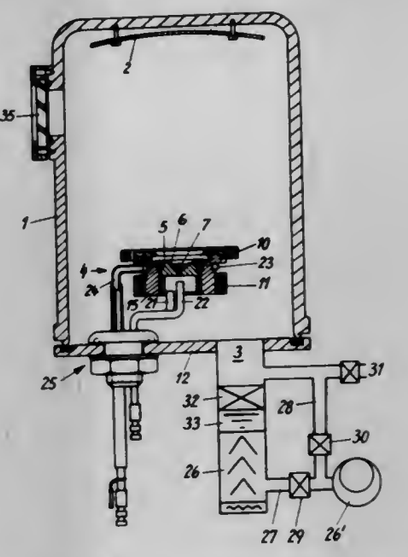
3,274,416
IMAGE INTENSIFIER TYPE CAMERA TUBE WITH POTENTIAL FIELD CORRECTING MEANS
Alexander A. Rotow, Lancaster, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Sept. 27, 1961, Ser. No. 141,135
5 Claims. (Cl. 313—65)

5. An image intensifying section of an image sensitive device comprising a planar shaped photocathode, a focal plane for photoelectrons from said photocathode, a tubular electrode having one end adjacent to said photocathode and the other end adjacent to said focal plane, said focal plane being substantially parallel to and spaced from said photocathode, at least two potential field-correcting electrodes spaced inwardly from said tubular elec-



trode and around the path of photoelectrons in their transit from said photocathode to said focal plane.

3,274,417
ELECTRONIC EVAPORATOR
René Haefer, 8483 Kollbrum, Zurich, Switzerland, and Erich Zollinger, 9496 Balzers, Churerstr. 326, Balzers, Liechtenstein
Filed May 29, 1963, Ser. No. 284,198
Claims priority, application Switzerland, May 30, 1962, 6,572/62
9 Claims. (Cl. 313—75)



1. In an electronic evaporator for the evaporation of substances in a high vacuum:
an anode having an outer end,
a cathode formed in a substantially regular closed shape to produce an electron beam having a substantially closed periphery coaxial with said anode and disposed radially outwardly of said anode and axially inwardly from the outer end of said anode,
an auxiliary electrode surrounding said cathode and formed to limit the initial direction of electrons emitted from said cathode to angles less than 90 degrees with respect to the axis of said anode, and
means for establishing a potential difference between said cathode and said anode to deflect said electrons toward the end of said anode.

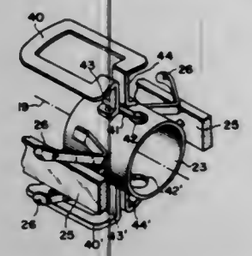
3,274,418
FIELD CONCENTRATOR HAVING CONDUCTIVE LOOP PROXIMATE BEAM
Charles Burton Crumly, Palo Alto, Calif., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 8, 1963, Ser. No. 322,452
6 Claims. (Cl. 313—75)

1. A field concentrator for a magnetically deflected cathode-ray tube having an envelope with an electron gun

located at one end for developing and directing an electron beam along a given path to a screen located at the other end, said concentrator comprising:

a first conductive loop positioned closely adjacent the periphery of a particular section of said envelope to be inductively coupled to a deflection yoke surrounding said section of said envelope;

a second conductive loop disposed substantially parallel and in closed proximity to said beam path;



and a pair of conductors serially connecting said first and second loops to define therewith a shorted turn, said second loop being dimensioned to have a flux density very high compared to that of said first loop so that the magnetic flux of said shorted turn is concentrated within said second loop and directed across said beam path.

3,274,419

FLEXIBLE ELECTROLUMINESCENT LAMP HAVING TRANSPARENT METAL-COATED STRANDS AS THE LIGHT TRANSMITTING ELECTRODE

Harold H. Roth, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Jan. 23, 1962, Ser. No. 168,221
8 Claims. (Cl. 313—108)



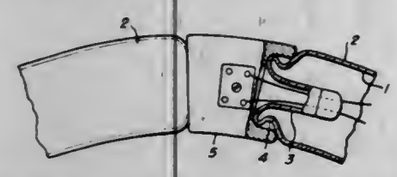
1. A flexible electroluminescent lamp of improved efficiency consisting of a layer comprising a flexible solidified intimate intermixture of a phosphor and a resinous dielectric material, said layer provided with flexible electrical conducting sheets adhered to the opposing faces thereof, at least one of said sheets being a light-transmitting mat composed of transparent metal-coated, spaced-apart strands selected from the class consisting of synthetic and natural fibers.

3,274,420

ANNULAR FLUORESCENT LAMPS

Akira Kameyama, Yokohama, Tetsuo Funabashi, Tokyo, Ichiro Kusakawa and Jiro Watanabe, Yokohama, Takashi Hayao, Tokyo, Yoshihisa Takashima, Kawasaki-shi, and Nisaburo Maruyama, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Sept. 27, 1961, Ser. No. 141,108
2 Claims. (Cl. 313—109)



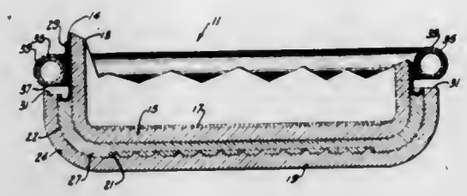
1. An annular fluorescent lamp comprising a glass tube of circular form with the opposite ends disposed in opposed relation; nodal gripping formations comprising a circumferential ridge on said tube at the opposite ends thereof; said tube having on its inside a fluorescent layer coated prior to the bending of the tube; and, a one piece light transmitting base means snapped onto the opposite tube ends.

3,274,421

READ-OUT DEVICE HAVING BONDING MATERIAL BETWEEN A FACE PANEL AND A COVER PANEL

Alfred D. Johnson, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 26, 1961, Ser. No. 162,052
3 Claims. (Cl. 313—109.5)



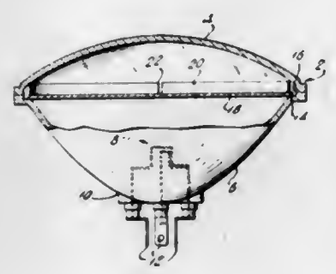
1. A read-out device having a laminated viewing area comprising a substantially transparent face panel having a given index of refraction for providing a display, a substantially transparent cover panel for said face panel having an index of refraction substantially corresponding to that of said face panel, said cover panel having a graticule formed on the internal surface for observation from the external surface thereof, a substantially transparent bonding material having an index of refraction substantially corresponding to that of said panels and disposed intermediate said panels, said bonding material supporting said panels relative to one another in alignment to provide orientation of the graticuled cover panel with the axis of the face panel display to enable conjunctive comparison of the graticule and the display image during external viewing.

3,274,422

COLORED SEALED BEAM LAMP AND METHOD OF MAKING THE SAME

Walter E. Carpenter, Cedar Grove, N.J., assignor to Tung-Sol Industries, Inc., Newark, N.J., a corporation of Delaware

Filed May 6, 1963, Ser. No. 278,363
9 Claims. (Cl. 313—111)



6. A sealed beam lamp comprising:

(a) a reflector with a concave reflecting face;

(b) a filament positioned within the reflecting face;

(c) a lens positioned over the reflecting face to form an envelope surrounding the filament;

(d) a filter with two faces which is between the lens and the filament with the periphery of one of the faces positioned against the interior surface of the envelope; and

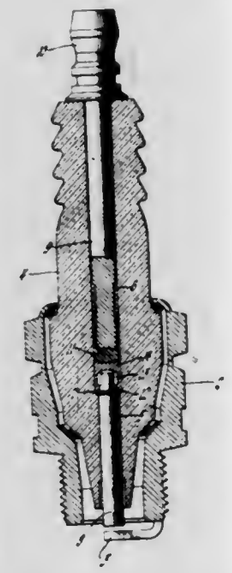
(e) a strip of spring material adjacent the periphery of the filter with one edge of the strip against the interior of the envelope and the other edge of the strip against the other face of the filter to hold the first mentioned face of the filter against the interior wall of the envelope.

3,274,423

SPARK PLUG WITH MULTIPLE CONDUCTIVE SEALS

Patrick N. Kesten, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 5, 1962, Ser. No. 177,423
4 Claims. (Cl. 313—145)



2. A spark plug comprising an insulator having a centerbore therethrough, said centerbore having a lower portion of relatively small diameter, an upper portion of enlarged diameter and an annular shoulder at the junction of said portions, an elongated silver electrode in the lower portion of said centerbore having a firing tip portion at the lower end thereof and an enlargement at the upper end thereof positioned in said upper centerbore portion and abutting said annular shoulder, said silver electrode having a plurality of ribs above said enlargement a pressed seal in the upper portion of said centerbore and a mass of tightly packed metal powder in said centerbore below said seal surrounding said ribs, said mass minimizing the tendency of said silver electrode to extrude during the manufacture of said plug of said silver electrode.

3,274,424

DISCONTINUOUS ELECTRODE ARC PLASMA GENERATOR

Edgar A. Bunt, Kensington, Lloyd O. Kauffman, Jr., Baltimore, Herman L. Olsen, Derwood, and Spencer D. Raezer, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy

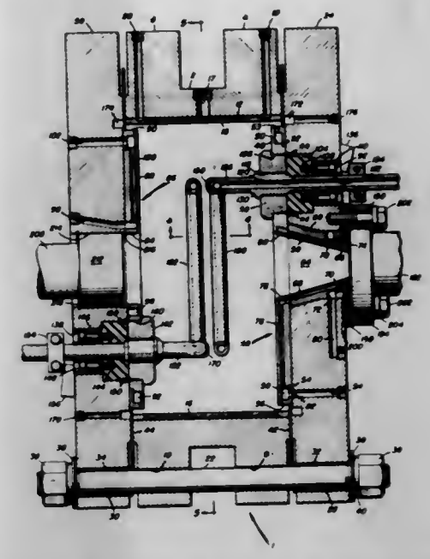
Filed Jan. 10, 1963, Ser. No. 250,722
11 Claims. (Cl. 313—231)

1. An arc plasma generator, comprising:

a pressure vessel defining a chamber therein,

a pair of identical, ring-like electrodes supported within said chamber in confronting relationship, each electrode having a discontinuity therein and the discontinuity in one electrode being displaced from the discontinuity in the other electrode,

means for supplying electric current to said electrodes, and



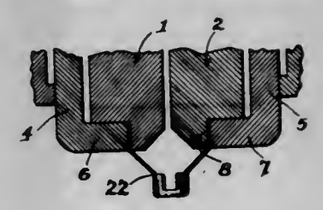
ramp means on each electrode on both sides of the discontinuity therein and disposed to project toward the confronting surface of the other electrode so as to decrease the arcing distance between said electrodes.

3,274,425

FILAMENT FOR ELECTRON GUN

David Sciaky, Chicago, Ill., assignor to Welding Research, Inc., Chicago, Ill., a corporation of Illinois

Filed July 31, 1964, Ser. No. 386,725
7 Claims. (Cl. 313—237)



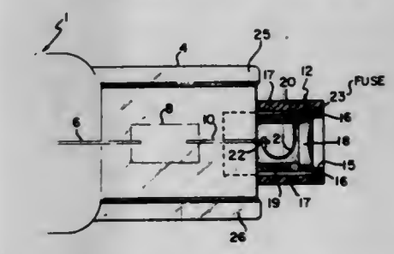
1. An electron emitting element comprising a strip of metal having a shape which provides a pair of spaced clamping portions and a central cylindrical section connecting with the clamping portions.

3,274,426

ELECTRIC LAMP WITH FUSE

Robert F. Scoledge, Danvers, and Robert P. Bonazoli, Hamilton, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 7, 1962, Ser. No. 192,724
4 Claims. (Cl. 313—318)



1. An electric lamp comprising an envelope having at least one flattened end, a lead-in conductor extending through said end, a hollow insulating end cap having an opening with a rim at one end of said cap and being

slotted at the other end to fit over said flattened end of said envelope, contact means, a fuse inside said end cap and connected between said contact means and said lead-in conductor, an insulating cylinder inside said end cap and enclosing the outside end of said lead-in conductor and at least part of said fuse, said insulating cylinder forcing said contact means against the internal rim of said cap.

3,274,427
SELF-STARTING ARC LAMP

Raymond E. Paquette, Sunnyvale, and Charles H. Keller, Los Altos, Calif., assignors to Pek Labs, Inc., Sunnyvale, Calif., a corporation of California

Filed Mar. 15, 1965, Ser. No. 439,757
The portion of the term of the patent subsequent to June 14, 1983, has been disclaimed
12 Claims. (Cl. 314—34)



1. A self-starting arc lamp comprising:

a sealed envelope having disposed therein an anode and a cathode which are spaced apart to define an arc gap therebetween;

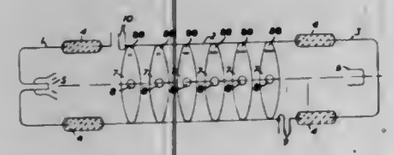
connector means coupled to said anode and to said cathode and passing through said sealed envelope for applying electrical operating power across said anode and cathode; and

a consumable, conductive bridgewire of substantially uniform cross section disposed axially across said arc gap and having opposite end portions conductively coupled to said anode and said cathode respectively, the cross sectional area of said bridgewire being selected sufficiently small to fuse upon the application of electrical operating power across said anode and cathode which corresponds to the normal operating power for sustaining an arc between said anode and said cathode.

3,274,428
TRAVELLING WAVE TUBE WITH BAND PASS SLOW WAVE STRUCTURE WHOSE FREQUENCY CHARACTERISTIC CHANGES ALONG ITS LENGTH

Neville Wreford Harris, Great Baddow, Essex, England, assignor to English Electric Valve Company Limited, London, England, a British company

Filed Apr. 1, 1963, Ser. No. 269,388
2 Claims. (Cl. 315—3.6)

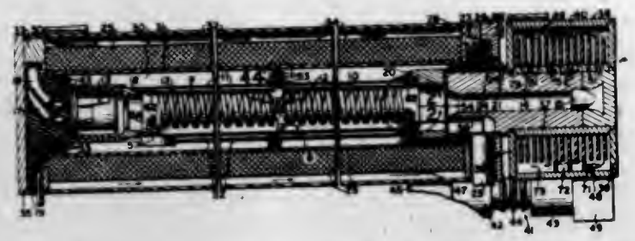


1. A backward wave travelling wave tube having an electron gun, a collector electrode positioned to receive the electrons of an electron beam projected from said gun, and intermediate between the gun and the collector electrode, a series of partition members transverse to the electron beam path and each having a main hole positioned to pass said beam, all said main holes being aligned, and a further aperture which is offset with respect to the main hole, all said further apertures being aligned with an alignment substantially parallel to the main hole alignment, the further apertures reducing in size from partition member to partition member from a maximum size in a partition member nearer the collector electrode to a minimum size in a partition member nearer the gun.

3,274,429
HIGH FREQUENCY ELECTRON DISCHARGE DEVICE WITH HEAT DISSIPATION MEANS

Stanley F. Swiadek, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Mar. 18, 1963, Ser. No. 265,633
13 Claims. (Cl. 315—3.6)



1. A high frequency electron discharge device comprising,

(a) electron gun means for generating and directing an electron beam along a predetermined path, within said device,

(b) collector means for collecting said electron beam disposed at the end of said predetermined path,

(c) first and second spaced-apart slow wave circuits positioned in axial alignment along said path between the gun and collector,

(d) a first plurality of elongated dielectric rods positioned around and extending along said first slow wave circuit for supporting said first circuit in the device, and

(e) a second plurality of elongated dielectric rods positioned around and extending along said second slow wave circuit for supporting said second circuit in the device,

(f) said first slow wave circuit fixedly attached to said first plurality of elongated dielectric rods only at one end portion of said first slow wave circuit and,

(g) said second slow wave circuit fixedly attached to said second plurality of elongated dielectric rods only at one end portion of said second slow wave circuit, the other ends of said slow wave circuits being free to move relative to the associated support rods,

(h) said first slow wave circuit being a helix which is glazed to said plurality of support rods only at the end portions of said first helix furthest removed from said electron gun means,

(i) said second slow wave circuit being a helix which is glazed to said plurality of support rods only at the end portions of said second helix furthest removed from said collector means,

(j) a main body shell surrounding said first and said second helices and said first and said second plurality of elongated dielectric rods, said main body shell forming a portion of a vacuum tight enclosure about said first and said second helix circuits and said first and said second plurality of elongated dielectric rods,

(k) magnetic beam focusing means surrounding said main body shell and spaced therefrom along the length of said shell, and

(l) a plurality of minute, generally spherical shaped heat conductive members disposed between said main body shell and said focusing means.

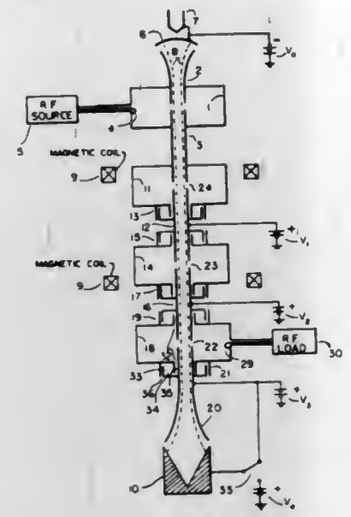
3,274,430
BIASED-GAP KLYSTRON

Ibrahim El-Hefni, North Andover, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Aug. 1, 1963, Ser. No. 299,350
7 Claims. (Cl. 315—5.41)

1. An electron beam modulation device comprising, an electron beam source for providing a beam having a defined axis, a plurality of cavities of the reentrant type, said

cavities having drift tube sections as their reentrant portions through which the beam passes, said drift tube sections of each cavity being in axial alignment and in spaced apart relation to form a gap, said gap being a part of said cavity, whereby an R.F. electric field within said cav-

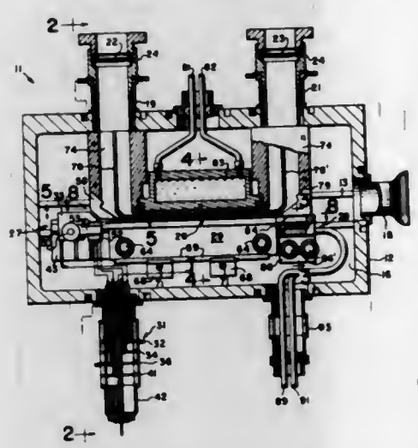


ity provides an R.F. electric potential across said gap to act on said beam, means for applying a D.C. potential across at least one of said gaps to provide a D.C. electric field across the gap acting upon the beam to increase its velocity, and a collector for termination of said beam.

3,274,431
CROSSED FIELD HIGH FREQUENCY ELECTRON DISCHARGE APPARATUS

Ronald L. Bell, Woodside, and Gordon S. Kino and Joseph K. Mann, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed July 3, 1961, Ser. No. 121,378
18 Claims. (Cl. 315—39.3)

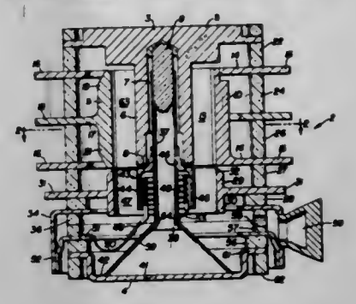


1. A high-frequency apparatus comprising an electron gun said gun being adapted and arranged to generate an electron beam, a slow-wave structure, and a collector, said slow-wave structure comprising an interdigital line including a plurality of fingers mounted on spaced parallel support walls, said fingers being interdigitated, adjacent fingers being affixed to opposite walls at the one end of said fingers and free at the other end thereof and said fingers being tapered along the length thereof, said taper being such that the cross-section of said fingers is considerably reduced at the mid-portion of the length thereof relative to cross section at the fixed end thereof, said fingers having a relatively minute change in cross section from approximately said mid-portion thereof to said free end thereof.

3,274,432
VOLTAGE-TUNABLE MAGNETRON

Dale L. Peterson, Santa Clara, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California

Filed Mar. 27, 1962, Ser. No. 182,836
11 Claims. (Cl. 315—39.63)

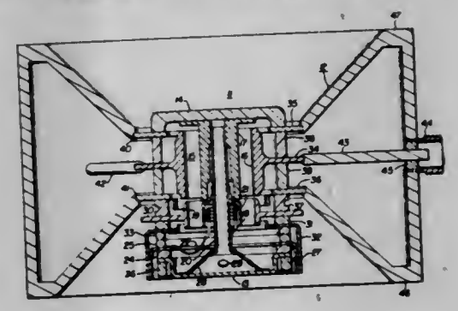


1. A voltage-tunable magnetron comprising an evacuated envelope including a composite hollow intermediate envelope portion and first and second metallic end cap structures hermetically closing opposite ends of the intermediate envelope portion, said first metallic end cap structure including a collector electrode having a dielectric post fixed thereon and an elongated hollow metallic extension surrounding the dielectric post and extending into the hollow intermediate envelope portion to constitute a cold cathode therewithin, an anode within the envelope having circumferentially spaced longitudinally extending interdigital segments radially spaced from the cold cathode to define therewith an annular interaction space, a support member fixed to the second end cap structure adjacent one of its ends and adjacent its other end engaging the dielectric post, an indirectly heated cathode axially displaced from the anode and rigidly supported on the support member in thermally and electrically insulated relation with respect to the cold cathode, heater means to energize the cathode, and a tubular control electrode arranged concentrically about the cathode.

3,274,433
MAGNETRON AND RADIO FREQUENCY CIRCUITRY THEREFOR

Dale L. Peterson, Santa Clara, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California

Continuation of application Ser. No. 280,324, May 14, 1963. This application July 22, 1965, Ser. No. 480,228
4 Claims. (Cl. 315—39.73)

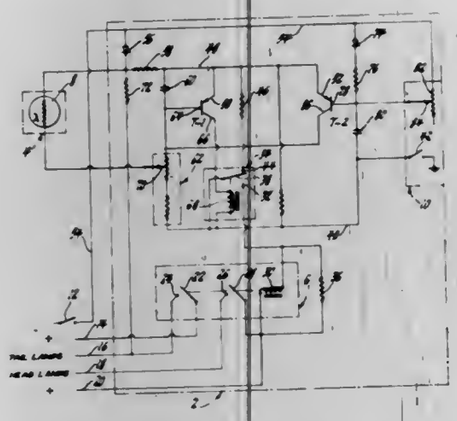


1. A radio frequency circuit for an electron discharge device, said electron discharge device having at least three radio frequency terminals one of which is electrically isolated from the other terminals of said discharge device, comprising: a resonant cavity adapted to surround said electron discharge device and being coupled to said other terminals, and at least one elongated conductive rod the size of which can influence the Q and resonant frequency of said cavity coupled to and radially extending in its elongated direction between said electrically isolated terminal and a portion of said surrounding resonant cavity.

3,274,434
TIME DELAY AND DAYLIGHT INHIBITING MEANS FOR CONTROLLING AUTOMOTIVE LIGHTING SYSTEMS

Charles W. Miller, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,164
4 Claims. (Cl. 315—82)



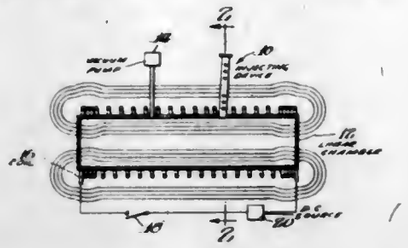
1. In a control system, a source of electrical power, a load circuit, a main relay switching means interconnecting the source of electrical power and the load to control energized periods thereof, a control circuit connected to the main relay switching means to control the same including light sensitive means, a control relay connected to said main relay switching means to control the same, a transistor having a base, emitter and collector electrodes, biasing means connected to said base and emitter electrodes and to the source of electrical power to provide proper operating voltages therefor, said light sensitive means being connected to the base electrode biasing means to vary the bias thereon with ambient light changes, said collector electrode being connected to said control relay means so that conduction of the transistor controls the energization of the control relay and in turn the main relay switching means to energize and de-energize the load circuit dependent upon changes in ambient light on the light sensitive means, a second transistor having an input and an output circuit, said output circuit being connected to the source of electrical power and to the base biasing means for the first transistor, time delay means connected to the input circuit for the second transistor and to the source of electrical power to change the bias on the input circuit when voltage is removed from the input connection to cause the second transistor to become conductive after a predetermined time and alter the base bias on the first transistor to reduce conduction therethrough and de-energize the control relay.

3,274,435
METHOD OF INJECTING AND TRAPPING PARTICLES IN A STATIC MAGNETIC CONFINING FIELD BY BUNCHING PARTICLES IN A BEAM

Donald W. Kerst, La Jolla, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 16, 1960, Ser. No. 9,046
5 Claims. (Cl. 315—111)

1. A method of injecting particles into an evacuated gas-tight chamber from a source of particles external of said chamber and trapping the particles in said chamber in a static magnetic confining field established therein, said magnetic confining field being shaped as by magnetic mirrors or toroidal magnetic coils substantially to trap the particles three-dimensionally against escape in any direction, said method comprising subjecting a beam of particles from said source to phase bundling whereby the particles are organized into discrete bunches, and injecting the bunches of particles into the chamber at an angle

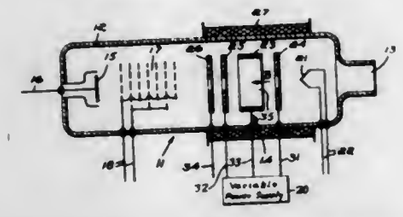


to said confining field whereby the bunches become disorganized within the chamber thereby trapping particles in the field.

3,274,436
ION SOURCE WITH SELECTIVE HOT OR COLD CATHODE

Günter Reich, Vochemer Str. 9, Cologne-Zollstock, Germany

Filed Jan. 23, 1963, Ser. No. 253,360
Claims priority, application Germany, Jan. 31, 1962, L 41,094
3 Claims. (Cl. 315—111)



1. An ion beam apparatus comprising an ion source having a hollow open ended cylindrical anode electrode, an ion beam utilizing device positioned adjacent one open end of said hollow open ended cylindrical anode electrode and including an ion collector electrode adapted to collect ions transmitted by said ion source, a thermionic cathode electrode positioned adjacent the opposite open end of said hollow open ended cylindrical anode electrode, said ion source further including a first plate electrode positioned between said ion beam utilizing device and said cylindrical anode electrode and a second plate electrode positioned between said thermionic cathode electrode and said hollow cylindrical anode electrode, said first plate electrode having an aperture adapted to transmit ions passing between said cylindrical anode electrode and said ion beam utilizing device, said second plate electrode having an aperture adapted to transmit electrons between said thermionic cathode electrode and said cylindrical anode electrode, magnetic means adapted to apply a magnetic field through said cylindrical anode electrode, and variable power supply means connected to said ion source and adapted to permit selective energization of said ion source as either an ion focusing anode for said thermionic cathode electrode or as a cold cathode ion source.

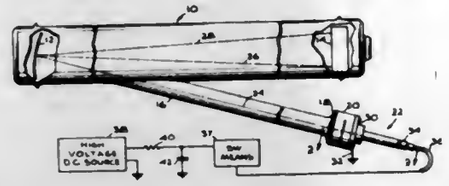
3,274,437
HIGH INTENSITY RADIANT ENERGY SOURCE

Frithjof N. Mastrup, Manhattan Beach, Calif., assignor to Thompson Ramo Wooldridge Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Nov. 20, 1963, Ser. No. 325,084
8 Claims. (Cl. 315—111)

2. In an apparatus for generating pulses of light energy:
a pair of spaced electrodes;
circuit means for applying electrical potential between said electrodes to produce short time duration arc discharges therebetween with the time between successive discharges being relatively long as compared to the time duration of a given arc discharge;

insulating means extending from one of said electrodes to the other and defining an arc discharge passageway in which said arc discharges occur;
said insulating means having passageway wall portions which include an electric arc responsive gas-evolving substance which is characterized in that the gases released therefrom, when heated by intense electrical discharge therethrough, emit radiation substantially corresponding to that of a black body

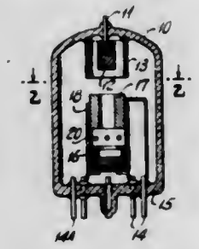


having a temperature of the order of at least 18,000 degrees Kelvin, so that during each successive arc discharge said gases are pressurized within said passageway to temporarily provide a high temperature light emitting plasma therein;
and evacuation means for exhausting the evolved gases from said passageway to provide a pressure substantially lower than atmospheric therein prior to the next successive arc discharge.

3,274,438
THYRATRON AND CIRCUIT THEREFOR

Philip Hirshfield, Passaic, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware

Filed Aug. 17, 1962, Ser. No. 217,724
5 Claims. (Cl. 315—206)



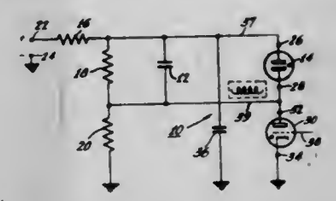
1. A thyratron and circuit therefor comprising: a gaseous discharge device including a sealed envelope containing an anode, a cathode, a firing electrode, and an auxiliary anode positioned adjacent to the cathode and exterior to the space between the anode and cathode; a charging circuit which includes a source of electric power, a diode rectifier, a storage capacitor, and a coupling circuit connected to a load; a discharge circuit including in series said storage capacitor, said coupling circuit, and the anode-cathode circuit of said discharge device; a firing circuit which includes circuit means in series with a capacitor for impressing a positive voltage pulse upon the firing electrode of the discharge device; and an auxiliary anode circuit connected between the auxiliary anode and the cathode which applies a positive potential to the auxiliary anode after the device has been made conductive.

3,274,439
CIRCUITS FOR DISCHARGING A CAPACITOR THROUGH AN ARC DISCHARGE DEVICE

Brainard E. Tompkins, Yardville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Oct. 30, 1961, Ser. No. 148,589
9 Claims. (Cl. 315—237)

1. A circuit for discharging a capacitor through a normally non-conductive discharge device having two terminals connected in circuit, said discharge device having a predetermined break-down voltage, said circuit having positive and negative terminals for receiving a unidirectional voltage therebetween, means connecting said capacitor between said positive and negative terminals to charge said capacitor from said voltage, relatively low resistance means connecting said capacitor between said terminals of said discharge device, at least one of said low resistance means having inductive reactance and being connected to one of said terminals of said discharge device, and means including a normally nonconductive switching device connected between a terminal of said

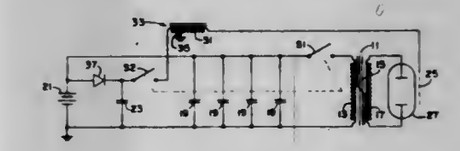


source of voltage and said one terminal of said discharge device to cause to be self-induced in said low resistance means having inductive reactance, when said switching device is rendered conductive, a triggering voltage having a waveform whose rise time is substantially zero, said one terminal of said discharge device being connected to said negative terminal through said low resistance means having inductive reactance, and said triggering voltage being sufficient to cause said discharge device to conduct when added to the voltage across said capacitor in a charged state.

3,274,440
PHOTOFLASH OPTICAL PUMPING CIRCUIT

Morton Stimler, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 22, 1963, Ser. No. 267,371
1 Claim. (Cl. 315—239)



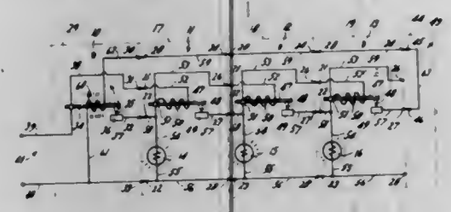
An electronic flash tube power supply circuit comprising,
a bank of parallel-connected capacitors,
a trigger capacitor,
a saturable core first transformer having a primary winding,
a secondary winding, and a saturable core,
an electrontic flash tube having an anode, a cathode and an ignition electrode,
a D.C. voltage source having one terminal thereof at ground potential,
a first switch means having an open position and a closed position,
a second switch means having an open position and a closed position; said second switch means mechanically coupled to said first switch means in a manner to close .5 millisecond after said first switch means is closed,
means serially interconnecting said first switch means and said bank of parallel-connected capacitors to the primary winding of said first transformer,
means connecting the secondary winding of said first transformer to the anode and the cathode of said electronic flash tube,
a second transformer having a single winding with a tap thereon, said tap being connected to apply a ground potential thereto,

means serially interconnecting the winding of said second transformer, said trigger capacitor and said second switch means to the ignition electrode of said electronic flash tube,

means connecting said bank of parallel connected capacitors to said D.C. voltage source, and

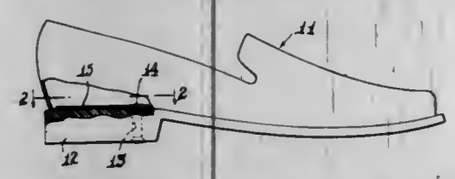
diode means connecting said trigger capacitor to said source of D.C. voltage.

3,274,441
SEQUENTIAL ELECTRICAL LIGHTING ARRANGEMENT
Fedor Benedik, 19 E. 76th St., New York, N.Y.
Filed Oct. 9, 1961, Ser. No. 143,641
6 Claims. (Cl. 315—323)



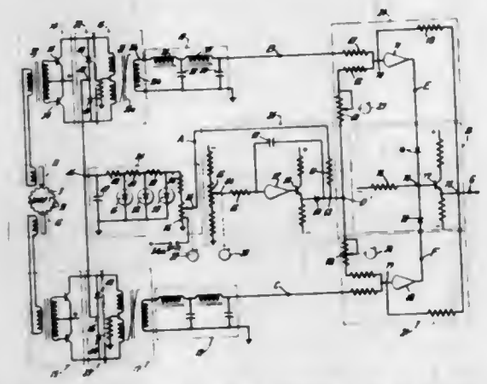
1. A sequential lighting arrangement for successively energizing a plurality of electric lamps, comprising a plurality of switches each including a pair of normally closed contacts, a heat-sensitive element coupled to one of said contacts for opening said contacts upon the application of heat thereto, and a heater element intimately associated with said heat-sensitive element, circuit means connecting all of the pairs of switch contacts in series with one terminal of a source of electrical current to provide a first bus line, means connecting each heater element across the pair of contacts of the preceding switch to place said heater element in the first bus line for energization thereof when the pair of contacts of the preceding switch are open and the bus line is completed to said preceding switch, a second bus line connected to the other terminal of said current source, and means connecting each of said lamps in parallel between the second bus line and one of the contacts of a switch in the first bus line independently of said heater elements for energization of said lamp when the bus line is completed to said connected contact.

3,274,442
CONDUCTIVE FOOTWEAR
James R. Peel, 406 N. Iowa St., Villa Park, Ill.
Filed Nov. 19, 1963, Ser. No. 324,625
1 Claim. (Cl. 317—2)



A static discharging shoe including a sole and a heel portion, a thin layer of electrically conductive material overlying the inside surface of the heel portion only, said electrically conductive material being adapted to have direct contact with the heel of the wearer, an electrically conductive element extending through the heel portion and having electrical contact at one of its ends with the electrically conductive material, said electrically conductive element having its other end exposed on the outside bottom face of said heel portion, the conductivity of said thin layer of electrically conductive material varying significantly in accordance with changes in thickness of the material of several thousandths of an inch, said thin layer of electrically conductive material having a predetermined conductivity established by the thickness of the material employed, said thickness being selected in accordance with the conductivity desired.

3,274,443
REDUNDANT SPEED CONTROL SYSTEM
Markus A. Eggenberger and Paul H. Troutman, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 5, 1963, Ser. No. 328,281
5 Claims. (Cl. 317—5)



1. A redundant speed control system for a prime mover having servo means controlling the operation thereof in response to an electrical speed error signal representing deviation from a desired speed, comprising:

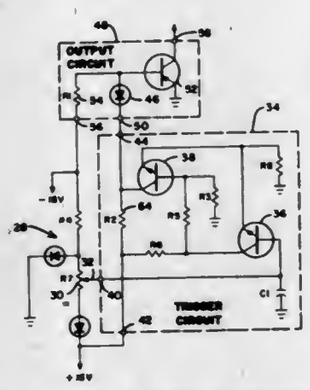
first and second means responsive to prime mover speed generating first and second electrical signals respectively proportional to actual speed,

third means generating a third selectable constant electrical signal representing a desired prime mover speed,

fourth and fifth means summing the first signal with the third signal and summing the second signal with the third signal respectively to produce two speed error signals representing the difference between actual and desired prime mover speeds, and

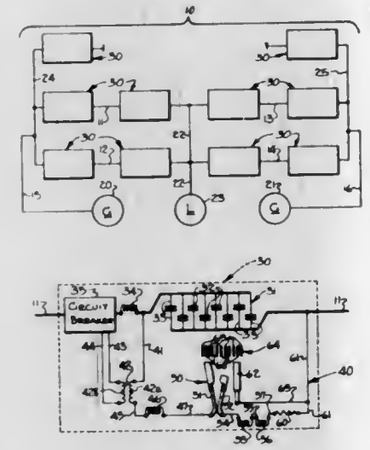
common gating means receiving both of said error signals from the fourth and fifth means and enabling only the error signal calling for the lower speed of the prime mover to actuate said servo means.

3,274,444
SIGNAL RESPONSIVE APPARATUS
Thomas K. Boudreau, New Brighton, and Albert Z. Kaszynski, St. Paul, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,632
15 Claims. (Cl. 317—9)



1. In a data processing system having a plurality of circuit means each characterized by static operation capability according to a quiescent operating point which is determined in part by the energy level of D.C. energy supplies for the circuit means, said quiescent operating point being in a reliable operation range extending between predesignated upper and lower voltage limits, said circuit means further characterized by dynamic operation in response to signal changes applied thereto, a power failure sensing circuit comprising: circuit means for constantly monitoring the levels of the D.C. energy supplies, said circuit means including voltage threshold sensing means having reference voltage isolation means, said thresholds sensing means developing a signal change when any of the respective D.C. energy supplies reaches predetermined levels approaching said limits; control circuit means for activating predetermined operation sequences; and means for applying said developed signal change to said control circuit means to effect preselected dynamic operations thereof in a period of time less than that during which the D.C. energy level reaches one of said limits from said predetermined level.

3,274,445
METHOD AND MEANS FOR INCREASING VOLTAGE CAPABILITY AND IMPROVING THE OPERATION OF AN ELECTRICAL TRANSMISSION SYSTEM
Herman B. Wolf, Charlotte, N.C., assignor to R. H. Bouligny, Inc., Charlotte, N.C., a corporation of North Carolina
Filed July 25, 1963, Ser. No. 297,560
13 Claims. (Cl. 317—12)



1. In an electrical transmission system having a plurality of transmission lines connected as a transmission network to sources of electrical energy and to loads, said transmission lines having a given basic insulation level which prevents frequent faults therein at a given normal operating voltage; the improvement comprising means for increasing the permissible normal operating voltage impressible on said transmission lines without the necessity of increasing the basic insulation level thereof and for improving the operation of the transmission system comprising

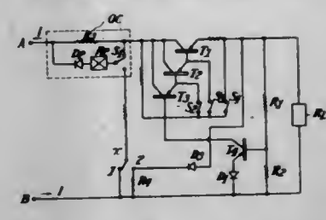
(a) a set of capacitors connected in each of said transmission lines at each end thereof, said capacitors serving to substantially offset reactance of the transmission lines and to substantially eliminate voltage dip occasioned by a fault,

(b) protective means connected in shunting relation to each of said sets of capacitors and normally being inoperative upon normal voltage and current conditions in said transmission lines, but being operable in response to a predetermined voltage rise across said capacitors due to the occurrence of a fault in the transmission line for shunting said capacitors to protect the same from damage, due to excessive voltage,

(c) current limiting means connected in said transmission lines in series with each of said sets of capacitors and having an ohmic value no greater than the ohmic value of the capacitive reactance of said set of capacitors in series therewith so that said capacitors render said current limiting means ineffective during normal operating current conditions, said current limiting means becoming effective upon the shunting of the capacitors by said protective means for limiting the current flowing in the faulted circuit to a predetermined value, and

(d) circuit breaking means connected in said transmission lines at each end thereof and in series with each of said sets of capacitors for interrupting the faulted circuit in response to fault current flowing in said transmission lines.

3,274,446
DARLINGTON CONFIGURATION TRANSISTOR CIRCUIT
Minoru Nagata, Kodaira-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Jan. 3, 1963, Ser. No. 249,275
Claims priority, application Japan, Jan. 8, 1962, 37/251, 37/252
5 Claims. (Cl. 317—33)

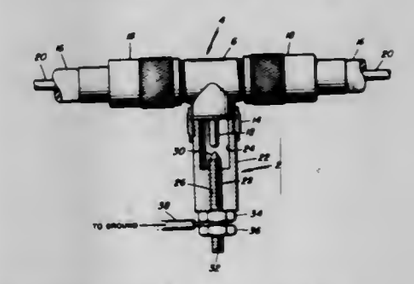


1. A Darlington configuration transistor circuit consisting of a combination of a plurality of transistors, which comprises:

a circuit construction having at least two transistors wherein the emitter of a second transistor is directly connected to the base of a first transistor and the collectors of said respective transistors are connected in common;

and switching means inserted between the base of said second transistor and the emittters of said respective transistors, whereby, when said switching means are simultaneously closed, the connection between the emitters of said respective transistors and the base of said second transistor in said circuit construction is shorted to cut-off said Darlington transistor circuit.

3,274,447
COAXIAL CABLE LIGHTNING ARRESTER
Noel R. Nelson, 12813 Camellia Drive, Takoma Park, Md.
Filed Mar. 14, 1963, Ser. No. 265,191
12 Claims. (Cl. 317—61)

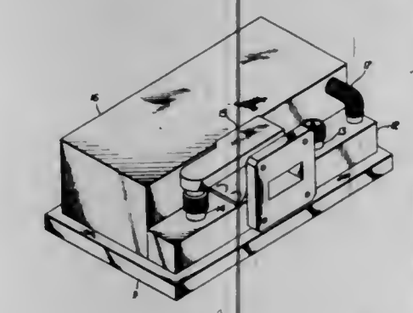


1. A lightning arrester fitting adapted for connection to one leg of a branched coaxial cable connector said leg having a center conductor extending therefrom, said arrester fitting comprising a body, means for securing said body to said connector leg, conductor means within said

body forming an air gap with said center conductor, and means on the outside of said body for connecting said conductor means with ground.

3,274,448
ELECTRON DISCHARGE DEVICE AND POWER SUPPLY ASSEMBLY

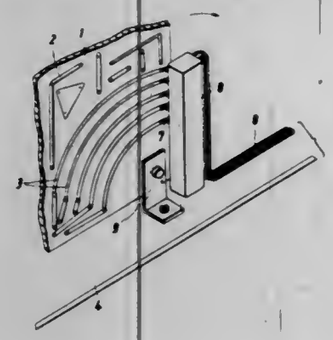
Murray I. Disman, Sunnyvale, and Charles M. Eallonardo, Cupertino, Calif., assignors, by mesne assignments, to Varian Associates, a corporation of California
Filed Mar. 9, 1964, Ser. No. 350,293
15 Claims. (Cl. 317—100)



1. An electron tube and power supply assembly comprising: a first hermetically sealed container, an electron tube having a vacuum envelope enclosed within said first container, a second hermetically sealed container, a power supply for providing operating voltages for said electron tube enclosed within said second container, a flexible tubular member having one of its ends hermetically secured to said first container adjacent an opening therein and its other end hermetically secured to said second container adjacent an opening therein thereby providing a passageway between the interior of said first and said second containers, means for applying operating potential to said electron tube coupled to said power supply and extending through said tubular member to said electron tube contained within said first container, and an inert gas enclosed within said first and second containers and said tubular member.

3,274,449
ELECTRICAL APPARATUS COMPRISING PRINTED CIRCUIT BOARDS

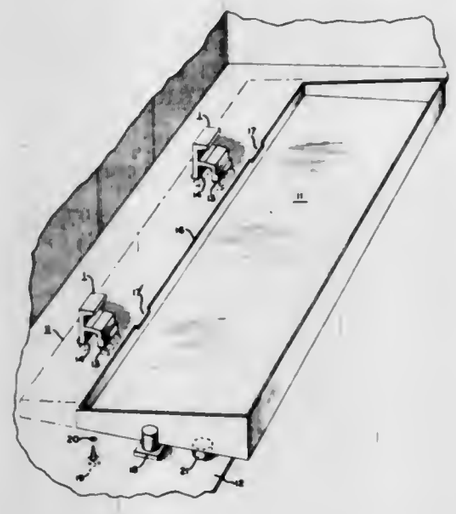
Werner Pioch, Darmstadt-Eberstadt, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed Nov. 12, 1963, Ser. No. 322,629
Claims priority, application Germany, Nov. 13, 1962, F 38,298
10 Claims. (Cl. 317—101)



1. An electrical apparatus of the character described comprising, in combination, stationary support means; a printed circuit board supported on said support means for pivotable movement about an axis; a plurality of arcuate contact means fixedly connected to said circuit board for pivotal movement therewith and arranged concentrically with said axis; a plurality of resilient contact means carried by said support means and respectively resiliently contacting said plurality of arcuate contact means; connection means electrically connecting each of said plurality of arcuate contact means to respective points of a printed circuit on said printed circuit board; and conductor means connected to each of said plurality of resilient contact means.

3,274,450
INSULATIVE SPACER FOR TELEVISION CHASSIS

Donald J. Siebold, North Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 19, 1965, Ser. No. 434,010
4 Claims. (Cl. 317—101)



1. In a television receiver having a cabinet structure and an internally located chassis, apparatus mounting said chassis in electrically insulated spaced relationship to said cabinet comprising;

(a) a plurality of insulative spacing members, each member including,

(1) a first leg portion having a top and bottom thereof, said bottom of said first leg portion being pivotally received by a first aperture in said cabinet,

(2) a second leg portion having a top and bottom thereof, said bottom of said second leg portion being received by a second aperture in said cabinet in locking engagement therewith,

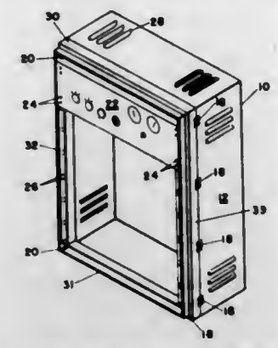
(3) a first integral transverse portion joining said top of said first leg portion to an intermediate point of said second leg portion, and

(4) a second integral transverse portion extending from the top of said second leg portion and overlying said first transverse portion in spaced relationship therewith to define a channel receiving the edge of said chassis.

3,274,451
ELECTRONIC EQUIPMENT CABINET

Max Laity, 2032 37th St., Rock Island, Ill.
Filed Feb. 13, 1964, Ser. No. 344,700
8 Claims. (317—122)

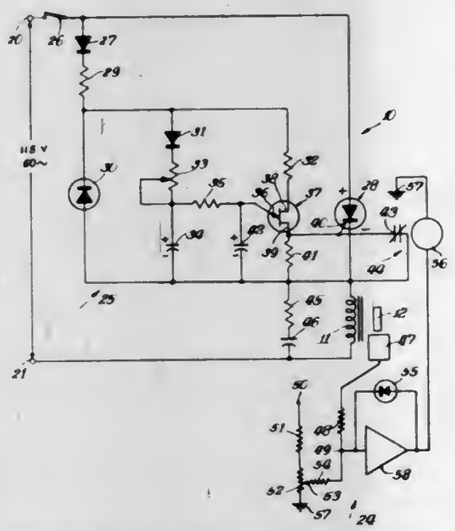
1. A cabinet comprising a vertical frame substantially rectangular in shape formed by a plurality of members joined at their ends, said frame members having a channel shaped cross section, the open side of each member facing the same direction and being covered with one or more plates, forming a rectangular conduit, said frame also forming part of the cabinet exterior, and a cabinet cover



open on one side, the outer perimeter of said open side conforming to and being attached to the outer perimeter of said frame.

3,274,452
DEGAUSSER

Lewis G. Landes, Wilmette, Ill., assignor to Barnes & Reinecke, Incorporated, a corporation of Delaware
Filed Mar. 12, 1963, Ser. No. 264,596
11 Claims. (Cl. 317—157.5)



5. Apparatus for controlledly degaussing a magnetic element, comprising: a degausser coil; and means for providing in said degausser coil a current of seriatim increasing-maximum-amplitude, damped sine wave pulses with a finite time interval between said pulses.

3,274,453
SEMICONDUCTOR INTEGRATED STRUCTURES AND METHODS FOR THE FABRICATION THEREOF

Thomas V. Sikina, Willow Grove, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Feb. 20, 1961, Ser. No. 90,580
5 Claims. (Cl. 317—234)

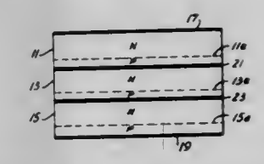


1. A microminiaturized semiconductor counter circuit assembly comprising a wafer of high-resistivity gallium arsenide having a thin, strongly P-type surface layer, a plurality of pairs of alloyed metal connections to said surface layer, each of said pairs comprising one ohmic

and one rectifying connection associated to form a tunnel diode, an adherent, electrically insulating surround of solidified material extending over said surface layer and between said connections, the surface of said surround and the external surfaces of said connections forming a common planar surface, and a plurality of deposited metallic interconnections adhering to said planar surface, each of said interconnections extending between said rectifying connection of one of said pairs and said ohmic connection of another of said pairs.

3,274,454
SEMICONDUCTOR MULTI-STACK FOR REGULATING CHARGING OF CURRENT PRODUCING CELLS

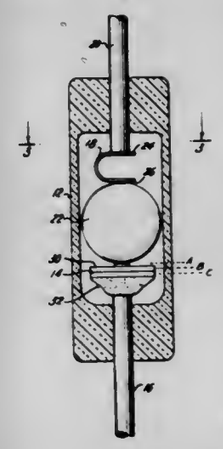
Rolf R. Haberecht, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Sept. 21, 1961, Ser. No. 139,704
6 Claims. (Cl. 317—234)



1. A composite stacked semiconductor device having a gating characteristic occurring at a distinct voltage level comprising: a plurality of individual semiconductor rectifier wafers respectively having an N zone and a P zone therein forming a PN junction, the transverse end surface of each of said zones being substantially planar, said wafers stacked together in series; and a layer of conductive metal of the order of 0.1 mil in thickness integrally bonded to and separating a P zone of one wafer from an N zone of another wafer.

3,274,455
CONTACT FOR SOLID STATE DIODE

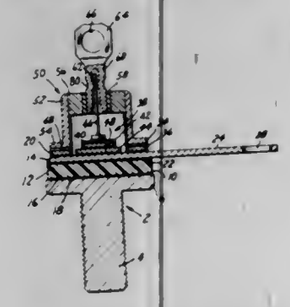
Stanley Pessok, West Orange, N.J., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed July 27, 1962, Ser. No. 212,933
3 Claims. (Cl. 317—234)



1. A silicon junction diode comprising a cylindrical glass envelope, a semiconductor junction and lead sealed in one end of the cylinder, a contact spring and lead sealed in the other end of the cylinder, and a metal sphere formed of a metal of no greater weight than a metal selected from the group consisting of aluminum, nickel, silver or lead-silver alloy disposed directly between the spring and the surface of the junction, said sphere having a diameter closely approaching the inside

diameter of the cylinder, there being no metal band to the ball, and said junction being a silicon junction of the mesa type with a centrally located mesa.

3,274,456
RECTIFIER ASSEMBLY AND METHOD OF MAKING SAME
Marvin S. Pittler and Johnway Chu, Teaneck, N.J., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Nov. 21, 1962, Ser. No. 239,255
7 Claims. (Cl. 317—234)

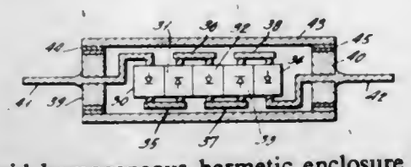


1. A rectifier assembly comprising an insulating body, a conductive body on and solder-secured to said insulating body, having at least a portion inside the periphery of said insulating body, and having a terminal part extending from said portion to a point laterally beyond said insulating body, a rectifying unit solder-secured to said portion of said conductive body and in electrically conductive relation therewith, said rectifying unit being located inside the periphery of said insulating body, a metal ring surrounding and radially spaced from said rectifying unit, said ring being mounted on and solder-secured to said conductive body and having a portion inside the periphery of said insulating body, and a cap covering said rectifying unit and having a peripheral part resting on and weld-secured to said portion of said ring.

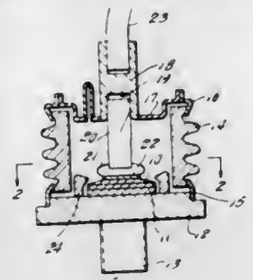
7. The method of assembling a rectifying assembly which comprises positioning a conductive body on an insulating body so that at least a portion of said conductive body is inside the periphery of said insulating body and soldering said conductive body to said insulating body in that position, said conductive body having a plurality of terminal parts extending therefrom laterally beyond said insulating body, soldering a metal ring to said conductive body, said ring having a portion substantially inside the periphery of said insulating body, soldering a rectifier unit to and in electrically conductive relation with said portion of said conductive body and inside and radially spaced from said ring, placing a cap over said rectifier unit with a peripheral flange part of said cap resting on said portion of said ring, making electrical connection to said peripheral cap portion, making electrical connection to said ring via said plurality of terminal parts, and welding said peripheral cap part to said ring portion by electricity supplied through said electrical connections while physically supporting said peripheral cap part and said ring portion by said insulating body.

3,274,457
SEMICONDUCTOR ENCAPSULATED AND SEALED WITHIN HOUSING
Joe Wislocky, El Segundo, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Feb. 26, 1963, Ser. No. 261,109
4 Claims. (Cl. 317—234)

1. In combination; a semiconductor wafer, a homogeneous hermetic enclosure for said semiconductor wafer having leads from said wafer extending therethrough, and a second hermetic enclosure enclosing said homogeneous enclosure and having leads extending therefrom which are at least electrically continuous with said leads of said wafer; said homogeneous hermetic enclosure being cylindrical; said second hermetic enclosure comprising a cylindrical wall portion having a front-end portion and rear-end portion at the respective ends thereof; the interior of said second hermetic enclosure being spaced from the exterior of said homogeneous hermetic enclosure to define a volume between the interior surface of said second hermetic enclosure and the exterior of said homogeneous hermetic enclosure; said cylindrical wall portion and its said front and rear-end portions defining a gas tight seal between the exterior of said second hermetic enclosure and said volume interior of said second hermetic enclosure.



3,274,458
EXTREMELY HIGH VOLTAGE SILICON DEVICE
John L. Boyer and Frank W. Parrish, El Segundo, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Apr. 2, 1964, Ser. No. 356,716
13 Claims. (Cl. 317—234)

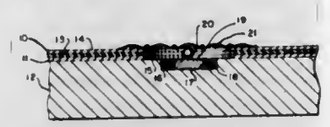


1. A high voltage semiconductor device comprising a wafer of semiconductor material having at least one junction therein, a conductive support base for said wafer and being connected to one surface portion of said wafer, an insulation cylinder having one end thereof mechanically connected to said conductive support base, and an upper terminal structure electrically connected to a surface portion of said wafer opposite to said one surface portion and mechanically connected to the opposite end of said insulation cylinder; said mechanical connection between said one end and said opposite end of said insulation cylinder to said conductive support base and said upper terminal structure defining a hermetically sealed housing for said wafer; and a corona shield; said corona shield comprising a conductive ring surrounding the upper periphery of said wafer and being connected to said conductive base, said conductive ring being radially interposed between said upper periphery of said wafer and said insulation cylinder.

3,274,459
LOW IMPEDANCE COUPLED TRANSMISSION LINE AND SOLID STATE TUNNEL DIODE STRUCTURE
Fred Sterzer, Princeton, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed May 7, 1964, Ser. No. 365,847
5 Claims. (Cl. 317—234)

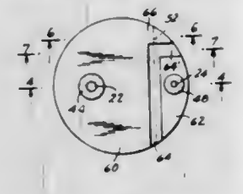
1. A voltage controlled negative resistance solid state diode assembly comprising an electrically conductive base plate having thickness sufficient to impart rigidity to the assembly and having at least one flat surface, a stripline

transmission line composed of two thin layers of conducting material separated by a thin dielectric layer, one layer being a ground plane conductor and the other a conductor strip, said ground plane conductor being electrically surface united to the flat surface of said base plate, a chamber formed in said base plate opening toward said stripline, a semiconductor crystal having a high concentration of free charge carriers and secured in said chamber with a nonrectifying low impedance union said crystal having its top surface substantially in the plane



of the flat surface of said base plate, a second chamber above and communicating with the first chamber and formed by cutting an aperture through said stripline, a small pellet of conductive material no longer than the thickness of said stripline in said second chamber engaging said crystal, a tunnel diode junction at the contact point between the crystal and pellet composed of an alloy of the materials of said contact point and a bridging conductor covering said second chamber and having an ohmic connection with said pellet and the conductor strip of said stripline.

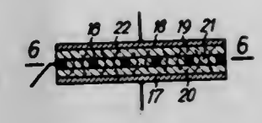
3,274,460
CONTROLLED RECTIFIER COMPRISING A RESISTIVE PLATING INTERCONNECTING ADJACENT N AND P LAYERS
Stanley Pessok, West Orange, N.J., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed July 27, 1962, Ser. No. 212,974
5 Claims. (Cl. 317—235)



1. A controlled power rectifier comprising a silicon semiconductor having P, N and P layers, an anode terminal on one side, a cathode terminal lead and a gate terminal lead on the other side, a diffused N layer on the cathode side covering a substantial portion less than all of the P layer surface, metal plating for soldering of the cathode terminal lead on the N surface portion, metal plating for soldering of the gate lead on the P surface portion, there being a gap in the metal plating between the said N and P surface portions, the plating at one point of limited area being carried over the said gap from one portion to the other providing a resistive connection between the two portions.

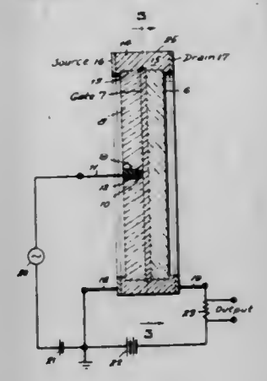
3,274,461
HIGH FREQUENCY AND POWER FIELD EFFECT TRANSISTOR WITH MESH-LIKE GATE STRUCTURE
Stanislas Teszner, 49 Rue de la Tour, Paris, France
Filed Dec. 11, 1962, Ser. No. 243,793
Claims priority, application France, Dec. 16, 1961, 822,222
13 Claims. (Cl. 317—235)

1. A field-effect translating device comprising a semiconductor plate having two parallel great faces including a first zone of a given conductivity type contiguous with the first face thereof, a second zone having first portions of the type of conductivity opposite to said given conductivity type formed by a first impurity of said opposite type of conductivity and large diffusion coefficient diffused from said second face and unaltered second portions of said given type of conductivity, said first and second portions respectively forming mesh-like channels and a wire-like gate, a third zone generally of said given type of conductivity having first portions adjacent said wire-like gate, heavily doped in said given type and formed by a second impurity of said given type of conductivity and



small diffusion coefficient diffused from said second face and second portions slightly doped in said given type and formed both by the said first impurity of said opposite type of conductivity and large diffusion coefficient and the said second impurity of said given type of conductivity and small diffusion coefficient diffused from said second face, source and drain connections respectively to said first and third zones and a gate connection to said wire-like gate.

3,274,462
STRUCTURAL CONFIGURATION FOR FIELD-EFFECT AND JUNCTION TRANSISTORS
Keats A. Pullen, Jr., Rte. 1, Box 381, Kingsville, Md.
Filed Nov. 13, 1963, Ser. No. 323,511
2 Claims. (Cl. 317—235)



1. A field-effect transistor comprising, in combination, a basic assembly consisting of a body of intrinsic semiconductor having two parallel major surfaces and a peripheral surface, a layer of one type of polar impurity formed in said body on one of said major surfaces and extending to said peripheral surface and forming a part thereof, a layer of single crystal semiconductor formed on the said layer of one type of polar impurity and also constituting a part of said peripheral surface, a channel in the form of an open annulus consisting of opposite type polar impurity formed in said basic assembly adjacent said peripheral surface, said channel extending along its longitudinal axis through the basic assembly in perpendicular relationship to said layer of one type polar impurity whereby said layer of one type polar impurity is divided providing a first gate extending inwardly of said peripheral surface to one side of said channel and a second gate in contact with the side of said channel opposite to said one side, said channel having a distribution of conductivity of maximum adjacent said first and second gates and diminishing in a direction toward the center of said channel from each of said gates, a source comprising an ohmic contact formed to one annular end of said channel, a drain comprising an ohmic contact formed to the opposite annular end of said channel, said gate positioned in the basic assembly immediately adjacent to said source.

3,274,463
SYMMETRICALLY SWITCHING INTEGRATED SEMICONDUCTOR DEVICES

Jearld L. Hutson, Richardson, Tex., assignor to Electronic Control Corporation, Dallas, Tex., a corporation of Texas

Filed Feb. 11, 1964, Ser. No. 343,987
29 Claims. (Cl. 317—235)

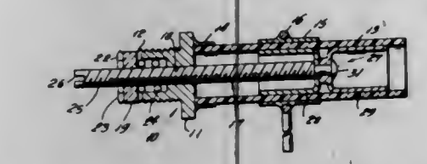


1. A duojunction transistor comprising a semiconductor body of one-type conductivity having a region of opposite-type conductivity at each end thereof forming a PN junction therewith, a contact for each region shunting such region to the body along the PN junction, an area of opposite-type conductivity adjacent to each region penetrating a portion of said body between its end and forming PN junctions therewith, each area being within a diffusion length for minority carriers in said body from the region of its adjacency and beyond such diffusion length from each other, and electrical contacts to each said area.

3,274,464
TEMPERATURE COMPENSATING TRIMMER CAPACITOR

Hugo Selden, Brooklyn, N.Y., assignor to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of New York

Filed Nov. 3, 1964, Ser. No. 408,483
5 Claims. (Cl. 317—248



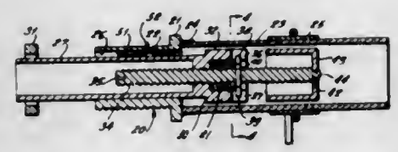
1. A trimmer capacitor comprising a bushing having an opening therein, a hollow dielectric cylinder secured to said bushing, an adjustment screw means connected to said bushing and extending through said opening in said bushing and into said hollow dielectric cylinder, an electrode band surrounding said dielectric cylinder, and a piston assembly connected to the end of said adjustment screw and movable within said dielectric cylinder; said piston assembly comprising a first and second coaxial piston; each of said first and second pistons comprising thin walled cylinders having a closed end portion; said closed end portions of each of said pistons being adjacent to one another; said adjustment screw extending into said first piston and being connected to central portions of closed end portions of each of said first and second pistons; said first piston being of a material having a first temperature coefficient of expansion; said second piston being of a material having a second and different temperature coefficient of expansion than said material of said first piston.

3,274,465
TWO-POSITION TRIMMER CAPACITOR

Ralph Spielman, Brooklyn, N.Y., and David Taub, Paris, France, assignors to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of New York

Filed May 25, 1965, Ser. No. 458,690
5 Claims. (Cl. 317—249)

1. A two-position trimmer capacitor; said two-position trimmer capacitor comprising a support bushing having an opening therethrough, a dielectric cylinder connected to said support bushing and extending coaxially therewith, an electrode band secured to said dielectric cylinder, a conductive piston coaxially positioned in said dielectric cylinder and axially movable within said dielectric cylinder, an elongated support shaft extending through said opening in said support bushing and connected to said piston at one end thereof, and support means connected between said elongated support shaft and the interior of said opening in said support bushing; said support means including an axially extending square portion defining an axially slidable connection between said support bushing and said elongated support shaft; said support means including a threaded portion defining a rotatable threaded connection between said support bushing and said elongated support shaft; first and second stop means for limiting the axial sliding movement of

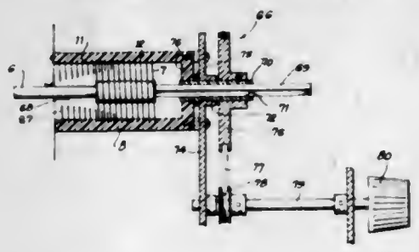


said elongated support shaft between respective first and second spaced positions with respect to said support bushing, said first stop means comprising a nut movable into engagement with said support bushing and threadably adjustable with respect to said elongated adjustment screw, said second stop means being movable into engagement with said support means and being operatively connected to said elongated support shaft; said opening in said support bushing comprising a shaft having a square tubular portion extending through said rectangular opening in said support bushing; said elongated support shaft being a threaded circular shaft; said support means including an internally threaded portion for threadably receiving said elongated support shaft.

3,274,466
VARIABLE CAPACITOR

William B. Kincaid, Nashville, Tenn., assignor to Aladdin Industries, Incorporated, Chicago, Ill., a corporation of Illinois

Filed Oct. 4, 1963, Ser. No. 314,031
1 Claim. (Cl. 317—252)

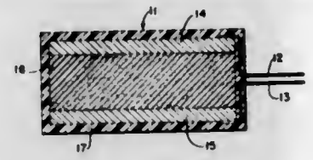


In a variable capacitor, the combination comprising a supporting cylinder made of insulating material and having an axial bore therein, said cylinder being formed with double internal screw threads extending along the inside of said bore, said double threads providing first and second parallel internal helical grooves along said bore, a conductive helical radial stator plate having its outer edge received and supported in said first helical groove, said stator plate having an axial opening therein, a rotor having an axial shaft extending through said opening, a conductive radial helical rotor plate secured to said shaft and having its outer edge received in said second helical groove, said shaft and said rotor plate being rotatable to move said rotor plate along said second helical groove to vary the extent to which said rotor plate meshes with said stator plate, said shaft and said rotor plate being spaced from said stator plate, a drive member having a non-circular opening therein, said shaft having a correspondingly non-circular drive portion slidably received within said non-circular opening, and means supporting said drive member for rotation while restraining axial movement thereof, said stator plate being tapered in radial width along the length thereof.

3,274,467
CERAMIC CAPACITOR

Ernest G. Graf, North Tonawanda, N.Y., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed May 17, 1963, Ser. No. 281,301
12 Claims. (Cl. 317—258)

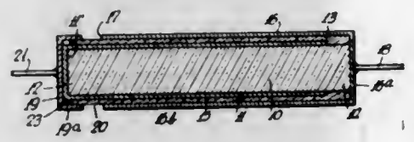


1. A ceramic capacitor having a capacity of at least about 10,000 pfd./cm.² and a suitably low dissipation factor comprising a semi-conductive, sintered ceramic body formed from a mixture of titania and a pentavalent modifying oxide selected from the group consisting of Nb_2O_5 and Sb_2O_5, and a pair of spaced metallic electrodes attached to said body, at least one of said electrodes having a non-ohmic contact with said body.

3,274,468
ELECTRIC CAPACITOR AND METHOD FOR PRODUCING THE SAME

Antonio Ruiz Rodriguez and Robert Emanuel Stapleton, Franklinville, N.Y., assignors to Aerovox Corporation, a corporation of Massachusetts

Filed Oct. 7, 1954, Ser. No. 460,797
15 Claims. (Cl. 317—258)



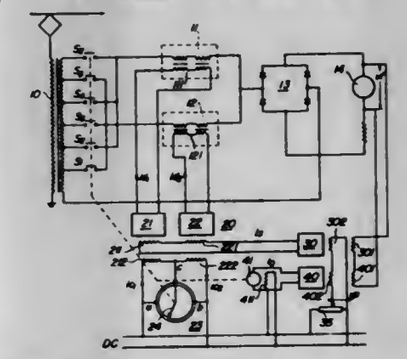
1. A monolithic ceramic capacitor consisting of a ceramic core having an inner electrode of metal sufficiently refractory to withstand the firing temperature of the ceramic, exposing one end of and substantially completely covering and bonded to substantially the entire remaining surface area including the other end of the core, a ceramic dielectric film substantially covering and directly bonded to substantially the entire outer surface of said inner electrode other than the portion thereof covering said other end of the core and an outer electrode covering said ceramic dielectric film and bonded to substantially the entire area thereof, said capacitor having an insulating coating with terminals accessible therethrough and connected respectively to said inner and outer electrodes, said ceramic and inner electrodes being substantially inert with respect to each other.

9. The method of preparing a ceramic capacitor which comprises applying to the surface of a core of green ceramic, a suspension of metal over substantially the entire surface of the core other than one end portion thereof, drying the suspension, coating the metal coated core with a slip of ceramic dielectric composition corresponding to that of the core, drying the slip coating, firing the unit to the maturing temperature of the dielectric coating, applying a metal electrode over the common end of the core and slip and over nearly the entire length of the outer surface of the slip, leaving exposed the end portion of the slip at the extremity of the core opposed to that beyond the extremity of the inner electrode, drying and firing the unit, and effecting terminal connections respectively at the extremity of the outer electrode and at the extremity of the inner electrode at opposed ends of the core.

3,274,469
TRANSFORMER FED NON-ARCING MOTOR ACCELERATION CONTROL FOR AN ELECTRIC CAR INCLUDING ANTI-SLIP CIRCUITRY

Takashi Tsuboi, Fumio Masutomi, and Yoshimitsu Onoda, Katsuta-shi, Ibaragi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed May 6, 1963, Ser. No. 278,251
Claims priority, application Japan, May 11, 1962, 37/18,594
15 Claims. (Cl. 318—52)

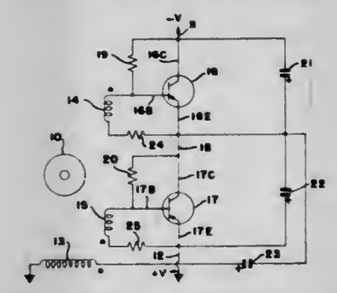


1. An electric car controlling apparatus for switching the supply voltage of the motor and preventing damage due to slippage thereof, comprising a main transformer supplied from an alternating-current trolley and having a plurality of voltage taps in the output, a direct-current traction motor, connecting means operatively connecting a selected one of said taps with said traction motor including rectifier means operable to rectify the A.C. current from said transformer into D.C. current and at least one pair of supply voltage regulating means operatively interposed between said transformer and said rectifier means, switching control means operable to change said voltage taps under substantially non-arcing condition while controlling said supply voltage regulating means, means operatively connected with said motor for producing a voltage proportional to the speed thereof, and a slip-preventing circuit means operable to sense said voltage proportional to the speed of the motor and operatively connected with said supply voltage regulating means to raise the impedance of all of said supply voltage regulating means in accordance with the sensed output.

3,274,470
BRUSHLESS MOTOR MEANS

Bernard J. Gershen, Edison, N.J., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

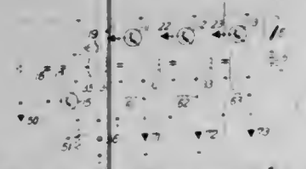
Filed Dec. 5, 1963, Ser. No. 328,273
2 Claims. (Cl. 318—138)



1. Energizing arrangement from a direct current supply line source for D.-C. to D.-C. convertor as well as D.-C. to A.-C. inverter means, comprising, electromagnetic core means shared by four winding portions includ-

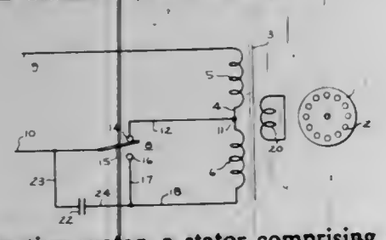
ing a main winding portion, a pair of feedback winding portions and an additional output winding portion all fixed in location, a pair of semi-conductor means each having base, collector and emitter portions thereof, each feedback winding portion having connection between base and emitter portions of respective semi-conductor means, an emitter portion of one semi-conductor means being connected to a collector of the other semi-conductor means in a common juncture also shared by capacitance means at least in series with said main winding portion which is connected to a connection of one side of supply line and emitter portion of one of said semi-conductor means which a remaining side of supply line source is connected to collector portion of said other semi-conductor means, and a pair of rectifier means connected to opposite ends of said additional winding portion also having a tap connection thereto for direct current output therefrom and having alternating current output directly from opposite ends of said additional winding portion.

3,274,471
DIRECT CURRENT MOTOR WITH TRANSISTORIZED POWER SUPPLY
Helmut Moczala, Berlin-Grunewald, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Sept. 1, 1964, Ser. No. 393,572
Claims priority, application Germany, Sept. 6, 1963, L 45,797
8 Claims. (Cl. 318—138)



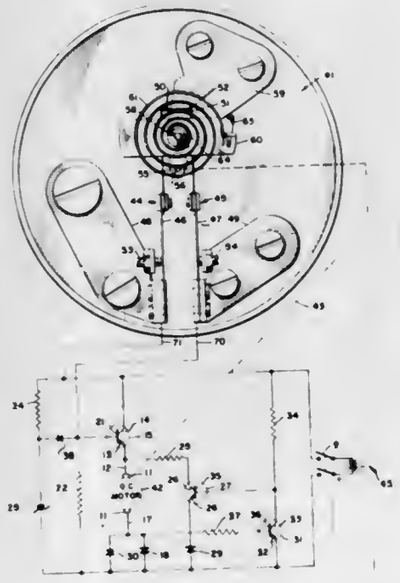
5. In a D.C. motor having a stator and a rotor, armature windings, a power supply, armature transistors connecting the power supply to the armature windings, a control circuit connected to the armature transistors for controlling the same in dependence upon the relative angular position between the stator and rotor, the control circuit including an oscillatory circuit incorporating a control transistor, and speed regulating means connected to the control circuit for applying thereto a tachometer potential, dependent on the rotational speed of the motor, which renders the control circuit ineffective at a given predetermined rotational speed, the improvement that said tachometer potential is derived from said armature windings while the same are blocked from said power supply by said armature transistors.

3,274,472
TWO SPEED INDUCTION MOTOR
John P. Slattery, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 3, 1963, Ser. No. 313,652
2 Claims. (Cl. 318—200)



1. In an induction motor, a stator comprising a single phase winding consisting of first and second series-connected coil sections mutually coupled to each other, a capacitor, switch means movable to either of two operative positions for connecting said first section to a source alternating current power and for connecting said capacitor across said second section in one position and to series connect both of said sections to said source of power and short said capacitor in said second position whereby said motor starts and runs at a high speed with power factor correction when said switch is in its first position and at a low speed when said switch is in its second position.

3,274,473
STARTING AND DAMPING CIRCUITRY FOR A TRANSISTORIZED GOVERNING SYSTEM
Bruce H. Kamens, Thomaston, Conn., assignor to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware
Filed Aug. 13, 1963, Ser. No. 301,735
10 Claims. (Cl. 318—311)

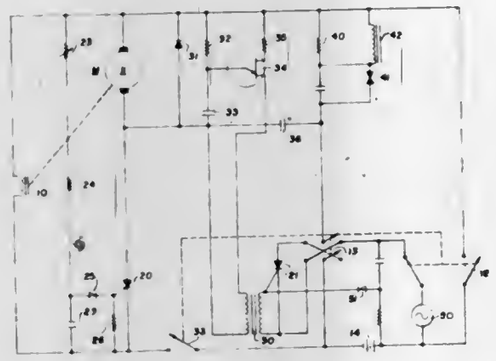


1. A failsafe starting system for a D.C. motor having a pair of chronometrically controlled governor contacts for controlling the energization of the motor to maintain its speed at a predetermined value, comprising
(a) a D.C. source in series with said motor,
(b) governing means controllable by said chronometrically controlled contacts for varying the current supplied to said motor,
(c) an auxiliary starting voltage means insuring a voltage to be supplied across the armature of the D.C. motor when said contacts are open,
(d) said auxiliary voltage means having less effective E.M.F. than the back E.M.F. generated by said motor at said predetermined speed,
(e) said auxiliary voltage therefore having effect during the starting of said motor when said contacts are open, but having no effect on the operation of said motor in the range of said predetermined value.

3,274,474
CONTROLLED RECTIFIER SUPPLY FOR MOTOR SPEED SYSTEM
Ronald C. Dow, Garland, Tex., assignor to Power Engineering, Inc., Richardson, Tex., a corporation of Texas
Filed Sept. 3, 1963, Ser. No. 305,956
4 Claims. (Cl. 318—332)

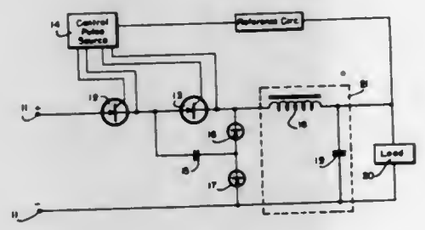
4. A polyspeed variable motor drive from a unidirectional current source which comprises:
(a) a first circuit including a field winding connected across said source,
(b) a second circuit including a controlled rectifier in series with the armature of said motor connected across said source,

(c) a third circuit connected across said source and to said first controlled rectifier and including timing means to render said rectifier conductive at time intervals dependent upon the setting of said timing means,
(d) a fourth circuit connected across said source including a second controlled rectifier poled the same as said first controlled rectifier and connected in series with a pair of normally closed relay contacts and a resistor,
(e) a condenser connected at one terminal to the juncture between the first controlled rectifier and said armature and at the other terminal to the juncture between the second controlled rectifier and said normally closed contacts,



(f) a timing circuit connected across said armature and responsive to current flow through said armature for firing said second controlled rectifier a predetermined time interval after each initiation of current flow through said armature, and
(g) energizing means for said normally closed contacts responsive to current flow through said second controlled rectifier of a predetermined condition for opening said normally closed contacts to terminate control of current flow through said second controlled rectifier.

3,274,475
CONVERTER CIRCUIT
Eliasz Poss, Easthaven, Conn., assignor to Electronic Energy Conversion Corporation, New York, N.Y.
Filed Feb. 5, 1963, Ser. No. 256,281
5 Claims. (Cl. 320—1)



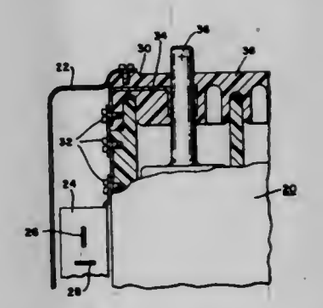
1. An electrical converter circuit for supplying controllable direct current from an uncontrolled source of electrical energy, said circuit comprising a capacitor, means for charging said capacitor in a first direction, means for passing said charging current through a load in said first direction, means for selectively discharging said capacitor in a second direction, means for passing said discharging current through a load in said first direction, and means for selectively determining the times during which said capacitor is charged and discharged.

3,274,476
ARTICLE CARRYING BELT
Paul Wildum, 450 West End Ave., New York, N.Y.
Filed Oct. 30, 1963, Ser. No. 320,065
10 Claims. (Cl. 320—2)



1. An article carrying belt comprising an elongated flat belt member having means at the opposite ends thereof for detachably interconnecting the opposite ends of said belt member, means on said belt member forming a plurality of laterally adjacent article holding compartments disposed longitudinally of said belt member between the interconnecting means at the opposite ends thereof, said compartment forming means comprising an elongated molded plastic web, said molded web including a longitudinally extending medial portion formed to provide a plurality of laterally adjacent, individual walled compartments closed at the top, bottom and on one side thereof, the other side thereof being open, and a pair of longitudinally extending marginal portions integral with and extending from opposite sides of said medial portion, each of said marginal portions being folded about the respective side edges of said belt member to locate said medial portion in opposed relation to one side of said belt member, said one side of the belt member closing the open side of each of the walled compartments of said web, means for mounting said molded web on said belt member, the folded marginal portions thereof being disposed in opposed relation to the other side of said belt member, and means for detachably interconnecting the opposed edge portions of the marginal portions of said plastic web whereby one of said marginal portions may be rolled back over one side edge of said belt member to expose the individual compartments for removal of articles therefrom or insertion of articles therein.

3,274,477
STORAGE BATTERY
Donald L. Boyes, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 31, 1963, Ser. No. 299,041
5 Claims. (Cl. 320—35)



1. The combination comprising a storage battery including a case and positive and negative battery terminals, a voltage regulator mounted in direct and intimate heat exchange contact with said storage battery and including a circuit controlling element, internal elec-

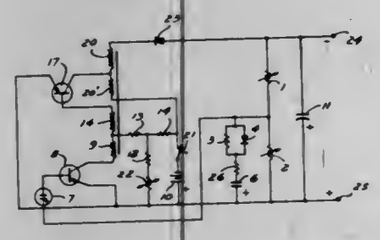
trical connecting means molded directly into said case for connecting one terminal of said storage battery to said voltage regulator, said circuit controlling element being sensitive to changes in temperature of said battery whereby said voltage regulator controls the charging rate to said battery from a charging device remote therefrom to maintain the charging rate at the optimum value with respect to the temperature for charging said battery.

3,274,478

DIRECT CURRENT CONVERTER ARRANGEMENT

Siegfried Hollmann and Heinz Engelstätter, Frankfurt am Main, and Karl Buresch, Offenbach-Bieber, Germany, assignors to Braun Aktiengesellschaft, Frankfurt am Main, Germany

Filed May 7, 1962, Ser. No. 192,848
Claims priority, application Germany, May 6, 1961, B 62,412
8 Claims. (Cl. 321—18)



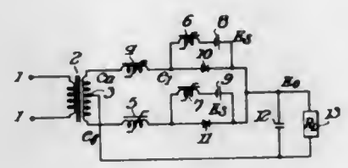
1. A direct current converter arrangement for deriving a comparatively high direct voltage output from a source of comparatively lower direct voltage, comprising, in combination, a source of direct voltage of predetermined magnitude; transistor oscillator means including a step-up transformer having a primary winding in circuit with said source, a feedback winding, and a secondary winding, and a main transistor having three electrodes, of which one is connected to said primary winding and a second one is connected to one end of said feedback winding, and a control transistor means having a control electrode and two operative electrodes, the latter being connected between the third electrode of said main transistor and the other end of said feedback winding; a storage capacitor means and a first diode means so connected in series with each other between one terminal of said secondary winding and one terminal of said source that said storage capacitor is chargeable thereby to a desired output voltage, the terminals of said storage capacitor means constituting the direct voltage output terminals of the converter arrangement; voltage divider means connected in parallel with said storage capacitor means and having an intermediate tapping point; glow lamp means ignitable when said storage capacitor means is charged to said desired output voltage, one electrode of said glow lamp means being connected to said tapping point of said voltage divider means, the other electrodes of said glow lamp means being connected to said control electrode of said control transistor means so that said control transistor means causes the oscillation of said oscillator means to stop when said glow lamp means is ignited and to start when said glow lamp means is extinguished; and a series-combination of a second diode means and an impulse capacitor means connected between said tapping point of said voltage divider means and one of said operative electrodes of said control transistor means, said second diode means being arranged with such polarity that said impulse capacitor means is charged via the reverse resistance of said second diode means when the potential at said tapping point drops below a predetermined value, and that it is discharged via the forward resistance of said second diode means when the potential at said tapping point exceeds a predetermined value.

3,274,479

RECTIFYING APPARATUS FOR PRODUCING CONSTANT VOLTAGE

Toshio Kurimura, Setagaya-ku, Tokyo-to, and Kazuomi Yamamura, Yoyogi, Shibuya-ku, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo, Japan

Filed Oct. 15, 1962, Ser. No. 230,534
Claims priority, application Japan, Oct. 23, 1961, 36/37,984
10 Claims. (Cl. 321—25)



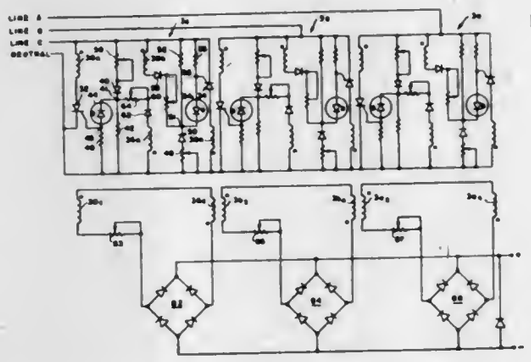
1. A rectifying apparatus for developing constant voltage outputs comprising: an alternating current source having terminals, rectifying means comprising series connected circuits, each series circuit comprising a saturable reactor and a rectifier connected in series, each series circuit connected at one end thereof to a corresponding terminal of said alternating-current power source supplying power to be rectified and connected at the other end thereof to a junction common to said series-connected circuits, control means comprising series-connected control circuits each comprising an auxiliary saturable reactor and a direct-current power source, and each control circuit connected in parallel with one of the said rectifiers of said rectifying means for causing the saturable reactors of the said rectifying means to accomplish control of the suppressing phase of the current to be rectified with respect to the alternating-current voltage to be rectified.

3,274,480

CONTROL ARRANGEMENT FOR LIMITING THE PEAK INSTANTANEOUS VOLTAGE FROM AN A.C. POWER SOURCE

Loren H. Walker, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Oct. 12, 1962, Ser. No. 230,139
15 Claims. (Cl. 321—61)



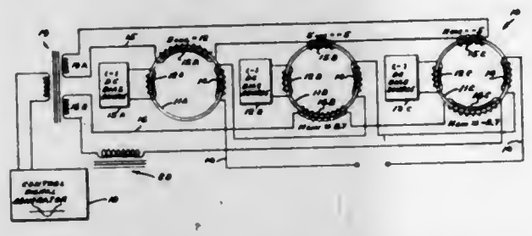
1. In combination with an alternating current power source, a parallel arrangement of first and second oppositely poled gate controlled rectifiers connected across said source, first means connected across said source for providing gating signals to said first gate controlled rectifier in response to half cycles of output from said source of one polarity which exceed a chosen value, second means connected across said source for providing gating signals to said second gate controlled rectifier in response to half cycles of output from said source of the opposite polarity and which exceed said chosen value, means responsive to conductivity in said first gate controlled rectifier during half cycles of said opposite polarity for producing a potential in additive relationship with the output of said second signal gating means to provide gating signals to said second gate controlled rectifier, and means responsive to conduction in said second gate controlled rectifier during half cycles of said one polarity for producing a potential in additive relationship with the output of said first signal gating means to provide gating signals to said first gate controlled rectifier.

3,274,481

FREQUENCY MULTIPLIER CIRCUIT

Dallas H. Lien, Indianapolis, Ind., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 2, 1962, Ser. No. 191,912
5 Claims. (Cl. 321—68)



1. A frequency multiplier circuit for providing a composite alternating output signal having a frequency that is a multiple of the frequency of an alternating input signal, which comprises:

a series of saturable magnetic devices;

biasing means for applying magnetizing force to the magnetic devices which bias the magnetic devices beyond a primary saturated state, the magnetizing forces applied to the magnetic devices by the biasing means having sufficient amplitudes and having the required polarities to drive the magnetic devices from selected nonsaturated states to the primary saturated states;

a pair of control windings wound about the magnetic devices so as to be electromagnetically associated therewith and connected to the source of the input signal so that magnetizing forces are applied to the magnetic devices in response to the application of the input signal thereto, each control winding having periodic characteristic variations in the winding pattern which are distinct from but bear a predetermined relationship to the periodic characteristic variations in the winding pattern of the other control winding so that a different combination of control winding patterns is established on each magnetic device;

means associated with one of the control windings for shifting the phase of the input signal from the source one-quarter wave length so that the resultant signals applied to the two control windings are one-quarter wave length out of phase with respect to each other, maximum magnetizing forces being sequentially applied to succeeding ones of the magnetic devices during each cycle of the input signal in response to the application of the input signal to the control windings, the maximum magnetizing forces having sufficient amplitudes and having the required polarities to overcome the effects of the biasing means and drive the magnetic devices from the primary saturated states to selected nonsaturated states, each magnetic device being driven from the selected nonsaturated state to the primary saturated state by the biasing means subsequent to being driven from the primary saturated state to the selected nonsaturated state and each magnetic device being driven from the primary saturated state to the selected nonsaturated state and back to the primary saturated state before the next succeeding magnetic device is driven through the same cycle of operation; and

an output conductor so wound on the magnetic devices that an output signal is induced therein when a magnetic device is driven from one state of magnetization to another state of magnetization whereby a composite alternating output signal is induced in the output conductor during each cycle of the input signal which has a frequency equal to the input signal frequency times the number of magnetic devices, the output signal induced in the output conductor when a magnetic device is driven from the primary saturated state to the selected nonsaturated state being opposite in polarity to the output signal induced therein when a magnetic device is driven from the selected nonsaturated state to the primary saturated state.

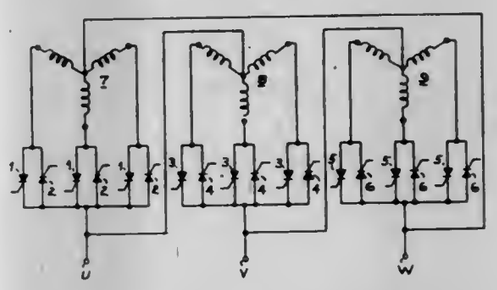
3,274,482

FREQUENCY CHANGER FOR FREQUENCY CONVERSION OF THREE PHASE ALTERNATING CURRENTS

Manfred Depenbrock, Mannheim-Almenhof, Germany, assignor to Brown, Boveri & Cie Aktiengesellschaft, Mannheim, Germany, a joint-stock company

Filed June 13, 1962, Ser. No. 202,183
Claims priority, application Germany, June 13, 1961, B 62,874
6 Claims. (Cl. 321—69)



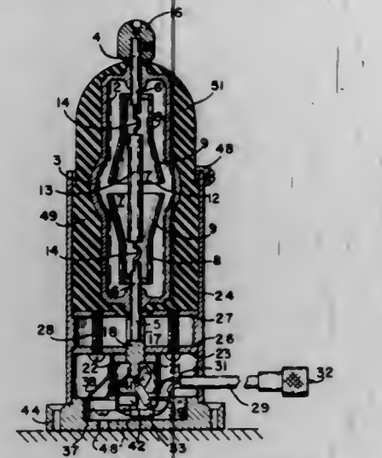


1. In a frequency changer for frequency conversion of three-phase alternating currents, particularly for the production of lower frequency three-phase alternating currents from three-phase alternating currents of mains frequency, the combination comprising three groups of six rectifiers each corresponding to the three phases, said rectifiers being of the controllable type, means arranging the six rectifiers of each group in three pairs with the rectifiers of each pair arranged anti-parallel, said rectifier pairs being connected respectively to the corresponding windings of a three-phase supply transformer operating at the mains frequency, means connecting said three groups of rectifiers in delta formation, the supply of the lower frequency three-phase alternating currents to the consumer being tapped at the angle points of said delta formation, and means controlling operation of said rectifiers of each group such that at any given moment only two rectifiers of each six-rectifier group are free to conduct current while the other four rectifiers of that group are blocked and prevented from conducting current.

3,274,483
PARALLEL RESISTANCE-CAPACITANCE VOLTAGE DIVIDER

Ronald V. Tetz, Los Gatos, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware

Filed Oct. 29, 1962, Ser. No. 233,762
11 Claims. (Cl. 323—74)



9. A parallel resistance-capacitance voltage divider comprising:

(a) an envelope including a pair of terminal leads extending into the envelope and having their inner ends spaced apart,

(b) an electrically resistive element conductively connecting the spaced apart inner ends of said terminal leads,

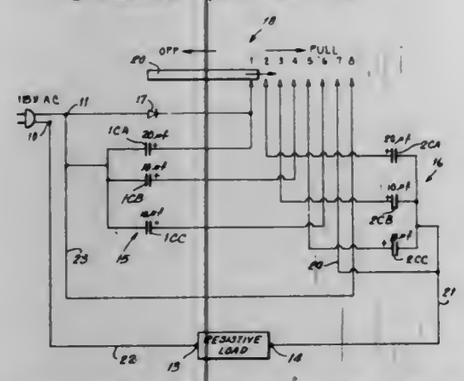
(c) a pair of opposed capacitor electrodes supported within the envelope and electrically connected to the terminal leads in parallel with the resistive element, and

(d) connection means including a low voltage capacitor to electrically connect one of the terminal leads to an associated measuring device.

3,274,484
POWER CONTROL NETWORK

Robert C. Gebhardt, Parsippany, N.J., and John S. Lory, 6700 192nd St., Flushing 65, N.Y.; said Gebhardt assignor to said Lory

Filed May 5, 1964, Ser. No. 365,078
8 Claims. (Cl. 323—93)

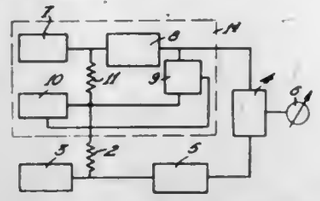


1. An alternating current power control network for resistive loads comprising terminals for an alternating current power source, terminals for a resistive load, variable means having first and second groups of reactive components, a diode, and cumulative switch means and conductors arranged for connecting the load and said reactance means in series to the power source and for connecting said diode in parallel with said first group of components and for connecting said diode in series with said second group of components to thereby vary the power supplied to the load.

3,274,485
APPARATUS FOR MEASURING MAGNETIC FIELD GRADIENTS BY NUCLEAR RESONANCE, AND APPLICATIONS THEREOF

André Denis, Herblay, and Guy Ripart, Plessis-Robinson, France, assignors to Sud-Aviation Société Nationale de Constructions, Paris, France

Filed July 18, 1962, Ser. No. 210,729
Claims priority, application France, July 20, 1961, 868,434, Patent 1,305,456
3 Claims. (Cl. 324—.5)

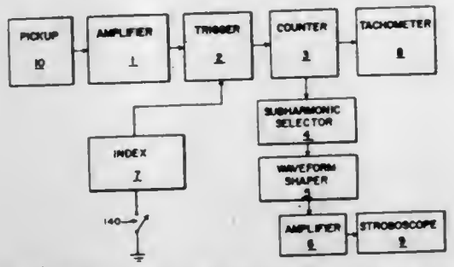


1. Apparatus for measuring by nuclear resonance the gradient of a magnetic field between two predetermined points comprising, in combination, a proton-frequency oscillator located at one of the predetermined points and only subjected to the action of the magnetic field the gradient of which is to be measured, weak coupling means connected to said proton-frequency oscillator at the output thereof, a proton resonance probe located at the other of the predetermined points and fed by said proton-frequency oscillator through said weak coupling means, means connected to said proton-frequency oscillator and said proton probe at the outputs thereof for generating a current which is a function of the phase shift between the output signals of said oscillator and of said probe and thereby a function of the magnetic field gradient between said predetermined points, and a device sensitive to a current value and connected to said current generating means.

3,274,486
AUTOMATIC SYNCHRONIZED STROBOSCOPE

Leon M. Gould, Los Angeles, Calif., and Warren D. Paley, Great Neck, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Mar. 1, 1963, Ser. No. 262,279
3 Claims. (Cl. 324—16)

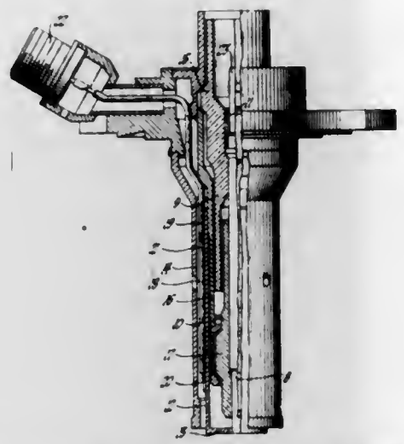


1. A stroboscope system for investigating rotation comprising a pickup device providing a source of pulses whose repetition rate is an integer times the rotational speed of the mechanism being observed, amplifying means connected to said pickup device and producing an amplified pulse output, trigger means connected to said amplifying means for producing shaped pulses, preset electronic counter means having input means connected to said trigger means for counting said pulses, a subharmonic selector circuit comprising a monostable multivibrator connected to said preset counter means producing output pulses of predetermined length in response to the output of said preset electronic counter means, a waveform shaper connected to said selector circuit which modifies said predetermined pulse, a strobe lamp, further amplifier means, said further amplifier means coupling said waveshaper with said strobe lamp, and an indexing pulse generator, said indexing pulse generator connected to said trigger means whereby pulses are provided to advance the observation aspect of said stroboscope system.

3,274,487
IGNITER PLUG WITH SPARK-SENSING MEANS

William J. Johnston, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 15, 1961, Ser. No. 131,678
4 Claims. (Cl. 324—17)

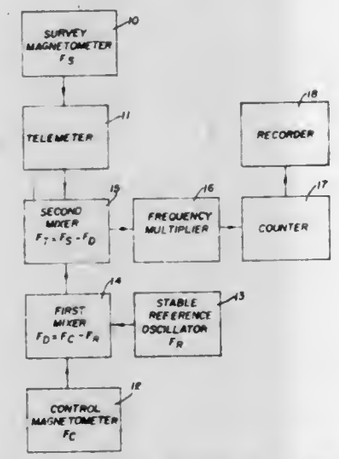


1. An igniter plug having a pair of electrodes with end portions in spaced relationship to provide a spark gap therebetween, one of said electrodes having a second portion thereof electrically grounded, means for indicating whether arcing is occurring in said gap, said means including a pair of electrical conductors connected to the grounded electrode at spaced points thereon located along the axis of said grounded electrode between said end portion and said second portion to indicate any voltage drop across said spaced points.

3,274,488
APPARATUS FOR MEASURING MAGNETIC INTENSITY WITH COMPENSATION FOR DIURNAL VARIATIONS

Stephen Washkurak and Peter Sawatzky, Ottawa, Ontario, Canada, assignors to Her Majesty the Queen in right of Canada, as represented by the Minister of Mines and Technical Surveys

Filed Mar. 22, 1963, Ser. No. 267,133
Claims priority, application Canada, Mar. 30, 1962, 845,684
3 Claims. (Cl. 324—43)

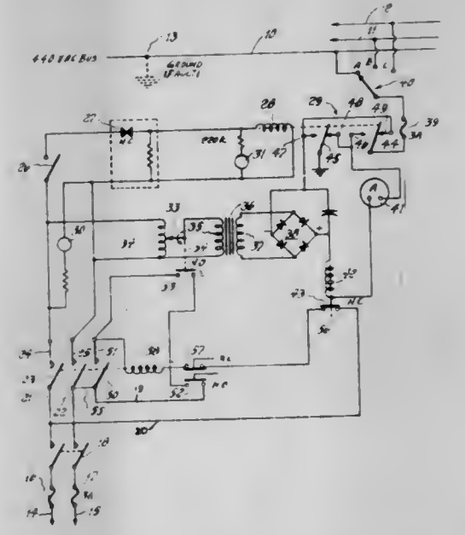


1. Magnetic intensity survey apparatus comprising a mobile survey magnetometer adapted to produce a signal of which the frequency F_S is indicative of magnetic intensity in the vicinity of the survey magnetometer, a control magnetometer for use at a location remote from that of the survey magnetometer and adapted to produce a signal of which the frequency F_C is indicative of diurnal variations in magnetic intensity, a source of a stable reference signal having a frequency F_R, first mixer means having input connections to the control magnetometer and to the source of stable reference signal and adapted to produce at its output a signal of frequency F_D equal to F_C minus F_R, second mixer means having input connections to the output of the first mixer means and to the output of telemeter means adapted to transmit the signal from said mobile survey magnetometer, said second mixer means being adapted to produce at its output a signal of frequency F_T equal to F_S minus F_D, and means adapted to indicate the frequency F_T of the output signal of the second mixer means.

3,274,489
CABLE FAULT LOCATOR FOR UNGROUNDED ELECTRICAL SYSTEMS INCLUDING MEANS FOR APPLYING A SQUARE WAVE TO THE CABLE UNDER TEST

Samuel H. Behr, 1046 Pembroke St., Uniondale, N.Y.

Filed Jan. 20, 1964, Ser. No. 339,037
4 Claims. (Cl. 324—52)



1. A ground fault locator device for use on an ungrounded electrical system including several conductor wires comprising:

(a) a relay having a coil and a triple pole-single throw switch said TP–ST switch having first, second and third poles and first, second and third stationary contacts, said second and third poles being electrically connected,

(b) a source of A.C. connected across said first and second of said poles of said TP–ST switch,

(c) a second relay having a coil and a double pole-double throw switch,

(d) a thermal relay for alternately opening and shorting circuiting a line in which it is placed,

(e) a first series circuit path having included therein said thermal contactor, said first and second stationary contacts of said TP–ST switch, said coil of said second relay,

(f) a normally open start switch,

(g) a second series path having included therein said first pole of said TP–ST switch, said coil of said TP–ST switch, said third stationary contact of said

TP–ST switch, said start switch, said third pole of said TP–ST switch,

(h) rectifier means having its input connected across said first and second stationary contacts and its output connected across paralleled stationary contacts of said DP–DT switch,

(i) one of the poles of said DP–DT switch being grounded and the other pole provided with connection means to a wire of said electrical system along which a ground is to be located,

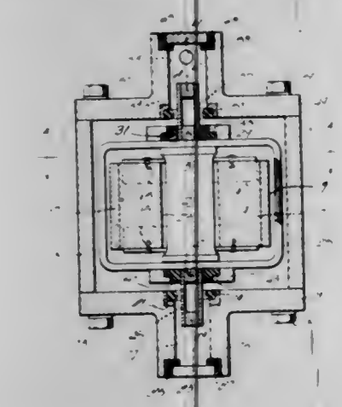
(j) detector means movable along a wire for detecting the changing polarity current in said wire whereby a ground fault can be located therein.

3,274,490

FLUID DAMPED PERMANENT MAGNET CORE METER MOVEMENT WITH A FLOAT SUPPORTED AND FILAR SUSPENDED COIL

Harry G. Swanson, Tewksbury, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Nov. 23, 1962, Ser. No. 239,851
1 Claim. (Cl. 324—154)



A permanent magnet core type electrical measuring instrument comprising:

(a) a housing including a cylindrical flux return portion constructed of a magnetically permeable material and end covers constructed of a non-magnetically permeable material;

(b) an annular transversely magnetized permanent magnet core;

(c) non-mangetic arcuate sector plates which position the annular core within the housing so as to provide a uniform air gap between the core and the cylindrical portion of the housing;

(d) pole pieces secured to diametrically opposed peripheral pole portions of the core;

(e) a fluid of predetermined specific gravity which fills the housing;

(f) a hollow cylindrical float rotatably mounted within the opening of the annular core and extending axially only slightly beyond the ends of the core;

(g) an electrical coil symmetrically mounted across opposite ends of the float and encircling the core, in an extended radial plane of the core portions of individual conductors of the coil being disposed in the air gap between the core and the housing;

(h) electrically conductive trunnions secured to opposite ends of the float along the extended axis of the float;

(i) an annular ringstone bearing mounted on the housing and encircling each trunnion;

(j) an electrical connector disposed in the housing on the extended axis of the core opposite each trunnion;

(k) an electrically conductive torsion wire connected between each juxtaposed electrical connector and trunnion;

(l) a mirror secured to one torsion wire;

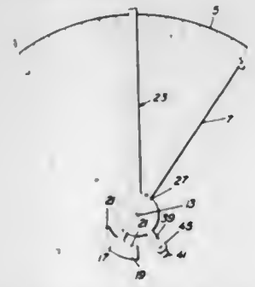
(m) and means for electrically connecting one end of the coil to one trunnion and the other end of the coil to the other trunnion.

3,274,491

INDICATING METER COMBINED WITH ADJUSTABLE COUPLED COILS WHICH ARE SELECTIVELY DECOUPLED BY A POINTER SUPPORTED VANE

Robert J. Mulligan, Hamden, and Harry C. Quick, Jr., Weston, Conn., assignors to International Instruments, Incorporated, Orange, Conn., a corporation of Connecticut

Filed Sept. 29, 1961, Ser. No. 141,869
3 Claims. (Cl. 324—157)



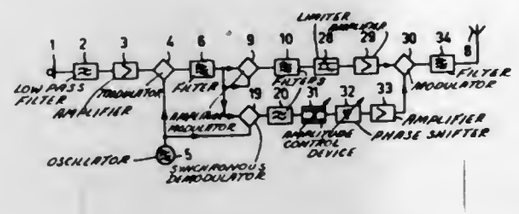
1. A control meter, including in combination, a meter movement and a scale, a meter pointer supported on and moved by said meter movement, said meter pointer including a portion extending forwardly from said meter movement and adapted to traverse and indicate over the full scale, and said meter pointer including a rearwardly extending portion from said meter movement which is aligned and movable with said forwardly extending position, a vane fixed on said rearwardly extending portion and said vane being elongated in a direction generally perpendicular to the longitudinal axis of said rearwardly and forwardly extending portions of said meter pointer, and a set point arm assembly pivotally mounted at the center of said meter movement and independently movable relative to said meter pointer, said set point arm assembly having a forwardly extending portion terminating adjacent said scale for manual adjustment to predetermined points on the scale, and said set point arm assembly including a rearwardly extending portion movable with the forwardly extending portion thereof, said rearwardly extending portion of the set point arm assembly being offset with respect to the longitudinal axis of the forwardly extending portion thereof, a pair of spaced electromagnetically coupled coils fixed on the rearwardly extending portion of said set point arm assembly positioned for travel of said vane therebetween, the offset of said rearwardly extending portion of said set point arm assembly relative to the forwardly extending portion thereof and the dimensions of the vane being such that the vane will be positioned between and shielding the coils from the time the meter pointer reaches and is aligned with the forwardly extending portion of said set point arm assembly in its indicating travel of the scale and also said vane will be positioned between and shielding both of said coils during its indicating travel from its position in alignment with the set point arm to a full scale indication, whereby a control function is in one condition until the meter pointer reaches and is aligned with the forwardly extending portion of said set point arm assembly in its indicating travel of the scale, and is in the opposite condition in its further travel of the scale beyond said aligned position of the meter pointer with the forwardly extending portion of said set point arm assembly.

3,274,492

TRANSMITTING DEVICE FOR THE TRANSMISSION OF AMPLITUDE-MODULATED OSCILLATIONS

Theodorus Jozef Van Kessel and Joannes Maria Albertus Uijen, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 9, 1962, Ser. No. 186,255
Claims priority, application Netherlands, May 16, 1961, 264,824
8 Claims. (Cl. 325—137)



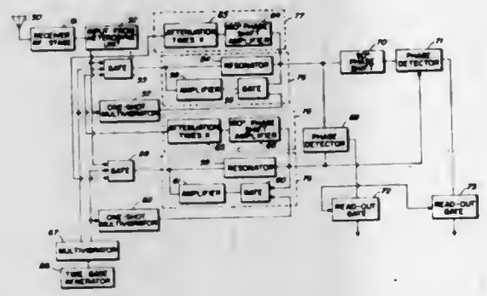
1. A transmitter for transmitting compatible single sideband signals of the type comprising a carrier oscillation of predetermined frequency and a single sideband thereof modulated with information signals, said transmitter comprising a source of a first single sideband signal including a first carrier of half said predetermined frequency and only one sideband thereof modulated with an information signal, amplitude modulator means, first and second signal paths connected to said amplitude modulator means, means for applying said first single sideband signal to said first and second signal paths whereby the signals applied to said modulator means by way of said first and second paths are multiplied in said modulator means and means for transmitting the output of said amplitude modulator means in the signal band at said predetermined frequency.

3,274,493

CIRCUIT FOR REMOVING DISTORTION IN A TIME SYNCHRONOUS PHASE MODULATION RECEIVER

Kenneth H. Renshaw, Costa Mesa, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed June 13, 1963, Ser. No. 287,676
5 Claims. (Cl. 325—320)



1. In a receiver for receiving time synchronous phasors in which a small portion of each phasor has been carried over into the next succeeding phasor owing to the inherent inability to change phase instantaneously, said receiver comprising:

a pair of resonator means tuned to the phasor frequency,

means for generating timing signals at the bit rate of the received phasors,

gating means responsive to the timing signals to drive said pair of resonator means alternately with the received phasors, each of said resonator means being constructed to ring during the phasor period immediately following the driving period thereof,

and means for quenching each of said pair of resonator means at the end of their ringing periods,

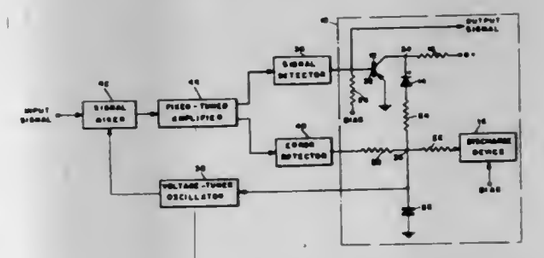
feedback means connecting the output of each of the resonator means to the input of the other resonator means during the driving period of said other resonator means, said feedback means constructed to cancel out the distorting carry-over portion of the phasor immediately preceding the phasor driving said other resonator means.

3,274,494

SEARCH GENERATOR

Oliver C. Stanley, San Diego, Calif., assignor to The Ryan Aeronautical Company, San Diego, Calif.

Filed Feb. 27, 1963, Ser. No. 261,312
4 Claims. (Cl. 325—420)



1. In an automatic frequency tracking circuit, apparatus comprising:

an oscillator having tuning means including a voltage variable tuning capacitor, so that changing voltage applied to said capacitor changes the frequency of the oscillator;

a first charging circuit connected to charge said capacitor when an input signal to the charging circuit is absent, said first charging circuit including a transistor having an emitter connected to ground, a collector connected through a series load resistor to a D.C. source, and a base connected to the output of a signal detector, whereby said transistor is cut off when said signal detector has no output and conducts when said signal detector has an output, a zener diode connected to said collector, and a resistor connected in series with said zener diode and said tuning capacitor, whereby said zener diode conducts and said tuning capaictor charges when said transistor is cut off, and said zener diode is cut off, interrupting the charging circuit, when said transistor conducts;

a second charging circuit connected to charge and discharge said capacitor when an input signal to said first charging circuit is present; and

a discharge circuit connected to discharge said capacitor when the charge from said first charging circuit reaches a predetermined magnitude.

3,274,495

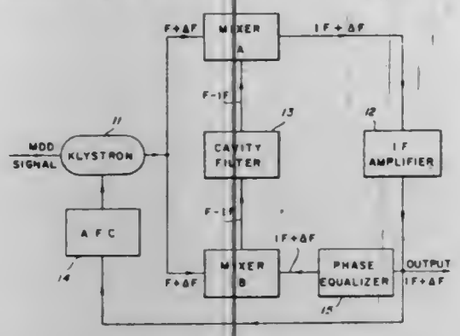
FREQUENCY CONVERSION CIRCUIT

Edward Bellem, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Nov. 7, 1962, Ser. No. 235,970
11 Claims. (Cl. 325—434)

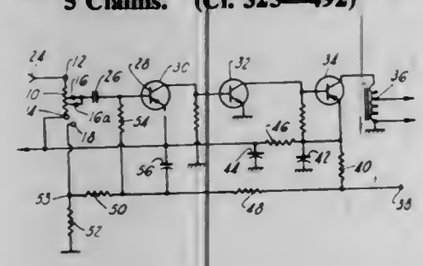
8. Apparatus for deriving from a first frequency modulated signal of higher frequency a second frequency modulated signal of lower frequency having the same frequency deviation as the signal of the higher frequency, comprising first mixing means adapted to mix the first

signal with a signal of fixed frequency equal to the difference between the higher frequency and the lower frequency thereby to produce said second signal, means for



amplifying the second signal, and second mixing means for mixing the amplified second signal with said first signal thereby to produce said fixed frequency signal.

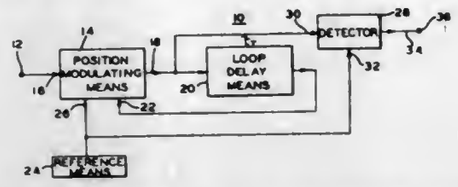
3,274,496
ON-OFF SWITCHING ARRANGEMENT FOR TRANSISTOR RADIOS
Basil P. Hooten, Jr., and Raivo Vest, Baltimore, Md., assignors to The Bendix Corporation, Baltimore, Md., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,749
5 Claims. (Cl. 325—492)



2. In a transistor powered radio receiver,
a source of direct current power,
filtering means connected to said source providing a source of filtered direct current power at a potential somewhat lower than said first source,
amplifying means including at least one transistor having its emitter connected to said source of filtered direct current power and its base connected to said first named source,
and a volume control potentiometer including a resistance element having one end connected to said source of filtered direct current power and a wiper connected in the circuit of said base:
switch means for turning said receiver on and off including a contact connected in the circuit of said base and so constructed and arranged with respect to said wiper that movement of said wiper to its said one end connects said source of filtered direct current power to the circuit of said base such that said transistor is biased to cut-off and said amplifying means is effectively turned off.

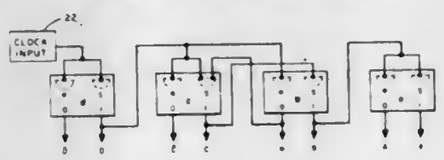
3,274,497
PULSE POSITION MODULATION SWEEP INTEGRATOR SYSTEM
Mark S. Zimmerman, Philadelphia, Pa., assignor to General Atronics Corporation, Montgomery County, Pa., a corporation of Pennsylvania
Filed Sept. 22, 1960, Ser. No. 57,838
15 Claims. (Cl. 328—37)

1. A system for sweep integrating signals subject to occurrence with variable amplitudes at predetermined time-positions within a given period said system comprising: a closed signal loop providing for signals circulating around said loop a time delay substantially equal to said period, means for injecting into said loop signals for circulation around said loop; and means for varying the



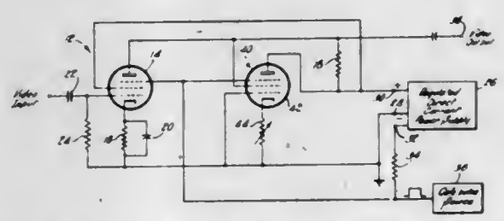
time-positions of different ones of said injected signals in accordance with the variations in amplitudes of different ones of said variable amplitude signals.

3,274,498
TWELVE-STATE TIMING PULSE GENERATOR USING TRAILING-EDGE TRIGGERING
David L. Jones, Kensington, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Feb. 26, 1964, Ser. No. 347,635
9 Claims. (Cl. 328—42)



1. A timing pulse generator comprising in combination first, second, third and fourth flip-flop means each having a set input and a reset input; a logic AND gate means operatively coupled to the set input of said second flip-flop means; a source of clock input pulses connected directly to the set and the reset inputs of said first flip-flop means; connections from an output of said first flip-flop means to the reset input of said second flip-flop means, to a first input of said AND gate means, and to the reset input of said third flip-flop means; connections from an output of the second flip-flop means to the set input of said third flip-flop means; connections from one output of the third flip-flop means to a second input of said AND gate means; and connections from another output of said third flip-flop means to the set and reset inputs of said fourth flip-flop means.

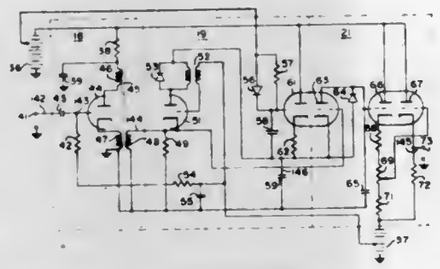
3,274,499
VIDEO GATE WITH PEDESTAL CANCELLATION
Winfield R. Koch, Marlton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 13, 1963, Ser. No. 301,927
1 Claim. (Cl. 328—99)



A circuit for switching broad band radio frequency signals in a radar equipment comprising:
(a) a first pentode,
(b) a load resistor connected to the anode of the pentode,
(c) a bias resistor shunted by a radio frequency bypass capacitor connected to the cathode of the pentode,
(d) a direct current source having a reference terminal, a positive terminal and a negative terminal,

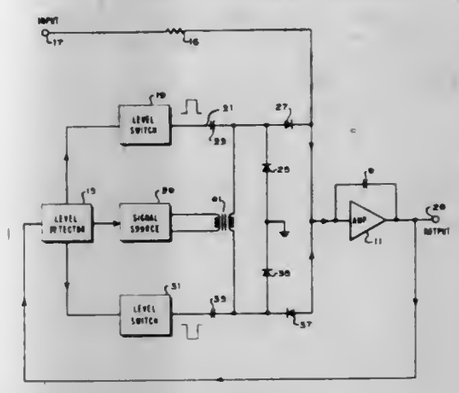
(e) the positive terminal being connected to the screen grid and to the load resistor,
(f) the reference terminal being connected to the bias resistor,
(g) a resistor connected between the suppressor grid and the negative terminal, the potential of the negative terminal relative to the reference terminal being sufficient to cut off the pentode,
(h) a signal coupling circuit including a capacitor connected to the control grid and a resistor connected between the control grid and the reference terminal of the direct current source,
(i) a second pentode substantially identical to the first pentode,
(j) the anode of the second pentode being connected to the positive terminal ot the direct current source,
(k) the suppressor grid of the second pentode being connected in common with the suppressor grid of the first pentode,
(l) the screen grid of the second pentode being connected to the anode of the first pentode,
(m) the control grid of the second pentode being connected to the reference terminal of the direct current source,
(n) an adjustable bias resistor connected to the cathode of the second pentode and the reference terminal of the direct current source,
(o) whereby a predetermined level of direct current is drawn through the load resistor by the screen grid of the second pentode, and whereby when a positive rectangular pulse of predetermined amplitude is coupled to the suppressor grids of both pentodes, the first pentode draws anode current and the screen current of the second pentode is reduced in a relationship whereby the direct current component through the load resistor is essentially constant and the output of the circuit is essentially free of transient spikes, and whereby the bias resistor for the second pentode is adjustable to minimize switching pedestal.

3,274,500
APPARATUS TO MEASURE THE PERIOD OF AN INPUT SIGNAL
Phillip S. Bengston, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Original application Mar. 4, 1960, Ser. No. 12,876, now Patent No. 3,158,845, dated Nov. 24, 1964. Divided and this application Aug. 31, 1964, Ser. No. 399,955
8 Claims. (Cl. 328—108)



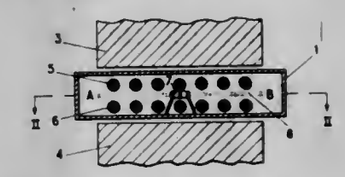
1. Apparatus to measure the period of a signal comprising first means to produce positive and negative pulses for each cycle of a signal applied thereto, generator means coupled to said first means to initiate a saw-tooth voltage in response to a pulse of one polarity, said sawtooth voltage having a peak value and sampling means coupled to said first means and to said generation means for sampling the saw-tooth voltage when the pulse of the other polarity occurs, whereby an output produced by said sampling means is indicative of the period of the signal applied to said first means.

3,274,501
VOLTAGE TO FREQUENCY CONVERTER
Edward A. Heinsen, Sunnyvale, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Jan. 3, 1964, Ser. No. 335,540
4 Claims. (Cl. 328—127)



3. Signal apparatus comprising:
an integrator having an input and an output;
first and second capacitors;
circuit means connecting the output of said integrator and one terminal of each of said first and second capacitors for varying the voltage on said one terminal of one of said first and second capacitors from a first level to another level and back to said first level in response to the output of said integrator of a selected polarity attaining a predetermined value;
first and second pairs of unidirectional conduction elements serially connected between the other terminals of said first and second capacitors;
a source of current connected to said elements for supplying forward conduction current through the first pair of said elements during charging of one of said first and second capacitors and through the second pair of said elements during discharge of said one of the first and second capacitors; and
means including said first pair of elements coupling the other terminals of said first and second capacitors and the input of said integrator.

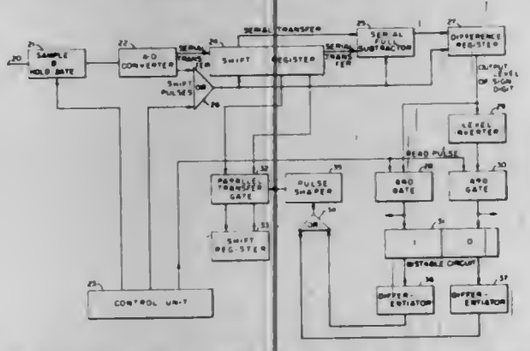
3,274,502
PARTICLE ACCELERATOR
Jacques Pinel and Georges Mourier, Paris, France, assignors to CSF Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed Dec. 21, 1962, Ser. No. 246,449
Claims priority, application France, Jan. 10, 1962, 884,375, Patent 1,318,737; May 3, 1962, 896,281
8 Claims. (Cl. 328—234)



1. A cyclotron comprising: an acceleration chamber, a source of charged particles located substantially within the center of said chamber, first means for establishing within said chamber a constant unidirectional magnetic field, and second means for establishing a high frequency electric field substantially perpendicularly to said magnetic field substantially within the entire interor space of said chamber including a wave delaying structure disposed within said chamber, and a source of high frequency coupled to said delay structure, said delay structure including two series of substantially parallel bars disposed

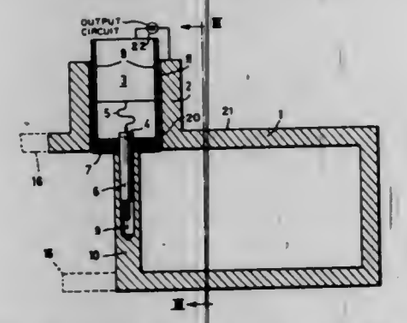
adjacent to substantially the entire path of said charged particles in planes on either sides thereof substantially perpendicular to said magnetic field.

3,274,503
DIGITAL DIFFERENTIATOR FOR AMPLITUDE MODULATED CARRIER
Herbert L. Peterson, 5521 24th Ave., Hillcrest Heights, Md., and William J. Finney, Lakeside Terrace, Rte. 1, Box 570, Accokeek, Md.
Filed Nov. 30, 1962, Ser. No. 241,450
3 Claims. (Cl. 329—104)



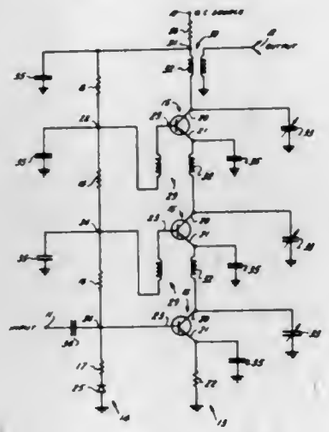
1. A detector for modulated carrier waves comprising:
sampling means for sampling the amplitude of the carrier at a rate greater than the frequency of said carrier,
analog-to-digital converter means coupled to said sampling means for converting samples from said sampling means to digital form,
first storage means operatively coupled to said analog-to-digital converter for storing at least one of said samples and a subsequent sample,
subtractor means coupled to the output of said storage means for extracting a difference sample equal to the difference between two successive samples,
second storage means for storing at least one of said samples,
gating means for coupling said first storage means to said second storage means, and
circuit means operatively coupled between said subtractor means and said gating means for opening said gating means when the sign of said difference sample changes to transfer the sample from said first storage means to said second storage means.

3,274,504
MICRO-WAVE DETECTOR
Frans Christiaan de Ronde, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 4, 1964, Ser. No. 349,407
Claims priority, application Netherlands, Mar. 21, 1963, 290,518
7 Claims. (Cl. 329—160)



1. Means for detecting high frequency oscillations in a waveguide, comprising a waveguide for conveying high frequency oscillations, said waveguide having a rectangular cross-section with first and second adjacent side walls, said first side wall having a first aperture at the junction of said first and second side walls, unidirectional current means having first and second terminals, means connecting said first terminal to said second side wall in the transverse plane of said waveguide which extends through said first aperture, capacitor means for coupling said second terminal to said first side wall in said plane, said second side wall having second and third apertures on opposite sides of said first aperture with respect to the longitudinal direction of said waveguide, whereby wall currents in said waveguide flow through said unidirectional current means, and output circuit means connected between said second terminal and said first side wall.

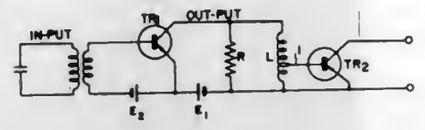
3,274,505
SERIES TRANSISTOR CIRCUIT WITH SELECTIVELY COUPLED STAGES
Arnold Frisch, Brooklyn, Lawrence H. Weiss, Forest Hills, and Morris Engelson, Brooklyn, N.Y., assignors, by mesne assignments, to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Feb. 28, 1964, Ser. No. 348,121
9 Claims. (Cl. 330—18)



1. A transistor arrangement for use with a source of relatively high direct current voltage, comprising a transistor circuit for amplifying alternating current signals at alternating current signal frequencies, and a bias-resistor circuit connected in parallel with said transistor circuit across said source, said transistor circuit including a plurality of transistors connected in series energized relationship for direct currents from said source, said bias-resistor circuit including a bias reisstor for each of said transistors, said bias resistors being connected in series, means for coupling the junctions between said bias resistors to said transistors for the purpose of biasing said transistors, means for decoupling said junctions at said alternating current signal frequencies and for decoupling said transistors in said series energized relationship at said alternating current signal frequencies, and separate means for coupling the output of selected of said transistors to the input of selected other of said transistors at said alternating current signal frequencies.

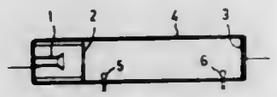
3,274,506
TRANSISTOR TYPE BROAD BAND AMPLIFIER UTILIZING A CHOKE COIL
Hisao Maeda, 211 Minamisenzoku-machi, Ota-ku, Tokyo-to, Japan
Filed May 29, 1963, Ser. No. 284,231
Claims priority, application Japan, June 13, 1962, 37/30,442
1 Claim. (Cl. 330—21)

In a multistage transistor type broad band amplifier circuit consisting of at least two stages in which at least the preceding amplifier circuit stage includes a load resistance connected in parallel to the output circuit thereof, the improvement consisting of a network connected between the output terminal of said preceding stage and the base of the transistor of the succeeding stage, said



network consisting of a high frequency choke coil connected in parallel to said load resistance; said choke coil provided with a tap and said tap connected to the base of the transistor of the succeeding amplifier circuit stage.

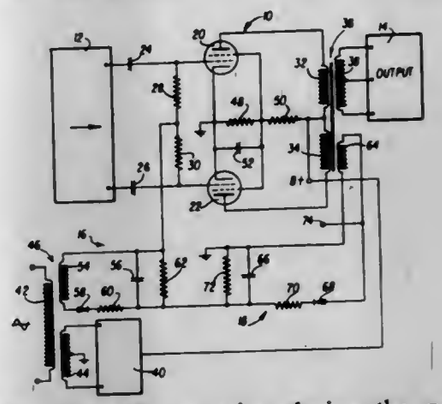
3,274,507
ELECTRON BEAM PLASMA AMPLIFIER WITH A WAVE-GUIDE COUPLING
Karl Richard Ulrich Weimer and Marinus Teunis Vlaardingerbroek, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 8, 1962, Ser. No. 164,762
Claims priority, application Netherlands, Jan. 13, 1961, 260,047
3 Claims. (Cl. 330—41)



1. An electron beam plasma amplifier comprising an envelope containing an ionizable gaseous medium, means within said envelope for generating an electron beam, first and second electrodes directly in the path of the electron beam defining a plasma discharge space and for generating a plasma, coupling means for introducing an input signal of given frequency directly into said plasma discharge space, said plasma having a plasma frequency which is at least equal to the signal frequency, the signal being amplified by interaction between the electron beam and the plasma, and output coupling means for extracting an amplified signal from said plasma discharge space, said output coupling means being positioned more remote from said electron beam generating means than said input coupling means, at least one of said coupling means being a wave-guide coupler and being positioned in the plasma discharge space.

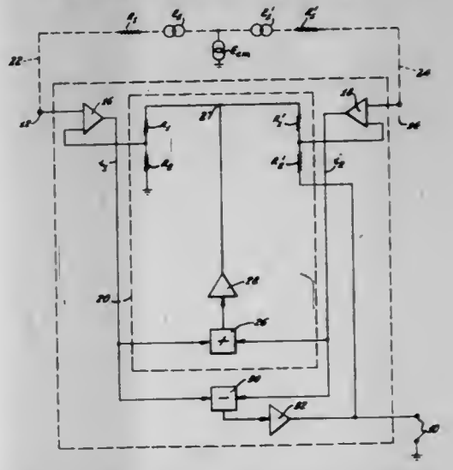
3,274,508
POWER AMPLIFIER INCLUDING BIASING MEANS FOR REDUCING STANDBY POWER DISSIPATION
Norman H. Reeve, Racine, Wis., assignor to Webster Electric Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 14, 1963, Ser. No. 315,859
4 Claims. (Cl. 330—96)

1. An amplifier for use with a signal source comprising an amplifier stage including a pair of beam power tubes in push-pull configuration and having input control elements coupled to the signal source, said amplifier stage having an output circuit, a signal utilizing means coupled to the output circuit of said amplifier stage, a fixed value potential source connected to the input control elements for applying a negative bias of about 55 volts to the amplifier stage to substantially reduce no-signal plate dissipation while introducing an appreciable amount of signal distortion when a signal is applied to the input control elements, and control means coupled to the output circuit of said amplifier stage and to said input control elements and responsive solely to the amplified signal supplied to the signal utilizing means for reducing the bias applied to the input control elements to bias the amplifier stage



for normal class AB operation during the periods in which a signal is applied to the input control element, said control means including series connected rectifying and capacitive means arranged to develop a positive bias effective to reduce said negative bias to about 40 volts.

3,274,509
DIFFERENTIAL AMPLIFIER
Stewart C. Brown, 10354 Oklahoma Ave., Chatsworth, Calif.
Filed Apr. 22, 1960, Ser. No. 23,964
9 Claims. (Cl. 330—116)



1. A differential amplifier for amplifying a differential intelligence signal applied across a pair of associated input terminals while suppressing common mode signals applied simultaneously at the input terminals, said differential amplifier comprising: a pair of input circuits coupled respectively to said input terminals, each of said input circuits being responsive to the differential intelligence signal and the common mode signal applied to its associated input terminal for producing a composite output signal representative of the signals applied thereto; first means coupled to receive the output signal from at least one of said input circuits, said first means being responsive to applied output signals for generating an error signal representative of the common mode signal; a first feedback circuit coupling said first means and said input circuits, said first feedback circuit including a resistance network connected to receive said error signal and to apply said error signal to said input circuits to compensate for the common mode signals applied thereto; second means coupled to receive the output signal from at least the other of said input circuits and operable in response to applied output signals for producing an output intelligence signal corresponding to the input

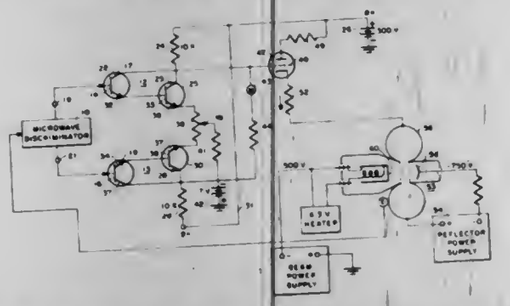
differential intelligence signal; and a second feedback circuit coupling said second means and at least one of said input circuits through said resistance network for applying to apply said output intelligence signal to at least one of said pair of input circuits for controlling the gain imparted to the applied input differential intelligence signals.

3,274,510

AUTOMATIC FREQUENCY CONTROL FOR KLYSTRON COUPLING REGULATOR TUBE TO KLYSTRON SHELL

Clifford G. Dorn, Corona, and Harold B. Dunkelberger, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Nov. 24, 1964, Ser. No. 413,660
3 Claims. (Cl. 331—6)



1. In a circuit for controlling the output frequency of a klystron oscillator, the combination comprising:

(a) sensing means coupled to said klystron for producing an output signal proportional to deviations of the output frequency of said oscillator from a predetermined value,

(b) differential amplifier means coupled to said sensing means for amplifying said output signal,

(c) a reference voltage source,

(d) a series regulator tube connected between one side of said reference voltage source and the shell of said klystron,

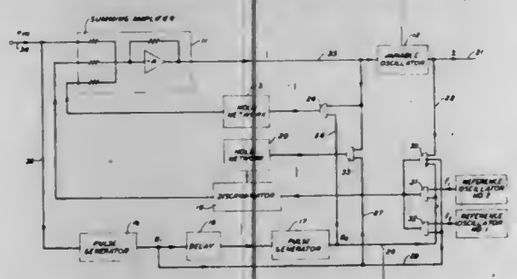
(e) said series regulator tube having an input coupled to the output of said amplifier and being coupled through the electron flow stream of said klystron to the other side of said reference voltage source and being responsive to the output signal from said sensing means for controlling the output frequency of said klystron.

3,274,511

FREQUENCY STABILIZED SWEEP FREQUENCY GENERATOR

John C. Dale, Chester, and Peter S. Fuss, Randolph Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 30, 1963, Ser. No. 334,655
8 Claims. (Cl. 331—10)



2. A stabilized signal generator responsive to an applied input signal comprising:

means for generating an output signal having a frequency which varies as a function of the magnitude of a control signal applied to its input,

discriminator means for developing a first signal proportionate to the frequency of an applied signal,

a reference oscillator,

means for applying said output signal to said discriminator means and periodically substituting a signal from said reference oscillator,

means for developing simultaneously with the substitution of a reference signal from said oscillator, an error signal separate and distinct from said first signal proportionate to the drift in magnitude of an algebraic summation of said input signal, said control signal and said first signal from the magnitude of a signal developed by said discriminator means,

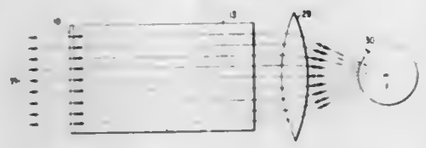
and summing means responsive to said input, said first and said error signal for developing said control signal.

3,274,512

RESONATOR FOR RADIATION GENERATED BY STIMULATED EMISSION

Akira Okaya, Rockville, Md., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 6, 1963, Ser. No. 263,329
8 Claims. (Cl. 331—94.5)



1. In a device for enhancing the production of selected directional modes of radiation generated by stimulated emission, the combination comprising:

means for inducing stimulated emission of radiation, including a source of pumping energy and an active medium emitting radiation by stimulation when acted upon by pumping energy from said source;

refraction means located in the path of radiation emitted from said active medium for diverting a selected directional mode of said emitted radiation along a converging path to a fixed focal location on the side of said refraction means away from said active medium; and

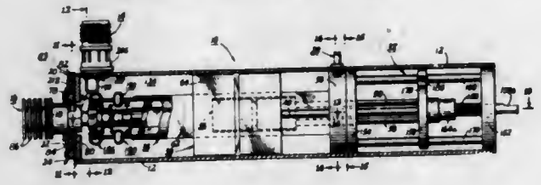
convex reflection means interposed between said refraction means and said focal location for reflecting radiation of said selected mode back to said refraction means along a diverging path coincident to said converging path, thereby directing said radiation of said selected mode back into said active medium along a path coincident to its path of emission.

3,274,513

BROAD BAND TUNABLE MICROWAVE OSCILLATOR WITH SUBSTANTIALLY CONSTANT OUTPUT POWER CHARACTERISTICS

Benjamin F. Gregory, Tampa, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.

Filed Oct. 30, 1963, Ser. No. 325,833
3 Claims. (Cl. 331—98)



1. A microwave oscillator comprising, in combination,

(A) a high frequency triode having plate, grid and cathode terminals,

(B) a tubular conductive outer shell

(C) a by-pass capacitor for electrically coupling said plate terminal to said shell, said bypass capacitor comprising

(1) as one plate thereof, a terminal member in electrical contacting engagement with said plate terminal of said triode, said member having

(a) an annular groove formed in a surface thereof, and

(b) an attenuating material disposed in said groove

(2) a dielectric medium interposed between said surface of said terminal member and a portion of said shell constituting the other plate of said bypass capacitor,

(3) whereby said bypass capacitor is lossive at the low end of the frequency band

(D) a tubular conductive cathode line member coaxially disposed within said shell and electrically connected to said cathode terminal,

(E) a tubular conductive grid line member coaxially disposed intermediate said shell and said cathode line member,

(F) a first annular tuning choke slidingly disposed between said outer shell and said grid line member to define a plate coaxial line,

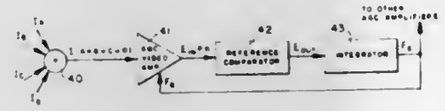
(G) output circuit means for coupling said plate coaxial line to an output load.

3,274,514

PULSE COMPARATOR AND CONVERTER

Orson G. Foulger, Goleta, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 18, 1964, Ser. No. 346,062
1 Claim. (Cl. 332—1)



A signal conversion apparatus for deriving, from an input signal of unknown periodicity, or aperiodic, and consisting of variable-amplitude input pulses, signal conversion apparatus output pulses having time-widths and polarities corresponding to the magnitude and algebraic sense, respectively, of amplitude difference of input pulse amplitude relative to a predetermined reference amplitude, said apparatus comprising:

(a) a reference channel operating to be triggered by said input pulses to provide reference channel output pulses of fixed polarity, fixed amplitude and fixed time-width;

(b) a signal channel operating to convert said input pulses to signal channel output pulses of fixed polarity, of fixed amplitude, and of time-widths varying directly with input pulse amplitude, said signal channel output pulses having a time-width range embracing a reference time-width corresponding to an input pulse having said predetermined reference amplitude;

(c) means for equalizing the amplitudes of said reference channel and signal channel output pulses; and

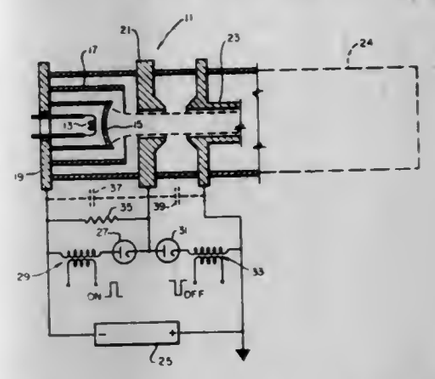
(d) an amplitude summer for combining corresponding reference channel and signal channel output pulses, after their amplitudes are equalized, to provide signal conversion apparatus output pulses of time-widths and polarities corresponding to the magnitude and algebraic sense, respectively, of signal channel output pulse time-width relative to reference channel output pulse time-width.

3,274,515

PULSER FOR MODULATED ANODE TUBES

George M. W. Badger, Menlo Park, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California

Filed Dec. 31, 1962, Ser. No. 248,464
7 Claims. (Cl. 332—7)



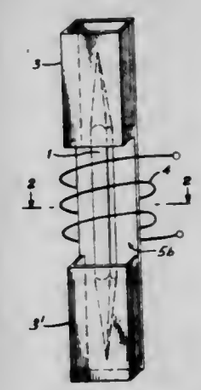
1. A pulser for a modulating anode tube of the type including a cathode, an anode and a modulating means comprising means for applying a source of accelerating voltage between the cathode and anode, a first series combination including a switching transformer and a diode connected between the cathode and modulating means, a second series combination including a second switching transformer and diode connected between the modulating means and a source of potential positive with respect to the cathode, and means for selectively applying switching pulses to said transformers whereby the modulating anode tube may be selectively turned "on" or "off."

3,274,516

FERRITE DEVICES FOR THE MODULATION AND SWITCHING OF MICROWAVES

Ernst Neckenbürger, Hamburg-Stellingen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

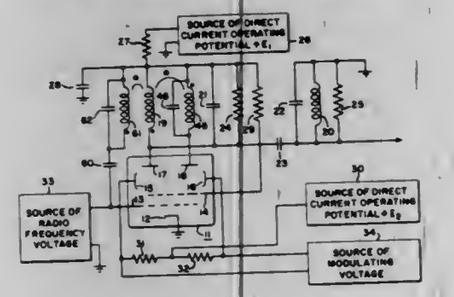
Filed May 25, 1965, Ser. No. 458,704
Claims priority, application Germany, Mar. 21, 1960, P 24,656, P 24,657
13 Claims. (Cl. 332—51)



1. A modulation device for high frequency waves comprising a ferrite bar, a source of microwave energy, means applying said microwave energy to said bar, a modulating coil surrounding said bar for providing a longitudinal magnetic field in said bar, a conducting plate extending parallel to said bar inside said coil and spaced from said bar, said plate comprising the sole conductive means between said coil and bar, said first and second rectangular waveguide sections positioned coaxially with said bar, said plate forming an extension of one wall of each of said waveguide sections, said bar having sufficiently large cross-sectional dimensions that said energy is conducted dielectrically without substantial transverse field extension and

sufficiently small cross-sectional dimensions that said plate substantially prevents rotation of the polarization plane of waves in said bar.

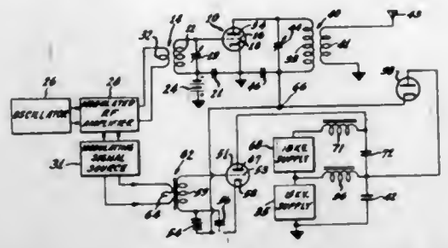
3,274,517
BEAM DEFLECTION TUBE MODULATION CIRCUIT WITH MEANS FOR SUPPRESSING UNDESIRABLE ALTERNATING OUTPUT
Edward I. Lynch, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 25, 1962, Ser. No. 212,251
8 Claims. (Cl. 332—58)



1. A modulation circuit comprising:
(A) a beam deflection electron discharge amplifying device having a cathode electrode, first and second anode electrodes, an electron beam intensity control electrode, and first and second deflector electrodes;
(B) an output load circuit coupled between said first anode and cathode electrodes;
(C) means coupled to said control electrode for providing alternating intensity modulation at a frequency f_1 of an electron beam generated by said device;
(D) means for providing and coupling a modulating voltage between said first and second deflector electrodes;
(E) means providing direct current operating potentials for said device;
(F) said amplifying device having a current i_1 and a corresponding current i_2 flowing therein; said current i_1 comprising the total electron beam current flowing between the cathode and first anode electrode and said current i_2 comprising the total electron beam current flowing between the cathode and the second anode electrode;
(G) said current i_1 generating an alternating output voltage in said output load circuit; and
(H) means connected between said second anode and cathode electrodes responsive to said current i_2 for automatically suppressing the alternating output voltage when said current i_1 has a preselected amplitude smaller than the amplitude of said corresponding current i_2.

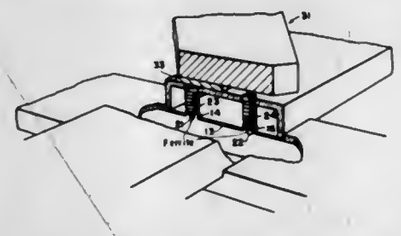
3,274,518
MODULATION SYSTEM
Merle V. Hoover, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 29, 1964, Ser. No. 340,882
9 Claims. (Cl. 332—60)

1. An amplitude modulation system for a modulated carrier wave and a modulation signal, comprising,
an R-F amplifier,
means to couple said modulated carrier wave to said R-F amplifier for amplification of said modulated carrier wave,
a modulation amplifier for amplifying said modulation signal,
means to bias said modulation amplifier to cut-off below a predetermined modulation signal amplitude, and
means coupling said modulation amplifier to said R-F amplifier to control the amplification of said R-F



amplifier at modulation signal amplitudes in excess of said predetermined modulating signal amplitude.

3,274,519
FREQUENCY SELECTIVE COUPLING DEVICE HAVING FERRITE ELEMENTS BIASED TO DIFFERENT RESONANT FREQUENCIES
Leslie Nathanson, Boston, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Feb. 5, 1964, Ser. No. 342,608
8 Claims. (Cl. 333—1.1)

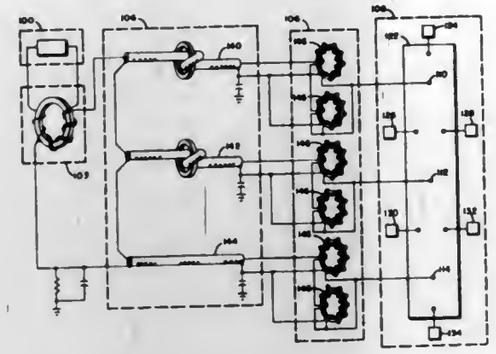


1. A frequency selective coupling device for electromagnetic waves, comprising a pair of rectangular waveguides disposed in overlapping relation so as to form a wall junction in which one of the broad walls of a first of the guides intersects at right angles with one of the broad walls of the second guide, a first of said guides having an input port and the second of said guides having a pair of output ports, said junction being provided with a pair of apertures communicating between the interiors of said guides at first and second locations, and said locations being displaced in the same direction with respect to the longitudinal axis of said second guide and in opposite directions with respect to the longitudinal axis of said first guide; a pair of ferrite coupling elements, means to mount said elements at the respective locations defined by said apertures, and means to produce a D.C. magnetic field acting upon said ferrite elements substantially at right angles to the plane of the intersection of said walls, said ferrite elements being adapted to resonate at slightly differing frequencies in the presence of said field.

3,274,520
HIGH FREQUENCY PULSE BRANCHING AND COUPLING NETWORK
Charles W. Eddy, St. Paul, and Le Roy A. Prohofsky, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 500,465
8 Claims. (Cl. 333—9)

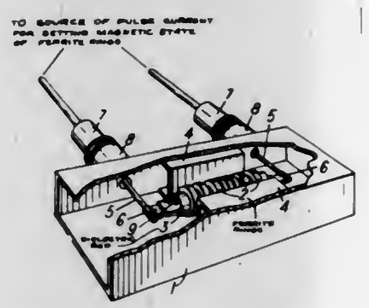
1. An impedance transformation device for coupling a high output impedance generator of a high frequency signal to a low impedance bus-bar distribution system, comprising in combination:
a plurality of cores of magnetic material;
a current dividing network including a plurality of transmission lines, one portion of each but one of said transmission lines coupled to a separate one of said cores;

a bus-bar;
a plurality of impedance transformers;
an input transformer the output of which is coupled to the input of said current dividing network;



the output of said current dividing network split with each output coupled to a different one of said impedance transformers;
the outputs of said impedance transformers coupled to respective different portions of said bus-bar.

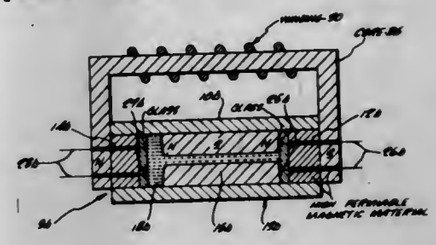
3,274,521
MICROWAVE PHASE SHIFTER
Oswald Nourse, Lee on Solent, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain
Filed Sept. 12, 1963, Ser. No. 308,488
Claims priority, application Great Britain, Sept. 19, 1962, 35,651/62
5 Claims. (Cl. 333—24.1)



1. A mircowave phase shifter for pulsed operation comprising a hollow waveguide of rectangular cross-section having within it a cylindrical dielectric rod disposed with its longitudinal axis coincident wth the longitudinal axis of the waveguide, an assemblage of circular rings of ferrite threaded on said rod and mounted thereon in predetermined locations along it, a metal strip along said rod and external leads connected to the strip for the conduction of pulsing current through said strip, and constriction of the wider internal cross dimension of the waveguide, which constriction extends along the region occupied by the ferrite ring assemblage to enhance the effective phase shift resulting from magnetization of the ferrite rings by the pulsing current.

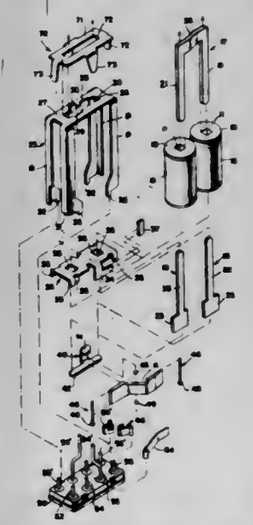
3,274,522
BISTABLE ELEMENT
Peter V. N. Heller, P.O. Box 147, Dana Point, Calif.
Filed Jan. 15, 1962, Ser. No. 166,151
14 Claims. (Cl. 335—5)

1. A bistable element comprising:
(a) a container having a chamber with at least one side wall and at least one end wall adjacent each end of said side wall for enclosing said chamber,
(b) a member slidably mounted in said chamber having an outer surface of substantially the same shape as said side wall and closely fitting against said side wall but being shorter than the length thereof in between said end walls causing a void space in said chamber and comprising,
(1) a passageway for inter-connecting the void space at the ends of said member, and



(c) a quantity of mercury at least substantially filling said void space said chamber walls and member being adapted so that movement of said member to either end wall of said chamber causes substantially all of said quantity of mercury in between such chamber end wall and said member to be moved out therefrom and moved through said passageway into a position in between the other end wall of said chamber and said member, surface tension of said mercury maintaining said member at the opposite end wall of said chamber from said quantity of mercury.

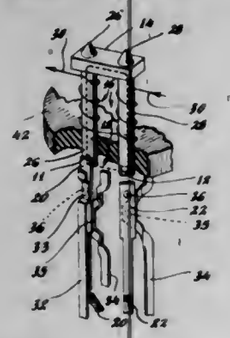
3,274,523
ELECTROMAGNETIC SWITCHING RELAY HAVING A THREE PIECE U-SHAPED CORE
Eric W. Bayer, Rocky Hill, and Joseph W. Bentz, Middletown, Conn., assignors to Allied Control Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 2, 1964, Ser. No. 348,404
6 Claims. (Cl. 335—121)



1. In an electromagnetic device, a frame comprising spaced upper and lower plates, a plurality of spaced upstanding legs secured to the plates and projecting below the lower plate, a pair of upstanding magnetizing coils positioned within the confines of the plates and the legs, a core assembly comprising a first member secured to the frame and including a web disposed above the coils and a pair of spaced arms depending from the web, each arm extending through a corresponding coil, and a pair of second members, each second member including a portion which extends through a corresponding coil and a portion which is wider than the first-mentioned portion and which is disposed beneath the lower plate and serves as a pole piece, each second member bearing against and being secured to a corresponding arm of

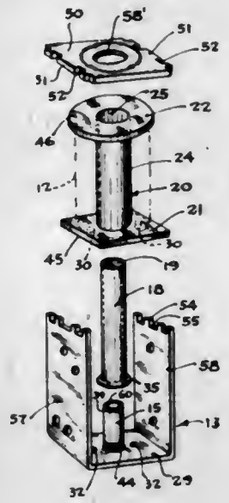
the first member, an armature unit positioned below and secured to the lower plate comprising an armature that is pivotal relative to the frame and that includes a pair of spaced parts each of which is cooperatively associated with a corresponding pole piece, biasing means normally urging the armature in one direction of rotation relative to the frame and maintaining said armature parts in a position away from the pole pieces, the armature being adapted, upon energization of the coil, to be moved in a reverse direction against the action of the biasing means by magnetic attraction between the pole pieces and said armature parts, and a plurality of spaced resilient fingers carried by and projecting generally outwardly of the frame, said fingers being adapted to effect frictional engagement with the inner surface of the side wall of a cover unit that is adapted to encase parts of the device.

3,274,524
ELECTROMAGNETIC REED RELAY
Nathan H. Magida, Westport, and Walter W. Bachle, Wilton, Conn., assignors to Thermosen, Incorporated, Stamford, Conn.
Filed Mar. 25, 1964, Ser. No. 354,616
11 Claims. (Cl. 335—152)



1. An electromagnetic circuit control device comprising, in combination:
(A) a sealed cylindrical enclosure;
(B) a plurality of elongated flexible reed members of ferromagnetic metal;
  (a) said reeds being insulatingly supported in one end wall of said enclosure and extending into the enclosure in a substantially cylindrical array concentric with the enclosure axis;
(C) a plurality of support arm members of non-magnetic metal insulatingly supported in said one end wall and extending into the enclosure in a substantially cylindrical array concentric with the reed array;
(D) electrical contacts on adjacent surfaces of said reeds and support arms at locations thereon remote from said one end wall;
(E) a plurality of magnetic devices each comprising:
  (a) first and second cores respectively providing at one end first and second pole pieces; and
  (b) a coupler bar of flux conductive material connecting the other ends of said cores;
  (c) said coupler bar forming with said first and second cores a U structure projecting at its opposite ends through the other end wall of said enclosure to dispose said pole pieces within said enclosure separated by an air gap;
(F) said magnetic devices being arrayed about said enclosure axis to provide within said enclosure a corresponding plurality of sets of pole pieces arrayed about said axis;
(G) a separate coil means for each magnetic device comprising an electrically conductive wire wound about the portions of the cores of that device disposed outside of said enclosure and arranged when energized to impart opposite polarization to the pole pieces of that device, whereby to establish for that device a magnetic circuit sequentially including one of said pole pieces, the related core, the coupler bar, the other core, the other pole piece and said air gap;
(H) the number and the relative radial and circumferential positioning of said reeds and said pole pieces within said enclosure being such as to dispose the free ends of a pair of reeds adjacent the respective pole pieces of each pole piece set; and
(I) means for passing electrical current selectively through each of said wires, whereby to attract the reed pair ajacent the pole piece set of the related magnetic device toward the respective pole pieces of that set to move the contacts on said reed pair relative to the contacts on the related support arms so as to perform switching operations with respect to electrical circuits including those contacts.

3,274,525
SOLENOID DEVICE HAVING A NON-ROTATABLY MOUNTED COIL BOBBIN
Robert L. Valleau, Morton Grove, Ill., assignor to Comar Electric Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 28, 1964, Ser. No. 392,697
4 Claims. (Cl. 335—255)

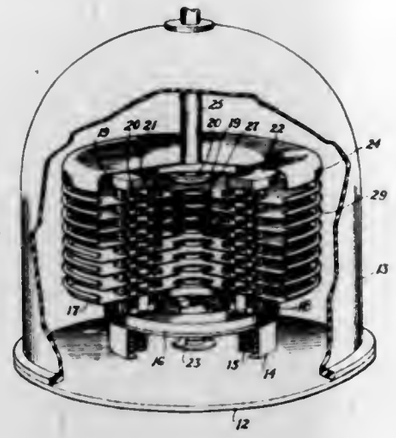


1. A solenoid comprising a frame having a base wall and a pair of interconnecting side walls extending from and joined at respective ends to said base wall, a cylindrical plunger stop secured to said base wall, a bobbin having a hollow central body and a pair of attached headers at the opposite ends thereof, said bobbin having a coil, an elongated guide tube fitted over said plunger stop, said central body of said bobbin being loosely fitted over and said guide tube with one header thereof disposed adjacent said base wall, a solenoid plunger arranged within said guide tube for sliding movement, and said one header and the base wall having interlocked projections and openings to secure said bobbin against rotation.

3,274,526
INSULATING CORE TRANSFORMERS
Roy M. Emanuelson, Reading, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed July 17, 1963, Ser. No. 295,698
8 Claims. (Cl. 336—60)

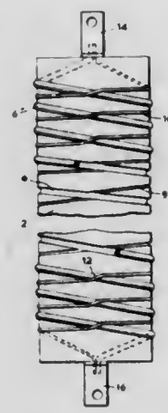
1. An electromagnetic transformer comprising at least one primary coil, at least two secondary coils serially arranged in operable relationship with each primary coil, a closed magnetic circuit including a plurality of grooved core segments of permeable material, there being at least

one core segment associated with each secondary coil, means for insulating each core segment from adjacent segments, a hermetic non-metallic tank enclosing said electromagnetic transformer, a pressurized insulating gas atmosphere residing therein, fluid cooling means disposed



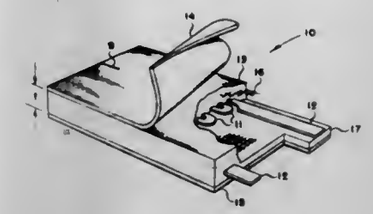
within said tank, and means for circulating said insulating gas atmosphere through the grooves of said core segments and through said fluid cooling means, said grooves extending through each core segment in a direction transverse to the direction of the magnetic flux in said core segment.

3,274,527
CONCENTRIC HELICAL COILS WITH ELECTRICALLY CONNECTED CROSSOVER POINTS
Alfred Alexander Robinson, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed June 3, 1964, Ser. No. 372,275
Claims priority, application Great Britain, June 5, 1963, 22,460/63
6 Claims. (Cl. 336—69)



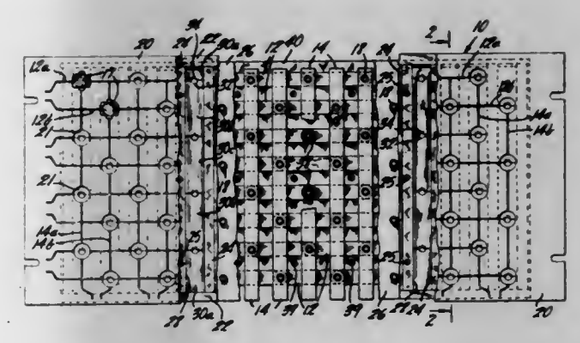
1. An inductor comprising
two terminals,
first and second helical coils each connected between said two terminals and wound about a common axis so as to cross over one another at a plurality of points, said first coil having a relatively high resistance and said second coil having a relatively low resistance, and
conecting means interconnecting the first and second coils at selected ones of said points whereby selected lengths of said second coil are shunted by the resistance possessed by elected lengths of said first coil.

3,274,528
STRAIN MEASURING DEVICE
Leslie H. Bermann, Northridge, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 23, 1964, Ser. No. 353,660
6 Claims. (Cl. 338—2)



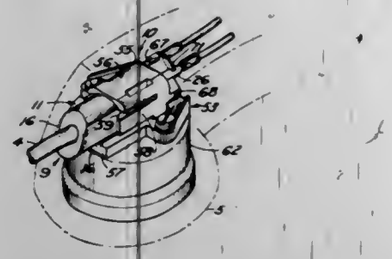
1. An electrical strain measuring device capable of being pressed onto a receiving surface, comprising
a sheet of polymerizable adhesive polymerized to a B-stage cure, at least one surface of said sheet having the characteristic of being adhesively bonded to said receiving surface upon substantial completion of polymerization of said adhesive;
an impermeable backing strip, in contact with, and extending over said one surface of said sheet;
a planarly disposed strain-responsive sensing conductor, coplanarly encapsulated within said sheet, the resistance of said sensing conductor being responsive to strain transmitted from said receiving surface through said polymerized adhesive; and
a pair of lead conductors each having a first end connected to a corresponding terminus of said sensing conductor and a second end extending through, and beyond, a boundary of said sheet.

3,274,529
CROSS-BAR DISTRIBUTION PANEL
David Berdan, Freehold, N.J., assignor to Buck Engineering Company, Inc., Freehold, N.J., a corporation of New Jersey
Filed Feb. 12, 1964, Ser. No. 344,443
6 Claims. (Cl. 339—18)



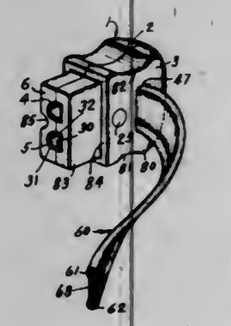
1. A crossbar distribution panel, comprising a front panel structure, a plurality of first spaced-apart conductors mounted on said panel structure, a plurality of second spaced-apart conductors mounted on said panel structure and insulated from and crossing the first conductors, said first and second conductors having means defining aligned openings at their crossover points, said front panel having corresponding openings therein, pin means positionable in said openings in the panel and into said aligned openings for interconnecting a selected first conductor to a selected second conductor, and means arranged in the front panel for blocking the positioning of said pin means into any more than a predetermined number of openings in any one of said first conductors simultaneously.

3,274,530
TINSEL WIRE CONNECTOR
Charles E. Michaely, 9132 Greenwood Ave., Des Plaines, Ill.
Filed Nov. 5, 1963, Ser. No. 321,492
4 Claims. (Cl. 339—97)



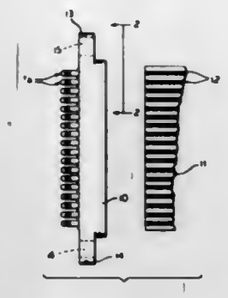
1. A plug member for an electrical connector comprising a body member having an opening therethrough, said body member having an annular portion of reduced diameter at its rearward end, said annular portion having a series of axially extending grooves in its outer surface extending from its rearward end toward its forward end, a strain relief member disposed within said opening, said relief member having an axial passage therethrough, a plurality of wires extending through said passage, each of said wires having an insulating covering, the outer end of each of said wires being folded back to engage the bottom surface of one of said grooves, a collar encircling said annular portion and engaging said insulating covering of said wires to hold said wires in engagement with said body member, and said body member and said strain relief member having means cooperating to hold said members in assembly, and said strain relief member having elements gripping said wires to minimize a pull-strain thereon, said strain relief member and said collar cooperating to hold the wires firmly in said grooves, said grooves being of greater dimensions than said wires and being adapted to receive a mating contact and for making electrical connection therewith by removal of the insulation from the wires upon movement of the mating contact into the grooves.

3,274,531
ELECTRICAL CONNECTOR
Francis K. Bourhenne, Lawndale, Calif., assignor to Sierra Electric Corporation, Gardena, Calif., a corporation of California
Filed Mar. 16, 1964, Ser. No. 352,034
1 Claim. (Cl. 339—99)



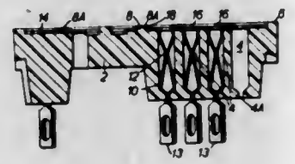
An electrical connector, for insulated wire cable, including: a casing, a flexible arm within said casing, said casing formed with a restricted cable entrance and with an enlarged cavity having an offset wall, said flexible arm designed to swing toward the restricted cable entrance to bend the cable out of line against the offset wall to effect a strain relief and a penetration of the insulation to contact the cable wire.

3,274,532
CONNECTOR FOR PRINTED WIRE BOARD
William J. Engel, Chicago, Ill., assignor to United-Carr Incorporated, a corporation of Delaware
Continuation of application Ser. No. 794,013, Feb. 18, 1959. This application Mar. 17, 1964, Ser. No. 353,319
2 Claims. (Cl. 339—176)



1. In combination with a connector body part having a longitudinally extending channel and a transversely oriented contact receiving cavity intersecting said channel, said cavity having a bottom wall and opposed end walls and an opening extending upwardly into said cavity through the bottom wall adjacent each end wall thereof, a pair of contact members mounted within said cavity adjacent each end wall in spaced, opposed relationship to one another and adapted to receive a longitudinally oriented male member in frictionally gripped relationship therebetween with at least one of said contact members adapted to be electrically coupled with said male member, each of said contact members including a spring leg portion juxtaposed to each end wall of the cavity and extending through said opening and terminating in a free end outside the cavity thereof, each of said spring leg portions being inclined slightly upwardly and inwardly from a point adjacent the bottom wall of said cavity and forming a first flexure zone thereat, each of said spring leg portions at the outside free end thereof being adapted to be connected to an electrical conductor, a contact portion having an upper portion and a lower portion secured at one end to the other end of each of said spring leg portions with the upper portion of each contact portion extending inwardly and downwardly in the direction of one another, the point of jointure of each of said upper portions to each spring leg portion forming a second flexure zone thereat, the lower portion of each contact portion extending downwardly from said upper portion in generally spaced parallel relationship to the spring leg portion and to each other for a distance sufficient to form a passageway between the lower portion of each contact portion having a substantial contacting surface which will frictionally engage a male member when inserted into the passageway, the width between said lower portions being normally less than the width of the male member to be inserted therein, a leaf spring portion integrally joined at one end to the free end of each of said lower portions of said contact portions and extending upwardly and inwardly from the lower portion of each contact portion in the direction of its corresponding leg portion, each of said first flexure points normally biasing each spring leg and its contact portion in the direction away from the juxtaposed cavity end wall with each of said first flexure points being relatively pliant as a result of the length of each leg portion so as to be overcome by a relatively small force applied against each contact portion upon initial insertion of the male member into said channel to move each of said leg portions and contact portions inwardly in the direction of the respective end walls of the cavity; said second flexure zone of each contact member being relatively stiff as a result of the shortness of the upper contact portion of each contact portion and the formed passageway between the lower portions and the leaf spring portion so as to be overcome only by a greater force applied against such contact portion by said male member subsequent to the initial insertion thereof into said cavity by the relatively small force.

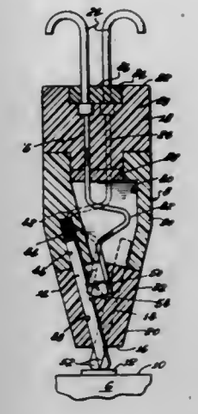
3,274,533
ELECTRIC SOCKET CONNECTORS
James E. Apted, London, and George F. N. Oliver, Bean, near Dartford, Kent, England, assignors to Oliver Pell Control Limited
Filed June 26, 1964, Ser. No. 378,188
Claims priority, application Great Britain, July 1, 1963, 25,986/63
4 Claims. (Cl. 339—192)



1. An electrical socket connector including a moulded body of electrically insulating, synthetic resin plastic, material having a plurality of apertures therein, each aperture extending completely through the body from the upper surface to the lower and having a portion of reduced cross section at its lower end, the body having an integral, continuous rim extending around its periphery and projecting above the upper surface of the body and a plurality of integral upstanding pips on the said upper surface, a plurality of female spring contacts each housed in one of the said apertures, each said contact having a pair of opposed arms which bear resiliently against the sides of the aperture, and having a lower portion of reduced cross-section projecting downwardly through the reduced portion of the said aperture, the lower portion of the contact below the lower surface of the body forming a terminal and being adapted to retain the contact against upward movement out of its aperture, and a cover plate which is thin relative to the thickness of the body, the said cover plate being located laterally by the rim on the body, having holes to receive the said pips, which are deformed to form rivet like heads which retain the plate to the body, the said plate also being formed with apertures which register with those in the body but are of lesser width so that the edges of the apertures in the plate overlie and thereby protect the upper end edges of the arm of the spring contacts.

3,274,534
ELECTRICAL CONNECTOR
William K. Shortridge, Anaheim, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Dec. 2, 1963, Ser. No. 327,457
15 Claims. (Cl. 339—196)

1. An electrical connector comprising, in combination:
(a) a housing having an upper surface and a lower surface;
(b) output terminals positioned at said housing upper surface;
(c) contact pins spaced longitudinally of the housing and receivable therein for independent movement angular to the housing vertical axis to and from retracted positions within said housing and extended positions of protrusion from said housing lower surface;
(d) contact leads extending between each of said output terminals and respective associated contact pins; and
(e) biasing means urging said pins independently into said positions of protrusion beyond the housing lower surface and permitting said pins retraction into said housing, such that the pins wipingly engage circuit terminals positioned thereagainst to force said pins into retracting movement.



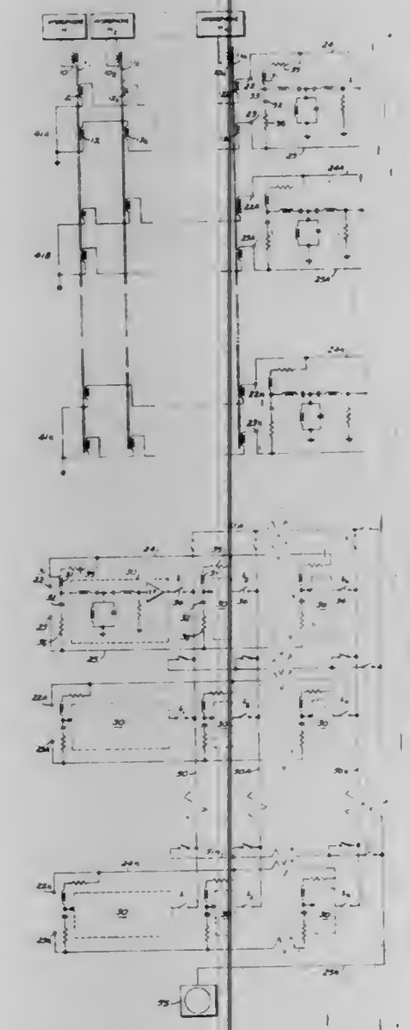
3,274,535
PROPAGATION VELOCITY CORRECTION FOR DOPPLER LOG
Edwin E. Turner, Newport, R.I., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 14, 1964, Ser. No. 396,439
6 Claims. (Cl. 340—3)

1. In a system for determining the velocity of a vehicle moving through a fluid medium of the type wherein a sound beam of a given frequency is radiated from said vehicle at a given depression angle with the horizontal and the echo signal which is thereafter reflected from the bottom is compared with the radiated signal to produce a Doppler shift signal indicative of said velocity, the improvement of
automatically varying the depression angle at which said sound beam is radiated in response to changes in the temperature of the surrounding fluid medium, thereby to compensate for changes in the velocity of sound propagation occurring as a result of said temperature changes.

3,274,536
BROAD BAND MULTIPLE BEAM FORMING DEVICE
Frank R. Abbott and James A. Peugh, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 31, 1964, Ser. No. 393,462
4 Claims. (Cl. 340—6)

2. A beam steering system for defining a plurality of differently aimed signal beams, said system comprising:
an array of uniformly spaced transducers,

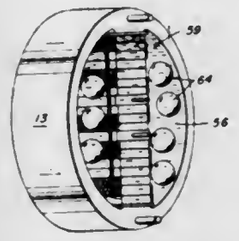
means associated with each transducer for deriving a voltage proportional to sin ϕ_n, where ϕ_n is the phase shift seen by the nth transducer relative to an arbitrary fixed point in said array,
means associated with each transducer for deriving a voltage proportional to cos ϕ_n, where ϕ_n is the phase shift seen by the nth transducer relative to said arbitrary fixed point,
means for adding the derived sin voltages,
means for adding the derived cos voltages,



means for relatively shifting 90° the phase of the resultants of said voltages,
a plurality of filters capable of passing different discrete bands of frequencies coupled to said phase shifting means, and
means for selectively displaying the output voltages of said filters.

3,274,537
FLEXURAL-EXTENSIONAL ELECTRO-MECHANICAL TRANSDUCER
William J. Toulis, 1100 E. Broad St., Columbus, Ohio
Filed Oct. 17, 1963, Ser. No. 317,095
7 Claims. (Cl. 340—8)

1. A composite electromecanical transducer comprising in combination:
a plurality of open-ended tubular diaphragm members of identical non-circular cross sections, each of said tubular diaphragm members being adapted to vibrate in the flexural mode and said plurality of tubular diaphragm members being joined and sealed end-to-end,
electrically-actuable electromechanical converter means, individual to an disposed within each of said diaphragm members in thrust-transmitting relationship therewith and vibratile in the longitudinal mode of vibration in response to actuating electrical signals,
closure means sealed across both ends of the tubular diaphragm means,
electrical conductors connected to each of said electromechanical converter means for actuating the respective electromechanical converter means,
means for uniting said diaphragms and closure means so that said diaphragms and said closure means constitutes a transducer cavity,
means for automatically equalizing the pressure within said transducer cavity with external hydrostatic pressure,
each converter means comprising a stack of electromechanical-active elements each of which is adapted to alternately expand and contract along the longitudinal axis of said stack in response to the application of said electromechanically-active elements of an electric signal of fluctuating intensity, the longitudinal ends of said stack being in thrust-transmitting relationship with its associated diaphragm member;

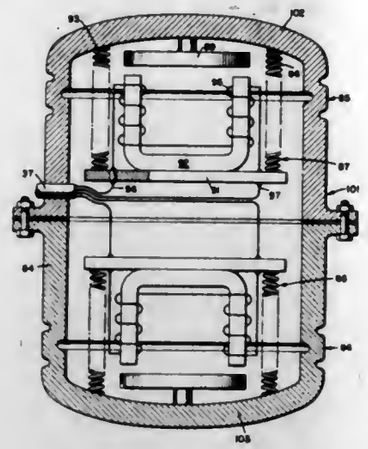


electrode means, operatively interconnecting each of said electromechanically-active elements to said electrical conductors for bringing each of said electromechanically-active elements under the operative influence of the actuating fluctuating electrical signal carried by said electrically-conductive actuating means;
insulator means, intermediate the respective longitudinal ends of said stack of electromechanically-active elements and the diaphragm member associated therewith, for electrically insulating said stack of electromechanically-active elements from said associated diaphragm member; and
heat dissipating means, connected to each of the electromechanically-active elements in said stack for conducting heat away from said electromechanically-active elements, said heat-dissipating means, in part, consisting of wire mesh-like structure for accelerating the dissipation of heat away from said electromechanically-active elements.

3,274,538
ELECTROACOUSTIC TRANSDUCER
Benjamin L. Snavely, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Original application Sept. 19, 1960, Ser. No. 57,085, now Patent No. 3,219,969, dated Nov. 23, 1965. Divided and this application Oct. 30, 1963, Ser. No. 326,652
4 Claims. (Cl. 340—8)

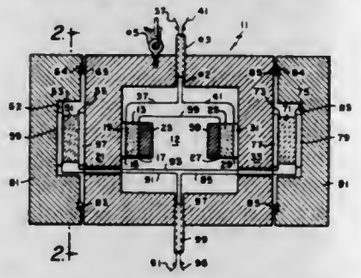
1. An underwater acoustic transducer comprising,
hollow cup-shaped elements secured together to form a closed compliant shell, each cup-shaped element having a bottom and side surface,

motivating means in each of said cup-shaped elements coupled to said bottom surfaces for movement thereof, said side surfaces being of sufficient softness to



compress when the bottom surfaces are actuated by said motivating means.

3,274,539
TRANSDUCER FOR SIMULTANEOUS MEASUREMENT OF PHYSICAL PHENOMENA OF SOUND WAVE
Alan O. Sykes, 304 Mashie Drive, Vienna, Va.
Filed Nov. 30, 1964, Ser. No. 414,929
10 Claims. (Cl. 340—10)



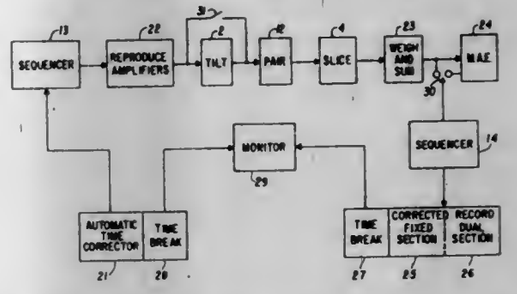
1. A transducer for simultaneously measuring a plurality of characteristics of a sonic wave at the same point in space comprising:
a first means for sensing a first physical characteristic of a sonic wave at a given point in space;
a hollow housing, said first means for sensing a physical characteristic of a sonic wave on a given point in space mounted within said hollow housing; and
a second means for sensing a second physical characteristic of a sonic wave at a given point in space rigidly mounted on the outside of said hollow housing.

3,274,540
HIGH ENERGY SONIC AND ULTRA-SONIC MAGNETOSTRICTION TRANSDUCER
Leonard J. Melhart, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 30, 1964, Ser. No. 422,465
5 Claims. (Cl. 340—11)



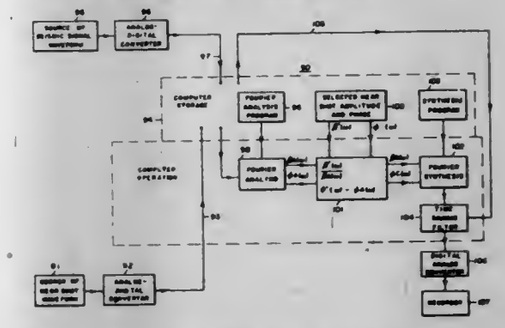
1. A transducer comprising:
a stack of identical laminations of magnetostrictive material pressed tightly together to form a transducer core, and
an elongated tubular element axially split through one side to form a single turn coil,
said single turn coil surrounding at least one portion of said transducer core.

3,274,541
SEISMIC VELOCITY FILTERING
Peter Embree, Farmers Branch, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 15, 1963, Ser. No. 258,782
26 Claims. (Cl. 340—15.5)



1. A method of processing seismic traces to indicate the presence, inside a predetermined time delay range, of signals in each trace having a time delay with respect to signals in another trace, wherein each trace is a function of its spatial origin in relation to the spatial origin of each other trace, comprising the steps of:
(a) weighting each trace in relation to each other as a function of their respective spatial origins,
(b) bidirectionally time shifting each trace in relation to each other as functions of their respective spatial origins and the predetermined time delay range,
(c) and compositing all the weighted and time shifted traces to produce a composite output indicative of the presence, inside the predetermined time delay range, of signals in each trace having a time delay with respect to signals in another trace.

3,274,542
METHODS OF BAND-EQUALIZING SEISMOGRAMS
William H. Ruehle, Dallas, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Mar. 25, 1963, Ser. No. 267,592
4 Claims. (Cl. 340—15.5)

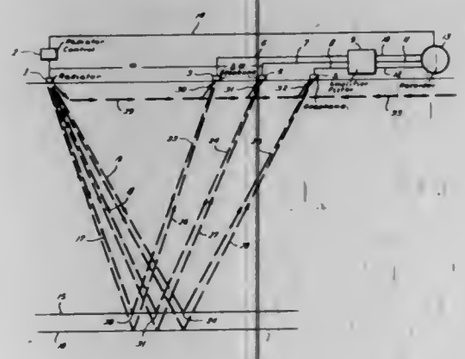


4. A method of producing from seismic signals generated in response to separate input seismic energies applied at different shot points improved seismic signals that would be generated if all were produced from a reference input seismic energy, comprising the steps of:
(a) generating a first signal having an amplitude-frequency spectrum $\beta A(\omega)$ representative of the amplitude-frequency spectrum of one of the input seismic energies,
(b) generating a second signal having an amplitude-frequency spectrum $\beta'(\omega)$ representative of the reference input seismic energy,

(c) comparing said first and second signals to produce a filter whose impulse response in the frequency domain is characterized by an amplitude-frequency spectrum of $\beta'(\omega)/\beta A(\omega)$, and

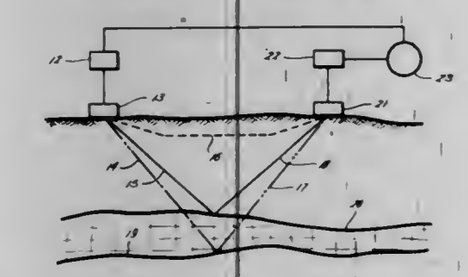
(d) applying to said filter the seismic signal generated in response to said one of said input seismic energies to produce an improved seismic signal.

3,274,543
MEANS AND METHOD OF DISTINGUISHING SEISMIC SIGNALS
Burton McCollum, Houston, Tex.; P. R. Rowe and Bank of The Southwest National Association, Houston, Tex., executors of said Burton McCollum, deceased
Filed Oct. 11, 1963, Ser. No. 315,620
17 Claims. (Cl. 340—15.5)



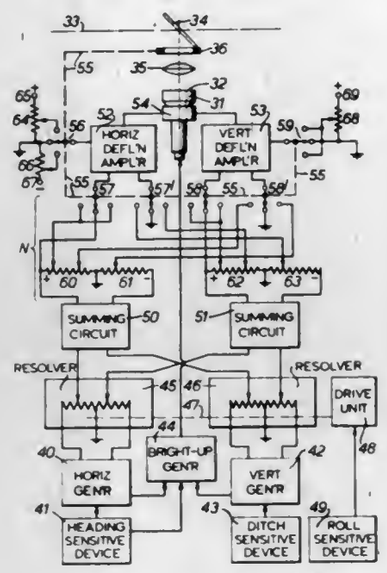
1. The method of seismic prospecting comprising radiating in the earth at least one truncated wave train signal of fixed frequency and amplitude and predetermined duration, detecting subsurface reflections of said signal, subjecting the detected signal reflections to signal frequency band suppression of the type to leave unsuppressed the terminal pulses of wave trains at said signal frequency, and recording the residual terminal pulses of the detected signal reflections.

3,274,544
METHOD OF DISTINGUISHING SEISMIC SIGNALS
Burton McCollum, Houston, Tex.; P. R. Rowe and Bank of the Southwest National Association, Houston, Tex., executors of said Burton McCollum, deceased
Filed Oct. 21, 1963, Ser. No. 317,423
8 Claims. (Cl. 340—15.5)



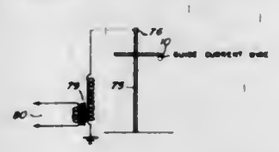
1. The method of seismic exploration comprising radiating in the earth a truncated wave train signal of constant frequency and amplitude and predetermined number of cycles, detecting a subsurface reflection of said signal and accompanying wave energy, repeating the detected signal reflection and associated wave energy a number of times equal to the number of half cycles in said signal, and making an algebraically composited record of the repeated reflection and wave energy progressively shifted in phase a half wave length of the signal and alternately reversed in phase for emphasizing the beginning of the reflected wave energy on the composite record.

3,274,545
ELECTRONIC DISPLAY APPARATUS
Donald Clive Bowles, Purley, and Derek Raymond Burrows, London, England, assignors to Rank-Bush Murphy Limited, London, England, a company of Great Britain
Filed July 15, 1963, Ser. No. 294,920
9 Claims. (Cl. 340—24)



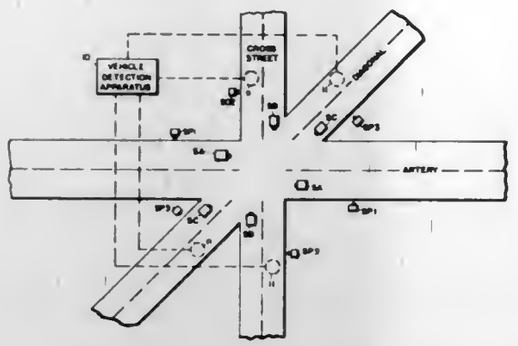
1. Electronic display apparatus comprising in combination: a cathode ray tube having a luminescent screen; means for producing a luminous display upon said screen; a partial reflector mounted for movement about an axis; an optical path whereby an image of said screen may be viewed in said reflector; electrical potential control means operated by movement of said reflector; shift means producing a displacement of said display on said screen; and means for applying said controlled potential to said shift means, thereby producing a displacement of said image when said reflector is moved such as to compensate for said movement of said reflector.

3,274,546
AIRCRAFT GUIDANCE, APPROACH, AND LANDING SYSTEM WITH YAW DETECTION AND METERING
Ross Gunn, 4437 Lowell St. NW., Washington, D.C.
Original application Apr. 29, 1959, Ser. No. 809,861, now Patent No. 3,116,473, dated Dec. 31, 1963. Divided and this application Oct. 30, 1963, Ser. No. 320,113
6 Claims. (Cl. 340—25)



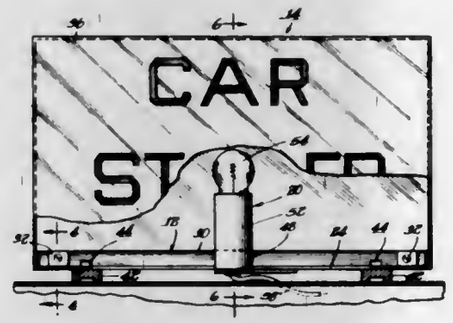
1. A guidance system for vehicles including, in combination, means for generating a pattern of alternating magnetic flux at least within the audio range, induction means on a vehicle for sensing said flux as an A.C. voltage, means on the vehicle to rectify said voltage, means to indicate the phase direction of the flux from said rectified voltage, a conductor positioned above ground and within the influence of said pattern of A.C. magnetic flux, means energizing said conductor with a high A.C. voltage of the same frequency as said pattern, and means on the vehicle to detect the electrostatic flux from said conductor, said means to rectify said voltage sensed from the pattern flux being synchronized by the detected electrostatic flux to insure correct indication of phase.

3,274,547
TRAFFIC SIGNAL CONTROLLER
Norman A. Bolton, Scottsville, N.Y., assignor to The General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 29, 1963, Ser. No. 319,761
9 Claims. (Cl. 340—37)



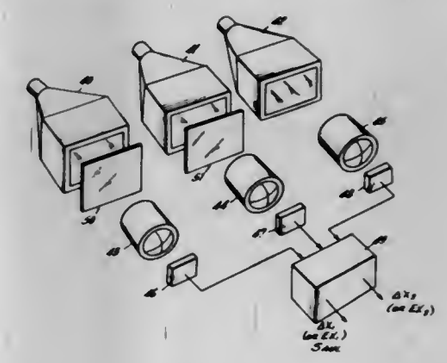
1. A multi-phase controller for traffic signals having a plurality of signal lamps which are illuminated in different combinations on successive intervals of each signal cycle and comprising in combination, a counter having a predetermined number of steps and including means for operating said counter from one step to the next in sequence, selector means operable between first and second conditions, said selector means in the first of its conditions operatively connecting said counter on any one step of a successive plurality of its steps with a respective first plurality of said signal lamps and in a second of its conditions operatively connecting said counter on said one step with a respective second plurality of signal lamps, and means for at times operating said selector means between its said first and second conditions but only when none of said successive plurality of steps of said counter is being operated.

3,274,548
ILLUMINATING AND SIGNAL DEVICE
John W. Brimsek, 630 Long Road, Glenview, Ill.
Filed Apr. 3, 1963, Ser. No. 270,304
3 Claims. (Cl. 340—84)



1. A device of the character described comprising, in combination, an electric light, a light mount supporting said electric light, an electric cord being electrically connected at one end to said electric light, an electric plug connected to the other end of the electric cord and being adapted for mounting in an automobile electric cigar lighter receptacle to energize said electric light, a base being removably attached to said light mount for supporting said light mount and the electric light, said base having an aperture for receiving said light and an elongated slot opening into said aperture, a magnet having a narrow neck being mounted in said slot and having one portion on one side of said base and the remainder on the other side of said base, a translucent message plate fixed to said base, and a second translucent message plate fixed to said base and being substantially opposite to the first-mentioned translucent message plate to have the electric light between said plates to illuminate the plates.

3,274,549
AUTOMATIC PATTERN RECOGNITION SYSTEM
Saul Moskowitz, Brooklyn, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed May 4, 1962, Ser. No. 192,456
3 Claims. (Cl. 340—146.3)



1. A pattern recognition system; said pattern recognition system comprising first and second and third image producing means for producing an image of a common object to be identified, first, second and third transducer means for receiving the radiant energy across the full area of said first, second and third images respectively, filter means for partially absorbing a predetermined portion of the energy of said first and second image interposed between said first and second image and said first and second transducer means, and computation network means for computing pattern information from the outputs of said first, second and third transducers; the output of said first cell being related to

$$\int_A \frac{I(x_1, x_2)}{K_1(x_1, x_2)} dx_1 dx_2$$

wherein $I(x_1, x_2)$ is a variable intensity distribution over the area A and $K_1(x_1, x_2)$ is a function of variables x_1 and x_2 over the area A the output of said second cell being related to

$$\int_A \frac{I(x_1, x_2)}{K_2(x_1, x_2)} dx_1 dx_2$$

wherein $K_2(x_1 x_2)$ is a second function of variables x_1, x_2 over the area A the output of said third cell being related to

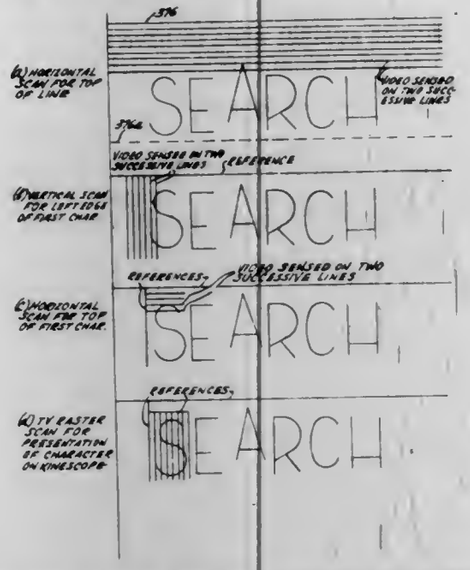
$$\int_A I(x_1, x_2) dx_1 dx_2$$

said computer being operable to compute the implicit displacement information Δx_1, and Δx_2 of said pattern from a predetermined value.

3,274,550
CHARACTER RECOGNITION SYSTEM INCLUDING CIRCUITS FOR LOCATING CHARACTERS AND CIRCUITS FOR DISCRIMINATING AGAINST NOISE
Seymour Klein, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 6, 1962, Ser. No. 200,365
9 Claims. (Cl. 340—146.3)

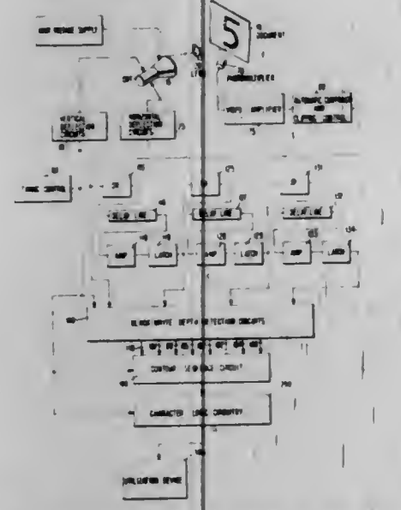
1. In a system for recognizing characters appearing on a page of printed material; means for locating the top

edge of the highest character in the first line of print; means for locating the left edge of the first character in



the first line of print; and means for locating the top edge of the said first character.

3,274,551
PATTERN RECOGNITION BY CONTOUR SEQUENCES
William S. Rohland, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,516
19 Claims. (Cl. 340—146.3)



1. Pattern recognition apparatus in which patterns are scanned in a series of vertical scans horizontally displaced from each other, the pattern recognition apparatus including:

means for simultaneously presenting signals representing a present scan and a predetermined number of previous scans;

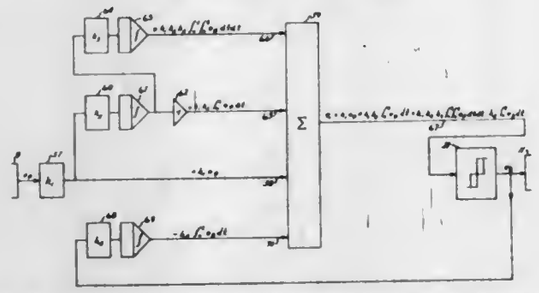
means for simultaneously sampling said signals a successive number of times;

depth detection means connected to said signal representing means and to said sampling means for developing weighted notation signals according to the optical condition of each sampling interval of each current scan and modified according to the optical conditions of horizontally adjacent previously scanned areas to indicate the degree of entry into and exit from the pattern for each sampling interval of each current scan;

examining means connected to said depth detection means for sequentially examining said notation signals within each vertical scan to develop outputs indicative of segmental shapes indicative of portions of patterns; and

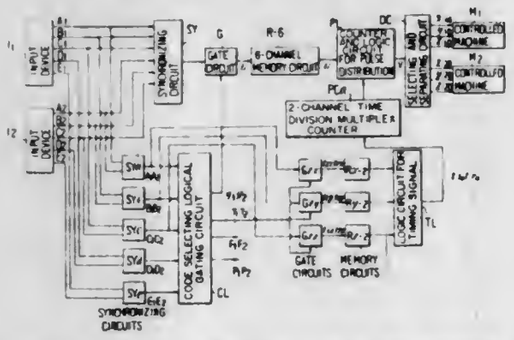
pattern identifying means operatively connected to said examining means to sequentially combine outputs therefrom for identifying the patterns.

3,274,552
ADAPTIVE MISSILE CONTROL SYSTEM
George Lamar Harmon and William O. Purcell, Orange County, Fla., assignors to Martin-Marietta Corporation, Middle River, Baltimore, Md., a corporation of Maryland
Filed June 25, 1962, Ser. No. 204,875
13 Claims. (Cl. 340—147)



12. In a control system, manually controlled means for producing a first signal, means for deriving first and second integrals of said first signal, means for deriving a degenerative feedback signal, means for adding said first signal, the integrals of said first signal, and said degenerative feedback signal to provide a composite signal, output means connected to be triggered by said composite signal, said output means having a predetermined upper threshold trigger value and a predetermined lower threshold trigger value and being triggered to an operative condition when said composite signal exceeds said upper threshold trigger value, said output means producing an output signal when in its operative condition, and means for producing from the output signal said degenerative feedback signal, said output means becoming inoperative to produce said output signal when said composite signal as a result of said degenerative feedback signal decreases to a valve lower than said predetermined lower thereshold value.

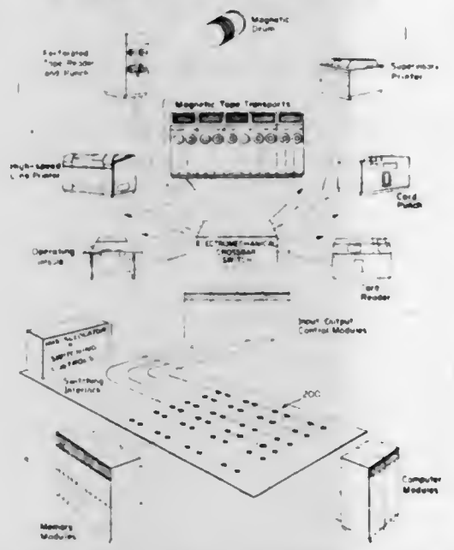
3,274,553
TIME-DIVISION, MULTIPLEX, NUMERICAL-CONTROL SYSTEM
Yuichiro Oya, Kitatama-gun, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Jan. 17, 1963, Ser. No. 252,110
1 Claim. (Cl. 340—147)



A time-division, multiplex numerical control system for accomplishing digital information processing, which comprises: m digital input devices, each generating respective command signals of n_1, n_2 . . . n_m channels and

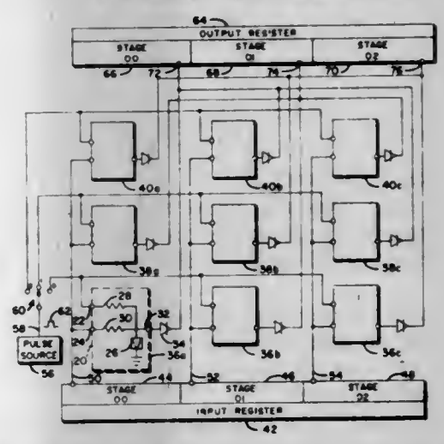
auxiliary signals corresponding to said respective command signals; a first synchronizing circuit which produces a time-division multiplexed signal of said respective command signals by synchronous pulses; a second synchronizing circuit which produces a time-division multiplexed signal of said respective command signals and auxiliary signals by synchronous pulses; a code selecting logical gating circuit which selects codes of the output time-division multiplexed signal of said second synchronizing circuit and produces various gate control signals, in accordance with said selected codes; a first gate circuit which controls an output time-division signal of said first synchronizing circuit to pass through said first gate circuit by one of said various gate control signals and passes a data signal of said output time-division signal through said first gate circuit; a first time-division memory circuit which memorizes said data signal; second gate circuits which control output time-division signals of said second synchronizing circuits to pass through said second gate circuit by another of said various gate control signals and passes time control signals of said output time division signals through said second gate circuits; second time-division memory circuits of m channel which memorize said time control signals from said second time-division memory circuits and produces time command signals in each input device; a counter circuit which introduces clock pulses synchronized with each channel into the input of appropriate bits of said counter circuit for each channel in accordance with said time command signal and counts said clock pulses; a time-division multiplexed pulse distribution circuit which controls the non-carry pulses of each channel of each bit of said counter circuit in accordance with said data signals and produces the time-division controlling command pulses of m channels; a separating circuit which separates said time-division controlling command pulse trains of m channel for m controlled devices.

3,274,554
COMPUTER SYSTEM
Warren W. Hopper, West Chester, Stanley J. Pezely, Norristown, Leonard H. Sichel, Jr., Bryn Mawr, Ronald B. Lounsbury, St. Davids, and Patricia V. Zimmerman, Oreland, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 15, 1961, Ser. No. 89,525
27 Claims. (Cl. 340—172.5)



21. In a system comprising requestor units and a unit to which a request is made, hold matrix means operable upon more than one request for the said requested unit and on busy conditions of said requested unit, said matrix comprising an OR gate for each requestor unit, an AND gate for said requested unit for each of the requestor units, means to provide a first input indicative of requested unit address from each of said requestor units to each of said AND gates, and a second common input to each of said AND gates responsive to busy condition of said addressed unit, each of said requestor unit OR gates being responsive to its respective AND gate, said OR gate having an input responsive to a signal indicating that said requestor unit is to await operation upon its request, each of said OR gates having output means to provide a signal to its corresponding unit to enable said unit to sense said OR gate output and take appropriate holding action.

3,274,555
DIGITAL DATA TRANSFER CIRCUIT UTILIZING TUNNEL DIODES
Louzelle A. Luke, Coon Rapids, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,529
10 Claims. (Cl. 340—172.5)



1. A digital signal shifting circuit comprising: a plurality of switching circuits arranged in a matrix array of rows and columns; each of said switching circuits comprising two signal input terminals, an output terminal, a tunnel diode electrically operational in at least two different states, and impedance means electrically interconnecting said input terminals, said output terminal and one electrode of said tunnel diode; an input data storage register; an output data storage register; means connecting electrical signal representations of the data value of each different stage of the input register to a first input terminal of all of the switching circuits in respectively different columns; impedance means connecting the output terminal of different ones of the switching circuits in each column to a respectively different stage of said output data storage register; and means for selectively applying an electrical signal to the second input terminal of all of the switching circuits in any one row.

3,274,556
LARGE SCALE SHIFTER
Gerard T. Paul, Jules F. Dirac, and Gene M. Amdahl, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 10, 1962, Ser. No. 208,845
14 Claims. (Cl. 340—172.5)

1. A data transfer device comprising

a plurality of storage registers for storing information in assigned register positions,

a first logic level connected to the storage registers and including a first data collecting means adapted to provide a first output,

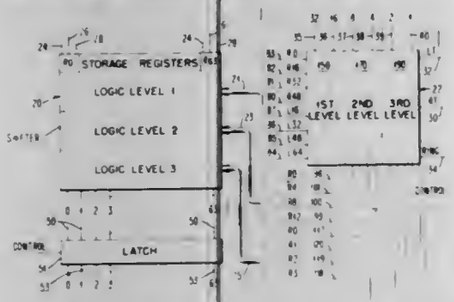
said first logic level responsive to a first control signal to transfer information from the register positions to preselected points in the first data collecting means,

said points being displaced in first or second directions or both directions relative to the register positions according to the first control signal,

a second logic level connected to the first output and including a second data collecting means adapted to provide a second output,

said second logic level responsive to a second control signal to transfer the information from the first output to preselected points in the second data collecting means, said points in the second data collecting means being displaced in the first direction relative to the points in the first data collecting means according to the second control signal,

and a third logic level connected to the second output and including a third data collecting means adapted



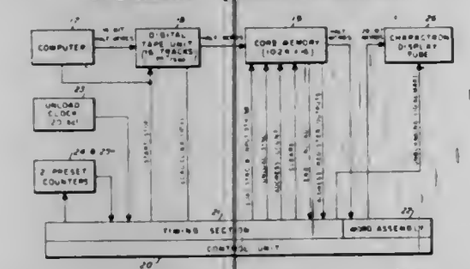
to provide a third output,

said third logic level responsive to a third control signal to transfer the information from the second output to preselected points in the third data collecting means,

said points in the third data collecting means being displaced in the first direction relative to the points in the second data collecting means according to the third control signal,

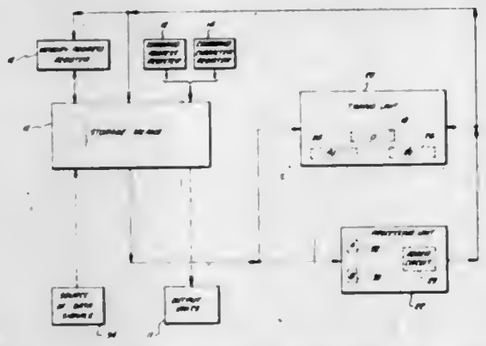
thereby to transfer the information in the storage register positions to the third output whereby the third output is displaced in a direction and a desired number of positions relative to the register positions according to the sum of the first, second and third control signals.

3,274,557
DISPLAY SIMULATOR FOR COMPUTER-AIDED SYSTEMS
Roger H. Prager, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 24, 1962, Ser. No. 212,172
5 Claims. (Cl. 340—172.5)



1. A display simulator for computer-aided systems comprising in combination, tape recorder means adapted for receiving and recording fourteen bit half-words and concomitant regulatory signals and timely producing successive sets of fourteen bit half-words as the output therefrom, memory means coupled to the output of said tape recorder means for storing each of said successive sets of fourteen bit half-words a predetermined time period, means connected to the output of said memory means for assembling successive adjacent pairs of said fourteen bit half-words into twenty-eight bit words, means connected to said assembling means for displaying said twenty-eight bit words, and means interconnecting each of the aforesaid means for timing the respective aforementioned functions thereof to effect the display of said twenty-eight bit words by said display means so that they will be read out as predetermined coherent symbolic characters.

3,274,558
DIGITAL DATA PROCESSOR
Richard Stanton Sharp, Sierra Madre, Calif., Dan Allan Neilson, North Palm Beach, Fla., and James Russell Bennett, Glendora, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Continuation of application Ser. No. 80,171, Jan. 3, 1961. This application Oct. 19, 1965, Ser. No. 505,123
33 Claims. (Cl. 340—172.5)



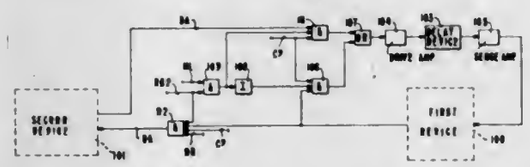
17. In a stored program computer the combination comprising:

(a) memory means for storing and reading out information a character at a time and arranged for storing and reading out commands composed of at least two addresses and at least two field length signals associated with the two addresses, said memory means including means for repeatedly reading out the addresses of a command,

(b) means for individually storing and selectively modifying in a predetermined manner the two field length signals of a command read out of the memory means and thereby form a plurality of different field length signals for each command, and

(c) means for combining the plurality of field length signals with the corresponding addresses repeatedly read out of the memory means and for forming a plurality of different addresses of characters in the memory means.

3,274,559
APPARATUS FOR TRANSFERRING DATA
Paul H. Giroux and Robert J. Urquhart, both of Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 4, 1961, Ser. No. 156,825
1 Claim. (Cl. 340—172.5)



In a data processing system, means for transferring serial trains of digital information between first and second devices, each of said first and second devices being operable at different first and second bit rates, each of said trains representing a word length composed of a predetermined plural number of bit intervals, said means comprising:

first And gate means coupled between the output of said first device and the input of said second device,

second And gate means coupled to the output of said second device,

delay means operable at a bit rate equal to said first bit rate and having an output coupled to the input of said first device,

third And gate means coupled to the output of said first device,

Or gate means having first and second inputs coupled respectively to the output of said second And gate means and the output of said third And gate means,

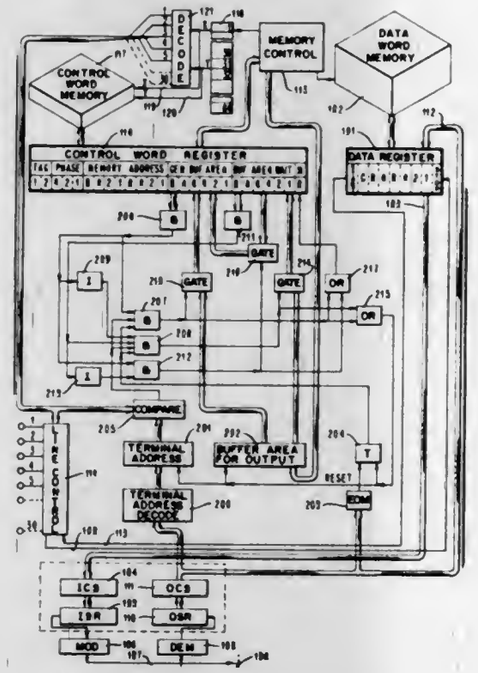
first means for periodically actuating said second And gate means at said second bit rate to pass therethrough the data bits of a serial train from the second device to said delay and first devices, one data bit of the serial train from said second device being passed during each actuation of said second And gate means,

second means for periodically actuating said first And gate means at said first bit rate to pass therethrough the data bits of a serial train from said first device for recirculation thereof through said delay and first devices, one data bit of the serial train from said first device being passed during each actuation of said first And gate means, and

third means for periodically actuating said third And gate means at said second bit rate to pass therethrough the data bits of a serial train from said first device to said second device, one data bit of the serial train from said first device being passed during each actuation of said third And gate means,

said first, second and third gate means being actuated by their respective said actuating means to allow the data bits to be transferred between the first and second devices simultaneously.

3,274,560
MESSAGE HANDLING SYSTEM
Gerry D. Granito, Poughkeepsie, N.Y., Lucius D. Smith, Atlanta, Ga., and Dana R. Spencer and Thomas S. Stafford, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 12, 1962, Ser. No. 223,228
10 Claims. (Cl. 340—172.5)



1. A message handling system comprising:

a plurality of data lines;

a plurality of utilization devices respectively connected to each said data line;

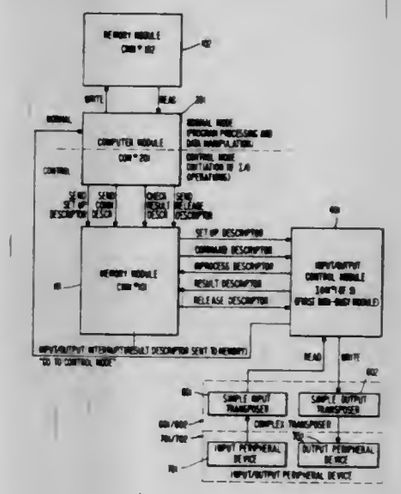
a data memory, said memory having addressable locations for storing data messages;

control means for placing each said lines in one or the other of two modes for transfer of data to or from an associated utilization device and one of said memory locations as required;

means for recognizing that a completed message is ready for transfer from one of said memory locations to one of said lines;

means, responsive to said control means and said completed message recognition means, for effecting immediate transfer of said message if said line is not presently in one of said modes.

3,274,561
DATA PROCESSOR INPUT/OUTPUT CONTROL SYSTEM
Henry Raymond Hallman, Norristown, and Leonard H. Sichel, Jr., Bryn Mawr, Pa., Cornelius C. Perkins, Birmingham, Mich., and Stanley J. Pezely, Norristown, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 30, 1962, Ser. No. 241,421
27 Claims. (Cl. 340—172.5)



24. An input/output system for a data processor having at least one Input/Output peripheral control device and a plurality of peripheral devices, each of said peripheral devices having means associated with it to control the communication transfer rate between said peripheral device and said at least one *I/O* peripheral control device, and said at least one peripheral control device having means for transferring said control to said associated means.

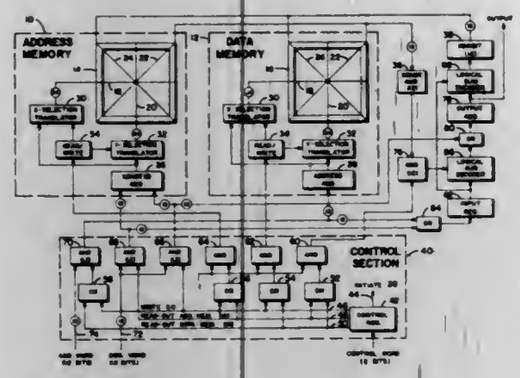
3,274,562
MEMORY APPARATUS WHEREIN THE LOGICAL SUM OF ADDRESS AND DATA IS STORED AT TWO ADDRESSABLE LOCATIONS
George B. Strawbridge, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 30, 1963, Ser. No. 254,986
5 Claims. (Cl. 340—172.5)

1. In combination:

memory apparatus comprising a plurality of independently accessible addressable storage registers, said memory apparatus including addressing means for accessing selected ones of said addressable storage locations;

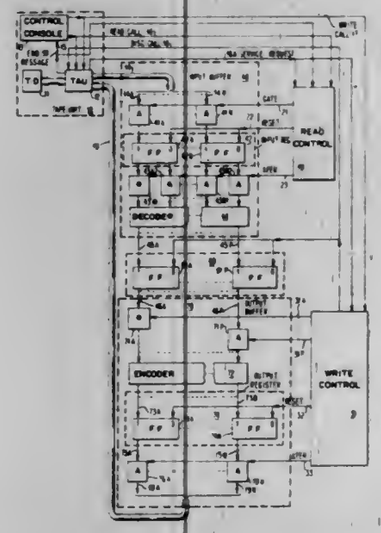
receiving means for receiving manifestations of first and second binary-coded words, each of said words indicative at least in part of an address to be accessed in said memory apparatus, said receiving means coupled to said addressing means;

logical summing means coupled to said receiving means for combining the manifestations of said first and second words to provide manifestations of the logical sum thereof;



and control means coupled to said logical summing means and said memory apparatus for storing the manifestations of the logical sum in said memory apparatus at a storage register address defined by the manifestations of said first word and at storage register address defined by the manifestations of said second word.

3,274,563
SORTER SYSTEM
Theodore C. Cox, Rhinebeck, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 2, 1963, Ser. No. 292,241
5 Claims. (Cl. 340—172.5)



3. In a system for sorting into order of value each of a plurality of words which may have any one of a number of values and which are serially produced in random order of value by a word generator,

the combination comprising:

a storage device having a plurality of elements,

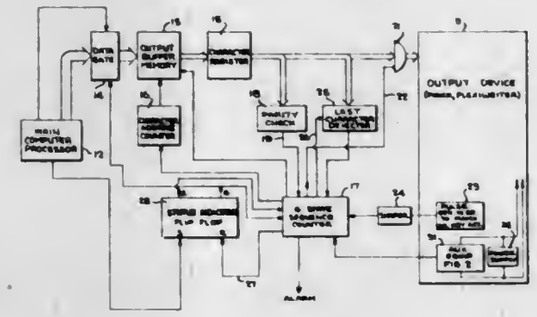
said elements corresponding to and representative of the various possible values of said words arrayed in the order of word values represented thereby,

each of said elements being operable for storing a single bit of information, and

decoding means coupled to said generator operative in response to each of the series of words produced by said generator for writing a bit into the one of said memory elements representing the value of the received word,

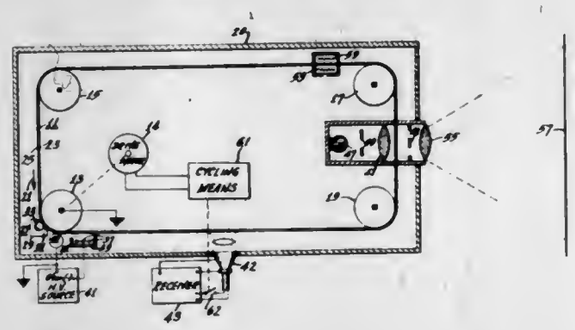
whereby a number of significant information bits representing each value of a plurality of words are stored in serial order within the appropriate storage elements to represent the identity or relative values of said words.

3,274,564
DATA PROCESSOR
Alfred A. Binder, Cincinnati, Ohio, and Thomas J. Linder, Eau Gallie, Fla., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed July 12, 1963, Ser. No. 294,589
11 Claims. (Cl. 340—172.5)



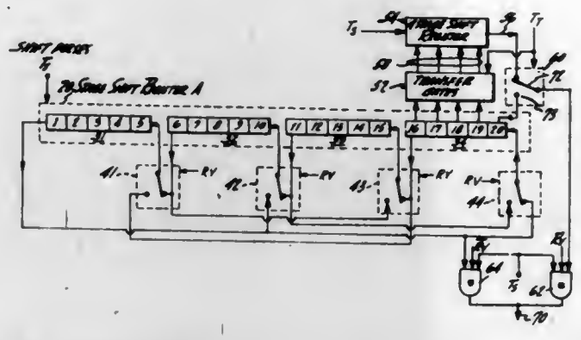
1. In a data processor wherein data are transferred from a main processor through an addressed buffer memory to an outputting device, means for deriving an indication in response to a non-operating condition of said device, means responsive to said indication for resetting said memory back to a predetermined address, and means responsive to said indication for preventing data flow from the main processor to the buffer memory while said device is in the non-operating condition.

3,274,565
OPTICAL-PHOTOCONDUCTIVE REPRODUCER UTILIZING INSULATIVE LIQUIDS
Paul E. Wright, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 1, 1961, Ser. No. 106,698
18 Claims. (Cl. 340—173)



13. Image reproduction apparatus comprising a substantially transparent elongated layer of photoconductive insulating material, means for transporting said layer along a predetermined path, means adjacent said path for applying insulating liquid to said layer as a thin film, corona generating means for producing a substantially uniform electrostatic charge on said layer, means for projecting a light image onto said layer to produce thereon a latent electrostatic image, and schlieren optic means for illuminating said layer to convert the surface modulated image formed by said latent electrostatic image into a projected light image.

3,274,566
STORAGE CIRCUIT
Ellwood P. McGrogan, Jr., Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 15, 1966, Ser. No. 527,566
3 Claims. (Cl. 340—173)



1. In combination:

a first one-way shift register having n storage stages and subdivided into $k=n/x$ groups of x stages each, the first stage of each i'^{th} group being connected to the last stage of the

$$i\overset{\ominus}{k}1'^{th}$$

group, said register storing bits in a certain order, where n, k and x are integers, $i=1, 2 \ldots k$, and

$$\overset{\ominus}{k}$$

represents modulo k subtraction;

a second one-way shift register, this one with at least $x-1$ stages;

means for applying shift pulses to both of said registers, in the case of the first register, for shifting the information stored in each j'^{th} stage to the

$$j\overset{\ominus}{n}1'^{th}$$

stage and, in the case of the second register, for shifting the information stored from stage to stage; where $j=1, 2 \ldots n$, and

$$\overset{\ominus}{n}$$

represents modulo n subtraction;

an output terminal at one of said stages of said first register at which the stored bits may be read out in serial fashion in said certain order in response to said shift pulses;

an output terminal at one of the stages of the second register at which the bits stored therein may be read out in serial fashion in response to said shift pulses;

switch means associated with said first register for disconnecting the first stage of each i'^{th} group from the last stage of the

$$i\overset{\ominus}{n}1'^{th}$$

group and for connecting the first stage of each i'^{th} group to the last stage of the

$$i\overset{\oplus}{k}1'^{th}$$

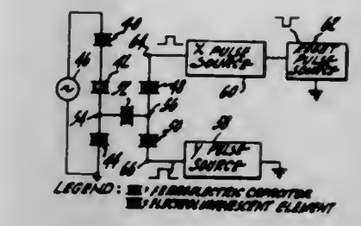
group, where

$$\overset{\oplus}{k}$$

represents modulo k addition; and

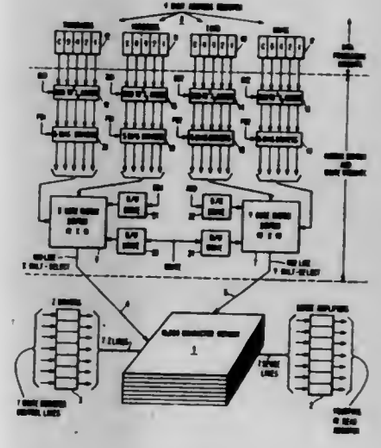
means for transferring at least the first $x-1$ bits stored in one of said groups of stages in the first register into the second register, in an order such that they are shifted out of the second register in an order which is the reverse of that in which they are stored in the first register, each x'^{th} shift pulse.

3,274,567
FERROELECTRIC CONTROL CIRCUIT
Ennio Fatuzzo, Zurich, Switzerland, assignor to Radio Corporation of America, a corporation of Delaware
Filed May 17, 1962, Ser. No. 195,453
12 Claims. (Cl. 340—173.2)



2. In combination, an alternating current load, first and second ferroelectric storage elements, and an alternating current source, all connected in series; means for polarizing said elements in opposite directions; and means including third and fourth series connected ferroelectric storage elements coupled to said first and second elements responsive to a single pulse for providing a low impedance path for said pulse, and responsive to two concurrent pulses for reversing the polarization of one of said storage elements.

3,274,568
MAGNETIC CORE MATRIX SWITCH
Warren A. Christopherson, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 21, 1961, Ser. No. 118,618
12 Claims. (Cl. 340—174)



1. In a magnetic core matrix having a plurality of bistable cores arranged according to rows and columns, means for changing the magnetic state of a selected core comprising:

row and column bias windings on each of said cores,

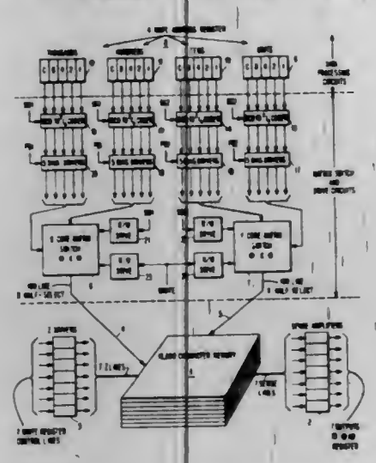
means for energizing all of said bias windings to produce additive M.M.F. in each core tending to drive said cores toward a first saturation state,

a read winding on each of said cores,

means for energizing said read windings to produce an M.M.F. tending to drive the subsequently unbiased of said cores toward a second saturation state,

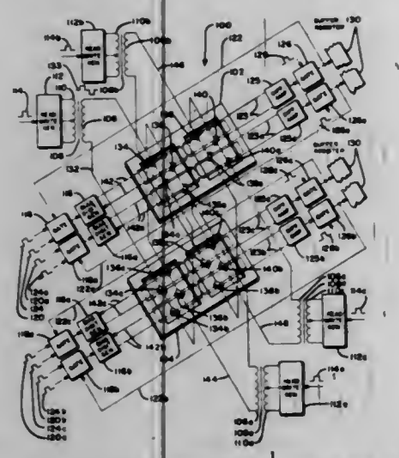
and means for deenergizing those of said bias windings tending to drive the selected core toward the first saturation state whereby the M.M.F. induced in said selected core by said read winding effects a change of flux in the selected core.

3,274,569
DECODING DEVICE
Leonard Roy Harper, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 21, 1961, Ser. No. 118,623
11 Claims. (Cl. 340—174)



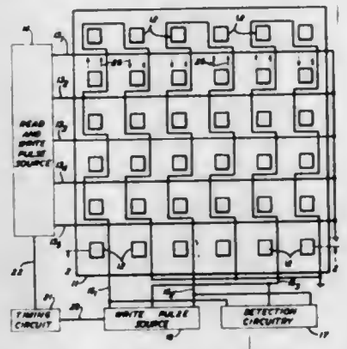
1. In a magnetic core matrix having a plurality of bistable cores arranged according to rows and columns, means for changing the magnetic remanent state of a selected core comprising: bias means for driving all but a selected core to saturation in a first direction, said bias means including row and column bias windings, means for energizing selected of said column bias windings to bias all but one column of said cores to saturation in a first direction, means for energizing selected of said row bias windings to bias all but one row of said cores to saturation in a first direction, a read winding including all of said cores, and means for energizing said read winding to drive an unbiased core to saturation in a second direction whereby the selected core common to said unbiased column and row is changed in state.

3,274,570
TIME-LIMITED SWITCHING FOR WORD-ORGANIZED MEMORY
Sigbjorn A. Brekne, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 22, 1961, Ser. No. 139,947
13 Claims. (Cl. 340—174)



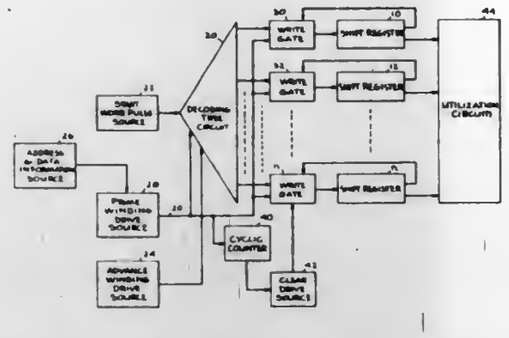
1. A magnetic memory system comprising a plurality of substantially similar two-dimensional arrays each of which includes a plurality of magnetic cores each having a substantially rectangular hysteresis characteristic and being capable of being operated in a time-limited, a steady-state, or a saturated condition as a function of a magnetic field of a predetermined amplitude-duration characteristic, with all of said cores arranged in columns and rows and including a first plurality of conductors each of which is inductively coupled to a separate column and a second plurality of conductors each of which is inductively coupled to a separate row for producing a plurality of magnetic fields for placing said cores in at least two magnetic stable states and a third plurality of conductors each of which is inductively coupled to predetermined ones of said cores for sensing the magnetic state of said cores, the improvement comprising: means coupled to each of said first plurality of column conductors for conducting symmetrical first and a second, opposite polarity, time-limited, read and write signals, respectively; means coupled to each of said second plurality of row conductors for conducting a constant bias signal of said first polarity and a time-limited digit signal of said second polarity wherein the field produced by said read and bias signals has a sufficient amplitude-duration characteristic to drive the magnetic state of said cores into a first stable state saturation condition, the field produced by said write and bias signals has an insufficient amplitude-duration characteristic to drive the magnetic state of said cores into a stable state substantially different from said first stable state, and the field produced by said write, bias and digit signals has only a sufficient amplitude-duration characteristic to drive the magnetic state of said cores into a second stable state time-limited condition; and transformer means coupling said read-write signals to said first plurality of column conductors.

3,274,571
MAGNETIC MEMORY CIRCUITS
Andrew H. Bobeck, Chatham, and James L. Smith, Bedminster, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 7, 1962, Ser. No. 215,318
20 Claims. (Cl. 340—174)



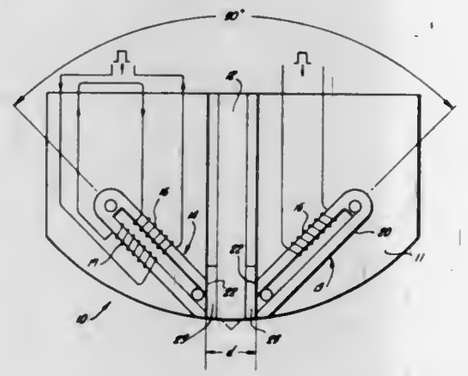
1. A magnetic memory circuit comprising a high magnetic permeability base plate having a bottom portion and a plurality of posts protruding from said bottom portion, an overlay magnetic sheet having substantially rectangular hysteresis characteristics positioned contiguous to said posts, a first and a second memory cell, each being defined by said bottom portion, said overlay sheet and two of said posts, each of said memory cells including a closed flux path therein, said first and second memory cells together comprising a bit address, means for establishing a first remanent magnetic condition in said first memory cell and a second remanent magnetic condition in said second memory cell indicative of a first binary value stored in said bit address and for establishing said second remanent magnetic condition in said first cell and said first remanent magnetic condition in said second cell indicative of a second binary value stored in said bit address, means for establishing said first remanent magnetic condition in both of said first and second cells, and means for detecting the flux reversals effected in either said first or said second cell when it is switched from said second to said first remanent magnetic condition.

3,274,572
MEMORY SYSTEM
John A. Swanson, Mountain View, Calif., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 26, 1963, Ser. No. 268,123
5 Claims. (Cl. 340—174)



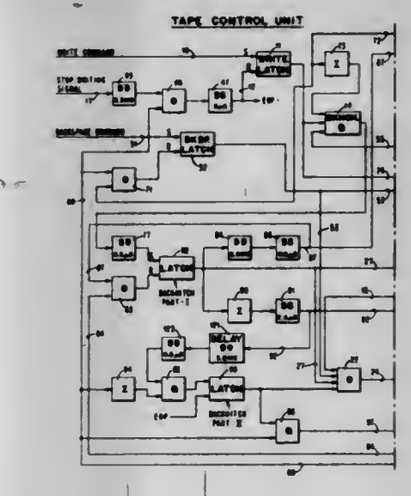
1. In a system for storing data in a shift register having a first and last stage wherein there is a first magnetic core having at least two input minor apertures, and a last magnetic core having at least one output minor aperture, a system for gating information into said register comprising a first, second and third magnetic core, winding means coupling said third magnetic core with said last and first shift register cores for enabling an input to said first shift register core only in the absence of an output from said third core, means coupling said first and second and first and third cores for transferring an output from said first core to said respective second and third cores, transfer winding means for applying output from said second core to said first core of said shift register, means for conditioning said second core after receiving an input from said first core in accordance with data desired to be entered into the first core of said shift register, and means for simultaneously applying a drive to said second core, said third core and the last core of said shift register, for entering data in accordance with the condition of said second core into the first core of said shift register, for preventing the entry of data from said last core of said shift register, into said first core of said shift register, and for applying an output from said third core to said first core.

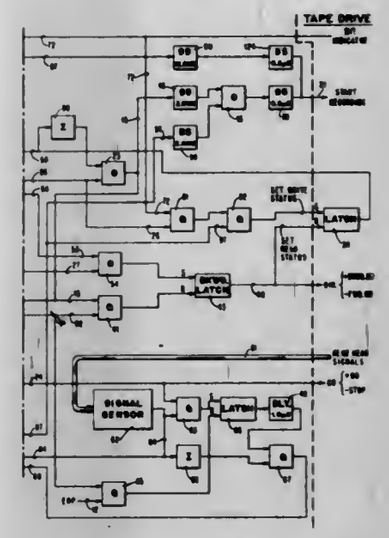
3,274,573
MAGNETIC TRANSDUCER
Henry M. Merrill, Altadena, and Gardner P. Wilson, Arcadia, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 21, 1961, Ser. No. 132,677
8 Claims. (Cl. 340—174.1)



1. A magnetic transducer for reading and writing simultaneously on a single track of a magnetic carrier comprising a substantially non-magnetic body having a pair of spaced, closed loop magnetic portions each including an exposed high reluctance transducing gap therein arranged in the same plane for reading and writing simultaneously, a magnetic shield arranged between said transducing gaps carried by said body to shield the transducing gaps from one another, said magnetic portions being arranged in a divergent relationship relative to said intergap magnetic shield for minimizing cross-coupling, and at least a single transducing winding individually coupled to each of said magnetic portions for defining the read and write transducers.

3,274,574
BACKHITCHING TAPE CONTROL
Earl W. Miller, Poughkeepsie, and John W. Irwin, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 24, 1962, Ser. No. 246,813
12 Claims. (Cl. 340—174.1)



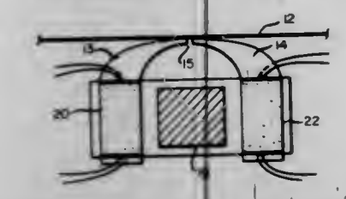


1. A system for backhitching a digital tape data block recorded on a tape in a tape drive comprising:
means for sensing the occurrence of a write command while said tape drive is in read status to provide a backhitch signal,
means for driving said tape in a backward direction in response to said backhitch signal,
and means for reversing the direction of movement of said tape in response to sensing an end of a prior block.

3,274,575
TRANSDUCER HAVING A MAGNETO-RESISTIVE BRIDGE CIRCUIT

Heinz Adolf de Koster, 55 Madrona St., San Carlos, Calif.

Filed Aug. 1, 1963, Ser. No. 299,333
17 Claims. (Cl. 340—174.1)

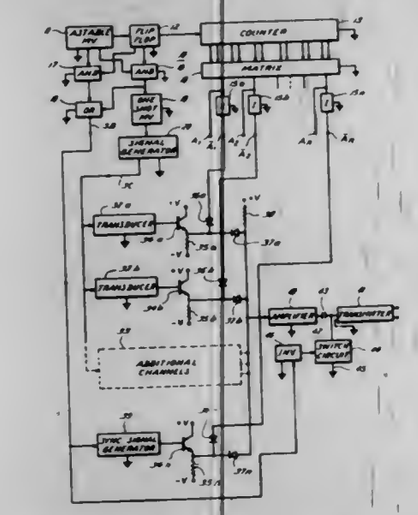


17. A transducer comprising a magnetic bridge having four arms, each of said arms providing a path for magnetic flux and each including a high reluctance gap, adjacent arms being magnetically connected to form bridge terminals, and four magneto-resistive elements one disposed in each of said arms in said gap. each of said elements including two terminals for connecting the same to associated electrical circuits.

3,274,576
TELEMETERING ENCODER SYSTEM

Jean Hubert Guignard, L'Hay les Roses, France, assignor to Societe de Prospection Electrique Schlumberger, S.A., Paris, France, a corporation of France

Filed June 4, 1962, Ser. No. 199,729
Claims priority, application France, July 12, 1961, 868,564
15 Claims. (Cl. 340—183)



1. A telemetering encoder system comprising: a plurality of transducer means; a common output signal channel; diode switching circuit means including coupling diodes for individually coupling the different transducer means to the common output signal channel and circuit means for activating the coupling diodes one at a time in sequence; and clamping circuit means coupled to the common output signal channel for periodically clamping the signal level in the output channel at a predetermined constant value.

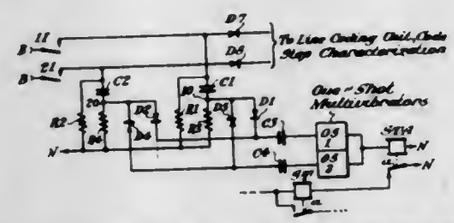
3,274,577
STATUS CHANGE DETECTION APPARATUS

Donald E. Stark, Eastwood, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Oct. 18, 1963, Ser. No. 317,309
2 Claims. (Cl. 340—213)

1. Indication code starting apparatus for the remote stations of a coded remote control system, comprising at each station in combination,

(a) a condition repeating SPST contact for each two-condition indication function, operable between a closed and an open position to repeat the first and second conditions respectively of the corresponding function,
(b) a capacitor associated with each repeating contact,
(c) an auxiliary starting relay,
(d) a source of direct current energy,
(e) a first and a second one shot multivibrator device,
(f) a first circuit for each capacitor including said source, the corresponding repeating contact, the capacitor, and a first resistor for charging that capacitor when said corresponding repeating contact closes,
(g) a second circuit for each capacitor including that capacitor, the corresponding first resistor, and a second resistor connected in series for discharging that capacitor when the corresponding repeating contact opens,

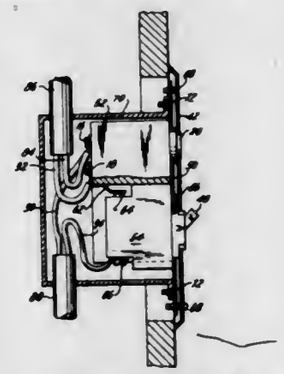


(h) a coupling network connected between said first multivibrator device and each capacitor for applying an actuating pulse of preselected polarity to said first device when a repeating contact closes,
(i) another coupling network connected between said second multivibrator device and each capacitor for applying an actuating pulse of opposite polarity to said second device when a repeating contact opens,
(j) an energizing network for said auxiliary relay jointly controlled by said multivibrator devices for briefly energizing said relay when a multivibrator device is actuated,
(k) a starting circuit means controlled by said auxiliary relay for initiating an indication code when said relay is energized.

3,274,578
FIRE ALARM SYSTEM

Charles Block, 1129 Albert Road, North Bellmore, N.Y., and Leon J. Mintz, 1046 E. 29th St., Brooklyn, N.Y.

Filed Feb. 5, 1964, Ser. No. 342,704
5 Claims. (Cl. 340—220)



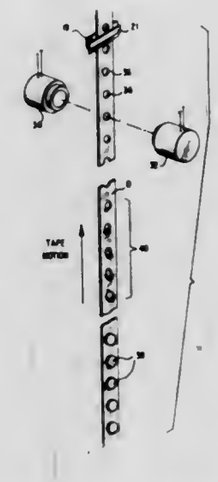
1. A transmitter assembly for a fire alarm system which transmitter is intended to transmit by high frequency carrier to a receiver-controlled alarm through the usual household power supply wiring, said transmitter being compactly dimensioned and being housed together with a power wiring component in the standard recessed wall receptacle previously used for said wiring component, said transmitter including a temperature responsive sensor, and having high frequency oscillator

circuitry controlled by said sensor, and a cover plate for said wall receptacle, said cover plate having an opening for the sensor and having another opening for the said wiring component, said transmitter and wiring component having appropriate terminal screws at the back for line and ground connections inside the recessed wall receptacle.

3,274,579
FUSIBLE PLUG FLAME DETECTION SYSTEM

Forney Fuller, Jr., P.O. Box 12151, New Orleans, La.

Filed Feb. 25, 1964, Ser. No. 347,157
6 Claims. (Cl. 340—227)

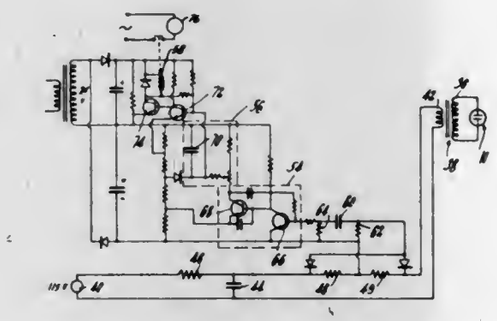


6. The method of detecting flame failure in a static installation having a fuel burner therein including the steps of continuously inserting and withdrawing from a combustion area within said static installation a probe having a plurality of spaced fusible elements thereon, detecting the melting or non-melting of fusible elements and continuously providing said probe with new fusible elements.

3,274,580
RADIATION DETECTION DEVICE CIRCUITS FOR USE IN FLAME SENSING

Elihu C. Thomson, Wellesley, Mass., assignor to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts

Filed Aug. 10, 1962, Ser. No. 216,121
8 Claims. (Cl. 340—228)

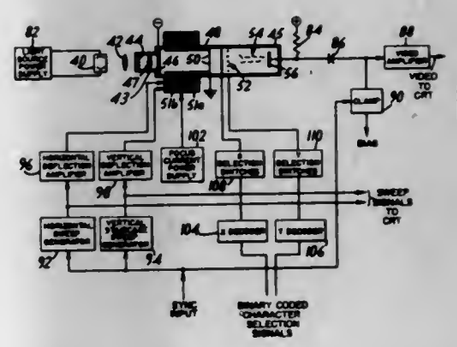


6. In combination, a radiation detection device having an envelope transparent to the radiation of interest,
a pair of spaced electrodes mounted within said envelope,
a voltage step up transformer having primary and secondary windings inductively coupled together,
said secondary winding being connected in series with said electrodes,
means to supply magnetizing current to said primary winding through a current controlling resistance to produce a high voltage electric field between said electrodes,
a circuit including a capacitor connected to said primary winding for augmenting said magnetizing current supply means when said radiation sensing device breaks down in discharge action upon the sensing of radiation of interest,
a readout impedance connected in circuit with said primary winding,
and means coupled to said readout impedance for providing a signal indicative of the sensing of radiation of interest.

3,274,581
IMAGE SCANNING APPARATUS

James Kenneth Moore and Peter C. Goldmark, Stamford, Bernard R. Linden, South Norwalk, and Marshall P. Wilder, Stamford, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York

Filed Mar. 28, 1963, Ser. No. 268,718
16 Claims. (Cl. 340—324)



2. Apparatus for producing electrical signals representative of figures to be generated by an output device comprising, means for simultaneously producing electron images of a plurality of figures to be generated, an electrode having a like plurality of apertures therein, the size of said apertures being small relative to their respective electron images, means for accelerating the electrons forming said images toward said electrode, means for deflecting all of said electron images in accordance with the same predetermined scanning pattern as the electrons accelerate toward said electrode whereby streams of electrons corresponding to the electron images flow through the respective apertures, means for deriving an output signal from a selected one of said streams of electrons, and means coupling said output signal to said output device.

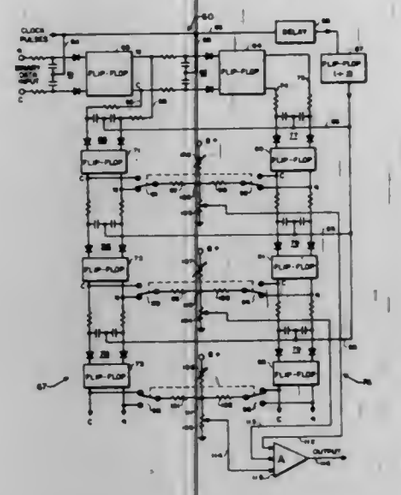
3,274,582
INTERDIGIT INTERFERENCE CORRECTION

Earl D. Gibson, Hyattsville, Md., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey

Filed Aug. 25, 1961, Ser. No. 133,936
7 Claims. (Cl. 340—347)

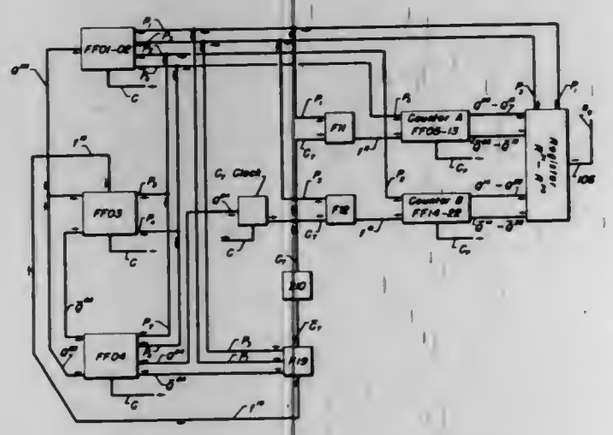
1. Apparatus for converting digital data from a first code to a second code having a higher radix and compensating for interdigital interference, comprising first means for supplying serial digits of the first code, first and second shift registers, second means for feeding odd digits from said first means to the first shift register and even digits from said first means to the second shift register, third means connected to said shift registers for causing them to shift after every second digit, fourth means for obtaining an output pulse from each stage of said shift

registers, fifth means for adjusting the amplitudes of the output pulses of said first register relative to the output pulses of the second register according to said second code and for adjusting the amplitudes of the output pulses



of successive stages of the shift registers relative to one another to values which compensate said interference, and means for superimposing all said adjusted output pulses.

3,274,583
PULSE RATE CONTROLLER
David M. Boyd, Jr., Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Nov. 6, 1961, Ser. No. 150,436
7 Claims. (Cl. 340—347)



1. Apparatus for controlling the pulse rate of a variable frequency pulse source, said frequency being responsive to an analog control signal, which comprises in combination:

(a) programming means alternately and repetitively producing first and second command pulses which are noncoexistent;

(b) variable time gating means generating a counter enabling pulse of adjustable time duration in response to said first command pulse;

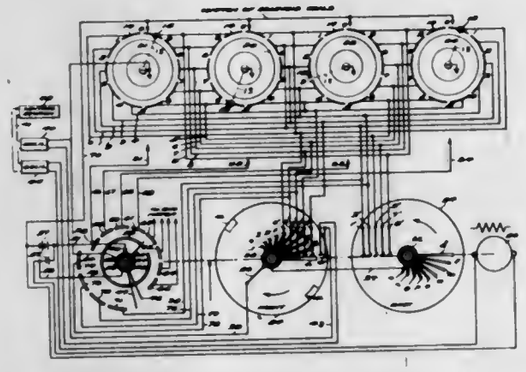
(c) a counter adapted to receive and count said variable frequency pulses in response to and only for the duration of said counter enabling pulse;

(d) register means producing an analog register signal proportional to the total count stored therein;

(e) register input means for transferring from said counter to the register means, in response to said second command pulse, the total count reached by said counter during the existence of said counter enabling pulse; and

(f) an integrating amplifier receiving said register signal and producing as its output signal said analog control signal.

3,274,584
APPARATUS FOR REMOTE READING OF UTILITY METERS
Donald P. Morgan, Box 145, R.D. 1A, Russell, Pa., and Donald D. Dalrymple, 6 Woods Road, North Warren, Pa.
Filed Aug. 29, 1963, Ser. No. 305,380
14 Claims. (Cl. 340—347)



1. Apparatus for telemetering to a remote location the relative positions of a plurality of rotary shafts of a meter register of the decimal integrating type, comprising a contact ring for and arranged concentric with each of said shafts, each such contact ring being constituted by ten contact segments insulated from each other, each said contact segment corresponding to a different digital indicating position for the associated rotary shaft, rotary contact arms for and cooperative with each of said contact rings, said contact arms being adapted for attachment to said meter register shafts so as to establish contact with the contact segments on said rings, and a code pulse assembly having different pulse producing means characteristic respectively of the differently positioned contact segments of each contact ring, said code pulse assembly being comprised of a support of insulating material having thereon a plurality of conductor strips, a plurality of contact members for said conductor strips, and means effecting relative movement between said conductor strips and contact members to effect engagement therebetween, said contact members being connected respectively to the different contact segments on said contact ring such that each contact member will engage the same number of conductor strips as corresponds to the digital indicating position of the rotary contact arm.

3,274,585
SHAFT ANGLE TO TIME INTERVAL CONVERTER
Joseph A. Faulkner and Clifford J. Black, Takoma Park, and Robert G. Rolfe, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 29, 1963, Ser. No. 305,564
8 Claims. (Cl. 340—347)

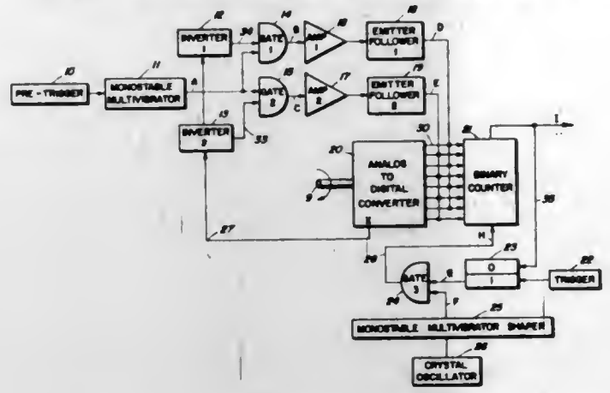
1. A system for converting an angle of shaft rotation into a time interval between output pulses comprising:

an analog-to-digital converter coupled to said shaft,

a binary counter circuit,

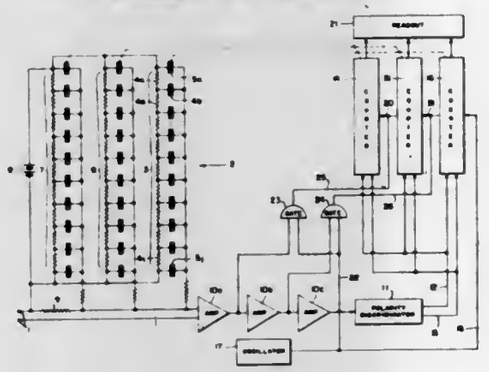
means connecting the output of said analog-to-digital converter to said binary counter circuit for presetting said binary counter circuit at a value commensurate with shaft rotation therein, and

a first source of timing pulses connected to said binary counting circuit whereby the count rate of said binary counter circuit is controlled by the spacing of said



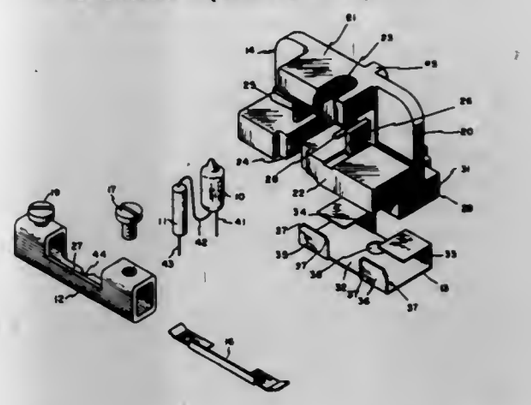
timing pulses applied thereto and the binary number preset into said binary counter from said analog-to-digital converter.

3,274,586
ELECTRICAL APPARATUS
Francis A. Lapinski, Ambler, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 317,985
9 Claims. (Cl. 340—347)



1. An analog to digital converter comprising, a plurality of bidirectional counting means connected in series to form increasing decade steps whereby a completion of a count in either direction in one of said counting means is effective to transfer a count signal to a succeeding adjacent one of said counting means, said counting means each including selectively responsive control means operative to determine the direction of a count in the respective ones of said counting means, reference signal supply means controlled by said counting means and operative to supply a plurality of weighted steps in the magnitude of a reference signal in response to a count in a corresponding one of said counting means, signal comparing means operative to compare the reference signal with an unknown signal to be digitized to provide a difference signal having a magnitude representative of the error between said reference signal and said unknown signal and a polarity representative of the direction of said error, polarity discriminating means responsive to said difference signal to provide a control signal indicative of said polarity, means connecting said control signal to all of said control means to determine the direction of the count in said counting means, oscillator means connected to the first one of said counting means to provide signals to be counted thereby, and signal gate means responsive to a plurality of magnitudes of said difference signal and operative to selectively apply said signals from said oscillator means to ones of said counting means other than said first one in response to a corresponding magnitude of said difference signal.

3,274,587
COMBINED ELECTRICAL CONNECTOR AND INDICATOR
Murray A. Sanders, 40 Dianas Trail, Roslyn, N.Y.
Filed May 13, 1964, Ser. No. 366,950
6 Claims. (Cl. 340—381)



1. Combined electrical connector and indicator modules in which each module comprises

(a) an electrically nonconductive support member including a plate section having upper and lower spaced flanges extending from its surface, and a base section, said upper flange having an aperture therein,

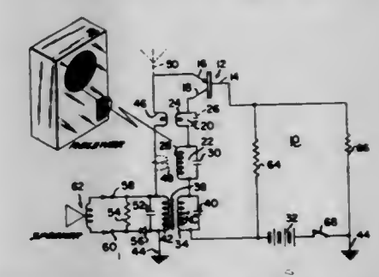
(b) an electrically conductive primary conductor having spaced apart input and output terminals secured to said lower flange, said primary conductor electrically connecting said input and output terminals,

(c) an electrically conductive ground conductor secured to said base section, said ground conductor having a flat portion contiguous with the bottom of said base section and a plurality of tabs secured to the sides of said base section,

(d) an indicating lamp positioned in said aperture in said upper flange, and

(e) means electrically coupling said indicating lamp between said primary and ground conductors, said lamp being energized when a voltage is impressed between said primary conductor and said ground conductor.

3,274,588
SIMULTANEOUSLY MULTI-MODE OSCILLATOR SYSTEM
Page G. Brown, 1158 W. 54th St., Los Angeles, Calif.
Filed July 9, 1964, Ser. No. 381,444
5 Claims. (Cl. 340—384)



1. Multiple-mode oscillator circuit comprising:

an amplifier transistor having emitter, collector and control electrodes;

a battery having positive and negative terminals;

a common bus;

an audio output transformer having primary and secondary windings;

a pair of audio output terminals;

a first radio frequency coil resonant with its stray shunt capacitance to a first radio frequency and being coupled to said collector electrode;

a second radio frequency coil and shunt capacitor resonant to a second radio frequency and being

coupled in series with said first radio frequency coil, said first radio frequency being higher than said second radio frequency, and said first and second radio frequencies being non-harmonically related,

said primary winding of said audio frequency output transformer being intercoupled in series between said second radio frequency coil and said negative terminal of said battery, and said secondary winding of said audio transformer being coupled between said emitter electrode and said common bus;

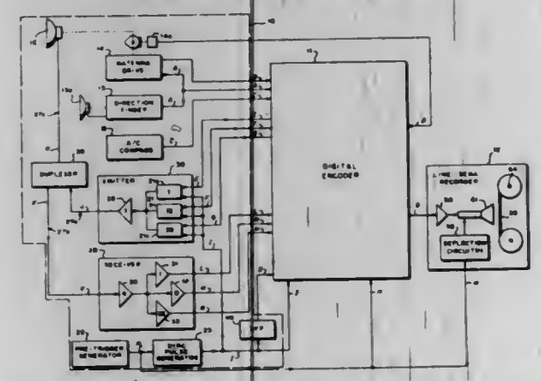
a diode and load resistor coupled in series across the terminals of said secondary winding of said audio transformer,

said pair of output terminals being connected respectively to opposite ends of said load resistor;

a voltage divider resistor network coupled between said positive and negative terminals of said battery with said control electrode of said transistor being connected to said network;

means for coupling said positive terminal of said battery to said common bus and feedback means interconnected between said emitter electrode and said secondary winding of said audio transformer and coupled to each of said first and second radio frequency coils.

3,274,589
ENCODING AND RECORDING APPARATUS
Thomas F. Droege, Kendall Park, N.J., and Ronald F. Sandler, Elkins Park, and Adolf Futterweit, Levittown, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 27, 1964, Ser. No. 347,965
6 Claims. (Cl. 343—6)



1. An airborne digital data encoding and video recording system for use with a controlled target comprising in combination:

target locating means providing an output signal representative of target location,

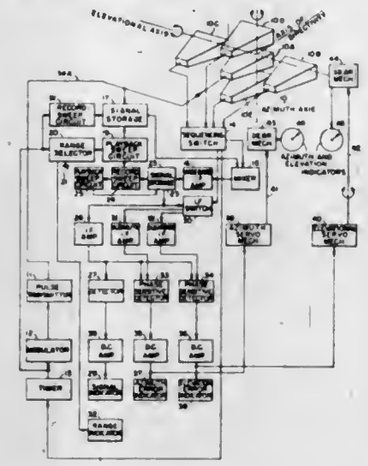
a radar system including a transmitter, receiver and an antenna for detecting the target and having a video output signal indicative of the target and other targets comprising the target environment, said radar transmitter having a plurality of selectable transmission modes and said receiver having a plurality of compatible selectable receiving modes,

data processing means including switch means both for manually encoding slowly changing environmental and transmission conditions and for automatically encoding the selected transmission and receiving modes, said switch means having an output indicative of said conditions and said modes, said data processing means receiving and digitally encoding on a time-shared basis said output signal from said target locating means and said output signal from said switch means,

said data processing means time-sharing said digitally encoded time-shared signal with said video output signal, and

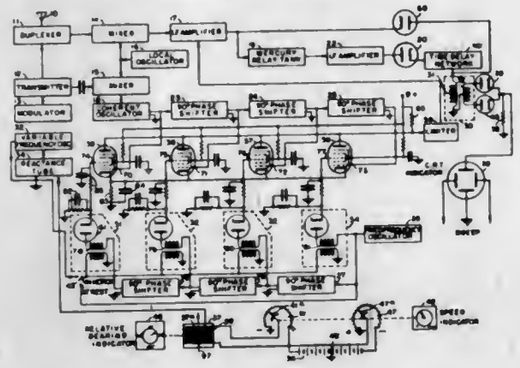
recording means receiving said combined time-shared signal for a line scan recording whereby a recording is obtained for use in selecting the optimum mode radar transmission for detecting a particular target under particular environmental conditions.

3,274,590
ANGLE TRACKING STORAGE RADAR SYSTEM
Robert M. Page, Camp Springs, Md.
(6715 Norview Court, Springfield, Va. 22150)
Filed Feb. 6, 1950, Ser. No. 142,681
8 Claims. (Cl. 343—7.4)



1. In an echo energy operative detection device having divergent, partly overlapping zones of reception, means alternately storing in carrier waves the signals received from said divergent, partly overlapping zones of reception during successive short duration widely separated time intervals, playback means reproducing the stored signals during substantially the entire time spacing between the successive short duration time intervals, a narrow bandwidth carrier wave signal integrating circuit, and signal delivery means applying the reproduced signal from the playback means to the integrating circuit in one polarity for one zone of reception and in opposing polarity for the opposing zone of reception.

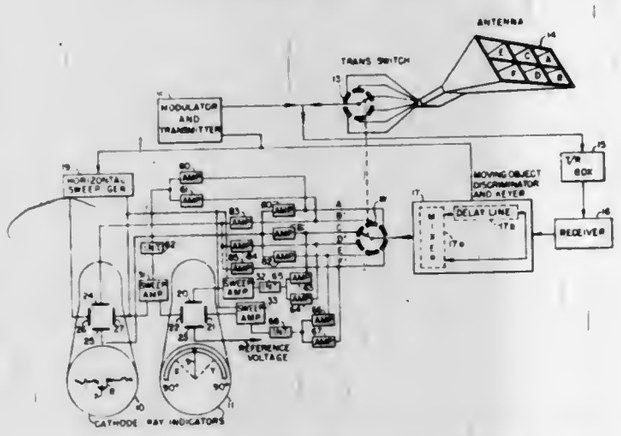
3,274,591
PHASE ROTATION SYSTEM FOR USE IN VELOCITY CANCELLATION MOVING TARGET RADAR SYSTEMS
Torrence H. Chambers, 3729 S St. SE., Washington, D.C.
Filed May 8, 1947, Ser. No. 746,847
7 Claims. (Cl. 343—7.7)



1. In an echo-ranging system for detecting moving objects by comparing consecutive echo pulses after they have been vectorially added with a locally generated signal having a fixed phase relationship to the transmitted pulse, compensating means for balancing out the component of relative motion between the system and an object

produced by motion of the system comprising, an oscillation generator coherent to the system for providing said locally generated signal, three phase shifting means serially connected thereto and reproducing said generator's output in phase quadrature components, four normally non-conducting vacuum tube amplifier means respectively receiving said generator output in phase quadrature, a mutual output means therefor, means for sequentially triggering said vacuum tube amplifiers at a rate in accordance with said relative motion produced by motion of the system, said last named means comprising a fixed frequency oscillator and a variable frequency oscillator, the frequency of said variable frequency oscillator being varied in accordance with said component of relative motion produced by the motion of the system, and means for controlling the rate of sequential triggering of said vacuum tube amplifiers in accordance with the frequency difference between said fixed and said variable frequency oscillators, and means for combining the output of said mutual output means with the echo pulses.

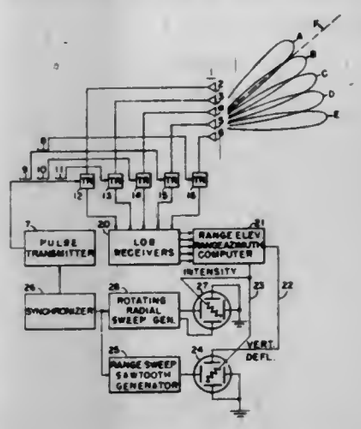
3,274,592
PULSE ECHO MOVING OBJECT LOCATOR SYSTEM
Roger R. Crane, Washington, D.C. (% Massachusetts Institute of Technology, Cambridge, Mass.)
Filed Oct. 7, 1948, Ser. No. 53,327
5 Claims. (Cl. 343—11)



1. A pulse echo moving object locator system comprising a directive antenna array including a plurality of feeds operative to provide a plurality of overlapping zones of radiation and reception so disposed to produce at least a pair of equal signal intensity axes, a radio pulse transmitter and receiver, said transmitter being operative to periodically emit radio frequency pulses, switching means for sequentially connecting said transmitter and receiver to said feeds in such manner as to permit the radiation of one pulse and the reception of echoes therefrom from one antenna feed at a time in sequence, a moving object discriminator circuit means operative to cancel echoes obtained from stationary objects lying in any particular zone of reception fed by the output of said receiver, and means operatively connected to said moving object discriminator circuit for indicating the reception of energy reflected from moving objects.

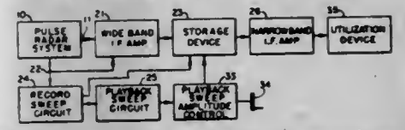
3,274,593
HEIGHT FINDING RADAR SYSTEM
Arthur A. Varela, Alexandria, Va. (Naval Research Laboratory, Anacostia Station, Washington 25, D.C.), and Elvin E. Herman, 6864 Glacier Drive, Riverside, Calif.
Filed Mar. 26, 1953, Ser. No. 344,912
9 Claims. (Cl. 343—16)

1. Target locating apparatus comprising a radio transmitter for radiating energy in a selected direction, a receiving antenna array providing more than two stacked-beam patterns with an overlap on adjacent beams for receiving said energy after reflection from a remote target, logarithmic comparison means coupled to said antenna array for generating respective voltages proportional to the relative amplitude of instantaneous energy received



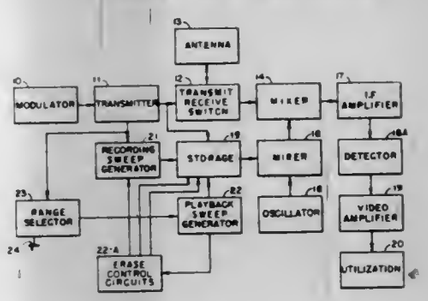
on each pair of adjacent beams, means for respectively deriving the absolute value of said voltages and means coupled to said derivation means and responsive to the absolute value voltage outputs therefrom to select the pair of adjacent beams between which a target is located.

3,274,594
SIGNAL INTEGRATING RADAR SYSTEM
Robert M. Page, Camp Springs, Md.
(6715 Norview Court, Springfield, Va. 22150)
Filed Dec. 27, 1949, Ser. No. 135,215
20 Claims. (Cl. 343—17.1)



1. A radar system comprising, transmitter means recurrently emitting short duration pulses of carrier frequency energy, receiver means intercepting return energy, radio frequency storage means retaining in a carrier frequency signal form signals returned with selected time delay after each emitted pulse, and means reproducing retained signals in carrier frequency signal form with phase coherence between successive reproduced signals.

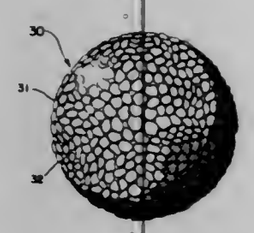
3,274,595
FREQUENCY MODULATED PULSE RADAR SYSTEM
Robert M. Page, Camp Springs, Md.
(6715 Norview Court, Springfield, Va. 22150)
Filed Apr. 13, 1950, Ser. No. 155,773
7 Claims. (Cl. 343—17.2)



1. In a pulse echo locator system having reduced susceptibility to interference the combination of frequency modulation transmitter means for producing radio frequency pulse signals possessing carrier frequency modulations therein, an antenna system connected to the transmitter means for emitting generated pulse signals and

for intercepting return signals, storage means for recording the pulse signals, playback means for controlling the reproduction of recorded pulse signals in coincidence with the receipt of return signals from a selected range, and mixing means for combining reproduced signals and return signals to obtain cancellation of frequency modulations in the return signals.

3,274,596
BLISTERED SKIN PASSIVE SATELLITE
Herbert P. Raabe, St. Paul, Minn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 30, 1964, Ser. No. 414,933
3 Claims. (Cl. 343—18)



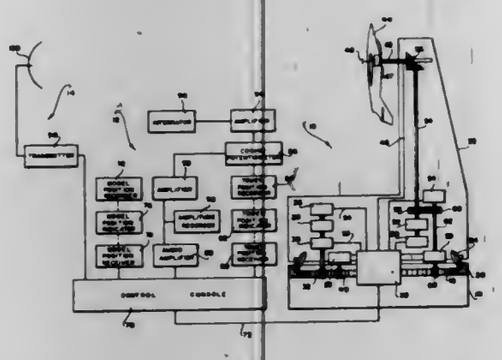
1. A passive communication satellite adapted for an orbital path and for reflecting electromagnetic energy from a source on the earth to a receiver remote from the source, comprising:

(a) a body having an electromagnetic reflective skin;

(b) said body including means defining a plurality of mutually related isotropic reflectors made by said skin being laminated for increased strength and randomly sealed along lines wherein said isotropic reflectors are generally hemispherical in shape; and

(c) said reflectors being ramdomly phased whereby the energy effectively reflected by the satellite is substantially greater than for a similar sized specular satellite.

3,274,597
METHOD AND APPARATUS FOR EVALUATING ANTENNAE
Alton M. Archer, Van Nuys, and Richard G. Wyatt, San Fernando, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 7, 1963, Ser. No. 278,682
9 Claims. (Cl. 343—100)



9. In an apparatus for evaluating an antenna, means for mounting said antenna so that it is continuously rotatable about first and second orthogonal axes, first means for driving said antenna so that it rotates about said first axis, second means for driving said antenna for rotation about said second axis, radiator means for radiating radio frequency energy toward said antenna, means for measuring the energy received by said antenna, cosine potentiometer means driven by rotation of said antenna about one of said axes, the energy received by said antenna being fed through said cosine potentiometer, and integrator means connected to the output of said cosine potentiometer to integrate the received signal.

3,274,598
DIRECTIVE RESPONSE TRANSPONDER SYSTEM
Claud E. Cleeton, 2424 34th St. SE., Washington, D.C. 20020
Filed Feb. 26, 1964, Ser. No. 347,625
8 Claims. (Cl. 343—100)



1. A transponder system comprising:

control station means including a receiver and a transmitter for transmitting a first electrical signal having certain characteristics;

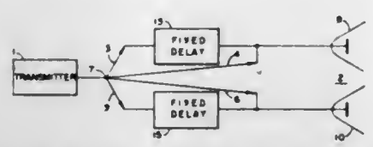
a transponder unit located on a vehicle;

an array of directional antennas and directional control means included in said transponder unit, said directional control means being operatively coupled to said array to maintain said array in a predetermined spatial orientation;

signal generator means included in said transponder unit and responsive to some of said certain characteristics of said first signal to generate a second signal and

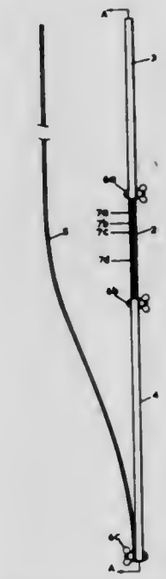
antenna control means included in said transponder unit and responsive to other of said certain characteristics of said first signal to cause said second signal to be transmitted by only a selected one antenna of said array.

3,274,599
RADIO DIRECTION FINDER SYSTEM
Robert M. Page, Camp Springs, Md. (6715 Norview Court, Springfield, Va. 22150)
Filed Feb. 21, 1952, Ser. No. 272,875
10 Claims. (Cl. 343—112)



1. A system for determining the azimuth of a vehicle relative to a reference point comprising transmitter means for generating an output signal of random frequency composition, first and second respective antenna means for radiating signals from said reference point in respective directive patterns having angularly overlapping lobes whose angle of overlap defines a selected azimuthal sector, means supplying said first antenna with a pair of signals each identical to said transmitter output signal and having a first time spacing, means supplying said second antenna with a pair of signals each identical to said transmitter output signal but having a second time spacing, whereupon the radiation patterns of said two antennas are identifiable by the time spacing of the signals in a pair, receiving means in said vehicle for receiving each of said pairs of signals and deriving a respective output voltage proportional to the amplitude of the signals in each of said respective pairs, and means for comparing said respective output voltages to determine the relative azimuthal position of said vehicle within said selected azimuthal sector.

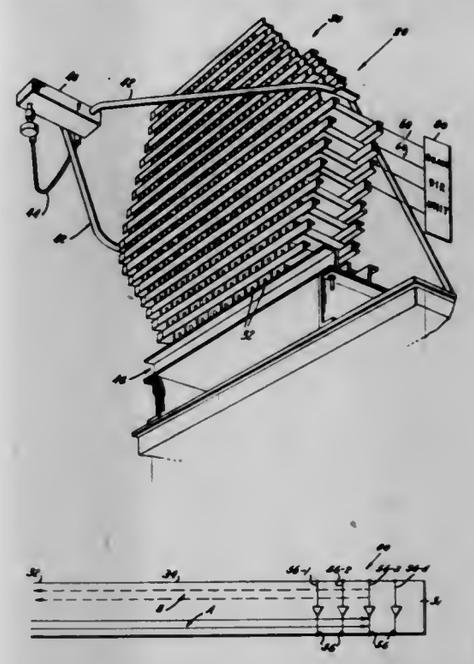
3,274,600
REACTIVELY LOADED BROADBAND ANTENNA FOR USE IN THE 10 THROUGH 160 METER BANDS
George Alfred Partridge, 17 Ethel Road, Broadstairs, England
Filed Feb. 14, 1963, Ser. No. 258,592
6 Claims. (Cl. 343—749)



1. A broadband transmitting and receiving radio aerial having high efficiency over the 10 through 160 meter bands without the need of electrical or mechanical adjustment to the aerial, comprising an inductance coil wound on an elongated former of insulating material, said coil having a fixed inductance of substantially 35 to 43 microhenries, a first elongated radiating member positioned on one end of said former and colinear therewith, a second elongated radiating member positioned on the other end of said former and colinear therewith, the length of said first radiating member being substantially 3 feet 8 inches and the length of said second radiating member being substantially 2 feet 8 inches, means forming an electrical connection between each end of said coil and the adjacent end of the corresponding radiating member, and means for connecting a feeder to said first radiating member at a position adjacent the end of said first radiating member remote from said coil.

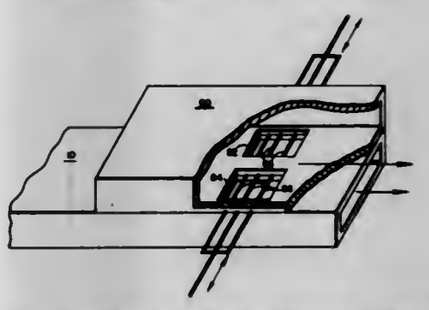
3,274,601
ANTENNA SYSTEM WITH ELECTRONIC SCANNING MEANS
Judd Blass, Bayside, N.Y., assignor to Blass Antenna Electronics Corporation, Long Island City, N.Y., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,089
17 Claims. (Cl. 343—754)

1. In combination in an antenna system, a reflecting surface and a signal feed; scanning means cooperatively associating said reflecting surface with respect to said signal feed to effect an antenna beam orientation in a desired direction; said reflecting surface formed of a plurality of radiating elements, each associated with a branch signal channel; said radiating elements operatively positioned with respect to said signal feed to present a plurality of branch wave signals therebetween; said radiating elements positioned at a first end region of said branch signal channels; individual signal reflecting means at a second end region of each of said branch signal channels; said branch wave signals traversing a path from said radiating elements at said first end region, towards said second end region, and from said reflecting means at said second end region oppositely directed back toward



said first end region; adjusting means individually controlling the characteristics of said plurality of reflecting means whereby the phase of said branch wave signals at each of said first end regions may be individually varied; the additive phase effect of said branch wave signals establishing said desired direction of antenna beam orientation, said reflecting means including shorting means, said adjustment means selectively positioning said shorting means along the second end region of said branch signal channels, whereby the overall lengths of selected ones of said branch signal paths are varied.

3,274,602
ANTENNA HAVING VARIABLE BEAMWIDTH ACHIEVED BY VARIATION OF SOURCE WIDTH
Grant M. Randall, Whittier, and Jerry A. Algeo, Buena Park, Calif., assignors to North American Aviation, Inc.
Filed Sept. 16, 1963, Ser. No. 309,002
3 Claims. (Cl. 343—762)



1. In a horn-type microwave antenna having a main waveguide terminal horn portion, one open end of which is adapted to cooperate with an antenna dish and an opposite end of which is adapted to be connected to a feed-horn, variable aperture means comprising

an auxiliary terminal horn portion, one end of which is open and adapted to cooperate with said antenna dish and an opposite end of which is closed, said auxiliary horn portion having one wall thereof contiguous with a wall of said main horn portion;

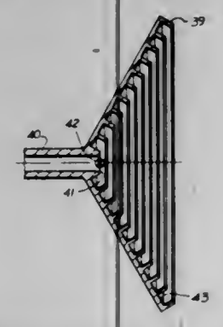
coupling slot means in said contiguous walls and intercoupling said main and auxiliary terminal horn portions in microwave circuit; and

switchable shortcircuiting impedance means mounted in said coupling slot means and oriented for selectively decoupling said intercoupled terminal horn portions.

3,274,603
WIDE ANGLE HORN FEED CLOSELY SPACED TO MAIN REFLECTOR

Alan F. Kay, Cambridge, Mass., assignor, by mesne assignments, to Control Data Corporation, South Minneapolis, Minn., a corporation of Minnesota

Filed Apr. 3, 1963, Ser. No. 270,330
The portion of the term of the patent subsequent to Nov. 2, 1982, has been disclaimed and dedicated to the Public
7 Claims. (Cl. 343—781)



1. A primary microwave antenna for use in an antenna system having a focusing wave translation means with a bounded illumination aperture and a focal point, said focal point and said illumination aperture boundary defining an illumination angle, comprising:

primary wave translation means including a primary member having a bounded, plane-defining, primary wave translation aperture formed therein and tapered wave translation conductive surfaces defining with said aperture a primary wave translation aperture angle having an apex at an internal focal point, the maximum dimension from said apex to said aperture minus the minimum dimension from said apex to said aperture being greater than one half wavelength of translated energy;

radiation suppression means formed in said primary wave translation surfaces, said suppression means including a plurality of transversely disposed, uniformly spaced grooves, the width of each said groove being greater than one quarter wavelength, the spacing between said grooves being less than one quarter wavelength, and the groove-to-groove spacing being approximately one half wavelength; and

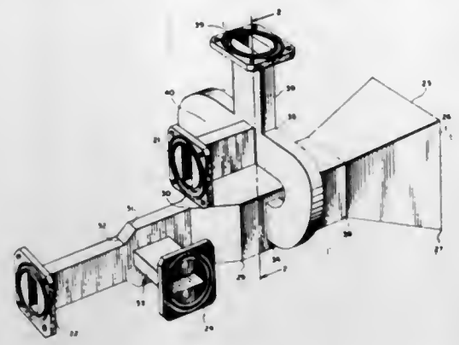
wave transmission means for coupling said member to a source of microwave energy.

3,274,604
MULTI-MODE SIMULTANEOUS LOBING ANTENNA

Bernard L. Lewis, Winter Park, Fla.
(1239 Seminole Drive, Satellite Beach, Fla.)

Filed Dec. 12, 1958, Ser. No. 780,175
5 Claims. (Cl. 343—786)

5. In a radio energy operative locator system, a rectangular waveguide capable of supporting energy propagation in the TE_{10}, TE_{20}, TE_{11} and TM_{11} modes, said waveguide having an open end orientable in the direction of receipt of radio energy, means separately extracting energy from said waveguide in dependency on the TE_{10}, on the TE_{20} and the combined TE_{11} and TM_{11} modes

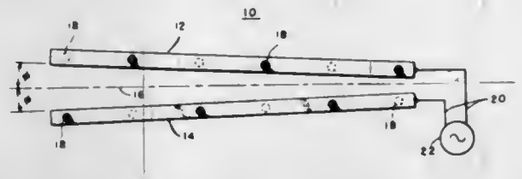


existing therein, and means deriving error signals in proportion to the relationship of the TE_{20} and combined TE_{11} and TM_{11} to the TE_{10} signals.

3,274,605
COPLANAR LOG PERIODIC DIPOLE ARRAY

Alexander Rauch, Red Bank, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed June 7, 1963, Ser. No. 286,431
1 Claim. (Cl. 343—792.5)



A wideband constant impedance logarithmically periodic antenna comprising a pair of open ended linear coplanar conductors spaced symmetrically about an axis, each of said conductors having its open end spaced further from said axis than its feed end so as to from an appreciable acuate angle having an upper limit of .5° between each said conductor and said axis, a plurality of straight open ended radiating elements logarithmically spaced along said conductors at right angles to the plane of said conductors and having successive ones of said elements extending in alternate directions from opposite sides of said plane, the length of said radiating elements decreasing logarithmically from said open end to said feed end, said conductors and radiating elements being arranged in two-fold symmetry about said axis and transmission line means connected directly across said feed ends of said antenna.

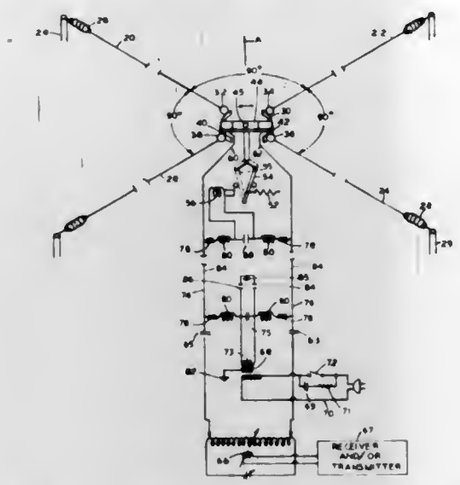
3,274,606
ANTENNA SYSTEM

George A. Bonadio, 373 East Ave., Watertown, N.Y.

Filed Jan. 15, 1964, Ser. No. 337,812
2 Claims. (Cl. 343—854)

1. An antenna system for radio transmission and reception comprising a generally horizontal system consisting of four single filamentary conductors of equal length extending radially and generally horizontal at horizontal angles of 90 degrees from one another from a central area and in alignment with a common center in said area, each of said conductors being insulated from one another and having their central area inner ends equally spaced from the common center, a double-pole double-throw two position switch disposed within the central area, said switch having four contacts equally

spaced around a circle concentric with the common center and having one contact connected to a lead-in of a transmission line, and connected at all times to the inner end of a first one of said conductors, and another contact connected to a second lead-in of a transmission line, and connected at all times to the inner end of a second one of said conductors extending in the opposite direction to said first conductor, and the other two contacts connected to the inner ends of the two intermediate conduc-

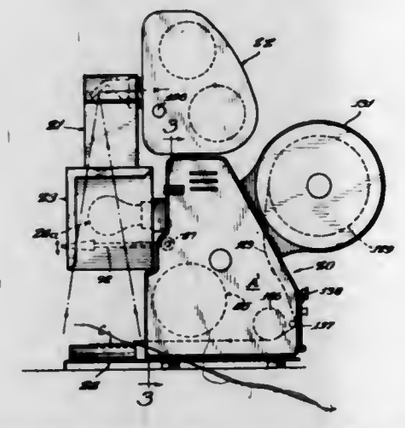


tors respectively whereby in one position or the other of said switch one of said intermediate conductors is connected to either of said first or said second conductor, when the other of said intermediate conductors is connected to either the second or said first conductor, whereby the radiation pattern of said antenna may be substantially instantly shifted exactly 90 degrees by actuation of said switch from one position to the other without altering the constants of the antenna system.

3,274,607
COMBINATION MICROFILM PHOTOGRAPHIC AND PRINTING APPARATUS FOR PHOTOGRAPHICALLY RECORDING TRANSACTIONS AND DISPENSING PRINTED MEMORANDA OF THE SAME

Clarence F. Muchow, Broadview, Juan R. Blanco, Roselle, and Donald G. Disney, Chicago, Ill., assignors to Rapidex Corp., New York, N.Y., a corporation of New York

Filed June 23, 1964, Ser. No. 377,217
23 Claims. (Cl. 346—24)

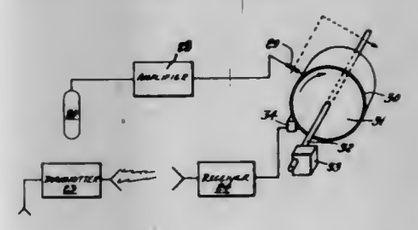


19. Recording apparatus comprising a camera, a light source, means disposed within the range of said camera for supporting an object to be photographed, a rotatable printing cylinder carrying type characters, a printable tape movable over a surface into engagement with said printing cylinder, means for feeding said tape over said surface, drive means including an intermittently operating motor, means operatively connected to said drive means for operating said camera and said light source during a portion of the rotational cycle of said printing cylinder, means for automatically arresting rotation of said printing cylinder upon completion of a single rotational cycle, means connecting said drive means to said tape feeding means, means for inking said type characters, means for maintaining said inking means in non-operative relationship to said printing cylinder during non-operation of the apparatus, a cutter blade disposed transversely to the direction of movement of said tape for cutting said tape, and means operatively connected to said drive means for actuating said cutter blade.

3,274,608
SEISMIC PROFILER

John I. Ewing, Palisades, and Albert Stockel, Jr., Bayville, N.Y., assignors to the United States of America as represented by the Secretary of the Navy

Filed May 4, 1964, Ser. No. 364,869
1 Claim. (Cl. 346—33)



In an apparatus for seismic profiling wherein a plurality of seismic traces are arranged in parallel relation on a record medium having a cylindrical record supporting drum adapted for mounting said record medium circumferentially thereon, means for recording thereon said traces, that improvement for providing a common datum reference which comprises:

a rotatable shaft coaxial with said drum,

means for rotating said shaft,

clutch means disposed on opposite ends of said drum and carried by said drum and said shaft coupling said shaft and drum for rotation thereof,

said clutch means including a first disc carried by said shaft,

a second disc carried by said drum, and

means urging said discs into contact,

stop means for selectively holding said drum stationary while said shaft rotates,

said stop means including

a first member carried by said drum,

a second stationary member having a portion movable to engage and disengage with said first member to prevent rotation of said drum,

electrical means for releasing said stop means upon the occurrence of an event for a selected number of complete revolutions of said drum,

said electrical means including

an electrical solenoid having a movable actuating member coupled to said portion for moving the same into and out of the path of said first member and means for actuating said solenoid,

said event being the initiation of a seismic wave at a point remote from said apparatus and further including

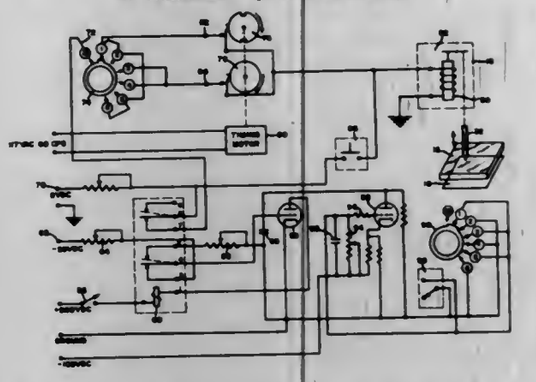
a transmitter at said remote point,

a receiver having its output coupled to actuate said solenoid whereby at the instant said wave is initiated, a signal will be transmitted by said transmitter, received by said receiver and simultaneously start said drum rotating.

3,274,609
VIBRA-PEN SCRIBER ASSEMBLY

Stephen E. Boone, Mission Hills, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Original application Apr. 7, 1961, Ser. No. 101,604, now Patent No. 3,125,401, dated Mar. 17, 1964. Divided and this application Feb. 19, 1964, Ser. No. 356,342
4 Claims. (Cl. 346—62)



1. A system for inscribing lines on surfaces to indicate the flight path and speed of vessels comprising,

a recorder means,

a plurality of information channels coupled in parallel to said recorder means,

channel identifying means directly coupled to said plurality of information channels,

timing means, said timing means comprising

a first electronic valve means having a control grid,

time delay circuit means coupled to said control grid for controlling the conduction of said first valve means, and

a first switching means coupled to said first valve means responsive to the operation of said first valve means to sequentially activate and deactivate the timer,

selective means directly coupling said timing means to one of said plurality of information channels, and

recorder interrupting means coupled to said timing means operative during an information channel change, said recorder interrupting means comprising,

a second electronic valve means having a control grid,

a load coupled to said second valve and to the control grid of said first valve means,

a second time delay circuit means coupled to the control grid of said second valve means for controlling the conduction of said second valve means, and

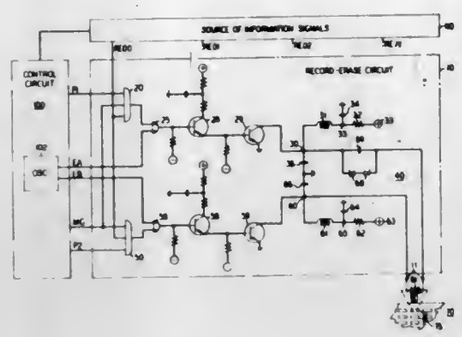
a second switching means coupled to said selective means for pulse biasing said second valve means to conduction and simultaneously decoupling said timing means from the selective means during transition of information channels thereby interrupting the recording.

3,274,610
INFORMATION RECORDING CIRCUIT

Cyrus F. Ault, Lincroft, and David Friedman, Red Bank, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 21, 1963, Ser. No. 266,959
11 Claims. (Cl. 346—74)

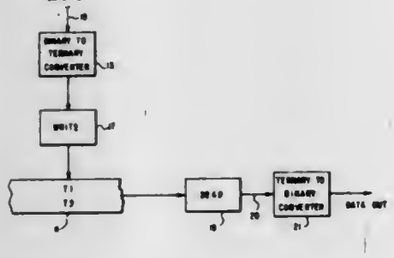
4. A magnetic recording circuit for selectively magnetizing and demagnetizing discrete portions of a magnetic medium, comprising a transducer having a single winding, means for applying alternating current to said winding, means selectively operable for providing a direct-current signal to said winding coincident with a current peak of said alternating current and for thereafter damping said alternating current quickly to a quiescent level, blocking means in circuit with said transducer winding for normally preventing the flow of direct current in said transducer winding, and means in shunt with said blocking means for providing a path for said direct-current signal.



3,274,611
BINARY TO TERNARY CODE CONVERSION RECORDING SYSTEM

David T. Brown, Wappingers Falls, and Frederick F. Sellers, Jr., Hopewell Junction, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 27, 1963, Ser. No. 333,820
5 Claims. (Cl. 346—74)



1. In a magnetic recording system, the combination comprising:

conversion means for converting binary signals to be written onto a magnetic storage medium into a ternary representation, said conversion means producing an output signal which is the combination of two binary digits for each ternary digit, each ternary digit including at least one binary digit that is a binary "ONE"; and

write means connected to said conversion means for writing said ternary digits onto said storage medium, said write means including means for causing phase reversal of magnetic flux on said storage medium for each binary "ONE" digit included in a ternary digit, whereby ternary information is recorded onto said storage medium with at least one flux reversal for each ternary digit.

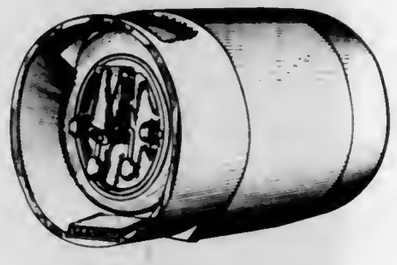
DESIGNS

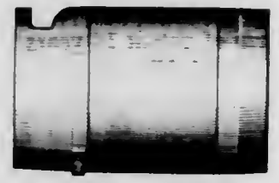
SEPTEMBER 20, 1966

205,750
BEVERAGE DISPENSING TANK OR SIMILAR ARTICLE

Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota

Filed Jan. 5, 1966, Ser. No. 471
Term of patent 14 years
(Cl. D2—3)





205,751
RUBBER GLOVE

Mal Greenberg, Wichita, Kans., assignor to Meco, Inc., Wichita, Kans.

Filed Sept. 23, 1965, Ser. No. 87,148
Term of patent 14 years
(Cl. D3—11)



205,752
HAT

Marvin I. Malk, Denver, Colo., assignor to Imperial Cap Works, Inc., Denver, Colo., a corporation of Colorado

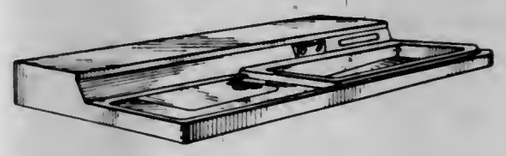
Filed Feb. 28, 1966, Ser. No. 1,207
Term of patent 14 years
(Cl. D3—13)



205,753
COMBINATION COUNTERTOP AND SINK

Robert W. Fink, Benton Harbor, Mich., assignor to Whirlpool Corporation, a corporation of Delaware

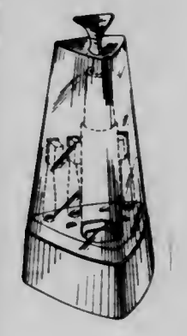
Filed Sept. 23, 1965, Ser. No. 87,137
Term of patent 14 years
(Cl. D4—2)



205,754
COMBINED HOLDER AND CHARGING UNIT FOR ELECTRIC TOOTHBRUSH OR THE LIKE

Richard B. Hall, Cincinnati, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio

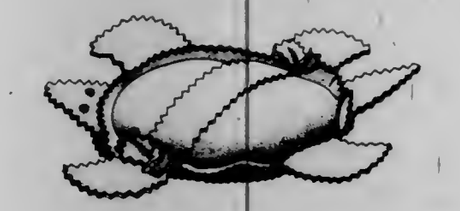
Filed Oct. 21, 1965, Ser. No. 87,689
Term of patent 14 years
(Cl. D4—3)



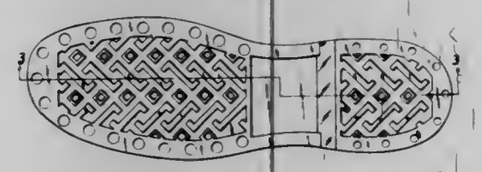
205,755
OVERSHOE
Duncan E. Slade, Naugatuck, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 3, 1965, Ser. No. 38
Term of patent 14 years
(Cl. D7—4)



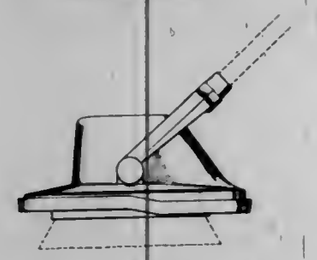
205,756
BATH SPONGE
Fanny Triplett, Ray, Ohio, assignor to Trippies, Ray, Ohio, a partnership
Filed Dec. 22, 1965, Ser. No. 294
Term of patent 14 years
(Cl. D9—2)



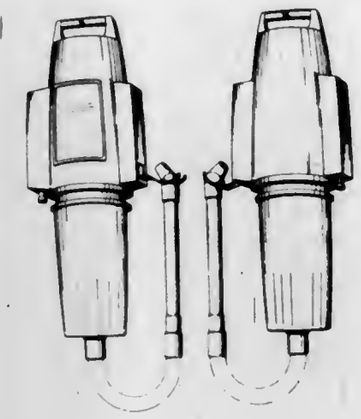
205,757
FOOTWEAR SOLE
William Virgil Wakeland, Rock Island, Ill., assignor to The Servus Rubber Company, Rock Island, Ill., a corporation of Illinois
Filed July 6, 1965, Ser. No. 86,029
Term of patent 7 years
(Cl. D7—5)



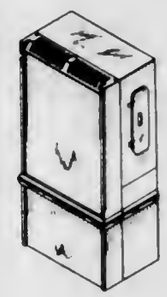
205,758
FLOOR TREATING MACHINE
Frederick K. Storm, Jr., Glendale, Calif., assignor to Orbitor, Ltd., a limited partnership
Filed Feb. 16, 1966, Ser. No. 1,080
Term of patent 14 years
(Cl. D9—2)



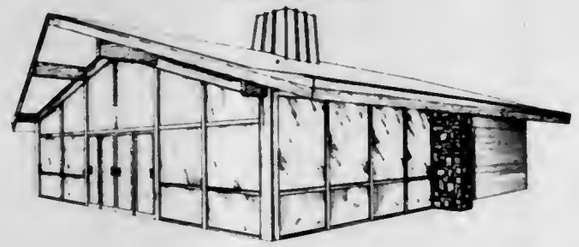
205,759
VACUUM CLEANER
Herbert La Mers and Maury W. Wayne, Los Angeles, Calif., assignors to California Car Wash Systems Inc., Sun Valley, Calif., a corporation of California
Filed July 28, 1965, Ser. No. 86,326
Term of patent 14 years
(Cl. D9—2)



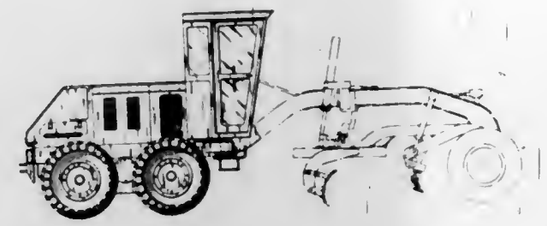
205,760
COMBINATION AIR FILTERING AND COLLECTING UNIT FOR TEXTILE WASTE PRODUCTS
R. Hovan Hocutt and Thomas E. Mullinax, Charlotte, N.C., assignors to Pneumafil Corporation, Charlotte, N.C., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 87,198
Term of patent 14 years
(Cl. D9—2)



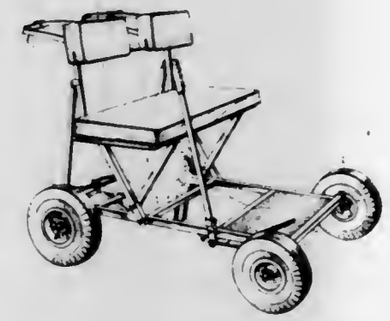
205,761
BUILDING
Edward C. Bridger, Annandale, Va., assignor to Marriott-Hot Shoppes, Inc., Washington, D.C., a corporation of Delaware
Filed Jan. 18, 1966, Ser. No. 667
Term of patent 14 years
(Cl. D13—1)



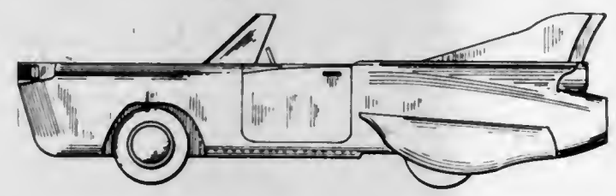
205,762
VEHICLE
Robert E. Gerber, Marion, Ohio, assignor to Huber-Warco Company, Marion, Ohio, a corporation of Ohio
Filed June 30, 1964, Ser. No. 80,652
Term of patent 14 years
(Cl. D14—3)



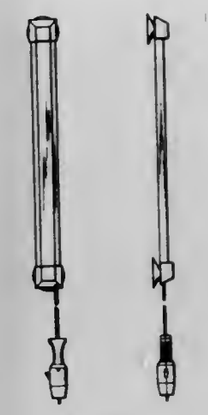
205,763
GOLF CART
Bernard E. Post, 424 S. 12th, Clear Lake, Iowa
Filed July 2, 1965, Ser. No. 86,012
Term of patent 14 years
(Cl. D14—3)



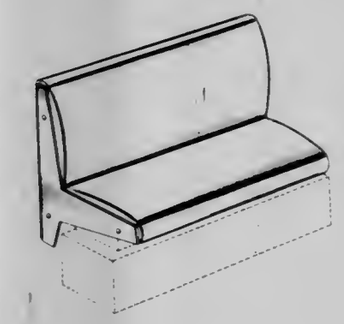
205,764
AMPHIBIOUS CAR
Roy W. Brisendine, 350 Main St., Marencie, Mich.
Filed Sept. 8, 1965, Ser. No. 86,898
Term of patent 14 years
(Cl. D14—3)



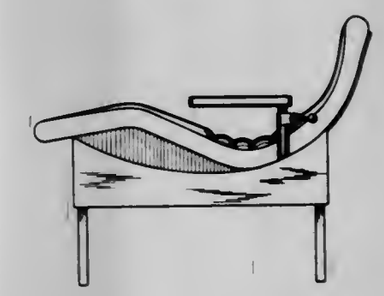
205,765
AUTO DEFROSTER
Hajime Ota, Tokyo, Japan, assignor to Fedtro, Inc., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 87,772
Term of patent 14 years
(Cl. D14—6)



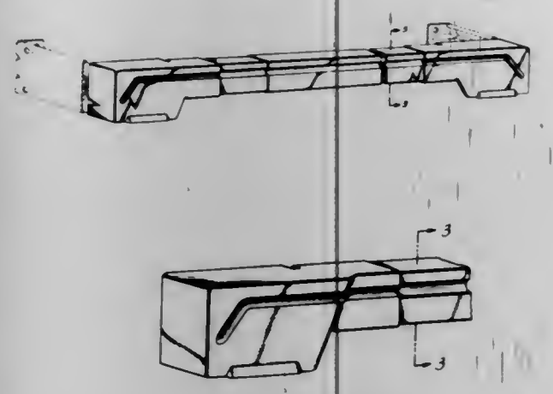
205,766
RESTAURANT BOOTH SEAT OR SIMILAR ARTICLE
Louis Martignoli, Geneva, Switzerland, assignor to S. A. Bjorgensen, Fribourg, Switzerland
Filed Oct. 20, 1964, Ser. No. 82,258
Term of patent 14 years
(Cl. D15—11)



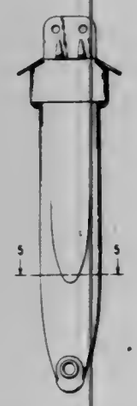
205,767
CHAIR
Arthur C. Ferro, Creve Coeur, Mo., assignor to Contour Chair-Lounge Co., Inc., St. Louis, Mo., a corporation of Missouri
Filed July 26, 1965, Ser. No. 86,288
Term of patent 14 years
(Cl. D15—11)



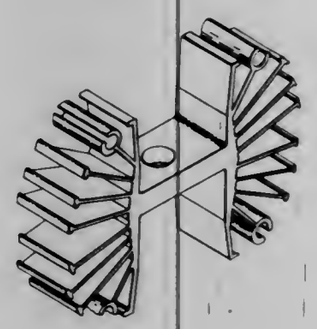
205,768
DRAPERY TRAVERSE ROD
H Henry Martens, North Haven, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Sept. 28, 1965, Ser. No. 87,200
Term of patent 14 years
(Cl. D21—1)



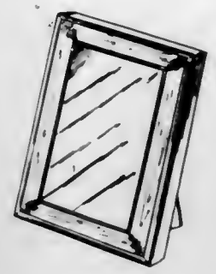
205,769
BAYONET SCABBARD
Edwin L. Beckwith, Harvard, Mass., assignor to Beckwith-Arden Inc., Watertown, Mass., a corporation of New Hampshire
Filed Oct. 27, 1964, Ser. No. 82,337
Term of patent 14 years
(Cl. D22—6)



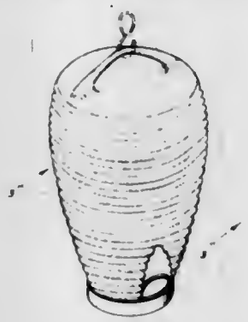
205,770
HEAT SINK
Thomas D. Coe, Winchester, Mass., assignor to Wakefield Engineering Co., Inc., Wakefield, Mass., a corporation of Massachusetts
Filed Mar. 15, 1965, Ser. No. 84,268
Term of patent 14 years
(Cl. D26—1)



205,771
PICTURE FRAME
Leonard Spiselman, 9 Gasto Lane, Roosevelt, N.Y.
Filed Mar. 19, 1965, Ser. No. 84,358
Term of patent 14 years
(Cl. D29—20)



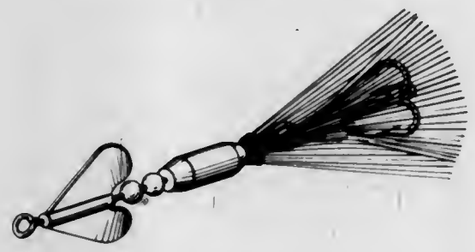
205,772
BIRD FEEDER
Benton Blair, Prospect St., East Woodstock, Conn.
Filed Dec. 28, 1965, Ser. No. 349
Term of patent 14 years
(Cl. D31—2)



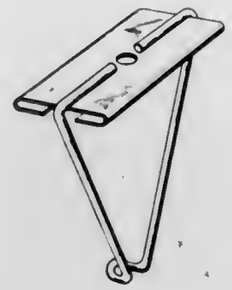
205,773
FISH LURE
Joseph L. Schneider, 2544 E. 21st St., Brooklyn, N.Y.
Filed Jan. 27, 1966, Ser. No. 787
Term of patent 14 years
(Cl. D31—4)



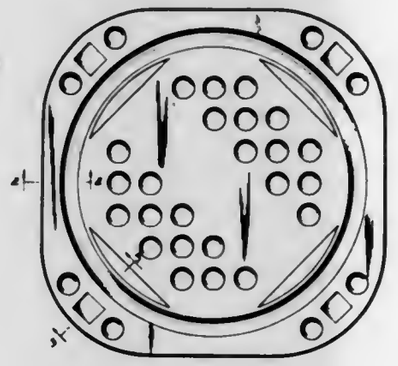
205,774
FISH LURE
Joseph L. Schneider, 2544 E. 21st St., Brooklyn, N.Y. 11235
Filed Jan. 27, 1966, Ser. No. 783
Term of patent 14 years
(Cl. D31—4)



205,775
SUSPENSION HOOK FOR A CLOTHES HANGER ROD
Carl E. Gingher, 304–328 Depot St., Scranton, Pa.
Filed Sept. 11, 1964, Ser. No. 81,682
Term of patent 14 years
(Cl. D33—8)

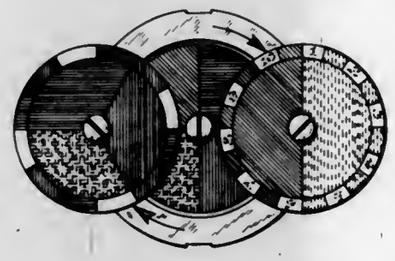


205,776
GAME BOARD
William F. Boubel, 1116 NE. 21st Ave., Portland, Oreg.
Filed Jan. 21, 1966, Ser. No. 720
Term of patent 7 years
(Cl. D34—5)

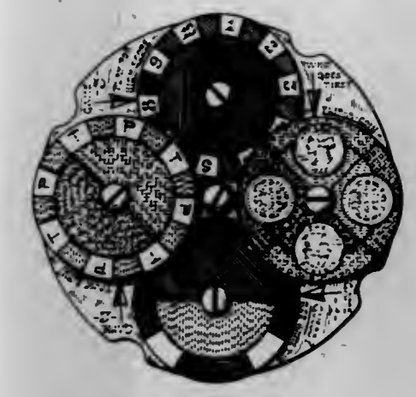


205,777
COMBINED AMUSEMENT AND GAME DEVICE
Alfred E. Ischinger, 410 Kenhorst Blvd., Reading, Pa. 19602
Filed July 20, 1964, Ser. No. 80,918
Term of patent 14 years
(Cl. D34—5)

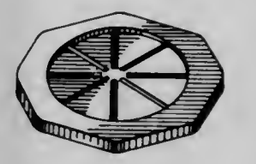




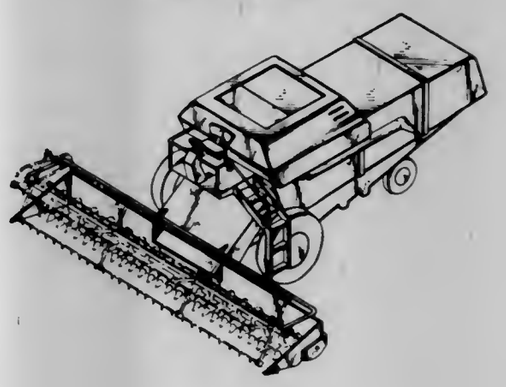
205,778
GAME DEVICE
Alfred E. Schinger, 410 Kenhorst Blvd., Reading, Pa. 19602
Filed Apr. 7, 1965, Ser. No. 84,649
Term of patent 14 years
(Cl. D34—5)



205,779
POKER CHIP
Albert S. Hakim, P.O. Box 1026, Monroe, La.
Filed Oct. 5, 1965, Ser. No. 87,321
Term of patent 14 years
(Cl. D34—5)



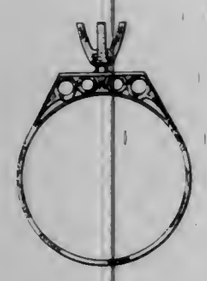
205,780
HARVESTING MACHINE
Cornelis van der Lely, Zug, Switzerland, assignor to Texas Industries Inc., Willemstad, Curacao, Netherlands Antilles, a limited-liability company of the Netherlands Antilles
Filed May 19, 1965, Ser. No. 85,408
Claims priority, application Great Britain Nov. 26, 1964
Term of patent 14 years
(Cl. D40—1)



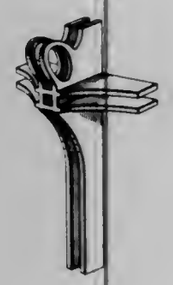
205,781
BEVERAGE SERVER OR THE LIKE
Howard C. Valle and Samuel E. Hatchett, San Diego, and Raymond E. Gust, Spring Valley, Calif., assignors to Courtesy Products Corporation, San Diego, Calif.
Filed Oct. 18, 1965, Ser. No. 87,556
Term of patent 14 years
(Cl. D44—21)



205,782
FINGER RING
John L. Hazelquist, Garden City, Mich., assignor to Traub Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Jan. 14, 1966, Ser. No. 608
Term of patent 14 years
(Cl. D45—10)



205,783
PENDANT CROSS OR THE LIKE
Arthur Albanese, Cranston, R.I., assignor to Marvel Jewelry Mfg. Company, Providence, R.I., a corporation of Rhode Island
Filed Oct. 4, 1965, Ser. No. 87,308
Term of patent 14 years
(Cl. D45—16)



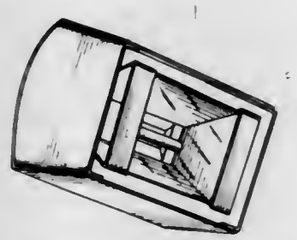
205,784
LIGHTING FIXTURE ADAPTOR
Nathan R. Schwartz, Yonkers, N.Y., assignor to Swivelier Company, Inc., Nanuet, N.Y., a corporation of New York
Filed Mar. 3, 1965, Ser. No. 84,063
Term of patent 14 years
(Cl. D48—4)



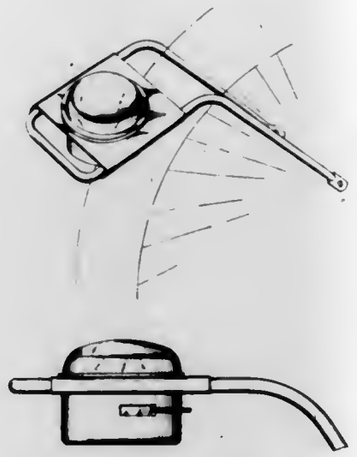
205,785
HIGH INTENSITY LAMP
Richard B. Cronheim, 709 S. Skinker St., St. Louis, Mo.
Filed Nov. 17, 1965, Ser. No. 88,129
Term of patent 14 years
(Cl. D48—20)



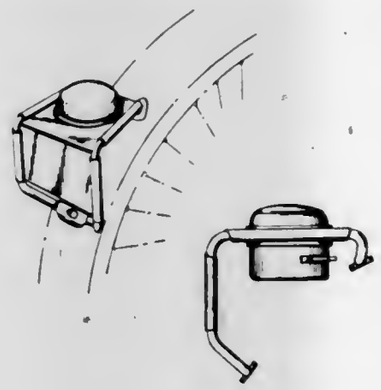
205,786
HOUSING FOR AN INDOOR LIGHT FIXTURE OR THE LIKE
George D. Cooper, 1136 Vista Place, Edmonds, Wash.
Filed May 28, 1965, Ser. No. 85,490
Term of patent 14 years
(Cl. D48—20)



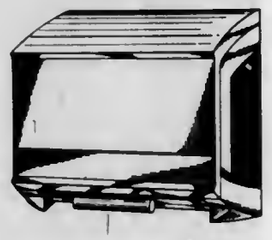
205,787
BICYCLE LIGHT
Viktor Schreckengost, 2265 Stillman Road, Cleveland Heights 18, Ohio
Original design application June 15, 1964, Ser. No. 80,397, now Design Patent No. 203,064, dated Nov. 3, 1965. Divided and this application Aug. 6, 1965, Ser. No. 87,045
Term of patent 14 years
(Cl. D48—24)



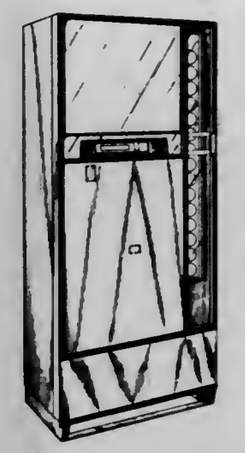
205,788
BICYCLE LIGHT
Viktor Schreckengost, 2265 Stillman Road, Cleveland Heights 18, Ohio
Original design application June 15, 1964, Ser. No. 80,397, now Patent No. 203,064, dated Nov. 3, 1965. Divided and this application Aug. 6, 1965, Ser. No. 87,046
Term of patent 14 years
(Cl. D48—24)



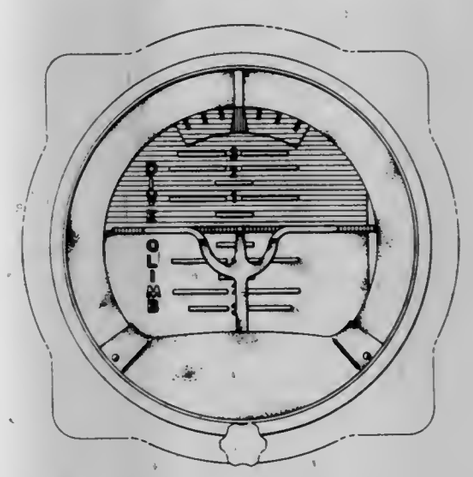
205,789
TOWEL DISPENSING CABINET
Le Roy F. Radtke, Jr., Chicago, Ill., assignor to Steiner American Corporation, Chicago, Ill., a corporation of Nevada
Filed May 3, 1965, Ser. No. 85,057
Term of patent 14 years
(Cl. D52—2)



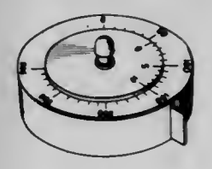
205,790
BOTTLE VENDING MACHINE OR SIMILAR ARTICLE
James R. Reichow, Edina, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Mar. 14, 1966, Ser. No. 1,442
Term of patent 14 years
(Cl. D52—3)



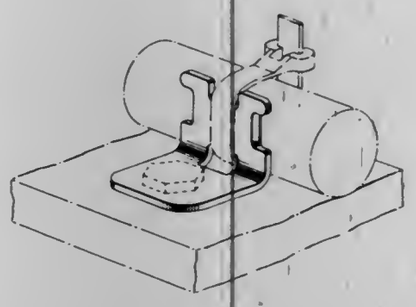
205,791
INSTRUMENT FACE FOR GYROSCOPIC INSTRUMENTS
David E. Harding, 5128 Aldrich Ave. S., Minneapolis, Minn.
Filed Oct. 14, 1964, Ser. No. 82,168
Term of patent 14 years
(Cl. D52—6)



205,792
VERNIER SURFACE THERMOMETER OR THE LIKE
George A. Argabrite, Malibu, Calif. (2301 Federal Ave., Los Angeles, Calif. 90064)
Filed May 3, 1965, Ser. No. 85,069
Term of patent 14 years
(Cl. D52—7)



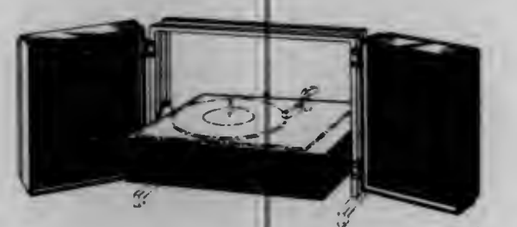
205,793
MOUNTING BRACKET
Harry J. Holmes, Basking Ridge, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed July 1, 1965, Ser. No. 85,974
Term of patent 14 years
(Cl. D54—1)



205,794
DECORATIVE SCROLL
Garland L. Sheldall, Los Angeles County, Calif. (9063 Nagle Ave., Panorama City, Calif.)
Filed Nov. 10, 1965, Ser. No. 88,058
Term of patent 14 years
(Cl. D54—2)



205,795
PORTABLE PHONOGRAPH OR SIMILAR ARTICLE
Bernard A. Grae and Richard S. Cox, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed May 28, 1965, Ser. No. 85,511
Term of patent 14 years
(Cl. D56—4)



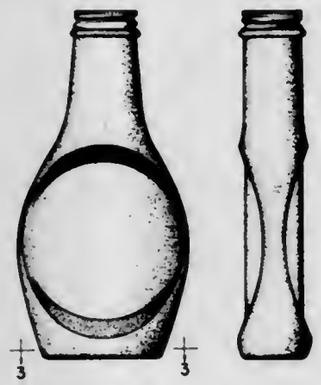
205,796
SPECTACLE FRONT
Gerald Courtney, 6311 Yucca St., Hollywood, Calif.
Filed Nov. 19, 1965, Ser. No. 391
Term of patent 14 years
(Cl. D57—1)



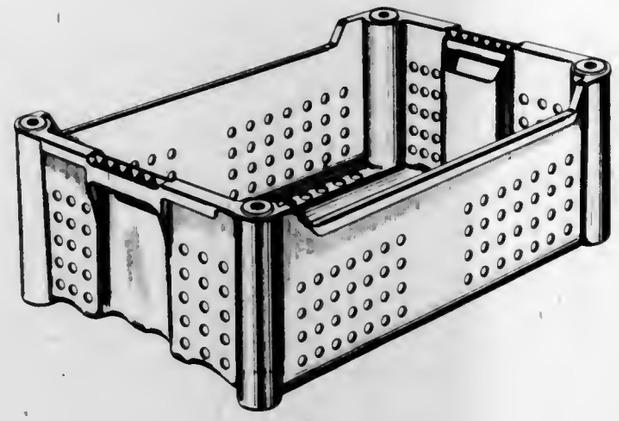
205,797
BOTTLE
William L. Lee, Phoenix, Md., and James A. Shepler, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Sept. 22, 1965, Ser. No. 87,106
Term of patent 14 years
(Cl. D58—6)



205,798
BOTTLE
John Le Roy Parcels, Bordentown, N.J.
Filed Nov. 19, 1965, Ser. No. 88,157
Term of patent 14 years
(Cl. D58—6)



205,799
STACKING BOX OR THE LIKE
Roy C. Josephsen, 230 Oak Ridge Road, Hillsdale, N.J., and Clifford L. Weir, 62 Rolling Hills Drive, Wayne, N.J.
Filed Oct. 11, 1965, Ser. No. 87,418
Term of patent 14 years
(Cl. D58—12.6)



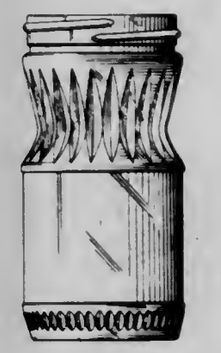
205,800
HINGED COMPARTMENTED CONTAINER
John Donald Bostrom, Niles, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 84,261
Term of patent 14 years
(Cl. D58—13)



205,801
COMBINED WASTE RECEPTACLE AND TRAY
Mario Manfredonia, Nassau County, N.Y. (2 Emerald Drive, Glen Cove, N.Y.)
Filed Aug. 7, 1964, Ser. No. 81,194
Term of patent 14 years
(Cl. D58—17)



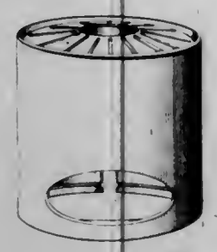
205,802
JAR OR SIMILAR ARTICLE
Floyd E. Pettengill, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed May 18, 1964, Ser. No. 80,008
Term of patent 14 years
(Cl. D58—25)



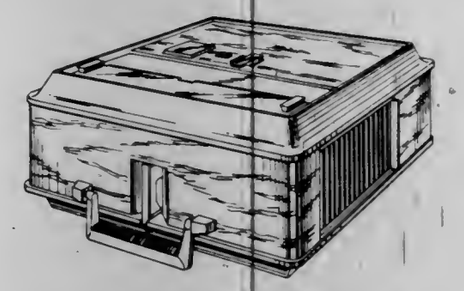
205,803
PULL TAB FOR A TEAR STRIP OPENER
Ralph C. Van Kuren, Coopersburg, and Louis S. Schwartz, Schnecksville, Pa., and Raymond O. Palmgren, Glenview, Ill., assignors to Bethlehem Steel Corporation
Filed Aug. 18, 1965, Ser. No. 86,620
Term of patent 14 years
(Cl. D58—26)



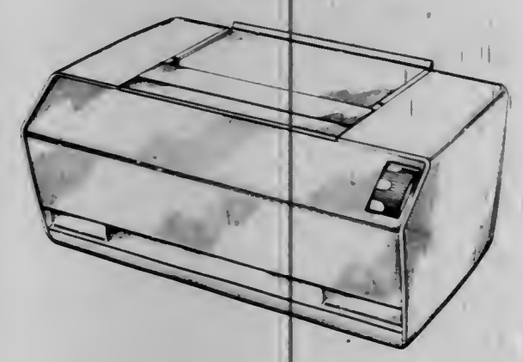
205,804
COVER FOR AN AEROSOL DISPENSER
Robert L. Weber III, New Canaan, Conn., assignor to Time-Mist Inc., Stamford, Conn., a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 87,249
Term of patent 14 years
(Cl. D58—26)



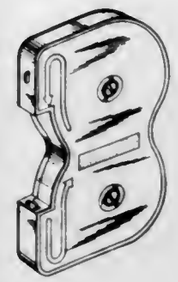
205,805
SLIDE PROJECTOR
Robert M. Simonelli, Des Plaines, and Thomas M. Steinbach, Park Ridge, Ill., assignors to Sawyer's Inc., Portland, Oreg., a corporation of Oregon
Filed Sept. 10, 1965, Ser. No. 86,948
Term of patent 14 years
(Cl. D61—1)



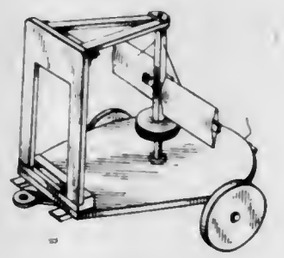
205,806
REPRODUCTION MACHINE
Robert G. Plantholt, Rochester, Mich., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 30, 1965, Ser. No. 87,243
Term of patent 14 years
(Cl. D61—1)



205,807
FILM CARTRIDGE OR SIMILAR ARTICLE
Hiroshi Yamamura, 809 4-chome, Midori, Odawara-shi, Japan
Filed Oct. 5, 1965, Ser. No. 87,325
Claims priority, application Japan Apr. 5, 1965
Term of patent 14 years
(Cl. D61—1)



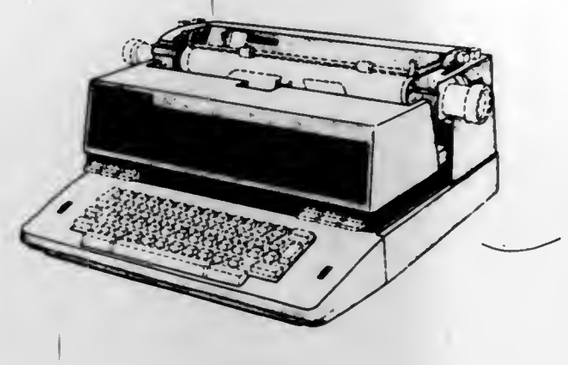
205,808
MOBILE FAN
Hans Skreberg, Big Bend, Minn. (Milan, Minn. 56262)
Filed Apr. 18, 1966, Ser. No. 1,922
Term of patent 14 years
(Cl. D62—4)



205,809
ADDING MACHINE OR SIMILAR ARTICLE
Pierre L. Crease, Kettering, and Donald M. Streiff, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Dec. 15, 1965, Ser. No. 180
Term of patent 14 years
(Cl. D64—11)



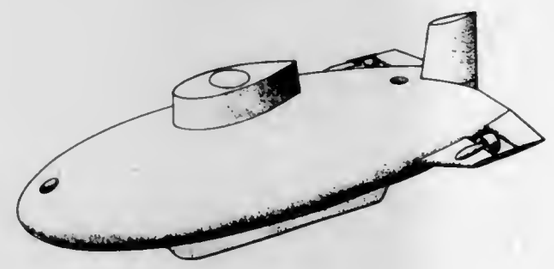
205,810
TYPEWRITER
Carl L. Otto, 9 E. 68th St., New York, N.Y.
Filed Feb. 23, 1966, Ser. No. 1,149
Term of patent 14 years
(Cl. D64—11)



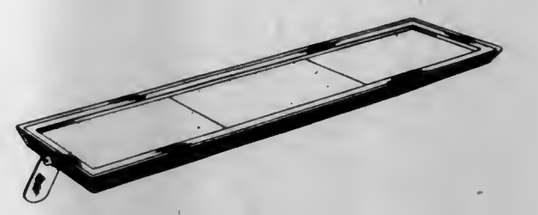
205,811
TYPEWRITER
George H. Kress, 60 S. Munn St., East Orange, N.J., and Alexander Sarkis, Jr., 415A Clinton Ave., Brooklyn, N.Y.
Filed Mar. 25, 1966, Ser. No. 1,630
Term of patent 14 years
(Cl. D64—11)



205,812
DEEP SUBMERGENCE RESEARCH SUBMARINE
Herman G. Ulbrich, Los Altos, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 20, 1965, Ser. No. 238
Term of patent 14 years
(Cl. D71—1)



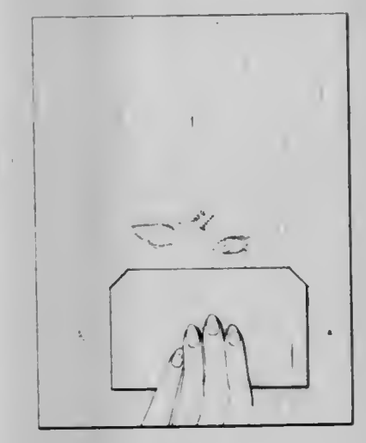
205,813
BEACH BARGE
Robert B. Ward, Box 4574, Fresno, Calif.
Filed July 26, 1965, Ser. No. 86,289
Term of patent 14 years
(Cl. D71—1)



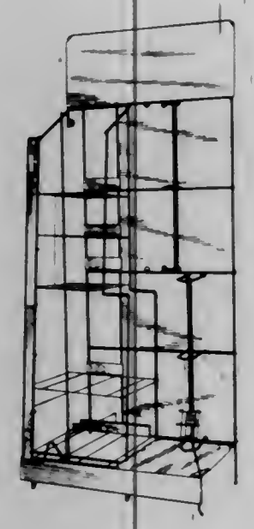
205,814
JET AIRPLANE OR THE LIKE
Mike Tecton, 5101 45th St. NW., Washington, D.C.
Filed Oct. 24, 1965, Ser. No. 87,910
Term of patent 14 years
(Cl. D71—1)



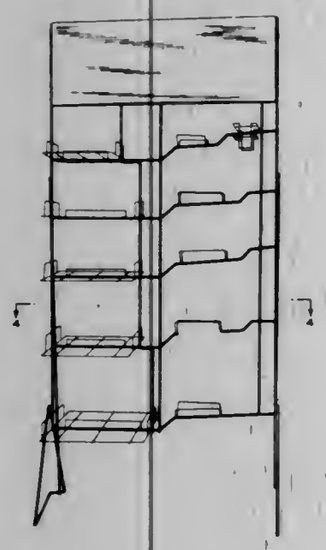
205,815
DISPLAY CARD FOR PACKAGED MERCHANDISE
William Albert Binstead, 106 Old Farm Road S., New Hyde Park, N.Y.
Filed Nov. 8, 1965, Ser. No. 88,041
Term of patent 14 years
(Cl. D80—5)



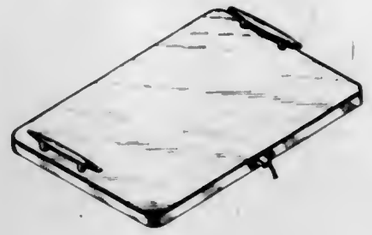
205,816
DISPLAY RACK
Bernard Kleinman, New York, N.Y., assignor to Fedtro, Inc., Rockville Centre, Long Island, N.Y.
Filed Nov. 8, 1965, Ser. No. 88,021
Term of patent 14 years
(Cl. D80—10)



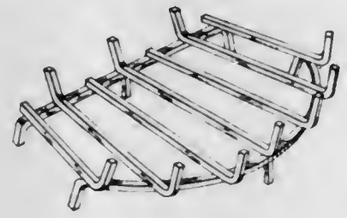
205,817
DISPLAY RACK
Bernard Kleinman, New York, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y.
Filed Nov. 8, 1965, Ser. No. 88,022
Term of patent 14 years
(Cl. D80—10)



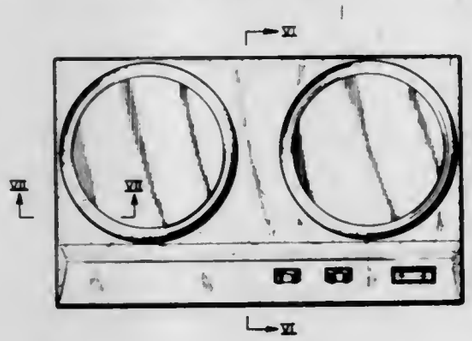
205,818
RADIANT HEATER SUSPENSION PANEL FOR THE MODESTY PANEL OF A DESK
Louis J. Reynolds, Santa Fe, N. Mex., assignor to Aztec Electric Heat (a division of Reynolds Electrical & Engineering Co., Inc.), Santa Fe, N. Mex.
Filed Dec. 14, 1964, Ser. No. 83,307
Term of patent 14 years
(Cl. D81—1)



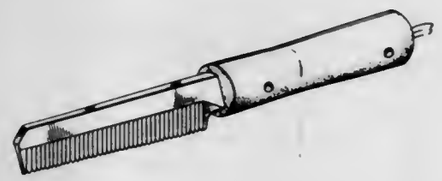
205,819
FIREPLACE GRATE OR THE LIKE
Edward Foreman, 11018 Acalanes Drive, and De Moody Blair, 303 Darr St., both of Oakland, Calif. 94603
Filed Sept. 23, 1965, Ser. No. 87,127
Term of patent 14 years
(Cl. D81—5)



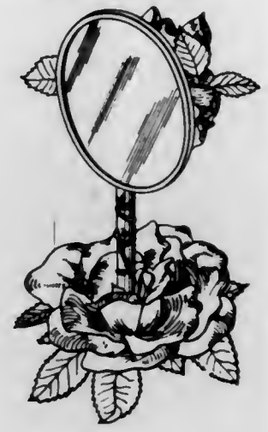
205,820
WARMING TRAY OR THE LIKE
Thomas J. Ryan, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 21, 1965, Ser. No. 83,518
Term of patent 14 years
(Cl. D81—10)



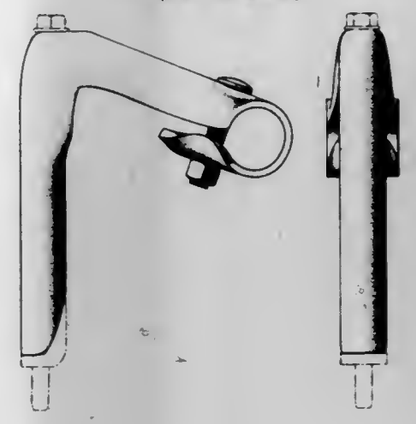
205,821
ELECTRICALLY HEATED COMB
Harold G. Lattimer, Long Beach, Calif., assignor to Owen Franks of California, Inc., North Hollywood, Calif., a corporation of California
Filed Jan. 13, 1966, Ser. No. 591
Term of patent 14 years
(Cl. D86—8)



205,822
FLORAL MIRROR STAND
Leo Lederman, New York, N.Y., assignor to L. Thaler & Co., Inc., New York, N.Y., a corporation of New York
Filed Aug. 12, 1964, Ser. No. 81,250
Term of patent 14 years
(Cl. D86—10)



205,823
BICYCLE STEERING POST
Ruben L. Pawsat, Maysville, Ky., assignor to Wald Manufacturing Company, Incorporated, Maysville, Ky., a corporation of Kentucky
Filed Dec. 30, 1965, Ser. No. 382
Term of patent 14 years
(Cl. D90—9)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 20TH DAY OF SEPTEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Antalek, John J. Thompson Ramo Wooldridge Inc. Coupling device. Re. 26,089, 9–20–66, Cl. 317—101.

Baker Oil Tools, Inc.: *See*—
Myers, William D. Re. 26,085.

Bell Telephone Laboratories, Inc.: *See*—
White, Donald L. Re. 26,091.

Bendix Corp., The: *See*—
Tankersley, James A., and Driscoll. Re. 26,078.

Cooper, Martin, to Motorola, Inc. Selective calling apparatus. Re. 26,079, 9–20–66, Cl. 340—164.

Dixon Corp.: *See*—
Rulon-Miller, Robert, and Ricklin. Re. 26,088.

Driscoll, Paul A.: *See*—
Tankersley, James A., and Driscoll. Re. 26,078.

Dunwell, Stephen W., C. E. Stephens, W. R. Stringfellow, and V. D. Winkler, to International Business Machines Corp. Multi-computer system including multiplexed memories, lookahead, and address interleaving features. Re. 26,087, 9–20–66, Cl. 340—172.5.

Dyke, Walter P., and F. J. Grundhauser, to Field Emission Corp. Short pulse-high energy field emission type electron radiation tube. Re. 26,081, 9–20–66, Cl. 250—49.5.

Field Emission Corp.: *See*—
Dyke, Walter P., and Grundhauser. Re. 26,081.

Forrer, Homer W., to The Mead Corp. Article carrier. Re. 26,083, 9–20–66, Cl. 220—115.

Grundhauser, Frank J.: *See*—
Dyke, Walter P., and Grundhauser. Re. 26,081.

Hagstrom, Arthur A., to Teletype Corp. Telegraph transmitter distributor starting mechanism. Re. 26,080, 9–20–66, Cl. 178—17.

Inoue, Kiyoshi. Electric power supply apparatus for electric method of electrical discharge machining. Re. 26,090, 9–20–66, Cl. 219—69.

International Business Machines Corp.: *See*—
Dunwell, Stephen W., Stephens, Stringfellow, and Winkler. Re. 26,087.

McKenzie, Archibald M., to Sherman Development Ltd. Self-cleaning ash tray. Re. 26,092, 9–20–66, Cl. 220—20.5.

Mead Corp., The: *See*—
Forrer, Homer W. Re. 26,083.

Motorola, Inc.: *See*—
Cooper, Martin. Re. 26,079.

Myers, William D., to Baker Oil Tools, Inc. Hydraulically actuated well packers. Re. 26,085, 9–20–66, Cl. 166—120.

Osborne, George T., to Sperry Rand Corp. Asynchronous binary counter register stage with flip-flop and gate utilizing plurality of interconnected (NOR) logic circuits. Re. 26,082, 9–20–66, Cl. 307—88.5.

Popovitsch, Ernst: *See*—
Ruhrmann, Josef, Streicher, and Popovitsch. Re. 26,086.

Ranson, Charles W. Fruit and vegetable washing device with vertical circulative flow and ribbed cover. Re. 26,084, 9–20–66, Cl. 259—4.

Ricklin, Saul: *See*—
Rulon-Miller, Robert, and Ricklin. Re. 26,088.

Ruhrmann, Josef, K. Streicher, and E. Popovitsch, to Talon, Inc. Slide fasteners. Re. 26,086, 9–20–66, Cl. 24—205.1.

Rulon-Miller, Robert, and S. Ricklin, to Dixon Corp. Bearing composition. Re. 26,088, 9–20–66, Cl. 252—12.

Sherman Development Ltd.: *See*—
McKenzie, Archibald M. Re. 26,092.

Sperry Rand Corp.: *See*—
Osborne, George T. Re. 26,082.

Stephens, Clarence E.: *See*—
Dunwell, Stephen W., Stephens, Stringfellow, and Winkler. Re. 26,087.

Streicher, Kurt: *See*—
Ruhrmann, Josef, Streicher, and Popovitsch. Re. 26,086.

Stringfellow, William R.: *See*—
Dunwell, Stephen W., Stephens, Stringfellow, and Winkler. Re. 26,087.

Talon, Inc.: *See*—
Ruhrmann, Josef, Streicher, and Popovitsch. Re. 26,086.

Tankersley, James A., and P. A. Driscoll; said Tankersley assor. to The Bendix Corp. Combination adjuster and reset mechanism. Re. 26,078, 9–20–66, Cl. 188—72.

Teletype Corp.: *See*—
Hagstrom, Arthur A. Re. 26,080.

Thompson Ramo Wooldridge Inc.: *See*—
Antalek, John J. Re. 26,089.

White, Donald L., to Bell Telephone Laboratories, Inc. Ultrasonic amplifiers, oscillators, circulators, isolators and switches. Re. 26,091, 9–20–66, Cl. 331—96.

Winkler, Vaughn D.: *See*—
Dunwell, Stephen W., Stephens, Stringfellow, and Winkler. Re. 26,087.

LIST OF DESIGN PATENTEES

Albanese, Arthur, to Marvel Jewelry Mfg. Co. Pendant cross or the like. 205,783, 9–20–66, Cl. D45—16.

Anchor Hocking Glass Corp.: *See*—
Pettengill, Floyd E. 205,802.

Argabrite, George A. Vernier surface thermometer or the like. 205,792, 9–20–66, Cl. D52—7.

Aztec Electric Heat (a division of Reynolds Electrical & Engineering Co., Inc.): *See*—
Reynolds, Louis J. 205,818.

Beckwith-Arden Inc.: *See*—
Beckwith, Edwin L. 205,769.

Beckwith, Edwin L., to Beckwith-Arden Inc. Bayonet scabbard. 205,769, 9–20–66, Cl. D22—6.

Bethlehem Steel Corp.: *See*—
Van Kuren, Ralph C., Schwartz, and Palmgren. 205,803.

Binstead, William A. Display card for packaged merchandise. 205,815, 9–20–66, Cl. D80—5.

Bjorgensen, S. A.: *See*—
Martignoli, Louis. 205,766.

Blair, Benton. Bird feeder. 205,772, 9–20–66, Cl. D31—2.

Blair, De Moody: *See*—
Foreman, Edward, and Blair. 205,819.

Bostrom, John D., to Illinois Tool Works Inc. Hinged compartmented container. 205,800, 9–20–66, Cl. D58—13.

Boubel, William F. Game board. 205,776, 9–20–66, Cl. D34—5.

Bridger, Edward C., to Marriott-Hot Shoppes, Inc. Building. 205,761, 9–20–66, Cl. D13—1.

Brisendine, Roy W. Amphibious car. 205,764, 9–20–66, Cl. D14—3.

California Car Wash Systems Inc.: *See*—
La Mers, Herbert, and Wayne. 205,759.

Coe, Thomas D., to Wakefield Engineering Co., Inc. Heat sink. 205,770, 9–20–66, Cl. D26—1.

Contour Chair-Lounge Co., Inc.: *See*—
Ferro, Arthur C. 205,767.

Cooper, George D. Housing for an indoor light fixture or the like. 205,786, 9–20–66, Cl. D48—20.

Cornelius Co., The: *See*—
Cornelius, Richard T. 205,750.

Cornelius, Richard T., to The Cornelius Co. Beverage dispensing tank, or similar article. 205,750, 9–20–66, Cl. D2—3.

Cornelius Co., The: *See*—
Reichow, James R. 205,790.

Corning Glass Works: *See*—
Ryan, Thomas J. 205,820.

Courtesy Products Corp.: *See*—
Valle, Howard C., Hatchett, and Gust. 205,781.

Courtney, Gerald. Spectacle front. 205,796, 9–20–66, Cl. D57—1.

Cox, Richard S.: *See*—
Grae, Bernard A., and Cox. 205,795.

Crease, Pierre L., and D. M. Streiff, to The National Cash Register Co. Adding machine or similar article. 205,809, 9–20–66, Cl. D64—11.

Cronheim, Richard B. High intensity lamp. 205,785, 9–20–66, Cl. D48—20.

Dominion Electric Corp.: *See*—
Hall, Richard B. 205,754.

Fedtro, Inc.: *See*—
Ota, Hajime. 205,765.
Kleinman, Bernard. 205,816.
Kleinman, Bernard. 205,817.

Ferro, Arthur C., to Contour Chair-Lounge Co., Inc. Chair. 205,767, 9–20–66, Cl. D15—11.

Fink, Robert W., to Whirlpool Corp. Combination countertop and sink. 205,753, 9–20–66, Cl. D4—2.

Foreman, Edward, and D. M. Blair. Fireplace grate or the like. 205,819, 9–20–66, Cl. D81—5.

Franks, Owen, of California, Inc.: *See*—
Lattimer, Harold G. 205,821.

Gerber, Robert E., to Huber-Warco Co. Vehicle. 205,762, 9–20–66, Cl. D14—3.

Gingher, Carl E. Suspension hook for a clothes hanger rod. 205,775, 9–20–66, Cl. D33—8.

Grae, Bernard A., and R. S. Cox, to Radio Corp. of America. Portable phonograph or similar article. 205,795, 9–20–66, Cl. D56—4.

Greenberg, Mal, to Meco, Inc. Rubber glove. 205,751, 9–20–66, Cl. D3—11.

Gust, Raymond E.: *See*—
Valle, Howard C., Hatchett, and Gust. 205,781.
Hakim, Albert S. Poker chip. 205,779, 9–20–66, Cl. D34—5.
Hall, Richard B., to Dominion Electric Corp. Combined holder and charging unit for electric toothbrush or the like. 205,754, 9–20–66, Cl. D4—3.
Harding, David E. Instrument face for gyroscopic instruments. 205,791, 9–20–66, Cl. D52—6.
Hatchett, Samuel E.: *See*—
Valle, Howard C., Hatchett, and Gust. 205,781.
Hazelquist, John L., to Traub Mfg. Co. Finger ring. 205,782, 9–20–66, Cl. D45—10.
Hocutt, R. Hovan, and T. E. Mullinax, to Pneumafil Corp. Combination air filtering and collecting unit for textile waste products. 205,760, 9–20–66, Cl. D9—2.
Holmes, Harry J., to The Thomas & Betts Co. Mounting bracket. 205,793, 9–20–66, Cl. D54—1.
Huber-Warco Co.: *See*—
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Illinois Tool Works Inc.: *See*—
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Imperial Cap Works, Inc.: *See*—
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Ischinger, Alfred E. Combined amusement and game device. 205,777, 9–20–66, Cl. D34—5.
Ischinger, Alfred E. Game device. 205,778, 9–20–66, Cl. D34—5.
Josephsen, Roy C., and C. L. Weir. Stacking box or the like. 205,799, 9–20–66, Cl. D58—12.6.
Kleinman, Bernard, to Fedtro, Inc. Display rack. 205,816, 9–20–66, Cl. D80—10.
Kleinman, Bernard, to Fedtro, Inc. Display rack. 205,817, 9–20–66, Cl. D80—10.
Kress, George H., and A. Sarkis, Jr. Typewriter. 205,811, 9–20–66, Cl. D64—11.
La Mers, Herbert, and M. W. Wayne, to California Car Wash Systems Inc. Vacuum cleaner. 205,759, 9–20–66, Cl. D9—2.
Lattimer, Harold G., to Owen Franks of California, Inc. Electrically heated comb. 205,821, 9–20–66, Cl. D86—8.
Lederman, Leo, to L. Thaler & Co., Inc. Floral mirror stand. 205,822, 9–20–66, Cl. D86—10.
Lee, William L., and J. A. Shepler, to Owens-Illinois, Inc. Bottle. 205,797, 9–20–66, Cl. D58—6.
Lockheed Aircraft Corp.: *See*—
Ulbrich, Herman G. 205,812.
Malk, Marvin I., to Imperial Cap Works, Inc. Hat. 205,752, 9–20–66, Cl. D3—13.
Manfredonia, Mario. Combined waste receptacle and tray. 205,801, 9–20–66, Cl. D58—17.
Marriott-Hot Shoppes, Inc.: *See*—
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Martens, H. Henry, to The Stanley Works. Drapery traverse rod. 205,768, 9–20–66, Cl. D21—1.
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Marvel Jewelry Mfg. Co.: *See*—
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Meco, Inc.: *See*—
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National Cash Register Co., The: *See*—
Crease, Pierre L., and Streiff. 205,809.
Orbitor, Ltd.: *See*—
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Otto, Carl L. Typewriter. 205,810, 9–20–66, Cl. D64—11.
Owens-Illinois, Inc.: *See*—
Lee, William L., and Shepler. 205,797.
Palmgren, Raymond O.: *See*—
Van Kuren, Ralph C., Schwartz, and Palmgren. 205,803.
Parcels, John L. R. Bottle. 205,798, 9–20–66, Cl. D58—6.
Pawsat, Ruben L., to Wald Mfg. Co., Inc. Bicycle steering post. 205,823, 9–20–66, Cl. D90—9.
Pettengill, Floyd E., to Anchor Hocking Glass Corp. Jar or similar article. 205,802, 9–20–66, Cl. D58—25.
Plantholt, Robert G., to Xerox Corp. Reproduction machine. 205,806, 9–20–66, Cl. D61—1.
Pneumafil Corp.: *See*—
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Post, Bernard E. Golf cart. 205,763, 9–20–66, Cl. D14—3.
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Grae, Bernard A., and Cox. 205,795.
Radtke, Le Roy F., Jr., to Steiner American Corp. Towel dispensing cabinet. 205,789, 9–20–66, Cl. D52—2.
Reichow, James R., to The Cornelius Co. Bottle vending machine or similar article. 205,790, 9–20–66, Cl. D52—3.
Reynolds, Louis J., to Aztec Electric Heat (a division of Reynolds Electrical & Engineering Co., Inc.). Radiant heater suspension panel for the modesty panel of a desk. 205,818, 9–20–66, Cl. D81—1.
Ryan, Thomas J., to Corning Glass Works. Warming tray or the like. 205,820, 9–20–66, Cl. D81—10.
Sarkis, Alexander, Jr.: *See*—
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Schneider, Joseph L. Fish lure. 205,773, 9–20–66, Cl. D31—4.
Schneider, Joseph L. Fish lure. 205,774, 9–20–66, Cl. D31—4.
Schreckengost, Viktor. Bicycle light. 205,787, 9–20–66, Cl. D48—24.
Schreckengost, Viktor. Bicycle light. 205,788, 9–20–66, Cl. D48—24.
Schwartz, Louis S.: *See*—
Van Kuren, Ralph C., Schwartz, and Palmgren. 205,803.
Schwartz, Nathan R., to Swiveller Co., Inc. Lighting fixture adaptor. 205,784, 9–20–66, Cl. D48—4.
Servus Rubber Co., The: *See*—
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Sheldall, Garland L. Decorative scroll. 205,794, 9–20–66, D54—2.
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Simonelli, Robert M., and T. M. Steinbach, to Sawyer's Inc. Slide projector. 205,805, 9–20–66, Cl. 61—1.
Skreberg, Hans. Mobile fan. 205,808, 9–20–66, Cl. D62—4.
Slade, Duncan E., to United States Rubber Co. Overshoe. 205,755, 9–20–66, Cl. D7—4.
Spiselman, Leonard. Picture frame. 205,771, 9–20–66, Cl. D29—20.
Stanley Works, The: *See*—
Martens, H. Henry. 205,768.
Steinbach, Thomas M.: *See*—
Simonelli, Robert M., and Steinbach. 205,805.
Steiner American Corp.: *See*—
Radtke, Le Roy F., Jr. 205,789.
Storm, Frederick K., Jr., to Orbitor, Ltd. Floor treating machine. 205,758, 9–20–66, Cl. D9—2.
Streiff, Donald M.: *See*—
Crease, Pierre L., and Streiff. 205,809.
Swiveller Co., Inc.: *See*—
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Tecton, Mike. Jet airplane, or the like. 205,814, 9–20–66, Cl. D71—1.
Texas Industries Inc.: *See*—
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Thaler, L., & Co., Inc.: *See*—
Lederman, Leo. 205,822.
Thomas & Betts Co., The: *See*—
Holmes, Harry J. 205,793.
Time-Mist Inc.: *See*—
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Traub Mfg. Co.: *See*—
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Triplett, Fanny, to Tripples. Bath sponge. 205,756, 9–20–66, Cl. D9—2.
Tripples: *See*—
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Ulbrich, Herman G., to Lockheed Aircraft Corp. Deep submergence research submarine. 205,812, 9–20–66, Cl. D71—1.
United States Rubber Co.: *See*—
Slade, Duncan E. 205,755.
Valle, Howard C., S. E. Hatchett, and R. E. Gust, to Courtesy Products Corp. Beverage server or the like. 205,781. 9–20–66, Cl. D44—21.
Van der Lely, Cornelis, to Texas Industries Inc. Harvesting machine. 205,780, 9–20–66, Cl. D40—1.
Van Kuren, Ralph C., L. S. Schwartz, and R. O. Palmgren, to Bethlehem Steel Corp. Pull tab for a tear strip opener. 205,803, 9–20–66, Cl. D58—26.
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Ward, Robert B. Beach barge. 205,813, 9–20–66, Cl. D71—1.
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Weber, Robert L., III., to Time-Mist Inc. Cover for an aerosol dispenser. 205,804, 9–20–66, Cl. D58—26.
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Josephsen, Roy C., and Weir. 205,799.
Whirlpool Corp.: *See*—
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Yamamura, Hiroshi. Film cartridge or similar article. 205,807, 9–20–66, Cl. D61—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 20TH DAY OF SEPTEMBER, 1966

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Gibson, Earl D. 3,274,582.
Johnson, Eldon A. 3,273,870.
A & D Associates: *See*—
Cassini, Genaro. 3,273,174.
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Frant, Martin S., and Elss. 3,274,034.
Swanson, John A. 3,274,572.
Abbott, Frank R., and J. A. Peugh, to United States of America, Navy. Broad band multiple beam forming device. 3,274,536, 9–20–66, Cl. 340—6.
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Short, James H. 3,274,218.
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Acme Tool, Inc.: *See*—
Burner, Donald L. 3,273,932.
Acton Laboratories Inc.: *See*—
Mongeau, Eugene H. 3,274,350.
Adams, Cecelia J.: *See*—
Lester, George R., and Adams. 3,274,273.
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Adams, Loyd W., to Phillips Petroleum Co. Filtration. 3,274,103, 9–20–66, Cl. 210—23.
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Gilboe, Daniel P., and Adolphson. 3,274,042.
Adriance, Theodore R., Jr., and E. P. Smith, to General Electric Co. Commutator riser construction. 3,274,413, 9–20–66, Cl. 310—234.
Aerovox Corp.: *See*—
Rodriguez, Antonio R., and Stapleton. 3,274,468.
Aftandilian, Victor D., to Cabot Corp. Catalyst composition having increased hydroxyl groups bound thereto and method for producing same. 3,274,120, 9–20–66, Cl. 252—432.
Agfa Aktiengesellschaft: *See*—
Jakob, Franz. 3,273,479.
Kiper, Gerd. 3,273,481.
Menzel, Karl-Heinz, Wahl, and Kuhn. 3,274,001.
Winkler, Alfred, Landbrecht, and Engelsmann. 3,273,480.
Aguilar, Henry. Apparatus for orienting fruit having stems, and for pitting said fruit. 3,273,615, 9–20–66, Cl. 146—19.
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McCabe, Francis J. 3,273,632.
Air Reduction Co., Inc.: *See*—
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Aladdin Industries, Inc.: *See*—
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Albert, Harry E., and P. G. Haines, to Pennsalt Chemicals Corp. Process for tertiary amine oxides and hydroxylamines. 3,274,252, 9–20–66, Cl. 260—583.
Albright, Denton M., and C. Perlaky, to United States Steel Corp. Method for improving the conversion of aromatic carboxylic acids to phenols. 3,274,262, 9–20–66, Cl. 260—621.
Aldrich, Thomas R. Attachment for crutches and like walking aids. 3,273,573, 9–20–66, Cl. 135—62.
Alexander, Thomas E., and W. F. Nelson, to Koehring Co. Automatic fill-up and cementing devices for well pipes. 3,273,650, 9–20–66, Cl. 166—225.
Alfille, Lucien, to European Atomic Energy Community-Euratom. Fuel rods for nuclear reactors. 3,274,069, 9–20–66, Cl. 176—72.
Algeo, Jerry A.: *See*—
Randall, Grant M., and Algeo. 3,274,602.
Allard Instrument Corp.: *See*—
Skrobisch, Alfred. 3,273,270.
Allen, Helen M., and A. J. Austin. Tie-rod bracket for concrete forms. 3,273,848, 9–20–66, Cl. 249—219.
Allen, John D., to Fawick Corp. Hydraulic system. 3,273,467, 9–20–66, Cl. 91—420.
Allen, John D., to Fawick Corp. Hydraulic system with regenerative position. 3,273,468, 9–20–66, Cl. 91—420.
Allen, Kenneth M., and C. H. Harper, to Allen-Harper, Inc. Eccentric pulley drive. 3,273,698, 9–20–66, Cl. 198—220.
Allen, Willard B., to United States of America, Navy. Series-parallel recirculation time compressor. 3,274,341, 9–20–66, Cl. 179—15.55.
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Gilbert, Everett E., and Rumanowski. 3,274,243.
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Allison, Ethel. Annular wig suitable for attachment to the natural hair. 3,273,570, 9–20–66, Cl. 132—53.
Alsys, Clarence M., to Tee-Pak, Inc. Shirred sausage casing with end closure. 3,274,005, 9–20–66, Cl. 99—176.
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Braunwarth, Victor A., Nickle, and Phillips. 3,274,008.
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Rutemiller, Herbert C., and Montgomery. 3,274,085.
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Amagasa, Masataka, and T. Yamaguchi. Process for the production of cyclohexene and methylcyclohexene. 3,274,272, 9–20–66, Cl. 260—666.
Amano, Noboru, and N. Wakayama, to Nihon Genshiryoku Kenkyu Sho. Division circuit. 3,274,381, 9–20–66, Cl. 235—196.
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Amborski, Leonard E., to E. I. du Pont de Nemours and Co. Method of producing non-fogging films. 3,274,091, 9–20–66, Cl. 204—165.
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Bikales, Norbert M. 3,274,205.
Bobsein, William P., and Mellor. 3,274,245.
Buckler, Sheldon A., and Epstein. 3,274,256.
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American Motors Corp.: *See*—
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American Radiator & Standard Sanitary Corp.: *See*—
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Anderson, Kelvin G., to W. R. Grace & Co. Method and apparatus for wrapping and package produced. 3,273,301, 9–20–66, Cl. 53—32.

Anderson, Kelvin G., and I. F. Churchill, to W. R. Grace & Co. Method of employing electrostatic means in a heat shrinking process. 3,274,302, 9–20–66, Cl. 264—22.

Anderson, Martin and H. T. Self-tucking fitted sheet. 3,273,175, 9–20–66, Cl. 5—334.

Anderson, Norman L., and A. C. Litke, to Allied Chemical Corp. Monoazo dyestuffs containing a benzothiazole nucleus. 3,274,171, 9–20–66, Cl. 260—158.

Anderson, Paul G., 25% to F. A. Parson, 25% to F. H. Wells, and 25% to B. V. Curry. Weather protected chairs. 3,273,937, 9–20–66, Cl. 297—219.

Andrew, Vladimir. Dental crown and method of producing the same. 3,273,242, 9–20–66, Cl. 32—12.

Andrews, Harold D., Jr. Paint can lib. 3,273,746, 9–20–66, Cl. 220—90.

Andrews, John R., III, to Welsh Mfg. Co. Hard hat with reinforcing ribs. 3,273,162, 9–20–66, Cl. 2—3.

Andrews, John R., III, to Welsh Mfg. Co. Accessory attachment to a hard hat. 3,273,163, 9–20–66, Cl. 2—3.

Andrews, Merritt R., and H. A. Hokanson, to United Aircraft Corp. Arc etching. 3,274,036, 9–20–66, Cl. 156—2.

Andrews, Walter J. Tube removal tool. 3,273,231, 9–20–66, Cl. 29—275.

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Apted, James E., and G. F. N. Oliver, to Oliver Pell Control Ltd. Electric socket connectors. 3,274,533, 9–20–66, Cl. 339—192.

Archer, Alton M., and R. G. Wyatt, to Lockheed Aircraft Corp. Method and apparatus for evaluating antennae. 3,274,597, 9–20–66, Cl. 343—100.

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Gliboe, Daniel P., and Adolphson. 3,274,042.
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Aronson, Philip M., and R. H. Waser, to United States of America, Navy. Static and dynamic calibration vessel for pressure gages. 3,273,376, 9–20–66, Cl. 73—4.

Aronsson, Arent, to Svenska Flaktfabriken, Aktieholaget. Method for conditioning web- or sheet-like material. 3,274,697, 9–27–66, Cl. 34—36.

Arrow-Hart & Hegeman Electric Co., The: *See*—
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Ytterfors, Sven L., and Jansson. 3,273,658.

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Chapman, William I., Whitfield, and Atwood. 3,273,904.
Chapman, William I., Whitfield, and Atwood. 3,273,905.

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Avco Corp.: *See*—
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Bächler, Werner G.: *See*—
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Baddorf, Paul E., and J. H. Houdry, to Oxy-Catalyst, Inc. Apparatus for improving the purification of exhaust gases from an internal combustion engine. 3,273,971, 9–20–66, Cl. 23—288.

Bader, Horst, to J. C. Eckardt A.G. Dynamic flow meter. 3,273,391, 9–20–66, Cl. 73—228.

Badger, George M. W., to Varian Associates. Pulser for modulated anode tubes. 3,274,515, 9–20–66, Cl. 332—7.

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Bailey, Frederick E., Jr., to Union Carbide Corp. Polymerization of epoxides. 3,274,129, 9–20–66, Cl. 260—2.

Baizer, Manuel M., to Monsanto Co. Electrolytic reductive coupling process. 3,274,084, 9–20–66, Cl. 204—72.

Bajars, Laimonis, to Petro-Tex Chemical Corp. Process for dehydrogenating. 3,274,285, 9–20–66, Cl. 260—680.

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Ball, Warren. Carburetion system. 3,273,550, 9–20–66, Cl. 123—119.

Balmer, Hansjorg, and R. J. Gasparac, to Nordberg Mfg. Co. Seal for gyratory crushers. 3,273,808, 9–20–66, Cl. 241—215.

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Barker, Michael D., and G. A. Somerfield, to Glaxo Laboratories Ltd. Derivatives of cephalosporin C and their synthesis. 3,274,186, 9–20–66, Cl. 260—243.

Barnard, Charles F. Well tools. 3,273,648, 9–20–66, Cl. 166—175.

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Baruth, Elmore J., and W. C. Oswald, to Bostrom Corp. Method and means for securing seat covers to the base structure of a seat. 3,273,178, 9–20–66, Cl. 5—353.2.

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Bassett, Joseph A., and M. H. Battles, to Swift & Co. Scuff resistant leather. 3,274,023, 9–20–66, Cl. 117—142.

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Batosti, Mario, and A. Belloni, to Edison. Method and apparatus for extrusion of plastic material. 3,274,317, 9–20–66, Cl. 264—95.

Batt, Irving P., to E. I. du Pont de Nemours and Co. Shrinkable regenerated cellulose band incorporated with translucent micaceous flakes. 3,274,013, 9–20–66, Cl. 106—168.

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Beatty, John W., to General Electric Co. Gas blast circuit breaker of the axial blast-type with magnetic means for rotating an arc terminal. 3,274,365, 9–20–66, Cl. 200—148.

Beaumont, Albert G., to Courtaulds Ltd. Filamentary material. 3,273,771, 9–20–66, Cl. 225—3.

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Beck, Earl J., Jr. Self-pressurized deep ocean buoy. 3,273,181, 9–20–66, Cl. 9—8.

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Becker, Edward J., and R. S. Robison, to E. R. Squibb & Sons, Inc. A-norpregn-3-ene derivatives. 3,274,237, 9–20–66, Cl. 260—488.

Becker, Stephen P., and B. A. Fulton, to Fargo Mfg. Co., Inc. Insulated cable splice. 3,274,330, 9–20–66, Cl. 174—84.

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Beckett, Reginald W., deceased, by M. J. Beckett, executrix. Hydraulic pulsation absorber. 3,273,596, 9–20–66, Cl. 138—30.

Becking, Paul E., to Dura Corp. Tape handling device. 3,273,687. 9–20–66, Cl. 197—180.

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Beckman, Irving C., and A. M. Beerbohm. Self-mailer. 3,273,785, 9–20–66, Cl. 229—69.

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Smitzer, Louis A. 3,273,567.
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Bell, Ronald L., G. S. Kino, and J. K. Mann, to Varian Associates. Crossed field high-frequency electron discharge apparatus. 3,274,431, 9–20–66, Cl. 315—39.3.

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Winkler, Albert H. 3,273,871.
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Benedik, Fedor. Sequential electrical lighting arrangement. 3,274,441, 9–20–66, Cl. 315—323.

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Beredjick, Nicky, to Standard Oil Co. Method of retarding water surface evaporation. 3,273,957, 9–20–66, Cl. 21—60.5.

Bergerson, Ronald O. Multiscale engineers scale. 3,273,247, 9–20–66, Cl. 33—107.

Bergman, Elliott, to Shell Oil Co. Epoxy trioxanes. 3,274,162. 9–20–66, Cl. 260—78.4.

Bergstein, Frank D., A. B. Kleingers, Jr., and L. Back, to Bergstein Packaging Trust. Method and means for controlling foaming of clay coating composition during application. 3,274,307, 9–20–66, Cl. 264—37.

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Billings, William E., and R. M. Lasater, to Halliburton Co. Method of initiating foam in drowned wells. 3,273,643, 9–20–66, Cl. 166—45.

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Bird, John L. Hydraulically actuated controllable-pitch propeller system for outboard motors and outdrives. 3,273,656, 9–20–66, Cl. 170—160.32.

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Blass, Judd, to Blass Antenna Electronics Corp. Antenna system with electronic scanning means. 3,274,601, 9–20–66, Cl. 343—754.

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Bloch, Herman S., to Universal Oil Products Co. Preparation of diphenyl. 3,274,277, 9–20–66, Cl. 260—670.
Block, Charles, and L. J. Mintz. Fire alarm system. 3,274,578, 9–20–66, Cl. 340—220.
Blomquist, Arthur G., L. Larsen, M. C. Neuman, and P. G. Wermager, to United States of America, Navy. Load status indicator. 3,274,348, 9–20–66, Cl. 200—5.
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Bobeck, Andrew H., and J. L. Smith, to Bell Telephone Laboratories, Inc. Magnetic memory circuits. 3,274,571, 9–20–66, Cl. 340—174.
Bobsein, William P., and J. F. Mellor, Jr., to American Cyanamid Co. Recovery of acrylamide from its salt by vaporization with an inert gas. 3,274,245, 9–20–66, Cl. 260—561.
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Bonadio, George A. Antenna system. 3,274,606, 9–20–66, Cl. 343—854.
Bonang, Raymond P. Maternity girdle. 3,273,563, 9–20–66, Cl. 128—579.
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Boone, Stephen E., to United States of America, Navy. Vibrapen scriber assembly. 3,274,609, 9–20–66, Cl. 346—62.
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Bourne, Henry A., to Continental Oil Co. Method and apparatus for completing wells. 3,273,641, 9–20–66, Cl. 166—12.
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Boyer, John L., and F. W. Parrish, to International Rectifier Corp. Extremely-high-voltage silicon device. 3,274,458, 9–20–66, Cl. 317—234.
Boyes, Donald L., to General Motors Corp. Storage battery. 3,274,477, 9–20–66, Cl. 320—35.
Bradley, Chester D., to The A. H. Emery Co. Hydraulic load cell. 3,273,470, 9–20–66, Cl. 92—101.
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Brandl, Willi. Temperature-responsive control mechanism for heating apparatus. 3,274,360, 9–20–66, Cl. 200—122.
Branick, Charles E. Earth-mover tire transporter. 3,273,857, 9–20–66, Cl. 254—2.
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Brass, Robert L., and A. Feiner, to Orbicon, Ltd. Game apparatus for simulating skiing. 3,273,889, 9–20–66, Cl. 273—1.
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Braunwarth, Victor A., A. G. Nickle, and N. W. F. Phillips, to Aluminium Laboratories Ltd. Refractory compositions and methods of preparation. 3,274,008, 9–20–66, Cl. 106—65.
Brazell, Douglass L., B. E. Greenfield, and H. W. Barber, to Phillips Petroleum Co. Natural gas separation with refrigerant purification. 3,274,102, 9–20–66, Cl. 208—341.
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Brooksbank, Wallace R. Shuttle boxes for looms for weaving. 3,273,604, 9–20–66, Cl. 139—183.
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Brown, Adolph M., deceased (by M. E. Brown, administratrix), 20% each to R. G. Le Vaux and E. C. Wood. Skin and surgical clips. 3,273,562, 9–20–66, Cl. 128—337.
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Buckman, Stanley J., J. D. Pera, and W. P. Purcell, to Buckman Laboratories, Inc. Pitch control in pulp and papermaking. 3,274,050, 9–20–66, Cl. 162—190.
Budde, Walter M., to Archer-Daniels-Midland Co. Poly ether alcohols, poly ether acids and salt derivatives and method of production. 3,274,220, 9–20–66, Cl. 260—404.5.
Budnick, Alfred S., to Radio Corp. of America. Semiconductive devices. 3,273,979, 9–20–66, Cl. 29—195.
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Bunt, Edgar A., L. O. Kauffman, Jr., H. L. Olsen, and S. D. Raezer, to United States of America, Navy. Discontinuous electrode arc plasma generator. 3,274,424, 9–20–66, Cl. 313—231.
Burdick, Everette M. Method for treating papaya plants to recover desired constituents therefrom. 3,274,072, 9–20–66, Cl. 195—2.
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Chambers, William H. Knife implement. 3,273,191, 9–20–66, Cl. 15—105.
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Cherkas, Max A., and W. M. Grim, to Merck & Co., Inc. Stable hexylresorcinol compositions. 3,274,057, 9–20–66, Cl. 167—65.
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Christenson, Howard W., J. J. Mooney, Jr., and R. H. Schaefer, to General Motors Corp. Transmission. 3,273,344, 9–20–66, Cl. 60—53.
Christopherson, Warren A., to International Business Machines Corp. Magnetic core matrix switch. 3,274,568, 9–20–66, Cl. 340—174.
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Clark, Hubert M., and G. H. Drutchas, to TRW Inc. Stack up slipper pump and compact valve assembly. 3,273,503, 9–20–66, Cl. 103—42.
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Clark, William R. Automobile light switch. 3,274,367, 9–20–66, Cl. 200—161.
Clarke, Richard G., R. H. Groth, and E. J. Duzak, to United Aircraft Corp. Regenerable adsorbent gels and the method of their preparation. 3,274,125, 9–20–66, Cl. 252—466.
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Cleaveland, Norman, to Pacific Tin Consolidated Corp. Circular jigs. 3,273,714, 9–20–66, Cl. 209—456.
Cleeton, Claud E. Directive response transponder system. 3,274,598, 9–20–66, Cl. 343—100.
Clegg, Joseph, to Pritchett & Gold and E. P. S. Co. Ltd. Manufacture of ribbed porous plastic sheeting. 3,274,319, 9–20–66, Cl. 264—126.
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Collier, Herman E., Jr., and J. D. Sterling, Jr., to E. I. du Pont de Nemours and Co. Stabilized tetraethyl lead antiknock blends. 3,274,224, 9–20–66, Cl. 260—437.
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Every, Richard L., Grimsley, and Riggs. 3,274,032.
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Coyne, John P., and G. E. Haddeland, to American Cryogenics, Inc. Acetylene container filler and method. 3,274,123, 9–20–66, Cl. 252—446.
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Halpern, Alfred, and M. D. Sackler, to Synergistics, Inc. Sennoside derivatives and pharmaceutical compositions containing same. 3,274 053, 9–20–66, Cl. 167—65.

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Halverstadt, Carl D., 50% to A. L. Rothfeder. High precision caliper gage. 3,273,248. 9–20–66, Cl. 33—147.

Hamaker, Paul, G. C. Morgan, and J. R. Powell, Jr., to Transall, Inc. Process and apparatus for locking members to cables and the like. 3,273,695, 9–20–66, Cl. 198—192.

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McCollum, Burton (deceased, by Bank of The Southwest National Assn., executors), and P. R. Rowe. Method of distinguishing seismic signals. 3,274,544, 9–20–66, Cl. 340—15.5.

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Millar, Rutherford Y. Sanitary blanket. 3,273,176, 9–20–66, 9–20–66, Cl. 5—334.

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Miller, William M. Ice fishing reel. 3,273,821, 9–20–66, Cl. 242—106.

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Mogensen, Warren B. Outdoor grill. 3,273,556, 9–20–66, Cl. 126—25.

Mohrbacher, Richard J., to McNeil Laboratories, Inc. Certain octohydro-3-oxo-indolizines. 3,274,202, 9–20–66, Cl. 260—294.

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Mongeau, Eugene H., to Acton Laboratories Inc. Frictionless contact construction for electrical devices. 3,274,350, 9–20–66, Cl. 200—11.

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Moore, John C., to The Dow Chemical Co. Method and apparatus for damping a pulsating flow of liquid. 3,273,577, 9–20–66, Cl. 137—13.

Moore, Joseph A., 45% to V. T. Pritchard. Scoop conveyor apparatus. 3,273,730, 9–20–66, Cl. 214—146.

Moore, Richard N., and J. F. Roth, to Monsanto Co. Hydrocarbon conversion process and catalyst. 3,274,287, 9–20–66, Cl. 260—683.3.

Moore, Robert L. Luggage rack. 3,273,767, 9–20–66, Cl. 224—42.01.

Moore, William H., to Meehanite Metal Corp. Foundry melting method. 3,273,994, 9–20–66, Cl. 75—43.

Moreau, Rene P., H. Charpentier, P. Ricart, and P. Boutevin, to Societe Anonyme dite: Societe anonyme des Anciens Etablissements J. M. Paillard. Compact paint box for painting with water colors. 3,273,700, 9–20–66, Cl. 206—1.7.

Morf, Ernest. Method for opening a watchcase. 3,273,228, 9–20–66, Cl. 29—177.

Morgan, Donald P., and D. D. Dalrymple. Apparatus for remote reading of utility meters. 3,274,584, 9–20–66, Cl. 340—347.

Morgan, George C.: *See*—
Hamaker, Paul, Morgan, and Powell. 3,273,695.

Morgan, John C., Jr.: *See*—
Dean, Harry N., Morgan, and Flaherty. 3,273,988.

Morison, Peter P., to Spillers Ltd. Integrated error correcting systems. 3,274 377, 9–20–66, Cl. 235—151.13.

Morita, Katsura, H. Nawa, and T. Miki, to Takeda Chemical Industries, Ltd. Metadioxane derivatives of pregnane compounds. 3,274,177, 9–20–66, Cl. 260—239.55.

Moritz, Laurits. Packing carton. 3,273,778, 9–20–66, Cl. 229—5.5.

Moroney, Bernard M.: *See*—
Halpine, Joseph C., and Moroney. 3,274,351.

Morris, Earl L., and G. L. Curtice, to Ocorn Engineering Co. Wall closet carrier. 3,273,173, 9–20–66, Cl. 4—292.

Morris, Robert A., and R. F. Salat, to Vactronic Lab. Equipment, Inc. Nude ion gage assembly. 3,274,326, 9–20–66, Cl. 174—18.

Mortimer, John V., to The British Petroleum Co. Ltd. Separation of organic compounds. 3,273,315, 9–20–66, Cl. 55—67.

Morton, Glenn R. Carburetor for internal combustion engines. 3,273,868, 9–20–66, Cl. 261—39.

Morton, Glenn R. Carburetor means for internal combustion engines. 3,273,869, 9–20–66, Cl. 261—40.

Moser, Theo: *See*—
Wolf, Otto, and Moser. 3,273,309.

Mosier, Harold F., Jr.: *See*—
Farrington, Gerrald K., and Mosier. 3,273,897.

Moskowitz, Saul, to Kollsman Instrument Corp. Optical-analog integrator. 3,274,380, 9–20–66, Cl. 235—183.

Moskowitz, Saul, to Kollsman Instrument Corp. Automatic pattern recognition system. 3,274,549, 9–20–66, Cl. 340—146.3.

Mosovsky, Joseph G. Electroluminescent dial clock and nightlight. 3,273,331, 9–20–66, Cl. 58—50.

Motorola, Inc.: *See*—
Hansen, Robert B., and Waldschmidt. 3,274,334.
Winkler, Gustav A. 3,273,407.

Mourier, Georges: *See*—
Pinel, Jacques, and Mourier. 3,274,502.

Mowll, Roger T. L.: *See*—
Yeo, Alan A., and Mowll. 3,274,100.

Moyroud, Louis M., and R. A. Higonnet. Photographic-type composition device. 3,273,475, 9–20–66, Cl. 95—4.5.

Muchow, Clarence F., J. R. Blanco, and D. G. Disney, to Ranidex Corp. Combination microfilm photographic and printing apparatus for photographically recording transactions and dispensing printed memoranda of the same. 3,274,607, 9–20–66, Cl. 346—24.

Mueller, Lawrence E., to Burroughs Corp. Coil winding machine. 3,273,811, 9–20–66, Cl. 242—9.

Mullen, Edward K., and L. C. Carter, to Book Covers, Inc. Book cover boards and board structures and apparatus and method for making the same. 3,273,913, 9–20–66, Cl. 281—29.

Mullen, James W., II: *See*—
Tancos, Frank I., Davis, Smith, and Mullen. 3,273,334.

Müller, Alf J.: *See*—
Müller, Josef and A. J. 3,273,909.
Willingshofer, Walter, and Muller. 3,273,910.

Muller, Erwin: *See*—
Ellegast, Konrad, Reischl, and Muller. 3,274,160.

Muller, Herbert: *See*—
Weinrich, Hellmut, Paulsen, and Weinrich. 3,273,422.

Müller, Josef, and A. J. Müller, to Daimler-Benz Aktiengesellschaft. Independent wheel suspension. 3,273,909, 9–20–66, Cl. 280—96.2.

Muller, Karl H., and P. Borner, to Schering Aktiengesellschaft. Process for the preparation of bicyclo-(3,2,1)-octene-(2). 3,274,271, 9–20–66, Cl. 260—666.

Muller, Werner, to Magnetfabrik Bonn Gewerkschaft Windhorst. Method and apparatus for making magnetically anisotropic permanent magnets. 3,274,303, 9–20–66, Cl. 264—24.

Mulligan Robert J., and H. C. Quick, Jr., to International Instruments, Inc. Indicating meter combines with adjustable coupled coils which are selectively decoupled by a pointer supported vane. 3,274,491, 9–20–66, Cl. 324—157.

Munday, John C.: *See*—
Rogers, Dilworth T., and Munday. 3,274,016.

Murdock, James D., N. Nelan, and G. H. Segall, to Canadian Industries Ltd. Homogenous blends of polyamides with carboxylate copolymers containing a neutral monomer comprising butadiene-1,3, vinyl chloride, or a mixture of butadiene-1,3, and methyl methacrylate. 3,274,289, 9–20–66, Cl. 260—857.

Muska, Allen V.: *See*—
Litvin, Milton, and Muska. 3,273,349.

Myers, Harry L.: *See*—
Holt, Lloyd J., and Myers. 3,273,835.

Myers, Max: *See*—
Hodson, Richard J., and Myers. 3,273,844.

Mykleby, Laurie G., to Republic Packaging Corp. Folded box. 3,273,779, 9–20–66, Cl. 229—14.

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Nagata, Minoru, to Kabushiki Kaisha Hitachi Seisakusho. Darlington configuration transistor circuit. 3,274,446, 9–20–66, Cl. 317—33.

Nagel, Ernst, and W. Steinmetz, to Pneumafil Corp. Drive apparatus for a carriage movable upon a guide. 3,273,408, 9–20–66, Cl. 74—22.

Nagel-Chase Mfg. Co., The: *See*—
Schultz, Edward H., Jr. 3,273,411.

Nail, Franklin R.: *See*—
Donnelly, Leo F., Fischer, and Nail. 3,273,385.

Nakajima, Jitsuji, H. Hayahi, and K. Onishi, to Nitto Electric Industries Co., Ltd. Device for severing fixed length of tape. 3,273,772, 9–20–66, Cl. 225—12.

Nathanson, Lealle, to Laboratories for Electronics, Inc. Frequency selective coupling device having ferrite elements biased to different resonant frequencies. 3,274,519, 9–20–66, Cl. 333—1.1.

National Biscuit Co.: *See*—
Griner, Arthur J. 3,273,691.

National Lead Co.: *See*—
Graf, Ernest G. 3,274,467.

National Lock Co.: *See*—
North, Edwin W., and Dauenbaugh. 3,273,363.

National Research Development Corp.: *See*—
Nourse, Oswald. 3,274,521.
Putley, Ernest H. 3,274,387.
Tatlow, John C., and Stephens. 3,274,265.

National Starch and Chemical Corp.: *See*—
Armour, Walter B., and Kania. 3,274,048.

National Tank Co.: *See*—
Meyer, Paul E. 3,273,318.

Neckenburger, Ernst, to North American Philips Co., Inc. Ferrite devices for the modulation and switching of microwaves. 3,274,516, 9–20–66, Cl. 332—51.

Neilson, Dan A.: *See*—
Sharp, Richard S., Neilson, and Bennett. 3,274,558.

Neisler Laboratories, Inc.: *See*—
Gray, Allan P., and Heitmeier. 3,274,190.

Nelan, Norman: *See*—
Murdock, James D., Nelan, and Segall. 3,274,289.

Nelson, Axel B.: *See*—
Billeter, Henry R., and Nelson. 3,273,919.

Nelson, Noel R. Coax cable lightning arrester. 3,274,447, 9–20–66, Cl. 317—61.

Nelson, Roy S., to Norton Co. Grinding wheel. 3,273,984, 9–20–66, Cl. 51—296.

Nelson, Wayne F.: *See*—
Alexander, Thomas E., and Nelson. 3,273,650.

Nepera Chemical Co., Inc.: *See*—
Wilbert, Godfrey, Scarano, and Duesel. 3,274,206.

Nesbitt, John D., to Midland-Ross Corp. Self-stabilizing combustion apparatus. 3,273,622, 9–20–66, Cl. 158—7.

Nesbitt, John D., to Midland-Ross Corp. Self-stabilizing combustion apparatus. 3,273,623, 9–20–66, Cl. 158—7.

Neuman, George E., to Newman Enterprises Ltd. Ultrasonic fluid heating, vaporizing, cleaning and separating apparatus. 3,273,631, 9–20–66, Cl. 159—6.

Neuman, Milton C.: *See*—
Blomquist, Arthur G., Larsen, Neuman, and Wermager. 3,274,348.

Neumann, Gerhardt A., to G. D. Searle & Co. Fire extinguisher. 3,273,652, 9–20–66, Cl. 169—30.

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Newport News Shipbuilding and Dry Dock Co.: *See*—
Maddox, James W. 3,274,373.

Newton, Alwin B. Flow regulator for piston-equipped cylinder. 3,273,786, 9–20–66, Cl. 230—23.

Newton, Leroy C. Fireproof mattress cover and protective shield. 3,273,177, 9–20–66, Cl. 5—335.

New York Air Brake Co., The: *See*—
McAfee, Kyle E., Jr. 3,273,581.
Weisenbach, Charles O. 3,273,860.

Nice, John K.: *See*—
Wesstrom, Alfred, and Nice. 3,273,880.

Nickle, Alexander G.: *See*—
Braunwarth, Victor A., Nickle, and Phillips. 3,274,008.

Nickola, Richard A., and G. T. Spare, to United States Steel Corp. Method and apparatus for applying hot-dipped metal coating to wire. 3,274,027, 9–20–66, Cl. 117—114.

Nieper, Hans A., and G. Escherich, to Marbert-Kosmetik, Roeber and Sendler, Firma. Cosmetic cream. 3,274,063, 9–20–66, Cl. 167—91.

Nihon Genshiryoku Kenkyu Sho: *See*—
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Nippon Electric Co., Ltd.: *See*—
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Nishida, Minoru: *See*—
Sada, Tomohiko, and Nishida. 3,274,111.

Nitto Electric Industries Co., Ltd.: *See*—
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Nixon, Charles E., to Inso Electronic Products, Inc. Methods and apparatus for insulating conductors. 3,274,037, 9–20–66, Cl. 156—52.

Noe, Robert J., M. J. Libeer, and J. M. Nys, to Gevaert Photo-Producten N.V. Electrophotographic material and method. 3,274,000, 9–20–66, Cl. 96—1.

Noller, Hans G., and W. G. Bachler, to Leybold Holding Aktiengesellschaft. High-vacuum system, method and apparatus. 3,273,787, 9–20–66, Cl. 230—101.

Nolting, Ray E. Golf putter sighting attachment. 3,273,892, 9–20–66, Cl. 273—163.

Nordberg Mfg. Co.: *See*—
Balmer, Hansjorg, and Gasparac. 3,273,808.
Gasparac, Rudolph J., Szaj, and Turnwald. 3,273,810.

Norfin, Inc.: *See*—
Pearson, Bernard A. 3,273,882.

Norman, George R., and W. M. Le Suer, to The Lubrizol Corp. Barium-cadmium organic complexes as stabilizers for halogen-containing resins. 3,274,135, 9–20–66, Cl. 260—23.

North American Aviation, Inc.: *See*—
Randall, Grant M., Algeo. 3,274,602.

North American Philips Co., Inc.: *See*—
De Ronde, Frans C. 3,274,504.
Neckenburger, Ernst. 3,274,516.
Van Kessel, Theodorus J., and Uljen. 3,274,492.
Weimer, Karl R. U., and Vlaardingerbroek. 3,274,507.
Zukowski, Kurt. 3,273,986.

North, Edwin W., and R. L. Dauenbaugh, to National Lock Co. Combination changing dial, knob and escutcheon assembly. 3,273,363, 9–20–66, Cl. 70—330.

Northern Electric Co. Ltd.: *See*—
Bellem, Edward. 3,274,495.

Northrup, Joseph D.: *See*—
Miles, Marshall, Northrup, and Prell. 3,273,505.

Norton Co.: *See*—
Nelson, Roy S. 3,273,984.

Norton, Desmond H., and M. A. Hardin. Fish lure holder. 3,273,279, 9–20–66, Cl. 43—54.5.

Nourse, Oswald, to National Research Development Corp. Microwave phase shifter. 3,274,521, 9–20–66, Cl. 333—24.1.

Novak, Thomas A., to The W. J. Schoenberger Co. Gas flow-control valve. 3,273,595, 9–20–66, Cl. 137—637.4.

Nyberg, George J., to Riley Stoker Corp. Furnace door. 3,273,521, 9–20–66, Cl. 110—179.

Nyquist, Arthur S., to American Cyanamid Co. Coated plastic articles. 3,274,026, 9–20–66, Cl. 117—138.8.

Nys, Jean M.: *See*—
Noe, Robert J., Libeer, and Nys. 3,274,000.

Oberg, Per O., to Handelsaktiebolaget Sanera. Garbage container structure, in particular for garbage chute. 3,273,840, 9–20–66, Cl. 248—98.

Oberholtzer, Alton V.: *See*—
La Vine, Paul F. 3,274,019.

Oberlander, Georg: *See*—
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Oberle, Theodore L., M. R. Calton, C. D. Loyd, and C. F. White, to Caterpillar Tractor Co. Method of bonding metal workpieces. 3,273,233, 9–20–66, Cl. 29—470.3.

Ocorn Engineering Co.: *See*—
Morris, Earl L., and Curtice. 3,273,173.

Odenweller, Joseph D., to Ethyl Corp. Hydroxybensyl thioethers and method of preparation. 3,274,258, 9–20–66, Cl. 260—609.

Oertel, Gunther, O. Bayer, and G. Braun, to Farbenfabriken Bayer Aktiengesellschaft. Phosphorus polyurethane plastics prepared from hydroxyl phosphorus compounds. 3,274,130, 9–20–66, Cl. 260—2.5.

Oestreicher, Georg, and G. Oberlander, to Klockner-Humboldt-Deutz Aktiengesellschaft. Locomotive with a main and an auxillary driving machine. 3,273,515, 9–20–66, Cl. 105—96.2.

Ogier, Clayton E.: *See*—
Hudson, Jimmie E., and Ogier. 3,274,314.

O'Hara, Mark J., to Universal Oil Products Co. Process of preparing a silica-alumina supported Group VIII metal hydrocracking catalyst. 3,274,124, 9–20–66, Cl. 252—451.

Okaya, Akira, to International Business Machines Corp. Resonator for radiation generated by stimulated emission. 3,274,512, 9–20–66, Cl. 331—94.5.

Okinaka, Yutaka, and D. R. Turner, to Bell Telephone Laboratories, Inc. Manufacture of nickel electrodes. 3,274,028, 9–20–66, Cl. 136—29.

Olich, Eugene E.: *See*—
Greebler, Paul, Horst, Olich, and Wolfe. 3,274,067.

Olin Mathieson Chemical Corp.: *See*—
Badell, Joseph A. 3,273,275.
Pauls, Theron F. 3,273,227.
Pauls, Theron F. 3,273,637.

Oliver, George F. N.: *See*—
Apted, James E., and Oliver. 3,274,533.

Oliver Pell Control Ltd.: *See*—
Apted, James E., and Oliver. 3,274,533.

Olsen, Herman L.: *See*—
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Olsen, William A., to United States of America, National Aeronautics & Space Administration. Hot wire liquid level detector for cryogenic fluids. 3,273,392, 9–20–66, Cl. 73—295.

Olson, Gene E.: *See*—
Knudson, Raymond G., Price, and Olson. 3,273,430.

O'Malley, John J., to General Motors Corp. Transmission. 3,273,420, 9–20–66, Cl. 74—677.

O'Malley, Joseph M.: *See*—
Daly, Daniel F., and O'Malley. 3,274,353.

O'Neill, Paul J., Jr., to Union Machine Co. Method and apparatus for packaging paint and the like in a pressurized dispensing container. 3,273,606, 9–20–66, Cl. 141—3.

O'Neill, Paul J., Jr., to Union Machine Co. Method and apparatus for packaging paint and the like in a pressurized dispensing container. 3,273,607, 9–20–66, Cl. 141—3.

O'Neill, Paul J., Jr. Pressure can construction including free piston. 3,273,762, 9–20–66, Cl. 222—389.

Onishi, Kenji: *See*—
Nakajima, Jitsuji, Hayshi, and Onishi. 3,273,772.

Opratko, Val: *See*—
Campbell, Robert A., Elliott, Fisher, and Opratko. 3,273,972.

Orbicon, Ltd.: *See*—
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Orr, San W. Wildlife feeder. 3,273,537, 9–20–66, Cl. 119—51.

Ortwig, Thomas B.: *See*—
Sullivan, Robert S., and Ortwig. 3,274,364.

Oshiba, Jun, J. Umeda, and K. Kaneko, to Nippon Electric Co., Ltd. Input-output typewriter having double shift means. 3,273,684, 9–20–66, Cl. 197—19.

Ostis, Sotirios, to Corning Glass Works. Method of forming an electrical capacitor. 3,274,025, 9–20–66, Cl. 117—217.

Oswald, William C.: *See*—
Baruth, Elmore J., and Oswald. 3,273,178.

Otis Engineering Corp.: *See*—
Dollison, William W. 3,273,688.
Tamplen, Jack W. 3,273,849.

Otto, William H.: *See*—
Marsocchi, Alfred, and Otto. 3,273,987.

Outland, Grover C.: *See*—
Webster, John D. 3,273,624.

Overly Mfg. Co.: *See*—
Wehe, Herbert W., Jr. 3,273,297.

Owens-Corning Fiberglas Corp.: *See*—
Kleist, Dale, Snow, and Buchanan. 3,273,358.
Marsocchi, Alfred, and Otto. 3,273,987.
McKinnis, Charles L. 3,274,006.
Shannon, Richard F., and Sullivan. 3,274,046.
Stalego, Charles J. 3,274,324.

Owens-Illinois Glass Co.: *See*—
Dollheimer, Franz. 3,273,471.

Owens-Illinois, Inc.: *See*—
Denman, Robert R. 3,273,991.
Early, Richard L., and Sorbie. 3,273,710.

Owens, James M. Hand facing machine—for rule type and border. 3,273,370, 9–20–66, Cl. 72—199.

Owens, Walter K. Single passenger aircraft. 3,273,824, 9–20–66, Cl. 244—4.

Oxy-Catalyst, Inc.: *See*—
Baddorf, Paul E., and Houdry. 3,273,971.

Oya, Yuichiro, to Kabushiki Kaisha Hitachi Seisakusho. Time-division, multiplex, numerical-control system. 3,274,553, 9–20–66, Cl. 340—147.

Ozawa, Masakatsu. Oil expeller. 3,273,495, 9–20–66, Cl. 100—145.

Pacific Tin Consolidated Corp.: *See*—
Cleaveland, Norman. 3,273,714.

Pagani, Angelo, and M. Vezzoli. Portable clearing device for fiber ends, broken threads and the like. 3,273,186, 9–20–66, Cl. 15—1.5.

Page, Leo W., to Michigan Magnetics, Inc. Means for mounting an eraser head to a record head. 3,274,347, 9–20–66, Cl. 179—100.2.

Page, Robert M. Angle tracking-storage radar system. 3,274,590, 9–20–66, Cl. 343—7.4.

Page, Robert M. Signal integrating radar system. 3,274,594, 9–20–66, Cl. 343—17.1.

Page, Robert M. Frequency modulated pulse radar system. 3,274,595, 9–20–66, Cl. 343—17.2.

Page, Robert M. Radio direction finder system. 3,274,599, 9–20–66, Cl. 343—112.

Paige, Richard E., to Paper Products Development Corp. Articles such as displays formed of flexible creasable sheets. 3,273,272, 9–20–66, Cl. 40—124.1.

Paley, Warren D.: *See*—
Gould, Leon M., and Paley. 3,274,486.

Palmer, Charles E., to Monsanto Chemical Co. Display container. 3,273,702, 9–20–66, Cl. 206—45.31.

Pane, Joseph F.: *See*—
Winter, Alpheus, IV, Pane, and Marindin. 3,273,304.

Paper Products Development Corp.: *See*—
Paige, Richard E. 3,273,272.

Pappas, James J., and E. Gancher, to Interchemical Corp. Triphenylphosphinemethylene. 3,274,228, 9–20–66, Cl. 260—465.

Paquette, Raymond E., and C. H. Keller, to Pek Labs, Inc. Self-starting arc lamp. 3,274,427, 9–20–66, Cl. 314—34.

Pare, Robert L., ½ to D. R. Black, Jr. Road expansion joint. 3,273,473, 9–20–66, Cl. 94—18.

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Matthey, Roger. 3,273,949.

Parker Pen Co., The: *See*—
Thurman, Richard L., and Coutre. 3,273,541.

Parmelee Plastics Co.: *See*—
Thomas, Robert R. 3,273,164.

Parosh, William R., to Swift & Co. Removal of fluorine compounds from phosphoric acid. 3,273,713, 9–20–66, Cl. 23—153.

Parrish, Frank W.: *See*—
Boyer, John L., and Parrish. 3,274,458.

Parson, Freeman A.: *See*—
Anderson, Paul G. 3,273,937.

Partridge, George A. Reactively loaded broadband antenna for use in the 10 through 160 meter bands. 3,274,600, 9–20–66, Cl. 343—749.

Passal, Frank, to M & T Chemicals Inc. Bath and process for the electrodeposition of nickel and nickel-cobalt alloys. 3,274,079, 9–20–66, Cl. 204—43.

Pastan, Harvey L., to Dynisco Division of America Brake Shoe Co. Pressure cell. 3,273,400, 9–20–66, Cl. 73—398.

Patch, Robert S., to Sweden Freezer Mfg. Co. Flushing apparatus for dispensing freezers. 3,273,585, 9–20–66, Cl. 137—240.

Paul, Francis V. F., to Pneumatiques et Caoutchouc Manufacture Kleber-Calombes. Reinforcing element. 3,273,978, 9–20–66, Cl. 29—191.

Paul, Gerard T., J. F. Dirac, and G. M. Amdahl, to International Business Machines Corp. Large scale shifter. 3,274,556, 9–20–66, Cl. 340—172.5.

Pauls, Theron F., to Olin Mathieson Chemical Corp. Fabrication of heat exchange devices. 3,273,227, 9–20–66, Cl. 29—157.3.

Pauls, Theron F., to Olin Mathieson Chemical Corp. Heat exchanger. 3,273,637, 9–20–66, Cl. 165—171.

Paulsen, Günther: *See*—
Weinrich, Hellmut, Paulsen, and Müller. 3,273,422.

Pawliw, John: *See*—
Januss, Stanislaw A., and Pawliw. 3,274,071.

Pearce, John P., to K.G.M. Electronics Ltd. Selectively illuminated indicating devices. 3,273,274, 9–20–66, Cl. 40—130.

Pearlson, Wilbur H., to Minnesota Mining and Mfg. Co. Electrochemical process for making fluorine-containing carbon compounds. 3,274,081, 9–20–66, Cl. 204—59.

Pearson, Bernard A., to Norfin, Inc. Sheet collating device. 3,273,882, 9–20–66, Cl. 270—58.

Pease, David H., Jr., to Pease Woodwork Co., Inc. Sill and threshold assembly. 3,273,287, 9–20–66, Cl. 49—468.

Pease Woodwork Co., Inc.: *See*—
Pease, David H., Jr. 3,273,287.

Peck, Norman O.: *See*—
Riethmann, Ray E., Grout, N. O. Peck, and W. H. Peck, Sr. 3,273,718.

Peck, William H., Sr.: *See*—
Riethmann, Ray E., Grout, N. O. Peck, and W. H. Peck, Sr. 3,273,718.

Peel, James R. Conductive footwear. 3,274,442, 9–20–66, Cl. 317—2.

Peeters, Jean M., to Pittsburgh Plate Glass Co. Glass drawing apparatus with pivotal cooler. 3,273,990, 9–20–66, Cl. 65—202.

Pek Labs, Inc.: *See*—
Paquette, Raymond E., and Keller. 3,274,427.

Pendleton, Wesley W., and H. L. Saums, to Anaconda Wire & Cable Co. Method of making electromagnetic structures for high-temperature service. 3,273,225, 9–20–66, Cl. 29—155.57.

Pennington, James A. Rotating shaft seal. 3,273,906, 9–20–66, Cl. 277—134.

Pennsalt Chemicals Corp.: *See*—
Albert, Harry E., and Haines. 3,274,252.

Pera, John D.: *See*—
Buckman, Stanley J., Pera, and Purcell. 3,274,050.

Perkins, Cornelius C.: *See*—
Hallman, Henry R., Sichel, Perkins, and Pesely. 3,274,561.

Perlaky, Charles: *See*—
Albright, Denton M., and Perlaky. 3,274,262.

Permaduc, Inc.: *See*—
Peterson, Earl C. 3,273,371.

Permawick Co.: *See*—
Abel, Martin L. 3,273,668.

Perry, Kenneth P., W. J. Jackson, Jr., and J. R. Caldwell, to Eastman Kodak Co. Chlorinated polycarbonates. 3,274,156, 9–20–66, Cl. 260—47.

Perry, Thomas E.: *See*—
Garmy, Robert J., and Perry. 3,273,212.

Pessok, Stanley, to General Instruments Corp. Contact for solid state diode. 3,274,455, 9–20–66, Cl. 317—234.

Pessok, Stanley, to General Instruments Corp. Controlled rectifier comprising a resistive plating interconnecting adjacent N and P layers. 3,274,460, 9–20–66, Cl. 317—235.

Pet Milk Co.: *See*—
Sargeant, Ralph G. 3,273,629.

Petersen, Carl T., to Filper Corp. Freestone drupe pitter. 3,273,616, 9–20–66, Cl. 146—28.

Petersen, Carl T., and E. R. McClelland, to Filper Corp. Freestone drupe pitter and method. 3,273,692, 9–20–66, Cl. 198—34.

Peterson, Dale L., to Varian Associates. Voltage-tunable magnetron. 3,274,432, 9–20–66, Cl. 315—39.63.

Peterson, Dale L., to Varian Associates. Magnetron and radio frequency circuitry therefor. 3,274,433, 9–20–66, Cl. 315—39.73.

Peterson, Earl C., to Permaduc, Inc. Fabricating table. 3,273,371, 9–20–66, Cl. 72—218.

Peterson, Herbert L., and W. J. Finney. Digital differentiator for amplitude modulated carrier. 3,274,503, 9–20–66, Cl. 329—104.

Petit, Elwood P., to Combustion Engineering Inc. Furnace wall blower improvement. 3,273,543, 9–20–66, Cl. 122—392.

Petriello, John, to Dilectrix Corp. High impermeability coatings and supported fabricated objects of polytetrafluoroethylene. 3,274,323, 9–20–66, Cl. 264—308.

Petrocarbon Developments Ltd.: *See*—
Seddon, William L. 3,274,254.

Petro-Tex Chemical Corp.: *See*—
Bajars, Laimonis. 3,274,285.
Brill, William F., and Besozzi. 3,274,255.
Etherington, Robert W., Jr., and Brill. 3,274,242.
Karkalits, Olin C., Jr., and Leatherwood. 3,274,284.

Peugh, James A.: *See*—
Abbott, Frank R., and Peugh. 3,274,536.

Peverley, Guy D., to Intermountain Research & Development Corp. Process for the preparation of soda ash. 3,273,958, 9–20–66, Cl. 23—63.

Pesely, Stanley J.: *See*—
Hallman, Henry R., Sichel, Perkins, and Pesely. 3,274,561.

Pfaudler Permutit Inc.: *See*—
Brown, William R. 3,273,390.

Philco Corp.: *See*—
Pietrolewicz, John P. 3,274,336.
Sikina, Thomas V. 3,274,453.
Sirgo, Valdeko H. 3,273,969.

Phillips, George D.: *See*—
Phillips, James T. and G. D. 3,273,620.

Phillips, Harry: *See*—
Boothroyd, Harold W., and Phillips. 3,273,531.

Phillips, James T. and G. D. Tire chains. 3,273,620, 9–20–66, Cl. 152—228.

Phillips, Norman W. F.: *See*—
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Phillips Petroleum Co.: *See*—
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Braseli, Douglass L., Greenfield, and Barber. 3,274,102.
Fluegel, Dale A., and Kuntz. 3,273,576.
Hudson, Jimmie E., and Ogier. 3,274,314.
Hutto, John F., Garlington, and Cabbage. 3,274,275.
Testerman, Maurice K., and McLeod. 3,273,877.
Warner, Paul F. 3,274,142.
Zelinski, Robert P., and Strobel. 3,274,147.

Pickles, Joseph, to Ferro Mfg. Corp. Window regulator. 3,273,410, 9–20–66, Cl. 74—90.

Pieper, Gustav, and H. Logemann, to Farbenfabriken Bayer Aktiengesellschaft. Film-forming copolymer emulsion. 3,274,141, 9–20–66, Cl. 260—29.7.

Pietras, Chester M.: *See*—
Crawford, John K., and Pietras. 3,274,378.

Pietrolewicz, John P., to Philco Corp. High voltage circuit. 3,274,336, 9–20–66, Cl. 178—7.5.

Pietsch, Raymond L., to Engineered Products Co. Magnetic catch assembly. 3,273,926, 9–20–66, Cl. 292—251.5.

Pifiiola, Calvin E., to The Unipress Co., Inc. Shirt buck apparatus. 3,273,765, 9–20–66, Cl. 223—57.

Pifiiola, Calvin E., to The Unipress Co., Inc. Shirt buck apparatus. 3,273,766, 9–20–66, Cl. 223—57.

Pinel, Jacques, and G. Mourier, to C S F Compagnie General de Telegraphie Sans Fil. Particle accelerator. 3,274,502, 9–20–66, Cl. 328—234.

Pinnes, Robert W., to United States of America, Army, and Administrator of the Federal Aviation Agency. Movable turbine-fan unit for an aircraft jet engine. 3,273,654, 9–20–66, Cl. 170—135.7.

Pioch, Werner, to Fernseh G.m.b.H. Electrical apparatus comprising printed circuit boards. 3,274,449, 9–20–66, Cl. 317—101.

Pittler, Marvin S., and J. Chu, to General Instruments Corp. Rectifier assembly and method of making same. 3,274,456, 9–20–66, Cl. 317—234.

Pittsburgh Plate Glass Co.: *See*—
Lacasse, Adrien R. 3,273,812.
Peeters, Jean M. 3,273,990.
Small, Russell L., and Drummond. 3,273,985.

Pittsburgh Plate Glass Co.: *See*—
Umbel, Forrest K. 3,274,390.

Plamowski, Stanley C.: *See*—
Saltzman, Edwin J., De Geer, and Plamowski. 3,273,399.

Plath, Walter L. Spring actuated safety switch for the fuel supply linkage of an internal combustion engine. 3,273,552, 9–20–66, Cl. 123—198.

Plessey-U.K. Ltd.: *See*—
Jamieson, Archie W. H. 3,273,506.

Ploeger, Walter, Jr., to Filmon Process Corp. Impression ribbon and method of making same. 3,273,686, 9–20–66, Cl. 197—172.

Ploeger, Walter, Jr., to Filmon Process Corp. Method of making printing ribbon. 3,274,039, 9–20–66, Cl. 156—251.

Pneumafil Corp.: *See*—
Nagel, Ernst, and Steinmetz. 3,273,408.

Pneumatiques et Caoutchouc Manufacture Kleber-Calombes: *See*—
Paul, Francis V. F. 3,273,978.

Poelstra, William G.: *See*—
Brous, Jack, Conrad, and Poelstra. 3,273,226.

Pohler, Carl L., and R. Breuer, to Th. Kieserling & Abbrett. Straightening machine. 3,273,364, 9–20–66, Cl. 72—12.

Pokrant, Adolf G.: *See*—
Robinson, William A., Jr., and Pokrant. 3,274,384.

Polderman, Robert W.: *See*—
Curtenius, Frederick B., and Polderman. 3,273,725.

Pollitzer, Ernest L., to Universal Oil Products Co. Removal of reaction products of water, boron fluoride, etc. from hydrocarbons. 3,274,279, 9–20–66, Cl. 260—674.

Polymer Corp., The: *See*—
Davis, William J. 3,273,977.
Davis, William J. 3,274,328.
Hanley, Michael A. 3,273,205.

Pool, Eldert B., J. R. Kertis, and J. A. Hollingsworth, to Rockwell Mfg. Co. Composite metal-rubber insert for gate valve. 3,273,853, 9–20–66, Cl. 251—175.

Porter, James A.: *See*—
Deubler, Louis H., Porter, and Thomas. 3,273,592.

Porter, Virgil V., to Moore Business Forms, Inc. Envelope assemblies. 3,273,784, 9–20–66, Cl. 229—69.

Poss, Eliass, to Electronic Energy Conversion Corp. Converter circuit. 3,274,475, 9–20–66, Cl. 320—1.

Potts, James E., to Union Carbide Corp. Irradiated rubbery elastomeric ethylene-alkyl acrylate interpolymers. 3,274,086, 9–20–66, Cl. 204—154.

Poudrier, George L., to United States of America, Navy. Production of cooled propellant gases through endothermic reaction. 3,273,332, 9–20–66, Cl. 60—35.4.

Powell, Jeff R., Jr.: *See*—
Hamaker, Paul, Morgan, and Powell. 3,273,695.

Power Engineering, Inc.: *See*—
Dow, Ronald C. 3,274,474.

Powers, Eugene L.: *See*—
Saunders, James H., and Powers. 3,274,225.

Prager, Roger H., to United States of America, Navy. Display simulator for computer-aided systems. 3,274,557, 9–20–66, Cl. 340—172.5.

Pratt, Albert S.: *See*—
Ede, John H., Pratt, and Sewell. 3,273,450.

Prell, Edward T.: *See*—
Miles, Marshall, Northrup, and Prell. 3,273,505.

Press, Carl, to Alfred Teves Maschinen- und Armaturen Fabrik KG. Internal-expansion brake system with reinforced brake-shoe extensions. 3,273,677, 9–20–66, Cl. 188—78.

Price, James W.: *See*—
Knudsen, Raymond G., Price, and Olson. 3,273,480.

Pricenski, Theodore J.: *See*—
Matheson, Wilfrid G., Clune, and Pricenski. 3,274,374.

Priebs, Horst, to Anker-Werke Aktiengesellschaft. Memory and control device for computing machines or the like. 3,274,349, 9–20–66, Cl. 200—5.

Priest, Reid G., and D. K. McCurdy. Tower top for logging spar. 3,273,722, 9–20–66, Cl. 212—70.

Priscu, John C., and L. E. Snyder, to Titanium Metals Corp. of America. Gettering device. 3,273,970, 9–20–66, Cl. 23—277.

Pritchard, Vern T.: *See*—
Moore, Joseph A. 3,273,730.

Pritchell & Gold and E.P.S. Co. Ltd.: *See*—
Clegg, Joseph. 3,274,319.

Prochaska, Robert J., to General Electric Co. Aromatic carbonates. 3,274,214, 9–20–66, Cl. 260—340.2.

Procter & Gamble Co., The: *See*—
Watrous, Howard N., and Hood. 3,273,300.

Proell, Wayne A., to Standard Oil Co. High-temperature illuminating flare. 3,273,499, 9–20–66, Cl. 102—37.8.

Progil: *See*—
Schneider, Gerard. 3,274,121.

Prohofsky, Le Roy A.: *See*—
Eddy, Charles W., and Prohofsky. 3,274,520.

Prusak, Donald F., and T. E. Crawford, to Dowsmith Inc. Rotating dispensing apparatus. 3,273,814, 9–20–66, Cl. 242—55.

Pudelko, Hermann, to Durkoppwerke Aktiengesellschaft. Buttonhole-stitching machine and thread-severing means therefor. 3,273,523, 9–20–66, Cl. 112—65.

Pullen, Keats A., Jr. Structural configuration for field-effect and junction transistors. 3,274,462, 9–20–66, Cl. 317—235.

Pullman Inc.: *See*—
Gaschke, Marcel M., and Spector. 3,274,049.
Saware, Michael M. 3,274,127.

Purcell, William O.: *See*—
Harmon, George L., and Purcell. 3,274,552.

Purcell, William P.: *See*—
Buckman, Stanley J., Pera, and Purcell. 3,274,050.

Purdy Machinery Co. Ltd.: *See*—
Silver, Dennis S. 3,273,885.

Putley, Ernest H., to National Research Development Corp. Infra-red detector comprising a cooled semiconductor disposed in a magnetic field. 3,274,387, 9–20–66, Cl. 250—83.3.

Puttfarcken, Heinrich, to Junkers & Co. G.m.b.H. Interrelated gas valve and manual igniter control. 3,273,628, 9–20–66, Cl. 158—115.

Pyrochem Corp.: *See*—
Huntington, Morgan G. 3,273,640.

Quenot, Andre, to Etablissements Quenot & Cie. Tape reel. 3,273,820, 9–20–66, Cl. 242—84.8.

Querengasser, Hugo: *See*—
Ritter, Friedbert, Rodis, Reuter, and Querengasser. 3,273,965.

Quick, Harry C., Jr.: *See*—
Mulligan, Robert J., and Quick. 3,274,491.

Quenot & Cie, Etablissements: *See*—
Quenot, Andre. 3,273,820.

Quigley, Mark F. Electrical connector with pre-applied solder. 3,274,331, 9–20–66, Cl. 174—94.

Quinn, Harold W., to The Dow Chemical Co. Removal of acetylenes from gaseous streams with silver carboxylate ion exchange resin. 3,273,314, 9–20–66, Cl. 55—63.

Raab, Karl: *See*—
Trumper, Konrad, and Raab. 3,273,516.

Raabe, Herbert P., to United States of America, Navy. Blistered skin passive satellite. 3,274,596, 9–20–66, Cl. 343—18.

Rademachers, Jakob: *See*—
Zirngibl, Hans, and Rademachers. 3,273,812.

Radio Corp. of America: *See*—
Budnick, Alfred S. 3,273,979.
Eichenbaum, Arie L. 3,274,404.
Fatuzzo, Ennio. 3,274,567.
Hansen, Richard C., and Levene. 3,273,774.
Haynes, Harold E. 3,273,476.
Hoover, Merle V. 3,274,518.
Klein, Seymour. 3,274,550.
McGrogan, Ellwood P., Jr. 3,274,566.
Schnitzler, Hans F. 3,274,327.
Sheng, Alfredo S. 3,274,399.
Silverberg, Morton. 3,274,398.
Sommers, Henry S., Jr. 3,274,406.
Tompkins, Brainard E. 3,274,439.
Wright, Paul E. 3,274,565.

Radlove, Sol B. Reaction product and process for the production thereof. 3,274,221, 9–20–66, Cl. 260—410.9.

Raeymaekers, Alfons H. M., D. C. I. C. Thienpont, and P. J. A. W. Demoen, to Janssen Pharmaceutica N.V. Certain 6-substituted-imidazo [2,1-b] thiazole compounds. 3,274,209, 9–20–66, Cl. 260—306.7.

Raezer, Spencer D.: *See*—
Bunt, Edgar A., Kauffman, Olsen, and Raezer. 3,274,424.

Raichle, Karl, and H. Rudolph, to Farbenfabriken Bayer Aktiengesellschaft. Mixtures of unsaturated polyesters and monomeric ethylene compounds co-polymerizable therewith containing cobalt salts and a member of the group of arsines, stibenes, and phosphines. 3,274,291, 9–20–66, Cl. 260—863.

Ralston, Edward L.: *See*—
Rogers, Charles E., Matty, and Ralston. 3,273,961.

Ramer, Edward L., by M. A. Ramer, executrix. Remote automatic control of power driven equipment. 3,273,664, 9–20–66, Cl. 180—79.

Ramer, Mildred A.: *See*—
Ramer, Edward L. 3,273,664.

Ramos, Thomas. Very soft urethane vulcanizates which comprise a fully saturated urethane prepolymer and an organotin compound. 3,274,134, 9–20–66, Cl. 260—18.

Randall, Grant M., and J. A. Algeo, to North American Aviation, Inc. Antenna having variable beamwidth achieved by variation of source width. 3,274,602, 9–20–66, Cl. 343—762.

Rank-Bush Murphy Ltd.: *See*—
Bowles, Donald C., and Burrows. 3,274,545.

Rank Organisation Ltd.: *See*—
Ede, John H., Pratt, and Sewell. 3,273,450.

Rapid Metal Development Ltd.: *See*—
Young, George B. A. and Cadman. 3,273,921.

Rapidex Corp.: *See*—
Muchow, Clarence F., Bianco, and Disney. 3,274,607.

Rasor, John C., to The General Fireproofing Co. Furniture construction. 3,273,922, 9–20–66, Cl. 287—54.

Rauch, Alexander, to United States of America, Army. Coplanar log periodic dipole array. 3,274,605, 9–20–66, Cl. 343—792.5.

Raytheon Co.: *See*—
Crocker, Clark F. 3,274,402.

Reardon, Patrick H., to The Lionel Corp. Pitch lens blocker ball and blanks. 3,273,291, 9–20–66, Cl. 51—216.

Reber, Hubert, to McGraw-Edison Co. Method of encapsulating transformer. 3,274,320, 9–20–66, Cl. 264—135.

Recall, Inc.: *See*—
Staats, Henry N. 3,273,709.

Reed, Robert D.: *See*—
Zink, John S., Goodnight, and Reed. 3,273,627.

Reeve, Norman H., to Webster Electric Co. Power amplifier including biasing means for reducing standby power dissipation. 3,274,508, 9–20–66, Cl. 330—96.

Reich, Günter. Ion source with selective hot or cold cathode. 3,274,436, 9–20–66, Cl. 315—111.

Reich, Manfred, to Chemische Werke Huls Aktiengesellschaft. Process for the removal of acetylenic hydrocarbons from hydrocarbon mixtures containing diolefines. 3,274,286, 9–20–66, Cl. 260—681.5.

Reifenhäuser K.G., Firma: *See*—
Reifenhäuser, Fritz. 3,273,201.

Reifenhäuser, Fritz, to Firma Reifenhäuser K.G. Feed screw for extrustion press. 3,273,201, 9–20–66, Cl. 18—12.

Reifschneider, Walter, and J. S. Kelyman, to The Dow Chemical Co. Synthesis of (alkylthio) phenols. 3,274,257, 9–20–66, Cl. 260—609.

Reiland, William H., Jr., to Sun Oil Co. Oxidation resistant hydraulic oil. 3,274,113, 9–20–66, Cl. 252—78.

Reinert, Ernst, and H. Funck, to Funck, Dr. Ing., K.G. Watertight boots. 3,273,265, 9–20–66, Cl. 36—3.

Reischl, Artur: *See*—
Ellegast, Konrad, Reischl, and Muller. 3,274,160.

Remington, John W.: *See*—
Caldwell, Leslie M., and Remington. 3,273,931.

Rendos, John J., and R. R. Banks, to Air Reduction Co., Inc. Method of locating leaks. 3,273,379, 9–20–66, Cl. 73—40.7.

Renshaw, Kenneth H., to Collins Radio Co. Circuit for removing distortion in a time synchronous phase modulation receiver. 3,274,493, 9–20–66, Cl. 325—320.

Repper, Marcel, to Societe Toulousaine de Produits Chemiques "Tolochimie." Process for the preparation of diphenylmethane diamines. 3,274,247, 9–20–66, Cl. 260—570.

Republic Packaging Corp.: *See*—
Mykleby, Laurie G. 3,273,779.

Republic Steel Corp.: *See*—
Garmy, Robert J., and Perry. 3,273,212.
McDonald, Edwin C., and Stephens. 3,273,982.

Resnick, Paul: *See*—
Dehn, Joseph W., Jr., Gancher, Kuhefuss, and Resnick. 3,274,173.

Reuter, Konrad: *See*—
Ritter, Friedbert, Rodis, Rodis, Arend, and Reuter. 3,273,960.

Reynolds, Charles B.: *See*—
Jenkins, James D., and Reynolds. 3,273,373.

Reynolds, Francois H. K., Jr., to Halliburton Co. Well sampling and treating tool. 3,273,659, 9–20–66, Cl. 175—4.

Reynolds Metals Co.: *See*—
McMinn, Curtis J. 3,274,093.
Watson, David R., Hrishikesan, and Deutcher. 3,274,311.

Rexall Drug and Chemical Co.: *See*—
Draper, Marshall D. 3,274,201.

Reznor, George W., to International Telephone and Telegraph Corp. Surge arrestor. 3,273,597, 9–20–66, Cl. 138—30.

Rheinstahl Siegener Eisenbahnbedarf Gesellschaft mit beschrankter Haftung: *See*—
Trumper, Konrad, and Raab. 3,273,516.

Rhoda, Richard N., to The International Nickel Co. Palladium deposition. 3,274,022, 9–20–66, Cl. 117—130.

Rhone-Poulene S.A.: *See*—
Fritsch, Christian H. Y., and Lefort. 3,274,210.

Ricart, Pierre: *See*—
Moreau, Rene P., Charpentier, and Ricart. 3,273,700.

Rice Barton Corp.: *See*—
Krikorian, Garo. 3,273,535.

Richard, Maurel N., to Merck & Co., Inc. Stable-enhanced plasmin solutions. 3,274,059, 9–20–66, Cl. 167—73.

Richards, Hugh C., D. F. Spooner, and J. R. Housley, to Boots Pure Drug Co. Ltd. Penicillin derivatives. 3,274,175, 9–20–66, Cl. 260—239.1.

Ridenour, Wayne: *See*—
Brzuskiewicz, John, LoPresti, and Ridenour. 3,273,532.

Ridenour, Williard L., to Hoover Ball and Bearing Co. Insulator for foam pads and method of making the same. 3,273,179, 9–20–66, Cl. 5—354.

Riebs, Richard E., to McGraw Edison Co. Thermal relay. 3,274,359, 9–20–66, Cl. 200—122.

Riedl, Josef: *See*—
Hirschbeck, Josef, and Riedl. 3,274,281.

Riegel Textile Corp.: *See*—
Gore, Graves T., Martin, and Smith. 3,273,522.

Rieger, Frederic L., and P. H. Hamisch, Jr., to The Monarch Marking System Co. Fastener. 3,273,705, 9–20–66, Cl. 206—56.

Riethmann, Ray E., J. R. Grout, N. O. Peck, and W. H. Peck, Sr. Heavy-duty centrifugal separators. 3,273,718, 9–20–66, Cl. 210—370.

Rietz Mfg. Co.: *See*—
Johnson, Frank E., and Lewis. 3,273,257.

Rigterink, Preston D., and R. A. Haggard, to Big Dutchman, Inc. Bin and chain feed system. 3,273,759, 9–20–66, Cl. 222—202.

Riley Stoker Corp.: *See*—
Griffith, Louis E. 3,273,542.
Nyberg, George J. 3,273,521.

Rimmer, Ronald, to Bristol Siddeley Engines Ltd. Jet engine shock wave control system including fuel supply and exhaust nozzle regulation. 3,273,338, 9–20–66, Cl. 60—35.6.

Rio Algom Mines Ltd.: *See*—
Campbell, Robert A., Elliott, Fisher, and Opratko. 3,273,972.

Ripart, Guy: *See*—
Denis, Andre. 3,274,485.

Ripert, Roger L., to Velan Engineering Cos. Ball valve construction. 3,273,852, 9–20–66, Cl. 251—171.

Ritchey, James F.: *See*—
Ham, James H., Jr., Hostetler, Ritchey, and Tolman. 3,274,345.

Ritter, Friedbert, F. Rodis, deceased (by H. Rodis, nee Arend, heiress), K. Reuter, and H. Querengasser, to Knapsack Aktiengesellschaft. Process of preparing a burden for use in electrothermal furnaces. 3,273,965, 9–20–66, Cl. 23—223.

River, Dan, Mills, Inc.: *See*—
Smith, Louis W. 3,274,189.

Rizk, Waheeb, to The English Electric Co. Ltd. Turbogenerators. 3,274,395, 9–20–66, Cl. 290—52.

Roberts, Charles G. Stereo sound system. 3,273,662, 9–20–66, Cl. 181—31.

Roberts, Ryland J.: *See*—
Long, Frank, and Roberts. 3,274,226.

Robinson, Alfred A., to The English Electric Co. Ltd. Concentric helical coils with electrically connected crossover points. 3,274,527, 9–20–66, Cl. 336—69.

Robinson, Carl J.: *See*—
Julien, Harry A., and Robinson. 3,273,551.

Robinson, Frederick G. Tamper-proof caps for containers. 3,273,523, 9–20–66, Cl. 113—121.

Robinson, William A., Jr., and A. G. Pokrant, to Westinghouse Air Brake Co. Railway car counter. 3,274,384, 9–20–66, Cl. 246—247.

Robison, Robert S.: *See*—
Becker, Edward J., and Robison. 3,274,237.

Rockwell Mfg. Co.: *See*—
Pool, Eldert B., Kertis, and Hollingsworth. 3,273,853.

Rodis, Hildegard: *See*—
Ritter, Friedbert, Rodis, Reuter, and Querengasser. 3,273,965.

Rodis, Franz: *See*—
Ritter, Friedbert, Rodis, Reuter, and Querengasser. 3,273,965.

Rodriguez, Antonio R., and R. E. Stapleton, to Aerovox Corp. Electric capacitor and method for producing the same. 3,274,468, 9–20–66, Cl. 317—258.

Rogers, Charles E., R. E. Matty, and E. L. Ralston, to The Babcock & Wilcox Co. Regeneration of magnesium bisulphite pulping liquor and absorption of sulphur dioxide during regeneration. 3,273,961, 9–20–66, Cl. 23—131.

Rogers, Dilworth T., and J. C. Munday, to Esso Research and Engineering Co. Process for manufacture of solid compositions comprising asphalt and clay-containing soils. 3,274,016, 9–20–66, Cl. 106—281.

Rogers, Cyril B., and M. R. Doolittle, to Clark Equipment Co. Load handling apparatus. 3,273,727, 9–20–66, Cl. 214—16.

Rohland, William S., to International Business Machines Corp. Pattern recognition by contour sequences. 3,274,551, 9–20–66, Cl. 340—146.3.

Rohm & Haas Co.: *See*—
Hurwitz, Melvin D. 3,274,164.

Rolfe, Robert G.: *See*—
Faulkner, Joseph A., Black, and Rolfe. 3,274,585.

Rolite, Inc.: *See*—
Hagenson, Leo J. 3,273,934.

Roper, Raymond W., to Sundstrand Corp. Oil burner pump unit with air purging means. 3,273,513, 9–20–66, Cl. 103—203.

Rosaen Filter Co., The: *See*—
Rosaen, Nils O. 3,273,715.

Rosaen, Nils O., The Rosaen Filter Co. Fluid filters. 3,273,715, 9–20–66, Cl. 210—90.

Rosch, Francis C., Jr., and C. K. Hines, to Consolidated Electrodynamics Corp. Ball valve having urging means acting normal thereto. 3,273,851, 9–20–66, Cl. 251—124.

Rosema, Thomas J., and H. R. Farwell, to J. A. Black, president of General Research, Inc. Screen stencil frame. 3,273,497, 9–20–66, Cl. 101—128.1.

Rosenstein, Abraham J.: *See*—
Rosenstein, N. and A. J. 3,273,220.

Rosenstein, N. and A. J., to Spunize Co. of America, Inc. Apparatus for the crimping of natural and synthetic textile materials. 3,273,220, 9–20–66, Cl. 28—1.

Ross, Frank A., to The B. F. Goodrich Co. Apparatus for forming plastic sheet material. 3,273,203, 9–20–66, Cl. 18—19.

Ross, Sigmund L. Industrial waste-gas purifier method. 3,273,316, 9–20–66, Cl. 55—90.

Roth, Harold H., to The Dow Chemical Co. Flexible electroluminescent lamp having transparent metal-coated strands as the light transmitting electrode. 3,274,419, 9–20–66, Cl. 313—108.

Roth, James F.: *See*—
Moore, Richard N., and Roth. 3,274,287.

Rothfeder, Arthur L.: *See*—
Halverstadt, Carl D. 3,273,248.

Rotow, Alexander A., to United States of America, Army. Image intensifier type camera tube with potential field correcting means. 3,274,416, 9–20–66, Cl. 313—65.

Rottler, Donald B. Boring machine. 3,273,423, 9–20–66, Cl. 77—4.

Roulund, Poul B., 20% to E. A. Sokolski. Water jet propulsion device. 3,273,333, 9–20–66, Cl. 60—35.5.

Roussel-UCLAF: *See*—
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Smitzer, Louis A., to Bell & Howell Co. File card retrieval device. 3,273,567, 9–20–66, Cl. 129—16.1.

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Somerfield, Gordon A.: *See*—
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Sommers, Henry S., Jr., to Radio Corp. of America. Acoustic-electromagnetic device. 3,274,406, 9–20–66, Cl. 310—8.1.

Sonderegger, Hans C., and H. U. Baumgartner. Device for balancing rotating bodies during operation. 3,273,293, 9–20–66, Cl. 51—262.

Songer, Paul A., to The Gates Rubber Co. Method of making reinforced corrugated hose. 3,274,816, 9–20–66, Cl. 264—94.

Sony Corp.: *See*—
Sada, Tomohiko, and Nishida. 3,274,111.

Sorbie, Thomas B.: *See*—
Early, Richard L., and Sorbie. 3,273,710.

Sorenson, Wayne R.: *See*—
Marshall, David W., and Sorenson. 3,274,280.

Soulon, Glenn E. Detachable baseboard and flooring trim assembly. 3,273,296, 9–20–66, Cl. 52—288.

Southard, Creston R., to Champion Dish Washing Machine Co. Dishwashing machine and refuse disposal and method. 3,273,573, 9–20–66, Cl. 134—104.

Spafford, Bert L. Stone separator. 3,273,712, 9–20–66, Cl. 209—147.

Spare, Gordon T.: *See*—
Nickola, Richard A., and Spare. 3,274,027.

Spark, Wallace R., to Douglas Aircraft Co., Inc. Bathythermograph. 3,273,393, 9–20–66, Cl. 73—344.

Sparks, William J., and L. S. Minckler, Jr., to Esso Research and Engineering Co. Fracture support agents made by cyclizing and curing rubbery pelletized butadiene copolymers. 3,274,148, 9–20–66, Cl. 260—41.5.

Spears, Esten W., Jr., to General Motors Corp. Gas turbine engine. 3,273,345, 9–20–66, Cl. 60—35.6.

Spector, Marshall L.: *See*—
Gaschke, Marcel M., and Spector. 3,274,049.

Spencer, Dana R.: *See*—
Granito, Gerry D., Smith, Spencer, and Stafford. 3,274,560.

Sperandeo, Frank. Gloves for playing sports. 3,273,165, 9–20–66, Cl. 2—169.

Sperry Rand Corp.: *See*—
Boudreau, Thomas K., and Kaszynski. 3,274,444
Brekne, Sigbjorn A. 3,274,570.
Eddy, Charles W., and Prohofsky. 3,274,520.
Luke, Louselle A. 3,274,555.
Miller, Robert E. 3,273,951.
Strawbridge, George B. 3,274,562.

Spicer, Ronald F., to The Kendall Co. Dampening roll cover. 3,273,224, 9–20–66, Cl. 29—120.

Spiegler, Louis, to E. I. du Pont de Nemours and Co. Process for preparing C-6 alkyl phenylcyclohexylglycolates. 3,274,234, 9–20–66, Cl. 260—473.

Spielman, Ralph, and D. Taub, to JFD Electronics Corp. Two-position trimmer capacitor. 3,274,465, 9–20–66, Cl. 317—249.

Spillane, Matthew L., and G. J. Heimberger, to Atlas Chemical Industries, Inc. Method of making static-resistant detonator plug. 3,274,318, 9–20–66, Cl. 264—104.

Spillers Ltd.: *See*—
Morison, Peter P. 3,274,377.

Spitzley, Henry A.: *See*—
Willems, Donald J., and Spitzley. 3,273,657.

Spooner, David F.: *See*—
Richards, Hugh C., Spooner, and Housley. 3,274,175.

Sporck, Claus L., to The Lodge & Shipley Co. Metal working. 3,273,368, 9–20–66, Cl. 72—78.

Sprultenburg, Marinus J.: *See*—
Anderson, James H., and Sprultenburg. 3,273,920.

Spunise Co. of American, Inc.: *See*—
Rosenstein, Nathan and A. J. 3,273,220.

Spurlin, Harold M.: *See*—
Breslow, David S., and Spurlin. 3,274,166.

Squibb, E. R. & Sons, Inc.: *See*—
Becker, Edward J., and Robison. 3,274,237.

Staats, Henry N., to Recall, Inc. Documentary storage and retrieval systems. 3,273,709, 9–20–66, Cl. 209—81.

Staeuble, Max: *See*—
Weber, Kurt, Staeuble, Hugelshofer, and Hari. 3,274,197.

Stafford, Thomas S.: *See*—
Granito, Gerry D., Smith, Spencer, and Stafford. 3,274,560.

Stahlheber, Norman E., to Monsanto Co. Caking resistant mono calcium phosphate, monohydrate and process for its manufacture. 3,273,960, 9–20–66, Cl. 23—108.

Staiger, Kurt: *See*—
Fairbanks, Gordon J., and Staiger. 3,273,799.

Stalego, Charles J., to Owens-Corning Fiberglas Corp. Apparatus for forming heat-softenable materials. 3,274,324, 9–20–66, Cl. 13—6.

Stanchel, Ivan J. Apparatus for dry heat pre-expansion of expandable polystyrene and like products. 3,273,573, 9–20–66, Cl. 263—26.

Standard Oil Co. (Indiana): *See*—
Beredjick, Nicky. 3,273,957.
Proell, Wayne A. 3,273,499.

Standard Screw Co.: *See*—
Lesher, Kenneth W. 3,273,547.

Stangl, Heins: *See*—
Kojer, Hugo, Jira, Smidt, and Stangl. 3,274,238.

Stanley, Oliver C., to The Ryan Aeronautical Co. Search generator. 3,274,494, 9–20–66, Cl. 335—420.

Stanton, George W., and T. G. Traylor, to The Dow Chemical Co. Compositions comprising graft copolymers on polyester substrates of one or more monomers from the group including vinyl lactams; sulfonated alkenyl and/or α-halo alkenyl aromatics; sulfonated olefins; sulfonated arylates and methacrylates; vinyl pyridines; aminated alkenyl aromatics; aminated acrylates and methacrylates; and monomeric polyglycol ethers of alkenyl aromatics. 3,274,294, 9–20–66, Cl. 260—873.

Stapleton, Robert E.: *See*—
Rodrigues, Antonio R., and Stapleton. 3,274,468.
Starck, Leon, to Linotype G.m.b.H. Control apparatus for type setting machines. 3,273,791, 9–20–66, Cl. 234—7.
Stark, Donald E., to Westinghouse Air Brake Co. Status change detection apparatus. 3,274,577, 9–20–66, Cl. 340—213.
Staros, Anthony: *See*—
Gardner, Henry F., and Staros. 3,273,168.
Starp, Franz W. R., to Alfred Gauthier G.m.b.H. Photographic camera with automatic diaphragm setting in the flash range. 3,273,482, 9–20–66, Cl. 95—64.
Starrett, James R., to The Bauer Bros. Co. Rotary valve. 3,273,758, 9–20–66, Cl. 222—194.
Stasenko, Stephen: *See*—
Johnson, Irving A., and Stasenko. 3,273,753.
State Steel Products, Inc.: *See*—
Holman, Lee B. 3,273,409.
Stauffer Chemical Co.: *See*—
Walsh, Edward N., and Brady. 3,274,299.
Stec, Frederick J., to Continental Can Co., Inc. Vented easy-opening container. 3,273,745, 9–20–66, Cl. 220—54.
Steeper, Charles P.: *See*—
Taylor, Alfred H., Ford, and Steeper. 3,272,169.
Stein, Werner, H. Weiss, and O. Koch, to Henkel & Cie., G.m.b.H. Pourable and free-flowing detergent, wetting, and emulsifying compositions. 3,274,117, 9–20–66, Cl. 252—161.
Steinmetz, Werner: *See*—
Nagel, Ernst, and Steinmetz. 3,273,408.
Stephens, Franklin E.: *See*—
McDonald, Edwin C., and Stephens. 3,273,982.
Stephens, Robert: *See*—
Tatlow, John C., and Stephens. 3,274,265.
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Graff, Mark, McQuistion, and Sterling. 3,274,264.
Sterling, John D., Jr.: *See*—
Collier, Herman E., Jr., and Sterling. 3,274,224.
Sterzer, Fred, to United States of America, Army. Low impedance coupled transmission line and solid state tunnel diode structure. 3,274,459, 9–20–66, Cl. 317—234.
Stevens, Curtis R., to Master Specialties Co. Switch mechanism. 3,274,354, 9–20–66, Cl. 200—76.
Stewart, Warren A., to Cooper Industries, Inc. Compressor valve with removable guide means. 3,273,591, 9–20–66, Cl. 137—512.1.
Stewart-Warner Corp.: *See*—
Fairbanks, Gordon J., and Staiger. 3,273,799.
Gray, Dudley. 3,274,335.
Martz, Roger G. 3,273,502.
Miles, Marshall, Northrup, and Prell. 3,273,505.
Stiles, Morrison N.: *See*—
Galer, Merrill F., and Stiles. 3,273,536.
Stimler, Morton, to United States of America, Navy. Photoflash optical pumping circuit. 3,274,440, 9–20–66, Cl. 315—239.
Stobbe, Richard E., and F. Zankl, to Kearney & Trecker Corp. Transmission with automatic meshing control. 3,273,413, 9–20–66, Cl. 74—346.
Stockel, Albert, Jr.: *See*—
Ewing, John I., and Stockel. 3,274,608.
Stolz, Walter A.: *See*—
Krafft, Joseph M., and Stolz. 3,273,383.
Strawbridge, George B., to Sperry Rand Corp. Memory apparatus wherein the logical sum of address and data is stored at two addressable locations. 3,274,562, 9–20–66, Cl. 340—172.5.
Street, Frederick A., 25% to Head & Johnson. Packing device with rotatable plug. 3,273,900, 9–20–66, Cl. 277—9.
Stribley, Rexford C., to American Home Products Corp. Presterilized disposable nipple assembly. 3,273,703, 9–20–66, Cl. 206—46.
Strobel, Charles W.: *See*—
Zelinski, Robert P., and Strobel. 3,274,147.
Stromberg-Carlson Corp.: *See*—
Brightman, Barrie. 3,274,342.
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Fesco, John J. 3,273,322.
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Denis, Andre, and Ripart. 3,274,485.
Sullivan, Paul M.: *See*—
Ruppert, John A., and Sullivan. 3,273,995.
Sullivan, Philip W.: *See*—
Shannon, Richard F., and Sullivan. 3,274,046.
Sullivan, Robert S., and T. B. Ortwig, to Kearney-National Inc. By-pass switch for operation without interrupting service. 3,274,364, 9–20–66, Cl. 200—146.
Sumitomo Chemical Co., Ltd.: *See*—
Ikeda, Hachiro, Yurimoto, and Ryu. 3,273,996.
Koike, Eiji, and Kanazawa. 3,274,172.
Sun Oil Co.: *See*—
Lauer, James L. 3,274,087.
Lecher, Marilyn T. 3,274,146.
Reiland, William H., Jr. 3,274,113.
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Sunbeam Corp.: *See*—
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Jepson, Ivar, and Wied. 3,273,195.
Sundstrand Corp.: *See*—
Roper, Raymond W. 3,273,513.
Sutcliffe, Hazel L.: *See*—
Carder, Mervin L., and Sutcliffe. 3,273,609.
Svenska Flaktfabriken, Aktiebolaget: *See*—
Aronsson, Arent. 3,274,697.
Swan, Alfred H., to Air Reduction Co., Inc. Flexible tube. 3,273,600, 9–20–66, Cl. 138—122.
Swanson, Harry G., to United States of America, Navy. Fluid damped permanent magnet core meter movement with a float supported and filar suspended coil. 3,274,490, 9–20–66, Cl. 324—154.
Swanson, John A., to AMP Inc. Memory system. 3,274,572, 9–20–66, Cl. 340—174.
Sweden Freezer Mfg. Co.: *See*—
Patch, Robert S. 3,273,585.
Swiadek, Stanley F., to Varian Associates. High-frequency electron discharge device with heat dissipation means. 3,274,429, 9–20–66, Cl. 315—3.6.
Swift & Co.: *See*—
Bassett, Joseph A., and Battles. 3,274,023.
Parosh, William R. 3,273,713.
Schlernitzauer, Edward A. 3,273,487.
Swoboda, Thomas J., to E. I. du Pont de Nemours and Co. Energy conversion devices. 3,274,405, 9–20–66, Cl. 310—4.
Sydor, Walter J., to American Cyanamid Co. Germicidal compositions. 3,274,115, 9–20–66, Cl. 252—106.
Sykes, Alan O. Transducer for simultaneous measurement of physical phenomena of sound wave. 3,274,539, 9–20–66, Cl. 340—1.
Sylvania Electric Products Inc.: *See*—
Johnson, Alfred D. 3,274,421.
Matheson, Wilfrid G., Clune, and Pricenski. 3,274,374.
Scoledge, Robert F., and Bonazoli. 3,274,426.
Thomas, Martha J. B., and Durkee. 3,274,415.
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Halpern, Alfred. 3,274,055.
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Gasparac, Rudolph J., Szaj, and Turnwald. 3,273,810.
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Joo, Louis A., and Szawlowski. 3,274,292.
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Szechtman, Joshua, deceased, by R. Szechtman, executrix, to Chlormetals Inc. Gas removal from electrolytic cells. 3,274,082, 9–20–66, Cl. 204—60.
Szechtman, Rebecca: *See*—
Szechtman, Joshua. 3,274,082.
Szohatzky, Zoltan: *See*—
Zahuranec, Emery J., and Szohatzky. 3,273,742.
Szsczepanek, Alfred, to Firma Chemische Fabrik Hoesch K.-G. Lead stabilizers for polyvinyl chloride and polyvinyl chloride copolymers. 3,274,222, 9–20–66, Cl. 260—414.
Szwarc, Michael M., to Pullman Inc. Pyrolysis of a 1,4-dimethyl benzene nuclearly-substituted with at least one gaseous halogen atom. 3,274,127, 9–20–66, Cl. 260—2.
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Clark, Hubert M., and Drutchas. 3,273,503.
Tauschek, Max J. 3,273,856.
Taccone Corp.: *See*—
Taccone, Russell W. 3,273,207.
Taccone, Russell W. 3,273,210.
Taccone, Russell W., to Taccone Corp. Machine for handling patterns. 3,273,207, 9–20–66, Cl. 22—20.
Taccone, Russell W., to Taccone Corp. Machine for removing molds from flasks. 3,273,210, 9–20–66, Cl. 22—95.5.
Tait Mfg. Co., The: *See*—
Lung, Kenneth R. 3,273,508.
Takacs, Kálman: *See*—
Harśanyi, Kálman, Korbonits, Takacs, Tardos, Lexzkovszky, and Erdély. 3,274,248.
Takashima, Yoshihisa: *See*—
Kameyama, Akira, Funabashi, Kusakawa, Watanabe, Hayao, Takashima, and Maruyama. 3,274,420.
Takeda Chemical Industries, Ltd.: *See*—
Morita, Katsura, Nawa, and Miki. 3,274,177.
Senda, Shigeo, Fujimura, and Izumi. 3,274,195.
Tamplen, Jack W., to Otis Engineering Corp. Equalizing valve means. 3,273,649, 9–20–66, Cl. 166—224.
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Aoki, Yonesaku, Emoto, and Tanaka. 3,273,806.
Tanczos, Frank I., T. Davis, E. H. Smith, and J. W. Mullen, II, to United States of America, Navy. Ramjet missile. 3,273,334, 9–20–66, Cl. 60—35.6.
Tardos, László: *See*—
Harśanyi, Kálman, Korbonits, Takács, Tardos, Lexzkovszky, and Erdély. 3,274,248.
Tatlow, John C., and R. Stephens, to National Research Development Corp. Fluorinated organic compounds. 3,274,265, 9–20–66, Cl. 260—648.
Taub, David: *See*—
Spielman, Ralph, and Taub. 3,274,465.
Tauschek, Max J., to TRW Inc. Valve stem retainer lock. 3,273,856, 9–20–66, Cl. 251—337.
Taylor, Alfred H., A. C. W. Ford, and C. P. Steeper, to Hugh Steeper Ltd. Remote alternator for selective actuation of prosthetic limbs and surgical appliances. 3,273,169, 9–20–66, Cl. 3—12.3.
Taylor, Donald F., Jr.: *See*—
Dollison, William W., and Taylor. 3,273,589.
Taylor, Donald O., to Scovill Mfg. Co. Registering device for gap spacing. 3,273,229, 9–20–66, Cl. 29—200.
Taylor, Robert S. Refrigeration systems and methods of refrigeration. 3,273,350, 9–20–66, Cl. 62—101.
Taylor, Ruel E., Jr., to S. D. Warren Co. Reverse transport for flexible sheets. 3,273,886, 9–20–66, Cl. 271—45.
Taylor, William, Jr. Dispensing device. 3,273,823, 9–20–66, Cl. 242—129.
Tee-Pak, Inc.: *See*—
Alsys Clarence M. 3,274,005.
Teer, Wickwire & Co.: *See*—
Klaassen, William P. 3,273,249.
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Frisch, Arnold, Weiss, and Engelson. 3,274,505.
Telefunken Patentverwertungsgesellschaft m.b.H.: *See*—
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DeBoo, Jerome L., and Lutz. 3,274,368.
Terry, Billy W.: *See*—
Jones, Wray H., Maxson, and Terry. 3,273,319.
Testerman, Maurice K., and P. C. McLeod, Jr., to Phillips Petroleum Co. Fluid oscillator analyzer and method. 3,273,377, 9–20–66, Cl. 73—23.1.
Teszner, Stanislas. High-frequency and power field-effect transistor with mesh-like gate structure. 3,274,461, 9–20–66, Cl. 317—235.
Tetz, Ronald V., to Jennings Radio Mfg. Corp. Parallel resistance-capacitance voltage divider. 3,274,483, 9–20–66, Cl. 323—74.
Teves, Alfred, Maschinen- und Armaturenfabrik K.G.: *See*—
Press, Carl. 3,273,677.
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Thermosen, Inc.: *See*—
Magida, Nathan H., and Bachle. 3,274,524.
Thienpont, Denis C. I. C.: *See*—
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Thiokol Chemical Corp.: *See*—
Bolleau, Christopher W. 3,273,337.
Wilhite, Verbon H. B. 3,273,801.
Thirion, Rene, to Societe Anonyme D.B.A. Spot-type disc brakes. 3,273,676, 9–20–66, Cl. 188—73.
Thomas, Roy E., Jr., M. R. Bennett, and J. W. Ullmann, to United States of America, Atomic Energy Commission. Method for processing aluminum-containing nuclear fuels. 3,273,973, 9–20–66, Cl. 23—324.
Thomas, David R.: *See*—
Kendrick, Thomas C., and Thomas. 3,274,154.
Thomas, Martha J. B., and F. P. Durkee, to Sylvania Electric Products Inc. Gaseous discharge lamp with a reduced and unreduced actuator. 3,274,415, 9–20–66, Cl. 313—25.
Thomas, Maurice: *See*—
Deubler, Louis H., Porter, and Thomas. 3,273,592.
Thomas, Robert R., to Parmelee Plastics Co. Face shield assembly for a hard hat. 3,273,164, 9–20–66, Cl. 2—10.
Thompson, Arthur: *See*—
Lister, Leslie, and Thompson. 3,273,736.
Thompson, Clifford F.: *See*—
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Thompson George E.: *See*—
Edwards, Gordon J., Thompson, and Senkowski. 3,273,673.
Thompson, Harold G., and M. B. Bochner, to American Cyanamid Co. Method for the preparation of 2-styryloxazole compounds. 3,274,184, 9–20–66, Cl. 260—240.
Thompson Ramo Wooldridge Inc.: *See*—
Landers, Richard R. 3,274,401.
Mastrup, Frithjof N. 3,274,437.
Thompson, Stanley E. Tongue blade dispenser. 3,273,749, 9–20–66, Cl. 221—239.
Thompson, Wallace W., and R. H. Wallick, to E. I. du Pont de Nemours and Co. Process for the preparation of 5-halo-3,6-disubstituted uracils. 3,274,196, 9–20–66, Cl. 260—260.
Thomson, Elihu C., to Electronics Corp. of America. Radiation detection device circuits for use in flame sensing. 3,274,580, 9–20–66, Cl. 340—228.
Thomson, Frederick M., Jr., to E. I. du Pont de Nemours and Co. Solids blending apparatus. 3,273,864, 9–20–66, Cl. 259—97.
Thumin, Carl, to Miehle-Goss-Dexter, Inc. Variable back gauge travel adjustment means for guillotine-type cutting machine. 3,273,453, 9–20–66, Cl. 88—24.
Thurber, Ross D. Variable volume rotary fluid motor and pump. 3,273,464, 9–20–66, Cl. 91—204.
Thurman, Richard L., and A. J. Coutre, to The Parker Pen Co. Adjustable resilient writing instrument. 3,273,541, 9–20–66, Cl. 120—42.03.
Thurston, Robert E., to Improved Machinery Inc. Belt positioning device. 3,273,698, 9–20–66, Cl. 198—202.
Tillery, Lloyd E. Unitary flexible metallic connector. 3,273,916, 9–20–66, Cl. 285—226.
Time Inc.: *See*—
Galer, Merrill F., and Stiles. 3,273,536.
Timmons, Frank E., to Belden Mfg. Co. Shielded cords. 3,274,329, 9–20–66, Cl. 174—69.
Tinnerman Products, Inc.: *See*—
Bennett, Alan J. 3,273,839.
Tischler, Edward J.: *See*—
Hiers, James E., and Tischler. 3,273,403.
Titanium Metals Corp. of America: *See*—
Priscu, John C., and Snyder. 3,273,970.
Snyder, Linden E. 3,274,083.
Tocker, Stanley, to E. I. du Pont de Nemours and Co. Olefin copolymer modified with a hydroxybenzoic acid. 3,274,158, 9–20–66, Cl. 260—62.
Tokan Kogyo Co., Ltd.: *See*—
Kawamura, Yuzo. 3,274,315.
Tokyo Shibaura Denki Kabushiki Kaisha: *See*—
Tsuji, Yuji. 3,274,078.
Tokyo Shibaura Electric Co., Ltd.: *See*—
Kameyama, Akira, Funabashi, Kusakawa, Watanabe, Hayao, Takashima, and Maruyama. 3,274,420.
Tolman, Warren R.: *See*—
Ham, James H., Jr., Hostetler, Ritchey, and Tolman. 3,274,345.
Tomcufcik, Andrew S., R. B. Angier, M. Forbes, and H. F. Lindb, to American Cyanamid Co Antiviral compositions and method of administration. 3,274,054, 9–20–66, Cl. 167—65.
Tomhave, Lawrence R.: *See*—
Els, Ralph O., Tomhave, and Walsh. 3,274,332.
Tomita, Hiroshi, to Kabushiki Kaisha Hitachi Seisakusho. Scanning ray microanalyser. 3,274,385, 9–20–66, Cl. 250—49.5.
Tomlinson, Kent. Apparatus for removing feathers from poultry. 3,273,198, 9–20–66, Cl. 17—11.1.
Tompkins, Brainard E., to Radio Corp. of America. Circuits for discharging a capacitor through an arc discharge device. 3,274,439, 9–20–66, Cl. 315—237.
Tothero, Dwight L., to Carrier Corp. Automatically reversible pumping mechanism. 3,273,501, 9–20–66, Cl. 103—3.
Touey, George P., and H. E. Davis, to Eastman Kodak Co. Composition of matter having improved oxidative stability. 3,274,109, 9–20–66, Cl. 252—56.
Toulis, William J. Flexural-extensional electromechanical transducer. 3,274,537, 9–20–66, Cl. 340—8.
Townsley, Malcolm G., to Bell & Howell Co. File card retrieval apparatus. 3,273,565, 9–20–66, Cl. 129—16.1.
Toyo Spinning Co., Ltd.: *See*—
Koike, Eiji, and Kanazawa. 3,274,172.
Tractor Research Ltd.: *See*—
Edwards, Gordon J., Thompson, and Senkowski. 3,273,673.
Trak Microwave Corp.: *See*—
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Transall, Inc.: *See*—
Hamaker, Paul, Morgan, and Powell. 3,273,695.
Traylor, Teddy G.: *See*—
Stanton, George W., Traylor. 3,274,294.
Treves, Gino R., K. L. Hill, and K. P. Dorschner, to FMC Corp. Herbicidal use of substituted methylcyclohexenones. 3,273,992, 9–20–66, Cl. 71—2.3.
Trieschmann, Alfred, to Vereinigte Kaliwerke Salzdetfurth AG. Self-loading vehicle and dump gate therefor. 3,273,732, 9–20–66, Cl. 214—518.
Trout, Otto F., Jr.: *See*—
Hill, Paul R., and Trout. 3,273,855.
Troutman, Paul H.: *See*—
Eggenberger, Markus A., and Troutman. 3,274,443.
Trumper, Konrad, and K. Raab, to Rheinstahl Siegener Eisenbahnbedarf Gesellschaft mit beschrankter Haftung. Longitudinal shock absorbing assembly for vehicles. 3,273,516, 9–20–66, Cl. 105—392.5.
Trzesniewski, Joseph J. Burial vault with sectional inclined sidewalls. 3,273,294, 9–20–66, Cl. 52—141.
Tsuboi, Takashi, F. Masutomi, and Y. Onoda, to Hitachi, Ltd. Transformer fed non-arcing motor acceleration control for an electric car including anti-slip circuitry. 3,274,469, 9–20–66, Cl. 318—52.
Tsuboi, Takeo: *See*—
Kado, Masaru, Tsuboi, Maeda, and Yoshinaga. 3,274,051.
Tsui, Shin-Hua. Round-shaped harmonica. 3,273,440, 9–20–66, Cl. 84—377.
Tsuji, Yuji, to Tokyo Shibaura Denki Kabushiki Kaisha. Process for treating the surface of aluminium or aluminium alloy with an organohydrogenpoly siloxane. 3,274,078, 9–20–66, Cl. 204—35.
Tsutsui, Nobuhiro: *See*—
Fujita, Yoshimasa, and Tsutsui. 3,273,956.
Tung-Sol Industries, Inc.: *See*—
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Hirshfield, Philip. 3,274,438.
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Design Patents

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 20, 1966 Volume 830 Number 3

TRADEMARKS

NOTICES

United States Adopted Names

List No. 14

March 1, 1966 to June 30, 1966

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Assistant Director, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

allobarbital: central nervous system depressant
betamethasone acetate: corticosteroid
betamethasone disodium phosphate: corticosteroid
cloperidone hydrochloride: sedative; tranquilizer
descinolone acetonide: glucocorticoid
gamfexine: antidepressant
guanethidine monosulfate: hypotensive
hycanthone: schistosomacide
isosorbide: oral osmotic diuretic
lidoflazine: cardiovascular agent
mesterolone: oral androgenic hormone
metyrapone tartrate: diagnostic test of pituitary function
niclosamide: anthelmintic
nitarsone: veterinary histomonastat
nonoxynol: spermatocide
prednival: topical anti-inflammatory
prilocaine hydrochloride: local anesthetic
propiram fumarate: analgesic
pyrantel tartrate: anthelmintic
rifamide: antibacterial
roxarsone: veterinary growth stimulant
sodium ampicillin: antibiotic
sodium edetate: chelating agent
tetroquinone: treatment of keloids
trimoxamine hydrochloride: antihypertensive
trisodium edetate: chelating agent
viridofulvin: antifungal antibiotic

United States Adopted Names (USAN) and United States Adopted Names (Proposed) (USAN)

QUARTERLY CUMULATIVE LIST

January 1, 1966–June 30, 1966

This is a revised alphabetical listing of the nonproprietary names *proposed for adoption* by the USAN Council which were published in the Trademark Bureau Bulletin during the

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	28,840
Date of oldest new application	July 15, 1965
Date of oldest amended application (filing date)	July 6, 1962

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF (Acting), Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	7-15-65	2-24-64
(II) F. H. WETHERBEE (Acting), Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	9-25-65	7-6-62
Renewals (All Classes)	6-29-66	
Sec. 12(c) Publications (All Classes)	7-7-66	

Applications filed during the month of July—2,057

Registrations Issued ..... 409—No. 815,251 to No. 815,659
Renewals Issued 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

period indicated. The listing also incorporates the revised lists of *adopted* nonproprietary names issued by the USAN Council, but not published in the Bulletin.

The Quarterly Cumulative List is intended to supplement USAN Cumulative List 4, 1961–1965, published annually for the Council by the United States Pharmacopeia; it is distributed with an issue of the Trademark Bureau Bulletin.

An asterisk (*) before a name indicates an *adopted name;* all other names on the list are *proposed for adoption.*

Since Q.C.L. is cumulative, only the latest issue need be consulted. All preceding lists may be discarded.

Any comments or protests regarding proposed names should be brought promptly to the attention of the USAN Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

*allobarbital: central nervous system depressant
asperlin: antibacterial; antineoplastic
*betamethasone acetate: corticosteroid
*betamethasone disodium phosphate: corticosteroid
*cloperidone hydrochloride: sedative; tranquilizer
*cyheptamide: anticonvulsant
*descinolone acetonide: glucocorticoid
*gamfexine: antidepressant
*guanethidine monosulfate: hypotensive
*hycanthone: schistosomacide
*ibufenac: analgesic; anti-inflammatory
*isosorbide: oral osmotic diuretic
*lidoflazine: cardiovascular agent
*mefruside: diuretic
*mesterolone: oral androgenic hormone
*metyrapone tartrate: diagnostic test of pituitary function
*niclosamide: anthelmintic
*nifuraldezone: antibacterial
*nitarsone: veterinary histomonastat
*nitrazepam: hypnotic; anticonvulsant
*nitromide: veterinary coccidiostat and antibacterial
*nonoxynol: spermatocide
*norgestrel: progestin
*pemoline: central nervous system stimulant
phenobarb: proposed abbreviation for phenobarbital
phthalofyne: veterinary anthelmintic
*prednival: topical anti-inflammatory
*prilocaine hydrochloride: local anesthetic
*propiram fumarate: analgesic
*pyrantel tartrate: anthelmintic
quilazine maleate: oxytocic
*rifamide: antibacterial
*roxarsone: veterinary growth simulant
seperidol hydrochloride: neuroleptic
*sodium ampicillin: antibiotic
*sodium edetate: chelating agent
*sodium ethacrynate: diuretic
sulfabenz: veterinary antibacterial and anticoccidial
sulfafen: antibacterial; anticoccidial agent
*tetramisole hydrochloride: anthelmintic
*tetroquinone: treatment of keloids
thyroglobulin: thyroid preparation
*trimoxamine hydrochloride: antihypertensive
*trisodium edetate: chelating agent
*viridofulvin: antifungal antibiotic
zolertine hydrochloride: vasodilator; anti-adrenergic; anti-hypertensive

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 293,319 (SONOTONER), Sonotone Corporation, Earphones for the use of persons with defective hearing; **Reg. No. 327,079** (SONOTONE), same, Hearing-aid devices and acoustic elements and accessories thereof, such as sound transmitters, telephone receivers, hearing-inducing bone oscillators and electric sound amplifiers; **Reg. No. 344,948,** same, Phonographs and apparatus for recording sound on discs and accessories thereof; **Reg. No. 633,079,** same, Mechano-electric energy transducers—namely, phonograph pick-ups and parts thereof; **Reg. No. 677,971** (SONOTAPE), same, Electro-magnetic transducers, and specifically magnetic tape recording heads; **Reg. No. 763,389** (SONO/COM), same, Mechano-electric transducers—namely, head set microphones and parts thereof; **Reg. No. 767,838** (SONOTROL), Sonotone Corporation, assignee of Aaron H. Axelrod, doing business as Electronics Company, Electronically operated sound switch, particularly useful for the deaf and hard of hearing; **Reg. No. 779,881** (SONO-FLEX), Sonotone Corporation, Replaceable stylus holders and styli for phonograph pickup cartridges; **Reg. No. 792,144** (SONOMASTER), same, Speaker systems, including loudspeakers and enclosures therefor; **Reg. No. 796,672** (SONAFONE), same, Phonograph cartridge assemblies, microphones and parts therefor, hearing aid receivers, hearing aids and parts therefor, **filed** Mar. 17, 1966, D.C.N.J. (Trenton), Doc. 272–66, *Sonotone Corporation* v. *Sonetronics, Incorporated.* Judgment dismissing action with prejudice Aug. 11, 1966.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 192,932. N.V. Instrument Fabriek En-Handel Voorheen P. J. Kipp & Zonen, Delft, Netherlands. Filed May 7, 1964.

KIPP & ZONEN

Owner of Dutch Reg. No. 148,063, dated Oct. 31, 1962.

Class 26—Measuring and Scientific Appliances

For Galvanometers, Microvolmeters, Apparatus for the Registration of Very Weak Currents and Tensions, Colorimeters, Photometers, Densimeters, Cash Registers, and Calculating Machines.

Class 44—Dental, Medical, and Surgical Appliances

For Medical Apparatus for Measurement of the Metabolic Rate; Apparatus for Direct Oxygen Saturation Measurement of Blood During Heart Catheterization and Recording of Dye Dilution Curves; and Hemoreflector for Measuring the Percentage of Oxygen Saturation in Blood.

First use August 1958; in commerce Aug. 12, 1959.

SN 201,825. The Cramer Chemical Company, Gardner, Kans. Filed Sept. 14, 1964.

Cramer of GARDNER, KANSAS

The words "of Gardner, Kansas" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 418,406, 568,042 and others.

Class 4—Abrasives and Polishing Materials

For Liquid Rubber and Leather Ball Cleaner and Polish.
First use Jan. 7, 1949.

Class 6—Chemicals and Chemical Compositions

For Shoe Dressing and Adherent for Adhesive Tape.
First use Aug. 10, 1943.

Class 18—Medicines and Pharmaceutical Preparations

For Tablets for the Relief of Pain, Antacid Preparations, Ammonia Inhalants, Aspirin, Atheletic Liniment, Massaging Ointment, Rub-Down Liniments, Tablets To Relieve Nervous Tension, Analgesic Balm, Vitamin Tablets, Salt Tablets, Foot Ointment, Germicidal and Fungicidal Preparation for Treating Athletes Foot and Other Fungus Infections, Inhalant To Promote Breathing, Isopropyl Alcohol, Germicide, Antiseptic Ointment, Skin Lubricant and Spray Vaporizer.
First use Aug. 10, 1943.

Class 22—Games, Toys, and Sporting Goods

For Magnesium Carbonate Sticks, Rosin, Paste Mixture for External Use To Counteract Glare, Elastic Wrap, and Anti-Slip Preparation for Sports Use.
First use Aug. 10, 1943.

Class 44—Dental, Medical, and Surgical Appliances

For Cotton Tipped Applicators, Cold Packs, Felt, Foam Rubber and First Aid Kits.
First use Aug. 10, 1943.

Class 46—Foods and Ingredients of Foods

For Pre-Packaged Dietary Foods Consisting of Cookies and a Drink.
First use Jan. 14, 1963.

Class 51—Cosmetics and Toilet Preparations

For Foot and Body Powder, Deodorant, Astringent, Skin Lotion for Prevention of Sunburn and Liquid Preparations for External Use To Protect and Toughen Skin.
First use Aug. 10, 1943.

Class 52—Detergents and Soaps

For Athletic Soap, Hand Cleaner, Paste Ball Cleaner and Tape Remover.
First use Aug. 10, 1943.

SN 220,449. Bell Auto Parts, Inc., Bell, Calif. Filed June 7, 1965.

CRAGAR

Class 19—Vehicles

For Automotive Equipment and Accessories—Namely, Custom Wheels, Steering Wheels and Disc Brakes.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machinery and Tools and Parts Thereof—Namely, Engine Adapters and Supercharger Kits.

First use Apr. 8, 1955.

SN 221,982. Adidas S.A.R.L., Dettwiller, Bas-Rhin, France. Filed June 25, 1965.

CANGORAN

Owner of French Reg. No. 1,173, dated Apr. 7, 1965 (Saverne); Natl. Inst. No. 221,982.

Class 1—Raw or Partly Prepared Materials

For Leather.

Class 39—Clothing

For Footwear—Namely, Boots, Shoes, and Slippers.

SN 225,214. Harriet Taylor, d.b.a. Varil Industries, Evanston, Ill. Filed Aug. 6, 1965.

Varil

Class 39—Clothing

For Ladies' Hats or Millinery.

Class 40—Fancy Goods, Furnishings, and Notions

For Headbands, Plain and Adorned, Including Huggy Head Bands.

First use May 13, 1965.

SN 226,535. Inter-Continental Trading Corporation, New York, N.Y. Filed Aug. 26, 1965.

ITC

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Business Machines—Namely Typewriters.

Class 26—Measuring and Scientific Appliances

For Calculators and Cash Registers.

First use on or about July 20, 1965.

SN 230,040. Faroy, Inc., Houston, Tex. Filed Oct. 13, 1965.

FAROY

Class 15—Oils and Greases

For Candles.
First use November 1950.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Candle Holders.
First use January 1963.

SN 231,657. The Wickes Corporation, Saginaw, Mich. Filed Oct. 27, 1965.

WALDORF

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Hardware, Particularly for Cabinets.
First use Mar. 18, 1965.

Class 20—Linoleum and Oiled Cloth

For Floor Tile Comprising Vinyl and Asphalt Tile.
First use Apr. 29, 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 198,035. Fleming-Joffe, Ltd., New York, N.Y. Filed July 17, 1964.

BRAVO CALF

The term "Calf" is disclaimed apart from the mark as shown.

For Decorated Leather for Handbags and Leather in the Piece for Use in the Manufacture of Handbags.

First use Apr. 15, 1964.

SN 237,542. Dairyland Seed Company, Inc., Campbellsport, Wis. Filed Jan. 27, 1966.

DS

For Farm Seeds.
First use on or about Oct. 11, 1965.

SN 238,014. Stark Bro's Nurseries & Orchards Co., Louisiana, Mo. Filed Feb. 3, 1966.

STARK DOUBLE-DWARF

Owner of Reg. Nos. 44,394, 741,434, and others.

For Fruit Trees and Plants, and Scions, Cuttings, Grafts, Roots, and Stocks Thereof.

First use on or about Jan. 5, 1966.

SN 240,871. Emerald Furs Limited, Newark, N.J. Filed Mar. 14, 1966.

BLACK EMERALD

For Natural Ranch Mink Pelts.
First use on or about July 20, 1955.
Subj. to Intf. with SN 232,069.

SN 241,361. Nichols & Company, Inc., Boston, Mass. Filed Mar. 18, 1966.

WELLSTRAND

For Nylon Fibers.
First use July 15, 1965.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 239,168. Neiman-Marcus Company, Dallas, Tex. Filed Feb. 18, 1966.

R.S.V.P.

For Handbags and Pocketbooks.
First use Aug. 15, 1964.

SN 239,511. Garay & Co., Inc., New York, N.Y. Filed Feb. 24, 1966.

Knack

For Handbags and Ladies' Belts.
First use Feb. 18, 1966.

Class 4—Abrasives and Polishing Materials

SN 215,153. Alberto-Culver Company, Melrose Park, Ill. Filed Mar. 29, 1965.

TEAM MATE

For Preparation for Application to Hard Surfaces Such as Floors for Cleaning, or Polishing and Protection.
First use Mar. 18, 1965.

SN 234,242. S & S Chemicals, Ltd., Honolulu, Hawaii. Filed Dec. 8, 1965.

BRITE-ITT

For Metal Polishing Compositions.
First use Oct. 1, 1965.

Class 5—Adhesives

SN 226,993. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Sept. 2, 1965.

JIFFECLENE

For Liquid Binder Used in the Preparation of Foundry Cores and Molds.
First use in or about June 1928.

Class 6—Chemicals and Chemical Compositions

SN 222,592. The Mennen Company, Morristown, N.J. Filed July 2, 1965.

AIR 'N' WEAR

For Clothes Deodorant.
First use June 9, 1965.

SN 222,914. Dexter Chemical Corporation, New York, N.Y. Filed July 8, 1965.

BARISOL

For Wetting Agents, Dispersing Agents and Emulsifiers for Use in the Processing of Textiles.
First use Mar. 19, 1947.

SN 222,915. Dexter Chemical Corporation, New York, N.Y. Filed July 8, 1965.

DEXOPAL

Owner of Reg. No. 439,890.

For Wetting Agents, Water Soluble Oils and Softeners for Organic Fibrous Material, Textile Assistants, Dye Levelling Agents and Emulsifying Agents.

First use Mar. 19, 1947.

SN 222,997. Witco Chemical Company, Inc., New York, N.Y. Filed July 8, 1965.

ULTRAPHOS

For Organic Surfactants—Namely, Wetting, Emulsifying, Spreading, Penetrating and Dispersing Agents.
First use June 22, 1965.

SN 224,041. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed July 22, 1965.

PATHOTEC

For Diagnostic Reagent for Laboratory Use—Namely, Pathogen Differential Test Papers.
First use June 29, 1964.

SN 224,282. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed July 26, 1965.

PREVIEW

For Disinfectant-Deodorant for Household and Industrial Use.
First use Sept. 4, 1964.

SN 228,579. Time-Mist, Inc., Stamford, Conn. Filed Sept. 24, 1965.

TIME-MIST

For Aerosol Products—Namely, Air Sanitizers, Fragrances, Insecticides and Odor Neutralizers.
First use Oct. 30, 1964.

SN 234,585. Strauss Stores Corporation, Maspeth, N.Y. Filed Dec. 14, 1965.

STRAUSS STORES

Owner of Reg. No. 605,822.
For Lighter Fluid.
First use September 1952.

SN 238,668. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Feb. 11, 1966.

FLASH

For Dry Granular Chemical Compound for Melting Ice in the Winter Time.
First use on or about Dec. 15, 1965.

SN 238,828. B. T. Babbitt, Inc., Albany, N.Y. Filed Feb. 15, 1966.

VANO

Owner of Reg. Nos. 392,176, 759,875, and others.
For Fabric Finish.
First use Feb. 21, 1962.

SN 238,833. Baumann Photo-Chemical Corporation, Chicago, Ill. Filed Feb. 15, 1966.

PRINTOFINE

For Photographic Developer.
First use Nov. 19, 1965.

SN 238,916. Baumann Photo-Chemical Corporation, Chicago, Ill. Filed Feb. 16, 1966.

DIAFINE

For Photographic Developer.
First use Feb. 21, 1963.

SN 239,028. Eastman Kodak Company, Rochester, N.Y. Filed Feb. 17, 1966.

EKTAFLO

Owner of Reg. Nos. 574,097, 699,652, and 770,573.
For Photographic Processing Chemicals.
First use Feb. 9, 1966.

SN 239,599. Corn Products Company, New York, N.Y. Filed Feb. 25, 1966.

SLIDE-9

For Ironing Aid Ingredient Incorporated in Starch for Laundry Purposes.
First use at least as early as Mar. 19, 1965.

SN 239,600. Corn Products Company, New York, N.Y. Filed Feb. 25, 1966.

HY-PIX

For Starch for Use in the Paper Industry.
First use at least as early as Sept. 22, 1964.

SN 239,624. Hercules Powder Company, Wilmington, Del. Filed Feb. 25, 1966.

RHAP-TROL

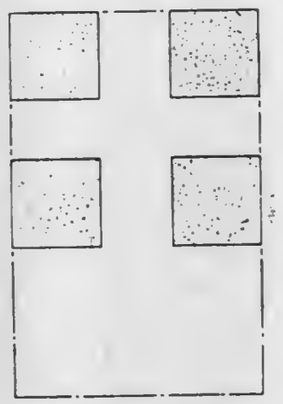
For Herbicides.
First use on or about Feb. 1, 1963.

SN 239,770. The Harshaw Chemical Company, Cleveland, Ohio. Filed Feb. 28, 1966.

NOVA

For Bright Nickel Plating Addition Agent.
First use Feb. 15, 1966.

SN 240,353. Southern Agricultural Insecticides, Inc., Palmetto, Fla. Filed Mar. 7, 1966.



The trademark consists of four blocks of the same color or shade, contrasting with the color or shade of the background of the label and arranged relative to each other, as shown. The dot-dash line in the drawing represents the margins of the label or of the central panel thereof. Owner of Reg. No. 571,011.
For Insecticides.
First use May 7, 1958.

SN 240,803. Technic, Inc., Cranston, R.I. Filed Mar. 11, 1966.

TECHNIGOLD

For Gold and Gold Plating Solutions.
First use Feb. 3, 1966.

SN 240,877. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

TRUMP

For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Feb. 23, 1966.

SN 240,878. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

LUMETON

Owner of Reg. No. 787,000.
For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Feb. 23, 1966.

SN 240,879. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

ACREMIN

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Feb. 24, 1966.

SN 240,880. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

IGRAN

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Feb. 23, 1966.

SN 240,881. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

ENAROL

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Feb. 23, 1966.

SN 240,882. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

GESINDOR

Owner of Reg. No. 786,999.
For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Feb. 23, 1966.

SN 240,883. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

OTEGIN

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Feb. 24, 1966.

SN 240,884. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

EMALDIN

For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Feb. 2, 1966.

SN 240,885. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

BLANKISOL

For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Feb. 23, 1966.

SN 240,886. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

GESAFLOC

Owner of Reg. Nos. 418,283, 719,834, and others.
For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Feb. 24, 1966.

SN 240,887. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

CONFORMAN

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Feb. 23, 1966.

SN 240,888. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

AGOLON

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Feb. 24, 1966.

SN 240,889. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

OFARIN

For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Feb. 2, 1966.

SN 240,890. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

LAWN-TOX

Owner of Reg. Nos. 261,556, 798,986, and others.
For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Feb. 23, 1966.

SN 240,891. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

GESALAC

Owner of Reg. Nos. 406,217, 727,862, and others.
For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Feb. 23, 1966.

SN 240,893. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

EVICT

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Feb. 23, 1966.

SN 240,894. General Aniline & Film Corporation, New York, N.Y. Filed Mar. 14, 1966.

GAFENOX

For Antioxidants.
First use Dec. 27, 1965.

SN 241,137. Merrill J. Foster, d.b.a. Marine Instrument Co., Fox River Grove, Ill. Filed Mar. 16, 1966.

SILC

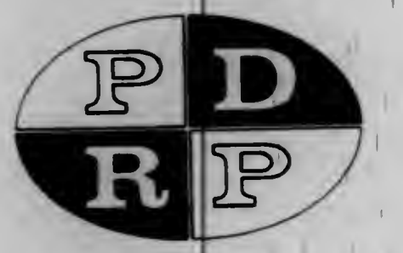
For Silicon Dioxide.
First use on or about Feb. 17, 1966.

SN 241,812. Sprayon Products, Inc., Bedford Heights, Ohio. Filed Mar. 24, 1966.

PDRP

For Penetrating, Moisture Removing and Rust Preventing Composition.
First use Feb. 14, 1966.

SN 241,813. Sprayon Products, Inc., Bedford Heights, Ohio. Filed Mar. 24, 1966.



For Penetrating, Moisture Removing and Rust Preventing Composition.
First use Feb. 14, 1966.

SN 248,396. King Kullen Grocery Co., Inc., Westbury, N.Y. Filed June 20, 1966.



Owner of Reg. Nos. 682,619, 802,003, and others.
For Borax and Water Softener for Laundry Use.
First use May 6, 1965.

Class 7 — Cordage

SN 239,104. Alamo Industries, Inc., New York, N.Y. Filed Feb. 18, 1966.

ALAMO

For Olefin Twine.
First use Nov. 12, 1965.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 222,301. South Dakota Fireworks, Inc., Sioux Falls, S. Dak. Filed June 29, 1965.

SHOT GUN

For Cylindrical Firecrackers.
First use Dec. 1, 1964.

SN 222,302. South Dakota Fireworks, Inc. Sioux Falls, S. Dak. Filed June 29, 1965.

RED CHERRY

For Cylindrical Firecrackers.
First use Dec. 1, 1964.

SN 222,407. Pachmayr Gun Works, Inc., Los Angeles, Calif. Filed June 30, 1965.

"PRESENTATION MODEL"

The word "Model" is disclaimed apart from the mark as shown.
For Firearm Recoil Pads.
First use Feb. 11, 1965.

Class 10 — Fertilizers

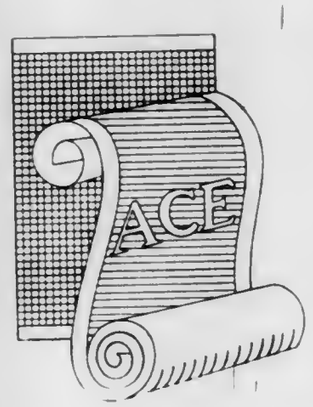
SN 239,652. Northrup, King & Co., Minneapolis, Minn. Filed Feb. 25, 1966.

NATURE'S RATIO

For Lawn Food.
First use Jan. 12, 1966.

Class 11 — Inks and Inking Materials

SN 239,047. J. M. Huber Corporation, Borger, Tex. Filed Feb. 17, 1966.



The drawing is lined for blue, but coloring is not essential except for contrast.
For Carbon Paper.
First use Apr. 25, 1960.

Class 12 — Construction Materials

SN 216,668. Concrete Masonry Research, Incorporated, Orange, Conn. Filed Apr. 16, 1965.

HydrEpoxy

For Resinous Epoxy Compound for Coating Articles and Resinous Epoxy Compounds Mixed With Mortars, Including Hydraulic Cements, and the Like.
First use Jan. 12, 1965, on resinous epoxy compounds.

SN 221,166. Textron Electronics Inc., Providence, R.I. Filed June 15, 1965.

GC-TELCO

For Antenna Masts—Namely, Telescoping Masts, Mast Tubing, and Lock Joint Masts.
First use August 1957; February 1930 as to "GC"; January 1953 as to "Telco."

SN 222,802. Amerada Glass Corp., Chicago, Ill. Filed July 7, 1965.

FROST-LITE

For Multiple Pane Glass Sheet Glazine Units for Buildings, Display Windows and the Like.
First use Apr. 14, 1965.

SN 225,278. Cerilean Products Company, South Bend, Ind. Filed Aug. 9, 1965.

Cerilean Marbil

The word "Marbil" is disclaimed apart from the mark as shown.
For Synthetic Marble Slabs.
First use Oct. 1, 1963.

SN 227,762. Johns-Manville Corporation, New York, N.Y. Filed Sept. 14, 1965.

VITRO-FLEX

For Fiber Glass Mats.
First use Aug. 11, 1965.

SN 233,984. American Panel Products, Inc., Ypsilanti, Mich. Filed Dec. 6, 1965.



For Exterior and Interior Laminated Structural Panels for Use in Buildings.
First use May 1, 1965.

SN 235,141. United States Plywood Corporation, New York, N.Y. Filed Dec. 22, 1965.

NOVOSHELF

Owner of Reg. Nos. 542,445, 572,330, 802,103 and others.
For Lumber and Wood Products Comprising Wood Particles and Wood Fibers in the Form of a Board or Shelf Having a Metal Hanger Bar.
First use Dec. 6, 1965.

SN 235,799. Sakrete, Inc., Cincinnati, Ohio. Filed Jan. 4, 1966.



The mark is black in the areas so shown and is lined for yellow in the areas indicated. In essence the mark comprises a geometric pattern dominated by a central diamond and including parallel horizontal lines above and below the diamond.
Owner of Reg. No. 349,905.
For Building and Construction Materials—Namely, Mixtures of Sand and Aggregate, Cement and Sand, Cement, Sand and Mortar, Asphalt and Aggregate, Liquid Blacktop Surface Sealer and Mixtures of Plaster and Aggregate.
First use July 14, 1936.

SN 235,821. Continental Chemical Corporation, Bethesda, Md. Filed Jan. 4, 1966.

STEP-ONS

For Stair Carpet Nosings and Stair Treads.
First use Jan. 3, 1966.

SN 238,075. General Refractories Company, Philadelphia, Pa. Filed Feb. 4, 1966.

BRIK-CAST

Owner of Reg. No. 690,070.
For Refractory Castable.
First use at least as early as 1956.

SN 238,244. E. J. Lavino and Company, Philadelphia, Pa. Filed Feb. 7, 1966.

RAMSTAR

For Refractory Ramming Mix.
First use Jan. 20, 1966.

SN 238,245. E. J. Lavino and Company, Philadelphia, Pa. Filed Feb. 7, 1966.

LAVSTAR

For Refractory Shapes.
First use Jan. 20, 1966.

SN 238,246. E. J. Lavino and Company, Philadelphia, Pa. Filed Feb. 7, 1966.

TEMSTAR

For Refractory Shapes.
First use Jan. 20, 1966.

SN 238,247. E. J. Lavino and Company, Philadelphia, Pa. Filed Feb. 7, 1966.

TEMPREZ

For Refractory Shapes.
First use Jan. 20, 1966.

SN 238,248. E. J. Lavino and Company, Philadelphia, Pa. Filed Feb. 7, 1966.

PREREZ

For Refractory Shapes.
First use Jan. 20, 1966.

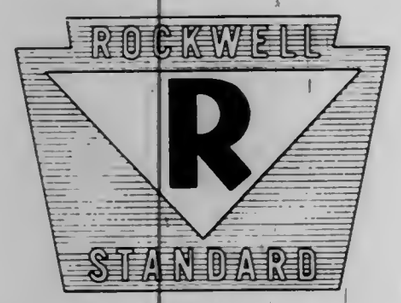
Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 221,167. Textron Electronics, Inc., Providence, R.I. Filed June 15, 1965.

GC-TELCO

For Television Hardware—Namely, Television Stand-Offs, Television Roof Mounts, Television Antenna Mounts of the Wall Type, Chimney Type, Vent Type, and Peak and Mast Types; and Television Installation Accessories, Namely, Strapping, Turnbuckles, Guy Rings, Mast Couplers, Guy Wire Clamp and Guy Ring Supports, Guy Wire Clamps, Guy Wire Thimbles, Mast Straps, Chimney Straps, Installation Screw Eyes, Screw Hooks, Screws, Bolts, and Nuts, Expansion Shields, Screw Anchors, Nail Drive-In Anchors, Standoff Mast Straps, U-Clamps and Bolts, Chimney Strap Clips, and Toothed Antenna Support Brackets.
First use August 1957; February 1930 as to "GC"; January 1953 as to "Telco."

SN 237,486. Rockwell-Standard Corporation, Pittsburgh, Pa. Filed Jan. 27, 1966.



The drawing is lined for blue. Owner of Reg. Nos. 695,203, 708,940, and others.
For Clip Type Fasteners.
First use at least in April 1958.

SN 238,507. Ethyl Corporation, New York, N.Y. Filed Feb. 10, 1966.

BELL:RING

For Plastic Pipe and Fittings.
First use Nov. 11, 1965.

SN 238,755. Linair Engineering Division, Inglewood, Calif. Filed Feb. 14, 1966.



For Industrial Pipe Couplings and Fittings.
First use Dec. 1, 1965.

SN 238,853. Frank Doerner & Sons Limited, Waterloo, Ontario, Canada. Filed Feb. 15, 1966.

NYLA-BUSH

Priority claimed under Sec. 44(d) on Canadian application filed Aug. 26, 1965, Reg. No. 144,111, dated Feb. 18, 1966.
For Chair Controls.

SN 238,854. Dynamic Valves, Inc., Mountain View, Calif. Filed Feb. 15, 1966.

DYVAL

For Hydraulic Valves.
First use Apr. 9, 1965.

SN 238,952. Hanszen Plastics Corporation, Dallas, Tex. Filed Feb. 16, 1966.

OFL

For Flake Lined Reinforced Plastic Pipe.
First use Jan. 1, 1963.

SN 239,031. Rudolph Erenhouse, d.b.a. Cosmos Product Company, New York, N.Y. Filed Feb. 17, 1966.

NORDISK

For Stainless Steel Hollow Ware.
First use Jan. 10, 1966.

SN 239,043. Joseph Gillott & Sons Limited, Dudley, England. Filed Feb. 17, 1966.

SPRITE

Owner of British Reg. Nos. 880,698, dated June 12, 1965 and 881,156, dated June 24, 1965.
For Furniture Castors.

SN 239,070. National Fastener Corp., New York, N.Y. Filed Feb. 17, 1966.

NATIONAL

For Zippers.
First use Feb. 2, 1946.

SN 239,178. Tylok International, Inc., Euclid, Ohio. Filed Feb. 18, 1966.



Owner of Reg. No. 709,828.
For Couplings and Fittings for Tubing—Namely, Unions, Connectors, T's, Elbows and End Caps.
First use Oct. 1, 1965.

SN 244,771. Timber-Top, Inc., Freeport, N.Y. Filed May 2, 1966.

MS-SYNCLAMPS

Owner of Reg. No. 695,161.
For Fixture Clamps for Mounting Components of Instruments and Apparatus on a Supporting Surface.
First use Feb. 27, 1966.

SN 244,772. Timber-Top, Inc., Freeport, N.Y. Filed May 2, 1966.

MINI-SYNCLAMPS

Owner of Reg. No. 695,161.
For Fixture Clamps for Mounting Components of Instruments and Apparatus on a Supporting Surface.
First use Jan. 10, 1966.

SN 244,773. Timber-Top, Inc., Freeport, N.Y. Filed May 2, 1966.

MICRO-SYNCLAMPS

Owner of Reg. No. 695,161.
For Fixture Clamps for Mounting Components of Instruments and Apparatus on a Supporting Surface.
First use Dec. 17, 1960.

SN 244,774. Timber-Top, Inc., Freeport, N.Y. Filed May 2, 1966.

SUPER-SYNCLAMPS

Owner of Reg. No. 695,161.
For Fixture Clamps for Mounting Components of Instruments and Apparatus on a Supporting Surface.
First use Feb. 27, 1961.

SN 244,775. Timber-Top, Inc., Freeport, N.Y. Filed May 2, 1966.

REVER-SYNCLAMPS

Owner of Reg. No. 695,161.
For Fixture Clamps for Mounting Components of Instruments and Apparatus on a Supporting Surface.
First use Dec. 12, 1962.

SN 244,841. Samuel Moore and Company, Mantua, Ohio. Filed May 3, 1966.

REUSAFLEX

For Hose Fittings.
First use July 1964.

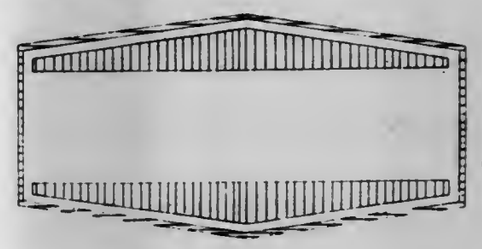
SN 248,653. Elastic Stop Nut Corporation of America, Union, N.J. Filed June 22, 1966.

ESLOK

Owner of Reg. Nos. 525,040, 746,173, and others.
For Self-Locking and Self-Sealing Screw Threaded Devices.
First use about Aug. 1, 1965.

Class 15—Oils and Greases

SN 227,745. The Atlantic Refining Company, Philadelphia, Pa. Filed Sept. 14, 1965.



The drawing is lined for red and blue.
For Motor Fuels and Lubricating Oils and Greases.
First use Aug. 27, 1965.

SN 247,857. Armstrong Bros. Tool Co., Chicago, Ill. Filed June 13, 1966.

ARMOIL

For Thread Cutting Oil.
First use July 1965.

Class 16—Protective and Decorative Coatings

SN 237,919. Barker Chemical Company, Chicago, Ill. Filed Feb. 3, 1966.

L-6000

For Thinner for Nitrocellulose Type Lacquer and Acrylic Type Lacquer.
First use June 28, 1964.

SN 241,672. Maas & Waldstein Co., Newark, N.J. Filed Mar. 23, 1966.



Applicant disclaims the phrase "Leadership in Fine Chemical Coatings Since 1876" apart from the mark as shown without waiver of any common law rights. The stippling on the drawing represents shading, and not color. Owner of Reg. No. 421,704.
For Coating Compositions in the Nature of Paints, Varnishes, Lacquers and Enamels.
First use 1904.

Class 17—Tobacco Products

SN 224,320. N. V. Sigarettenfabriek Ed. Laurens "Le Khedive," The Hague, Netherlands. Filed July 27, 1965.

PRIDE OF HOLLAND

No claim is made to the exclusive use of the word "Holland" apart from the mark as shown. Owner of Dutch Reg. No. 145,888, dated Sept. 18, 1962.
For Cigarettes, Cigars and Smoking Tobacco.
First use May 26, 1964; in commerce June 1, 1965.

SN 224,321. N. V. Sigarettenfabriek Ed. Laurens "Le Khedive," The Hague, Netherlands. Filed July 27, 1965.

PRINCE OF HOLLAND

No claim is made to the exclusive use of the word "Holland" apart from the mark as shown. Owner of Dutch Reg. No. 145,889, dated Sept. 18, 1962.
For Cigarettes, Cigars and Smoking Tobacco.
First use July 8, 1964; in commerce June 1, 1965.

SN 233,678. Carreras Limited, Basildon, Essex, England. Filed Dec. 1, 1965.



The drawing is lined for red and gold. Owner of British Reg. No. 825,617, dated Sept. 25, 1961 and U.S. Reg. Nos. 43,162 and 574,864.
For Cigarettes.

SN 234,019. Faber, Coe & Gregg, Inc., Newark, N.J. Filed Dec. 6, 1965.

SMS



For Cigars.
First use Nov. 3, 1965.
Subj. to Intf. with SN 239,945.

Class 18—Medicines and Pharmaceutical Preparations

SN 204,469. Guardian Chemical Corporation, Long Island City, N.Y. Filed Oct. 21, 1964.

GUARDETS

For Pharmaceutical Lozenges for Colds, Sore Throats, and the Like.
First use Sept. 30, 1964.

SN 228,111. Armour Pharmaceutical Company, Chicago, Ill. Filed Sept. 20, 1965.

AMORINE

For Anti-Inflammatory Preparation Containing Acetylsalicylic Acid.
First use Sept. 13, 1965.

SN 228,553. Merck & Company, Inc., d.b.a. Quinton Company, Rahway, N.J. Filed Sept. 24, 1965.

DITRON

For Oral Antiseptic for Use as a Mouthwash and for the Relief of Pain Associated With Sore Gums, Particularly for Denture Wearers.
First use Aug. 26, 1965.

SN 228,650. Cutter Laboratories, Inc., Berkeley, Calif. Filed Sept. 27, 1965.

STIP

Owner of Reg. Nos. 257,166 and 636,372.
For Blood Stop Larvicidal Powder for Veterinary Use.
First use Feb. 15, 1955.

SN 228,653. Cutter Laboratories, Inc., Berkeley, Calif. Filed Sept. 27, 1965.

R-GENE

Owner of Reg. No. 675,481.
For Intravenous Medication for Use in the Treatment of Ammonia Intoxication.
First use Jan. 3, 1957.

SN 228,654. Cutter Laboratories, Inc., Berkeley, Calif. Filed Sept. 27, 1965.

POISONOK

Owner of Reg. Nos. 432,782, 522,866, and 624,812.
For Extract of the Active Principal of Rhus Diversiloba Used To Enable the System To Build Resistance to the Rash Produced by Poison Oak or Ivy.
First use February 1924.

SN 228,655. Cutter Laboratories, Inc., Berkeley, Calif. Filed Sept. 27, 1965.

PLASMANATE

Owner of Reg. No. 665,653.
For Human Blood Fraction Used in Intravenous Therapy.
First use Sept. 24, 1956.

SN 229,711. Abbott Laboratories, North Chicago, Ill. Filed Oct. 11, 1965.

℞

For Pharmaceutical Preparations for Pediatric Use.
First use Nov. 17, 1964.

SN 237,005. Malingson Pharmaceuticals, Inc., Fairfax, Va. Filed Jan. 21, 1966.

TRUSTIN

For Analgesic Medicinal Preparations.
First use at least as early as Dec. 19, 1965.

SN 237,134. Johnson & Johnson, New Brunswick, N.J. Filed Jan. 24, 1966.

UMBILEX

For Antiseptic Preparation for Topical Use.
First use Nov. 5, 1965.

SN 237,310. Cilag-Chemie Aktiengesellschaft (Cilag-Chimie Societe Anonyme) (Cilag-Chemie Limited), Schaffhouse, Switzerland. Filed Jan. 26, 1966.

THALAMONAL

Owner of Swiss Reg. No. 192,948, dated July 4, 1962.
For Pharmaceutical Preparations.

SN 237,744. Ralston Purina Company, St. Louis, Mo. Filed Feb. 1, 1966.

NOVO-MAST

For Antibiotic Preparations for Bovine Mastitis.
First use Dec. 10, 1965.

SN 241,907. Dr. Le Gear, Inc., St. Louis, Mo. Filed Mar. 25, 1966.

BIG 10

For Veterinary Preparation for Bacterial Diarrhea, Bacterial Enteritis, and Pneumonia in Calves.
First use Feb. 21, 1966.

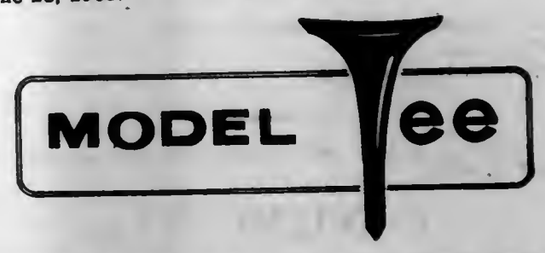
SN 249,465. A. H. Robins Company, Incorporated, Richmond, Va. Filed July 5, 1966.

DONNAMYCIN

For Pharmaceutical Preparation Used as an Antidiarrheal.
First use May 5, 1966.

Class 19—Vehicles

SN 221,816. Fore Motor Cart Company, Detroit, Mich. Filed June 23, 1965.



Applicant disclaims the word "Model" apart from the mark as shown.
For Electrically Powered Wheeled Carts.
First use Mar. 17, 1965.

SN 229,714. Aid Stores, Inc., Woodside, N.Y. Filed Oct. 11, 1965.



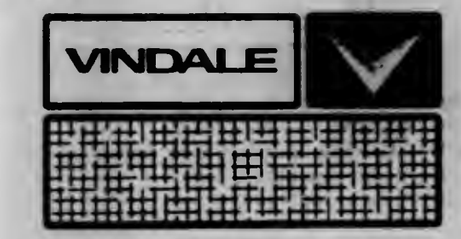
For Automotive Lined Brake Shoes.
First use January 1954.

SN 231,591. Outboard Marine Corporation, Waukegan, Ill. Filed Oct. 24, 1965.

CAPRICE

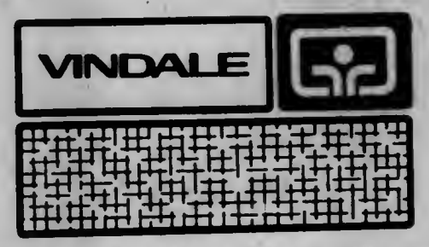
For Boats and Parts Therefor.
First use about May 1965.

SN 232,041. Vindale Corporation, Brookville, Ohio. Filed Nov. 2, 1965.



The drawing is lined for gold. Owner of Reg. No. 604,410.
For Mobile Homes.
First use Aug. 31, 1965.

SN 232,042. Vindale Corporation, Brookville, Ohio. Filed Nov. 2, 1965.



The drawing is lined for gold. Owner of Reg. No. 604,410.
For Mobile Homes.
First use Sept. 2, 1965.

SN 232,152. Rockwell-Standard Corporation, Pittsburgh, Pa. Filed Nov. 4, 1965.

FLEETMASTER

For Components for Vehicles—Namely, Trailer Axles and Leaf Springs.
First use June 16, 1965.

SN 232,271. Arnold, Schwinn & Co., Chicago, Ill. Filed Nov. 8, 1965.

CONTINENTAL

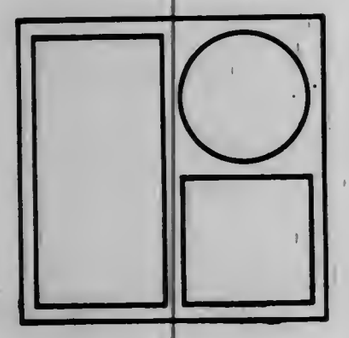
Owner of Reg. No. 414,174.
For Bicycles.
First use July 28, 1944.

SN 232,384. Western Mass. Associates, Inc., West Springfield, Mass. Filed Nov. 9, 1965.



For Bicycle Windshields.
First use Oct. 18, 1965.

SN 238,251. Litton Industries, Inc., Beverly Hills, Calif. Filed Feb. 7, 1966.



The mark consists of the letters "li" and design. Owner of Reg. No. 703,170.
For High Altitude Balloons and Ships, Including Underwater Vehicles Such as Submarines.
First use on or about May 21, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 209,552. King-Seeley Thermos Co., Ann Arbor, Mich., assignee of Structo Manufacturing Company, Freeport, Ill. Filed Jan. 7, 1965.



For Hood, Spit, and Electric Motor Sets for Grills.
First use May 1962.

SN 209,716. Omni Spectra, Inc., Detroit, Mich. Filed Jan. 11, 1965.

OMNI SPECTRA

For Electronic Equipment and Particularly for Wave Guide Systems and Components Therefor.
First use Dec. 28, 1964.

SN 212,384. Blonder-Tongue Laboratories, Inc., Newark, N.J. Filed Feb. 19, 1965.

BLONDER TONGUE

For Electrical Apparatus—Namely, Detectors, Amplifiers, Cathode-Ray Light Pick-Up and Display Apparatus Including Scanning and Related Circuits, Pre-Amplifier Boosters, Converters, Mixer Separators, and Weather-Proof and Radiation-Proof Housings for the Same; Power-Supply Systems; Antennas; Electrical Connectors, Plugs, Cables, Transmission Lines, Line and Cable Couplers, Outlets, Tap-Off Connectors, Mounting Plates, Control Boxes, Isolation and Outlet Networks, Line Splitters, Impedance-Matching Devices, Filters, Attenuators, Attenuation Equalizers, Duplexers, Directional Couplers, Wave Traps, Filters, and Relays.
First use in or about August 1950.

SN 215,077. In-Flight Devices, Inc., Chicago, Ill. Filed Mar. 26, 1965.

GUARD

For Automatic Airplane Landing Gear Control Device—Namely, an Electronic Combination Integrator and Control Device for Detecting and Correcting Unsafe Conditions.
First use June 4, 1964.

SN 217,317. Marshall Industries, San Marino, Calif. Filed Apr. 26, 1965.

NEOLYTHIC

For Ceramic Capacitors.
First use on or about Feb. 12, 1965.

SN 221,168. Textron Electronics Inc., Providence, R.I. Filed June 15, 1965.

GC-TELCO

For Television Antennas, Television Antenna Packs, Comprising the Antenna With Complete Installation Hardware, Television Line Connectors, Cords, and Plugs, Antenna Clips, and Lightning Arrestors.
First use August 1957; February 1930 as to "GC"; January 1953 as to "Telco."

SN 222,565. Fisher Radio Corporation, Long Island City, N.Y. Filed July 2, 1965.

TUNE-O-LITE

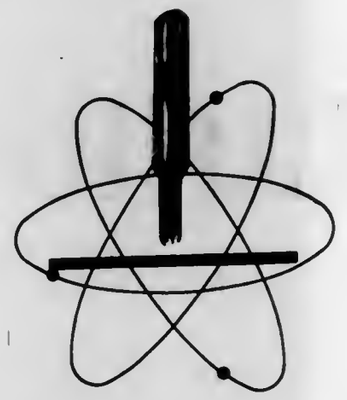
For Radio Receivers.
First use Mar. 8, 1965.

SN 223,508. BTU Engineering Corporation, Waltham, Mass. Filed July 16, 1965.



For Electric Furnaces.
First use June 22, 1965.

SN 224,524. Elox Corporation of Michigan, Troy, Mich. Filed July 29, 1965.



No claim is made to the representation of the discharge tube, apart from the mark as shown.
For Machine Tools and Power Supplies Used in Electrical Discharge or Spark Machining of Conductive Metal Workpieces.
First use on or about June 14, 1960.

SN 224,886. Republic Foil, Inc., Danbury, Conn. Filed Aug. 3, 1965.

REPUBLIC

For Aluminum Foil for Electrical and Electronics Applications.
First use Jan. 3, 1950.

SN 235,417. Mule Battery Manufacturing Company, Providence, R.I. Filed Dec. 28, 1965.



Owner of Reg. Nos. 181,596 and 359,758.
For Electrical Storage Batteries.
First use Oct. 23, 1965.

SN 236,016. Sidley Industries, Inc., Chicago, Ill. Filed Jan. 7, 1966.

MUSICRAFT

For Radios.
First use Nov. 8, 1965.

Class 22—Games, Toys, and Sporting Goods

SN 197,121. Head Ski Company, Inc., Dover, Del. Filed July 6, 1964.



For Snow Skis, Ski Poles, Ski Pole Rings, Ski Tip Protectors, Ski Edge Touch-Up Tools, Ski Surface Repair Kits, and Ski Base Treating Material in Liquid Form Packaged in an Aerosol Can.
First use January 1960.

SN 229,516. Fun Things, Inc., Culver City, Calif. Filed Oct. 7, 1965.

WEE PEOPLE

For Toy Figurines or Dolls.
First use May 12, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 213,968. General Motors Corporation, Detroit, Mich. Filed Mar. 12, 1965.



For Diesel Engines, Parts Thereof, and Accessories—Namely, Fans, Starting Motors, Oil, Water, Hydraulic, and Vacuum Pumps, and Power Takeoff Units Therefor.
First use Feb. 18, 1965; at least as early as November 1937 as to the words "Detroit Diesel."

SN 219,009. Lockwood Technical, Inc., Monterey, Calif. Filed May 17, 1965.

CANDLWHEEL

For Roller-Type Hot Melt Applicator for Applying Adhesive and the Like to a Work Surface.
First use on or about Sept. 2, 1964.

SN 219,901. Packaging Industries Limited, Inc., Montclair, N.J. Filed May 27, 1965.

SENTINEL

Owner of Reg. No. 572,922.
For Machines for Forming Heat Sealed Seams Between Sheets of Flexible or Inflexible Material by Means of the Application of Heat and Pressure; and for Machines for Forming Three Dimensional Containers From Sheet Material and for Filling the Same and for Sealing Lids to the Filled Containers; and for Machines for Conveying Packages and/or Packaging Equipment, Said Conveying Machines Being of Either Power Driven or Roller Type.
First use Nov. 26, 1951.

SN 220,253. The O.K. Tool Company, Inc., Milford, N.H. Filed June 2, 1965.

CHILCUT

For Apparatus for Cooling Machine Tools.
First use May 18, 1965.

SN 220,679. Benjamin Mills III, Needham Heights, Mass. Filed June 8, 1965.

INDICO

For Position Indicators for Rotating Stem Reversing Service Devices, Including Valves of the Butterfly Type Employed in Water Mains, Reel Operated Leveling Devices, Dampers, and the Like.
First use May 5, 1965.

SN 220,718. H. W. Ward & Co., Limited, Selly Oak, Birmingham, England. Filed June 8, 1965.

Ward

Owner of British Reg. No. 384,709, dated Apr. 5, 1938.
For Lathes.
First use Jan. 1, 1924; in commerce 1933.

SN 225,987. Minneapolis-Moline, Inc., Hopkins, Minn. Filed Aug. 18, 1965.

Hot Line

The drawing is lined for the color red.
For Complete Line of Parts and Accessories for Agricultural and Industrial Machinery, Implements and Accessories —Namely, Internal Combustion Engines, Tractors, Combines, Huskers, Snappers, Shellers, Picker-Shellers, Power Units, Balers, Plows, Mowers, Harrows, Choppers, Strippers, Windrowers, Planters, Drills, Cultivators, Spreaders, Loaders, Irrigation Units, Pulverizers, Rakes, Discers, Soil Conditioners, Blowers, Rotary Hoes, Middlebreakers, Tool Carriers, Fertilisers and Weeders.
First use April 1963; as early as August 1960 as to "Hot Line."

SN 226,607. Atlas Supply Company, Springfield, N.J. Filed Aug. 27, 1965.

ATLAS

Owner of Reg. Nos. 292,092, 729,390, and others.
For Air Powered Impact Wrench.
First use July 13, 1965.

SN 227,251. Clark Equipment Company, Buchanan, Mich. Filed Sept. 7, 1965.

CLARK

Owner of Reg. Nos. 165,644, 737,108, and others.
For Digging and Loading Vehicles.
First use June 10, 1965.

SN 228,187. Plasti-Shell Corporation, Philadelphia, Pa. Filed Sept. 20, 1965.

PLASTI-SHELL

For Mounting Shells for Printing Mats.
First use Nov. 20, 1964.

SN 228,298. Agatsuma Seiki Kabushiki Kaisha, Sakakimachi, Hanishina District, Nagano Prefecture, Japan. Filed Sept. 22, 1965.

AK

For Needle Plates, and Slide Plates for Use with Needle Plates, for Electric and Manually Operated Sewing Machines.
First use April 1962; in commerce April 1962.

SN 229,640. Ben I. Davis, d.b.a. Ranger Tool Company, Ellendale, Tenn. Filed Oct. 8, 1965.

RANGER IX

For Machine for Skinning or Peeling Linked Sausages, Frankfurters, Wieners, and the Like.
First use Aug. 10, 1965.

SN 230,797. Dana Corporation, Toledo, Ohio. Filed Oct. 21, 1965.

TRIPLEX PISTONS

No registration rights are claimed by the word "Piston" nor in the descriptive representation of the goods (pistons); applicant waives none of its common law rights in the mark shown or any feature thereof. Owner of Reg. No. 522,247.
For Pistons for Internal Combustion Engines.
First use on or about Oct. 4, 1965.

SN 230,843. Kimball Systems Inc., Belleville, N.J. Filed Oct. 21, 1965.

KIMPRESS

Owner of Reg. No. 624,923.
For Imprinting Machines for Tags, Tickets, Labels, and the Like.
First use not later than Nov. 30, 1964.

SN 231,107. Giesen & Forsthoff, Solingen, Germany. Filed Oct. 22, 1965.

TIMOR

Owner of German Reg. No. 260,535, dated June 25, 1920.
For Cutlery, Especially Razors, Pocket-Knives, Penknives, Scissors of All Kinds, Hair Thinning Devices, Hair Shapers, Hair Clippers, and Manicuring Instruments.
First use Feb. 19, 1921; in commerce Jan. 5, 1950.

SN 231,224. Ralphs Unified Limited, Leicester, England. Filed Oct. 22, 1965.

R UNIFIED

For Machinery for Manufacturing and Repairing Boots and Shoes, and Parts of Such Machinery.
First use June 1964; in commerce June 1964.

SN 231,852. Riggs & Lombard, Inc., Lowell, Mass. Filed Oct. 29, 1965.

DRAGNAUGHT

For Textile Machinery—Namely, Continuous Washers for Washing Elongated Webs of Material.
First use Sept. 27, 1965.

SN 231,904. Ted L. Ferrier, Jr., Dallas, Tex. Filed Nov. 1, 1965.

RAZOR-MATE

For Removable Protective Covers for Safety Razor Heads Having Blades Therein.
First use on or about June 18, 1964.

SN 232,877. Jackson Vibrators, Inc., Ludington, Mich. Filed Nov. 17, 1965.

BEACHLEACH

For Vehicles for Cleaning and Separating Refuse From the Soil.
First use Apr. 7, 1965.

SN 233,540. Union Carbide Corporation, New York, N.Y. Filed Nov. 29, 1965.

ZENDEL

For Agricultural Implements — Namely, Tractor-Drawn Planters.
First use July 15, 1965.

SN 233,858. Apsco Products, Inc., Rockford, Ill. Filed Dec. 3, 1965.

Atlas

For Pencil Sharpeners, and Parts Therefor.
First use Oct. 7, 1952.

SN 236,893. The Jacobs Manufacturing Company, West Hartford, Conn. Filed Jan. 20, 1966.

MULTI-CRAFT

For Chucks.
First use 1952.

SN 237,112. HPC, Inc., Chicago, Ill. Filed Jan. 24, 1966.

KEYRIFFIK

For Key Duplicating Machines.
First use June 11, 1965.

SN 237,772. Woodford Manufacturing Co., Des Moines, Iowa, Filed Feb. 1, 1966.

BARLIFT

For Dock Plates.
First use on or about May 20, 1964.

SN 237,773. Woodford Manufacturing Co., Des Moines, Iowa. Filed Feb. 1, 1966.

LIFTOMATIC

For Dock Plates.
First use on or about June 15, 1962.

SN 237,952. Fuel Injection Parts. Co., Inc., West Springfield, Mass. Filed Feb. 3, 1966.

FIPCO

For Fuel Injection Parts and Components for Fuel Injection Pumps.
First use Apr. 15, 1961.

SN 237,995. Mine and Smelter Supply Co., Denver, Colo. Filed Feb. 3, 1966.

HI-PROB

For Sizers.
First use Sept. 1, 1965.

SN 238,562. Reed Roller Bit Company, Houston, Tex. Filed Feb. 10, 1966.

ROTO-TORQ

For Torque Wrenches.
First use Dec. 6, 1944.

SN 238,803. The Union Fork and Hoe Company, Columbus, Ohio. Filed Feb. 14, 1966.

PUSH EZE

Owner of Reg. No. 805,536.
For Hand-Operated Lawn and Garden Tools—Namely, Rotary Lawn Edgers.
First use Jan. 28, 1966.

SN 238,809. Washington Forge, Incorporated, Englishtown, N.J. Filed Feb. 14, 1966.

WASHINGTON FORGE

For Kitchen, Table and Steak Knives.
First use June 1945.

SN 238,810. Washington Forge, Incorporated, Englishtown, N.J. Filed Feb. 14, 1966.



The mark consists of the letters "WF" and crest design.
For Kitchen and Table Cutlery and Stainless Steel Flatware.
First use June 1955.

SN 238,870. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co., Somerset, Pa. Filed Feb. 15, 1966.

DIAL-O-MATIC

For Spray Heads for Liquids.
First use June 6, 1961.

SN 238,874. The Huffman Manufacturing Company, Miamisburg, Ohio. Filed Feb. 15, 1966.

SHERATON

Owner of Reg. No. 694,506.
For Lawn Mowers and Garden Tillers, and Parts Therefor.
First use July 28, 1959.

SN 238,984. Tu-Bar Corporation, Cleveland, Ohio. Filed Feb. 16, 1966.



Owner of Reg. No. 735,625.
For Press Brake Type Sheet Metal Bending Machines.
First use on or about May 24, 1961.

SN 240,435. Hein-Werner Corporation, Waukesha, Wis. Filed Mar. 8, 1966.

HEIN-WERNER

Owner of Reg. No. 671,510.
For Earth Moving Machines.
First use Feb. 1, 1962.

SN 240,436. Hein-Werner Corporation, Waukesha, Wis. Filed Mar. 8, 1966.



No claim is made to the representation of the bucket apart from the mark as shown. Owner of Reg. No. 671,510.
For Earth Moving Machines.
First use Jan. 22, 1966; Feb. 1, 1962, as to "Hein-Werner."

SN 242,728. Hein-Werner Corporation, Waukesha, Wis. Filed Apr. 5, 1966.

Hein-Werner

Owner of Reg. No. 671,510.
For Earth Moving Machines.
First use Apr. 19, 1962; Feb. 1, 1962, as to "Hein-Werner."

SN 248,240. Mack Trucks, Inc., Allentown, Pa. Filed June 16, 1966.

MAXIDYNE

For Internal Combustion Engines.
First use Apr. 27, 1966.

SN 248,574. Harvey W. Bergander, d.b.a. Bergander Mfg. Co., Skokie, Ill. Filed June 21, 1966.

GULMITE

For Screw Drivers, Nut Drivers and Wrenches.
First use at least as early as 1934.

Class 26—Measuring and Scientific Appliances

SN 203,414. Meter-All Mfg. Co., Inc., Dallas, Tex. Filed Oct. 6, 1964.

VEND-TROL

Combination Device for Counting the Number of Coins Deposited in Coin Operated Devices and for Printing the Total Thereof.
First use Apr. 17, 1964.

SN 228,815. Eugene Ernst Products Co., Farmingdale, N.J. Filed Sept. 28, 1965.

EEP/

For Sight Flow Indicators, Gauge Glasses, Liquid Level Gauges, Water Gauges, and Components Thereof.
First use Mar. 5, 1962.

SN 230,605. Bausch & Lomb Incorporated, Rochester, N.Y. Filed Oct. 20, 1965.

BALREX

Owner of Reg. No. 575,207.
For Spectacles.
First use Oct. 1, 1965.

SN 231,435. Jean-Pierre Marchon, Versoix, Geneva, Switzerland. Filed Oct. 23, 1965.

MANORLINE

Owner of Swiss Reg. No. 210,521, dated Mar. 30, 1965.
For Eye Glasses, Including Protective Glasses, Safety Glasses, Sun and Anti-Glare Glasses, and Optical Frames.

SN 231,560. Formfoto Manufacturing Company, Villa Park, Ill. Filed Oct. 24, 1965.

fm

For Copy Making Apparatus, and Parts Thereof.
First use in or about July 1964.

SN 231,854. Sea & Ski Corporation, Millbrae, Calif. Filed Oct. 29, 1965.

GIRL CATCHERS

For Sunglasses.
First use Oct. 18, 1965.

SN 235,488. Birns & Sawyer Cine Equipment Co., Inc., Los Angeles, Calif. Filed Dec. 29, 1965.

AURIBELL FOCUSIGHT

For Movie Camera Accessory—Namely, a Mounted Optical Prism and Magnifier, Insertable Into the Film Gate of a Non-Reflex Movie Camera for Visual Checking of the Camera Lens Focus, Field of View, and Depth of Field.
First use Dec. 3, 1965.

SN 240,618. Ion Physics Corporation, Burlington, Mass. Filed Mar. 10, 1966.

IPC

The drawing is lined for the colors red and blue.
For Flash X-Ray Machines and Micro-Meteoroid Impact Simulators.
First use Feb. 18, 1966.

SN 240,619. Ion Physics Corporation, Burlington, Mass. Filed Mar. 10, 1966.

"implion"

For Radiation Detectors.
First use Feb. 11, 1966.

SN 242,689. William Wahl Corporation, Santa Monica, Calif. Filed Apr. 4, 1966.

HEAT SPY

For Temperature Indicating Devices That Show Temperatures by Changes of Appearance, and Infrared Thermometers.
First use on or about May 10, 1965.

Class 28—Jewelry and Precious-Metal Ware

SN 233,490. Gold-Master Corp., New York, N.Y. Filed Nov. 29, 1965.

GOLD MASTER

The word "Gold" is disclaimed apart from the mark as shown.
For Men's and Women's Rings.
First use May 27, 1964.

SN 233,491. Gold-Master Corp., New York, N.Y. Filed Nov. 29, 1965.

G.M.C. CREATIONS

The word "Creations" is disclaimed apart from the mark as shown.
For Men's and Women's Rings.
First use July 17, 1964.

Class 29—Brooms, Brushes, and Dusters

SN 227,790. United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. Filed Sept. 14, 1965.

UDS

For Wash Mitts, Polishing Bonnets, Chamois, Sponges, Polishing Disc Pads, and Bug Remover Pads.
First use Jan. 2, 1963.

Class 30—Crockery, Earthenware, and Porcelain

SN 230,664. Lenox, Incorporated, Trenton, N.J. Filed Oct. 20, 1965.

LENOX

Owner of Reg. Nos. 119,736, 769,522, and others.
For Vases, Pitchers, Urns, Pin Trays, Nut Bowls, Nut Dishes, Jars, Coasters, Tea Pots, Candy Bowls, Candy Dishes, Serving Bowls, Relish Dishes, Ornamental Trays, Bowls, and Dishes for Use as Centerpieces and the Like, Playing Card Boxes, and Boxes and Containers for Small Miscellaneous Items, All Formed of Ceramic Material.
First use 1900.

Class 31—Filters and Refrigerators

SN 220,881. Seitz-Asbest-Werke Theo & Geo Seitz Kommanditgesellschaft, Bad Kreuznach, Germany. Filed June 10, 1965.

ORIGINAL SWK WEST-GERMANY

The words "Original" and "West-Germany" are disclaimed as a part of the mark.
For Filtering Materials and Filter Sheets Made of Derivatives of Said Filtering Materials, Especially Raw and Refined Powders, Fibers and Granulates of Organic and Inorganic Origin and Mixtures of All Types of Said Substances, Mixtures of Said Raw Materials, and Mixtures Thereof With Coal, Earth, Sand and Diatomaceous Earth; Felt, Vegetable Fibers, Synthetic Fibers, Linen, Paper, and Cotton.
First use Mar. 2, 1965; in commerce Mar. 22, 1965.

SN 223,540. The Dole Valve Company, Morton Grove, Ill. Filed July 16, 1965.

PACER

For Ice Refrigerated Beverage Dispensing Units.
First use in or about mid-July 1961.

SN 223,541. The Dole Valve Company, Morton Grove, Ill. Filed July 16, 1965.

DIRECTOR

For Ice Refrigerated Beverage Dispensing Units.
First use in or about January 1960.

SN 223,542. The Dole Valve Company, Morton Grove, Ill. Filed July 16, 1965.

CITATION

For Ice Refrigerated Beverage Dispensing Units.
First use in or about mid-June 1958.

SN 229,382. UCB (Union Chimique-Chemische Bedrijven), Societe Anonyme, Saint-Gilles, near Brussels, Belgium. Filed Oct. 5, 1965.

UCEGO

Priority claimed under Sec. 44(d) on Belgian Reg. No. 104,888, dated Apr. 15, 1965.
For Horizontal Rotating Table Filter With Retractable Retention Band, and Means for Washing the Filter Cloth.

SN 230,247. M. R. Holmes, Jr., Billings, Mont. Filed Oct. 15, 1965.

TRI TRON

For Water Purification System for Removing Impurities by Means of an Electrical Pulse of Controlled Shape and Frequency.
First use Aug. 1, 1965.

SN 232,486. Universal Match Corporation, St. Louis, Mo. Filed Nov. 10, 1965.

Glasco

Owner of Reg. Nos. 306,811 and 596,407.
For Refrigerated vendors for Dispensing Individually Containerized Beverages.
First use Apr. 1, 1933.

Class 32—Furniture and Upholstery

SN 209,387. Baby Relax Ltd., Rainham, Essex, England. Filed Jan. 6, 1965.

BABY RELAX

For Nursery Furniture—Namely, Cribs, Chairs, Highchairs, and Swings for Children.
First use Jan. 8, 1964; in commerce Dec. 8, 1964.

SN 216,258. Delbert H. Browning, d.b.a. Town & Country Mart, Graham, N.C. Filed Apr. 12, 1965.

TOWNCO

For Novelty Type Furniture—Namely, Picture Frames, Letter Holders for Desks, Condiment Racks; and Novelty Furniture Containing a Design Appearance of Washboards—Namely, Magazine Racks, Book Ends, Planter Racks, Sewing Racks, Mail Racks, Pipe Racks, Hat Racks, Vanity Racks, and Tie Racks.
First use Apr. 25, 1964.

SN 227,982. Zeffyr Industries, Inc., Morrison, Ill. Filed Sept. 16, 1965.

ZEFFCO

For Upholstered Furniture.
First use May 13, 1965.

SN 233,200. Tri-State Bedding Company, Incorporated, Bowling Green, Ky. Filed Nov. 23, 1965.

LUXURY CUSHION

No claim is made to the word "Cushion" apart from the mark as shown.
For Mattresses and Box Springs.
First use Jan. 3, 1965.

SN 237,687. Forest Products Corporation, Morristown, Tenn. Filed Feb. 1, 1966.

LIBERTY HILL

For Furniture—Namely, Dining Room, Bedroom, and Occasional Groupings.
First use Jan. 6, 1966.

SN 237,688. Forest Products Corporation, Morristown, Tenn. Filed Feb. 1, 1966.

SANTIAGO

For Furniture—Namely, Dining Room, Bedroom, and Occasional Groupings.
First use Jan. 6, 1966.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 211,580. Robertshaw Controls Company, Richmond, Va. Filed Feb. 8, 1965.

SELECT-A-GAS

For Gas Oven Controls Having a Pilot Adjustor.
First use Nov. 6, 1964.

SN 216,956. The International Boiler Works Co., East Stroudsburg, Pa. Filed Apr. 20, 1965.

CASCADE CONVERTOR

The word "Convertor" is disclaimed apart from the mark as shown.
For Convertor or Exchanger to Transform Steam to High Temperature Water, and to Increase Temperature of Returned Water.
First use Dec. 28, 1964.

SN 221,255. E. Sam Dick Company, Inc., Seattle, Wash. Filed June 16, 1965.

VAPORAIRE

For Liquefied Petroleum Gas Standby Plant.
First use January 1965.

SN 223,207. Allied Thermal Corporation, New Britain, Conn. Filed July 13, 1965.

VECTROL

For Mechanical Air Deflectors for Air Conduits of Air Distribution Systems.
First use at least as early as 1955.

SN 226,882. American Hoist & Derrick Company, St. Paul, Minn. Filed Sept. 1, 1965.

H&B

For Pre-Fabricated Asphalt Batching Plant.
First use Jan. 15, 1943.

SN 227,771. Pall Corporation, Glen Cove, N.Y. Filed Sept. 14, 1965.

CORRU-TUBE

For Plate Type Counter-Flow Heat Exchanger, Used to Exchange Heat Between Two Fluids.
First use February 1965.

SN 233,463. Continental Manufacturing Company, Baltimore, Md. Filed Nov. 29, 1965.

TANDEM-TEMP

For Oil and Gas Residential and Commercial Boilers.
First use Aug. 24, 1965.

SN 233,588. Robert Evans Company, Inc., Jacksonville, Fla. Filed Nov. 30, 1965.

CANAVERAL

For Portable Kerosene Heating and Cooking Stoves, and Components Thereof.
First use Aug. 23, 1963.

SN 236,540. Tescom Corporation, Minneapolis, Minn. Filed Jan. 17, 1966.

BIG 98

For Torch Outfits for Heating, Brazing, Cutting, Welding, and Soldering, Each Outfit Including a Torch Body, Cutting and Welding Tips, Pressure Regulators, Hose, Goggles, and Torch Lighter Sold as a Unit.
First use in or about January 1959.

SN 236,544. Tescom Corporation, Minneapolis, Minn. Filed Jan. 17, 1966.

BIG 98A

For Torch Outfits for Heating, Brazing, Cutting, Welding, and Soldering, Each Outfit Including a Torch Body, Cutting and Welding Tips, Pressure Regulators, Hose, Goggles, and Torch Lighter Sold as a Unit.
First use in or about May 1963.

SN 239,058. Luxaire, Inc., Elyria, Ohio. Filed Feb. 17, 1966.

SLIM-PAC

For Air Conditioning Equipment for Heating and/or Cooling.
First use on or about Apr. 14, 1965.

SN 239,382. The Coleman Company, Inc., Wichita, Kans. Filed Feb. 23, 1966.

SOLAR GUN

For Furnaces for Heating Mobile Homes.
First use in or before August 1965.

SN 239,384. The Coleman Company, Inc., Wichita, Kans. Filed Feb. 23, 1966.

SOLAR-PAL

For Wall Heaters for Mobile Homes.
First use in or before August 1965.

SN 239,385. The Coleman Company, Inc., Wichita, Kans. Filed Feb. 23, 1966.

STA LITE

For Pressurized Oil Burners for Mobile Home Furnaces.
First use in or before July 1964.

SN 240,563. Williams Furnace Company, Buena Park, Calif. Filed Mar. 9, 1966.

WESTWOOD

For Gas Fired Wall Furnaces.
First use in or about June 1958.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 227,791. United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. Filed Sept. 14, 1965.

UDS

Owner of Reg. Nos. 768,348 and 772,186.
For Dual Purpose Patches, Vulcanizing Patches, Tire Patches, and Plugs.
First use Jan. 2, 1963.

Class 36 — Musical Instruments and Supplies

SN 218,006. Goodway Printing Company, Inc., Philadelphia, Pa. Filed May 4, 1965.

GP 360

For Tape Repeater Units.
First use Nov. 11, 1964.

SN 233,860. Aristo-Tone Electronics, Inc., New York, N.Y. Filed Dec. 3, 1965.

ARISTO

Owner of Reg. No. 777,275.
For Phonographs and Tape Recorders.
First use Nov. 12, 1965.

Class 37 — Paper and Stationery

SN 226,566. Paper Products Incorporated, Long Beach, Calif. Filed Aug. 26, 1965.

GOLD LINE

The drawing is lined to represent the color gold, but the color gold is disclaimed as an integral feature of the mark.
For Paper Napkins.
First use July 9, 1965.

SN 238,082. Hamilton Manufacturing Company, Inc., Richmond, Va. Filed Feb. 4, 1966.



The mark consists of a graphical representation of the English letter "H."
For Aluminum Foil Laminated to Paper and Paper Board, Paper Laminated to Paper and Paper Board, Paper Board Laminated to Paper Board, Saturated Paper, and Coated Paper.
First use 1953.

SN 247,435. Edwin Johanknecht, d.b.a. Color-Out Supply, Washington, D.C. Filed Jan. 28, 1966.

WITE-OUT

For Typing and Drawing Correction Fluid (Erasing Liquid).
First use Jan. 20, 1966.

Class 38 — Prints and Publications

SN 197,273. Electronic Treasure Chest Enterprises, Inc. Waukegan, Ill. Filed July 7, 1964.

ELECTRONIC
Treasure Chest

The word "Electronic" is disclaimed apart from the mark as shown.
For Printed Cards Which Can Be Used To Advertise Goods or Services of Others and Which Are Adapted for Use in a Scanning Device Which Indicates Card Owner Is Eligible for a Prize.
First use Nov. 7, 1961.

SN 197,723. Kleentear, Incorporated, New York, N.Y. Filed July 13, 1964.

KLEENTEAR

Owner of Reg. No. 664,210.
For Prepared Advertising, Sold as Such—Namely, Tear-Off Pad Slips or Coupons Stapled to Cardboard Advertisements, Used for Contest Blanks, Recipe Slips, Premium Offers, and "Do-It-Yourself" Products.
First use May 1, 1956.

SN 216,737. Colorado Ski Country U.S.A., Inc., Denver, Colo., by change of name from Ski Country USA, Inc., Denver, Colo. Filed Apr. 16, 1965.

SKI COUNTRY USA

For Prints and Publications, Including Brochures and Pamphlets Furnishing Travel Information and Information Relating to Location and Services of Ski Facilities.
First use in or about September 1963.

SN 220,878. Project Concern, Coronado, Calif. Filed June 10, 1965.

PROJECT CONCERN

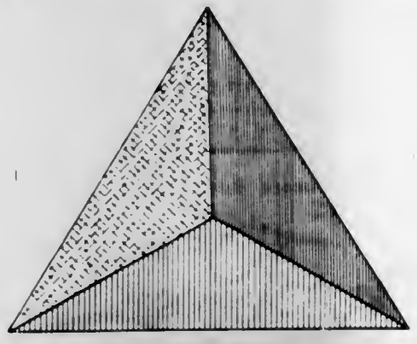
For Periodic Newsletters.
First use Aug. 26, 1961.

SN 223,869. Club Management, Inc., Alexandria, Va. Filed July 21, 1965.

JOPA

For Newsletter.
First use at least as early as Nov. 1, 1964.

SN 228,633. Cities Service Oil Company, Tulsa, Okla. Filed Sept. 27, 1965.



CITGO

The drawing is lined for orange and red.
For Magazines.
First use May 1965.

SN 228,788. The World Publishing Company, Cleveland, Ohio. Filed Sept. 27, 1965.



For Books Containing Printed Literary and Artistic Works.
First use May 26, 1965; 1937 as to the word "World."

SN 229,531. Arthur F. Lassagne, d.b.a. The Gold Bug Publishing Co., Walnut Creek, Calif. Filed Oct. 7, 1965.

THE GOLD BUG

For Periodical Newsletter.
First use Oct. 15, 1964.

SN 235,213. The National Research Bureau, Inc., Chicago, Ill. Filed Dec. 23, 1965.

SMILES

For Small-Sized Magazine of Wit and Humor Published Monthly as a Public Relations Medium.
First use Prior to September 1945.

SN 235,318. Moderne Card Co., Inc., d.b.a. Moderne Card Co., Chicago, Ill. Filed Dec. 27, 1965.



For Greeting Cards.
First use Nov. 15, 1965.

SN 235,446. Vitramon, Incorporated, Monroe, Conn. Filed Dec. 28, 1965.

VITRAMON NEWS

For House Organ Published From Time to Time and Distributed to Employees, Customers, Share Holders, Vendors, Sales Representatives, and the Like Associates of Applicant.
First use Nov. 3, 1965.

SN 236,123. Norcross, Inc., New York, N.Y. Filed Jan. 10, 1966.

LOOK-A-BOO

For Greeting Cards.
First use Sept. 18, 1964.

SN 236,127. Norcross, Inc., New York, N.Y. Filed Jan. 10, 1966.

WONDERMENT

For Greeting Cards.
First use Nov. 12, 1965.

SN 236,128. Norcross, Inc., New York, N.Y. Filed Jan. 10, 1966.

HATS OFF TO YOU

For Greeting Cards.
First use Nov. 24, 1965.

SN 236,131. Ob/Gyn Digest, Inc., Northfield, Ill. Filed Jan. 10, 1966.

OB/GYN DIGEST

The term "Digest," apart from the mark as shown, is disclaimed.
For Periodical Magazine.
First use Sept. 1, 1959.

SN 236,630. Outdoor American Corporation, Spokane, Wash. Filed Jan. 17, 1966.

SUN WORLD

For Magazine Devoted to Nudism.
First use Apr. 1, 1964.

SN 236,631. The Outdoorsman Publishing Co., Minneapolis, Minn. Filed Jan. 17, 1966.

THE OUTDOORSMAN

For Magazine.
First use Apr. 28, 1965.

SN 237,544. The Diners' Club, Inc., New York, N.Y. Filed Jan. 28, 1966.

SIGNATURE

For Magazine Published Monthly.
First use on or about Jan. 1, 1966.

SN 237,729. National Dairy Council, Chicago, Ill. Filed Feb. 1, 1966.

WEIGHTWATCHER

For Bimonthly Pamphlet.
First use Jan. 10, 1966.

SN 245,756. Publishers' Allied Services, Inc., Washington, D.C. Filed May 16, 1966.

the HIGH-RISER

Applicant disclaims the right to exclusive use of the words "Published Exclusively for the Modern Cliff Dweller," apart from the mark as shown.
For Magazine Specifically for the Occupants of High-Rise Apartments.
First use Jan. 28, 1966.

Class 39 — Clothing

SN 222,077. Stretchini, Inc., New York, N.Y. Filed June 25, 1965.

STRETCHINI MAKES STRETCH-RITHMETIC

Owner of Reg. Nos. 763,559 and 764,340.
For Sportswear—Namely, Tights, Shirts, Pants, Jackets, Sweaters, Skirts, and Jumpers.
First use May 5, 1965.

SN 223,699. Mister Cravate, Los Angeles, Calif. Filed July 19, 1965.

BRIAR

For Ties, Ascots and Handkerchiefs.
First use in or before November 1960.

SN 227,508. Key Work Clothes, Inc., Fort Scott, Kans. Filed Sept. 9, 1965.

KEY

Owner of Reg. No. 542,701.
For Work Clothes—Namely, Overalls, Pants, Shirts, Coveralls, Caps, Jeans, and Jackets.
First use 1908.

SN 229,221. Fancee Free Manufacturing Co. Inc., St. Louis, Mo. Filed Oct. 4, 1965.

Fancee Free
"Forget-Me-Not" Fashions

The word "Fashions" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 550,616 and 650,807.
For Ladies' Undergarments—Namely, Slips, Brassieres, Girdles, Garter Belts, Pants, Petticoats and Wraps; Shorty Pajamas, Peignoirs, Nightgowns, Robes, Sports Suits, Sports Blouses, Sports Skirts and Women's Shirts.
First use January 1948.

SN 230,282. The Pauker Corp., New York, N.Y. Filed Oct. 15, 1965.

BIG KAHUNA

For Boys' and Men's Bathing Apparel.
First use Sept. 21, 1965.

SN 231,277. Strathmore Shoe Co., Inc., Brockton, Mass. Filed Oct. 22, 1965.

Strathmore

For Men's Shoes.
First use about 1950.

SN 231,572. The Koolon Company, Baltimore, Md. Filed Oct. 24, 1965.

Koolon

For Men's Hats and Caps.
First use Oct. 8, 1965.

SN 231,612. Radley Furs, Inc., New York, N.Y. Filed Oct. 24, 1965.

GOLD CROWN MINK

The word "Mink" is disclaimed apart from the mark as shown.
For Fur Coats, Stoles, Scarves, Jackets, and Hats.
First use Mar. 15, 1965.

SN 232,645. Therese Ahrens, Inc., New York, N.Y. Filed Nov. 15, 1965.

THERESE AHRENS

The name "Therese Ahrens" is that of a living individual whose consent to registration has been made of record.
For Fashion Veils, Rain Headwear; Beachwear—Namely, Hats, and Tops Worn Over Bathing Suits; Neckwear—Namely, Scarves and Stoles.
First use September 1955 on Fashion Veils.

SN 232,684. Edmont, Inc., Coshocton, Ohio. Filed Nov. 15, 1965.

STD

For Gloves and Mittens.
First use During October 1963.

SN 232,685. Eisendrath Glove Co., Marinette, Wis. Filed Nov. 15, 1965.

eisendrath
AIR INSULATED SKI GLOVES

No claim is made to the wording "'Air Insulated' Ski Gloves" apart from the mark as shown without waiving any common law rights therein. Owner of Reg. No. 67,514.
For Ski Gloves.
First use Oct. 15, 1965.

SN 233,305. Autry-Baker Shoe Corp., Dallas, Tex. Filed Nov. 26, 1965.

QueenTeens

For Shoes.
First use on or about July 16, 1964.

SN 233,311. Belcrest Distributors Inc., Detroit, Mich. Filed Nov. 26, 1965.

coed Collegians

For Sweatshirts, Sweaters, Blouses, Parkas, and Shifts.
First use Aug. 20, 1965.

SN 233,482. Finbrooke Clothes, Inc., Baltimore, Md. Filed Nov. 29, 1965.

Finn-Brooke

For Clothing, i.e. Suits, Coats, and Sport Coats.
First use February 1965.

SN 233,503. Howard Stores Corporation, Brooklyn, N.Y. Filed Nov. 29, 1965.

a Lady Howard Creation

The words "A" and "Creation" are disclaimed apart from the mark as shown. Owner of Reg. No. 648,316.
For Ladies' Coats, Suits, Dresses; Ladies' Slacks, Pants, Bermuda Shorts, Swim Suits, Ski Suits, Sweaters, Blouses and Tailored Jackets, Blazer Jackets, Blouses, Pants Tops and Shells, Tapered Slacks, Slacks, Skirts, Sweaters, Hosiery, Lingerie; and Bras, Girdles, Slips, Daywear Lingerie, Nightgowns, Nightwear Lingerie, Robes, and Slippers.
First use Oct. 1, 1965.

SN 233,901. Hamilton Shoe Company, St. Louis, Mo. Filed Dec. 3, 1965.

THE SHOE WITH THE LIVELY LOOK

Applicant makes no claim to the word "Shoe" apart from the mark as shown.
For Women's Misses', and Girls' Shoes of Fabric, Leather, and Combinations Thereof.
First use Sept. 15, 1965.

SN 234,199. Hicks-Ponder Co., El Paso, Tex. Filed Dec. 8, 1965.

PEG-A-DILLY

For Men's and Boys' Clothing—Namely, Slacks and Trousers.
First use Nov. 3, 1965.

SN 234,985. Zimmon & Company, Inc., Belmont, Calif. Filed Dec. 20, 1965.

RAIN-BLOWS

Applicant disclaims the word "Rain" apart from the mark as shown.
For Kerchief for the Head and Hats.
First use Nov. 18, 1965.

SN 235,049. Champ Hats, Inc., New York, N.Y. Filed Dec. 17, 1965.

STRETCHLIN

For Men's and Boys' Hats and Caps.
First use Nov. 24, 1964.

SN 235,062. Casual Sportswear Co., Inc., New York, N.Y. Filed Dec. 20, 1965.



The words "Bell Bottoms" are disclaimed apart from the mark as shown.
For Slacks, Jeans, and Walk Shorts.
First use Oct. 21, 1965.

SN 235,063. Casual Sportswear Co., Inc., New York, N.Y. Filed Dec. 20, 1965.



For Slacks, Jeans, and Walk Shorts.
First use Oct. 21, 1965.

SN 235,064. Casual Sportswear Co., Inc., New York, N.Y. Filed Dec. 20, 1965.



The words "Tapered Jeans" are disclaimed apart from the mark as shown.
For Slacks, Jeans, and Walk Shorts.
First use Oct. 21, 1965.

SN 235,341. H. A. Satin & Co., Inc., Chicago, Ill. Filed Dec. 27, 1965.

Feminique

For Maternity Apparel—Namely, Dresses, Swim Suits, Sweaters, Skirts, Blouses, and Shifts.
First use Dec. 8, 1965.

SN 235,516. Mangel Stores Corporation, New York, N.Y. Filed Dec. 29, 1965.

MANCREST

For Men's Wear—Namely, Men's Handkerchiefs; Men's and Boys' Cotton Shirts and Work Clothes.
First use Feb. 17, 1965.

SN 235,539. Jack Verderame, d.b.a. Giant See-Thru Hat Co., San Mateo, Calif. Filed Dec. 29, 1965.

GIANT SEE-THRU

For Caricature Costumes—Namely, Oversized Hats With Depending False Face Pieces.
First use Dec. 13, 1965.

SN 235,559. The Fibre-Metal Products Company, Chester, Pa. Filed Dec. 30, 1965.

ScalpCap

For purposes of registration only and without prejudice to its common-law rights, applicant hereby disclaims exclusive rights to the word "Cap" apart from the mark as shown.
For Hats and Caps for Laceration Protection.
First use Dec. 2, 1965.

SN 236,200. Plymouth Shoe Company, Middleboro, Mass. Filed Jan. 11, 1966.

GYRO SHANK

Applicant disclaims the word "Shank" apart from the mark as shown.
For Men's Dress Shoes.
First use Mar. 22, 1965.

SN 236,201. Plymouth Shoe Company, Middleboro, Mass. Filed Jan. 11, 1966.

GYRO STEP

Applicant disclaims the word "Step" apart from the mark as shown.
For Men's Dress Shoes.
First use Mar. 22, 1965.

SN 236,202. Plymouth Shoe Company, Middleboro, Mass. Filed Jan. 11, 1966.

GYRO TRED

Applicant disclaims the word "Tred" apart from the mark as shown.
For Men's Dress Shoes.
First use Mar. 22, 1965.

SN 236,296. Standard Knitting Mills, Inc., Knoxville, Tenn. Filed Jan. 12, 1966.

Double Crown

For Knitted Sportswear for Men, Boys, and Juveniles—Namely, Sport Shirts, T-Shirts, Tennis Shirts, and Gym Shirts.
First use Nov. 30, 1965.

SN 236,346. C. W. Anderson Hosiery Company, Clinton, S.C. Filed Jan. 13, 1966.

SUMNER

Owner of Reg. No. 599,409.
For Ladies' Hosiery.
First use June 1, 1947.

SN 236,347. C. W. Anderson Hosiery Company, Clinton, S.C. Filed Jan. 13, 1966.

CHERRIE

Owner of Reg. No. 570,214.
For Ladies' Hosiery.
First use June 5, 1951.

SN 236,459. Ralph A. Burke, Oakland, Calif. Filed Jan. 14, 1966.

Counter Arch

Applicant disclaims the word "Arch" apart from the mark as shown.
For Shoes and Sandals Made of Leather, Rubber, Fabric, or a Combination of These Materials.
First use Nov. 22, 1965.

SN 236,492. Juniorite, Inc., New York, N.Y. Filed Jan. 14, 1966.

J-PRESS

For Children's, Teens', and Ladies' Wearing Apparel—Namely, Dresses, Skirts, Slacks, Coordinates, and Blouses.
First use Dec. 10, 1965.

SN 236,738. Leslie Fay, Inc., New York, N.Y. Filed Jan. 18, 1966.

LUSTRECETTE

For Ladies' Dresses.
First use Oct. 22, 1965.

SN 236,832. Leslie Fay, Inc., New York, N.Y. Filed Jan. 19, 1966.

MIRACETTE

For Ladies' Dresses.
First use Oct. 22, 1965.

SN 236,862. El Greco Leather Products Co. Inc., New York, N.Y. Filed Jan. 5, 1966.

GREKORS

For Ladies' Shoes, Sandals and Thongs, etc.
First use September 1965.

SN 246,428. Wayne Knitting Mills, Humboldt, Tenn. Filed May 24, 1966.



For Knitted Socks With Soles for Indoor Wear.
First use Feb. 9, 1950.

SN 247,860. Melville Shoe Corporation, New York, N.Y. Filed June 13, 1966.

ROAST BEEF

For Men's and Women's Shoes.
First use June 10, 1966.

SN 249,093. Vanity Fair Mills, Inc., Reading, Pa. Filed June 27, 1966.

GIDDY UP

For Foundation Garments—Namely, Girdles.
First use June 9, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 239,542. Q.H.S. Inc., Ellenville, N.Y. Filed Feb. 24, 1966.

Q.H.S.

For Hair Rollers.
First use Jan. 4, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 233,575. Bellaine Fabrics, Inc., New York, N.Y. Filed Nov. 30, 1965.

BELLAINE

For Textile Fabrics Made Wholly or in Substantial Part of Wool.
First use May 2, 1949.

SN 234,191. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Dec. 8, 1965.

VISTRAM

Priority claimed under Sec. 44(d) on German application filed June 12, 1965; Reg. No. 814,454, dated Jan. 11, 1966.
For Fabrics Composed of Polyurethane Coated Textiles for Use in Making Clothing, Hats, Upholstery Lining Material, Handbags, and Other Fancy Goods.

SN 234,816. Glen Raven Knitting Mills, Inc., Glen Raven, N.C. Filed Dec. 17, 1965.

GLENCREPE

For Fabrics of Natural and Synthetic Fibers, and Combinations Thereof, for Use in Making Wearing Apparel.
First use Aug. 10, 1965.

SN 234,867. Ames Shower Curtain Co., Inc., New York, N.Y. Filed Dec. 20, 1965.

AMES

For Shower Curtains, Window Curtains, and Towels.
First use February 1949.

SN 235,238. J. P. Stevens & Co., Inc., New York, N.Y. Filed Dec. 23, 1965.

HAMPSHIRE

Owner of Reg. No. 412,612.
For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers, or of Blends of the Foregoing.
First use Dec. 6, 1932.

SN 235,567. Klopman Mills, Inc., Rockleigh, N.J. Filed Dec. 30, 1965.

CERTIFIED WHIPPED CREAM

No claim is made to the word "Certified" apart from the mark as shown. Owner of Reg. No. 740,695.
For Greige and Finished Fabrics in the Piece of All Types, for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Nov. 15, 1965.

SN 238,068. Fieldcrest Mills, Inc., Spray, N.C. Filed Feb. 4, 1966.

PORTEAU

For Textile Rugs and Carpeting.
First use Dec. 14, 1965.

SN 238,497. Cone Mills Corporation, Greensboro, N.C. Filed Feb. 10, 1966.

CONE PUFF

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers, or any Combination Thereof.
First use Nov. 5, 1963.

SN 238,511. Fieldcrest Mills, Inc., Spray, N.C. Filed Feb. 10, 1966.

l'eterneau

For Textile Rugs and Carpeting.
First use Dec. 21, 1965.

SN 238,596. Amphenol Corporation, Broadview, Ill. Filed Feb. 11, 1966.

BORGAZIA

Owner of Reg. Nos. 618,314 and 630,125.
For Pile Fabrics of Cotton, Wool, Synthetic Fibers, or Combinations of Either of Them.
First use Apr. 1, 1963.

SN 238,836. Cone Mills Corporation, Greensboro, N.C. Filed Feb. 15, 1966.

POLYWARD

For Textile Fabrics in the Piece To Be Used in the Manufacture of a Variety of Textile Products, Including Men's, Women's, and Children's Wearing Apparel.
First use Jan. 27, 1966.

SN 238,895. J. P. Stevens & Co., Inc., New York, N.Y. Filed Feb. 15, 1966.

HO-DADDY

For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers, or of Blends of the Foregoing.
First use Feb. 9, 1966.

SN 238,933. Deering Milliken, Inc., New York, N.Y. Filed Feb. 16, 1966.

RHYMETTE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Feb. 7, 1966.

SN 238,934. Deering Milliken, Inc., New York, N.Y. Filed Feb. 16, 1966.

SOCIALITE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Feb. 7, 1966.

SN 238,935. Deering Milliken, Inc., New York, N.Y. Filed Feb. 16, 1966.

LIBRETTO

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Feb. 7, 1966.

SN 238,936. Deering Milliken, Inc., New York, N.Y. Filed Feb. 16, 1966.

LEPRILLE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Feb. 7, 1966.

Class 43—Thread and Yarn

SN 204,506. Roddy Recreation Products, Inc., Gardena, Calif. Filed Oct. 21, 1964.

TRANSITE

For Sewing Thread.
First use Oct. 13, 1960.

SN 235,652. Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. Filed Jan. 3, 1966.

PINGOUIN CHASSEUR

Owner of French Reg. No. 8,611, dated Nov. 17, 1960 (Roubaix); Natl. Inst. No. 155,232; and U.S. Reg. Nos. 303,410, 303,413, and 587,357.
For Yarns and Threads Made of Wool, Cotton, Linen, Silk, Rayon, Hemp, Flax, and Synthetic and Artificial Fibers.

SN 235,654. Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. Filed Jan. 3, 1966.

MAITRE PINGOUIN

Owner of U.S. Reg. Nos. 303,410, 303,413, and 587,357; and French Reg. No. 8,726, dated Mar. 11, 1961 (Roubaix); Natl. Inst. No. 243,906.
For Yarns and Threads Made of Wool, Cotton, Linen, Silk, Rayon, Hemp, Flax, and Synthetic and Artificial Fibers.

SN 235,657. Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. Filed Jan. 3, 1966.

QUATRE PINGOUINS

Owner of U.S. Reg. Nos. 303,410, 303,413, and 587,357; and French Reg. No. 8,601, dated Nov. 17, 1960 (Roubaix); Natl. Inst. No. 157,606.
For Yarns and Threads Made of Wool, Cotton, Linen, Silk, Rayon, Hemp, Flax, and Synthetic and Artificial Fibers.

Class 44—Dental, Medical, and Surgical Appliances

SN 176,293. Electronic Medical Specialties Inc., Cleveland, Ohio. Filed Sept. 4, 1963.



The representation of the viewing screen is disclaimed apart from the mark as shown, but the applicant waives none of its common law rights therein.
For Medical and Dental Diagnostic and Monitoring Instruments and Equipment—Namely, Blood Pressure Detecting and Monitoring Apparatus, Pulse Detecting and Monitoring Apparatus, Plythysmographic Apparatus, Sphygmomanometric Apparatus, Oscillometric Apparatus, and Pulse Transducing and Palpating Apparatus.
First use Aug. 8, 1963.

SN 220,956. Richard W. Moran, d.b.a. Ramble Seat Sales Company, Los Angeles, Calif. Filed June 11, 1965.

RAMBLE-SEAT

For Single Passenger Electric Wheel Chairs.
First use August 1962.

SN 227,509. The S. E. Massengill Company, Bristol, Tenn. Filed Sept. 9, 1965.

MONITUBE

For Diagnostic Device—Namely, a Swab Containing a Diagnostic Reagent for Detecting the Presence of Vaginal Monilliasis.
First use Sept. 18, 1964.

SN 232,515. The Bates File Mfg. Co., Newington, Conn. Filed Nov. 12, 1965.

Shear Cut

For Manicure Articles—Namely, Nail Clippers.
First use on or before May 29, 1944.

Class 45—Soft Drinks and Carbonated Waters

SN 223,380. Best-Ever Beverage Corporation, Garden City, N.Y. Filed July 15, 1965.

COMPROMISE

For Carbonated Soft Drinks.
First use Apr. 15, 1965.

SN 228,320. Canada Dry Corporation, New York, N.Y. Filed Sept. 22, 1965.

Owner of Reg. Nos. 155,002, 777,103, and others.

For Carbonated Beverages Used as Soft Drinks and as Mixers.

First use January 1954; 1906 as to "Canada Dry"; 1906 as to the shield and crown design.

Class 46—Foods and Ingredients of Foods

SN 193,078. Condiments & Spices, Inc., Miami, Fla. Filed Apr. 21, 1964.

BIJOL

For Saffron, Paprika, Annatto, Annatto Powder, Anise, Cinnamon, Wild Marjoram, Clove, Cumin, Amaranth, Mustard, Laurel Leaves, Pepper, Spices in Natural State or Reduced to Powder, and Combinations of Spices for Flavoring and Seasoning Foods.

First use November 1942.

SN 199,195. Joseph Gangi & Sons, Inc., Lawrence, Mass. Filed Aug. 4, 1964.

FLAVOR-FRESH

For Fresh Fruits—Namely, Lemons, Oranges, Pears, Grapes, Grapefruit, Tangerines, Bananas, Tangelos and Tomatoes; Dry Nuts; Shredded Cabbage for Coleslaw; and Fresh Vegetables—Namely, Cabbage, Onions, Radishes, Celery, Spinach, Broccoli, Parsnips, Chicory, Lettuce, Beets, Beet Greens, and Peppers.

First use on or about Nov. 18, 1946.

SN 199,587. McDonald's Corporation (Delaware corporation), Chicago, Ill., by merger of and change of name from McDonald's Corporation (Illinois corporation), Chicago, Ill. Filed Aug. 10, 1964.

LOOK FOR THE GOLDEN ARCHES

Owner of Reg. No. 796,545.

For Cheeseburgers, Prepared Hot or Iced Coffee, Fish Sandwiches, French Fried Potatoes, Hamburgers, Milk, and Milkshakes.

First use on or about Jan. 1, 1962.

SN 208,467. Les Etablissements Edouard Materne, Jambes, Belgium. Filed Dec. 18, 1964.

Frima

For Frozen Fruits and Frozen Vegetables.

First use February 1953; in commerce February 1953.

SN 209,309. Samuel J. Saul, d.b.a. Magic Nut Kitchens, Los Angeles, Calif. Filed Jan. 4, 1965.

THE MAGIC NUT

Applicant disclaims the word "Nut" and the representation of nuts apart from the mark as shown. Owner of Reg. No. 391,874.

For Shelled Nuts; Chocolate Covered Nuts and Fruits; Sherry Walnuts; Cinnamon-Orange Almonds; Rum Pecans; Caramel Popcorn With Nuts; and Prepared Macaroni Shells.

First use Apr. 8, 1940.

SN 213,200. N.V. Biscuit- en Chocoladefabriek Victoria, Dordrecht, Netherlands. Filed Mar. 3, 1965.

DELMONICO

Owner of Dutch Reg. No. 151,912, dated May 4, 1964.

For Bakery Products—Namely, Biscuits, Cakes, and Wafers; Cocoa Powder; Confectionery—Namely, Chocolate Candy, Bonbons, and Liquorice Candy; Fruit Flavored Ices, and Edible Cups Made of Wafer Batter Therefor.

SN 214,082. Patrick Cudahy Inc., Cudahy, Wis. Filed Mar. 15, 1965.

LA FORTUNA

The Italian words "La Fortuna" can be translated as "luck" or "fortune."

For Dry Sausage—Namely, Salami.

First use in or about December 1926.

SN 214,369. Matthew R. Perkins, d.b.a. Perkins Pancake Houses, Cincinnati, Ohio. Filed Mar. 17, 1965.

PERKINS PANCAKE HOUSES

The words "Pancake Houses" are disclaimed apart from the mark as shown.

For Pancake Mix.

First use November 1959.

SN 216,208. J. Allen Smith & Company, Knoxville, Tenn. Filed Apr. 9, 1965.

WHITE LILY

The drawing is lined for the colors green and gold, and such colors are claimed.

For Wheat Flour, Plain and Self-Rising; Biscuit Mix; and Corn Bread Mix.

First use in or about the year 1888.

SN 216,598. Fairmont Foods Company, Omaha, Nebr., assignee of Johnson Nut Company, Hopkins, Minn. Filed Apr. 15, 1965.

CREST-PAC

For Nut Meats.

First use Feb. 9, 1939.

SN 217,199. Nalley's, Inc., Tacoma, Wash. Filed Apr. 23, 1965.

IXL

The drawing is lined for the color red. Owner of Reg. Nos. 259,805, 707,257, and others.

For Canned Foods—Namely, Tamales, Enchiladas, Ravioli, Mushroom Sauce, Chili Con Carne, Tamale Pies, Lasagne, Beans and Franks, Beef Stew, Corned Beef Hash, and Lima Beans and Ham.

First use Jan. 11, 1965; Apr. 1, 1895, as to the letters "IXL."

SN 220,947. Lamb-Weston, Inc., Portland, Oreg. Filed June 11, 1965.

Lamb's

Owner of Reg. No. 519,987.

For Frozen Fruits and Vegetables.

First use 1944.

SN 223,225. Fruitland Canning Association, Inc. Fruitland, Idaho. Filed July 13, 1965.

Idaho's Pride

Applicant disclaims the exclusive right to use the word "Idaho's" except in the association shown, without waiver of applicant's common law rights in the composite trademark. Owner of Reg. No. 314,003.

For Canned Fruits, and Canned Vegetables (Excluding Potatoes).

First use at least as early as the year 1951.

SN 228,842. Schwarz Services International Limited, Mount Vernon, N.Y. Filed Sept. 28, 1965.

Schwarz

For Constituents of Foods and Food Beverages, and Processing Aids Used Therewith—Namely, Enzymes, Yeast Cultures and Yeast Nutrients.

First use at least as early as July 1, 1947; at least as early as 1922 as to "Schwarz."

SN 229,384. Ward Foods, Inc., New York, N.Y. Filed Oct. 5, 1965.

POLKA DOT

For Bread and Cake.

First use July 15, 1946.

SN 229,601. Ward Foods, Inc., New York, N.Y. Filed Oct. 7, 1965.

BAMBY

For Bread and Cake.

First use Nov. 1, 1948.

SN 236,803. Chop Chop Corporation, Superior, Wis. Filed Jan. 19, 1966.



For Chicken, Shrimp, French Fries, Meatless Chow Mein, Chicken Chow Mein, Beef Chow Mein, Prepared Chow Mein Noodles, Fried Rice, Egg Rolls, Pasta, Chili, Oriental Ribs, Barbecue Sauce, Fruit Rolls, Soups, Clam Chowder, and Sukiyaki.

First use Nov. 1, 1965.

SN 238,396. Breddo-Food Products Corporation, Inc., Kansas City, Kans. Filed Feb. 9, 1966.

GMS-90

For Monoglyceride Product Which Functions as a Dough Conditioner and Freshness Retaining Agent for Yeast Raised Bakery Products.

First use Apr. 30, 1965.

SN 239,648. National Pectin Products Company, Chicago, Ill. Filed Feb. 25, 1966.

METER RiTE

For Food Stabilizers for Sherbets, Ices, Ice Cream, Ice Milk, Egg Nog and Milk Shakes.
First use Nov. 2, 1965.

SN 246,134. W. F. Cosart Packing Co., Exeter, Calif. Filed May 20, 1966.



For Fresh Grapes.
First use Aug. 1, 1925.

Class 47 — Wines

SN 188,029. Conte Don Ugo Ravizza, Milan, Italy. Filed Mar. 5, 1964.



MONSECCO

Priority claimed under Sec. 44(d) on Italian application filed Nov. 26, 1963; Reg. No. 164,125, dated Mar. 13, 1964.
For Wines.

SN 213,365. Schieffelin & Co., New York, N.Y. Filed Mar. 4, 1965.

RUINART PERE & FILS

For Champagne Wines.
First use Mar. 6, 1953.

Class 49 — Distilled Alcoholic Liquors

SN 196,177. Melchers Distilleries Limited, Montreal, Quebec, Canada. Filed June 22, 1964.

Melchers Anniversary

Owner of U.S. Reg. No. 748,264.
For Canadian Whisky.
First use Nov. 30, 1948; in commerce Oct. 28, 1963.

SN 218,868. Hijos de Agustin Blasques, Cadiz, Spain. Filed May 14, 1965.

BRANDY TRES MEDALLAS

The words "Tres Medallas" mean "three medals" in English. Applicant disclaims any exclusive rights in the word "Brandy" apart from the mark as shown. Owner of Spanish Reg. No. 181,186, dated Nov. 4, 1948.
For Brandy.

SN 245,128. MacDonald Greenless Limited, Edinburgh, Scotland. Filed May 9, 1966.

CLAYMORE

Owner of U.S. Reg. No. 304,748.
For Scotch Whisky.
First use 1879; in commerce Jan. 26, 1966.

Class 50 — Merchandise Not Otherwise Classified

SN 227,976. Tri-Par Sales Co., New York, N.Y. Filed Sept. 16, 1965.

SANTA TRIM

For Decorations for Trimming Christmas Trees.
First use Mar. 19, 1960.

SN 229,488. Coleman Company, Inc., Wichita, Kans., assignee of Boise Cascade Corporation, Boise, Idaho. Filed Oct. 7, 1965.

SUN RIVAL

For Canvas Tarps.
First use on or before Oct. 1, 1963.

SN 229,690. Sno Kist Tree Corporation, Cheboygan, Mich. Filed Oct. 8, 1965.

Sno Kist

Owner of Reg. No. 681,304.
For Flock for Christmas Trees and the Like.
First use May 7, 1965.

SN 239,862. American Velcro, Inc., Manchester, N.H. Filed Mar. 1, 1966.

VELCOIN

Owner of Reg. No. 672,573.
For Separable Fastening Device Consisting of Complemental Pieces of Pliant Material, Each Having Attached Thereto Elements of a Synthetic Material Which Adhere When Pressed Together, Said Device Used for Garment Closures, Fastening Objects on Walls or Display Boards, and for Other Purposes.
First use July 15, 1965.

SN 239,863. American Velcro, Inc., Manchester, N.H. Filed Mar. 1, 1966.

VELSTICK

Owner of Reg. No. 672,573.
For Separable Fastening Device, Sold in Varying Lengths, Consisting of a Rigid and/or Semi-Rigid Plastic Having Anchored Thereto One Element of a Fastening Material, the Other Element of Said Material Separably Attached Thereto, Said Device Used for Fastening Carpets to Floors, Aircraft Interiors and Seating, Door and Wall Panels, and for Other Purposes.
First use July 15, 1965.

SN 241,345. Jones Brothers Co., Barre, Vt. Filed Mar. 18, 1966.

GUARDIAN

For Gravestones and Memorials.
First use June 20, 1926.

Class 51 — Cosmetics and Toilet Preparations

SN 220,115. L'Oreal, Societe Anonyme, Paris, France. Filed June 1, 1965.

MALE TEAM

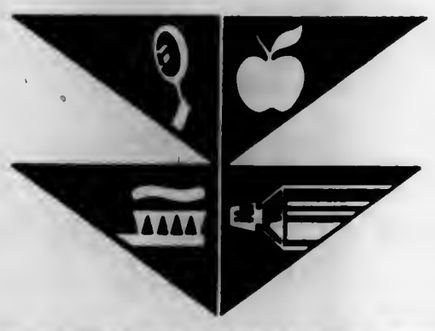
Priority claimed under Sec. 44(d) on French Reg. No. 526,796, dated Dec. 31, 1964 (Seine); Natl. Inst. No. 237,975. Applicant disclaims the word "Male" apart from the mark as shown.
For Men's Cologne and After Shave Lotion.

SN 220,183. Max Goldmann, d.b.a. U-X Manufacturing Co., Inc., New York, N.Y. Filed June 1, 1965.

U—X

For Preparation Used to Prepare the Hair and Beard for Shaving.
First use Dec. 6, 1937.

SN 220,273. Colgate-Palmolive Company, New York, N.Y. Filed June 3, 1965.



Applicant disclaims the representation of dentifrice apart from the mark as shown.
For Dentifrice.
First use Oct. 8, 1964.

SN 221,307. Hi-Score Toiletries, Inc., New York, N.Y. Filed June 16, 1965.

MOONSHINE

For Cologne, After-Shave Lotion, and Personal Deodorant.
First use Oct. 23, 1963.

SN 222,063. Prof. Sauerbruch-Praparate Bottger Kommanditgesellschaft, Berlin, Germany. Filed June 25, 1965.

ALGEMARINA

Owner of German Reg. No. 742,184, dated Sept. 7, 1960; and U.S. Reg. No. 787,911.
For Cosmetic Products—Namely, Preparations for Care of the Skin.

SN 222,616. Prof. Sauerbruch-Praparate Bottger Kommanditgesellschaft, Berlin, Germany. Filed July 2, 1965.



For Cosmetic Additives for Bath Water, Cosmetic Skin Cream, and Facials.
First use October 1960; in commerce June 1961.

SN 223,265. White Cross Stores, Inc., Monroeville, Pa. Filed July 13, 1965.

TAKE CARE!

For Personal Deodorants.
First use June 29, 1965.

SN 223,447. Parfums Schiaparelli, Inc., New York, N.Y. Filed July 15, 1965.

SANS SOUCI DE SCHIAPARELLI

The French words "Sans Souci" mean "care-free" or "easy-going." Owner of Reg. Nos. 404,736, 406,963, and others.
For Perfumes, Toilet Waters, Rouges, Lipsticks, Face Cream, Face Powders, and Talcum Powders.
First use Apr. 5, 1943.

SN 223,448. Parfums Schiaparelli, Inc., New York, N.Y. Filed July 15, 1965.

SLEEPING

Owner of Reg. No. 397,463.
For Perfumes, Toilet Waters, Rouge, Lipstick, Face Creams, and Powders.
First use July 21, 1938.

SN 223,668. Harbour Islanders, Ltd., New York, N.Y. Filed July 19, 1965.

QUEEN'S GARDEN

For Perfumes and After Shave Lotion.
First use Apr. 20, 1964.

SN 223,767. Alberto-Culver Company, Melrose Park, Ill. Filed July 20, 1965.

RIGHT TOUCH

For Hair Spray.
First use June 29, 1965.

SN 223,893. International Flavors & Fragrances Inc., New York, N.Y. Filed July 21, 1965.

ARROWHEAD

For Aromatic Chemicals, That Is Chemicals Having an Aroma, Natural and Artificial Perfume Materials, Mixtures of the Same, and Chemicals Employed for Masking Odors Combined With a Solid or Liquid Diluent and Used as Cosmetic and Toilet Preparations.
First use June 29, 1965.

SN 223,916. Sterling International Trading Co. Limited, Akron, Ohio. Filed July 21, 1965.

PRIVATE STOCK

For Men's After Shave and Cologne, Men's Pre-Electric Shave, and Men's Spray Deodorant.
First use June 9, 1965.

SN 228,159. Jakob Dreiding, Kilchberg, Switzerland. Filed Sept. 20, 1965.

MARAXAN

Owner of Swiss Reg. No. 192,219, dated May 22, 1962.
For Non-Medicated Creams, Lotions and Essences for Skin Treatment and Care; Perfumes; Powders for Face and Body; Cleansing Milk; Bath Salts and Bath Essences; Foam Baths; Massage Oils; Suntan Oils and Suntan Lotions; Shaving Preparations Not Being Soaps and After-Shave Lotions; Nail Polish and Enamels and Nail Polish and Enamel Removers; Nail Hardeners; Lipsticks; Hair Lotions and Hair Sprays; Toothpaste and Non-Medicated Mouth Gargles.

SN 228,180. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 20, 1965.

Diadème

The French word "Diadème" means "diadem."
For Perfume and Toilet Water.
First use Oct. 9, 1964.

SN 228,182. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 20, 1965.

BADINAGE

For Perfume and Toilet Water.
First use Nov. 6, 1964.

SN 228,183. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 20, 1965.

Après Le Bal

"Après Le Bal" in French means "after the ball."
For Perfume and Toilet Water.
First use Oct. 9, 1964.

SN 229,055. Briar Toiletries, Inc., Los Angeles, Calif. Filed Oct. 1, 1965.

H.M.S.

For Cologne and All Purpose Lotion.
First use on or before June 21, 1965.

SN 229,260. L. T. Products, Ltd., d.b.a. John Garton Distributors International, Los Angeles, Calif. Filed Oct. 4, 1965.

John Garton
hEGO

"John Garton" is the name of the president of the applicant corporation.
For Cologne Water.
First use on or about July 6, 1965.

SN 230,245. Golden Door Cosmetics, Inc., San Diego, Calif. Filed Oct. 15, 1965.



The drawing is lined for the color green, however, the color is not a feature of the mark.
For Bath Oil.
First use Dec. 10, 1964.
Subj. to Intf. with SN 234,112.

SN 234,112. Edmond S. Bordeaux, d.b.a. Elixirs of Light, San Diego, Calif. Filed Dec. 7, 1965.

ROYAL BATH OIL OF SUMERIA

Applicant disclaims "Bath Oil of" apart from the mark as shown.
For Bath Oil.
First use Dec. 15, 1964.
Subj. to Intf. with SN 230,245.

SN 235,434. Summit Laboratories, Inc., Indianapolis, Ind. Filed Dec. 28, 1965.

TICKY-STICKY

For Hair Preparation Applied to Hair and Skin With a Small Brush To Cause the Desired Amount of Hair To Stick to the Face in a Style.
First use Oct. 4, 1965.

SN 236,144. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics, Los Angeles Calif. Filed Jan. 10, 1966.

KEYNOTE

For Cosmetics—Namely, Creamy Make-Up.
First use Dec. 28, 1965.

SN 236,968. Chase Products Co., Broadview, Ill. Filed Jan. 21, 1966.

PRINCESS VAL

For Personal Deodorant.
First use Nov. 10, 1965.

SN 237,692. Germaine Monteil Cosmetiques Corp., New York, N.Y. Filed Feb. 1, 1966.

ARMADA

For After Shave Lotion, Cologne, and Personal Deodorant.
First use Jan. 24, 1966.

SN 237,719. Maradel Products, Inc., d.b.a. Tre-Jur, Farmingdale, N.Y. Filed Feb. 1, 1966.

SILKEN ROBE

For Bath Oil.
First use Jan. 1, 1966.

SN 239,886. Fearonce Beauty Products, Inc., Philadelphia, Pa. Filed Mar. 1, 1966.



Owner of Reg. Nos. 418,428 and 530,428.
For Dual Purpose Cleansing Cream, Oil Shampoo, Pressing Oils, Curling Wax, Olive Oil Hair Pomade Cream, Satin Glossine Hair Cream, Double Strength Working Oil for Massaging Scalp, Scalp Oil, Hair Pomades, Finger-Waving Fluid, Pine Oil, Tar Oil Shampoo, Medicated Hair Cream, Scalp Cream and Temple Edge Control.
First use on or about Mar. 1, 1937.

SN 240,381. Harry B. Morton, d.b.a. Parfums Dinard, New York, N.Y. Filed Feb. 24, 1966.

STRANGE MOODS

For Perfume, Cologne, Sachet, and Bath Oil.
First use March 1953.

SN 240,512. Maurice Farnel, d.b.a. Farnelle Distributor, New York, N.Y. Filed Mar. 9, 1966.

Farnelle

For Dusting Powder, Perfumes, Cologne, Toilet Water, and Bath Oil.
First use Apr. 6, 1965.

SN 240,647. Produits de Beaute—Parfums Jean d'Avese, Paris, France. Filed Mar. 10, 1966.



Owner of French Reg. No. 528,652, dated Mar. 1, 1965 (Seine); Natl. Inst. No. 242,046.
For Rouge, Skin Moistening Lotions, Skin Nourishing Lotions, Cream for the Care of the Nails, Tonic for Cleansing of the Skin, Hair Conditioning Cream, and Dentifrices.

SN 240,694. World Wide Perfumes, Inc., Montgomery, Ala. Filed Mar. 10, 1966.

SCREWDRIVER

For Cologne.
First use Feb. 22, 1965.

SN 240,713. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 11, 1966.

TASK

For Hand Lotion.
First use on or about Feb. 10, 1966.

SN 240,842. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Mar. 14, 1966.

BLUE WONDER

For Hand Lotion.
First use Jan. 13, 1966.

SN 240,843. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Mar. 14, 1966.

NEO DERMITOL

For Bath Moisturizer.
First use Jan. 13, 1966.

SN 243,750. Redken Laboratories, Inc., Van Nuys, Calif. Filed Apr. 19, 1966.

Bio-sprae

For Hair Spray.
First use Sept. 5, 1962.

Class 52 — Detergents and Soaps

SN 172,866. Lehn & Fink Products Corp., New York, N.Y., assignee of The Beacon Company, Cambridge, Mass. Filed July 12, 1963.

ALL-BRANDS

For Wax Remover.
First use December 1951.

SN 199,897. Fleet Wholesale Supply Co., Inc., Appleton, Wis. Filed Aug. 14, 1964.

MILKHOUSE

For Detergents and Cleaning Agents and Compounds for Use in Connection With Farm and Dairy Equipment.
First use June 24, 1964.

SN 206,941. W. R. Grace & Co., New York, N.Y. Filed Nov. 25, 1964.

WAX-AWAY

For Concentrated Liquid Detergent for Removing Polymeric Finishes and Waxes From Floors.
First use June 16, 1961.

SN 214,912. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 24, 1965.

PERKY PENGUIN

For Hair Shampoo.
First use Sept. 21, 1963.

SN 222,564. Epic Chemicals, Inc., Brooklyn, N.Y. Filed July 2, 1965.

GUARD-ALL

For Pine Odor Disinfectant for Use as a General Cleaning Preparation for Institutional and Industrial Use.
First use March 1951.

SN 224,244. Joseph F. Rosinsky, Jr., d.b.a. Lynx Products, Green Bay, Wis. Filed July 26, 1965.

LYNX



For Waterless Hand-Cleaners.
First use Jan. 5, 1965.

SN 224,283. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed July 26, 1965.

STRENGTH

For Wax and Synthetic Floor Polish Remover.
First use Sept. 4, 1964.

SN 239,556. Heinz Muller Touraine, d.b.a. Touraine Chemical Co., Long Island City, N.Y. Filed Feb. 24, 1966.

GLAMOL

For Concentrated Cleaning Preparations for Automotive Finishes, and Other Painted and Unpainted Surfaces.
First use Feb. 9, 1944.

SN 248,394. King Kullen Grocery Co., Inc., Westbury, N.Y. Filed June 20, 1966.



For Automatic Dishwasher Detergent and Controlled Suds Detergent.
First use Apr. 12, 1965.

SERVICE MARKS

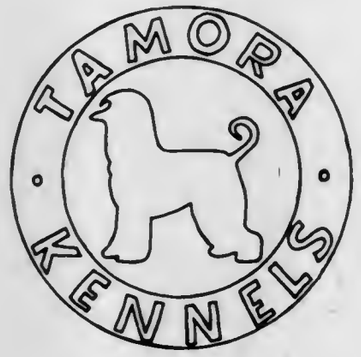
Class 100 — Miscellaneous

SN 214,841. George R. Colton, Tulsa, Okla. Filed Mar. 24, 1965.



Applicant disclaims the descriptive wording "World-Wide Petroleum Engineering Services."
For Petroleum Engineering Services Rendered to the Petroleum Industry Comprising Consultation in Drilling Operation at the Well Site, Furnishing Reports on Core Analysis and Structural Characteristics of the Ground Being Drilled; Recommendations as to the Proper Extraneous Lateral Support Necessary To Maintain the Drilled Hole.
First use Nov. 28, 1963.

SN 215,635. Hugh R. Morgan, d.b.a. Tamora Kennels, Spring Grove, Pa. Filed Apr. 2, 1965.



Applicant disclaims exclusive rights in the word "Kennels" and in the representation of an Afghan Hound, apart from the mark as shown.
For Kennel Services.
First use Feb. 15, 1963.

SN 221,502. Jolly Giant System, Inc., Scarsdale, N.Y. Filed June 18, 1965.



For Restaurant Services.
First use May 15, 1964.

SN 223,132. Mark Lipman Service, Inc., Memphis, Tenn. Filed July 12, 1965.

MARK LIPMAN SERVICE

No registration rights are claimed for the word "Service" apart from the mark as shown.
For Investigating, Watchman, and Guard Services.
First use 1936.

SN 223,746. Taco Bell, Palos Verdes Estates, Calif. Filed July 19, 1965.

TACO BELL

For Services Rendered in Training, Consulting and Advising Restaurant Operators.
First use on or about June 15, 1964.

SN 227,899. Weyerhaeuser Company, Tacoma, Wash. Filed Sept. 15, 1965.

WRH

Owner of Reg. No. 617,708.
For Provision of Interior and Exterior Color Co-Ordination on Homes, and for Advice and Consultation Services for the Construction and Repair of Homes.
First use January 1963.

Class 101 — Advertising and Business

SN 176,197. Robert Jonas, West Orange, N.J. Filed Sept. 3, 1963.



For Issuance and Redemption of Stamps Issued to Library Book Borrowers at Public and Private Libraries.
First use June 21, 1963.

SN 191,135. Couponing, Promotions & Sampling, Inc., New York, N.Y. Filed Apr. 15, 1964.

FOUR PLUS

For Services in Market Research, Sampling of Products of Others, Compilation of Data Resulting Therefrom, and Interpretation of Reports Thereon.
First use September 1963.

SN 196,121. The Curtis Publishing Company, Philadelphia, Pa. Filed June 22, 1964.

NEVER UNDERESTIMATE THE POWER OF A WOMAN

For Providing Space in Publications for the Advertising of Others.
First use March 1941.

SN 197,271. Electronic Treasure Chest Enterprises, Inc., Lake Bluff, Ill. Filed July 7, 1964.

ELECTRONIC
Treasure Chest

The word "Electronic" is disclaimed apart from the mark as shown.
For Promoting the Sale of Goods and Services of Others by Providing for Prospective Customers Cards Which Must Be Inserted in a Scanning Device on the Purchaser's Premises To Determine a Winning Card Holder.
First use Nov. 7, 1961.

SN 200,792. Star Advertising Co., Inc., Philadelphia, Pa. Filed Aug. 27, 1964.

ILLUMINAD

For Advertising Services Rendered by Means of Illuminated Signs Devised and Placed by Applicant.
First use on or about Apr. 15, 1964.

SN 216,728. Palisades Pageants, Inc., Palisade, N.J. Filed Apr. 16, 1965.

LITTLE MISS AMERICA

For Promoting the Sale of the Goods and Services of Others Through the Medium of Beauty Contests.
First use Aug. 30, 1963.

SN 216,738. Colorado Ski Country U.S.A. Inc., Denver, Colo., by change of name from Ski Country USA, Inc., Denver, Colo. Filed Apr. 16, 1965.

SKI COUNTRY USA

For Providing Advertising Services for Ski Facilities, Said Services Including Furnishing Information Relative to Transportation Facilities, to Ski Facilities, Housing and Food Facilities at the Ski Facilities, and Other Type Information.
First use in or about September 1963.

SN 221,312. Ann Thomas, New York, N.Y. Filed June 16, 1965.



For Secretarial Services.
First use May 1, 1960.

Class 102 — Insurance and Financial

SN 235,144. Well Fargo Bank, San Francisco, Calif. Filed Dec. 22, 1965.



Owner of Reg. Nos. 743,913, 791,983, and others.
For Banking and Trust Services.
First use Apr. 6, 1964.

Class 103 — Construction and Repair

SN 199,740. Halprin Supply Company, Los Angeles, Calif. Filed Aug. 12, 1964.



For Repair of Municipal and Industrial Fire Fighting Equipment.
First use Jan. 1, 1951.

SN 220,758. Terry F. Gayes, Dayton, Ohio. Filed June 9, 1965.

VAC-VAN

For Repair and Maintenance of Cleaning Equipment, and Replacement Parts Therefor.
First use May 1, 1965.

Class 105 — Transportation and Storage

SN 219,559. General Tours, Inc., New York, N.Y. Filed May 24, 1965.



The group of words "Golf Tours International" is disclaimed, but in no manner affecting applicant's rights therein under the common law. Owner of Reg. Nos. 727,584 and 732,271.
For Travel Agency Services—Namely, Arranging Tours From the United States to Foreign Countries.
First use Jan. 2, 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 239,628. Impresario Cultural Society, Lathrup Village, Mich. Filed Feb. 25, 1966.

IMPRESARIO CULTURAL SOCIETY

For Indicating Membership in the Applicant.
First use on or about Feb. 1, 1966.

SN 240,133. University of Dayton, Dayton, Ohio. Filed Mar. 3, 1966.



For Indicating Membership in the Student Body of the University of Dayton as an Upper Classman, and/or for Indicating Membership in the Alumni Body of the University of Dayton as One Who Previously Attained the Status of an Upper Classman in the Student Body Thereof.
First use in or about 1953.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

815,251. TODD, ETC. AND DESIGN. John H. Todd, d.b.a. Todd Hybrid Corn Company. SN 208,289. Pub. 7-5-66. Filed 12-16-64.

815,252. MCW AND DESIGN. Commercial Solvents Corporation. MULTIPLE CLASS (Classes 1, 6, and 16). SN 211,229. Pub. 7-5-66. Filed 2-3-65.

815,253. LABELAWN. Oscar Kern, d.b.a. Kern Enterprises. SN 223,999. Pub. 7-5-66. Filed 7-22-65.

815,254. GUSTOGRASS. Oscar Kern, d.b.a. Kern Enterprises. SN 224,000. Pub. 7-5-66. Filed 7-22-65.

815,255. SPLENDITURF. Oscar Kern, d.b.a. Kern Enterprises. SN 224,001. Pub. 7-5-66. Filed 7-22-65.

815,256. RENATA. American Renolit Corporation. SN 224,998. Pub. 7-5-66. Filed 8-5-65.

815,257. RENEER. American Renolit Corporation. SN 224,999. Pub. 7-5-66. Filed 8-5-65.

815,258. ELVAMIDE. E. I. du Pont de Nemours and Company. SN 228,896. Pub. 7-5-66. Filed 9-29-65.

815,259. HORSYLUX HX. S.p.A. Alfredo Motta. SN 230,707. Pub. 7-5-66. Filed 10-20-65.

815,260. STYROPOR. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 232,182. Pub. 7-5-66. Filed 11-5-65.

815,261. BEE (DESIGN). Bees Limited. SN 232,659. Pub. 7-5-66. Filed 11-15-65.

815,262. SP 33. Freeport Sulphur Company. SN 236,083. Pub. 7-5-66. Filed 1-10-66.

815,263. QUTRON. Beaunit Corporation. SN 238,386. Pub. 7-5-66. Filed 2-9-66.

Class 2 — Receptades

815,264. RAVEN AND DESIGN. Raven Industries, Inc. MULTIPLE CLASS (Classes 2, 12, 19, 21, 26, 34, and 50). SN 188,917. Pub. 7-5-66. Filed 3-17-64.

815,265. HC. House of Coins. SN 213,320. Pub. 7-5-66. Filed 3-4-65.

815,266. TUPPERWARE AND CIRCLE DESIGN. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 214,562. Pub. 7-5-66. Filed 3-19-65.

815,267. LEONARDO. Princess Products, Inc. SN 218,476. Pub. 7-5-66. Filed 5-10-65.

815,268. AXIOM. Axiom Products Co., Inc. MULTIPLE CLASS (Classes 2, 19, 23, 32, and 50). SN 221,562. Pub. 7-5-66. Filed 6-21-65.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

815,269. "CAT NAP-PUR" AND DESIGN. Barnes-Daugherty and Associates. SN 223,511. Pub. 7-5-66. Filed 7-16-65.

815,270. ETCO. Everglades Trading Company, Inc. SN 225,302. Pub. 7-5-66. Filed 8-9-65.

Class 4 — Abrasives and Polishing Materials

815,271. BARRAGE AND DESIGN. Lehn & Fink Products Corporation. MULTIPLE CLASS (Classes 4 and 52). SN 224,143. Pub. 7-5-66. Filed 7-26-65.

Class 5 — Adhesives

815,272. LUBEN. Avallone Corporation. MULTIPLE CLASS (Classes 5 and 12). SN 231,712. Pub. 7-5-66. Filed 10-28-65.

Class 6 — Chemicals and Chemical Compositions

815,252. (See Class 1 for this trademark.)

815,273. ANPROLENE. H. W. Andersen Products, Inc. SN 221,441. Pub. 7-5-66. Filed 6-18-65.

815,274. LIPAMIN. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 224,834. Pub. 7-5-66. Filed 8-3-65.

815,275. NUOSYN. Tenneco Chemicals, Inc. SN 227,735. Pub. 7-5-66. Filed 9-14-65.

815,276. VA 90. Thiokol Chemical Corporation. SN 227,892. Pub. 7-5-66. Filed 9-15-65.

Class 8 — Smokers' Articles, Not Including Tobacco Products

815,277. J2 AND DESIGN. Japan Gas Lighter Corp. SN 242,016. Pub. 7-5-66. Filed 3-28-66.

Class 10 — Fertilizers

815,278. WINTER SURVIVAL. The Borden Company. SN 229,192. Pub. 7-5-66. Filed 10-4-65.

815,279. DACTHAL PLUS THREE. Diamond Alkali Company. SN 240,594. Pub. 7-5-66. Filed 3-10-66.

Class 12 — Construction Materials

815,264. (See Class 2 for this trademark.)

815,272. (See Class 5 for this trademark.)

815,280. GREEN TRIANGLE (DESIGN). The Youngstown Sheet and Tube Company. MULTIPLE CLASS (Classes 12, 13, 15, 16, 19, 21, 23, 26, and 35). SN 205,221. Pub. 7-5-66. Filed 10-30-64.

815,281. DON'T MONKEY WITH CHEAP ROOFS AND DESIGN. Lone Star Roofing Co. SN 206,277. Pub. 7-5-66. Filed 11-16-64.

815,282. SWING SASH. Silver Line. SN 206,573. Pub. 7-5-66. Filed 11-19-64.

815,283. HARCO. Hardwood Corporation of America. SN 213,670. Pub. 7-5-66. Filed 3-9-65.

815,284. HARCO, ETC. AND DESIGN. Hardwood Corporation of America. SN 213,672. Pub. 7-5-66. Filed 3-9-65.

815,285. LOK-GARD. Coastal Research Corporation. SN 214,247. Pub. 7-5-66. Filed 3-16-65.

815,286. EVANS. Evans Products Company. SN 215,396. Pub. 7-5-66. Filed 3-31-65.

815,287. RED CARPET SHOPS MILK AND DESIGN. Electric Utilities Corporation. SN 216,491. Pub. 7-5-66. Filed 4-14-65.

815,288. DYNAFAB. Wm. W. Brockway. SN 216,785. Pub. 7-5-66. Filed 4-19-65.

815,289. FIBER-SHAKE. Supradur Manufacturing Corporation. SN 217,220. Pub. 7-5-66. Filed 4-23-65.

815,290. SPECTRA-LITE. The Burns & Russell Company of Baltimore City. SN 217,838. Pub. 7-5-66. Filed 5-3-65.

815,291. TEX-O-KOTE. Acorn Chemical Company. SN 219,386. Pub. 7-5-66. Filed 5-21-65.

815,292. NPD. National Paint Distributors, Inc. SN 220,314. Pub. 7-5-66. Filed 6-3-65.

815,293. TUBED SHEET. Reynolds Metals Company. SN 221,521. Pub. 7-5-66. Filed 6-18-65.

815,294. FOUR SEASONS AND DESIGN. Republic Powdered Metals, Inc. SN 223,259. Pub. 7-5-66. Filed 7-13-65.

815,295. WT (DESIGN). Weather-Tite Mfg. Corp. SN 226,809. Pub. 7-5-66. Filed 8-30-65.

815,296. STOCKLINE. Interoceanic Commodities Corporation. SN 227,502. Pub. 7-5-66. Filed 9-9-65.

815,297. THERM-SULATION. Scientific Insulation Co., Inc. SN 229,456. Pub. 7-5-66. Filed 10-6-65.

815,298. SHINGLE BLOCK AND DESIGN. Anthony Marino. SN 229,537. Pub. 7-5-66. Filed 10-7-65.

815,299. MOONSTONE. The Mosaic Tile Company. SN 230,414. Pub. 7-5-66. Filed 10-18-65.

815,300. HUSHLITE. Laminated Glass Corporation. SN 230,847. Pub. 7-5-66. Filed 10-21-65.

815,301. WITHDRAWN.

815,302. SUBDOO. Laminated Glass Corporation. SN 230,849. Pub. 7-5-66. Filed 10-21-65.

815,303. ARTISTOLITE. Laminated Glass Corporation. SN 230,850. Pub. 7-5-66. Filed 10-21-65.

815,304. VISTA-SAFE. Laminated Glass Corporation. SN 230,851. Pub. 7-5-66. Filed 10-21-65.

815,305. T-P. Taylor-Piedmont Co. SN 232,484. Pub. 7-5-66. Filed 11-10-65.

815,306. DYNA-QUARTZ. Johns-Manville Corporation. SN 234,037. Pub. 7-5-66. Filed 12-6-65.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

815,280. (See Class 12 for this trademark.)

815,307. M. Mink-Dayton, Inc. SN 204,181. Pub. 7-5-66. Filed 10-16-64.

815,308. MISCELLANEOUS DESIGN. The Cincinnati Time Recorder Company. MULTIPLE CLASS (Classes 13, 21, 23, 26, and 27). SN 210,419. Pub. 7-5-66. Filed 1-22-65.

815,309. TRIDENT IN CIRCLE (DESIGN). Merriman Bros., Inc. MULTIPLE CLASS (Classes 13, 14, 21, 22, and 23). SN 212,175. Pub. 7-5-66. Filed 2-17-65.

815,310. SV AND DESIGN. Stephen A. Young Corporation. SN 223,195. Pub. 7-5-66. Filed 7-12-65.

815,311. CHALLENGE AND DESIGN. Challenge Marine Hardware Company. SN 225,726. Pub. 7-5-66. Filed 8-16-65.

815,312. AIR-AQUA. Hinde Engineering Company. SN 228,527. Pub. 7-5-66. Filed 9-24-65.

815,313. SIX-WING. Hi-Shear Corporation. SN 232,555. Pub. 7-5-66. Filed 11-12-65.

815,314. SIXCES. Hi-Shear Corporation. SN 232,556. Pub. 7-5-66. Filed 11-12-65.

Class 14—Metals and Metal Castings and Forgings

815,309. (See Class 13 for this trademark.)

815,315. MAIRON. Toho Aen Kabushiki Kaisha, d.b.a. Toho Zinc Co. Ltd. SN 227,893. Pub. 7-5-66. Filed 9-15-65.

Class 15—Oils and Greases

815,280. (See Class 12 for this trademark.)

815,316. PEOPLES AND DESIGN. Energy Oil Company, Inc. SN 207,953. Pub. 7-5-66. Filed 12-11-64.

815,317. UFO. UFO Lubricants Inc. SN 240,360. Pub. 7-5-66. Filed 3-7-66.

Class 16—Protective and Decorative Coatings

815,252. (See Class 1 for this trademark.)

815,280. (See Class 12 for this trademark.)

815,318. PEDA-GARD. Jones-Blair Company, by change of name from Jones-Blair Paint Company, Inc. SN 175,288. Pub. 7-5-66. Filed 8-19-63.

815,319. GUARDSEAL. Chemical Concentrates Corporation, assignee of Baker Industries, Inc. SN 188,180. Pub. 7-5-66. Filed 3-9-64.

815,320. KOBA COAT AND DESIGN. Charles E. MacMillin. SN 214,134. Pub. 7-5-66. Filed 3-15-65.

815,321. POLY-LOCK. C. De Santis Paint Manufacturing Co. SN 214,251. Pub. 7-5-66. Filed 3-16-65.

815,322. SILKY AND DESIGN. West Paint & Varnish Company. SN 220,045. Pub. 7-5-66. Filed 5-28-65.

815,323. DYNACREX. W. R. Grace & Co. SN 221,042. Pub. 7-5-66. Filed 6-14-65.

815,324. QUAKER STATE Q METAL-GARD ETC. AND DESIGN. Quaker State Oil Refining Corporation. SN 221,203. Pub. 7-5-66. Filed 6-15-65.

815,325. THERMOFLEX. Rinshed-Mason Company. SN 221,408. Pub. 7-5-66. Filed 6-17-65.

815,326. STYLIZED L. Luminall Paints, Inc. SN 222,952. Pub. 7-5-66. Filed 7-8-65.

815,327. LUST-R-SEAL. Pur-O-Zone Chemical Co., Inc. SN 223,043. Pub. 7-5-66. Filed 7-9-65.

815,328. BOATLIFE AND DESIGN. Flo-Paint, Inc. SN 225,135. Pub. 7-5-66. Filed 8-6-65.

815,329. AQUA-PRIME. M. Buten & Sons, Inc. SN 225,538. Pub. 7-5-66. Filed 8-12-65.

815,330. SUPER SPRED LUSTRE. The Glidden Company. SN 225,555. Pub. 7-5-66. Filed 8-12-65.

815,331. PREFIX. Emcor, Inc. SN 225,950. Pub. 7-5-66. Filed 8-18-65.

815,332. JGY ETC. AND DESIGN. J. G. Yabnke Co. SN 228,427. Pub. 7-5-66. Filed 9-22-65.

815,333. LOCKS IN. Cook & Dunn Paint Corp. SN 229,336. Pub. 7-5-66. Filed 10-5-65.

815,334. KOROX. The Borden Company. SN 231,034. Pub. 7-5-66. Filed 10-22-65.

815,335. VINUX. International Paint Company, Inc. SN 231,136. Pub. 7-5-66. Filed 10-22-65.

815,336. PENCAPSULA. Texas Refinery Corp. SN 232,365. Pub. 7-5-66. Filed 11-8-65.

815,337. JAPALAC. The Glidden Company. SN 232,548. Pub. 7-5-66. Filed 11-12-65.

815,338. FIL-SEAL. The Valspar Corporation. SN 233,845. Pub. 7-5-66. Filed 12-2-65.

Class 17—Tobacco Products

815,339. B·A·T AND DESIGN. British-American Tobacco Company, Limited. SN 191,247. Pub. 7-5-66. Filed 4-16-64.

815,340. WEDGEWOOD. Ontario Tobacco Company Limited. SN 220,317. Pub. 7-5-66. Filed 6-3-65.

Class 18—Medicines and Pharmaceutical Preparations

815,341. HIRUDAL. Luitpold-Werk. SN 215,980. Pub. 7-5-66. Filed 4-7-65.

815,342. EXS. Harry Goldberg, d.b.a. The Right Aro Co. SN 224,307. Pub. 7-5-66. Filed 7-27-65.

815,343. LETTERMAN. Bristol-Myers Company. SN 224,711. Pub. 7-5-66. Filed 8-2-65.

815,344. ADHESI-KOTE. Lynn C. Osincup, d.b.a. Adhesi-Kote Company. SN 226,663. Pub. 7-5-66. Filed 8-27-65.

815,345. ALA-FLO. Segrest Feed & Seed Company, Inc. SN 227,963. Pub. 7-5-66. Filed 9-16-65.

815,346. EPSO-PINE SPA. Majestic Drug Co., Inc. SN 230,177. Pub. 7-5-66. Filed 10-14-65.

815,347. CHARM PEDERMA AND DESIGN. Wayne J. Saari, d.b.a. Charm Pederma Company. SN 232,725. Pub. 7-5-66. Filed 11-15-65.

815,348. SULFAZOBID. The Purdue Frederick Company. SN 234,299. Pub. 7-5-66. Filed 12-9-65.

815,349. GELSADOL. Societe Boulonnaise de Recherches et de Diffusion Pharmaceutiques "SOBORE." SN 237,258. Pub. 7-5-66. Filed 1-25-66.

815,350. PYLAN. Richardson-Merrell, Inc. SN 237,384. Pub. 7-5-66. Filed 1-26-66.

815,351. ASCOMIN. Richardson-Merrell, Inc. SN 237,385. Pub. 7-5-66. Filed 1-26-66.

815,352. STERI-FILM AND DESIGN. Spray Lin, Inc. SN 237,493. Pub. 7-5-66. Filed 1-27-66.

815,353. DESONIT. Geigy Chemical Corporation. SN 237,954. Pub. 7-5-66. Filed 2-3-66.

815,354. MOTOPOR. Geigy Chemical Corporation. SN 237,956. Pub. 7-5-66. Filed 2-3-66.

815,355. MADERAN. Geigy Chemical Corporation. SN 237,957. Pub. 7-5-66. Filed 2-3-66.

815,356. SYNCRO-PAR. G. D. Searle & Co. SN 238,453. Pub. 7-5-66. Filed 2-9-66.

815,357. DAVOXIN. The Kendall Company. SN 238,539. Pub. 7-5-66. Filed 2-10-66.

815,358. NETHAPRIN. Richardson-Merrell Inc. SN 238,669. Pub. 7-5-66. Filed 2-11-66.

815,359. URISPAS. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 238,721. Pub. 7-5-66. Filed 2-14-66.

815,360. DUOSTIM. Mead Johnson & Company. SN 238,757. Pub. 7-5-66. Filed 2-14-66.

815,361. SEFACIN. Schering Corporation. SN 238,792. Pub. 7-5-66. Filed 2-14-66.

815,362. COOL MOVE. Bristol-Myers Company. SN 238,921. Pub. 7-5-66. Filed 2-16-66.

815,363. SOMATO-STAPH. Philips Roxane, Inc. SN 239,308. Pub. 7-5-66. Filed 2-21-66.

815,364. NEO CORTA CLEAR. Dr. Le Gear, Inc. SN 239,777. Pub. 7-5-66. Filed 2-28-66.

Class 19—Vehicles

815,264. (See Class 2 for this trademark.)

815,268. (See Class 2 for this trademark.)

815,280. (See Class 12 for this trademark.)

815,365. CYPRESS GARDENS FLIVVER. Hains Industries, Inc. SN 213,560. Pub. 7-5-66. Filed 3-8-65.

815,366. SUBURBAN. Suntemp Industries, Inc. SN 216,885. Pub. 7-5-66. Filed 4-19-65.

815,367. ELEPHANT EAR. Cary Enterprises Inc. SN 223,774. Pub. 7-5-66. Filed 7-20-65.

Class 20—Linoleum and Oiled Cloth

815,368. TEXTISOM. La Manufacture de Feutres de Mouzon (Anciens Etablissements Roger Sommer & Ses Fils). SN 219,888. Pub. 7-5-66. Filed 5-27-65.

815,369. TEXTIFLEX. La Manufacture de Feutres de Mouzon (Anciens Etablissements Roger Sommer & Ses Fils). SN 219,890. Pub. 7-5-66. Filed 5-27-65.

Class 21—Electrical Apparatus, Machines, and Supplies

815,264. (See Class 2 for this trademark.)

815,280. (See Class 12 for this trademark.)

815,308. (See Class 13 for this trademark.)

815,309. (See Class 13 for this trademark.)

815,370. SPINNING. POWER AND GLOBES DESIGN. Globe-Union Inc. SN 181,884. Pub. 7-5-66. Filed 11-26-63.

815,371. TRENDICATOR. Ultronic Systems Corp. SN 193,425. Pub. 7-5-66. Filed 5-13-64.

815,372. M. Mink-Dayton, Inc. SN 204,182. Pub. 7-5-66. Filed 10-16-64.

815,373. H·S·I AND DESIGN. Haydon Switch & Instrument Inc. (California corporation), by change of name and asignment of Haydon Switch & Instrument, Inc. (Connecticut corporation). MULTIPLE CLASS (Classes 21, 26, and 27). SN 213,011. Pub. 7-5-66. Filed 3-1-65.

815,374. VALTRONIC. The Valtronic Corporation. SN 213,073. Pub. 7-5-66. Filed 3-1-65.

815,375. WIRELINE. Sage Laboratories, Inc. SN 213,480. Pub. 7-5-66. Filed 3-5-65.

815,376. "LITTLE CAESAR." International Telephone and Telegraph Corporation. SN 215,746. Pub. 7-5-66. Filed 4-5-65.

815,377. VOICE-PAK. Scott Aviation Corporation. SN 220,030. Pub. 7-5-66. Filed 5-28-65.

815,378. AERO GEO ASTRO. Keltec Industries, Inc. SN 220,303. Pub. 7-5-66. Filed 6-3-65.

815,379. L AND DESIGN. John E. Lindberg, Inc. SN 220,434. Pub. 7-5-66. Filed 6-7-65.

815,380. "ELECTRA." Dittmore-Freimuth Corp. SN 222,835. Pub. 7-5-66. Filed 7-7-65.

815,381. ROADRUNNER. Hugh R. Wahlin. SN 224,484. Pub. 7-5-66. Filed 7-28-65.

815,382. HIDE-A-VECTOR. Embassy Industries, Inc. SN 224,853. Pub. 7-5-66. Filed 8-3-65.

815,383. ISO-GRAD. Repco, Inc. SN 225,069. Pub. 7-5-66. Filed 8-5-65.

815,384. MOTIVATOR. Globe-Union Inc. SN 226,353. Pub. 7-5-66. Filed 8-24-65.

815,385. MOTOROTOR. Globe-Union Inc. SN 226,354. Pub. 7-5-66. Filed 8-24-65.

815,386. ROTOROTOR. Globe-Union Inc. SN 226,355. Pub. 7-5-66. Filed 8-24-65.

815,387. THERMO-COOL. Cable Electric Products Inc. SN 226,723. Pub. 7-5-66. Filed 8-30-65.

815,388. WESTERN-HOLLY. Wedgewood-Holly Appliance Co. MULTIPLE CLASS (Classes 21 and 34). SN 227,372. Pub. 7-5-66. Filed 9-7-65.

815,389. UNISTAT. Aquariums Incorporated. SN 229,329. Pub. 7-5-66. Filed 10-5-65.

815,390. INFORM-A-VISION. Spencer-Kennedy Laboratories, Inc. SN 229,460. Pub. 7-5-66. Filed 10-6-65.

815,391. SCORPION. Flo-Tronics, Inc., d.b.a. Northern Signal Co. SN 229,510. Pub. 7-5-66. Filed 10-7-65.

815,392. SSRM AND DESIGN. Sealectro Corporation. SN 229,683. Pub. 7-5-66. Filed 10-8-65.

815,393. SRM AND DESIGN. Sealectro Corporation. SN 229,685. Pub. 7-5-66. Filed 10-8-65.

815,394. EVEREADY ENERGIZER AND DESIGN. Union Carbide Corporation. SN 229,698. Pub. 7-5-66. Filed 10-8-65.

815,395. SUN-GLO AND DESIGN. The Goodyear Tire & Rubber Company. SN 229,796. Pub. 7-5-66. Filed 10-11-65.

815,396. TUFF-SKIN. Thomas Manufacturing Corporation. SN 229,889. Pub. 7-5-66. Filed 10-11-65.

815,397. PROFILE. The Tappan Company. SN 232,361. Pub. 7-5-66. Filed 11-8-65.

Class 22 — Games, Toys, and Sporting Goods

815,309. (See Class 13 for this trademark.)

815,398. JINGLE JUMP. Jak-Pak, Inc. SN 183,763. Pub. 11-17-64. Filed 12-30-63.

815,399. WEIRD-OHS AND DESIGN. Hawk Model Company, Inc. SN 194,487. Pub. 11-24-64. Filed 5-28-64.

815,400. ZA-ZOOOM. Louis Marx & Co. Inc. SN 194,813. Pub. 9-28-65. Filed 6-3-64.

815,401. AMERICAN RACER. American Hardware Supply Company. SN 209,976. Pub. 7-5-66. Filed 12-28-64.

815,402. LINDY LOONY REPULSIVE. Lindberg Products, Incorporated. SN 213,332. Pub. 7-5-66. Filed 3-4-65.

815,403. TIME-TELLER AND DESIGN. Nathan Polsky. SN 218,472. Pub. 7-5-66. Filed 5-10-65.

815,404. BRAD. Billiard Research and Development, Inc. SN 219,664. Pub. 7-5-66. Filed 5-25-65.

815,405. FLIP YOUR WIG. Milton Bradley Company. SN 223,280. Pub. 7-5-66. Filed 7-14-65.

815,406. BASH! Milton Bradley Company. SN 223,281. Pub. 7-5-66. Filed 7-14-65.

815,407. HIT THE BEACH. Milton Bradley Company. SN 223,282. Pub. 7-5-66. Filed 7-14-65.

815,408. MYSTERY DATE. Milton Bradley Company. SN 223,283. Pub. 7-5-66. Filed 7-14-65.

815,409. PATSY. Kiddie Brush & Toy Co. SN 223,683. Pub. 7-5-66. Filed 7-19-65.

815,410. VIOLET. Kiddie Brush & Toy Co. SN 223,684. Pub. 7-5-66. Filed 7-19-65.

815,411. TOOBER. Richard H. Coffman. SN 223,973. Pub. 7-5-66. Filed 7-22-65.

815,412. DI AND DESIGN. Durham Industries, Inc. SN 224,938. Pub. 7-5-66. Filed 8-4-65.

815,413. HERRING DODGER. Les Davis Fishing Tackle Co. SN 226,193. Pub. 7-5-66. Filed 8-19-65.

815,414. EPOLOC FACE. Wilson Sporting Goods Co. SN 226,195. Pub. 7-5-66. Filed 8-19-65.

815,415. TOP-A-GO-GO. Hassenfeld Bros., Inc. SN 229,805. Pub. 7-5-66. Filed 10-11-65.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

815,268. (See Class 2 for this trademark.)

815,280. (See Class 12 for this trademark.)

815,308. (See Class 13 for this trademark.)

815,309. (See Class 13 for this trademark.)

815,416. SORT-RITE. Sort-Rite Sales Corporation. MULTIPLE CLASS (Classes 23 and 31). SN 186,479. Pub. 7-5-66. Filed 2-11-64.

815,417. UNIAC. Pennsalt Chemicals Corporation. SN 206,959. Pub. 7-5-66. Filed 11-25-64.

815,418. PLATTALLOY. Plattsburg Foundry & Machine Co., Inc. SN 210,589. Pub. 7-5-66. Filed 1-25-65.

815,419. EHS AND DESIGN. Unarco Industries, Inc. SN 214,726. Pub. 7-5-66. Filed 3-22-65.

815,420. TRANSVACUMAT. Hamac-Hansella Aktiengesellschaft, assignee of Hamac-Hansella Maschinen GmbH. SN 215,074. Pub. 7-5-66. Filed 3-26-65.

815,421. REPRESENTATION OF A SAXOPHONE (DESIGN). R. H. Forschner Co., Inc. SN 215,204. Pub. 7-5-66. Filed 3-29-65.

815,422. BOREAMER. Madison Industries, Inc. SN 216,959. Pub. 7-5-66. Filed 4-20-65.

815,423. TRUBORE. Madison Industries, Inc. SN 216,961. Pub. 7-5-66. Filed 4-20-65.

815,424. SAFETYCHANGE. Maysteel Products Corp. SN 216,962. Pub. 7-5-66. Filed 4-20-65.

815,425. FLOTINK. Escher Wyss G.m.b.H. SN 217,434. Pub. 7-5-66. Filed 2-18-65.

815,426. PORTA-AIR "150" AND DESIGN. McDowell Tire Co. SN 217,511. Pub. 7-5-66. Filed 4-26-65.

815,427. VISCOUNT. Walker Manufacturing Company. SN 217,682. Pub. 7-5-66. Filed 4-29-65.

815,428. BEST. The Best Fertilizers Co. SN 217,702. Pub. 7-5-66. Filed 4-30-65.

815,429. C/MG AND DESIGN. Continental/Moss-Gordin Gin Company. SN 217,856. Pub. 7-5-66. Filed 5-3-65.

815,430. ADJUSTASTROKE. Goodman Bros. Manufacturing Co. SN 218,111. Pub. 7-5-66. Filed 5-5-65.

815,431. "SLUDGE-KING." The Laidlaw Company, Inc. SN 218,652. Pub. 7-5-66. Filed 5-12-65.

815,432. COMFORT. Comfort Equipment Company. SN 220,079. Pub. 7-5-66. Filed 6-1-65.

815,433. COAXICLAMP. AMP Incorporated. SN 220,259. Pub. 7-5-66. Filed 6-3-65.

815,434. HYDROCEL. Jacuzzi Bros., Incorporated. SN 221,274. Pub. 7-5-66. Filed 6-16-65.

815,435. HYDROTILE. Hydrotile Machinery Company. SN 221,932. Pub. 7-5-66. Filed 6-24-65.

815,436. FRL. Fabric Research Laboratories, Inc. SN 223,018. Pub. 7-5-66. Filed 7-9-65.

815,437. DYN-AU-TAPE. The Bullard Company. SN 224,715. Pub. 7-5-66. Filed 8-2-65.

815,438. TIGER. Otis Elevator Company. SN 224,875. Pub. 7-5-66. Filed 8-3-65.

815,439. CHAMPION. Cutting Room Appliances Corp. SN 225,293. Pub. 7-5-66. Filed 8-9-65.

815,440. LIQUID-SOLIDS BLENDER. The Patterson Kelley Co., Inc. SN 225,502. Pub. 7-5-66. Filed 8-11-65.

815,441. SOLIDS-FLOW. The Patterson Kelley Co., Inc. SN 225,503. Pub. 7-5-66. Filed 8-11-65.

815,442. SOLIDS PROCESSOR. The Patterson Kelley Co., Inc. SN 225,504. Pub. 7-5-66. Filed 8-11-65.

815,443. COBRA LOOP. United States Steel Corporation (Delaware corporation), by merger and change of name from United States Steel Corporation (New Jersey corporation). SN 229,610. Pub. 7-5-66. Filed 10-7-65.

815,444. VARI-PAK. Silver Creek Precision Corporation. SN 230,092. Pub. 7-5-66. Filed 10-13-65.

815,445. MACEYMATIC. Harris-Intertype Corporation. SN 230,155. Pub. 7-5-66. Filed 10-14-65.

815,446. MINI-DRIVE. Dyna Corporation. SN 230,368. Pub. 7-5-66. Filed 10-18-65.

815,447. CENTRIFIX ETC. AND DESIGN. Centrifix Corporation. SN 231,669. Pub. 7-5-66. Filed 10-27-65.

815,448. SKYWORKER. United States Air Conditioning Corporation. SN 231,966. Pub. 7-5-66. Filed 10-11-65.

815,449. SEG-GUARD. Clipper Manufacturing Company, Inc. SN 232,672. Pub. 7-5-66. Filed 11-15-65.

815,450. INSERT-A-JOINT. Clipper Manufacturing Company, Inc. SN 232,673. Pub. 7-5-66. Filed 11-15-65.

815,451. MONOBIND. Monarch Metal Products, Inc. SN 232,711. Pub. 7-5-66. Filed 11-15-65.

Class 24 — Laundry Appliances and Machines

815,452. HYDRO-AIR. Ametek, Inc. SN 199,165. Pub. 7-5-66. Filed 8-4-64.

Class 26 — Measuring and Scientific Appliances

815,264. (See Class 2 for this trademark.)

815,280. (See Class 12 for this trademark.)

815,308. (See Class 13 for this trademark.)

815,373. (See Class 21 for this trademark.)

815,453. EDISON. McGraw-Edison Company. SN 203,675. Pub. 7-5-66. Filed 10-9-64.

815,454. AUTOGRAMMER. Electro-Autosizing Machine Corporation. SN 203,911. Pub. 7-5-66. Filed 10-1-64.

815,455. KINETIC-CLAMP. Sigmamotor, Inc. SN 205,862. Pub. 7-5-66. Filed 11-9-64.

815,456. ROTHSCHILD AND DESIGN. Rothschild Messinstrumente. SN 207,232. Pub. 7-5-66. Filed 12-1-64.

815,457. MISCELLANEOUS DESIGN. Libbey-Owens-Ford Glass Company. SN 214,129. Pub. 7-5-66. Filed 3-15-65.

815,458. SP AND DESIGN. Sterling Plastics Company. MULTIPLE CLASS (Classes 26 and 37). SN 214,578. Pub. 7-5-66. Filed 3-19-65.

815,459. MOBILTEMP. Midwest Audio Corporation. SN 217,130. Pub. 7-5-66. Filed 4-22-65.

815,460. AERO GEO ASTRO. Keltec Industries, Inc. SN 220,304. Pub. 7-5-66. Filed 6-3-65.

815,461. IONOSTAT. United States Radium Corporation. SN 222,882. Pub. 7-5-66. Filed 7-7-65.

815,462. NEOPAN. Fuji Photo Film Co., Ltd. SN 227,672. Pub. 7-5-66. Filed 9-13-65.

815,463. MARK 900 AND DESIGN. Harvey E. Hanson Company. SN 229,090. Pub. 7-5-66. Filed 10-1-65.

815,464. VASCAR. Arthur N. Marshall. SN 235,004. Pub. 7-5-66. Filed 12-21-65.

Class 27 — Horological Instruments

815,308. (See Class 13 for this trademark.)

815,373. (See Class 21 for this trademark.)

Class 28 — Jewelry and Precious-Metal Ware

815,465. ASTRO-CLAD. Salvatore P. Iorio, Jr., d.b.a. Areo Jewelry Company. SN 230,395. Pub. 7-5-66. Filed 10-18-65.

815,466. NAJARDA. Najarda Corporation. SN 230,870. Pub. 7-5-66. Filed 10-21-65.

Class 29 — Brooms, Brushes, and Dusters

815,467. KILROY AND DESIGN. Kai Dyzmann. SN 202,275. Pub. 7-5-66. Filed 9-22-64.

815,468. MISCELLANEOUS DESIGN. National Work Clothes Rental. MULTIPLE CLASS (Classes 29, 39, and 42). SN 224,680. Pub. 7-5-66. Filed 7-30-65.

Class 31 — Filters and Refrigerators

815,416. (See Class 23 for this trademark.)

Class 32 — Furniture and Upholstery

815,268. (See Class 2 for this trademark.)

815,469. MISCELLANEOUS DESIGN. Libbey-Owens-Ford Glass Company. SN 214,130. Pub. 7-5-66. Filed 3-15-65.

815,470. KING-PIN. Beanstalk Shelving Limited. SN 216,780. Pub. 7-5-66. Filed 4-19-65.

815,471. STYLE-PAK. Display Workshop, Incorporated. SN 226,731. Pub. 7-5-66. Filed 8-30-65.

815,472. DE. Drexel Enterprises, Inc. SN 229,958. Pub. 7-5-66. Filed 10-12-65.

815,473. BRITE-LITE. Laminated Glass Corporation. SN 230,852. Pub. 7-5-66. Filed 10-21-65.

815,474. SUSPENSION 24. Webster Spring Co., Inc. SN 241,399. Pub. 7-5-66. Filed 3-18-66.

Class 33 — Glassware

815,475. A & W AND DESIGN. A & W Root Beer Co. SN 227,634. Pub. 7-5-66. Filed 9-13-65.

815,476. FAROY. Faroy, Inc. SN 229,779. Pub. 7-5-66. Filed 10-11-65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

815,264. (See Class 2 for this trademark.)

815,388. (See Class 21 for this trademark.)

815,477. AQUA-MIST THE ELECTRONIC HUMIDIFIER AND DESIGN. William E. Morrow, d.b.a. Aqua-Mist Co. SN 215,994. Pub. 7-5-66. Filed 4-7-65.

815,478. DRY-SMOKER. Michigan Oven Company, d.b.a. Drying Systems Company. SN 222,729. Pub. 7-5-66. Filed 7-6-65.

815,479. RADIANT-FLOW. Weldotron Corporation. SN 228,424. Pub. 7-5-66. Filed 9-22-65.

815,480. HYDRO-VENT. Dohrmann Co. SN 231,813. Pub. 7-5-66. Filed 10-29-65.

815,481. HUMIDRUM. Ebco Manufacturing Company. SN 232,120. Pub. 7-5-66. Filed 11-4-65.

815,482. TRI-TEMP. Hardwick Stove Company. SN 232,206. Pub. 7-5-66. Filed 11-5-65.

815,483. CHEVRON. Standard Oil Company of California. SN 232,245. Pub. 7-5-66. Filed 11-5-65.

815,484. PROFILE. The Tappan Company. SN 232,362. Pub. 7-5-66. Filed 11-8-65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

815,280. (See Class 12 for this trademark.)

815,485. SLIPTITE. Johns-Manville Corporation. SN 202,599. Pub. 7-5-66. Filed 9-24-64.

Class 36 — Musical Instruments and Supplies

815,486. SIDE MAN. The Wurlitzer Company. SN 214,811. Pub. 7-5-66. Filed 3-23-65.

815,487. MONUMENT AND DESIGN. Monument Record Corp. SN 219,045. Pub. 7-5-66. Filed 5-17-65.

Class 37 — Paper and Stationery

815,458. (See Class 26 for this trademark.)

815,488. AUDITOR'S. Lindy Pen Co., Inc. SN 92,474. Pub. 3–17–64. Filed 3–9–60.

815,489. WESCOSA. Taufek H. Ramsey, d.b.a. West Coast Sales. SN 193,043. Pub. 7–5–66. Filed 5–8–64.

815,490. AGENDA RENDEZ-VOUS AND DESIGN. Agendas Mignon S.A. SN 214,495. Pub. 7–5–66. Filed 3–19–65.

815,491. SPRED. Fort Howard Paper Company. SN 214,628. Pub. 7–5–66. Filed 3–22–65.

815,492. COLORLINE. Staver-Westport Incorporated. SN 215,457. Pub. 7–5–66. Filed 3–31–65.

815,493. ISC. Information Supplies Corporation, by change of name from Midwest Tabulating Card Producers, Inc. SN 218,459. Pub. 7–5–66. Filed 5–10–65.

815,494. VERONA. Simpson Lee Paper Company. SN 226,298. Pub. 7–5–66. Filed 8–23–65.

815,495. SPECTAPRINT. Consolidated Paper Sales Limited. SN 227,255. Pub. 7–5–66. Filed 9–7–65.

815,496. CRAYONEX. The Joseph Dixon Crucible Company. SN 227,569. Pub. 7–5–66. Filed 9–10–65.

815,497. SEVEN STAR MINI DIARY AND DESIGN. N.V. Uitgeversmaatschappij Succes. SN 228,852. Pub. 7–5–66. Filed 9–28–65.

815,498. 3M. Minnesota Mining and Manufacturing Company. SN 239,065. Pub. 7–5–66. Filed 2–17–66.

Class 38 — Prints and Publications

815,499. AM FM TV AND DESIGN. Howard W. Sams & Co., Inc. SN 211,312. Pub. 7–5–66. Filed 2–3–65.

815,500. THE ANTIQUES JOURNAL. Antiques Journal, Inc. SN 220,896. Pub. 7–5–66. Filed 6–11–65.

815,501. AD-REACH. Reinhold Publishing Corporation. SN 221,204. Pub. 7–5–66. Filed 6–15–65.

815,502. HAPPINESS. Happiness, Inc. SN 222,276. Pub. 7–5–66. Filed 6–29–65.

815,503. AUTO-X AND DESIGN. Auto-X Corp. SN 230,600. Pub. 7–5–66. Filed 10–20–65.

815,504. HP HERALD PRESS AND DESIGN. Mennonite Publishing House, Inc., d.b.a. Herald Press. SN 232,575. Pub. 7–5–66. Filed 11–12–65.

Class 39 — Clothing

815,468. (See Class 29 for this trademark.)

815,505. TROY SHIRT MAKERS GUILD. Troy Shirt Makers Guild, Inc. SN 161,217. Pub. 7–5–66. Filed 1–22–63.

815,506. BOX AND DESIGN. Mitsubishi International Corp. SN 195,005. Pub. 7–5–66. Filed 6–5–64.

815,507. IVORY SYSTEM AND DESIGN. Ivory System, Inc. SN 198,051. Pub. 7–5–66. Filed 7–17–64.

815,508. TIENTO AND DESIGN. L'Aigion Sociedad de Responsabilidad Limitada. SN 209,277. Pub. 7–5–66. Filed 1–4–65.

815,509. MISS GEORGIA. Miss Georgia, Inc. SN 216,092. Pub. 7–5–66. Filed 4–8–65.

815,510. MARTIN OF CALIFORNIA. Apparel Industries of California, Inc. SN 217,974. Pub. 7–5–66. Filed 5–4–65.

815,511. ILARIA HAND KNIT AND DESIGN. Ilaria. SN 218,118. Pub. 7–5–66. Filed 5–5–65.

815,512. DORCREST. The National Dollar Stores, Ltd. SN 218,127. Pub. 7–5–66. Filed 5–5–65.

815,513. KNIT KNOTS. Goodimade Manufacturing Company, d.b.a. Les Girls. SN 222,273. Pub. 7–5–66. Filed 6–29–65.

815,514. BRAND X. Chadbourn Gotham, Inc. SN 223,970. Pub. 7–5–66. Filed 7–22–65.

815,515. MULTI-KNIT. Chadbourn Gotham, Inc. SN 225,279. Pub. 7–5–66. Filed 8–9–65.

815,516. SEA BAGS. Sears, Roebuck and Co. SN 226,170. Pub. 7–5–66. Filed 8–20–65.

815,517. ENTRE NOUS. Byck Bros. & Co., Inc. SN 226,410. Pub. 7–5–66. Filed 8–25–65.

815,518. TIKI AND DESIGN. Private Label Inc. SN 227,773. Pub. 7–5–66. Filed 9–14–65.

815,519. BIG MURPH. G. C. Murphy Company. SN 227,860. Pub. 7–5–66. Filed 9–15–65.

815,520. OP-TIQUE. Teenform, Inc. SN 227,890. Pub. 7–5–66. Filed 9–15–65.

815,521. PROTEMPO. Marlboro Shirt Company, Inc. SN 228,056. Pub. 7–5–66. Filed 9–17–65.

815,522. LADY WINGS. Piedmont Shirt Company. SN 228,186. Pub. 7–5–66. Filed 9–20–65.

815,523. UNTOPPABLE SLACKS. The Asher Company. SN 228,318. Pub. 7–5–66. Filed 9–22–65.

815,524. WETZEL. Wetzel, Inc. SN 228,964. Pub. 7–5–66. Filed 9–29–65.

815,525. FRAT SLAX. Raleigh Manufacturers, Inc. SN 229,026. Pub. 7–5–66. Filed 9–30–65.

815,526. TIGEROO. Rob Roy Company, Inc. SN 229,919. Pub. 7–5–66. Filed 10–7–65.

815,527. LAZY-JOE. International Shoe Company. SN 230,055. Pub. 7–5–66. Filed 10–13–65.

Class 40 — Fancy Goods, Furnishings, and Notions

815,528. AMWAY. Amway Corporation. SN 226,115. Pub. 7–5–66. Filed 8–20–65.

815,529. AMWAY AND DESIGN. Amway Corporation. SN 226,192. Pub. 7–5–66. Filed 8–19–65.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

815,468. (See Class 29 for this trademark.)

Class 43 — Thread and Yarn

815,530. CAPELLA. Allied Chemical Corporation. SN 235,148. Pub. 7–5–66. Filed 12–23–65.

Class 44 — Dental, Medical, and Surgical Appliances

815,531. SYNCHRONATOR. Parmac Corporation. SN 200,282. Pub. 7–5–66. Filed 8–20–64.

815,532. AIR-LON. Dittmar and Penn Corporation. SN 202,562. Pub. 7–5–66. Filed 9–24–64.

815,533. HEMATAINER. Courtland Laboratories. SN 207,116. Pub. 7–5–66. Filed 11–30–64.

815,534. SALEM SUMP. Sheridan Corporation. SN 215,279. Pub. 7–5–66. Filed 3–29–65.

815,535. ORTHOBITE. Unitek Corporation. SN 217,225. Pub. 7–5–66. Filed 4–23–65.

815,536. VIBRA-JET AND DESIGN. Vibra-Whirl and Company. SN 218,349. Pub. 7–5–66. Filed 5–7–65.

815,537. APPLIMATIC. Aktiebolaget Astra, Apotekarnes Kemiska Fabriker. SN 228,969. Pub. 7–5–66. Filed 9–30–65.

815,538. INSTRA-MATS. Straubel Paper Company. SN 233,536. Pub. 7–5–66. Filed 11–29–65.

Class 45 — Soft Drinks and Carbonated Waters

815,539. PURPLE PASSION. Canada Dry Corporation. SN 213,401. Pub. 7–5–66. Filed 3–5–65.

Class 46 — Foods and Ingredients of Foods

815,540. GIOIA. Gioia Macaroni Company, Inc. SN 188,008. Pub. 7–5–66. Filed 3–5–64.

815,541. SUMMER SUN. C. E. Clements & Company Proprietary Limited. SN 195,064. Pub. 7–5–66. Filed 6–8–64.

815,542. ARNOLD. Fairchester Tomato Packers, Inc. SN 203,655. Pub. 7–5–66. Filed 10–9–64.

815,543. GOLDEN APPLE. S. Martinelli & Company. SN 215,241. Pub. 7–5–66. Filed 3–29–65.

815,544. CLARINETS. General Mills, Inc. SN 216,289. Pub. 7–5–66. Filed 4–12–65.

815,545. FLUTES. General Mills, Inc. SN 216,292. Pub. 7–5–66. Filed 4–12–65.

815,546. "YE OLE' VIRGINNY." Joel E. Harrell & Son, Incorporated. SN 218,866. Pub. 7–5–66. Filed 5–14–65.

815,547. MARY SUE. Mary Sue Candies, Inc. SN 219,148. Pub. 7–5–66. Filed 5–18–65.

815,548. CAMPCO. S. A. Camp Farms Co., d.b.a. S. A. Camp Co. SN 223,079. Pub. 7–5–66. Filed 7–12–65.

815,549. SAC. S. A. Camp Farms Co., d.b.a. S. A. Camp Co. SN 223,081. Pub. 7–5–66. Filed 7–12–65.

815,550. THANK YOU FOR CHOOSING TREESWEET. Treesweet Products Co. SN 223,844. Pub. 7–5–66. Filed 7–20–65.

815,551. APPLEMASTERS AND DESIGN. Applemasters, Inc. SN 223,862. Pub. 7–5–66. Filed 7–21–65.

815,552. STEER-KLEER. The Dow Chemical Company. SN 223,977. Pub. 7–5–66. Filed 7–22–65.

815,553. PINTO BEANS WITH CHILI FLAVOR AND DESIGN. N. K. Hurst Company, Inc. SN 223,996. Pub. 7–5–66. Filed 7–22–65.

815,554. BALANCED. Balanced Foods, Inc. SN 224,152. Pub. 7–5–66. Filed 7–26–65.

815,555. WHIFF. The Hervin Company. SN 224,195. Pub. 7–5–66. Filed 7–26–65.

815,556. KANEBO. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 224,204. Pub. 7–5–66. Filed 7–26–65.

815,557. C. W. POST. General Foods Corporation. SN 224,414. Pub. 7–5–66. Filed 7–28–65.

815,558. HOOK LINE AND DESIGN. Arni Olafsson, d.b.a. Icelandic Seafood Company (Islenzkar Sjavarafurdir). SN 224,440. Pub. 7–5–66. Filed 7–28–65.

815,559. RAINBOW. Joseph M. Gidding, d.b.a. J. Gidding Co. SN 224,607. Pub. 7–5–66. Filed 7–30–65.

815,560. "THERE'S NUFFIN' LIKE MUFFIN" AND DESIGN. Quality Shoppe Candies, Inc. SN 225,353. Pub. 7–5–66. Filed 8–9–65.

815,561. BARBA-TREATS. Roberts Packing Company. SN 225,512. Pub. 7–5–66. Filed 8–11–65.

815,562. OASIS. National Biscuit Company. SN 225,796. Pub. 7–5–66. Filed 8–16–65.

815,563. TRAY MATES. National Biscuit Company. SN 225,798. Pub. 7–5–66. Filed 8–16–65.

815,564. SIDNEY'S. Sidney's Linwood, Inc., d.b.a. Sidney's. SN 225,902. Pub. 7–5–66. Filed 8–17–65.

815,565. PARTI STYLE. Armour and Company. SN 226,030. Pub. 7–5–66. Filed 8–19–65.

815,566. INN-KEEPER. The Eat-All Frozen Food Co., Inc. SN 226,042. Pub. 7–5–66. Filed 8–19–65.

815,567. DELMARK COUNTRY OVEN. The Dietene Company, d.b.a. The Delmark Company. SN 227,484. Pub. 7–5–66. Filed 9–9–65.

815,568. MEL-O-CRUST. Allied Supermarkets, Inc. SN 227,806. Pub. 7–5–66. Filed 9–15–65.

815,569. THE MILK CHOCOLATE MELTS IN YOUR MOUTH—NOT IN YOUR HAND. Mars, Incorporated, d.b.a. M & M's Candies. SN 228,712. Pub. 7–5–66. Filed 9–27–65.

Class 47 — Wines

815,570. INDIVIDUAL. Benegas Hermanos y Cia. Ltda., S.A.I., y C. SN 192,668. Pub. 7–5–66. Filed 5–5–64.

815,571. BROTHERHOOD. The Brotherhood Corporation. SN 210,528. Pub. 7–5–66. Filed 1–25–65.

815,572. BOLOGNESI ETC. AND DESIGN. Hudson Valley Wine Company, Inc. SN 220,767. Pub. 7–5–66. Filed 6–9–65.

815,573. DESIREE. Banfi Products Corp. SN 227,117. Pub. 7–5–66. Filed 9–3–65.

Class 48 — Malt Beverages and Liquors

815,574. DRINK A DINK. Brauerei Dinkelacker GmbH. SN 222,813. Pub. 7–5–66. Filed 7–7–65.

815,575. RED CAP (DESIGN). Carling Brewing Company Incorporated, d.b.a. Carling Brewing Company. SN 229,633. Pub. 7–5–66. Filed 10–8–65.

815,576. SILHOUETTE OF A STATUE (DESIGN). Jackson Brewing Company. SN 230,253. Pub. 7–5–66. Filed 10–15–65.

815,577. STATUE (DESIGN). Jackson Brewing Company. SN 230,254. Pub. 7–5–66. Filed 10–15–65.

Class 49 — Distilled Alcoholic Liquors

815,578. TEACHER'S HIGHLAND CREAM ETC. AND DESIGN. Schieffelin & Co. SN 217,795. Pub. 7–5–66. Filed 4–30–65.

815,579. RUSTY NAIL. The Drambuie Liqueur Co., Ltd. SN 218,847. Pub. 7–5–66. Filed 5–14–65.

815,580. THE TREASURE OF THEM ALL! AND DESIGN. Destileria Seralles, Inc. SN 239,849. Pub. 7–5–66. Filed 2–24–66.

Class 50 — Merchandise Not Otherwise Classified

815,264. (See Class 2 for this trademark.)

815,268. (See Class 2 for this trademark.)

815,581. "SIGNOR CHIANTI" AND DESIGN. William F. Garlano, d.b.a. Career Enterprises. SN 197,112. Pub. 7–5–66. Filed 7–6–64.

815,582. BALLOTINI. Potters Brothers, Inc. SN 225,350. Pub. 7–5–66. Filed 8–9–65.

815,583. ROYAL-SEAL. United States Rubber Company. SN 229,468. Pub. 7–5–66. Filed 10–6–65.

815,584. BIRD WATCHER. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 231,850. Pub. 7–5–66. Filed 10–29–65.

815,585. BATH-MATE. Minnesota Mining and Manufacturing Company. SN 239,063. Pub. 7–5–66. Filed 2–17–66.

Class 51 — Cosmetics and Toilet Preparations

815,586. TIZ-EYE WONDERFUL. Maradel Products, Inc. SN 218,017. Pub. 7–5–66. Filed 5–4–65.

815,587. NUAGE BLUE. Avon Products, Inc. SN 223,955. Pub. 7–5–66. Filed 7–22–65.

815,588. CALGON. Calgon Corporation. SN 224,918. Pub. 7–5–66. Filed 8–4–65.

815,589. GIN AND BITTERS. Tom Fields, Ltd. SN 225,016. Pub. 7–5–66. Filed 8–5–65.

815,590. LISA MORNAY. Superior Products Company, d.b.a. House of Lisa Mornay. MULTIPLE CLASS (Classes 51 and 52). SN 225,520. Pub. 7–5–66. Filed 8–11–65.

815,591. AWAY. Colgate-Palmolive Company. SN 229,066. Pub. 7–5–66. Filed 10–1–65.

815,592. HOUR AFTER HOUR. Colgate-Palmolive Company. SN 229,067. Pub. 7–5–66. Filed 10–1–65.

815,593. RAPID SPRAY. Colgate-Palmolive Company. SN 229,068. Pub. 7–5–66. Filed 10–1–65.

815,594. STRESS. Colgate-Palmolive Company. SN 229,069. Pub. 7–5–66. Filed 10–1–65.

815,595. TRYCE. The Glessner Company, Inc. SN 231,909. Pub. 7–5–66. Filed 11–1–65.

815,596. "HI-LO" TONES. Maradel Products, Inc. SN 232,841. Pub. 7–5–66. Filed 11–17–65.

815,597. TNT. Chesebrough-Pond's Inc. SN 235,167. Pub. 7–5–66. Filed 12–23–65.

815,598. TEMPTATION. Studio Girl-Hollywood Inc. SN 235,941. Pub. 7–5–66. Filed 1–6–66.

815,599. FASTRENGTH AND DESIGN. Tanner Products Corporation. SN 235,942. Pub. 7–5–66. Filed 1–6–66.

815,600. CALL ME PRETTY. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics. SN 236,142. Pub. 7–5–66. Filed 1–10–66.

815,601. "MANHUNT." Cameo, Inc. SN 236,716. Pub. 7–5–66. Filed 1–18–66.

815,602. COLOR-A-MA. Hi-Fashion, Inc. SN 236,758. Pub. 7–5–66. Filed 1–18–66.

815,603. KAPOOT AND DESIGN. Antonio Hernandez, d.b.a. Kapoot Industries. SN 236,891. Pub. 7–5–66. Filed 1–20–66.

815,604. G.T.O. Max Factor & Co., d.b.a. Max Factor. SN 236,906. Pub. 7–5–66. Filed 1–20–66.

815,605. RENEGADE. Chesebrough-Pond's Inc. SN 242,560. Pub. 7–5–66. Filed 4–4–66.

Class 52 — Detergents and Soaps

815,271. (See Class 4 for this trademark.)

815,590. (See Class 51 for this trademark.)

815,606. HERITAGE HOUSE. American Hardware Supply Co. SN 218,834. Pub. 7–5–66. Filed 5–14–65.

815,607. PUNCH. Colgate-Palmolive Company. SN 224,844. Pub. 7–5–66. Filed 8–3–65.

815,608. TWICE AS NICE. Lever Brothers Company. SN 229,364. Pub. 7–5–66. Filed 10–5–65.

815,609. POLY-PLEX. Ellen Kaye Laboratories, Inc. SN 231,140. Pub. 7–5–66. Filed 10–22–65.

815,610. IGA. Independent Grocers' Alliance Distributing Co. SN 233,180. Pub. 7–5–66. Filed 11–23–65.

Service Marks

Class 100 — Miscellaneous

815,611. LUCKY PIERRE'S AND DESIGN. 37 Flavors, Inc. SN 191,225. Pub. 7–5–66. Filed 4–15–64.

815,612. MARRIOTT MOTOR HOTEL. Marriott Motor Hotels, Inc. SN 201,713. Pub. 7–5–66. Filed 9–11–64.

815,613. HUMAN MALE HEAD (DESIGN). Admiral Benbow Inn, Inc. SN 218,044. Pub. 7–5–66. Filed 5–5–65.

815,614. CHURCH'S. Church's Fried Chicken, Inc., d.b.a. Church's Drive-In-Restaurant. SN 222,468. Pub. 7–5–66. Filed 7–1–65.

815,615. TELEPHONE (DESIGN). Telephone Utilities, Inc. SN 222,629. Pub. 7–5–66. Filed 7–2–65.

815,616. CONCENTRIC CIRCLE AND PARABOLA (DESIGN). National Corrugated Steel Pipe Association. SN 229,994. Pub. 7–5–66. Filed 10–12–65.

Class 101 — Advertising and Business

815,617. UNION. Myron G. Welch. SN 156,205. Pub. 7–5–66. Filed 10–29–62.

815,618. NATIONAL ELECTRONIC PACKAGING & PRODUCTION CONFERENCE. Industrial & Scientific Conference Management, Inc. SN 191,770. Pub. 7–5–66. Filed 4–22–64.

815,619. MOBILE MUSCLES AND DESIGN. Patterson Equipment Company. MULTIPLE CLASS (Classes 101 and 103). SN 196,708. Pub. 7–5–66. Filed 6–29–64.

815,620. TIPTOP. Bergen Drug Data Processing Corp. SN 199,012. Pub. 7–5–66. Filed 8–3–64.

815,621. PAGE O'COLOR. Spangler, Inc., d.b.a. Spangler Printers, Inc. SN 200,387. Pub. 7–5–66. Filed 8–21–64.

815,622. CSC AND DESIGN. C. A. Doolittle, Jr., d.b.a. Contract Surety Consultants. SN 203,485. Pub. 7–5–66. Filed 10–7–64.

815,623. CSC. C. A. Doolittle, Jr., d.b.a. Contract Surety Consultants. SN 204,245. Pub. 7–5–66. Filed 10–19–64.

815,624. MACKE. The Macke Company, by change of name from Macke Vending Company. SN 224,106. Pub. 7–5–66. Filed 7–23–65.

815,625. UNIFORCE AND DESIGN. Uniforce Inc. SN 224,570. Pub. 7–5–66. Filed 7–29–65.

Class 102 — Insurance and Financial

815,626. SNAP-SAVE. Industrial Valley Bank and Trust Company. SN 220,509. Pub. 7–5–66. Filed 6–7–65.

815,627. THE MOHAWK NATIONAL BANK AND DESIGN. Mohawk National Bank. SN 220,532. Pub. 7–5–66. Filed 6–7–65.

815,628. MOHAWK AND DESIGN. Mohawk National Bank. SN 220,533. Pub. 7–5–66. Filed 6–7–65.

815,629. H IT HELPS TO HAVE HARLEYSVILLE AND DESIGN. Harleysville Mutual Insurance Company. SN 225,764. Pub. 7–5–66. Filed 8–16–65.

815,630. THE MAN FROM THE BIG H. Harleysville Mutual Insurance Company. SN 225,765. Pub. 7–5–66. Filed 8–16–65.

Class 103 — Construction and Repair

815,619. (See Class 101 for this trademark.)

815,631. MATERIAL SERVICE. General Dynamics Corporation. SN 174,659. Pub. 7–5–66. Filed 8–8–63.

815,632. VW. Volkswagenwerk Aktiengesellschaft. SN 198,787. Pub. 7–5–66. Filed 7–29–64.

815,633. REVERE AND DESIGN. Revere Custom Builders, Inc. SN 218,908. Pub. 7–5–66. Filed 5–14–65.

815,634. M MCDERMOTT INC. AND DESIGN. J. Ray McDermott & Co., Inc. SN 221,391. Pub. 7–5–66. Filed 6–17–65.

815,635. RUFF-COTE. Continental Oil Company. SN 223,643. Pub. 7–5–66. Filed 7–19–65.

Class 105 — Transportation and Storage

815,636. INLAND EXPRESS INC. IE AND DESIGN. Inland Express, Inc. SN 220,854. Pub. 7–5–66. Filed 6–10–65.

Class 107 — Education and Entertainment

815,637. THEATRE-IN-THE-AIR. Pan American World Airways, Inc. SN 218,309. Pub. 7–5–66. Filed 5–7–65.

815,638. INDIANAPOLIS MOTOR SPEEDWAY AND DESIGN. Indianapolis Motor Speedway Corporation. SN 223,236. Pub. 6–28–66. Filed 7–13–65.

815,639. INDIANAPOLIS MOTOR SPEEDWAY AND DESIGN. Indianapolis Motor Speedway Corporation. SN 223,237. Pub. 6–28–66. Filed 7–13–65.

815,640. DESIGN. Indianapolis Motor Speedway Corporation. SN 223,238. Pub. 7–5–66. Filed 7–13–65.

Collective Membership Marks

Class 200

815,641. MISCELLANEOUS DESIGN. Professional Pilot's Assn. SN 203,528. Pub. 7–5–66. Filed 10–7–64.

815,642. WWP AND DESIGN. Western Wood Products Association. SN 216,371. Pub. 7–5–66. Filed 4–12–65.

815,643. NATIONAL ASSOCIATION OF BARBER SCHOOLS, INC. AND DESIGN. National Association of Barber Schools, Inc. SN 223,704. Pub. 7–5–66. Filed 7–19–65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptades

815,644. Sweetheart Plastics, Inc., Wilmington, Mass. SN 199,416. Filed P.R. 8–6–64; Am. S.R. 7–26–66.

C-THRU

For Disposable Plastic Food and Drink Cups.
First use on or about July 20, 1964.

Class 12 — Construction Materials

815,645. Anfi Aksjeselskap, Oslo, Norway. SN 227,382. Filed P.R. 9–8–65; Am. S.R. 7–19–66.

POLYSTONE

Owner of Norwegian Reg. No. 63,221, dated Jan. 24, 1964.
For Precast Stone, Terrazzo, Tiles and Elements Made From Cement or Artificial Resin.

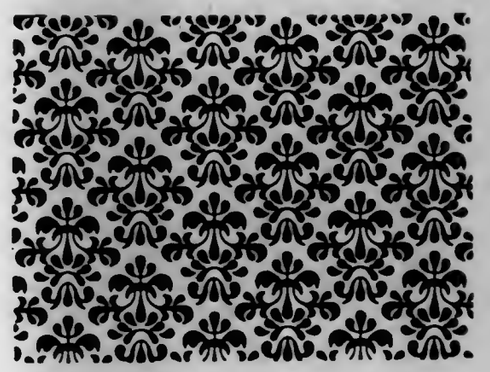
815,646. J. W. Mortell Company, Kankakee, Ill. SN 240,770. Filed P.R. 3–11–66; Am. S.R. 6–10–66.

Mortell

The drawing is lined for the color brown, but no claim is made to color.
For Weatherstripping—Namely, Transparent Plastic Tape, Vinyl Foam Self-Adhesive Tape, and Combination Aluminum and Vinyl Door Bottom Strip; Sealants in the Form of Caulking Compounds; and Mastic-Fiber Aluminum Roof Coating.
First use Apr. 23, 1964, on caulking compounds.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

815,647. Donner Manufacturing Co., Sylmar, Calif. SN 230,619. Filed P.R. 10–20–65; Am. S.R. 6–27–66.



For Bathroom Accessories, Including Towel Bars, Towel Bar Brackets, Towel Rings, Holders for Paper, Soap, Tumblers, Toothbrushes and Combinations Thereof, Rollers for Paper Holders, Grab Bars and Robe Hooks.
First use Mar. 3, 1965.

Class 17 — Tobacco Products

815,648. Iwan Ries & Co., Chicago, Ill. SN 211,538. Filed P.R. 2–8–65; Am. S.R. 7–22–66.

CANADIAN PLUG MIXTURE

The word "Mixture" is disclaimed apart from the mark as shown.
For Smoking Tobacco.
First use about June 1925.

815,649. Iwan Ries & Co., Chicago, Ill. SN 211,895. Filed P.R. 2-12-65; Am. S.R. 7-22-66.

Ries' Private Blend

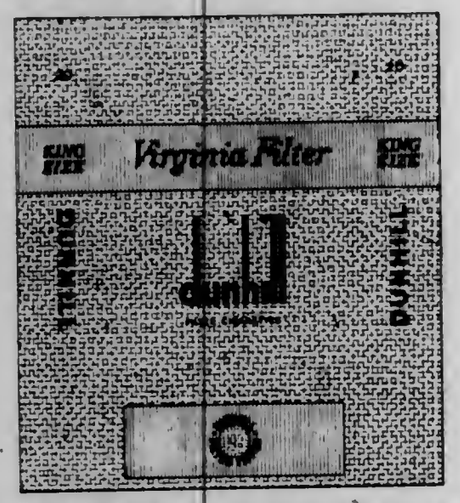
The word "Blend" is disclaimed apart from the mark as shown.
For Smoking Tobacco.
First use about November 1935.

815,650. The United Kingdom Tobacco Company, Limited, d.b.a. Marcovitch & Co., London, England. SN 212,716. Filed P.R. 2-24-65; Am. S.R. 7-15-66.



The portrait of the man in the mark is fictitious. Owner of British Reg. No. 439,829, dated Aug. 14, 1923; and U.S. Reg. Nos. 196,010 and 726,371.
For Cigarettes and Smoking Tobacco.

815,651. Alfred Dunhill Limited, London, England. SN 229,960. Filed P.R. 10-12-65; Am. S.R. 7-19-66.



The drawing is lined for the colors red and gold, which colors are claimed as a feature of the mark. Owner of Reg. Nos. 527,207; 539,892, and others.
For Cigarettes.
First use Jan. 25, 1965; in commerce July 13, 1965.

Class 19—Vehicles

815,652. Moulton Bicycles Limited, Bradford-on-Avon, England. SN 230,416. Filed 10-18-65.

MOULTON

For Bicycles and Parts Thereof.
First use Nov. 10, 1962.

Class 21—Electrical Apparatus, Machines, and Supplies

815,653. Automatic Power, Inc., Houston, Tex. SN 218,173. Filed P.R. 5-6-65; Am. S.R. 7-26-66.

NO BREAK

For Electric Generating Units.
First use at least as early as November 1959.

815,654. Appleton Electric Company, Chicago, Ill. SN 227,467. Filed P.R. 9-9-65; Am. S.R. 7-21-66.

SWITCHPLUG

For Explosionproof Plugs and Receptacles.
First use May 17, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

815,655. The Singer Company, New York, N.Y. SN 213,484. Filed P.R. 3-5-65; Am. S.R. 1-13-66.

MERRITT

For Sewing Machines, Parts and Accessories for Sewing Machines.
First use Dec. 15, 1962.

Class 39—Clothing

815,656. Glamorise Foundations, Inc., New York, N.Y. SN 212,406. Filed P.R. 2-19-65; Am. S.R. 7-21-66.

SMOOTH-SEAMS

For Foundation Garments.
First use Feb. 9, 1965.

815,657. Chappell Allen & Co., Limited, Redfield, Bristol, England. SN 222,655. Filed P.R. 7-6-65; Am. S.R. 7-15-66.

FITU

Owner of British Reg. No. 281,493, dated Apr. 2, 1906.
For Corsets.

815,658. Bedford Shirtmakers Corp., New York, N.Y. SN 223,628. Filed P.R. 7-19-65; Am. S.R. 7-25-66.

FAREWELL/IRON

For Men's and Boys' Shirts.
First use July 14, 1965.

Class 44—Dental, Medical, and Surgical Appliances

815,659. Instrumentation Associates Inc., New York, N.Y. SN 210,877. Filed P.R. 1-28-65; Am. S.R. 7-20-66.

PULMO-ANALYSOR

For Portable Thermal Conductivity Apparatus for Testing and Measuring Gases in Human Lungs.
First use 1958.

TRADEMARK REGISTRATIONS RENEWED

28,858. VTW (DESIGN). Cl. 23. 9-1-1896.
55,170. BLUE LABEL. Cl. 46. 8-7-06.
55,930. SIL-O-CEL. Cl. 12. 8-21-06.
56,078. LEWIS' LYE. Cl. 6. 8-21-06.
56,288. BELLEVIEW. Cl. 44. 9-4-06.
56,752. GOOD YEAR AND DESIGN. Cl. 35. 10-16-06.
57,538. MALTHOID. Cl. 12. 11-13-06.
57,590. GOOD YEAR AND DESIGN. Cl. 39. 11-13-06.
57,891. LINCOLN. Cl. 16. 12-4-06.
58,004. AMERICA. Cl. 27. 12-4-06.
58,463. LISTER'S. Cl. 52. 12-18-06.
58,601. JUMBO INDEXES. Cl. 22. 12-18-06.
58,866. PEERLESS. Cl. 42. 12-25-06.
59,776. COMFORT. Cl. 18. 1-15-07.
213,750. HOFF'S AND DESIGN. Cl. 18. 6-1-26.
215,466. TRIANGLE BRAND AND DESIGN. Cl. 1. 7-20-26.
215,799. DRY ICE AND DESIGN. Cl. 31. 7-27-26.
216,063. TOP-O-TH MORNIN. Cl. 46. 8-3-26.
216,731. DRASHEEN. Cl. 42. 8-17-26.
216,732. ROSESHEEN. Cl. 42. 8-17-26.
216,879. NEKAL. Cl. 6. 8-24-26.
217,142. DUROBORD. Cl. 12. 8-24-26.
217,417. PRO-PHY-LAC-TIC. Cl. 3. 8-31-26.
217,728. HILL AND DALE AND DESIGN. Cl. 39. 9-7-26.
218,459. FULTEX. Cl. 50. 9-28-26.
218,500. JOHNSON'S BURN EMOLLIENT AND DESIGN. Cl. 18. 9-28-26.
220,470. JUILANA. Cl. 42. 11-9-26.
220,932. GREAT BEAR SPRING WATER AND DESIGN. Cl. 45. 11-16-26.
221,005. AMERICAN BEAUTY. Cl. 46. 11-23-26.
221,524. CARESS. Cl. 39. 12-7-26.
221,583. LUXURY. Cl. 16. 12-7-26.
222,446. CAMEL (DESIGN AND LEGEND). Cl. 17. 1-4-27.
421,424. DESIGN FOR BEAUTY. Cl. 51. 6-4-46.
422,420. WESTERN CHIEF. Cl. 46. 7-23-46.
422,462. JEWELITE. Cl. 27. 7-23-46.
422,472. SCALP-MASTER. Cl. 29. 7-23-46.
422,486. "CANOE." Cl. 2. 7-23-46.
422,493. "SYMBOLE." Cl. 2. 7-23-46.
422,595. PRIMITIVE. Cl. 51. 7-30-46.
422,624. AIRTROL. Cl. 34. 8-6-46.
422,638. RIVIERA. Cl. 42. 8-6-46.
422,640. UNITY. Cl. 42. 8-6-46.
422,795. BLUE LINE AND DESIGN. Cl. 39. 8-13-46.
423,853. RITUAL. Cl. 51. 9-10-46.
424,145. TRENCHLINER. Cl. 23. 9-24-46.
424,146. RENTOKIL. Cl. 6. 9-24-46.
424,703. DANALAK. Cl. 51. 10-22-46.
424,927. SURE-RITE. Cl. 37. 10-29-46.
424,951. WHITE STAR AND DESIGN. Cl. 31. 10-29-46.
424,989. SOMBRERO. Cl. 42. 10-29-46.
425,011. THREE-SOME. Cl. 39. 10-29-46.
425,171. GENETRON. Cl. 6. 11-5-46.
425,240. PATSY'S PARTY. Cl. 46. 11-12-46.
425,306. "CANOE." Cl. 52. 11-12-46.
425,306. "EMIR." Cl. 52. 11-12-46.
425,308. "LENIA." Cl. 52. 11-12-46.
425,310. "PRIORITE." Cl. 52. 11-12-46.
425,311. "SUPERSTITION." Cl. 52. 11-12-46.
425,312. "SYMBOLE." Cl. 52. 11-12-46.
425,322. PRESAGE. Cl. 52. 11-12-46.
425,323. SABOTAGE. Cl. 52. 11-12-46.
425,653. PRUSSAID. Cl. 6. 11-26-46.
425,680. INTERVALLE. Cl. 51. 11-26-46.
426,114. COMBOTAN AND DESIGN. Cl. 1. 12-17-46.
426,300. TEXCEL. Cl. 21. 12-24-46.
426,319. DURA AND DESIGN. Cl. 23. 12-24-46.
426,375. HILLS BROS COFFEE AND DESIGN. Cl. 46. 12-24-46.
426,558. OLD DISCOVERY. Cl. 49. 12-31-46.
426,624. LINK BELT ELECTROFLUID AND DESIGN. Cl. 21. 1-7-47.
426,705. BM AND DESIGN. Cl. 28. 1-7-47.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

576,718. LEZOR GOLDEN SWEET (WITHIN DESIGN). Cl. 46. 6-30-53.

Section 8

130,221. JP. Cl. 46. 4-13-20.
231,899. COZETTE. Cl. 51. 8-30-27.
300,709. GOLDEN MAID. Cl. 46. 2-7-33.
374,849. MOTH-OFF AND DESIGN. Cl. 42. 1-30-40.
375,518. SEAFORTH. Cl. 51. 2-20-40.
379,737. P & B. Cl. 43. 7-23-40.
437,181. PRESTO. Cl. 6. 3-9-48.

The following registrations issued Aug. 2, 1960

702,038. KINDL-BAG. Cl. 1.
702,039. PROTHANE. Cl. 1.
702,043. STRADIVARIUS. Cl. 1.
702,044. TINTORETTA. Cl. 1.
702,060. PERMA STOP AND DESIGN. Cl. 6.
702,065. ROSAR. Cl. 6.
702,066. PURE AND DESIGN. Cl. 6.
702,080. LAWN-GARD. Cl. 10.
702,081. HI-STACK. Cl. 11.
702,086. NEOWOOD. Cl. 12.
702,093. PURKEY-WHITE AND DESIGN. Cl. 12.
702,095. HANDY ANGLE. Cl. 13.
702,096. GOLDEN GLO. Cl. 13.
702,097. RAMPCO. Cl. 13.
702,104. STAB-CLAD. Cl. 13.
702,114. UNION CARBIDE AND DESIGN. Cl. 15.
702,115. PRESTONE. Cl. 15.
702,116. EVEREADY. Cl. 15.
702,122. GOLDEN GATE. Cl. 17.
702,123. MARY LONG. Cl. 17.
702,125. JUNYER-ALL. Cl. 18.
702,126. SALENTINE. Cl. 18.
702,129. KURLYN. Cl. 18.
702,133. OVUTEST. Cl. 18.
702,137. LITROZYME. Cl. 18.
702,138. DIMORLIN. Cl. 18.
702,146. DIMITRONAL. Cl. 18.
702,151. SUCCIPHYLLINE. Cl. 18.
702,156. RADIPHOS. Cl. 18.
702,158. TROPHY. Cl. 18.
702,160. QYLO. Cl. 18.
702,161. QYLOMINIC. Cl. 18.
702,165. LUVATRENE. Cl. 18.
702,168. PASUMAL. Cl. 18.
702,170. OCTAVIA. Cl. 19.
702,171. FELICIA. Cl. 19.
702,174. SPARLANE. Cl. 19.
702,176. FLOTE-AIRE. Cl. 19.
702,178. S.E.C.C. AND DESIGN. Cl. 21.
702,179. ATR AND DESIGN. Cl. 21.
702,193. STRATO-GLIDE. Cl. 22.
702,194. CHECKMATE. Cl. 22.
702,195. PLAY-NIKS. Cl. 22.
702,201. 3 TEE ETC. AND DESIGN. Cl. 23.
702,208. MISS MISTLETOE. Cl. 23.
702,215. EBONAIRE. Cl. 23.
702,216. LANA STEPHANS. Cl. 23.
702,217. POWERSCOPE. Cl. 26.
702,220. WESTOVER. Cl. 27.
702,222. MARQUISE. Cl. 27.
702,230. MOP-ALL. Cl. 29.
702,231. MISS DUSTEE O-TOOL. Cl. 29.
702,233. F FURSTENBERG AND DESIGN. Cl. 30.
702,234. JET FREEZE. Cl. 31.

702,238. LANA STEPHANS. Cl. 32.
702,245. K-G. Cl. 35.
702,246. K-G AND DESIGN. Cl. 35.
702,251. BUTYLON. Cl. 35.
702,254. SATELLITE. Cl. 36.
702,255. SKY RECORDS AND DESIGN. Cl. 36.
702,257. MULTICHORD. Cl. 36.
702,259. DEE DEE. Cl. 36.
702,260. AUDIOLA. Cl. 36.
702,261. QUBIC KONTROL BOARD. Cl. 37.
702,267. BAHIA INTERNACIONAL. Cl. 38.
702,269. WILLIE WOO AND DESIGN. Cl. 38.
702,271. READ-IT NOW. Cl. 38.
702,272. DOLLAR SIGNS. Cl. 38.
702,276. TODAY'S MESSAGE. Cl. 38.
702,288. BRAIN-WARMER. Cl. 39.
702,290. POLLY TUCKER. Cl. 39.
702,292. GLAMOUR COMFYS ETC. AND DESIGN. Cl. 39.
702,299. THE TORSETTE. Cl. 39.
702,307. MEET MR. MORT. Cl. 39.
702,308. IROMATIC. Cl. 39.
702,310. GLENCAL. Cl. 39.
702,318. SIDE WINDER. Cl. 39.
702,322. PETITTO. Cl. 39.
702,324. LORD LEX. Cl. 39.
702,325. CENTENNIAL. Cl. 39.
702,333. PEDI BARES. Cl. 39.
702,334. LADY, BE GOOD. Cl. 39.
702,337. ONDIX. Cl. 42.
702,340. IROMATIC. Cl. 42.
702,345. HESGO. Cl. 42.
702,348. SILNIK. Cl. 43.
702,349. MAYKER. Cl. 44.
702,350. CLEANEUR. Cl. 44.
702,351. MAKEUP. Cl. 44.
702,352. PINK ROUND. Cl. 44.
702,353. PINK CIRCLE. Cl. 44.
702,355. GLYDIN. Cl. 44.
702,357. WALTER KENDALL FIVES AND DESIGN. Cl. 46.
702,372. MOLI-SHIELD. Cl. 50.
702,374. ROL-A-SHO. Cl. 50.
702,376. PLANTACLIP. Cl. 50.
702,377. MAG-CRAFT. Cl. 50.
702,378. PORKORIUM. Cl. 50.
702,379. SWAT-RITE. Cl. 50.
702,383. BOWLER'S. Cl. 51.
702,388. MAXIMATIC. Cl. 102.
702,389. DOORMAN SYMBOL. Cl. 103.
702,396. ROADS FOR THE FUTURE—BUILD WITH ASPHALT AND DESIGN. Cl. 1.
702,405. SAFE-T-BLOK AND DESIGN. Cl. 23.
702,406. SAFETY SHEAR. Cl. 23.
702,407. V-VERMOREL A VILLEFRANCHE AND DESIGN. Cl. 23.
702,410. KYOTO AND DESIGN. Cl. 30.
702,414. OSCILLATABLE. Cl. 44.
702,416. JELYCREM. Cl. 46.
702,417. THREE MONKS ETC. AND DESIGN. Cl. 46.
702,418. STON-ART. Cl. 50.
702,420. BON AMI ETC. AND DESIGN. Cl. 52.
702,422. HOST-ESCORT TOURS. Cl. 10.

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430,980. AMBA-AURA. Cl. 6. 7-1-47.
441,959. CENTURY AND DESIGN. Cl. 2. 2-1-49.
501,918. SAF-T RAY. Cl. 34. 8-31-48.
678,085. CO. Cl. 34. 5-5-59.
680,529. HARMONY LINE. Cl. 44. 6-16-59.
734,356. REDI-SERVE. Cl. 46. 7-10-62.
787,400. MERIDIAN PUMICE BRICK AND DESIGN. Cl. 12. 3-30-65.
712,628. JOLLY ROGER. Cl. 101. 3-14-61.
739,730. CHROMALAB. Cl. 26. 10-23-62.
748,105. CORO DISCOS AND DESIGN. Cl. 36. 4-16-63.
754,298. JOLLY ROGER. Cl. 46. 8-6-63.

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SEPTEMBER 20, 1966

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A & W Root Beer Co., Santa Monica, Calif. 815,475, pub. 7-5-66. Cl. 33.
Abbott Laboratories, North Chicago, Ill. 702,156, canc. Cl. 18.
Acme Quality Paints, Inc.: *See*—
Lincoln Paint & Color Co.
Acorn Chemical Co., Cleveland, Ohio. 815,291, pub. 7-5-66. Cl. 12.
Adhesi-Kote Co.: *See*—
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Admiral Benbow Inn, Inc., Memphis, Tenn. 815,613, pub. 7-5-66. Cl. 100.
Agendas Mignon S.A., Paris, France. 815,490, pub. 7-5-66. Cl. 37.
Air Products, Inc., Emmaus, Pa. 702,245, canc. Cl. 35.
Air Products, Inc., Emmaus, Pa. 702,246, canc. Cl. 35.
Air Reduction Co., Inc.: *See*—
Dryice Corp. of America.
Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. 815,537, pub. 7-5-66. Cl. 44.
Alfran Distributors, Inc., Catskill, N.Y. 702,065, canc. Cl. 6.
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Allied Chemical Corp., New York, N.Y. 815,530, pub. 7-5-66. Cl. 43.
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Allied Supermarkets, Inc., Detroit, Mich. 815,568, pub. 7-5-66. Cl. 46.
Amalgamated Leather Co., Inc., Wilmington, Del. 702,044, canc. Cl. 1.
American Cone & Pretzel Co., Philadelphia, Pa. 300,709, canc. Cl. 46.
American Hardware Supply Co., East Butler, Pa. 815,401, pub. 7-5-66. Cl. 22.
American Hardware Supply Co., East Butler, Pa. 815,606, pub. 7-5-66. Cl. 52.
American Pad & Textile Co., The, Pittsburgh, Pa. 702,194, canc. Cl. 22.
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Ametek, Inc., New York, N.Y. 815,432, pub. 7-5-66. Cl. 24.
Amp Inc., Harrisburg, Pa. 815,433, pub. 7-5-66. Cl. 23.
Amway Corp., Ada, Mich. 815,528, pub. 7-5-66. Cl. 40.
Amway Corp., Ada, Mich. 815,529, pub. 7-5-66. Cl. 40.
Andersen, H. W., Products, Inc., Oyster Bay, N.Y. 815,273, pub. 7-5-66. Cl. 6.
Andrews Chemical & Paper Co., Inc.: *See*—
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Anfi Aksjeselskap, Oslo, Norway. 815,645. Cl. 12.
Anthony, H. W., Co., Strausstown, Pa., to Burlington Industries, Inc., Greensboro, N.C. 221,524, ren. 9-20-66. Cl. 39.
Anthracite Equipment Corp., Wilkes-Barre, Pa. 702,038, canc. Cl. 1.
Antiques Journal, Inc., Uniontown, Pa. 815,500, pub. 7-5-66. Cl. 38.
Apparel Industries of Calif., Inc., Los Angeles, Calif. 815,510, pub. 7-5-66. Cl. 39.
Applemaster, Inc., Wenatchee, Wash. 815,551, pub. 7-5-66. Cl. 46.
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Aqua-Mist Co.: *See*—
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Automobilove Zavody, narodni podnik, Milada Boleslav, Czechoslovakia. 702,171, canc. Cl. 19.
Auto-X Corp., Newtown Square, Pa. 815,503, pub. 7-5-66. Cl. 38.
Avallone Corp., Cedar Grove, N.J. 815,272, pub. 7-5-66. Multiple Class (Classes 5 and 12).
Avon Products, Inc., New York, N.Y. 815,587, pub. 7-5-66. Cl. 51.
Axiom Products Co., Inc., Kew Gardens, N.Y. 815,268, pub. 7-5-66. Multiple Class (Classes 2, 19, 23, 32, and 50).
B & S Industries Inc.: *See*—
Born, Howard.
B & S Products Co.: *See*—
Born, Howard.
Babcock & Wilcox Co., The, New York, N.Y. 678,085, canc. Cl. 34.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 815,260, pub. 7-5-66. Cl. 1.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 815,274, pub. 7-5-66. Cl. 6.
Baker Industries: *See*—
Chemical Concentrates Corp.
Balanced Foods, Inc., New York, N.Y. 815,554, pub. 7-5-66. Cl. 46.
Banfi Products Corp., New York, N.Y. 815,573, pub. 7-5-66. Cl. 47.
Barnes-Daugherty & Associates, Sausalito, Calif. 815,269, pub. 7-5-66. Cl. 3.
Barth Levitt Products, Lynbrook, N.Y. 702,125, canc. Cl. 18.
Bauman-Massa Jewelry Co., St. Louis, Mo. 426,705, ren. 9-20-66. Cl. 28.
Beanstalk Shelving Ltd., Chichester, Sussex, England. 815,470, pub. 7-5-66. Cl. 32.
Beaunit Corp., New York, N.Y. 815,263, pub. 7-5-66. Cl. 1.
Bedford Shirtmakers Corp., New York, N.Y. 815,658. Cl. 39.
Bees Ltd., Sealand, Chester, England. 815,261, pub. 7-5-66. Cl. 1.
Bell & Gossett Co., Morton Grove, Ill., to International Telephone and Telegraph Corp., New York, N.Y. 422,624, ren. 9-20-66. Cl. 34.
Benegas Hermanos y Cia. Ltda., S.A.I. Y C., Buenos Aires, Argentina. 815,570, pub. 7-5-66. Cl. 47.
Bergen Drug Data Processing Corp., Hackensack, N.J. 815,620, pub. 7-5-66. Cl. 101.
Berry, J. Chester, Durham, N.C. 702,261, canc. Cl. 37.
Best Fertilizers Co., The, Lathrop, Calif. 815,428, pub. 7-5-66. Cl. 23.
Billiard Research & Development, Inc., St. Clair Shores, Mich. 815,404, pub. 7-5-66. Cl. 22.
Bon Ami Co., The, New York, N.Y. 702,420, canc. Cl. 52.
Borden Co., The, New York, N.Y. 815,278, pub. 7-5-66. Cl. 10.
Borden Co., The, New York, N.Y. 815,334, pub. 7-5-66. Cl. 16.
Born, Howard, d.b.a. B & S Products Co., to B & S Industries Inc., New York, N.Y. 422,472, ren. 9-20-66. Cl. 29.
Bradley, Milton, Co., Springfield, Mass. 815,406, pub. 7-5-66. Cl. 22.
Bradley, Milton, Co., Springfield, Mass. 815,407, pub. 7-5-66. Cl. 22.
Bradley, Milton, Co., Springfield, Mass. 815,408, pub. 7-5-66. Cl. 22.
Brauerei Dinkelacker G.m.b.H., Stuttgart, Germany. 815,574, pub. 7-5-66. Cl. 48.
Bristol-Myers Co., New York, N.Y. 815,343, pub. 7-5-66. Cl. 18.
Bristol-Myers Co., New York, N.Y. 815,362, pub. 7-5-66. Cl. 18.
British-American Tobacco Co., Ltd., London, England. 815,339, pub. 7-5-66. Cl. 17.
Brockway, Wm. W., Burbank, Calif. 815,288, pub. 7-5-66. Cl. 12.
Bro-Dart Industries, Inc., Newark, N.J. 702,406, canc. Cl. 23.
Brotherhood Corp., The, Washingtonville, N.Y. 815,571, pub. 7-5-66. Cl. 47.
Brown, J. S., Jr., to Bruce's Foods Corp., New Iberia, La. 425,240, ren. 9-20-66. Cl. 46.
Brown & Williamson Tobacco Corp., Louisville, Ky. 702,123, canc. Cl. 17.
Bruce's Foods Corp.: *See*—
Brown, J. S., Jr.
Burberrys Ltd., London, England. 702,337, canc. Cl. 42.
Burlington Industries, Inc.: *See*—
Anthony, H. W., Co.
Bullard Co., The, Bridgeport, Conn. 815,437, pub. 7-5-66. Cl. 23.
Burns & Russell Co. of Baltimore City, The, Baltimore, Md. 815,290, pub. 7-5-66. Cl. 12.
Buten, M., & Sons, Inc., Philadelphia, Pa. 815,329, pub. 7-5-66. Cl. 16.
Byck Bros. & Co., Inc., Louisville, Ky. 815,517, pub. 7-5-66. Cl. 39.
Cable Electric Products Inc., Providence, R.I. 815,387, pub. 7-5-66. Cl. 21.
Cameo, Inc., Toledo, Ohio. 815,601, pub. 7-5-66. Cl. 51.
Canada Dry Corp., Dover, Del. 815,539, pub. 7-5-66. Cl. 45.

Calgon Corp., Pittsburgh, Pa. 815,588, pub. 7–5–66. Cl. 51.
California Cedar Products Co., Stockton, Calif., to Johns-Manville Corp., New York, N.Y. 217,142, ren. 9–20–66. Cl. 12.
Call, Minnie T., d.b.a. Radiant Wash Solution Co., Olean, N.Y. 437,181, canc. Cl. 6.
Camp, S. A., Farms Co., Shafter, Calif. 815,548, pub. 7–5–66. Cl. 46.
Camp, S. A., Farms Co., Shafter, Calif. 815,549, pub. 7–5–66. Cl. 46.
Career Enterprises: *See*—
Garlano, William F.
Carling Brewing Co.: *See*—
Carling Brewing Co., Inc.
Carling Brewing Co., Inc., d.b.a. Carling Brewing Co., Cleveland, Ohio. 815,575, pub. 7–5–66. Cl. 48.
Cary Enterprises Inc., Huntington Station, N.Y. 815,367, pub. 7–5–66. Cl. 19.
Cellulo Co., The, Sandusky, Ohio. 424,951, ren. 9–20–66. Cl. 31.
Centrifix Corp., Houston, Tex. 815,447, pub. 7–5–66. Cl. 23.
Century Burial Vault Co., San Francisco, Calif. 441,959, canc. Cl. 2.
Chadbourn Gotham, Inc., Charlotte, N.C. 815,514, pub. 7–5–66. Cl. 39.
Chadbourn Gotham, Inc., Charlotte, N.C. 815,515, pub. 7–5–66. Cl. 39.
Challenge Marine Hardware Co., Brea, Calif. 815,311, pub. 7–5–66. Cl. 13.
Charles of the Ritz, Inc., to Lavin-Charles of the Ritz, Inc., New York, N.Y. 423,853, ren. 9–20–66. Cl. 51.
Charm Pederma Co.: *See*—
Saari, Wayne J.
Chemical Concentrates Corp., Fort Washington, Pa., d.b.a. Baker Industries, Inc., Newark, N.J. 815,319, pub. 7–5–66. Cl. 16.
Chesebrough-Pond's Inc., New York, N.Y. 815,597, pub. 7–5–66. Cl. 51.
Chesebrough-Pond's Inc., New York, N.Y. 815,605, pub. 7–5–66. Cl. 51.
Chicago Metallic Mfg. Co., Chicago, Ill. 702,096, canc. Cl. 13.
Chilag-Chemie A.G., Schaffhausen, Switzerland. 702,165, canc. Cl. 18.
Chore-Boy Mfg. Co., Inc., Cambridge City, Ind. 702,378, canc. Cl. 50.
Church's Drive-In-Restaurant: *See*—
Church's Fried Chicken, Inc.
Church's Fried Chicken, Inc., d.b.a. Church's Drive-In-Restaurant, San Antonio, Tex. 815,614, pub. 7–5–66. Cl. 100.
Churchill, Ltd., Baltimore, Md., to Medley Distilling Co., Owensboro, Ky. 426,558, ren. 9–20–66. Cl. 49.
Cincinnati Time Recorder Co., The, Cincinnati, Ohio. 815,308, pub. 7–5–66. Multiple Class (Classes 13, 21, 23, 26, and 27).
Clements, C. E., & Co. Proprietary Ltd., Melbourne, Victoria, Australia. 815,541, pub. 7–5–66. Cl. 46.
Cleveland Cleaner & Paste Co., Cleveland, Ohio. 702,195. canc. Cl. 22.
Cleveland-Detroit Corp., from Ray-dor Sales Corp., Cleveland, Ohio. 702,389, canc. Cl. 103.
Clipper Mfg. Co., Inc., Grandview, Mo. 815,449, pub. 7–5–66. Cl. 23.
Clipper Mfg. Co., Inc., Grandview, Mo. 815,450, pub. 7–5–66. Cl. 23.
Coastal Research Corp., Glen Burnie, Md. 815,285, pub. 7–5–66. Cl. 12.
Coffman, Richard H., Elgin, Ill. 815,411, pub. 7–5–66. Cl. 22.
Cohen, Lawrence M., Greensboro, N.C. 702,257, canc. Cl. 36.
Cole-Mort Inc., New York, N.Y. 702,307, canc. Cl. 39.
Colgate-Palmolive Co., New York, N.Y. 815,591, pub. 7–5–66. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 815,592, pub. 7–5–66. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 815,593, pub. 7–5–66. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 815,594, pub. 7–5–66. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 815,607, pub. 7–5–66. Cl. 52.
Comfort Equipment Co., Kansas City, Mo. 815,432, pub. 7–5–66. Cl. 23.
Comfort Powder Co., The, Hartford, Conn., to Parke, Davis & Co., Detroit, Mich. 59,776, ren. 9–20–66. Cl. 18.
Commercial Solvents Corp., New York, N.Y. 815,252, pub. 7–5–66. Multiple Class (Classes 1, 6, and 16).
Consolidated Paper Sales Ltd., Montreal, Quebec, Canada. 815,495, pub. 7–5–66. Cl. 37.
Continental/Moss-Gordin Gin Co., Prattville, Ala. 815,429, pub. 7–5–66. Cl. 23.
Continental Oil Co., Ponca City, Okla. 815,635, pub. 7–5–66. Cl. 103.
Contract Surety Consultants: *See*—
Doolittle, C. A., Jr.
Cook & Dunn Paint Corp., Newark, N.J. 815,333, pub. 7–5–66. Cl. 16.
Count-Rite Corp., Cleveland, Ohio. 702,379, canc. Cl. 50.
Courtland Laboratories, Los Angeles, Calif. 815,533, pub. 7–5–66. Cl. 44.
Curtice Bros. Co., to Curtice-Burns, Inc., Rochester, N.Y. 55,170, ren. 9–20–66. Cl. 46.
Curtice-Burns, Inc.: *See*—
Curtice Bros. Co.
Cutting Room Appliances Corp., New York, N.Y. 815,439, pub. 7–5–66. Cl. 23.
Daumit, Kay, Inc., to Kathryn, Inc., Chicago, Ill. 430,980. canc. Cl. 6.
Davis, Les, Fishing Tackle Co., Tacoma, Wash. 815,413, pub. 7–5–66. Cl. 22.
Delmark Co., The: *See*—
Dietene Co.
Denver Chemical Mfg. Co., The, Stamford, Conn. 815,359, pub. 7–5–66. Cl. 18.
Desantis, C., Paint Mfg. Co., Cleveland, Ohio. 815,321, pub. 7–5–66. Cl. 16.
Descalzo, Octavio A., Havana, Cuba. 702,267, canc. Cl. 38.
Desmond's, Inc., to Desmond's, Inc., Los Angeles, Calif. 425,011, ren. 9–20–66. Cl. 39.
Destilleria Seralles, Inc., Mercedita, Ponce, Puerto Rico. 815,580, pub. 7–5–66. Cl. 49.
Detroit Harvester Co., Detroit, to Dura Corp., Oak Park, Mich. 426,319, ren. 9–20–66. Cl. 23.
Diamond Alkali Co., Cleveland, Ohio. 815,279, pub. 7–5–66. Cl. 10.
Dietene Co., d.b.a. The Delmark Co., Minneapolis, Minn. 815,567, pub. 7–5–66. Cl. 46.
Dietz, Sheldon, d.b.a. The Six-Footer Co., Norwalk, Conn. 702,288, canc. Cl. 39.
Display Workshop, Inc., Hartford, Conn. 815,471, pub. 7–5–66. Cl. 32.
Dittmar and Penn Corp., Philadelphia, Pa. 815,532, pub. 7–5–66. Cl. 44.
Dittmore-Freimuth Corp., Milwaukee, Wis. 815,380, pub. 7–5–66. Cl. 21.
Dixon-Bartlett Inc.: *See*—
Dixon-Bartlett Co.
Dixon-Bartlett Co., to Dixon-Bartlett, Inc., Baltimore, Md. 217,728, ren. 9–20–66. Cl. 39.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 815,496. pub. 7–5–66. Cl. 37.
Dohrmann Co., Brisbane, Calif. 815,480, pub. 7–5–66. Cl. 34.
Dolores Enterprises, Inc., New York, N.Y. 702,259, canc. Cl. 36.
Donmoor-Isaacson, Inc., New York, N.Y. 702,325, canc. Cl. 39.
Donner Mfg. Co., Sylmar, Calif. 815,647. Cl. 13.
Donovan Industries, Inc., New York, N.Y. 702,043, canc. Cl. 1.
Doolittle, C. A., Jr., d.b.a. Contract Surety Consultants, Wichita, Kans. 815,622, pub. 7–5–66. Cl. 101.
Doolittle, C. A., Jr., d.b.a. Contract Surety Consultants, Wichita, Kans. 815,623, pub. 7–5–66. Cl. 101.
Dorann Foods, Inc.: *See*—
Food Enterprises, Inc.
Dow Chemical Co., The, Midland, Mich. 815,552, pub. 7–5–66. Cl. 46.
Drambuie Liqueur Co., Ltd., Edinburgh, Scotland. 815,579, pub. 7–5–66. Cl. 49.
Dr. Le Gear, Inc., St. Louis, Mo. 815,864, pub. 7–5–66. Cl. 18.
Dresser Industries, Inc., Dallas, Tex. 702,104, canc. Cl. 13.
Drexel Enterprises, Inc., Drexel, N.C. 815,472, pub. 7–5–66. Cl. 32.
Dryice Corp. of America, New York, and Long Island City, N.Y., to Air Reduction Co., Inc., New York, N.Y. 215,799, ren. 9–20–66. Cl. 31.
Dunhill, Alfred, Ltd., London, England. 815,651. Cl. 17.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 815,258, pub. 7–5–66. Cl. 1.
Dura Corp.: *See*—
Detroit Harvester Co.
Durham Industries, Inc., New York, N.Y. 815,412, pub. 7–5–66. Cl. 22.
Dyna Corp., Dayton, Ohio. 815,446, pub. 7–5–66. Cl. 23.
Eastern Carbon Black Co., Charleston, W. Va., to Ashland Oil & Refining Co., Ashland, Ky. 215,466, ren. 9–20–66. Cl. 1.
Eat-All Frozen Food Co., Inc., The, Philadelphia, Pa. 815,566, pub. 7–5–66. Cl. 46.
Ebco Mfg. Co., Columbus, Ohio. 815,481, pub. 7–5–66. Cl. 34.
Ednalite Optical Co., Inc., Peekskill, N.Y. 702,217, canc. Cl. 26.
Eldridge, Eugene, d.b.a. Rampco Equipment Co., Torrance, Calif. 702,097, canc. Cl. 13.
Electric Utilities Corp., Kansas City, Mo. 815,287, pub. 7–5–66. Cl. 12.
Electro-Autosizing Machine Corp., Closter, N.J. 815,454, pub. 7–5–66. Cl. 26.
Elliott Pharmacal Co.: *See*—
Froom, Julius Elliot.
Embassy Industries, Inc., Farmingdale, N.Y. 815,382, pub. 7–5–66. Cl. 21.
Emco, Inc., Des Plaines, Ill. 815,331, pub. 7–5–66. Cl. 16.
Energy Oil Co., Inc., Baltimore, Md. 815,316, pub. 7–5–66. Cl. 15.
Erie Mop & Wringer Co., Girard, Pa. 702,230, canc. Cl. 29.
Erwin Mills, Inc.: *See*—
Monohansett Mfg. Co.
Escher Wyss G.m.b.H., Wurttemberg, Germany. 815,425, pub. 7–5–66. Cl. 23.
Esso Standard Oil Co.: *See*—
Humble Oil Refining Co.
Evans Products Co., Portland, Oreg. 815,286, pub. 7–5–66. Cl. 12.
Everglades Trading Co., Inc., Hialeah, Fla. 815,270, pub. 7–5–66. Cl. 3.
Everpure Laboratories, Inc., Boston, Mass. 702,060, canc. Cl. 6.
Exprinter Travel Service, Inc., New York, N.Y. 702,422, canc. Cl. 10.
Fabric Research Laboratories, Inc., Dedham, Iowa. 815,436, pub. 7–5–66. Cl. 28.
Factor, Max: *See*—
Factor, Max, & Co.
Factor, Max, & Co., d.b.a. Max Factor, Hollywood, Calif. 815,604, pub. 7–5–66. Cl. 51.

Fairchester Tomato Packers, Inc., Mamaroneck, N.Y. 815,542, pub. 7–5–66. Cl. 46.
Faroy, Inc., Houston, Tex. 815,476, pub. 7–5–66. Cl. 33.
Fibreboard Paper Products Corp.: *See*—
Paraffine Paint Co., The.
Fields, Tom, Ltd., Northvale, N.J. 815,589, pub. 7–5–66. Cl. 51.
Firestone Tire & Rubber Co., The, Akron, Ohio. 702,251, canc. Cl. 35.
Flint, Eaton, & Co., Decatur, Ill. 702,137, canc. Cl. 18.
Flo-Paint, Inc., Long Island City, N.Y. 815,328, pub. 7–5–66. Cl. 16.
Flo-Tronics, Inc., d.b.a. Northern Signal Co., Minneapolis, Minn. 815,391, pub. 7–5–66. Cl. 21.
Food Enterprises, Inc., from Dorann Foods, Inc., Rye, N.Y. 734,356, canc. Cl. 46.
Forschner, R. H., Co., Inc., New York, N.Y. 815,421, pub. 7–5–66. Cl. 23.
Fort Howard Paper Co., Green Bay, Wis. 815,491, pub. 7–5–66. Cl. 37.
Freeport Sulphur Co., New York, N.Y. 815,262, pub. 7–5–66. Cl. 1.
Froom, Julius Elliot, d.b.a. Elliot Pharmacal Co., Omaha, Nebr. 702,383, canc. Cl. 51.
Fulton Bag & Cotton Mills, to Fulton Industries, Inc., Atlanta, Ga. 218,459, ren. 9–20–66. Cl. 50.
Fulton Industries, Inc.: *See*—
Fulton Bag & Cotton Mills.
Furstenberg Ehemalige Herzoglich Braunschweigische, Porzellanmanufaktur, Furstenberg (Weser), Germany. 702,233, canc. Cl. 30.
Garlano, William F., d.b.a. Career Enterprises, Newton Square, Pa. 815,581, pub. 7–5–66. Cl. 50.
Geigy Chemical Corp., Ardsley, N.Y. 815,354, pub. 7–5–66. Cl. 18.
Geigy Chemical Corp., Ardsley, N.Y. 815,355, pub. 7–5–66. Cl. 18.
General Chemical Co., to Allied Chemical Corp., New York, N.Y. 425,171, ren. 9–20–66. Cl. 6.
General Features Corp., New York, N.Y. 702,276, canc. Cl. 38.
General Dynamics Corp., Chicago, Ill. 815,631, pub. 7–5–66. Cl. 103.
General Foods Corp., White Plains, N.Y. 815,557, pub. 7–5–66. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 815,544, pub. 7–5–66. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 815,545, pub. 7–5–66. Cl. 46.
General Time Corp.: *See*—
Western Clock Mfg. Co., The.
General Time Corp., New York, N.Y. 702,220, canc. Cl. 27.
Gidding, J., Co.: *See*—
Gidding, Joseph M.
Gidding, Joseph M., d.b.a. J. Gidding Co., New York, N.Y. 815,559, pub. 7–5–66. Cl. 46.
Gioia Macaroni Co., Inc., Buffalo, N.Y. 815,540, pub. 7–5–66. Cl. 46.
Glamorise Foundations, Inc., New York, N.Y. 815,656. Cl. 39.
Glen Raven of California, Inc., San Fernando, Calif. 702,310, canc. Cl. 39.
Glessner Co., Inc., The, Stamford, Conn. 815,595, pub. 7–5–66. Cl. 51.
Glidden Co., The, Cleveland, Ohio. 815,330, pub. 7–5–66. Cl. 16.
Glidden Co., The, Cleveland, Ohio. 815,337, pub. 7–5–66. Cl. 16.
Globe-Union Inc., Milwaukee, Wis. 815,370, pub. 7–5–66. Cl. 21.
Globe-Union Inc., Milwaukee, Wis. 815,384, pub. 7–4–66. Cl. 21.
Globe-Union Inc., Milwaukee, Wis. 815,385, pub. 7–5–66. Cl. 21.
Globe-Union Inc., Milwaukee, Wis. 815,386, pub. 7–5–66. Cl. 21.
Glowall Corp., Glenside, Pa. 739,730, canc. Cl. 26.
Goldberg, Harry, d.b.a. The Right Aro Co., Plainfield, N.J. 815,342, pub. 7–5–66. Cl. 18.
Golden Grain Macaroni Co., d.b.a. Mission Macaroni Co., and as Pacific Coast Macaroni Mfg. Co., San Leandro, Calif. 702,417, canc. Cl. 46.
Gordon Foods: *See*—
Sunshine Biscuits.
Goodimade Mfg. Co., d.b.a. Les Girls, Philadelphia, Pa. 815,513, pub. 7–5–66. Cl. 39.
Goodman Bros. Mfg. Co., Philadelphia, Pa. 815,430, pub. 7–5–66. Cl. 23.
Goodrich Drug Co.: *See*—
Goodrich, Herbert F.
Goodrich-Gamble Co., St. Paul, Minn. 231,899. canc. Cl. 51.
Goodrich, Herbert F., d.b.a. Goodrich Drug Co., Anoka, to W. L. Janecek, d.b.a. Goodrich Drug Co., St. Paul, Minn. 213,750, ren. 9–20–66. Cl. 18.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 56,752, ren. 9–20–66. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 57,590, ren. 9–20–66. Cl. 39.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 815,395, pub. 7–5–66. Cl. 21.
Grace, W. R., & Co., Cambridge, Mass. 815,323, pub. 7–5–66. Cl. 16.
Grady & Neary Ink Co., Chicago, Ill. 702,081, canc. Cl. 11.
Great Bear Spring Co., New York, N.Y. 220,932, ren. 9–20–66. Cl. 45.
Griess-Pfleger Tanning Co., The, Waukegan, Ill. 426,114, ren. 9–20–66. Cl. 1.
Hains Industries, Inc., Winter Haven, Fla. 815,365, pub. 7–5–66. Cl. 19.
Happiness, Inc., Kansas City, Kans. 815,502, pub. 7–5–66. Cl. 38.
Hamac-Hansella Aktiengesellschaft, Viersen, Rhineland, from Hamac-Hansella Machinen GmbH, Dusseldorf, Germany. 815,420, pub. 7–5–66. Cl. 23.
Hamac-Hansella Machinen GmbH: *See*—
Hamac-Hansella Aktiengesellschaft.
Handy Angle Ltd., Birmingham, England. 702,095, canc. Cl. 13.
Hanson, Harvey E., Co., Paw Paw, Mich. 815,463, pub. 7–5–66. Cl. 26.
Hardwick Stove Co., Cleveland, Tenn. 815,482, pub. 7–5–66. Cl. 34.
Hardwood Corp. of America, Asheville, N.C. 815,283, pub. 7–5–66. Cl. 12.
Hardwood Corp. of America, Asheville, N.C. 815,284, pub. 7–5–66. Cl. 12.
Harleysville Mutual Insurance Co., Harleysville, Pa. 815,629, pub. 7–5–66. Cl. 102.
Harleysville Mutual Insurance Co., Harleysville, Pa. 815,630, pub. 7–5–66. Cl. 102.
Harrell, Joel E., & Sons, Inc., Suffolk, Va. 815,546, pub. 7–5–66. Cl. 46.
Harris-Intertype Corp., Cleveland, Ohio. 815,445, pub. 7–5–66. Cl. 23.
Harvey, G. F., Co., Inc., The, New York, N.Y. 702,138, canc. Cl. 18.
Harvey, G. F., Co., Inc., The, New York, N.Y. 702,151, canc. Cl. 18.
Harvey, G. F., Co., Inc., The, New York, N.Y. 702,168, canc. Cl. 18.
Hassenfeld Bros., Inc., Pawtucket, R.I. 815,415, pub. 7–5–66. Cl. 22.
Hawk Model Co., Inc., Chicago, Ill. 815,399, pub. 7–5–66. Cl. 22.
Haydon Switch & Instrument Inc., from Haydon Switch & Instrument Inc., Waterbury, Conn. 815,373, pub. 7–5–66. Multiple Class (Classes 21, 26, and 27).
Hemstreet, Arthur, Little Falls, N.Y. 702,126, canc. Cl. 18.
Henry Z., Inc., New York, N.Y. 702,292, canc. Cl. 39.
Herald Press: *See*—
Mennonite Publishing House, Inc.
Hernandez, Antonio, d.b.a. Kapoot Industries, Los Angeles, Calif. 815,603, pub. 7–5–66. Cl. 51.
Hervin Co., The, Tualatin, Oreg. 815,555, pub. 7–5–66. Cl. 46.
Hess, Goldsmith & Co., Inc., New York, N.Y. 702,345, canc. Cl. 42.
Hi-Fashion, Inc., Atlanta, Ga. 815,602, pub. 7–5–66. Cl. 51.
Hills Bros. Coffee, Inc., San Francisco, Calif. 426,375, ren. 9–20–66. Cl. 46.
Hinde Engineering Co., Highland Park, Ill. 815,312, pub. 7–5–66. Cl. 13.
Hi-Shear Corp., Torrance, Calif. 815,313, pub. 7–5–66. Cl. 13.
Hi-Shear Corp., Torrance, Calif. 815,314, pub. 7–5–66. Cl. 13.
Hoffman, Stanley, d.b.a. Satellite Records, New York, N.Y. 702,254, canc. Cl. 36.
Holzer Watch Co., Inc., New York, N.Y. 702,222, canc. Cl. 27.
House of Coins, Elizabeth, N.J. 815,265, pub. 7–5–66. Cl. 2.
House of Lisa Mornay: *See*—
Superior Products Co.
Hoving Corp., New York, N.Y. 702,290, canc. Cl. 39.
Hudnut, Richard, Morris Plains, N.J. 422,595, ren. 9–20–66. Cl. 51.
Hudson Valley Wine Co., Inc., Highland, N.Y. 815,572, pub. 7–5–66. Cl. 47.
Humble Oil Refining Co., Houston, Tex., from Esso Standard Oil Co., New York, N.Y. 702,396, canc. Cl. 1.
Hunn, William, and Associates: *See*—
Hunn, William E.
Hunn, William E., d.b.a. William Hunn and Associates, St. Louis, Mo. 702,374, canc. Cl. 50.
Hurst, N. K., Co., Inc., Indianapolis, Ind. 815,553, pub. 7–5–66. Cl. 46.
Hydrotile Machinery Co., Nashua, Iowa. 815,435, pub. 7–5–66. Cl. 23.
Iceland Seafood Co.: *See*—
Olafsson, Arni.
Ilaria, Lunata, Lucca, Italy. 815,511, pub. 7–5–66. Cl. 39.
Independent Grocers' Alliance Distributing Co., Chicago, Ill. 815,610, pub. 7–5–66. Cl. 52.
Indianapolis Motor Speedway Corp., Speedway, Ind. 815,638, pub. 6–28–66. Cl. 107.
Indianapolis Motor Speedway Corp., Speedway, Ind. 815,639, pub. 6–28–66. Cl. 107.
Indianapolis Motor Speedway Corp., Speedway, Ind. 815,640, pub. 7–5–66. Cl. 107.
Industrial & Scientific Conference Management, Inc., Chicago, Ill. 815,618, pub. 7–5–66. Cl. 101.
Industrial Tape Corp., to Johnson & Johnson, New Brunswick, N.J. 426,300, ren. 9–20–66. Cl. 21.
Industrial Valley Bank and Trust Co., Jenkintown, Pa. 815,626, pub. 7–5–66. Cl. 102.
Information Supplies Corp. from Midwest Tabulating Card Producers, Inc., Evanston, Ill. 815,493, pub. 7–5–66. Cl. 37.
Inland Express, Inc., Marlborough, Mass. 815,636, pub. 7–5–66. Cl. 105.
Imperial Knife Associated Co., Inc., Providence, R.I. 702,215, canc. Cl. 23.
Instrumentation Associates Inc., New York, N.Y. 815,659. Cl. 44.
International Paint Co., Inc., New York, N.Y. 815,335, pub. 7–5–66. Cl. 16.

International Shoe Co., St. Louis, Mo. 815,527, pub. 7–5–66. Cl. 39.
International Telephone and Telegraph Corp.: *See*—
Bell & Gossett Co.
International Telephone & Telegraph, New York, N.Y. 815,376, pub. 7–5–66. Cl. 21.
Interoceanic Commodities Corp., St. Paul, Minn. 815,296, pub. 7–5–66. Cl. 12.
Iorio, Salvatore P., Jr., d.b.a. Areo Jewelry, Providence, R.I. 815,465, pub. 7–5–66. Cl. 28.
Irwin-Harrison-Whitney, Inc., Philadelphia, Pa. 221,005, ren. 9–20–66. Cl. 46.
Ivory System, Inc., Peabody, Mass 815,507, pub. 7–5–66. Cl. 39.
J. G. Farbenindustrie Aktiengesellschaft, Ludwigshafen-on-Rhine, Germany, to General Aniline & Film Corp., New York, N.Y. 216,879, ren. 9–20–66. Cl. 6.
Jackson Brewing Co., New Orleans, La. 815,576, pub. 7–5–66. Cl. 48.
Jackson Brewing Co., New Orleans, La. 815,577, pub. 7–5–66. Cl. 48.
Jak-Pak, Inc., Milwaukee, Wis. 815,398, pub. 7–5–66. Cl. 22.
Janecek, William L.: *See*—
Goodrich, Herbert F.
Japan Gas Lighter Corp., New York, N.Y. 815,277, pub. 7–5–66. Cl. 8.
Jacuzzi Bros., Inc., Little Rock, Ark. 815,434, pub. 7–5–66. Cl. 23.
Johns-Manville Corp.: *See*—
California Cedar Products Co.
Magne-Silica Co.
Johns-Manville Corp., New York, N.Y. 815,306, pub. 7–5–66. Cl. 12.
Johns-Manville Corp., New York, N.Y. 815,485, pub. 7–5–66. Cl. 35.
Johnson & Johnson: *See*—
Industrial Tape Corp.
Johnson & Johnson, New Brunswick, N.J. 56,288, ren. 9–20–66. Cl. 44.
Johnson & Johnson, New Brunswick, N.J. 58,463, ren. 9–20–66. Cl. 52.
Johnson & Johnson, New Brunswick, N.J. 218,500, ren. 9–20–66. Cl. 18.
Jolly Music, Ltd., New York, N.Y. 702,269, canc. Cl. 38.
Jolly Roger Dairy Products, Inc., Johnsville, Pa. 754,298, canc. Cl. 46.
Jolly Roger Dairy Products, Inc., Johnsville, Pa. 712,628, canc. Cl. 101.
Jones-Blair Co., from Jones Blair Paint Co., Dallas, Tex. 815,318, pub. 7–5–66. Cl. 16.
Jones Blair Paint Co.: *See*—
Jones-Blair Co.
Kai Dyzamann, Hamburg, Germany. 815,467, pub. 7–5–66. Cl. 29.
Kanegafuchi Boseki Kabushiki Kaisha, Osaka, Japan. 815,556, pub. 7–5–66. Cl. 46.
Kapoot Industries: *See*—
Hernandez, Antonio.
Kawamura, A. S., d.b.a. Sun Marketing Co., Denver, Colo., to G. Kawamura, d.b.a. Western Marketing Co., Fullerton, Calif. 422,420, ren. 9–20–66. Cl. 46.
Kawamura, G.: *See*—
Kawamura, A. S.
Kaye, Ellen, Laboratories, Inc., St. Paul, Minn. 815,609, pub. 7–5–66. Cl. 52.
Keltec Industries, Inc., Alexandria, Va. 815,378, pub. 7–5–66. Cl. 21.
Keltec Industries, Inc., Alexandria, Va. 815,460, pub. 7–5–66. Cl. 26.
Kendall Co., The, Walpole, Mass. 815,357, pub. 7–5–66. Cl. 18.
Kendall Foods, Inc., Los Angeles, Calif. 702,357, canc. Cl. 46.
Kern Enterprises: *See*—
Kern, Oscar.
Kern, Oscar, d.b.a. Kern Enterprises, Stillwater, Minn. 815,253, pub. 7–5–66. Cl. 1.
Kern, Oscar, d.b.a. Kern Enterprises, Stillwater, Minn. 815,254, pub. 7–5–66. Cl. 1.
Kern, Oscar, d.b.a. Kern Enterprises, Stillwater, Minn. 815,255, pub. 7–5–66. Cl. 1.
Keystone Services, Inc., Denver, Colo. 702,201, canc. Cl. 23.
Kiddie Brush & Toy Co., Jonesville, Mich. 815,409, pub. 7–5–66. Cl. 22.
Kiddie Brush & Toy Co., Jonesville, Mich. 815,410, pub. 7–5–66. Cl. 22.
Koehring Co.: *See*—
Parsons Co., The.
Kohn, L., & Sons Meat and Grocery Co., d.b.a. The Kohn Stores, St. Louis, Mo., to The Kroger Co., Cincinnati, Ohio. 216,063, ren. 9–20–66. Cl. 46.
Kohn Stores, The: *See*—
Kohn, L., & Sons Meat and Grocery Co.
Kroger Co., The: *See*—
Kohn, L., & Sons Meat and Grocery Co.
Laidlaw Co., Inc., The, Indianapolis, Ind. 815,431, pub. 7–5–66. Cl. 23.
L'Aigon Sociedad de Responsabilidad Limitada, Buenos Aires, Argentina. 815,508, pub. 7–5–66. Cl. 39.
Laminated Glass Corp., Detroit, Mich. 815,300, pub. 7–5–66. Cl. 12.
Laminated Glass Corp., Detroit, Mich. 815,302, pub. 7–5–66. Cl. 12.
Laminated Glass Corp., Detroit, Mich. 815,303, pub. 7–5–66. Cl. 12.
Laminated Glass Corp., Detroit, Mich. 815,304, pub. 7–5–66. Cl. 12.
Laminated Glass Corp., Detroit, Mich. 815,473, pub. 7–5–66. Cl. 32.
La Manufacture de Feutres de Mouzon (Anciens Etablissements Roger Sommer & Ses Fils), Paris (Seine), France. 815,368, pub. 7–5–66. Cl. 20.
La Manufacture de Feutres de Mouzon (Anciens Etablissements Roger Sommer & Ses Fils), Paris (Seine), France. 815,369, pub. 7–5–66. Cl. 20.
Lavin-Charles of the Ritz, Inc.: *See*—
Charles of the Ritz, Inc.
Lehn & Fink Products Corp., New York, N.Y. 815,271, pub. 7–5–66. Multiple Class (Classes 4 and 52).
Les Girls: *See*—
Goodimade Mfg. Co.
Les Parfums de Dana, Inc., New York, N.Y. 425,306, ren. 9–20–66. Cl. 52.
Les Parfums de Dana, Inc., New York, N.Y. 425,307, ren. 9–20–66. Cl. 52.
Les Parfums de Dana, Inc., New York, N.Y. 425,308, ren. 9–20–66. Cl. 52.
Les Parfums de Dana, Inc., New York, N.Y. 425,310, ren. 9–20–66. Cl. 52.
Les Parfums de Dana, Inc., New York, N.Y. 425,311, ren. 9–20–66. Cl. 52.
Les Parfums de Dana, Inc., New York, N.Y. 425,312, ren. 9–20–66. Cl. 52.
Les Parfums de Dana, Inc., New York, N.Y. 425,322, ren. 9–20–66. Cl. 52.
Les Parfums de Dana, Inc., New York, N.Y. 425,323, ren. 9–20–66. Cl. 52.
Les Parfums de Dana, Inc., New York, N.Y. 422,486, ren. 9–20–66. Cl. 2.
Les Parfums de Dana, Inc., New York, N.Y. 422,493, ren. 9–20–66. Cl. 2.
Les Parfums de Dana, Inc., New York, N.Y. 425,680, ren. 9–20–66. Cl. 51.
Les Parfums de Dana, Inc., New York, N.Y. 424,703, ren. 9–20–66. Cl. 51.
Lever Bros. Co., New York, N.Y. 815,608, pub. 7–5–66. Cl. 52.
Lexington Mfg. Co., Lexington, N.C. 702,324, canc. Cl. 39.
Lezor Corp., New York, N.Y. 576,718, canc. Cl. 46.
Libbey-Owens-Ford Glass Co., Toledo, Ohio. 815,457, pub. 7–5–66. Cl. 26.
Libbey-Owens-Ford Glass Co., Toledo, Ohio. 815,469, pub. 7–5–66. Cl. 32.
Lilly, Eli, & Co., Indianapolis, Ind. 702,133, canc. Cl. 18.
Lilyette: *See*—
Lilyette Brassiere Co., Inc.
Lilyette Brassiere Co., Inc., d.b.a. Lilyette, New York, N.Y. 702,299, canc. Cl. 39.
Lincoln Paint & Color Co., Lincoln, Nebr., to Acme Quality Paints, Inc., Detroit, Mich. 57,891, ren. 9–20–66. Cl. 16.
Lindberg, John E., Inc., Berkeley, Calif. 815,379, pub. 7–5–66. Cl. 21.
Lindberg Products, Inc., Skokie, Ill. 815,402, pub. 7–5–66. Cl. 22.
Lindy Pen Co., Inc., Culver City, Calif. 815,488, pub. 7–5–66. Cl. 37.
Link-Belt Co., Chicago, Ill. 426,624, ren. 9–20–66. Cl. 21.
Lone Star Roofing Co., Houston, Tex. 815,281, pub. 7–5–66. Cl. 12.
Luitpold-Werk, Munich, Germany. 815,341, pub. 7–5–66. Cl. 18.
Luminall Paints, Inc., North Bergen, N.J. 815,326, pub. 7–5–66. Cl. 16.
Lyntone Co., The, Oklahoma City, Okla. 702,318, canc. Cl. 39.
M & M's Candies: *See*—
Mars, Inc.
Macke Co., The, from Macke Vending Co., Washington, D.C. 815,624, pub. 7–5–66. Cl. 101.
Macke Vending Co.: *See*—
Macke Co., The.
Macmillin, Charles E., Sepul Veda, Calif. 815,320, pub. 7–5–66. Cl. 16.
Madison Industries, Inc., Pawtuckett, R.I. 815,422, pub. 7–5–66. Cl. 23.
Madison Industries, Inc., Pawtucket, R.I. 815,423, pub. 7–5–66. Cl. 23.
Mag-Craft Sales Corp., Grand Rapids, Mich. 702,377, canc. Cl. 50.
Magne-Silica Co., Los Angeles, Calif., to Johns-Manville Corp., New York, N.Y. 53,930, ren. 9–20–66. Cl. 12.
Magyar, Louis L., d.b.a. Meridian Brick, Los Angeles, Calif. 787,400, canc. Cl. 12.
Majestic Drug Co., Inc., Bronx, N.Y. 815,346, pub. 7–5–66. Cl. 18.
Maradel Products, Inc., Farmingdale, N.Y. 815,586, pub. 7–5–66. Cl. 51.
Maradel Products, Inc., Farmingdale, N.Y. 815,596, pub. 7–5–66. Cl. 51.
Marcovitch & Co.: *See*—
United Kingdom Tobacco Co., Ltd., The.
Marino, Anthony, Avon, Mass. 815,298, pub. 7–5–66. Cl. 12.
Markel Mfg. Co., Inc., Middlebury, Ind. 702,176, canc. Cl. 19.
Marlboro Shirt Co., Inc., New York, N.Y. 815,521, pub. 7–5–66. Cl. 39.
Marriott Motor Hotels, Inc., Washington, D.C. 815,612, pub. 7–5–66. Cl. 100.
Mars, Inc., d.b.a. M & M's Candies, Chicago, Ill. 815,569, pub. 7–5–66. Cl. 46.
Marshall, Arthur N., Richmond, Va. 815,464, pub. 7–5–66. Cl. 26.
Martinelli, S., & Co., Watsonville, Calif. 815,543, pub. 7–5–66. Cl. 46.

Marx, Louis, & Co., Inc., New York, N.Y. 815,400, pub. 7–5–66. Cl. 22.
Mary Sue Candies, Inc., Baltimore, Md. 815,547, pub. 7–5–66. Cl. 46.
Maysteel Products Corp., Mayville, Wis. 815,424, pub. 7–5–66. Cl. 23.
McDermott, J. Ray, & Co., Inc., New Orleans, La. 815,634, pub. 7–5–66. Cl. 103.
McDowell Tire Co., Kansas City, Mo. 815,426, pub. 7–5–66. Cl. 23.
McGraw-Edison Co., West Orange, N.J. 815,453, pub. 7–5–66. Cl. 26.
McKelvy, Alfred D., d.b.a. Alfred D. McKelvy Co., Minneapolis, Minn. 375,518, canc. Cl. 51.
McKelvy, Alfred D., Co.: *See*—
McKelvy, Alfred D.
Mead Johnson & Co., Evansville, Ind. 815,360, pub. 7–5–66. Cl. 18.
Medley Distilling Co.: *See*—
Churchill, Ltd.
Mennonite Publishing House, Inc., d.b.a. Herald Press, Scottdale, Pa. 815,504, pub. 7–5–66. Cl. 38.
Meridian Brick: *See*—
Magyar, Louis L.
Merriman Bros., Inc., Boston, Mass. 815,309, pub. 7–5–66. Multiple Class (Classes 13, 14, 21, 22, and 23).
Michigan Oven Co., Morton Grove, Ill. 815,478, pub. 7–5–66. Cl. 34.
Midwest Audio Corp., Chicago, Ill. 815,459, pub. 7–5–66. Cl. 26.
Midwest Tabulating Card Producers, Inc.: *See*—
Information Supplies Corp.
Mink-Dayton, Inc., Dayton, Ohio. 815,372, pub. 7–5–66. Cl. 21.
Mink-Dayton, Inc., Dayton, Ohio. 815,307, pub. 7–5–66. Cl. 13.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 815,498, pub. 7–5–66. Cl. 37.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 815,585, pub. 7–5–66. Cl. 50.
Miss Georgia, Inc., Los Angeles, Calif. 815,509, pub. 7–5–66. Cl. 39.
Mission Macaroni Co.: *See*—
Golden Grain Macaroni Co.
Mitsubishi International Corp., New York, N.Y. 815,506, pub. 7–5–66. Cl. 39.
Mohawk National Bank, Schenectady, N.Y. 815,627, pub. 7–5–66. Cl. 102.
Mohawk National Bank, Schenectady, N.Y. 815,628, pub. 7–5–66. Cl. 102.
Molitor, Inc., Englewood, Colo. 702,372, canc. Cl. 50.
Monarch Metal Products, Inc., New Windsor, N.Y. 815,451, pub. 7–5–66. Cl. 23.
Monohansett Mfg. Co., Putnam, Conn., to Erwin Mills, Inc., Durham, N.C. 58,866, ren. 9–20–66. Cl. 42.
Monument Record Corp., Hendersonville, Tenn. 815,487, pub. 7–5–66. Cl. 36.
Moran Brush Mfg. Co., Inc., Hamden, Conn. 702,231, canc. Cl. 29.
Morrow, William E., d.b.a. Aqua-Mist Co., Winston-Salem, N.C. 815,477, pub. 7–5–66. Cl. 34.
Mosaic Tile Co., The, Cleveland, Ohio. 815,299, pub. 7–5–66. Cl. 12.
Mortell, J. W., Co., Kankakee, Ill. 815,646. Cl. 12.
Moulton Bicycles Ltd., Wiltshire, England. 815,652. Cl. 19.
Murphy, G. C., Co., McKeesport, Pa. 815,519, pub. 7–5–66. Cl. 39.
N.V. Uitgeversmaatschappij Suscess, The Hague, Netherlands. 815,497, pub. 7–5–66. Cl. 37.
Nachman, Joseph, Philadelphia, Pa. 702,216, canc. Cl. 23.
Nachman, Joseph, Philadelphia, Pa. 702,238, canc. Cl. 32.
Najarda Corp., New York, N.Y. 815,466, pub. 7–5–66. Cl. 28.
National Association of Barber Schools, Inc., Columbus, Ohio. 815,643, pub. 7–5–66. Cl. 200.
National Biscuit Co., New York, N.Y. 815,562, pub. 7–5–66. Cl. 46.
National Biscuit Co., New York, N.Y. 815,563, pub. 7–5–66. Cl. 46.
National Corrugated Steel Pipe Association, Chicago, Ill. 815,616, pub. 7–5–66. Cl. 100.
National Dollar Stores, Ltd., The, San Francisco, Calif. 815,512, pub. 7–5–66. Cl. 39.
National Glove, Inc.: *See*—
National Glove Co., The.
National Glove Co., The, Columbus, to National Glove, Inc., Coshocton, Ohio. 422,795, ren. 9–20–66. Cl. 39.
National Paint Distributors, Inc., Chicago, Ill. 815,292, pub. 7–5–66. Cl. 12.
National Work Clothes Rental, Elizabeth, N.J. 815,468, pub. 7–5–66. Multiple Class (Classes 29, 39, and 42).
New Castle Products, Inc., New Castle, Ind. 702,086, canc. Cl. 12.
Nilo Santos Pinto, Rio de Janeiro, Brazil. 702,260, canc. Cl. 36.
Nino Gesellschaft mit beschrankter Haftung & Co., Nordhorn, Bentheim, Germany. 702,308, canc. Cl. 39.
Nino Gesellschaft mit beschrankter Haftung & Co., Nordhorn, Bentheim, Germany. 702,340, canc. Cl. 42.
Northern Signal Co.: *See*—
Flo-Tronics, Inc.
Olafsson, Arni, d.b.a. Icelandic Seafood Co. (Islenzkar Sjavarafurdir), Reykjavik, Iceland. 815,558, pub. 7–5–66. Cl. 46.
Oneida Ltd., Oneida, N.Y. 702,208, canc. Cl. 23.
Ontario Tobacco Co. Ltd., Toronto, Ontario, Canada. 815,340, pub. 7–5–66. Cl. 17.
Ortho Pharmaceutical Corp., Raritan, N.J. 702,129, canc. Cl. 18.
Osincup, Lynn C., d.b.a. Adhesi-Kote Co., Waverly, Iowa. 815,344, pub. 7–5–66. Cl. 18.
Otis Elevator Co., New York, N.Y. 815,438, pub. 7–5–66. Cl. 23.
Ozark-Mahoning Co., Tulsa, Okla. 702,080, canc. Cl. 10.
Pacific Coast Macaroni Mfg. Co.: *See*—
Golden Grain Macaroni Co.
Pan American World Airways, Inc., New York, N.Y. 815,637, pub. 7–5–66. Cl. 107.
Paramine Paint Co., The, to Fibreboard Paper Products Corp., San Francisco, Calif. 57,538, ren. 9–20–66. Cl. 12.
Parke, Davis & Co.: *See*—
Comfort Powder Co., The.
Parmac Corp., Saginaw, Mich. 815,531, pub. 7–5–66. Cl. 44.
Parsons Co., The, Newton, Iowa, to Koehring Co., Milwaukee, Wis. 424,145, ren. 9–20–66. Cl. 23.
Pascall, James, Ltd., London, England. 130,221, canc. Cl. 46.
Patons & Baldwins, Ltd., Darlington, England. 379,737, canc. Cl. 43.
Patterson Equipment Co., Carnegie, Pa. 815,619, pub. 7–5–66. Multiple Class (Classes 101 and 103).
Patterson Kelley Co., Inc., The, East Stroudsburg, Pa. 815,440, pub. 7–5–66. Cl. 23.
Patterson Kelley Co., Inc., The, East Stroudsburg, Pa. 815,441, pub. 7–5–66. Cl. 23.
Patterson Kelley Co., Inc., The, East Stroudsburg, Pa. 815,442, pub. 7–5–66. Cl. 23.
Pedi-Bares, Inc., San Francisco, Calif. 702,333, canc. Cl. 39.
Pennsalt Chemicals Corp.: *See*—
Pennsylvania Salt Mfg. Co.
Pennsalt Chemicals Corp., Philadelphia, Pa. 815,417, pub. 7–5–66. Cl. 23.
Pennsylvania Salt Mfg. Co., to Pennsalt Chemicals Corp., Philadelphia, Pa. 56,078, ren. 9–20–66. Cl. 6.
Peyron, Antoine F., Paris, France. 702,349, canc. Cl. 44.
Peyron, Antoine F., Paris, France. 702,350, canc. Cl. 44.
Peyron, Antoine F., Paris, France. 702,351, canc. Cl. 44.
Peyron, Antoine F., Paris, France. 702,352, canc. Cl. 44.
Peyron, Antoine F., Paris, France. 702,353, canc. Cl. 44.
Phillips & Pain-Vermorel, Societe Anonyme, Montrouge, Seine, France. 702,407, canc. Cl. 23.
Piedmont Shirt Co., Greenville, S.C. 815,522, pub. 7–5–66. Cl. 39.
Plattsburgh Foundry & Machine Co., Inc., Plattsburgh, N.Y. 815,418, pub. 7–5–66. Cl. 23.
Plymouth Wholesale Dry Goods Corp., to Plymouth Wholesale Dry Goods Corp., New York, N.Y. 338,413, canc. Cl. 39.
Polsky, Nathan, Rockville Centre, N.Y. 815,403, pub. 7–5–66. Cl. 22.
Potters Bros., Inc., Carlstadt, N.J. 815,582, pub. 7–5–66. Cl. 50.
Princess Products, Inc., Fitchburg, Mass. 815,276, pub. 7–5–66. Cl. 2.
Private Label Inc., Los Angeles, Calif. 815,518, pub. 7–5–66. Cl. 39.
Process Chemicals Co., Santa Fe Springs, Calif. 702,039, canc. Cl. 1.
Professional Pilot's Assn., Columbus, Ohio. 815,641, pub. 7–5–66. Cl. 200.
Pro-Phy-Lac-Tic Brush Co., Northampton, to Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 217,417, ren. 9–20–66. Cl. 3.
Pro-Phy-Lac-Tic Brush Co., Northampton, to Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 422,462, ren. 9–20–66. Cl. 27.
Purdue Frederick Co., The, Yonkers, N.Y. 815,348, pub. 7–5–66. Cl. 18.
Pure Oil Co., The, Chicago, Ill. 702,066, canc. Cl. 6.
Purkey, R. D., d.b.a. Purkey-White, Miami, Fla. 702,093, canc. Cl. 12.
Purkey-White: *See*—
Purkey, R. D.
Pur-O-Zone Chemical Co., Inc., Lawrence, Kans. 815,327, pub. 7–5–66. Cl. 16.
Quaker State Oil Refining Corp., Oil City, Pa. 815,324, pub. 7–5–66. Cl. 16.
Quality Shoppe Candies, Inc., Fort Worth, Tex. 815,560, pub. 7–5–66. Cl. 46.
Radiant Wash Solution Co.: *See*—
Call, Minnie T.
Raleigh Manufactures, Inc., New York, N.Y. 815,525, pub. 7–5–66. Cl. 39.
Rampco Equipment Co.: *See*—
Eldridge, Eugene.
Ramsey, Taufek H., d.b.a. West Coast Sales, Campbell, Calif. 815,489, pub. 7–5–66. Cl. 37.
Ranney Refrigerator Co., Greenville, Mich. 702,234, canc. Cl. 31.
Raven Industries, Inc., Sioux Falls, S. Dak. 815,264, pub. 7–5–66. Multiple Class (Classes 2, 12, 19, 21, 26, 34, and 50).
Ray-dor Sales Corp.: *See*—
Cleveland-Detroit Corp.
Reider, S. A., & Co., New York, N.Y. 702,376, canc. Cl. 50.
Reinhold Publishing Corp., New York, N.Y. 815,501, pub. 7–5–66. Cl. 38.
Rentokil Ltd., London, England, to Rentokil Laboratories Ltd., East Grinstead, England. 424,146, ren. 9–20–66. Cl. 6.
Rentokil Laboratories Ltd.: *See*—
Rentokil Ltd.
Repco, Inc., Ivoryton, Conn. 815,383, pub. 7–5–66. Cl. 21.
Republic Powdered Metals, Inc., Cleveland, Ohio. 815,294, pub. 7–5–66. Cl. 12.
Revere Custom Builders, Inc., Center Square, Pa. 815,633, pub. 7–5–66. Cl. 103.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 815,266, pub. 7–5–66. Cl. 2.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 815,584, pub. 7–5–66. Cl. 50.

Rexall Drug and Chemical Co., Los Angeles, Calif. 815,600, pub. 7–5–66. Cl. 51.
Reynolds Metals Co., Richmond, Va. 815,293, pub. 7–5–66. Cl. 12.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 222,446, ren. 9–20–66. Cl. 17.
Richardson-Merrell, Inc., Cincinnati, Ohio. 815,350, pub. 7–5–66. Cl. 18.
Richardson-Merrell, Inc., Cincinnati, Ohio. 815,351, pub. 7–5–66. Cl. 18.
Richardson-Merrell, Inc., Cincinnati, Ohio. 815,358, pub. 7–5–66. Cl. 18.
Ries, Iwan, & Co., Chicago, Ill. 815,648. Cl. 17.
Ries, Iwan, & Co., Chicago, Ill. 815,649. Cl. 17.
Right Aro Co., The: *See*—
Goldberg, Harry.
Rinshed-Mason Co., Detroit, Mich. 815,325, pub. 7–5–66. Cl. 16.
Riojas, Casa, S.A., Mexico City, Mex. 748,105, canc. Cl. 36.
Riverside & Dan River Cotton Mills, Inc., to Dan River Mills, Inc., Danville, Va. 422,638, ren. 9–20–66. Cl. 42.
Riverside & Dan River Cotton Mills, Inc., to Dan River Mills, Inc., Danville, Va. 422,640, ren. 9–20–66. Cl. 42.
Riverside & Dan River Cotton Mills, Inc., to Dan River Mills, Inc., Danville, Va. 424,989, ren. 9–20–66. Cl. 42.
Roberts Packing Co., Kimberton, Pa. 815,561, pub. 7–5–66. Cl. 46.
Rob Roy Co., Inc., New York, N.Y. 815,526, pub. 7–5–66. Cl. 39.
Rothschild Messinstrumente, Zurich, Switzerland. 815,456, pub. 7–5–66. Cl. 26.
Roxane, Philips, Inc., New York, N.Y. 815,363, pub. 7–5–66. Cl. 18.
S.p.A. Alfredo Motta, Bettola di Cinisello, Balsamo, Italy. 815,259, pub. 7–5–66. Cl. 1.
Saari, Wayne J., d.b.a. Charm Pederma Co., Chicago, Ill. 815,347, pub. 7–5–66. Cl. 18.
Safe Electrical Cord Committee, New York, N.Y. 702,178, canc. Cl. 21.
Sage Laboratories, Inc., East Natick Industrial Park, Natick, Mass. 815,375, pub. 7–5–66. Cl. 21.
Sams, Howard W., & Co., Inc., Indianapolis, Ind. 815,499, pub. 7–5–66. Cl. 38.
Sarnes, Mary Ann, Detroit, Mich. 421,424, ren. 9–20–66. Cl. 51.
Satellite Records; *See*—
Hoffman, Stanley.
Schenlabs Pharmaceuticals, Inc., New York, N.Y. 702,160, canc. Cl. 18.
Schenlabs Pharmaceuticals, Inc., New York, N.Y. 702,161, canc. Cl. 18.
Schering Corp., Bloomfield, N.J. 815,361, pub. 7–5–66. Cl. 18.
Schieffelin & Co., New York, N.Y. 815,578, pub. 7–5–66. Cl. 49.
Scientific Insulation Co., Inc., Pitcairn, Pa. 815,297, pub. 7–5–66. Cl. 12.
Scott Aviation Corp., Lancaster, N.Y. 815,377, pub. 7–5–66. Cl. 21.
Sealectro Corp., Mamaroneck, N.Y. 815,392, pub. 7–5–66. Cl. 21.
Sealectro Corp., Mamaroneck, N.Y. 815,393, pub. 7–5–66. Cl. 21.
Searle, G. D., & Co., Skokie, Ill. 702,146, canc. Cl. 18.
Searle, G. D., & Co., Skokie, Ill. 815,356, pub. 7–5–66. Cl. 18.
Sears, Roebuck and Co., Chicago, Ill. 374,849, canc. Cl. 42.
Sears, Roebuck and Co., Chicago, Ill. 702,193, canc. Cl. 22.
Sears, Roebuck and Co., Chicago, Ill. 815,516, pub. 7–5–66. Cl. 39.
Segrest Feed and Seed Co., Inc., Slocomb, Ala. 815,345, pub. 7–5–66. Cl. 18.
Sheridan Corp., Argyle, N.Y. 815,534, pub. 7–5–66. Cl. 44.
Shrimpton & Fletcher Ltd., Birmingham, England. 702,355, canc. Cl. 44.
Sidney's: *See*—
Sidney's Linwood, Inc.
Sidney's Linwood, Inc., d.b.a. Sidney's, Kansas City, Mo. 815,564, pub. 7–5–66. Cl. 46.
Sigmamotor, Inc., Middleport, N.Y. 815,455, pub. 7–5–66. Cl. 26.
Silver Creek Precision Corp., Silver Creek, N.Y. 815,444, pub. 7–5–66. Cl. 23.
Silver Line, Kenilworth, N.J. 815,282, pub. 7–5–66. Cl. 12.
Simpson Lee Paper Co., Vicksburg, Mich. 815,494, pub. 7–5–66. Cl. 37.
Singer Co., The, New York, N.Y. 815,655. Cl. 23.
Sipe, James B., and Co., Pittsburgh, Pa. 221,583, ren. 9–20–66. Cl. 16.
Six-Footer Co., The: *See*—
Dietz, Sheldon.
Sky Records, Greenville, Miss. 702,255, canc. Cl. 36.
Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy. 702,348, canc. Cl. 43.
Societe Boulonnaise de Recherches et de Diffusion Pharmaceutiques "Sobore," Boulogne sur Seine (Seine), France. 815,349, pub. 7–5–66. Cl. 18.
Sort-Rite Sales Corp., Harlingen, Tex. 815,416, pub. 7–5–66. Multiple Class (Classes 23 and 31).
Spangler, Inc., d.b.a. Spangler Printers, Inc., Kansas City, Mo. 815,621, pub. 7–5–66. Cl. 101.
Spangler Printers, Inc.: *See*—
Spangler, Inc.
Spencer-Kennedy Laboratories, Inc., Boston, Mass. 815,390, pub. 7–5–66. Cl. 21.
Spray Lin, Inc., Shaker Heights, Ohio. 815,352, pub. 7–5–66. Cl. 18.
Spartan Aircraft Co., Tulsa, Okla. 702,174, canc. Cl. 19.
Standard Oil Co. of California, San Francisco, Calif. 815,483, pub. 7–5–66. Cl. 34.
Staver Westport Inc., Westport, N.Y. 815,492, pub. 7–5–66. Cl. 37.
Sterling Plastics Co., Mountainside, N.J. 815,458, pub. 7–5–66. Multiple Class (Classes 26 and 37).
Straubel Paper Co., Green Bay, Wis. 815,538, pub. 7–5–66. Cl. 44.
Studio Girl-Hollywood Inc., Chicago, Ill. 815,598, pub. 7–5–66. Cl. 51.
Sunshine Biscuits, d.b.a. Gordon Foods, Long Island City, N.Y. 702,416, canc. Cl. 46.
Sun Marketing Co.: *See*—
Kawamura, A. S.
Suntemp Industries, Inc., Blackwood, N.J. 815,366, pub. 7–5–66. Cl. 19.
Superior Parts Mfg. Corp., Chicago, Ill. 501,918, canc. Cl. 34.
Superior Products Co., d.b.a. House of Lisa Mornay, Dallas, Tex. 815,590, pub. 7–5–66. Multiple Class (Classes 51 and 52).
Supradur Mfg. Corp., Wind Gap, Pa. 815,289, pub. 7–5–66. Cl. 12.
Sweetheart Plastics, Inc., Wilmington, Mass. 815,644. Cl. 2.
Tabakfabrik Landhaus, A. Eichenberger & Co., Beinwil Am See, Switzerland. 702,122, canc. Cl. 17.
Tammen, Kathleen, d.b.a. Tammen Table Co., Tucson, Ariz. 702,414, canc. Cl. 44.
Tammen Table Co.: *See*—
Tammen, Kathleen.
Tanner Products Corp., Los Angeles, Calif. 815,599, pub. 7–5–66. Cl. 51.
Tappan Co., The, Mansfield, Ohio. 815,397, pub. 7–5–66. Cl. 21.
Tappan Co., The, Mansfield, Ohio. 815,484, pub. 7–5–66. Cl. 34.
Taylor-Piedmont Co., Spartanburg, S.C. 815,305, pub. 7–5–66. Cl. 12.
Teenform, Inc., New York, N.Y. 815,520, pub. 7–5–66. Cl. 39.
Telephone Utilities, Inc., Ilwaco, Wash. 815,615, pub. 7–5–66. Cl. 100.
Tenneco Chemicals, Inc., New York, N.Y. 815,275, pub. 7–5–66. Cl. 6.
Texas Refinery Corp., Fort Worth, Tex. 815,336, pub. 7–5–66. Cl. 16.
Thiokol Chemical Corp., Bristol, Pa. 815,276, pub. 7–5–66. Cl. 6.
37 Flavors, Inc., St. Paul, Minn. 815,611, pub. 7–5–66. Cl. 100.
Thomas Mfg. Corp., Parkton, Md. 815,396, pub. 7–5–66. Cl. 21.
Todd Hybrid Corn Co.: *See*—
Todd, John H.
Todd, John H., d.b.a. Todd Hybrid Corn Co., Burlington, Ind. 815,251, pub. 7–5–66. Cl. 1.
Toho Aen Kabushiki Kaisha, d.b.a. Toho Zinc Co. Ltd., Chuo-ku, Tokyo-to, Japan. 815,315, pub. 7–5–66. Cl. 14.
Toho Zinc Co. Ltd.: *See*—
Toho Aen Kabushiki Kaisha.
Torch Rubber Co. Inc., New York, N.Y. 702,322, canc. Cl. 39.
Treesweet Products Co., Santa Ana, Calif. 815,550, pub. 7–5–66. Cl. 46.
Troy Shirt Makers Guild, Inc., Glens Falls, N.Y. 815,505, pub. 7–5–66. Cl. 39.
Tupperware: *See*—
Rexall Drug & Chemical Co.
Rexall Drug and Chemical Co.
Tylart, Inc., Ferndale, Mich. 702,418, canc. Cl. 50.
Ufo Lubricants Inc., Danvers, Mass. 815,317, pub. 7–5–66. Cl. 15.
Ultronic Systems Corp., Pennsauken, N.J. 815,371, pub. 7–5–66. Cl. 21.
Unarco Industries, Inc., Chicago, Ill. 815,419, pub. 7–5–66. Cl. 23.
Uniforce Inc., New York, N.Y. 815,625, pub. 7–5–66. Cl. 101.
Union Carbide Corp., New York, N.Y. 702,114, canc. Cl. 15.
Union Carbide Corp., New York, N.Y. 702,115, canc. Cl. 15.
Union Carbide Corp., New York, N.Y. 702,116, canc. Cl. 15.
Union Carbide Corp., New York, N.Y. 815,394, pub. 7–5–66. Cl. 21.
United Merchants and Manufacturers, Inc.: *See*—
Atlantic Mills, The.
United States Air Conditioning Corp., Delaware, Ohio. 815,448, pub. 7–5–66. Cl. 23.
United Newspaper Magazine Corp., New York, N.Y. 702,271, canc. Cl. 38.
United States Playing Card Co., The, to The United States Playing Card Co., Cincinnati, Ohio. 58,601, ren. 9–20–66. Cl. 22.
United States Rubber Co., New York, N.Y. 815,583, pub. 7–5–66. Cl. 50.
United States Steel Corp., Pittsburgh, Pa. 815,443, pub. 7–5–66. Cl. 23.
United Kingdom Tobacco Co., Ltd., The, d.b.a. Marcovitch & Co., London, England. 815,650. Cl. 17.
United Corp., Monrovia, Calif. 815,535, pub. 7–5–66. Cl. 44.
Valspar Corp., The, Rockford, Ill. 815,338, pub. 7–5–66. Cl. 16.
Valtronic Corp., The, New York, N.Y. 815,374, pub. 7–5–66. Cl. 21.
Verona Tool Works, Pittsburgh, to Woodings-Verona Tool Works, Verona, Pa. 28,858 ren. 9–20–66. Cl. 23.
Vibra-Whirl and Co., Panhandle, Tex. 815,536, pub. 7–5–66. Cl. 44.
Vita-Unit Drug, Inc., New York, N.Y. 702,158, canc. Cl. 18.
Volkswagenwerk Aktiengesellschaft, Wolfsburg, Germany. 815,632, pub. 7–5–66. Cl. 103.
Wahlin, Hugh R., San Dimas, Calif. 815,381, pub. 7–5–66. Cl. 21.
Walker Mfg. Co., Racine, Wis. 815,427, pub. 7–5–66. Cl. 23.
Warner Bros. Co., The, Bridgeport, Conn. 702,334, canc. Cl. 39.

Weather-Tite Mfg. Corp., Baltimore, Md. 815,295, pub. 7–5–66. Cl. 12.
Webster Spring Co., Inc., Oxford, Mass. 815,474, pub. 7–5–66. Cl. 32.
Wedgewood-Holly Appliance Co., Culver City, Calif. 815,388, pub. 7–5–66. Multiple Class (Classes 21 and 32).
Welch, Myron G., Fredericktown, Mo. 815,617, pub. 7–5–66. Cl. 101.
Weldotron Corp., Newark, N.J. 815,479, pub. 7–5–66. Cl. 34.
West Coast Sales: *See*—
Ramsey, Taufek H.
Western Clock Mfg. Co., The, to General Time Corp., La Salle, Ill. 58,004, ren. 9–20–66. Cl. 27.
Western Marketing Co.: *See*—
Kawamura, A. S.
Western Wood Products Association, Portland, Oreg. 815,642, pub. 7–5–66. Cl. 200.
Wetzel, Inc., New York, N.Y. 815,524, pub. 7–5–66. Cl. 39.
West Paint & Varnish Co., Everett, Mass. 815,322, pub. 7–5–66. Cl. 16.
Whaley-Eaton Corp., Washington, D.C. 702,272, canc. Cl. 38.
Williams Gold Refining Co., Inc., Buffalo, N.Y. 680,529, canc. Cl. 44.
Wilson Sporting Goods Co., River Grove, Ill. 815,414, pub. 7–5–66. Cl. 22.
Woburn National Bank, Woburn, Mass. 702,388, canc. Cl. 102.
Woodings-Verona Tool Works: *See*—
Verona Tool Works.
Wright, A. T., Fort Worth, Tex. 702,405, canc. Cl. 23.
Wurlitzer Co., The, Chicago, Ill. 815,486, pub. 7–5–66. Cl. 36.
Yahnke, J. G., Co., Chicago, Ill. 815,332, pub. 7–5–66. Cl. 16.
Young, Stephen A., Corp., Flora, Ind. 815,310, pub. 7–5–66. Cl. 13.
Youngstown Sheet & Tube Co., The, Youngstown, Ohio. 815,280, pub. 7–5–66. Multiple Class (Classes 12, 13, 15, 16, 19, 21, 23, 26, and 35).

U.S. GOVERNMENT PRINTING OFFICE: 0——1966

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 27, 1966 Volume 830 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of August 1966

Examiner affirmed	78
Examiner affirmed in part	12
Examiner reversed	22
Total	112

Notification Re Conflict in Assignment in Certain Applications

Effective September 12, 1966, Assignment Branch will discontinue mailing notification in cases where there is a conflict in assignment between an original application and its divisional, continuation, substitute, or continuation-in-part application.

Assignments from original applications are applied without charge ONLY to divisional, continuation, or substitute applications where the date of the assignment is prior to the filing date of the later-filed application. (Continuation-in-part applications require separate assignments if they are to be issued to the assignee.)

Practitioners are reminded of the provisions of Rule 334. Unless an assignment is filed at or prior to the date of payment of the issue fee, the patent will normally be issued in the name of the inventor.

Section 306 of the Manual of Patent Examining Procedures will be amended appropriately.

W. R. ARMSTRONG,
Director, Office of Patent Services.

Concurred:
(Signed) R. A. WAHL,
Assistant Commissioner.

Adjudicated Patents

(D.C. Calif.) Homberg Patent No. 2,646,911 (224—45), for CONTAINER CARRIER. Claims 1, 2, 4, 5 and 7 to 13 *Held* not infringed. *Illinois Tool Works, Inc.* v. *Brunsing*, 254 F. Supp. 281; 149 USPQ 325.

(D.C.N.Y.) Carter Patent No. 2,733,049 (165—55), for CASTING AND MOUNTING ASSEMBLY FOR CONVECTOR HEATERS. Claims 1, 2, 4 and 5 *Held* invalid. *Rittling Corp.* v. *Slant/Fin Corp.*, 254 F. Supp. 427; 149 USPQ 119.

(D.C.N.Y.) Kellmer and Block Patent No. 2,914,070 (128—558), for BODY ENCIRCLING GARMENTS, *Held* invalid. *Formal Fashions Inc.* v. *Braiman Bows, Inc.*, 254 F. Supp. 389; 149 USPQ 347.

(D.C. Calif.) Poupitch Patent No. 2,923,406 (206—65), for CONTAINER CARRIER. Claims 1 and 2 *Held* not infringed. *Illinois Tool Works, Inc.* v. *Brunsing*, 254 F. Supp. 281; 149 USPQ 325.

(D.C. Mo.) Gerner Patent No. 3,044,798 (280—95), for REPLACEMENT UNIT FOR IDLER ARM BRACKET. Claims 1, 4 and 5 *Held* invalid. *Gerner* v. *Moog Industries*, 254 F. Supp. 969; 149 USPQ 891.

(C.D. Ill.) Flaherty Patent No. 3,086,684 (222—312), for SPREADER GATE ASSEMBLY. Claims 4 and 6 *Held* invalid. *Koehring Co.* v. *E. D. Etnyre & Co.*, 254 F. Supp. 334; 149 USPQ 265.

Termination of Daylight Saving Time

Attention is called to the Notice published in 824 O.G. 1199, March 22, 1966, as to the operation of the Patent Office on Daylight Saving Time. This operation will terminate on October 29, 1966.

New Applications Received During July 1966

Patents	6925
Designs	380
Plant Patents	2
Reissues	14
Total	7321

Issue—September 27, 1966

Patents	1422	No. 3,274,612 to	No. 3,276,033,	incl.
Designs	57	No. 205,824 to	No. 205,880,	incl.
Plant Patents	2	No. 2,672 to	No. 2,673,	incl.
Total	1481			

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JULY 1, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-1-63	11-14-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	1-29-63	2-20-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	7-1-63	7-11-60
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	6-4-63	12-4-61
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	11-16-62	10-11-61
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-11-63	12-18-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	12-31-62	10-19-61
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	8-26-63	1-16-62
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	4-4-63	12-22-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	12-17-62	7-31-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	9-18-63	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	5-17-65	9-21-64

Total number of pending applications (excluding Designs)	196, 314
Total number of Design applications pending	4, 534
Total number of applications awaiting action (excluding Designs)	145, 101
Total number of Design applications awaiting action	2, 563
Date of oldest new application awaiting action	Nov. 16, 1962
Date of oldest amended application awaiting action	Feb. 26, 1960

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during September 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents	Numbers 2,480,821 to 2,483,388, inclusive
Plant Patents	Numbers 870 to 876, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	10-5-64	2-19-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	3-3-64	3-6-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	8-17-64	11-14-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	5-18-64	11-7-62
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.		
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.		

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

ROBERT L. DREYFUS AND JOHN W. HARRISON *v.* MARTIN M. STERNAU

No. 7563. Decided March 24, 1966

[53 CCPA —; 357 F.2d 411; 149 USPQ 63]

1. INTERFERENCE—PATENT AND APPLICATION—RIGHT TO MAKE.

"By copying claims from an issued patent, and lacking express support for the limitations found therein, Sternau was faced with a twofold burden. First, one copying a claim from a patent for the purpose of instituting interference proceedings must show that his application clearly supports the count. *Jepson* v. *Coleman*, 50 CCPA 1051, 314 F.2d 533, 136 USPQ 647. There must be no doubt that an application discloses each and every material limitation of the claims and all doubts must be resolved against the copier. *Jepson* v. *Coleman*, supra; *Bierly* v. *Happoldt*, 40 CCPA 774, 201 F.2d 955, 96 USPQ 406. Second, where support must be based on an inherent disclosure, it is not sufficient that a person following the disclosure might obtain the result set forth in the counts; it must inevitably happen. *Crome* v. *Morrogh*, 44 CCPA 704, 239 F.2d 390, 112 USPQ 49."

2. SAME—SAME—SAME—INHERENT DISCLOSURE.

"In our view, it would do violence to the well-settled principles regarding inherency to hold that Sternau's disclosure and affidavit contain sufficient evidence to warrant a finding that the material limitation in question is inherently disclosed. Both the disclosure and the affidavit are couched in the broadest of generalities, and it would require a bold *ipse dixit* on our part to decide the issue in question in Sternau's favor. This we will not do."

3. SAME—SAME—SAME—SAME.

"The count calls for use of a film of a high shrink energy polymer. It is undisputed that Sternau does not describe the inner ply in terms of shrink energy. Rather, the inner ply is described, inter alia, as a heat shrinkable, oriented film. Under the law of inherency, it is incumbent upon Sternau to establish that a heat shrinkable, oriented film necessarily has a high shrink energy."

APPEAL from the Patent Office. Interference No. 93,409.

REVERSED.

Alvin Guttag (*C. Edward Parker* of counsel) for appellants.

John A. Blair, James M. Heilman for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Patent Interferences awarding priority of invention of the subject matter of Interference No. 93,409 to Sternau, the senior party, on application Serial No. 591,628, filed June 15, 1956. In issue is a single count copied from U.S. Patent No. 2,976,655, granted to the junior parties, Dreyfus et al. (Dreyfus), on an application filed August 20, 1959. The patent is assigned to W. R. Grace & Co., the application in suit is assigned to the Dow Chemical Co.

The count reads:

A method of forming a cover having an elastic edge comprising positioning a film of a high shrink energy polymer over and beyond the lip of a container, maintaining pressure on the film over the container, forcing the excess film downwardly around the container to form a gathered skirt and heating a band

of said skirt briefly to shrink the skirt and provide a gathered but relatively elastic edge.

The issues raised by this appeal are (1) whether Sternau can support certain limitations in the count; (2) whether Sternau's application complies with 35 U.S.C. 112; and (3) whether the count is new matter in the Sternau application.

As to the first issue, Dreyfus contends that Sternau cannot support the following limitations: (1) providing a relatively elastic edge; (2) positioning a film of a high shrink energy polymer; (3) forcing the excess film downwardly around the container; and (4) heating a band of said skirt briefly. We agree with Dreyfus as to Sternau's lack of support for the first limitation set forth above, and thus need not consider the other matters raised by this appeal.

Procedurally, this appeal comes to this court with this history. Dreyfus alleged no date earlier than the filing date of the senior party Sternau, and he was accordingly placed under order to show cause why judgment should not be entered against him. Dreyfus responded by moving to dissolve on the ground that the count is not supported by Sternau's disclosure, and that that disclosure is fatally defective in that it fails to comply with the requirements of 35 U.S.C. 112. This motion was denied by the Primary Examiner. Dreyfus thereupon requested that final hearing be set for consideration of matters set forth in his motion to dissolve. The Board of Patent Interferences held that Sternau could support all the material limitations in the count.

According to Dreyfus, the covers provided by the method of the count have a variety of uses including refrigerator dish covers, bathing caps, and tray-packed foodstuff covers. One method by which Dreyfus achieves a cover having a relatively elastic edge is described as follows:

In operating according to the invention the container is positioned on the turntable. The film of irradiated biaxially oriented polyethylene from 0.5 to 5 mils, e.g., of 3 mils thickness, is then positioned over the top of the container. The lever is then lowered until the upper portion of diaphragm engages the film. The diaphragm not only holds the film in place but it also evenly bends down the overlying edges of the film. The hot air blower is then started as is the turntable. The hot air forces the film in place against the sides of the container while at the same time the hot air also shrinks the film. As a result the film forms a thickened edge or bead * * * around the lip of the container. This thickened edge is usually about 5 to 10 times as thick as the film itself. As a result, an elastic edged cover for the container is formed. The cover can be removed to open the container and then can be applied again as a cover for the container due to its elasticity.

In describing the operation of a machine designed to provide covers for milk bottle hoods, TV dinner trays and the like, Dreyfus states:

After the downwardly blowing air has formed the shirred skirt then the cone is lowered further so that the lip or flange of the container rests on the circular impulse sealing ring, about ⅛ inch from the edge all around with the gathered film between the wire and the lip of the dish. The sponge applies slight downward pressure on top of the dish to maintain intimate contact all around. The impulse sealer is then operated, i.e. by heating, for 1¼ seconds at 450° F., to seal the wrinkles and shrink the film generally to provide a *gathered but relatively elastic edge*. [Emphasis ours.]

In still another portion of Dreyfus, the following is stated in describing the operation employed in making bathing caps from high shrink energy material:

A controlled amount of heat only should act on each disk of film material. Consequently, resistance wire after its original energization is almost immedi-

ately timed out by the action of the timing device. Time-out varies according to the thickness and nature of the film, but as an example, if the film be 1 mil thick irradiated polyethylene and the diameter of the ring of resistance wire be approximately 3¼ inches, time-out should occur after approximately 120 watt seconds have been released by the resistance wire.

Dreyfus defines the term "elastic" as follows: The term "elastic" is used in its popular sense as possessing the properties of extensibility and retractibility associated with vulcanized rubber.

Sternau relates to the provision of "a closure which is an inexpensive, simple hermetic seal for a container irrespective of whether the container is made of paper, plastic, aluminum, steel, etc." The closure may consist of either an inner component of a transparent oriented plastic sheet alone or in combination with an outer component of a semirigid, moldable material, such as aluminum, paper, plastic, glass, steel, etc.

The most pertinent portion of Sternau for purposes of this appeal reads as follows:

A closure may be made using an outer single-ply cover of aluminum, or paper, etc. as a retainer for a shrinkable plastic sheet, which is substantially larger than the mouth of the container. The plastic sheet is placed on top of the container, and the cover snapped onto the container. This will create the essential condition that the film is held flat across the mouth of the container, while the rim of the film is arranged around the rim of the container in pleats protruding beyond the outer cover. Thus, when heat is applied to the rim, the protruding film will shrink, conforming to the shape of the rim of the container and forming therewith a tight seal around said rim, while the remainder of the film is pulled tightly across the mouth of the container. This third method has the advantage that the outer cover can be removed without disturbing the seal of the film portion of the closure. *This process has the additional advantage that the outer cover can be repeatedly taken off and snapped back onto the container without losing its original efficiency of snapping onto the container, and locking below its rim due to its expandable, pleated rim.* [Emphasis ours.]

It will be noted that the foregoing passage describes a two-ply closure, the inner ply being of a shrinkable plastic sheet and an outer ply being of aluminum, paper, plastic, etc. Referring back to the count, it will be noted that it calls for a cover made of a film of a high shrink energy polymer. It is apparent that Sternau's outer ply, being of aluminum or paper construction, cannot possibly fit the description of a "film of a high shrink energy polymer." There is no dispute as to this. There is, however, some dispute as to whether the shrinkable plastic sheet, otherwise denominated by Sternau as a heat shrinkable, oriented material, is inherently a material having a high shrink energy. We will proceed on the assumption that the shrinkable plastic sheet does meet the limitation in the count as to a film of a high shrink energy polymer. Thus, it is with regard to the inner cover that Sternau, as copier of the claims from the Dreyfus patent, must establish support for the invention of the count.

Considering the above-quoted passage from Sternau further, it is noted that upon heating, the inner ply shrinks in such a manner as to form a tight seal around the rim of the container. Nothing is mentioned concerning the elastic properties of the inner ply in its shrunken state. The *outer cover* is stated to have an *expandable*, *pleated* rim, but it is not readily apparent from the application how this construction is achieved. In any case, it has no bearing on the construction of the inner ply, which is the one with which we must be concerned.

It is further noted that Sternau is completely silent in the passage under discussion, as well as throughout his disclosure, as to the specifics of his operating conditions. While Sternau's specification states that "heat may be applied by hot air, hot water, steam, electricity, or even by an open flame," no temperatures are given for the heating step; no mention is made as to the length of time the inner ply is subjected to heating conditions, and no specific materials are mentioned which fit the description of a shrinkable plastic sheet or a heat shrinkable oriented film. Moreover, there is no hint in Sternau that the inner ply should be capable of being removed and reapplied to the container which it seals. With the above in mind, we now turn to a consideration of the decisions below.

In reply to Dreyfus' motion to dissolve based on the contention that Sternau does not disclose forming a "gathered but relatively elastic edge," the Primary Examiner stated:

• • • however, • • • the Sternau specification points out that the film is arranged around the rim of the container "in pleats" and that heat is applied to the "rim" of the film to cause it to shrink into engagement with the rim of the container. Since the count is directed to a method, it is of no consequence that the pleating is done by an outside cover member. Also, since the cover material is a plastic film and since it shrinks to form a bead or raised edge around the container, it must inherently be "relatively elastic."

The Board adopted the Examiner's holding without elaboration.

Implicit in the Examiner's holding is the conclusion that Sternau does not expressly disclose a cover having a relatively elastic edge. We concur in this conclusion. However, we are not persuaded that there is sufficient ground for holding that Sternau's cover must inherently have an elastic edge. In Sternau, we are faced with an application completely devoid of specific teachings as to the crucial matters in question. Were there some indication of the specific materials employed, or the process conditions to which the broad class of materials are subjected, it might be possible to establish that the limitations in the count are inherently met. But in these matters the application is silent. Moreover, we cannot find in Sternau any indication that he desired an inner cover which could be removed and reapplied to the container. Such a teaching might provide a basis for an inference that the inner cover did in fact have a relatively elastic edge. No doubt, if such were within his contemplation, one of ordinary skill in the art could devise process conditions to achieve such a result. But that is not the criterion upon which the issue of inherency is resolved.

[1] By copying claims from an issued patent, and lacking express support for the limitations found therein, Sternau was faced with a twofold burden. First, one copying a claim from a patent for the purpose of instituting interference proceedings must show that his application clearly supports the count. *Jepson* v. *Coleman*, 50 CCPA 1051, 314 F.2d 533, 136 USPQ 647. There must be no doubt that an application discloses each and every material limitation of the claims and all doubts must be resolved against the copier. *Jepson* v. *Coleman*, supra; *Bierly* v. *Happoldt*, 40 CCPA 774, 201 F.2d 955, 96 USPQ 406. Second, where support must be based on an inherent disclosure, it is not sufficient that a person following the disclosure might obtain the result set forth in the counts; it must inevitably happen. *Crome* v. *Morrogh*, 44 CCPA 704, 239 F.2d 390, 112 USPQ 49.

There is of record an affidavit filed in behalf of Sternau, the pertinent averments of which read as follows:

> * * * that he has conducted and had conducted experiments with various heat shrinkable oriented films wherein film substantially larger than the mouth of a container has been laid across the mouth of the container, the periphery of the film has been arranged around the container and heat has been applied to the periphery to shrink the film and form a closure;
>
> * * * that he has found that all of the heat shrinkable oriented film tested, as described, produced a gathered pleated skirt extending downwardly around the container when the periphery of the film was arranged around the container;
>
> * * * that he has found that all of the heat shrinkable oriented film tested as described produced a closure having a gathered but relatively elastic edge permitting repeated removal and replacement of the closure on the container;
>
> * * * that, as a result of his experience and experimentation, he believes that any of the available heat shrinkable oriented films can be laid across and arranged around a container to form a gathered pleated skirt and will produce a closure having a gathered pleated skirt with a gathered but relatively elastic edge when the skirt is heat shrunk.

We make the following observations with regard to the affidavit. Affiant has not averred that the nine available heat shrinkable oriented films were tested. While *various* films were tested, how many or which particular ones we do not know. Nor do we know what process conditions were employed. While the first three averments are factual in expression, no data of any sort are presented. The fourth averment is clearly an expression of affiant's opinion.

[2] In our view, it would do violence to the well-settled principles regarding inherency to hold that Sternau's disclosure and affidavit contain sufficient evidence to warrant a finding that the material limitation in question is inherently disclosed. Both the disclosure and the affidavit are couched in the broadest of generalities, and it would require a bold *ipse dixit* on our part to decide the issue in question in Sternau's favor. This we will not do.

For purposes of deciding whether Sternau could support the limitation in the count "provid[ing] a * * * relatively elastic edge," we assumed arguendo that Sternau could support the further limitation "a film of a high shrink energy polymer." Turning to a consideration of the latter issue, we believe that this limitation is also not supported by Sternau.

[3] The count calls for use of a film of a high shrink energy polymer. It is undisputed that Sternau does not describe the inner ply in terms of shrink energy. Rather, the inner ply is described, inter alia, as a heat shrinkable, oriented film. Under the law of inherency, it is incumbent upon Sternau to establish that a heat shrinkable, oriented film necessarily has a high shrink energy.

The Examiner appears to have misconstrued the law of inherency. He found that since some of the materials disclosed by Dreyfus as *films of a high shrink energy polymer* were known in the art prior to Sternau's filing date, and since such films were also known as *shrinkable, oriented films*, the latter phrase, used by Sternau, would lead to the selection of a film of a high shrink energy polymer.

While apparently differing with the Examiner as to the proper test to apply, the Board agreed with the Examiner's holding that Sternau inherently supported the limitation in question.

The resolution of this issue actually turns on a relatively narrow point. Both parties agree that the description "a film of a high shrink energy polymer" does not include a film of low density, hot-blown polyethylene. The dispute arises as to whether the description heat shrinkable, oriented film, employed by Sternau, includes low density, hot-blown polyethylene. If it does, then one following Sternau's teachings *might select* low density, hot-blown polyethylene as a heat shrinkable, oriented film and thus provide a cover which is not a film of a high shrink energy polymer.

Sternau's evidence that low density, hot-blown polyethylene is not considered in the art as a heat shrinkable, oriented film consists in the main of averments in the affidavit discussed supra. The pertinent averments read:

> 10. that in film manufacturing and utilization industries the term "shrinkable film," as generally used, includes all nine of the commercially available shrink films;
>
> 11. that in the film manufacturing and utilization industries the terms "oriented film" or "shrinkable oriented film" are used to mean only those shrink films which have been subjected to special stretching, or other orientation processes, to induce a high degree of molecular orientation;
>
> 12. that, for example, while the low density polyethylene film in the chart[1] is produced by a blowing process which inherently produces a limited degree of molecular orientation and is therefore shrinkable, is not generally considered to be "shrinkable oriented film" but rather only "shrinkable film" since no special orientation process is utilized;
>
> * * * * * * *
>
> 14. that, as shown by the data in the Shrink Tension Range column of the chart on Properties of Shrink Films, the Dreyfus et al. limitation of "high shrink energy, e.g. 100 to 500 p.s.i.," includes all of the nine types of shrinkable film except low density polyethylene which is not considered to be an "oriented film";
>
> 15. that, the Sternau disclosure of a "shrinkable oriented film" would generally be understood in the film manufacturing and utilization industries to include all of the nine types of shrinkable film shown in the said chart except low density polyethylene;
>
> 16. that, therefore, the Sternau disclosure of a "shrinkable oriented film" is identical to the Dreyfus disclosure of "heat shrinkable oriented polymer" and to the limitation of "high shrink energy, e.g. 100 to 500 p.s.i."; and the disclosures of each application would lead persons of ordinary skill in the film manufacturing and utilization industries to use the same types of shrinkable film.

Arrayed against this evidence is page 488 of Modern Plastics Encyclopedia (1964 ed.) which reads in pertinent part:

> In general, however, blown film is characterized by good physical properties and gives a film that is equally oriented with and across the direction of extrusion (thereby producing some increase in strength). This orientation, although it is not great, can also cause the film to shrink on heating, for possible use in shrink packaging applications.

In view of the burden imposed upon Sternau (as copier of the claim constituting the count from the Dreyfus patent, we are not persuaded that the limitation as to a film of a high shrink energy polymer is inherently supported by Sternau. The foregoing passage from "Modern Plastics" indicates that low density, hot-blown polyethylene is both heat shrinkable and oriented, the latter albeit to a lesser extent than other types of oriented films. The fact that the orientation is not great may mean that it is not a preferred film for shrink packaging but this is immaterial. Moreover, the Lowry article cited by Sternau indicates that low-density polyethylene is used for shrink packaging. Thus, we are not sufficiently convinced that low density, hot-blown polyethylene is not considered by those in the art to be a heat shrinkable, oriented film.

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[1] The chart, which sets forth data on properties of shrink films, appears in an article by Robert D. Lowry in Modern Plastic Packaging Encyclopedia 223 (1963 ed.).

We think it is apparent from the foregoing that Sternau has not discharged the burden which the law imposes on one in his position. Accordingly, the decision of the Board of Patent Interferences is reversed.

REVERSED.

MARTIN, *J.*, concurring, with whom SMITH, *J.*, joins.

I am unwilling to assume that Sternau discloses a high shrink energy polymer in deciding whether he can support the limitation of a "relatively elastic edge." As I see it, if we make that assumption, a "relatively elastic edge" inherently must be formed in Sternau.

However, I agree with the majority that Sternau cannot make the limitation "a film of a high shrink energy polymer." In my view, an analysis of the facts relating to that limitation shows the Board erred in failing to appreciate the distinction between the types of polymers called for in Dreyfus by the above limitation as against the polymers Sternau contemplated under such terms as "shrinkable oriented films" and "transparent oriented plastic sheet." I make no intimation as to what Sternau in fact may be entitled.

U.S. Court of Customs and Patent Appeals

M.K.M. KNITTING MILLS, INC. *v.* DAMON CREATIONS, INC.

No. 7638. Decided April 7, 1966

[53 CCPA —; 357 F.2d 997; 149 USPQ 222]

1. TRADEMARK—CONFUSING SIMILARITY—DISTINCTION BETWEEN WELL-KNOWN NAME AND COINED WORD—*In re General Electric Co.* CONSTRUED.

"Appellant relied quite heavily on our reasoning in *In re General Electric Co.*, 49 CCPA 1186, 304 F.2d 688, 134 USPQ 190 (1962), wherein we held confusion unlikely between the simple word marks VULCAN and VULKENE, pointing out that VULCAN is a well-known name, hence familiar to the American people, whereas VULKENE has the characteristics of an arbitrary coined word. We felt that people would readily distinguish between the familiar and the unfamiliar and would not be confused by reason of the obvious similarities between the two marks.

2. SAME—SAME—"DAR MEN" AND "DAMON" FOR MEN'S WEAR.

Upon considering the decision of the Trademark Trial and Appeal Board cancelling the appellant's registered mark "dar men" in view of the appellee's registered mark "DAMON," both marks being for men's wear, where it was found that "Appellee does not dispute that DAMON is a common surname" and the court concluded that "the marks are not reasonably susceptible to similar pronunciation" nor that they look alike, *Held* that "We think the principles we applied in the *General Electric* case apply here and therefore the decision of the Board is reversed."

APPEAL from the Patent Office. Cancellation No. 8,153.

REVERSED.

Oliver C. Morse for appellant.

Russell L. Law for appellee.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board (abstract 144 USPQ 777) granting appellee's petition to cancel trademark Registration No. 747,904, issued April 9, 1963, on the

Principal Register, of the following mark for shirts, swimsuits and sweaters for men:



Petitioner-appellee relied on three Principal Register registrations: No. 684,827 of Sept. 8, 1959, for a composite mark with design including a pair of theatrical masks and the words "OFF-BEAT by damon"; No. 717,628 of June 27, 1961, for the work mark DAMON; and No. 721,064 of Sept. 5, 1961, for the word mark BY DAMON CREATIONS. The goods in the first-named registration are men's neckwear and the goods named in the other two are inclusive of the goods named in appellant's registration. There is no issue as to appellee's priority. The sole issue, therefore, is whether concurrent use of appellant's mark and any one of appellee's marks would be likely to create confusion, mistake, or deception. Trademark Act of 1946, section 2(d), as amended (15 U.S.C. 1052(d)).

Neither party took testimony. Both parties briefed and argued the case in this court. Appellee relies only on the "Damon" portions of its registered marks.

[1] Appellant relied quite heavily on our reasoning in *In re General Electric Co.*, 49 CCPA 1186, 304 F.2d 688, 134 USPQ 190 (1962), wherein we held confusion unlikely between the simple word marks VULCAN and VULKENE, pointing out that VULCAN is a well-known name, hence familiar to the American people, whereas VULKENE has the characteristics of an arbitrary coined word. We felt that people would readily distinguish between the familiar and the unfamiliar and would not be confused by reason of the obvious similarities between the two marks. The argument is, of course, that the same is true as between the mark "dar men" and the mark DAMON, the latter being the common name.

Appellee does not dispute that DAMON is a common surname. It is argued, however that "Darmen * * * *looks* like a name * * *." Appellee supports this proposition by allegedly finding a Darman in the Boston Telephone Directory (not of record) and a Darmon in the St. Louis Telephone Directory (not of record). It overlooks, however, the form of appellant's registered mark, which does not look like a name and, moreover, ends in "men."

The "hard core of appellee's complaint in this proceeding," says its brief, is that "dar men" and DAMON would probably be pronounced alike, at least in certain areas of the country. The theory is rather finely spun and we think it would have to be to arrive at such a conclusion. It involves the premise that some New Yorkers and eastern New Englanders do not pronounce their "r's" in certain words. While that may be true, we do not see its application to the present fact situation. As appellant points out, the name Damon is in the dictionary and its pronunciation is given with a long "a," with the sound of the word "day." We think it would not be likely to be pronounced otherwise. We also think that even people who drop their "r's" would not pronounce "dar men" with the "day" sound. Even without the "r" sound, the presence of the "r" calls for pronunciation of the "a" as *ah*. Therefore we conclude, contrary to the Board, that the marks are not reasonably susceptible to similar pronunciation.

We also are constrained to disagree with the Board that the marks look alike. In saying that they do, the Board opinion merely compares "Damon" and "Darmen"—typed just so—ignoring the design features of the mark as shown in the registration sought to be cancelled and reproduced above. We regard the design as a limitation of the registration which should be given some effect and which appears to have been ignored.

[2] We think the principles we applied in the *General Electric* case apply here and therefore the decision of the Board is reversed.

REVERSED.

MARTIN, *J.*, dissenting, with whom KIRKPATRICK, *J.*, joins:

The goods of the parties overlap. The spelling and appearance of the marks are highly similar, and the sound even more so. When the marks are considered, each in its entirety and removed in time and distant in place, it is clear to me that their concurrent use would be likely to cause confusion, mistake, or to deceive. This is particularly true since the marks can be used in speech. Appellant has not persuaded me of clear error in the Board's decision, and thus I would affirm.

PATENT SUITS

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2,761,643, Ward and Cross, TRANSFORMER CLUSTER RACK, **filed** Feb. 6, 1958, D.C., S.D. Tex. (Houston), Doc. 11,519, *Universal Pole Bracket Corporation* v. *Graybar Electric Company, Inc. et al.* Stipulation and order of dismissal without prejudice June 16, 1966.

2,771,006, B. Ver Nooy, FLUID TIGHT CLOSURE, **filed** June 30, 1966, D.C., N.D. Okla. (Tulsa), Doc. 6473, *T. D. Williamson, Inc.* v. *William A. (Bill) Morrison.*

2,771,849, L. Galbreath, UNIVERSAL BOBBIN FOR ROTARY, DOMESTIC SEWING MACHINES, **filed** June 10, 1966, D.C., M.D. Fla. (Jacksonville), Doc. 66–443–J, *Sew Fast Products, Inc.* v. *The Great Atlantic and Pacific Tea Co. et al.*

2,773,343, H. C. Oppel, COOPERATING ROTATABLE DISK TYPE BEET HARVESTER, **filed** Aug. 1, 1963, D.C. Idaho (Boise), Doc. S–3875, *Oppel Harvester, Inc.* v. *Wescon et al.* Action dismissed June 3, 1966.

2,784,396. (See 2,718,634.)

2,794,422, A. J. Piel, LIQUID APPLICATOR FOR ANIMAL USAGE; **2,813,510**, same, ANIMAL ACTUATED LIQUID APPLICATOR FOR HIDE, **filed** May 28, 1965, C.C.A., 8th Cir., Doc. 18037, *Piel Manufacturing Company, Incorporated et al.* v. *George A. Rolfes Co. et al.* Judgment of District Court affirmed June 23, 1966.

2,803,401. (See 2,718,634.)

2,813,510. (See 2,794,422.)

2,835,472. (See 2,702,180.)

2,865,564. (See 2,718,634.)

2,869,078. (See 2,656,508.)

2,882,662. (See 2,602,276.)

2,932,471(a). (See 2,718,634.)

2,932,471(b), Exner and Scarbrough, BROAD BANDWIDTH DIGITAL SERVO, **filed** Oct. 11, 1965, D.C., Del. (Wilmington), Doc. 3097, *TRW, Inc.* v. *Hughes Aircraft Co.* Stipulation and order of dismissal June 22, 1966.

2,935,199. (See 2,636,473.)

2,936,116. (See 2,718,634.)

2,953,317. (See 2,625,335.)

3,011,657. (See 2,702,180.)

3,043,625. (See 2,710,649.)

3,095,161. (See 2,625,335.)

3,107,067. (See 2,625,335.)

3,132,817. (See 2,625,335.)

3,163,790. (See 2,625,335.)

PLANT PATENTS

GRANTED SEPTEMBER 27, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,672
AZALEA PLANT
Henry W. Motzkau, Whitewater, Wis., assignor to Yoder Brothers, Inc., Barberton, Ohio, a corporation of Ohio
Filed Mar. 19, 1965, Ser. No. 441,387
1 Claim. (Cl. Plt.—57)

A new and distinct variety of azalea plant characterized as to novelty by its earliness to bloom without artificially inducing dormancy, vigorous plant growth, the strong to deep purplish pink color of its blooms, its readiness to set buds, good formal appearance, and good keeping qualities.

2,673
ROSA FLORIBUNDA PLANT
Edward Burton Le Grice, North Walsham, Norfolk, England
Filed July 15, 1965, Ser. No. 472,375
1 Claim. (Cl. Plt.—24)

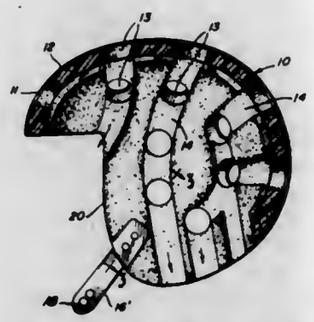
The new and distinct variety of Rosa floribunda plant herein shown and described.

PATENTS

GRANTED SEPTEMBER 27, 1966

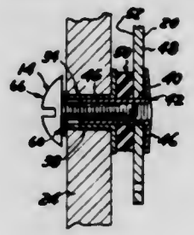
GENERAL AND MECHANICAL

3,274,612
HELMET FOR WATER SPORTS
Robert C. Merriam, 2222 Alice St., Santa Cruz, Calif.
Filed May 18, 1965, Ser. No. 456,621
4 Claims. (Cl. 2—3)



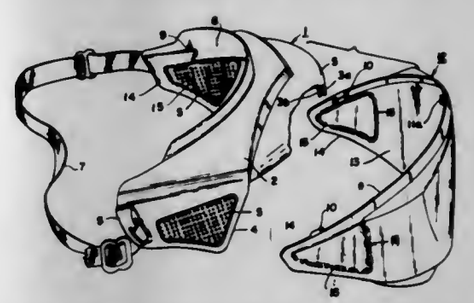
1. A safety helmet for use in water sports comprising:
a protective head-shaped shell;
a flexible liner attached to the inner surface of said shell, said flexible liner and said shell each being provided with a plurality of aligned openings therethrough; and
a network of drain channels extending from said aligned openings along the inside surface of said flexible liner to the edge of said safety helmet thereby permitting the escape of water entrapped inside said helmet.

3,274,613
PIVOTING FACE GUARD ASSEMBLY
Theo J. Sowle, 2525 Martin Ave., Grand Rapids 7, Mich.
Filed Feb. 3, 1964, Ser. No. 342,201
3 Claims. (Cl. 2—9)



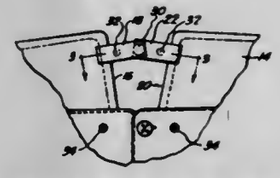
1. A pivoting face guard assembly for mounting in aligned holes in the opposite side walls of a protective helmet, said assembly comprising
an approximately U-shaped face guard having a central face-protecting portion disposed forwardly thereof and having opposite laterally-spaced side arms extending rearwardly from the opposite ends of said central portion,
said side arms near their rearward ends having a pair of aligned holes therethrough adapted to be aligned with the aligned holes in the helmet side walls;
and a pair of pivotal face guard connectors,
one face guard connector being mounted in each of said pair of aligned side arm holes:
each pivotal connector including
a headed threaded inner fastener having a tubular internally-threaded shank adapted to be inserted through and extend outwardly from one of the aligned helmet side wall holes and having means thereon adapted to engage the helmet side wall in rotation-preventing relationship therewith,
a tubular spacer disposed in one of said face guard side arm holes in telescoped relationship with said inner fastener and having an axial length substantially equal to the thickness of its respective face guard arm,
and a headed threaded outer fastener having an externally-threaded shank extending through said spacer into threaded engagement with said inner fastener and with its head having an abutting connection with said spacer.

3,274,614
HEADSHIELD
Charles J. Boyer, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Oct. 7, 1964, Ser. No. 402,216
3 Claims. (Cl. 2—14)



1. A headshield comprising a front portion adapted to be spaced from and surround the forehead of the wearer, a vertical slot formed on the bottom and extending along the perimeter of said front portion and terminating in arcuate cut-out portions at the ends of said slot said slot being defined by a front and rear wall, and a protective element having a top rim portion inserted in said slot and having stud elements at the ends of the rim portion detachably engaging said cut-out portions to provide a pivotal connection therewith, and means latching the intermediate portion of said rim portion to said headpiece.

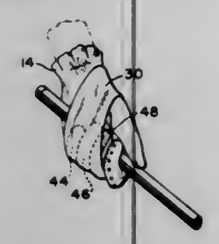
3,274,615
COLLAR CONSTRUCTION FOR SHIRTS
Wendell H. Piehler, Box 11, New London, N.H. 03257
Filed Dec. 21, 1964, Ser. No. 419,994
2 Claims. (Cl. 2—141)



1. In a shirt having an attached tab collar which has an inner fold and an outer fold, the outer fold forming a turn-down portion having two opposed ends which are spaced in front of the shirt to define a necktie receiving space, the combination therewith of a pair of tabs having a first position at which the opposed ends are detachably

connected and having a second position at which each of said tabs is secured to the inner fold at a position adjacent the corresponding end and hidden from view, each tab being connected at one end to the inside of the outer fold adjacent a corresponding end of the outer fold, the other end of said each tab extending to the front center of the collar across the necktie receiving space, a first snap fastener having male and female portions respectively carried by the free ends of said tabs, and second and third snap fasteners, one associated with each tab, each second and third fastener having male and female elements, one of said elements being attached to the corresponding tab at a point intermediate the ends thereof, the other of said elements being secured to the inner fold adjacent the corresponding opposed end of the outer fold but hidden from view, all of said fasteners having alternative locked and open positions, whereby said shirt is adapted to be worn with a tie when said tabs are in the first position and the opposite ends are connected and the fasteners are secured in locked position and whereby said shirt is adapted to be worn open neck without a tie when said tabs are in the second position and at least said first fastener is in the open position.

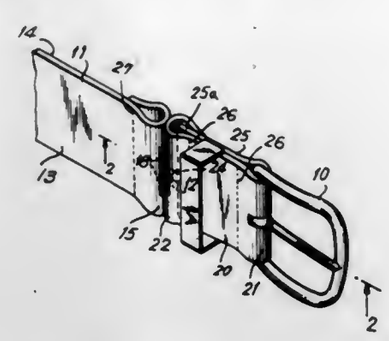
3,274,616
GRIP LOCKING GLOVE ASSEMBLY
Allie Russo, 488 Maywood Ave., Maywood, N.J.
Filed Oct. 14, 1965, Ser. No. 495,830
3 Claims. (Cl. 2—161)



1. A grip locking glove assembly adapted to compel the wearer to retain a firm grip upon the shaft of a golf club when the hands are gripping the club shaft, comprising a glove assembly positioned on a hand of the wearer, said glove assembly including a glove and a swatch of fastening material attached to the back thereof, a resilient band assembly including a band having a mating attachment on one end detachably secured to the swatch of fastening material, said band being wrapped completely around the glove and hand, a second mating attachment on the opposite end of said band detachably fastening into the swatch to hold the gloved hand firmly about the shaft of the golf club.

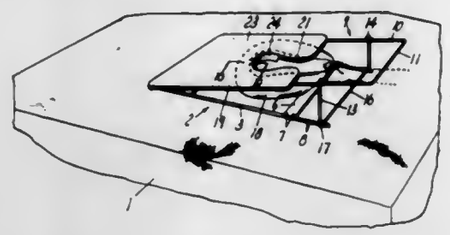
3,274,617
BELT STRUCTURE HAVING SWIVEL MEANS
Leon Krantz, Jamaica, N.Y., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed May 6, 1965, Ser. No. 453,699
2 Claims. (Cl. 2—301)

1. A belt comprising a body circling portion and a buckle carrying portion, a loop formed adjacent one end of said body encircling portion, an aperture formed in said loop, a rivet member having a shank passing through said aperture and having leg portions disposed within said loop, said leg portions being laterally spaced apart to prevent relative rotation of said rivet member and body encircling portion, a circular head on said rivet member spaced from said legs, a short length of material of substantial thickness having a buckle fixed at one end and having a bight portion at the other end, a second aperture formed in said bight portion, said shank of said rivet member passing through said second aperture and said circular head of said rivet member lying adjacent said second aperture, an end portion of said short length of belting material being disposed adjacent the head of said rivet member, thereby to space apart the portions



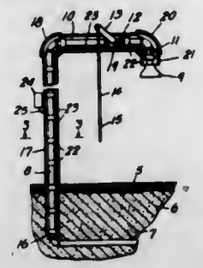
of said short section defining said bight, and fastening means passing through said portions defining said bight and said end portion.

3,274,618
BODY SUPPORTING APPARATUS
Mary Kahllo, 620 W. Paterson St., Kalamazoo, Mich.
Filed Oct. 24, 1963, Ser. No. 318,664
6 Claims. (Cl. 4—112)



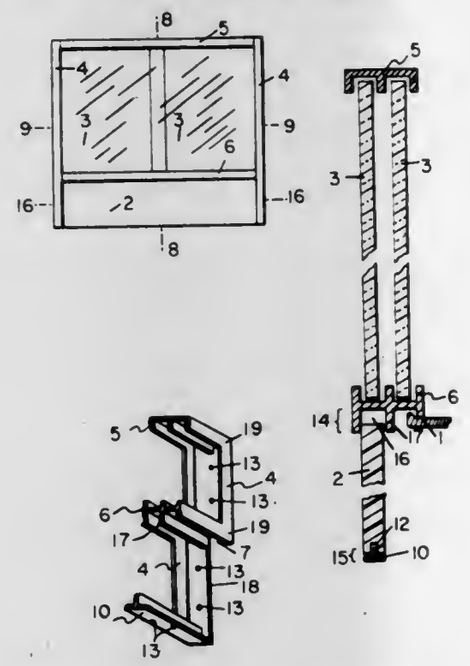
1. A body supporting apparatus adapted to be positioned on a supporting surface and comprising, a base member formed of rod stock having laterally spaced substantially parallel side bars fixedly connected at their front ends by a crosspiece aligned therewith, a rear crosspiece fixedly secured to said side bars adjacent to but in forwardly spaced relation to their rear ends, the side bars at the rear of said crosspiece having a plurality of upwardly facing notch like keepers, an adjustable body support member formed of rod stock and comprising a pair of laterally spaced and substantially parallel side bars connected at their rear ends by a crosspiece said support member side bars having eyes at their front ends pivotally engaging said crosspiece at the front end of said base member, said support member side bars being of a length substantially exceeding the length of said base member side bars and having offsets therein spaced forwardly from said handle, an upwardly facing U-shaped supporting strut for said body support member, the arms of which terminate in eyes hingedly engaged with said offsets of said support member side bars, its bight portion being inwardly offset and being selectively engageable with said keepers on said base member side bars when the support member is in erected position, said strut being adjustable to erected and to a collapsed position in which it is mainly disposed between said base member and said support member, and a user supporting panel supportedly and detachably mounted on said body support member side bars with portions thereof projecting laterally therefrom, said supporting panel terminating at its rear end in forwardly spaced relation to said strut and having an opening therein extending forwardly from its rear end, and having means facilitating the positioning of a bedpan relative to said opening.

3,274,619
EMERGENCY SHOWER
Hans Rolfes, Bronx, N.Y., assignor to Trans Continental Electronics Corp., New York, N.Y., a corporation of New Jersey
Filed Apr. 2, 1964, Ser. No. 356,831
4 Claims. (Cl. 4—145)



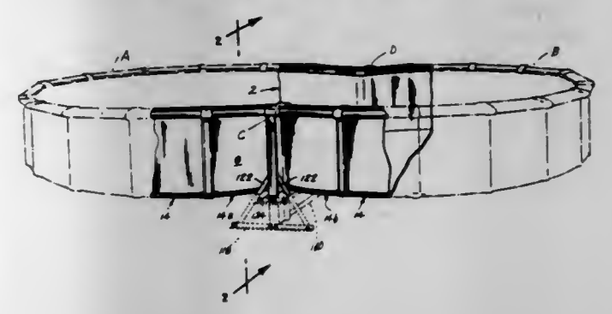
1. An emergency shower comprising a shower head in predetermined position above an outdoor ground slab, means for supplying water to said shower head, said means comprising a supply line submerged a frost safe distance below said ground slab, a riser extending upwardly from said supply line and coupled with a horizontal pipe extending to said shower head through a depending pipe, said first named means including a manually actuated valve controlling discharge of water from said shower head, a casing completely enveloping the riser, the horizontal pipe and the depending pipe extending to the shower head, interconnected induction heating coils mounted on and spaced longitudinally of the riser horizontal pipe and depending pipe, a thermostat controlling said coils, and insulating material in said casing around said coils, riser, horizontal pipe and depending pipe.

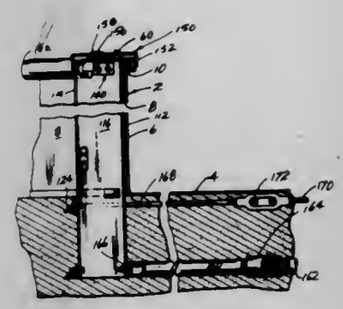
3,274,620
BATHING ENCLOSURE AND RECEPTACLE
Russell W. Smith, Jr., Arlington, Va.
(2403 Holt St., Vienna, Va. 22180)
Filed Aug. 26, 1963, Ser. No. 304,312
5 Claims. (Cl. 4—149)

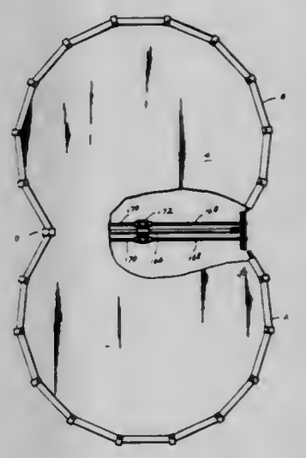


1. A bathing receptacle and an enclosure, in combination, comprising a bathtub having generally vertical walls, and a horizontal flange member located at the end portion of one of said vertical walls and integral therewith, and an enclosure consisting of a plurality of panel members held in place by a plurality of related framing members, one of said framing members being substantially horizontal and coextensive in length with said horizontal flange member of said bathtub, and having a flange coextensive in length with said framing member for matingly overlapping said horizontal flange member of said bathtub to thereby produce a water tight joint, said horizontal framing member having upper and lower supporting surface portions, said upper supporting surface having disposed therein at least one of said panel member that extends upward as a shower shield, said lower supporting surface having disposed therein at least one of said panel members extending downward from said horizontal framing member substantially to the floor.

3,274,621
WATER-RETAINING RECREATIONAL STRUCTURE FOR SWIMMING POOLS AND THE LIKE
Joseph Diemond, Simsbury, and Melvin Y. Gershman, West Hartford, Conn., and Henry L. Sundberg, Jr., and Norbert A. Vangmess, Longmeadow, Mass., assignors to Coleco Industries, Inc., Hartford, Conn., a corporation of Connecticut
Filed Dec. 27, 1965, Ser. No. 516,287
21 Claims. (Cl. 4—172)







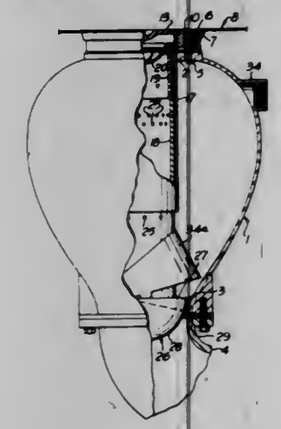
1. A water-retaining, above ground prefabricated recreational structure adapted to be disassembled and having a curvilinear peripheral configuration defined by a plurality of generally circular components intersecting at apices, the chords extending between said apices being of lesser length than the diameter of the intersecting circular components, said recreational structure having a liner member of flexible, relatively waterproof sheet

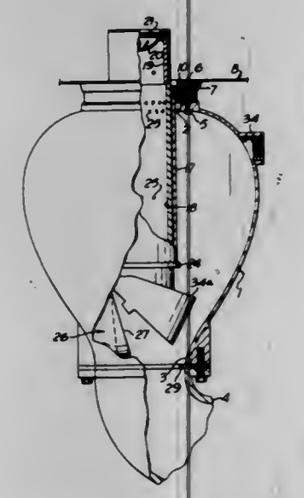
material providing a bottom wall portion and a side wall portion extending about the periphery of said bottom wall portion; a relatively rigid, generally vertical support panel extending about the periphery of said liner side wall portion and closely adjacent thereto to provide a relatively rigid horizontal support therefor in said curvilinear peripheral configuration; a plurality of elongated horizontal support members extending in end-to-end relationship about said liner member in said curvilinear configuration; vertical support members at said apices between said circular components extending vertically of the outer surface of said support panel; coupling means engaging the adjacent ends of horizontal support members with said vertical support members at said apices to provide a firm assembly thereof with said horizontal support members diverging outwardly from said vertical support members; and means at said vertical support members compensating against pressures thereon.

3,274,622
HOUSEHOLD AND OTHER REFUSE STORAGE AND DISPOSAL APPARATUS

Douglas Michael Venison, Billericay, Essex, and John James Pite, West Wickham, Kent, England, assignors to Matthew Hall & Co. Limited, London, England, a corporation of the United Kingdom

Filed Nov. 21, 1963, Ser. No. 325,311
11 Claims. (Cl. 4—287)





1. A refuse storage and disposal unit of the kind adapted to be fitted to a kitchen sink, comprising an outer chamber for receiving waste liquid, said outer chamber having an inlet opening for connection to said sink outlet and an outlet opening for connection to the pipework of a disposal plant, valve means for normally preventing the escape of liquid through said outlet opening and for retaining a quantity of liquid in said outer chamber, an open ended cylinder arranged for communication with said inlet opening to receive both waste liquid and solid refuse, apertures formed in said cylinder to allow the bulk of said waste liquid to pass therethrough into said outer chamber, closure means associated with the lower end of said cylinder for normally retaining said solid refuse therein, and means for actuating said valve means and said closure means so as to release said solid refuse simultaneously with said waste liquid so that it falls through said outlet opening to effect disposal thereof.

3,274,623
PILLOW CASES

Charles A. McCarthy, 342 Beach 40th St., Far Rockaway, N.Y.

Continuation of application Ser. No. 300,139, Aug. 2, 1963. This application Oct. 12, 1965, Ser. No. 495,205
3 Claims. (Cl. 5—339)

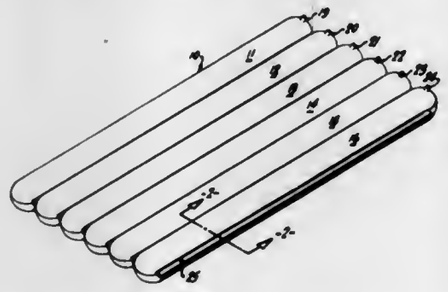


1. A combination pillow case and pocket construction adapted to be turned inside-out for use on a pillow, wherein one wall of a pocket comprises a relatively small right-triangular two-ply sheet of fabric consisting of a doubled-back rectangular sheet doubled back along a diagonal fold line and the pillow case consists of a doubled back relatively large rectangular sheet of fabric doubled back along a median fold line through the longitudinal edges of the sheet thereby providing opposed pillow case walls, said pocket wall being mounted in a corner of the doubled-back pillow case sheet opposite said fold line thereof with the mutually right-angle edges of the pocket wall plies positioned between the corresponding mutually adjacent edges of the pillow case walls and said pocket wall positioned wholly between said pillow case walls, and stitching extending along the length of and through said edges of the pillow case walls and hence also through said edges of said pocket wall plies.

3,274,624
INFLATABLE AIR MATTRESS

Claude J. Noerdinger, 3825 Rumford St., Palo Alto, Calif.

Filed Apr. 28, 1964, Ser. No. 363,105
5 Claims. (Cl. 5—345)



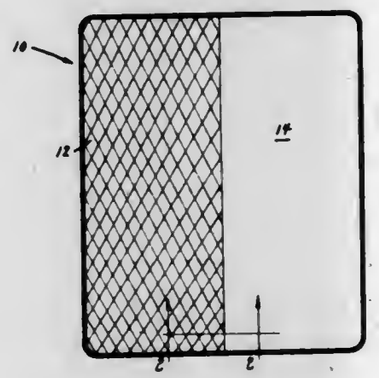
1. A resilient mattress, comprising a plurality of longitudinally extending cells disposed in side by side relation and being releasably interconnected along adjacent longitudinal surface portions thereof to enable cells to

be interchanged one for another and also to enable the transverse dimension of the mattress to be selectively altered, said cells being respectively equipped along each of such longitudinal surface portions thereof with fastener structure for effecting such releasable interconnection of said cells, and the fastener structures carried by any one cell along the respective longitudinal surface portions thereof being complementary and having cooperative elements interlockingly connected with the corresponding elements of the associated fastener structure of the cell adjacent thereto, said cooperative elements being resistive of separation tending to be enforced thereon by application of force thereto in the general plane of said mattress but being susceptible of ready separation by application of force thereto in a direction generally normal to such plane, each pair of interlocking connected fastener structures being disposed intermediate the edges of the cells corresponding to the top and bottom of said mattress and each such pair of connected fastener structures defining with the associated cells and I-beam-type configuration in which the adjacent cells are spaced from each other by the intervening fastener structure, such interconnected fastener structures in cooperation with the associated cells being effective to stiffen the mattress as well as interconnect the cells.

3,274,625
MATTRESS

Hendrix W. Metzger, R.R. 2, Boonville, Ind.

Filed June 21, 1965, Ser. No. 465,564
5 Claims. (Cl. 5—345)



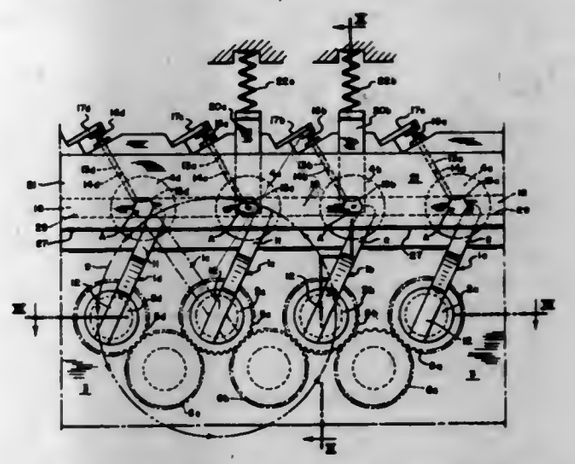
1. A mattress defining a body supporting surface comprising a cover assembly having one portion thereof quilted to present one firmness and another portion thereof unquilted to present a different firmness.

3,274,626
TRANSFER MEANS FOR MACHINE FOR MAKING BOLTS, NUTS AND THE LIKE

Gerardus C. van de Meerendonk, Helmond, Netherlands, assignor to Nedschroef Octrooi Maatschappij, N.V., Helmond, Netherlands, a limited-liability company of the Netherlands

Filed Dec. 10, 1963, Ser. No. 329,428
Claims priority, application Netherlands, Dec. 10, 1962, 286,483
15 Claims. (Cl. 10—12)

1. In a machine for forming articles of the type including a stationary die for receiving a workpiece, a reciprocable tool carrier movable toward and away from the die for pressing workpieces in the die, and a transfer mechanism for moving a workpiece into a position in front of the die, the improvement in which the transfer mechanism comprises a workpiece-guiding means located adjacent the die for guiding the workpiece along a path to a position in front of the die, and a continuously rotatable transfer arm mounted in a position with respect to the die such that its projecting end portion moves along the guiding means to engage a workpiece carried thereby and move the workpiece into a position in front

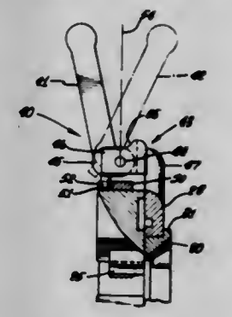


of the die where the transfer arm leaves the workpiece in a position to be pushed into the die and continues in its rotation.

3,274,627
RAPID INDEXING OF PIPE THREADING APPARATUS

Howard N. Behnke, South San Gabriel, Calif., assignor to Collins Machinery Corporation, Monterey Park, Calif., a corporation of California

Filed Jan. 2, 1964, Ser. No. 335,022
4 Claims. (Cl. 10—96)



1. In pipe threading apparatus of the character described, an assembly including

(a) a housing member forming a central through opening to receive pipe extending generally horizontally for rotation about a first axis,

(b) a series of thread chaser units carried by the housing, said units disposed about said first axis for cutting presentment to the pipe,

(c) a body member forming a pipe receiving opening and carrying a series of cams spiraling about said first axis and located to effect simultaneous inward advancement or outward retraction of said chaser units upon relative rotation of the housing and body members about said first axis, the body member carried on the housing member,

(d) a latch including a handle carried to freely project outwardly away from said first axis at the exterior of said housing and body,

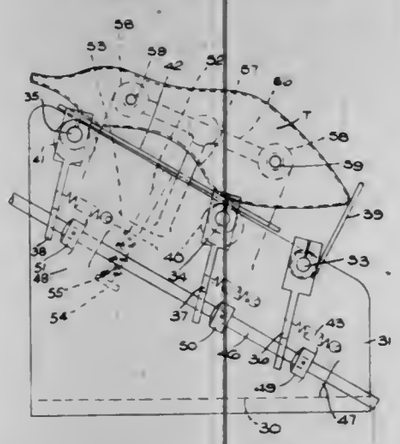
(e) connecting means including a pivot connecting the latch to said body member for free and unrestricted rocking of the latch about a second axis and between a primary position in which said body member may be freely rotated relative to the housing member in response to force applied to the handle in a direction generally normal to the direction of handle rocking, and a limited number of secondary positions in each of which relative rotation of said members is blocked,

(f) said handle in said primary and secondary positions being tilted at opposite sides of a vertical plane extending generally normal to said first axis and containing said second axis thereby to develop gravity bias acting to retain the handle in either of said positions,

(g) indexing means carried by the housing member and forming a series of latch engagement shoulders spaced about said first axis to be selectively engaged by the latch in said secondary positions and disengaged by the latch in said primary position, the spacing of said shoulders being predetermined to correspond to the selected diameter pipe threads to be formed by said chaser units,

(h) and means for supporting said housing member so that the latch handle projects generally upwardly in each of the primary and secondary positions to be assumed by the latch, said support means including a support pivot at one side of said first axis and a downwardly received holder at the opposite side of said axis to transmit the weight of said assembly, said holder being liftable to rotate the assembly upwardly about said support pivot, said holder and pivot being generally horizontally spaced apart.

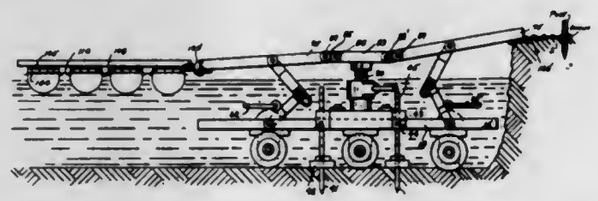
3,274,628
MANUFACTURE OF SHOE COMPONENTS
George Trevor Ralphs, Oadby, England, assignor to The Ralphs Engineering Company Limited, Leicester, England
Filed May 31, 1962, Ser. No. 198,989
4 Claims. (Cl. 12—146)



1. A method of producing pre-finished outsoles for shoes or shoe bottom units, wherein a plurality of sole blanks are superposed one upon another and held together in a stack, and, all while held together in the stack, the blanks are subjected to an edge trimming operation to produce the required edge contour on the blanks, any loose particles are removed from the trimmed edges, and afterwards, while the blanks are still held together in the same stack, the blanks are subjected to an inking operation to produce the required finished edge on the blanks.

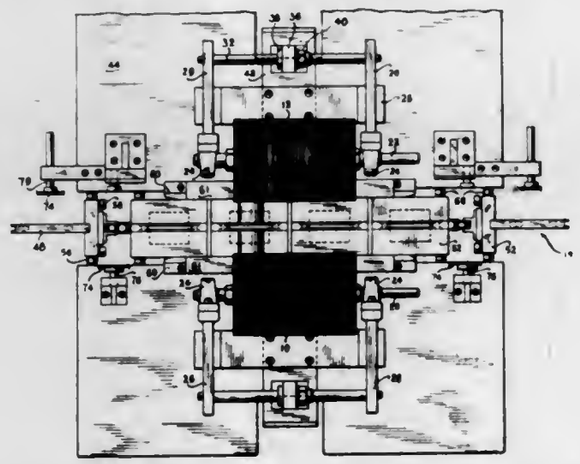
3,274,629
PORTABLE JACK PIER
Mary E. Gearon, 4523 W. Adams St., Chicago, Ill. 60624, and Joseph B. Lindecker, Skokie, Ill. (53 W. Jackson Blvd., Suite 1657, Chicago, Ill.)
Filed Mar. 13, 1964, Ser. No. 351,728
9 Claims. (Cl. 14—71)

1. An adjustable portable jack pier for use with pontoon bridges consisting of a plurality of floats each embodying an inflated envelope having a normally flat rectangular surface region and a region normally arcuate in cross-section and a platform supporting frame secured to the upper portion of said envelope, and stringers mounted upon the supporting frames of a plurality of floats; the pier comprising a main frame having a front section, a rear section and a central section located midway between the ends thereof, said central section embodying a frame structure with a top supporting surface arranged in a plane above but parallel to the plane of said main frame, a jack housing mounted upon and secured to said top supporting surface, a threaded thrust bar extending through said housing, means within said housing for actuating said thrust bar including a manually rotated shaft, crank means outside said housing for rotating said shaft, an operating platform mounted upon the upper end of said thrust bar, central stringers secured to the sides of said platform, a pair of front stringers pivotally mounted with the front end of said operating platform



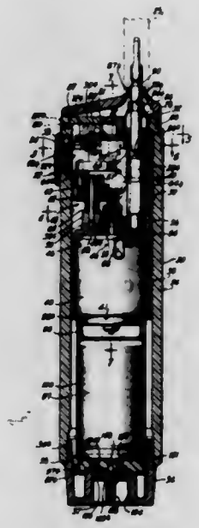
and extending above said front section, a pair of rear stringers pivotally mounted with the rear end of said central stringers on said operating platform and extending above said rear section, supporting members pivotally connected with said front and rear stringers intermediate the ends thereof and adjustably supported upon said main frame adapted to elevate the free ends of said stringers relative to the elevation of said central stringers on said operating platform, a plurality of axle housings secured to and extending below said main frame, an axle mounted in each pair of said housings, arranged transversely of the frame, each axle supporting a pair of wheels journalled for rotation thereon adapted to make said main frame mobile, vertical adjustable means for supporting said frame, and means for connecting the rear end of said rear section with an anchoring element on the shore.

3,274,630
BRUSHING MACHINE
Hovav Mileikowsky, Norwalk, Carl Horvath, Fairfield, and Saul Rosner, Norwalk, Conn., assignors to Burndy Corporation, a corporation of New York
Filed Mar. 11, 1965, Ser. No. 439,022
9 Claims. (Cl. 15—21)



1. A machine for scouring the opposed surfaces of a plurality of separate articles, comprising: a pair of opposed scouring members defining a passage therebetween; means for rotatably supporting said articles with the opposed surfaces thereof in exposed position; means for transporting said supporting means through the passage between said scouring members with the opposed surfaces of said articles in operative engagement with said opposed scouring members; and means including said rotatably supporting means for rotating said articles about an axis extending between said opposed surfaces during transport between said opposed scouring members.

3,274,631
ELECTRIC CORDLESS TOOTHBRUSH
Albert R. Spohr, Park Ridge, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 20, 1964, Ser. No. 353,327
14 Claims. (Cl. 15—22)



2. A power unit for an electric toothbrush comprising a generally cylindrical casing having an open end and a closed end, means defining an opening in said closed end, a subassembly adapted to be inserted into said casing through said open end, said subassembly comprising an electric motor, a driving mechansim, an electric switch and support means, a housing for said motor open at one end, said support means comprising a mechanism support for said driving mechanism, said support means including a lower portion closing the open end of said motor housing and an elongated U-shaped upper portion, said U-shaped upper portion being generally concentric with said cylindrical casing, an output drive shaft drivingly connected to said motor through said driving mechanism adapted to extend through said opening upon insertion of said subassembly into said casing, and means for closing the open end of said casing.

3,274,632
SHAMPOOING AND SCRUBBING DEVICE
Edmond G. Franklin, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Dec. 28, 1964, Ser. No. 421,538
3 Claims. (Cl. 15—29)

1. A hand held and manipulatable scrubbing device comprising;

(a) a casing, said casing having a handle portion dimensioned to be easily grasped in a person's hand,

(b) a shaft having a first end portion rotatably mounted on said casing and a second end portion projecting from said casing,

(c) scrubbing means mounted on said second end portion of said shaft,

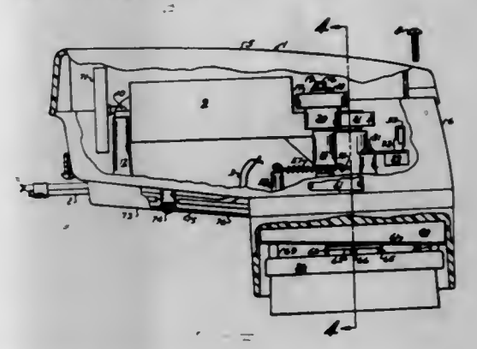
(d) sponge type foam generating means including a sponge mounted on said device and abutting against said casing adjacent said scrubbing means,

(e) self-priming positive displacement type of pump means on said device, said pump having an inlet and an outlet,

(f) said pump inlet being adapted to be connected to a liquid supply receptacle separate from said device,

(g) said pump outlet being positioned in contact with said sponge of said sponge type foam generating means between said sponge and said casing,

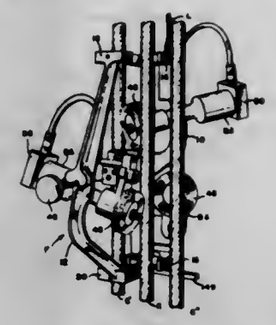
(h) driving means mounted within said casing for rotating said shaft and operating said pump and said foam generating means,



(i) and finger operated control means on the exterior of said casing adjacent said handle portion for selectively starting and stopping delivery of liquid from said pump to said foam generating means through said pump outlet,

(j) whereby liquid under pressure is selectively supplied to said foam generating means by operation of said control means and the location of said pump outlet in contact with said sponge between said casing and sponge provides active foam generation when said device is used to scrub vertical and sloping surfaces as well as horizontal surfaces.

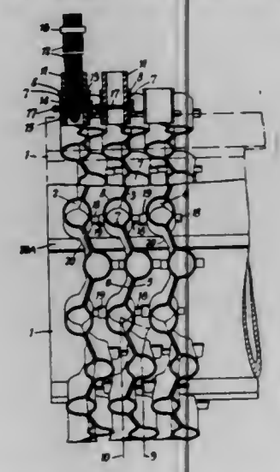
3,274,633
PORTABLE POWER CABLE CLEANER
Clair V. Stevenson, Seattle, Wash., assignor to Cable-Clean Corporation, Seattle, Wash., a corporation of Washington
Filed Apr. 6, 1965, Ser. No. 445,993
24 Claims. (Cl. 15—88)



24. A cable cleaning mechanism comprising: a frame; a plurality of brush assemblies, each including a rotary, bristle brush and an air motor for rotating said brush; means mounting said brush assemblies onto said frame at different locations circumferentially about the cable position, so that the brushes contact the cable at circumferentially spaced locations thereon, said means permitting yieldable engagement of the bristle brushes with said cable; an air cylinder means connected with each said brush assembly for urging same toward the cable, and in that manner urging the bristle brush of such assembly into contact with the cable; a source of compressed air; conduit means for delivering compressed air from said source to each air motor and to each air cylinder means; and pressure control means in said conduit means for main-

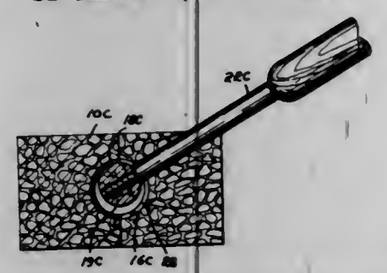
taining sufficient air pressure in said conduit means for actuating the air cylinder means during air delivery to the air motors.

3,274,634
ROTARY BRUSHES AND COMPONENTS FOR USE IN ROTARY BRUSHES
Leonard Robert Godfrey, Chepstow, England, assignor to Dendix Brushes Limited, Chepstow, England, a British company
Filed July 29, 1965, Ser. No. 475,633
8 Claims. (Cl. 15—198)



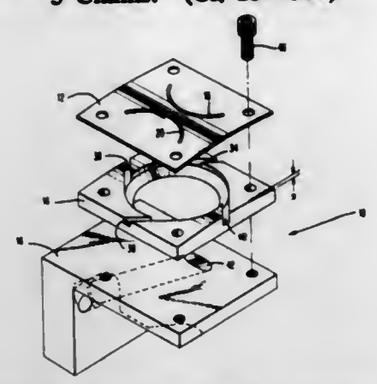
8. A component for a rotary brush, comprising a tuft-holding ring of zig-zag form, rigid tuft holders disposed at the peaks of the zig-zag and thereby arranged in two annular rows, the tuft holders all being substantially equidistant from the axis of the tuft-holding ring, tufts of brush filaments held by the tuft holders and extending outwardly of the tuft-holding ring, in each tuft holder a tubular support of resilient material which encloses the root of the tuft and is gripped by the tuft holder adjacent to and outwardly of the root of the tuft, and pivotal connections between the tuft holders and the tuft roots, the pivots being substantially parallel to the axis of the tuft-holding ring whereby when a tuft is bent in use in a plane perpendicular to said axis the tuft root is able to rock for short distances around its pivot and against the resistance provided by its tubular support.

3,274,635
SPONGE MOPS
Howard A. Myers, 63 Neponset Ave., Foxboro, Mass.
Filed Aug. 20, 1965, Ser. No. 486,256
11 Claims. (Cl. 15—244)



7. A sponge body for a mop having two principal, substantially flat and parallel work-engaging faces, a chamber centrally of said body and extending therethrough parallel to said faces and at right angles to the principal direction of movement of the mop body in normal use, and a slot opening through the rear edge of the body at right angles to and extending through said faces and intersecting said chamber, and sleeve-like, body reinforcing means within said chamber reinforcing substantial lengths of the chamber on both sides of the slot and having a yieldable inner friction surface.

3,274,636
TAPE CLEANER
Raymond E. MacGregor, Doylestown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,791
5 Claims. (Cl. 15—306)



1. A tape cleaner comprising: a scraper unit having a relatively hard smooth cylindrical surface for engagement with said tape, said scraper unit having a pair of arcuate slots, each of said slots including a single cutting edge disposed to contact said tape during operation, a block element having a chamber disposed below said scraper unit for receiving particles removed from said tape by said cutting edge, said chamber being shaped to provide a vortex movement of air when air is caused to be moved within said chamber, said block including a plurality of apertures arranged to permit air from the atmosphere to enter said chamber in the same tangential flow direction, and vacuum means connected to said chamber to cause a vortex movement of said air within said chamber to force particles removed from said tape to be moved away from said tape and out of said chamber.

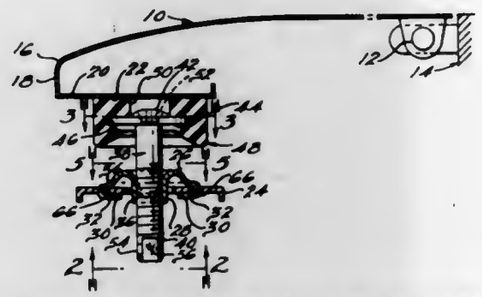
3,274,637
PAINT APPLICATOR AND ROLLER THEREFOR
Ernest G. Schulze, 78 Black Oak Ridge Road, Wayne, N.J.
Filed Mar. 11, 1966, Ser. No. 536,563
18 Claims. (Cl. 15—522)



1. A roller paint applicator comprising a housing, said housing including a trough portion and end members closing the ends of said trough portion; a roller member formed of porous spongy resiliently deformable material freely rotatably journaled in said end members; a flap member carried by said housing and pivoted for rotation about a pivotal axis parallel to the rotational axis of said roller member, said flap member having a free rectilinear edge portion extending parallel to said rotational axis, said flap member comprising a pressure-applying portion spaced from said free edge portion toward said pivotal axis, said pressure-applying portion being engageable with a lateral portion of said roller to compress said roller into a deformed cylindrical configuration, said free edge portion being engageable with a flat surface to maintain said roller in said deformed condition for applying a free

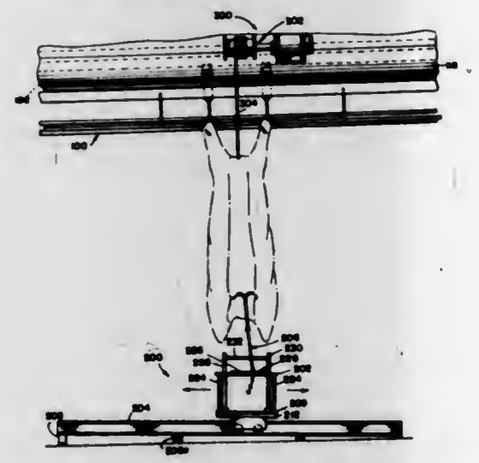
portion of said deformed roller against another surface forming a corner with said flat surface; and stop means limiting pivotal movement of said flap member away from said roller member.

3,274,638
FASTENER ARRANGEMENT
Alfred A. Bien, Dearborn, Mich., assignor to Chrysler Corporation, Highland Park, Ill., a corporation of Delaware
Filed Aug. 8, 1963, Ser. No. 300,793
6 Claims. (Cl. 16—86)



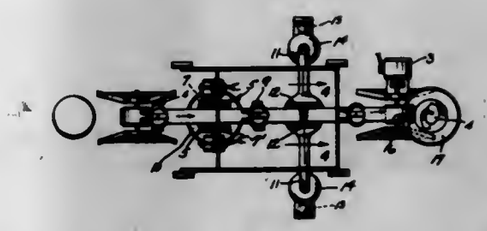
1. In combination with a pivotally mounted panel member, adjustable means for abuttingly engaging a swingable end of said panel, said means comprising a support, a self-piercing nut secured to said support, said nut comprising a flange, a generally tubular threaded portion, a body portion interconnecting said flange and threaded portion, a plurality of piercing tabs formed on said flange extending through said support and formed thereagainst in order to retain said support generally between said flange and said tabs, a screw having a threaded shank portion threadably received by said tubular threaded portion and a head portion, a radially extending flange portion formed on said screw near said head, a resilient member received generally about said screw flange portion, an opening formed in said resilient member providing a means of access to said screw head for adjustment of said screw, and a tool-engaging surface formed on said shank portion for axially adjusting said screw and said resilient member so as to cause said resilient member to abut against said swingable end of said panel at a desired portion of said panel.

3,274,639
HIDE-PULLING APPARATUS
Robert L. Knauss, Omaha, Nebr., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,286
8 Claims. (Cl. 17—21)



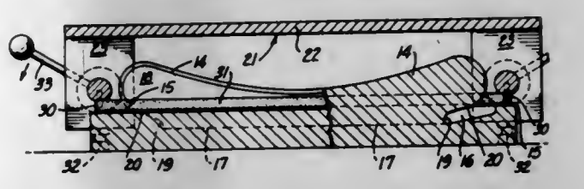
1. In an apparatus for removing the hides from animal carcasses, means for supporting a carcass to hang downwardly from the two hind legs and for moving the carcass in one direction horizontally, means for pulling the hide of the carcass substantially vertically upwardly from the head end and completely off the carcass during the movement of the carcass horizontally, and means secured for movement with the carcass to hold the carcass downwardly in opposition to the forces exerted by the pulling means.

3,274,640
METHOD OF REMOVING MEAT FROM CRABS
Michael Rossnan, 11724 Lovejoy St., Silver Spring, Md.
Original application Sept. 23, 1965, Ser. No. 489,622, now Patent No. 3,249,962, dated May 10, 1966. Divided and this application Jan. 13, 1966, Ser. No. 520,419
4 Claims. (Cl. 17—45)



1. The method of removing meat from a crab body, comprising removing the claws, crawling fingers, paddles and ends of the main shell to leave open ended stubs leading to the cavities of the crab body, and sucking the meat from all the cavities simultaneously.

3,274,641
APPARATUS AND METHOD FOR MAKING CRUTCH PADS
Howard C. Lien, Los Angeles, Calif., assignor to Alfred A. Smith, North Hollywood, Calif.
Filed Feb. 28, 1963, Ser. No. 261,798
10 Claims. (Cl. 18—1)

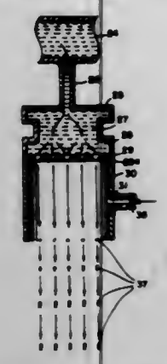


5. In an apparatus for making molded crutch pads of the type having a crutch receiving opening with an elastic reinforcing band disposed adjacent to said opening, said pad being formed on a mandrel, a loading device having holding means slightly larger than said mandrel, said band adapted to be mounted on said holding means, said loading device adapted to be disposed adjacent to said mandrel so that said band substantially surrounds said mandrel, and means for releasing said band from said holding means into engagement with said mandrel.

3,274,642
APPARATUS FOR PRILLING AMMONIUM NITRATE
John W. Cramer, Crystal City, Mo., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,272
10 Claims. (Cl. 18—2.7)

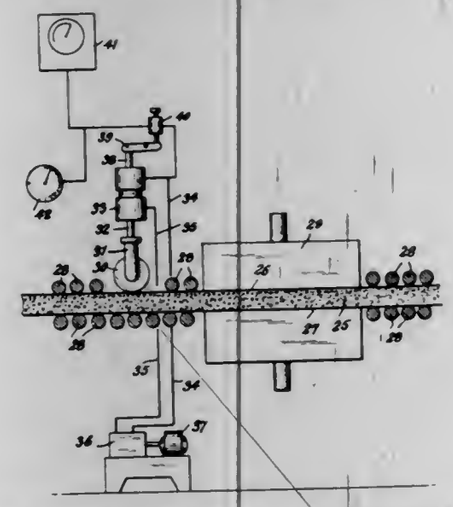
1. An apparatus for prilling liquid ammonium nitrate, including a prilling tower equipped at its top with a plurality of stationary quiescent liquid reservoirs, an orifice plate forming the bottom of each of said reservoirs and through which may freely fall streams of liquid ammonium nitrate, a sound producing system, a sound chamber communicating with and depending from the lower portion of said plate, means for communicating said sound

producing system and said sound chamber, means for impinging sonic vibrations upon said streams, and means for



passing upwardly in countercurrent to said streams blasts of cooling gas.

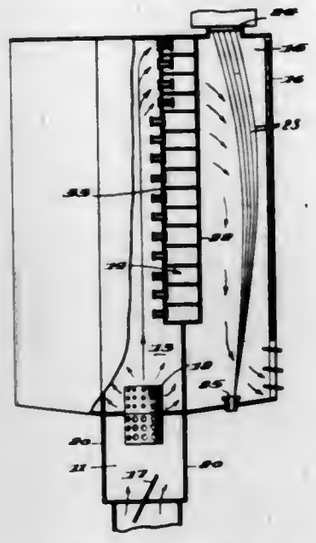
3,274,643
APPARATUS FOR DETERMINING THE EXPANSIVE PRESSURE OF MOLDED POLYSTYRENE BEADS
Berton R. Oxel, New Castle, Pa., assignor to Dyfoam Corporation, New Castle, Pa., a corporation of Pennsylvania
Filed July 20, 1964, Ser. No. 383,822
3 Claims. (Cl. 18—4)



1. In an apparatus for the molding of plastic from the expansion of polystyrene beads, the combination comprising a pair of moving endless bands between which said beads are expanded and molded, said bands being supported and motivated by a plurality of spaced rollers; a steam chest positioned along the path of said bands and through which said bands and said beads travel to cause the expansion of said beads; the improvement comprising the replacing of one of said spaced supporting and motivating rollers immediately adjacent the discharge end of said steam cabinet by a motion indicating means, said means being in direct contact with said band so as to be responsive to, and to be able to transmit, any relative movement of said bands caused by the expansion of said beads.

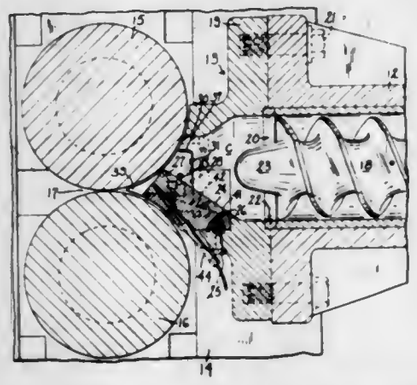
3,274,644
ADJUSTABLE PROFILE CHIMNEY
William Moore Massey, Signal Mountain, and Bill L. Pope, Hixson, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,908
4 Claims. (Cl. 18—8)

1. In combination with apparatus for cooling textile filaments formed by extruding molten film-forming material through a spinneret, a quenching chamber comprising essentially vertical inlet and outlet panels for allowing a gaseous cooling medium to pass through said chamber, and means for passing the extruded filaments vertically downwards through said chamber, each of said inlet and outlet panels comprising a plurality of adjacent, horizontally disposed sections and each of said sections contain-



ing means for individually regulating the stream of said gaseous cooling medium passing through said section, whereby both the total strength of the gaseous stream going through the quenching chamber and its general direction as it contacts the descending plurality of filaments may be regulated.

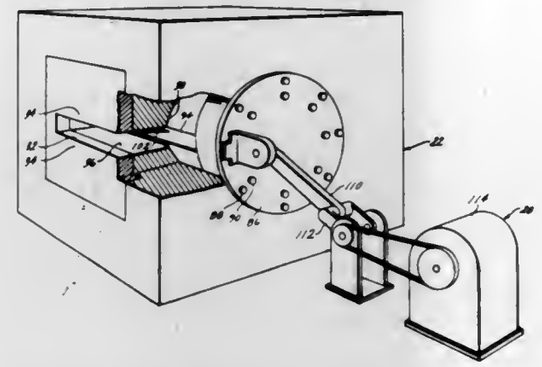
3,274,645
EXTRUDER-ROLLER DIE
Donald C. Chase, Milford, Conn., assignor to Farrel Corporation, Ansonia, Conn.
Filed Nov. 20, 1963, Ser. No. 324,973
8 Claims. (Cl. 18—12)



1. An extruder-roller die comprising an extruder head defining an extruder die cavity therethrough between a discharge orifice and an inlet orifice adapted to receive material forced therein in a plastic state, a pair of cooperating rolls defining a nip therebetween, said extruder head and said discharge orifice being arranged to introduce the material onto said rolls adjacent the nip thereof for forming said material by said nip, said discharge orifice being of substantially greater horizontal and lesser vertical dimension than said inlet orifice, the vertical dimension of the discharge orifice at the center thereof being lesser than the vertical dimension of the discharge orifice at the ends thereof so that material introduced into the cavity through said inlet orifice is uniformly spread along the width of the cavity and material is discharged from said discharge orifice on to said rolls with

substantially uniform characteristics, and said rolls act to pull material through said cavity and discharge orifice to said nip.

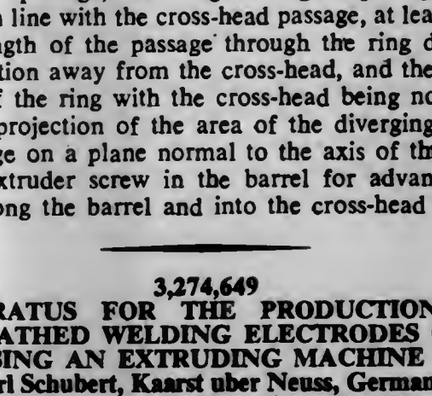
3,274,646
APPARATUS FOR MAKING EXTRUDED SHEET MATERIAL
Joseph P. Krystof, Kensington, Conn., assignor to Rowland Products, Incorporated, Kensington, Conn., a corporation of Connecticut
Filed May 13, 1963, Ser. No. 279,919
13 Claims. (Cl. 18—13)



1. An extrusion assembly for fabricating synthetic thermoplastic sheet material having a differentially colored band therein comprising an extruder die member having a chamber therein and an extrusion orifice in one surface thereof communicating with said chamber; a first conduit for supplying a mainstream of fluid synthetic thermoplastic material to said chamber at a point spaced from said extrusion orifice; a second conduit for supplying a stream of differentially colored fluid synthetic thermoplastic material to said chamber, said second conduit having a portion extending within said chamber generally parallel to said extrusion orifice and of smaller external dimension than said chamber to allow flow about at least one surface of a main stream of fluid synthetic thermoplastic material issuing from said first conduit, said second conduit portion having a discharge portion within said chamber reciprocable substantially rectilinearly and substantially parallel to said die orifice between said point of supply from said first conduit and said die orifice, said reciprocable discharge portion having a discharge aperture thereing opening adjacent said die member orifice; and means for reciprocating said discharge portion and its discharge aperture substantially parallel to said die orifice and transversely of a plastic mainstream issuing from the first conduit to discharge thereinto a differentially colored band moving longitudinally of said second conduit and to produce a sheet of thermoplastic material extruding from said die orifice comprised of the thermoplastic material of the mainstream with a generally longitudinally extending color band embedded therein and having a transverse directional component.

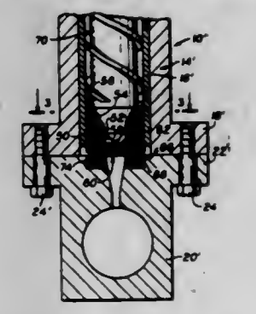
3,274,647
EXTRUSION MACHINES FOR PLASTIC MATERIAL
Léon Andouart, Paris, France, assignor to Societe des Etablissements Andouart, Bezons, Seine-et-Oise, France, a corporation of France
Filed June 19, 1964, Ser. No. 376,388
Claims priority, application France, July 29, 1963, 942,994
3 Claims. (Cl. 18—12)

1. In an extrusion machine for the manufacture of objects of plastic material from powder, comprising a vertical screw that feeds downwardly to a horizontal screw, the improvement comprising heating means for said vertical screw so that a monomeric plastic powder may be transformed to a jelly during passage along said vertical screw, drive means for said vertical screw connected to the lower extremity of said vertical screw, and a supply hopper



coaxial with the upper end of said vertical screw, the axes of said screws being spaced apart and a portion of said vertical screw extending down beside said horizontal screw.

3,274,648
SEAL RING FOR SCREW TYPE EXTRUDERS
William B. Van Orman, Clearwater Beach, Fla., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed June 29, 1965, Ser. No. 468,046
15 Claims. (Cl. 18—13)

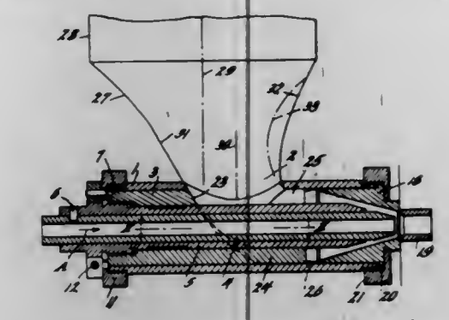


1. In plastic extrusion apparatus, the combination including an extruder barrel having a cylindrical chamber therein, a cross-head connected with the extruder barrel and extending across the end of the chamber, the cross-head having a passage therein into which plastic material is discharged from the barrel, a seal ring that fits into the end portions of the barrel and that is axially movable in the barrel into contact with the cross-head, around the cross-head passage, the ring having a passage therethrough in line with the cross-head passage, at least a part of the length of the passage through the ring diverging in a direction away from the cross-head, and the area of contact of the ring with the cross-head being no greater than the projection of the area of the diverging part of the passage on a plane normal to the axis of the barrel, and an extruder screw in the barrel for advancing the plastic along the barrel and into the cross-head passage.

3,274,649
APPARATUS FOR THE PRODUCTION OF SHEATHED WELDING ELECTRODES COMPRISING AN EXTRUDING MACHINE
Karl Schubert, Kaarst uber Neuss, Germany
Filed Oct. 24, 1965, Ser. No. 504,458
Claims priority, application Germany, Mar. 14, 1962, R 32,284
5 Claims. (Cl. 18—13)

1. Apparatus for the production of sheathed welding electrodes comprising a nozzle holder in the form of a bored body member having a lateral feed orifice therein

for the feeding an electrode sheathing material to the bore of said body member, an extrusion cylinder in front of said lateral feed orifice and arranged substantially transversely of said bored body, a forming nozzle positioned at an open end of said bored body, an electrode wire guiding tube positioned in said bored body and comprising a supporting tube which fits the outer wall of said



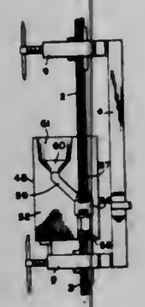
bored body, the space between said lateral feed orifice and said forming nozzle comprising a feed chamber for said sheathing material and having a cross-section which decreases substantially constantly along the path of said sheathing material between said lateral feed orifice and said forming nozzle with no substantial increase in cross-section along the path between said lateral feed orifice and said forming nozzle.

3,274,650

METHOD AND APPARATUS FOR JOINING METAL PARTS

Leonard Gelfand, South Euclid, Ohio, assignor to Erico Products, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 8, 1964, Ser. No. 358,214
7 Claims. (Cl. 22—58)



1. Apparatus for splicing the opposed ends of deformed metal reinforcing bars and the like comprising a refractory mold having a weld chamber therein adapted to receive molten weld metal and the like, passages in said mold entering said chamber adapted to receive such bars with the ends thereof projecting into such chamber, a refractory batting surrounding at least one of such bars, and a thin deformable yet irresilient metallic wrapped on sleeve surrounding said batting and closely conforming to and within the respective passage.

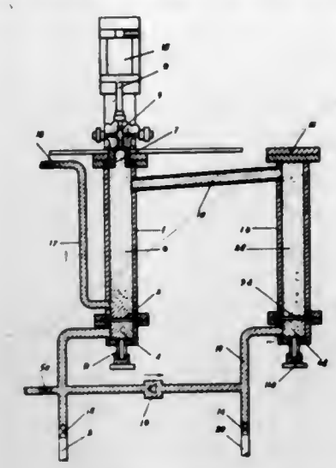
3,274,651

METHOD FOR INJECTING SAND IN MOULDING MACHINES

Fabio de Azevedo Oliveira, Rua Atlantica 114, Sao Paulo, Brazil

Filed Mar. 29, 1965, Ser. No. 443,346
4 Claims. (Cl. 22—193)

1. The method of injecting a mixture of resin and sand into a mould cavity comprising taking two columns of said mixture and applying low pressure air through a filter against the bottom of said columns to force the mixture into said cavity, thereafter increasing said air pressure a substantial amount to compact the mixture in said cavity, thereafter releasing the air pressure applied against one column while maintaining said pressure against the bot-



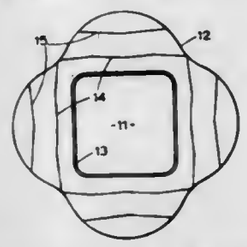
tom of the other column, thereafter permitting the pressure against said other column to progressively reduce to atmospheric pressure.

3,274,652

METHOD OF CONSTRUCTING A CASTING MOULD BY DETERMINATION OF ISOTHERMAL PATTERN

Allan Pearson Banks, Workington, Cumberland, England, assignor to Distington Engineering Company Limited

Filed Aug. 24, 1964, Ser. No. 391,808
Claims priority, application Great Britain, Aug. 23, 1963, 33,444/63
4 Claims. (Cl. 22—193)



1. A method of constructing a casting mold for casting metal, the mold having a cavity of given cross-sectional shape and dimensions, said method comprising the steps of:

(a) determining the cross-sectional isothermal pattern which exists in the wall of a trial mold having a wall of uniform thickness and a cavity of given shape and dimensions during cooling of metal cast in such mold; and

(b) constructing a final mold having a cavity of said given cross-sectional shape and dimensions and having a wall the outer cross-sectional periphery of which conforms substantially to a selected one of the isotherms of said isothermal pattern.

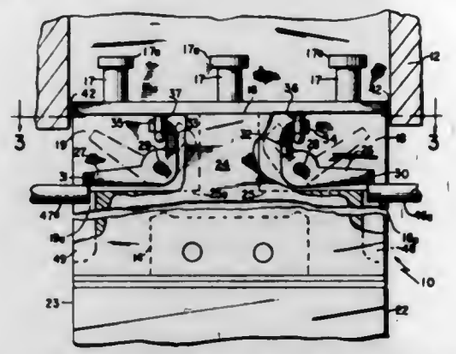
3,274,653

QUICKLY DISCONNECTABLE STARTER BAR

Justin E. Foldessy, Ogden Dunes, and Andrew L. Poulos, Ross Township, Lake County, Ind., assignors to United States Steel Corporation, a corporation of Delaware

Filed Dec. 26, 1963, Ser. No. 333,449
2 Claims. (Cl. 22—57.2)

1. In a continuous metal casting apparatus comprising a mold of rectangular cross-section in which metal is cast, a plurality of guide rolls below the mold for guiding a metal casting as it descends, and pinch rolls below said guide rolls for controlling the rate of descent of the casting, the improvement comprising a chill plate of rectangular cross-section slightly smaller than that of said mold for closing the bottom of the mold when the metal is first cast, a rigid starter bar for connection to said plate to support the plate until the cast metal solidifies thereon and becomes attached thereto and to then move the plate and casting downwardly and thus start the casting process, the top section of said starter bar being of the same cross-sectional size and shape as said chill plate and having a pair of recesses therein, a pair of latches respectively located in said pair of said recesses, each of said latches



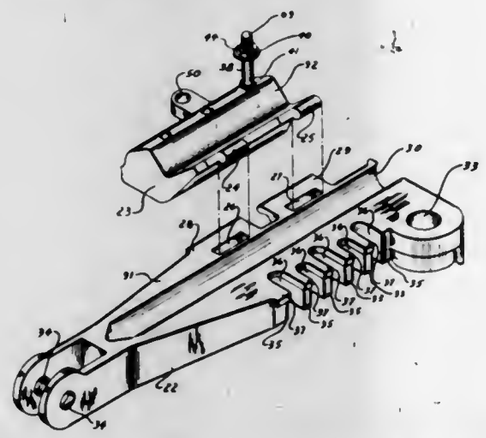
being pivotally mounted on said starter bar for rotation about a horizontal axis and including an outwardly extending arm and an upwardly extending arm terminating in a hook for securing said chill plate to said starter bar, and means located exteriorly of said starter bar for engaging said outwardly extending arms when said top section of said starter bar reaches a predetermined elevation between said mold and said pinch rolls in its descent and for holding said arms against downward travel with the bar long enough to disengage said starter bar from said chill plate and the attached casting.

3,274,654

HINGED DEAD END

Stephen P. Becker, Poughkeepsie, N.Y., assignor to Fargo Mfg. Company, Inc., Poughkeepsie, N.Y., a corporation of New York

Filed Aug. 4, 1964, Ser. No. 387,387
4 Claims. (Cl. 24—125)



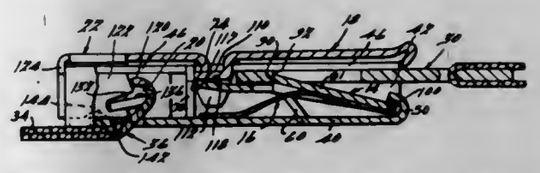
1. A dead end connector for a transmission cable including an elongated body, a cable-receiving longitudinal channel formed in said body, a pressure pad, a flange projecting from said body, a slot provided in said flange, an underlying first contact surface at the free end of said flange, a hook member projecting from said pressure pad and through said slot, a second contact surface formed on said hook member engaging said first contact surface in the closed position of said pressure pad, one of said contact surfaces being arcuate and the other of said contact surfaces being pointed forming a hinged connection, and first and second cooperating coupling means attached to said pressure pad and said body respectively with said channel between said hinged connection and said second coupling means whereby said pressure pad overlies said channel when said first and second coupling means are in cooperative relationship.

3,274,655

SAFETY BELT BUCKLE

Robert C. Fisher, Bloomfield Hills, Mich., assignor to Hamill Manufacturing Co., Washington, Mich., a corporation of Michigan

Original application July 3, 1962, Ser. No. 207,262, now Patent No. 3,131,451, dated May 5, 1964. Divided and this application Mar. 12, 1964, Ser. No. 366,673
5 Claims. (Cl. 24—196)



1. In a safety belt buckle comprising a base member, means for attaching one portion of the belt to said base member, an improved mechanism for adjustably securing a looped portion of the belt to the base member comprising

a slide supported by said base member for movement relative thereto and having

a pair of laterally spaced ears thereon with

a pair of truncated triangular apertures therein, respectively, and

a belt bar having

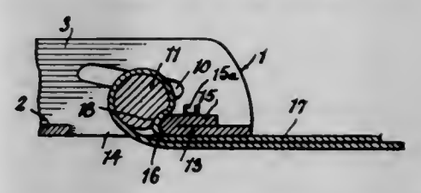
flat opposite end portions supported within the apertures of said slide, respectively, tensioning of one side of the looped portion of said belt effecting rotation of said belt bar so that the end portions thereof engage one side of the apertures in said slide thereby to facilitate shortening of said belt, tensioning of the other side of the looped portion of the belt effecting rotation of said belt bar so that the end portions thereof engage the opposite sides of the apertures in said slide thereby to hold the belt against slippage.

3,274,656

BELT MOUNTING IN SAFETY BELT BUCKLES

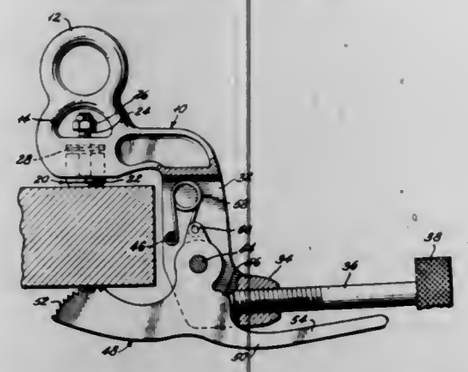
Walter F. Hamann, Huntington, N.Y., assignor to American Safety Equipment Corporation, New York, N.Y., a corporation of New York

Filed May 28, 1964, Ser. No. 370,930
2 Claims. (Cl. 24—196)



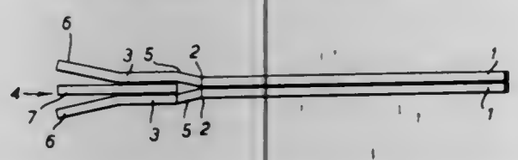
1. A buckle having a body provided with a bottom wall and side walls, the bottom wall having an opening constituting a belt passage, a portion of said bottom wall being turned over inwardly upon itself to locate such turned-over portion on the inside of the body and between the side walls thereof to thereby provide an abutment extending wholly between the side walls and constituting an edge of the opening, the side walls of the body having slots inclined in relation to said bottom wall, a rod slidable in said slots to and from the abutment, said rod having an arcuate edge facing the abutment and adapted for contact therewith, and means extending inwardly from the side walls and overlying the ends of the turned-over portion to thereby confine said portion between them and the inside face of the bottom wall of the body.

3,274,657
SAFETY CLAMP
Raymond L. Renfroe, Jacksonville, Fla., assignor to J. C. Renfroe & Sons, Inc., Jacksonville, Fla., a corporation of Florida
Filed Mar. 5, 1964, Ser. No. 349,722
10 Claims. (Cl. 24—248)



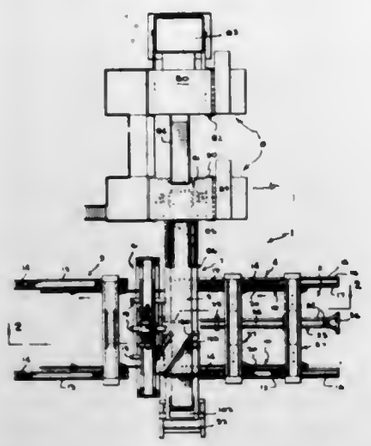
1. A safety clamp adapted to be operated with one hand and to be quickly and securely attached to and removed from a structural member comprising: a light portable clamp body; connection means on said body for attachment to a safety line; a first jaw mounted on said body; a second jaw movably mounted on said body for movement between open and closed positions in relation to said first jaw, said jaws having gripping surfaces defined by pointed protrusions adapted to bite into the structural member; spring means biasing said second jaw from said open position to said closed position; manually operable means connected to said second jaw for moving said second jaw to said open position; manually operable locking means mounted on said body in cooperative relation to said second jaw for positively urging said second jaw toward said first jaw; and grip means connected to said body closely adjacent and opposite said first named manually operable means to facilitate one hand operation of the safety clamp.

3,274,658
CLAMPING DEVICES
Charles Edward Pile, Greenford, Middlesex, England, assignor to Down Bros. and Mayer & Phelps Limited, Mitcham, England, a British company
Filed Nov. 30, 1964, Ser. No. 414,584
Claims priority, application Great Britain, Dec. 5, 1963, 48,090/63
10 Claims. (Cl. 24—259)



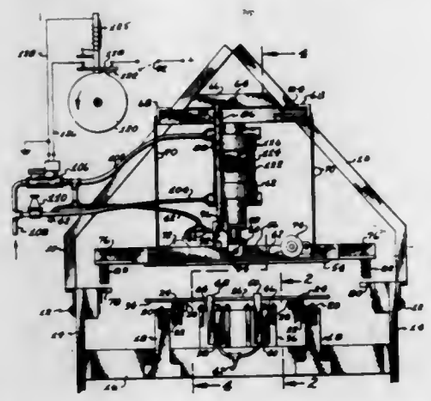
1. A clamping device comprising a pair of co-operating clamping members and at least three superposed coils forming a coil spring, one of the outermost of said coils being secured, in the region of the free end of said outermost coil, to one end of one of said clamping members, and the other of the outermost of said coils being secured, in the region of the free end of said other outermost coil, to one end of the other of said clamping members, at least a portion of at least one of said outermost coils being inclined outwardly from a plane parallel to the plane of the adjacent coil of said spring to form a lever that, when brought towards said adjacent coil, causes said clamping members to separate against a restoring force arising at least in part from torsion in the portion of the spring between the said outermost coils.

3,274,659
APPARATUS FOR FORMING CONCRETE ARTICLES
Robert S. Baker, P.O. Box 11615, Tampa, Fla.
Filed June 10, 1965, Ser. No. 462,904
7 Claims. (Cl. 25—2)



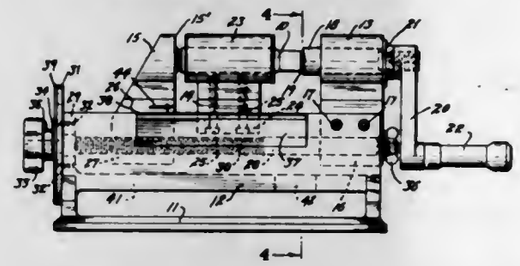
5. Apparatus for delivering mixed concrete into a mold box comprising, a support, a frame mounting the support to lie parallel to the mold box, the support being pivotally connected at one end to the frame, a load registering device on the frame upon which the other end of the support rests, an endless belt mounted on the support and having a concrete-receiving flight above the plane of the top of the mold box, a deflector movable over the concrete-receiving flight of the belt in sweeping relation thereto, and means to move the deflector along the said belt flight to sweep concrete therefrom into the mold box.

3,274,660
SLUMP BLOCK PRODUCING MACHINE
Bill L. Mizer, Phoenix, Robert T. Mizer, Scottsdale, and Donald E. Whitehurst, Phoenix, Ariz., assignors to Builders Equipment Company, a corporation of Arizona
Filed Oct. 17, 1960, Ser. No. 63,040
4 Claims. (Cl. 25—41)



1. In a slump block producing machine the combination of: a delivery conveyor of a conventional high production concrete block machine; a vertically movable pressure plate disposed above said conveyor and adapted vertically to move into engagement with the upper surfaces of concrete blocks disposed on a pallet carried by said conveyor; actuating means coupled to said pressure plate and supporting the same; a frame for supporting said actuating means whereby said pressure plate is suspended thereby; said actuating means pivoted to said last mentioned frame so that the plane of said pressure plate is readily conformable to the planes of concrete blocks supported on a pallet therebelow; first vibrating means disposed to vibrate a pallet on said conveyor below said pressure plate; and second vibrating means coupled with said pressure plate for vibrating it; first means operable by a high production concrete block machine in connection with said conveyor said first means coupled to said actuating means and said first and second vibrating means for automatically initiating operation of said pressure plate actuating means and said first and second vibrating means; limit switch means disposed to be actuated in accordance with downward movement of said pressure plate for deenergizing said actuating means and said first and second vibrator means when said pressure plate reaches a predetermined vertical position; stop means in connection with said pressure plate; members stationarily disposed to be engaged by said stop means for mechanically limiting the downward travel of said pressure plate, said conveyor comprising compressible belts supporting a pallet thereon and bars slightly below the upper surfaces of said belts disposed to support the lower surface of a pallet when said pressure plate engages and compresses blocks on the upper surface thereof.

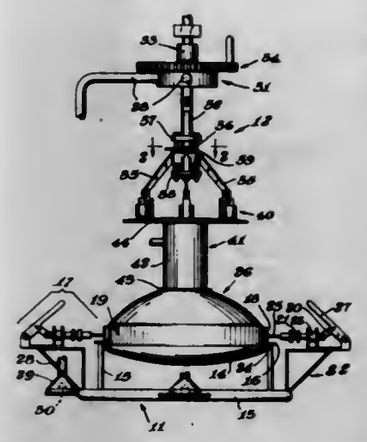
3,274,661
DEVICES FOR MEASURING AND TRIMMING GUN CARTRIDGE CASINGS
John W. Westbrook, 4951 S. Rio Grand, Littleton, Colo.
Filed Dec. 31, 1964, Ser. No. 422,722
4 Claims. (Cl. 29—1.32)



1. A cartridge casing measuring and trimming device comprising:
(a) a pair of horizontal, parallel, spaced-apart ways;
(b) a head stock mounted on and arising from the rear extremities of said ways;
(c) a horizontal trimmer shaft journalled in said head stock, above, parallel to, and intermediate said ways;
(d) milling teeth formed on the forward extremity of said trimmer shaft;
(e) shell casing supporting means supported from said ways and adapted to support a casing forwardly of and in alignment with said trimmer shaft;
(f) stop means supported by said ways forwardly of said casing supporting means to be contacted by said shell casing for limiting the forward movement of the latter;
(g) means for rotating said trimmer shaft to cause said milling teeth to trim away one extremity of said shell casing;
(h) a threaded shaft journalled between and parallel to said ways, said stop means being threaded on said threaded shaft; and
(i) means for rotating said threaded shaft to cause said stop means to travel along said ways.

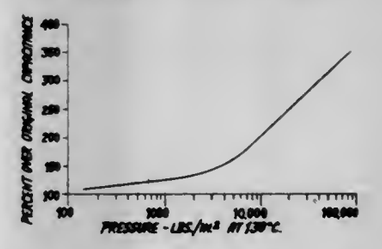
3,274,662
POSITIONING MACHINE
Robert M. Jackman and Jerry L. Allswede, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 23, 1961, Ser. No. 84,412
8 Claims. (Cl. 29—25.19)

1. A mechanism for aligning in spaced apart relationship two members having substantially mating surfaces which comprises a perimetric receiving, spacing and holding frame having matching member locating means, said frame being provided with self-centering means about its periphery; a matching member moving element, said moving element consisting of a frame network having self-centering mating engagement means to mate with said holding frame self-centering means and being provided



with an axially positioned adjustable moving means having in engageable intermittently lockable position an open ended vacuum cup closed on one end by a plate which extends peripherally beyond the cup diameter, said cup being engageable with one of said matching members and capable of holding said member for movement axially away from said other member.

3,274,663
ELECTRICAL CAPACITOR AND METHOD OF MAKING THE SAME
Leo J. Bonenfant and George T. Thurston, Hudson Falls, N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 6, 1962, Ser. No. 221,779
6 Claims. (Cl. 29—25.42)

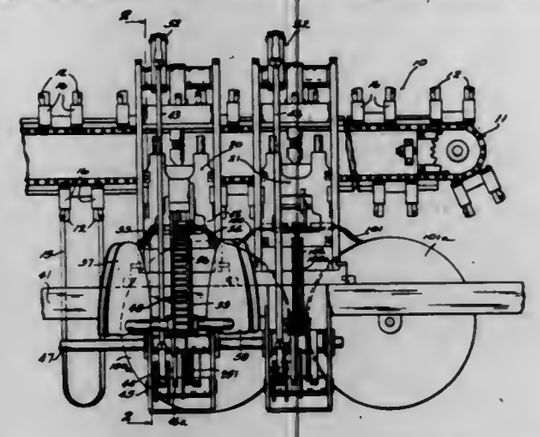


1. The method of making an electrical capacitor which comprises forming a wound roll of a superposed assembly of a pair of aluminum foil electrodes separated by polyethylene terephthalate dielectric sheets, and subjecting said wound roll to a pressure of about 10,000 to 75,000 pounds per square inch at a temperature of about 90° C. to 220° C. for reducing the thickness of said dielectric sheets and removing the air between said electrodes, whereby the capacitance of the capacitor is increased and the volume of the capacitor is reduced.

3,274,664
TERMINAL ATTACHING DEVICE
Karl H. Andren, West Allis, and Clarence R. Tuttle, Milwaukee, Wis., assignors to Artos Engineering Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 12, 1964, Ser. No. 374,592
8 Claims. (Cl. 29—33)

1. In a terminal attaching device, a supply of terminals for feeding along a center line of a terminal die, a supply of terminals for feeding along an axis in angular relation

to said terminal die center line, means for feeding said terminals along said center line, means for feeding said terminals at an angle thereto, means for presenting a cord having a plurality of conductors to said terminals, means



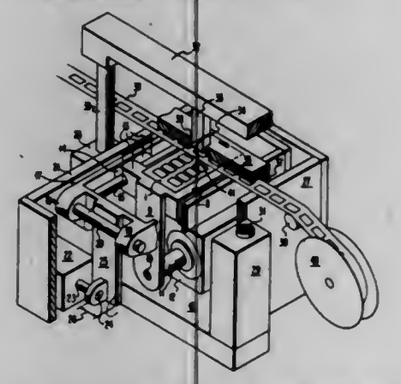
for simultaneously crimping a plurality of terminals on said plurality of conductors, and means actuated by said crimping means for advancing said terminals toward a terminal attaching zone.

3,274,665

MECHANICAL CHIP POSTING MECHANISM

Austin H. Higginson, Santa Clara, and Clyde C. Roshon, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 6, 1964, Ser. No. 401,935
8 Claims. (Cl. 29—33)



1. In a storage system wherein inserts cut from a length of film are removably mounted in apertures in carriers, the combination comprising:

a carrier having inner, front and back laminations,

at least one composite aperture in said carrier,

the apertures in the inner lamination being slightly larger than the apertures in the front and back laminations at two opposite extremities thereof whereby retaining slots are formed in the composite apertures, and

means for cutting said inserts from said length of film and frictionally mounting them in the retaining slots of said composite apertures.

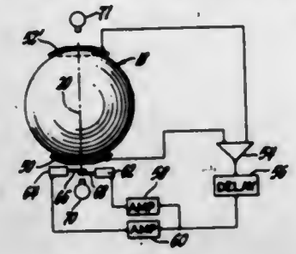
3,274,666

METHOD OF PRODUCING A SPHERICAL GYRO ROTOR

Arnold T. Nordsieck, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 26, 1965, Ser. No. 459,011
7 Claims. (Cl. 29—148.4)

1. A method of producing a body which assumes a spherical shape when rotated about a design axis at a relatively high design speed comprising the steps of forming a generally spherical body of substantially uniform plurality of randomly oriented axes at a relatively low density material, successively rotating the body about a speed, sensing, during the low speed rotation, surface nonuniformities and prefecting the static sphericity of the



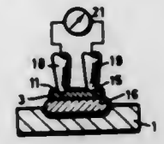
body by eliminating the surface nonuniformities sensed, rotating the body about the design axis at the design speed, sensing the centrifugal distortion in the body and altering the quantity of material in the surface of the body thereby to perfect the dynamic sphericity of the body at the design speed.

3,274,667

METHOD OF PERMANENTLY CONTACTING AN ELECTRONIC SEMICONDUCTOR

Karl Siebertz, Munich-Obermenzing, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Sept. 17, 1962, Ser. No. 223,976
Claims priority, application Germany, Sept. 19, 1961, S 75,819
1 Claim. (Cl. 29—155.5)



The method of contacting an electrode of an electronic semiconductor assembly which comprises placing a strip member of contact material having a width substantially equal to a face dimension of the electrode in substantially full face-to-face relation against the electrode of the semiconductor assembly to be contacted, pressing at least two mutually insulated punches of thermoelectrically different respective materials against the strip member in the direction toward the electrode of the semiconductor assembly, simultaneously passing electric current through said punches and thus through the strip-member portion intermediate the pressure locations to thereby electrically heat said locations to an elevated temperature for permanently attaching said member, and measuring the thermoelectric voltage generated between said two punches as a measure of said temperature.

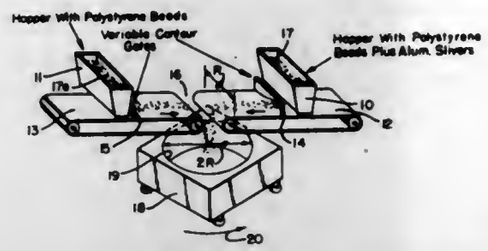
3,274,668

METHOD OF MAKING THREE-DIMENSIONAL DIELECTRIC LENS

Robert L. Horst, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Aug. 2, 1965, Ser. No. 477,669
22 Claims. (Cl. 29—155.5)

16. The method of fabricating a three-dimensional dielectric lens having a varying dielectric constant which comprises the steps of fabricating a substantially cylindrical starting mass of dielectric material exhibiting a two-dimensional variation in dielectric gradient in directions between the central axis and outer circular side of said cylindrical starting mass, slicing said starting mass along oppositely inclined planes extending transverse to the outer circular side of said mass with said oppositely inclined planes intersecting one another substantially along a diametrical plane in said mass thereby to form plural wedges of two-dimensionally graded material, each of which wedges has a relatively thin substantially linear edge taken from a central portion of the starting mass with the opposing ends of said linear edge being intercon-



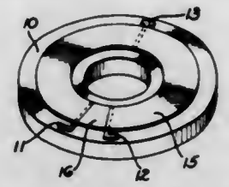
nected by a substantially semi-circular varyingly thickened edge taken from the outer circular side of a said mass, and assembling a plurality of said wedges into a three-dimensional mass with the linear edges of said wedges being disposed in substantially colinear relation to one another and with the thickened edges of said wedges being disposed closely adjacent one another.

3,274,669

METHOD OF MAKING ELECTRICAL RESISTANCE ELEMENT

Thomas M. Place, Sr., Newport Beach, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Original application Dec. 11, 1961, Ser. No. 158,317. Divided and this application Dec. 31, 1964, Ser. No. 435,767
4 Claims. (Cl. 29—155.7)



1. A method of making a resistance element, including the steps of:

applying a metallic paste to a nonconductive support structure in a thin layer to define a terminal;

heating the unit to a first temperature to convert the paste to a metal layer adhered to the support structure;

applying a cermet resistance material mixture to the support structure in a first film, with the film covering a portion of the metal layer and having a gap therein;

applying a cermet resistance material mixture with a refractory oxide additive therein to render said mixture nonconductive to the support structure in a second film and bridging the gap in the first film;

and heating the unit to a second temperature lower than the first temperature and lower than the melting point of the metallic constituents of the mixtures and exceeding the melting point of the glass constituents of the mixture to produce a continuous glassy and substantially flat surface.

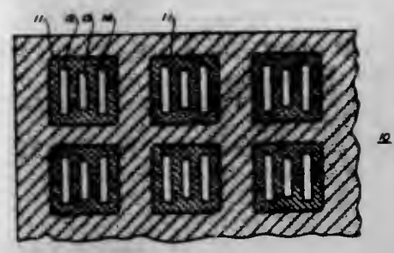
3,274,670

SEMICONDUCTOR CONTACT

Martin P. Lepselter, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 18, 1965, Ser. No. 440,782
3 Claims. (Cl. 29—155.5)

1. The method of making low resistance contact to a body of semiconductor material of silicon comprising forming an oxide mask on a portion of the surface of said semiconductor body, depositing on said surface a layer of platinum, heating said body at a temperature and for a time sufficient to produce a solid phase reaction between the platinum and said semiconductor to form a compound of platinum and said semiconductor which has a lower light reflectivity than platinum of such degree as



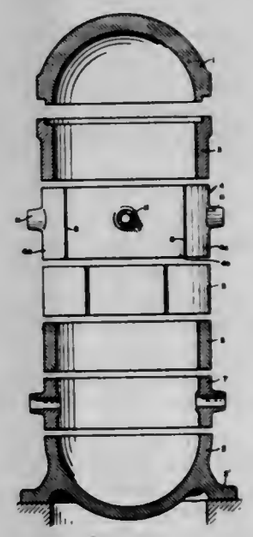
to enable visual determination of the formation of said compound on the unmasked portions of said surface and which is insoluble in aqua regia, treating said surface with an aqua regia solution to remove the remaining platinum areas leaving the compound portions in place, and applying additional metal layers to said compound portions to complete the contacts.

3,274,671

METHOD OF PRODUCING A PROJECTION ON A MACHINE COMPONENT

Josef Hauer, Radcice u Plzne, and Zdeněk Kobera, Plzen, Czechoslovakia, assignors to Zavody V.I. Lenina Plzen, narodni podnik, Plzen, Czechoslovakia

Filed Aug. 4, 1965, Ser. No. 479,048
Claims priority, application Czechoslovakia, Aug. 29, 1962, 4,980/62
6 Claims. (Cl. 29—157)



1. A method of producing a unitary machine element having a wall portion of substantially uniform thickness and a projecting portion integral with said wall portion, the dimension of said projecting portion in the direction of said thickness being substantially greater than said thickness, which method comprises:

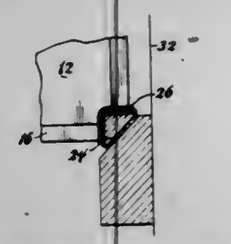
(a) forming a unitary piece of material to an initial thickness substantially equal to said dimension, said piece having a minor central portion and a major peripheral portion extending from said central portion transversely of the thickness of said piece in all directions;

(b) selectively applying pressure to said peripheral portion in the direction of said thickness of said piece until the thickness of said peripheral portion is reduced to said substantially uniform thickness while retaining said central portion at said initial thickness.

(1) said peripheral portion of reduced thickness constituting said wall portion, and said central portion of initial thickness constituting said projecting portion, and

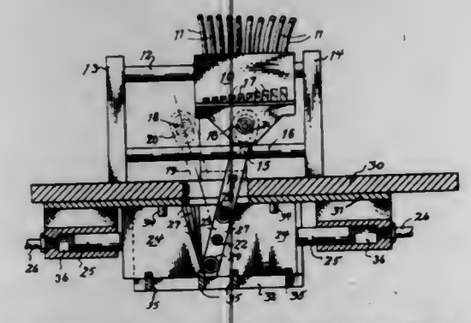
(c) piercing said central portion to form a passage therethrough in the direction of said dimension.

3,274,672
METHOD OF MAKING A HEAT EXCHANGER
Franklyn Doré, Wellsville, N.Y., assignor, by mesne assignments, to The Air Preheater Company, Inc., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,357
2 Claims. (Cl. 29—157.3)



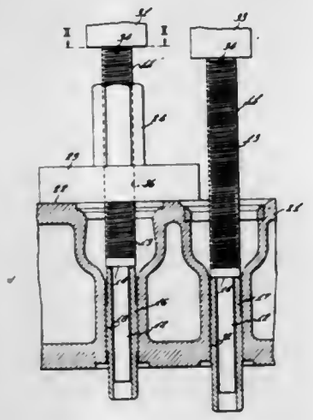
1. The method of forming a plate type heat exchanger which comprises the steps of forming a multiplicity of plain sided rectangular element sheets to include flanged edges between recessed corners, welding pairs of sheets together along one pair of parallel flanged edges to provide a series of open-ended envelopes, assembling the envelopes together with their plane sides in mutually adjacent relationship and their open ends similarly disposed at opposite sides of the assembly, welding the open ends of the envelope assemblies at their flanged edges to other flanged edges adjacent thereto to connect the envelopes into an integral assembly, forming sealing bars with a surface conforming to the recessed corners of the assembled envelopes, fitting the sealing bars to the recessed corners, inserting the envelope assembly including sealing bars into a casing, and drawing the casing tightly around said assembly to force a sealing relationship between the sealing bars and the confronting edges of the recessed corners.

3,274,673
MAGAZINE AND TUMBLER PIN SELECTING DEVICE
Max G. Roland, San Carlos, Calif., assignor to Maromatic Company, Inc., Burlingame, Calif., a corporation of California
Filed June 21, 1965, Ser. No. 465,274
6 Claims. (Cl. 29—211)



1. In a apparatus for selecting and assembling the key engaging pins of a tumbler lock to conform with the bits of a key, the combination of a movable pin supply magazine having segregated groups of tumbler pins of different lengths, stationary means for ejecting pins from said supply magazine as said magazine assumes different positions relative thereto, a preloading means movable with respect to said stationary pin ejecting means for transferring pins ejected from said supply magazine to a cylinder lock plug, and means for supporting a pinless key plug in a position to receive the pins ejected from said pin supply magazine as said preloading means is positioned thereover.

3,274,674
VALVE GUIDE REMOVING AND INSTALLING TOOL
Donald M. Hooper, Markham, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Nov. 2, 1964, Ser. No. 408,015
4 Claims. (Cl. 29—214)



1. A valve guide removing and installing tool comprising:

an elongated cylindrical driver having

a pilot portion at one end thereof adapted for insertion into a tubular valve guide,

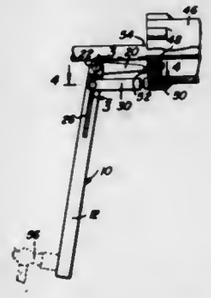
a shoulder of greater radial width than said pilot portion and spaced axially from said one end of said driver, said shoulder adapted to engage an axial end of said tubular valve guide, and

a threaded portion on said driver intermediate said shoulder and the other end of said driver,

a stop member having an opening through which said threaded portion extends, and

a nut threaded on said threaded portion of said driver on the side of said stop member remote from said shoulder, said nut being in abuttable relation to said stop member.

3,274,675
STRAIGHT AND CURVED BEARING PULLER
Beal S. Jackson, Rte. 10, Tulia, Tex.
Filed Sept. 4, 1964, Ser. No. 394,416
5 Claims. (Cl. 29—267)



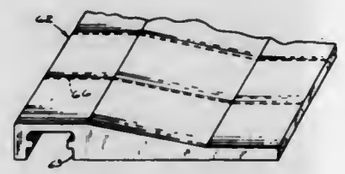
1. A bearing puller comprising an elongated lever, a pull arm pivotally secured at one end to a first end of said lever for rotation about an axis extending transversely of said lever and arm, the other end of said arm including means adapted to engage a bearing race through which said other end of said arm is received, an elongated fulcrum member carried on a mid-portion of said elongated lever and projecting laterally outwardly therefrom and disposed in the plane of swinging movement of said pull arm, said lever and fulcrum member including coacting means defining a pivot connection between said lever and said fulcrum member for swinging movement of the free end of said fulcrum member relative to said lever through a plane substantially coinciding with the first-mentioned plane, said coacting means also including means operative to shift said pivot connection longitudinally of said lever.

3,274,676
METHODS OF MAKING SHADES
John E. Gallagher, Flossmoor, Orin N. Crider, Chicago Heights, and Bryson McCulloch, Flossmoor, Ill., assignors, by mesne assignments, to Slick Industrial Company, Chicago Heights, Ill., a corporation of Delaware
Continuation of application Ser. No. 197,185, May 21, 1962. This application Oct. 31, 1963, Ser. No. 320,274
9 Claims. (Cl. 29—400)



1. A method of making a shade comprising the steps of: expanding a foam plastic composition, curable to form a rigid foam, within a rigid tube; curing said foam to form said core; assembling end members including spring re-winding means on the ends of said tube; and attaching a shade to said tube by an end of said shade.

3,274,677
METHOD OF MAKING LEVER ARMS
Eugene L. Kilbourn, Marengo Township, Calhoun County, Mich., assignor to S. H. Leggitt Company, Marshall, Mich., a corporation of Michigan
Filed Apr. 24, 1963, Ser. No. 275,307
9 Claims. (Cl. 29—417)



1. A method of constructing a lever arm for a fluid pressure regulator comprising:

forming an elongated rigid member having a constant cross-sectional configuration and having an elongated, open groove longitudinally aligned with the longitudinal axis of said member;

orienting said elongated member so that said groove opens upwardly;

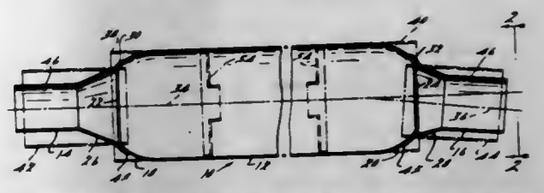
providing retention means at the ends of said groove for constituting with said groove a container capable of holding a liquid;

pouring a resilient material in liquid form into said groove and allowing same to harden to a resilient state;

removing said retention means from said elongated member; and

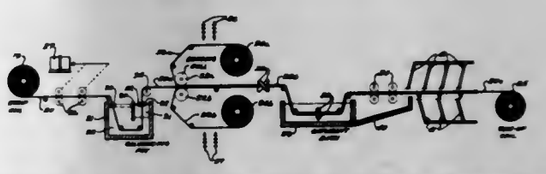
severing successive, generally identical, segments from said member using cutting planes transverse to the longitudinal axis of said member, whereby each of said segments constitutes one of said lever arms.

3,274,678
METHOD OF MAKING A MUFFLER
Peter G. Andrews, Kitchener, Ontario, Canada, assignor to Walker Manufacturing Company, a corporation of Delaware
Original application May 11, 1962, Ser. No. 193,927, now Patent No. 3,159,239. Divided and this application May 25, 1964, Ser. No. 370,021
1 Claim. (Cl. 29—471.1)



The method of making a muffler for automotive exhaust systems, said muffler having an outer shell and conduit connecting fittings at opposite ends which comprises inserting silencing means inside said shell, indenting the opposite ends of a tubular outer shell to form spherical surfaces, enlarging the ends of tubular end fittings to form spherical surfaces thereon, positioning the spherical surfaces of the fittings on the spherical surfaces at the ends of the shell and adjusting said fittings so that the axes thereof make the desired angles with the axis of the shell, and welding the spherical surfaces of the fittings to the spherical surfaces of the shell.

3,274,679
PROCESS FOR FABRICATING PROTECTED METAL SHEETS
Harold E. Kennedy, Pittsburgh, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1963, Ser. No. 331,719
4 Claims. (Cl. 29—473.1)



1. In the process of producing a protected metal sheet from a coil of metal core sheet including the sequential steps of:

metal-coating the metal core sheet;

applying a substantially asbestos felt sheet to said metal coating while said coating is at least partially molten, thereby bonding said substantially asbestos felt sheet to said metal sheet;

impregnating the said asbestos felt sheet with a high flash point asphalt saturant in molten condition; and

recoiling the resulting protected metal sheet;

the improvement comprising: recoiling the said resulting protected metal sheet at a temperature between 250° and 400° F.

3. In the process of producing a protected metal sheet from a coil of metal core sheet including the sequential steps of:

metal-coating the metal core sheet;

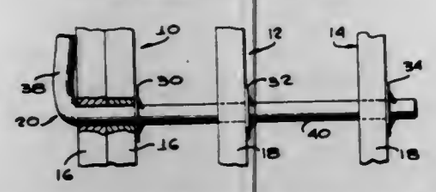
applying a substantially asbestos felt sheet to said metal coating while said coating is at least partially molten, thereby bonding said substantially asbestos felt sheet to said metal sheet;

impregnating the said asbestos felt sheet with a high flash point asphalt in molten condition; and

recoiling the resulting protected metal sheet;

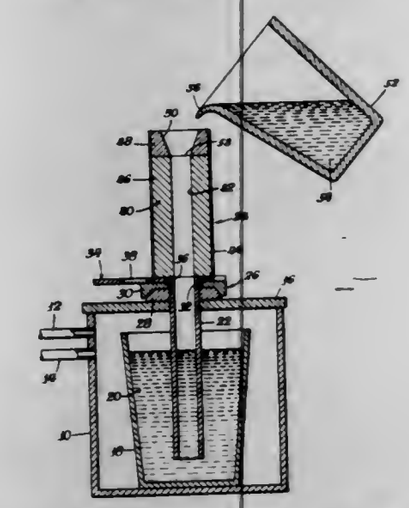
the improvement comprising: heating the asphalt-impregnated, fibrous-bonded, metal-coated core sheet to a temperature between 280° to 400° F. prior to recoiling and thereafter carrying out the said recoiling between 250° and 400° F.

3,274,680
METHOD OF TYING TOGETHER A PLURALITY OF BODIES
William C. Cruse, Chippawa Lake, Ohio, assignor to The Akron Products Company, Seville, Ohio, a corporation of Ohio
Filed June 14, 1963, Ser. No. 288,018
3 Claims. (Cl. 29—509)



1. The method of anchoring or tying together at least two bodies having openings therethrough and in alignment with one another, which method consists in extending an end of a tie rod through the openings to a position where one end of the rod extends beyond one body, then slipping a self-gripping nut on the extended end of the rod and effecting movement of the nut to a position in which it bears against said one body, and then bending the other end of the rod into clinching engagement with the other body.

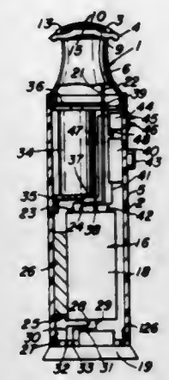
3,274,681
METHOD OF FORMING CLAD METAL
Gordon R. Lohman, Glen Ellyn, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed June 12, 1964, Ser. No. 374,703
6 Claims. (Cl. 29—528)



1. A method of cladding metal in a mold open at both ends comprising the steps of introducing a quantity of molten cladding metal up into the mold through the bottom opening thereof to achieve a predetermined interface level with the atmosphere by applying fluid pressure to a reservoir of said molten cladding metal, retaining the cladding metal in the mold by maintaining said fluid pressure until a surface portion freezes and forms a shell, displacing the remaining molten portion of the cladding metal downwardly from the central portion of the mold by introducing molten core metal into the mold through the top opening thereof against said fluid pressure while maintaining said atmosphere/molten metal interface level in the mold, and permitting said core metal to freeze to produce a solidified body after all the remaining molten cladding metal has been displaced.

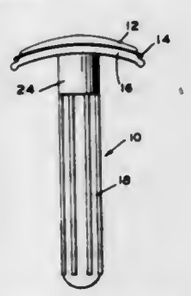
2. A method of producing a clad metal sheet comprising forming a billet according to the method of claim 1 and thereafter rolling the billet into a thin sheet in an operation that reduces the thickness of the core metal and cladding metal proportionately.

3,274,682
RAZOR WITH SOUND DETECTING MEANS
John H. Worthington, 108 Mohican Court, West Lafayette, Ind.
Filed Feb. 28, 1964, Ser. No. 348,037
4 Claims. (Cl. 30—34)



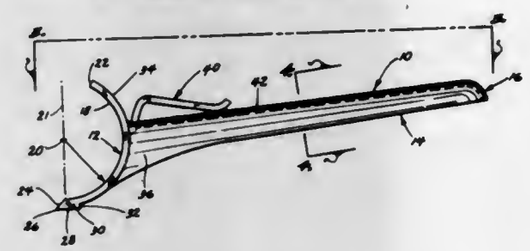
1. A razor for shaving comprising
(a) a handle,
(b) a blade
(1) removably carried by said handle, and
(2) having a sharp edge projecting outwardly from said handle in operative position to cut hairs in a shaving operation,
(c) means carried by said handle in position to pick-up vibrations of said blade,
(d) a speaker, and
(e) means operatively connected to said first-mentioned means for operatively actuating said speaker in accordance with such vibrations of said blade picked up by said first-mentioned means and thereby convert said vibrations to sound emitting from said speaker.

3,274,683
PLASTIC DISPOSABLE SAFETY RAZOR HAVING SEPARABLE PARTS RELEASABLY SECURED TOGETHER
Leonard W. Sachs, Grosse Pointe, Mich., assignor to Sachs Safety Razor Co., Inc., Detroit, Mich., a corporation of Michigan
Filed Oct. 26, 1964, Ser. No. 406,977
4 Claims. (Cl. 30—51)



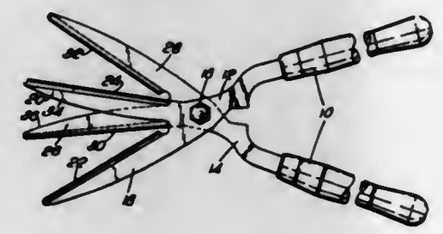
1. A disposable razor comprising a head, blade and guard member secured together in assembly, a handle projecting from said guard member at right angles thereto, and a connection between said guard member and handle comprising a socket on said guard member having a generally cylindrical cavity therein, said handle having a generally cylindrical inner end portion adapted to rotatably fit in said socket, a shoulder separating said inner end portion of said handle from the remainder thereof, said handle also having a locking lug projecting laterally outwardly from the generally cylindrical inner end portion thereof, said cavity in said socket having a longitudinally extending groove and at the inner end of said groove a circumferentially extending generally helical ramp, said groove being of sufficient width to clear said locking lug, whereby said inner end of said handle can be inserted in said cavity and during such insertion the longitudinal groove will clear said locking lug, and said handle can be thereupon rotated causing said locking lug to climb said ramp and draw said handle shoulder against the end of said socket to frictionally retain said handle.

3,274,684
SCRAPER DEVICE
William J. Marks, 5348 W. Lazy Heart St., Tucson, Ariz.
Filed Dec. 17, 1964, Ser. No. 419,147
8 Claims. (Cl. 30—171)



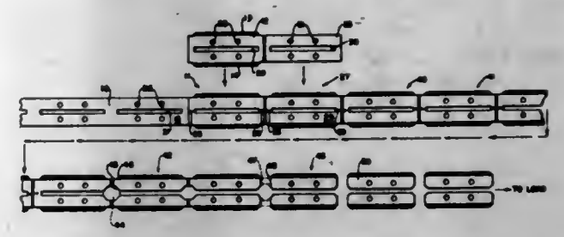
1. A scraper device, comprising,
a cutting blade having a concave front surface, said blade terminating along its lower edge in a rearwardly tapering front surface when said blade is substantially vertically disposed, a shoe surface defining a cutting edge with the lower edge of said blade and extending rearwardly from the lower edge of said tapering front surface and terminating in a substantially vertically disposed rear cutting surface, and
an elongated handle member secured to the back surface of said cutting blade, said handle member extending rearwardly of said front surface.

3,274,685
CUTTING APPLIANCES
Arthur William Knox, Longford, West Drayton, England, assignor to Mitchel & King Limited, Slough, England
Filed Aug. 12, 1963, Ser. No. 301,253
Claims priority, application Great Britain, Aug. 16, 1962, 31,418/62
2 Claims. (Cl. 30—211)



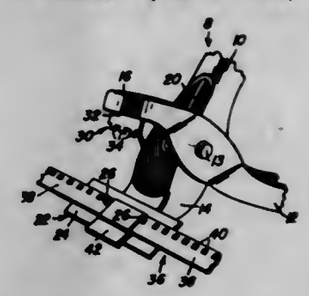
1. Hedge trimming shears comprising two stems joined together by a pivotal connection, each stem carrying inner and outer cutting blades which are splayed apart to form an acute angle on one side of the pivotal connection, said stems also carrying handles extending on the opposite side of the pivotal connection, the outer blade of each stem extending in substantial alignment with its corresponding handle, an open position of the blades having both blades on one stem disposed to one side of both blades of the other stem wherein none of the blades overlap any other blade, and the cutting edges of the blades of one stem facing the cutting edges of the blades of the other stem, whereby on closing the stems three cuts are obtained.

3,274,686
LAMINATED RAZOR BLADE FOR INJECTOR RAZOR
Jan Dawidowicz, Fairfield, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Mar. 2, 1965, Ser. No. 436,438
3 Claims. (Cl. 30—348)



1. A laminated razor blade for use in an injector razor comprising a thin flat metal razor blade of resiliently flexible material having a thickness of no greater than about .005 inch, a cutting edge formed along at least one elongated edge of said blade, a thin flat reinforcing strip having a thickness from about .003 to about .008 inch attached to at least one of the flat surfaces of the blade with their respective broad faces in a face-to-face adhesive bond to define a composite blade having a combined flat and uniform thickness with the end edge of the blade and reinforcing strip defining with their combined thickness an edge surface area sufficient for abutting contact with a corresponding edge surface area on the edge of a similar blade, one side edge of the reinforcing strip extending parallel to but spaced from the cutting edge, whereby the cutting edge extends from the side edge of the reinforcing strip an extent sufficient to extend the cutting edge out of the head of the razor in safety cutting position relative to the safety guard of an injector razor.

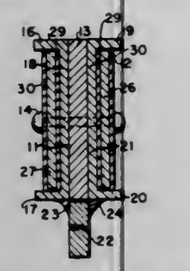
3,274,687
MOTION PICTURE FILM SPLICING TAPE PUNCH
Roger C. Le Blanc, 138 N. Brandywine Ave., Schenectady, N.Y.
Filed Nov. 13, 1964, Ser. No. 410,887
5 Claims. (Cl. 30—360)



1. In combination with a strip of film including a pair of end aligned sections with uniformly and longitudinally spaced sprocket holes formed therein in at least one pair of corresponding edge portions of said sections and a piece of splicing tape secured to at least one side of said strip throughout an area extending longitudinally of said strip a distance greater than the distance between two adjacent sprocket holes formed in said strip, a motion picture film splicing tape punching tool comprising a pair of jaws operatively interconnected for relative guided movement toward and away from each other, a die on one of said jaws for receiving the film thereon, said die having spaced openings therein with which the sprocket holes formed in said strip and disposed in said area are registrable, positioning means on said die engaging and positioning said strip in predetermined position on said die with the sprocket holes in said area registered with said openings, and punch means on the other jaw projecting outwardly thereof toward said one jaw and cooperable

with the openings in said die for punching through said tape in the portions thereof covering said holes in said area upon movement of the other jaw toward said one jaw.

3,274,688
CABLE JOINTING TEMPLATE
Joseph B. O'Mara, Hastings on Hudson, and Ralph G. D'Ascoli, Yonkers, N.Y., assignors to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 431,032
1 Claim. (Cl. 33—112)



A template for tapering the insulation at a joint in a high-voltage cable comprising:

(A) an aluminum bar having opposing flat surfaces sufficient in extent for guide lines for said template,

(B) two extruded aluminum channels, each having a web and two flanges, fastened to said bar, the webs of said channels each being mounted against one of the opposing flat surfaces of said bar,

(C) a positioning projection fixed to one end of said template in the plane of said bar and substantially at right angles thereto,

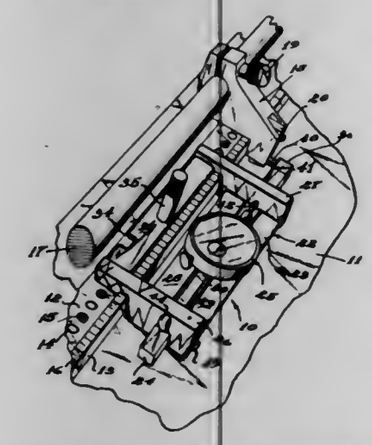
(D) two blue-print paper strips,

(a) each being bonded to the exposed surface of the web of one of said channels,

(b) said strips bearing guide lines for tapering said insulation, and

(E) transparent, abrasion-resistant resin coatings covering said strips.

3,274,689
GAGING APPARATUS FOR A MACHINE TOOL
Arthur K. Schott, Clarence, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Apr. 1, 1963, Ser. No. 269,461
9 Claims. (Cl. 33—125)



2. A structure for positioning a part with respect to a predetermined reference point, comprising in combination:

(a) an elongated rigid means having a series of aligned locating holes spaced predetermined distances from said reference point;

(b) a rigid rail bar secured in parallel spaced axially fixed relation to said elongated rigid means;

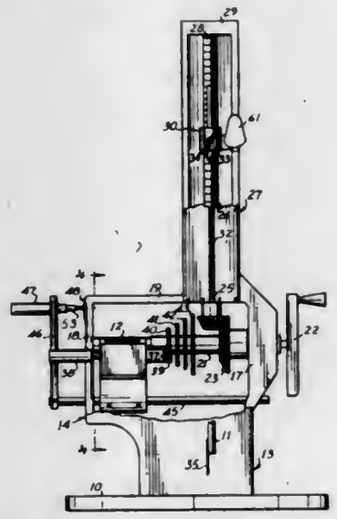
(c) a workpiece-locating stop slidably supported on only said rail bar and clampable thereto, said stop including a finger part having a workpiece-engaging surface extending perpendicularly to said rail bar;

(d) a holder having a locating plug receivable in any one of said locating holes;

(e) a movable slide bar guided only by said holder and having a reference surface engageable by said workpiece-engaging surface of said finger; and

(f) a direct-reading gage coactive with said holder and said slide bar for indicating the distance that said workpiece-engaging surface is disposed from a basic position.

3,274,690
DEVICE FOR MEASURING LIQUID IN CONTAINERS
Robert E. Beverly, Jr., Atlanta, Ga., assignor to Zac-Lac Paint & Lacquer Corp., Atlanta, Ga., a corporation of Georgia
Filed July 24, 1963, Ser. No. 297,441
3 Claims. (Cl. 33—126.7)



1. A device for measuring the volume of liquid in pint, quart, half gallon, or gallon containers in terms of the same particular volume of liquid measurement, said device comprising, in combination, a horizontal platform; a gear housing fixedly positioned adjacent to the platform having a left end panel with a slot, a right end panel, a front panel with a window, and a top panel; a vertical casing extending from the top panel of the gear housing perpendicular to the horizontal platform and having a vertical slit in its side; a gear axle extending within the gear housing between the left end panel and the right end panel of the gear housing; a screw within the vertical casing perpendicular to the gear axle and having a lower end which extends into the gear housing; a bevel gear having its pinion on and rotatable with the gear axle and its ring on and rotatable with the lower end of the screw; a sleeve positioned on the screw and vertically movable in response to the rotation of the screw; an arm fixedly attached at one end to the sleeve, extending horizontally through the slit, and having its extending end over the platform; a collar fixedly attached to the extending end of the arm; a rod fixedly, but movably inserted through the collar, said rod extending perpendicular to and toward the platform and having a lower end; a plate fixedly attached to the lower end of the rod and having an edge substantially parallel to the platform with a notch in it; a counter pin extending between the left end panel and the right end panel parallel to the gear axle, said counter pin being rotatable and slidably movable along its length; a counter having a counter shaft, indicia which change with revolutions

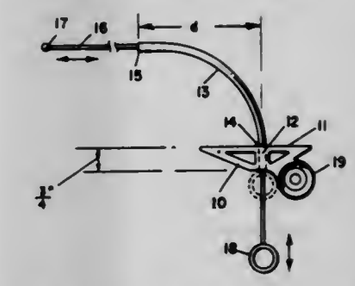
of the counter shaft, and a clearing pin which changes the indicia to zero when rotated, said counter being fixedly positioned on and movable with the counter pin and having its counter shaft extending parallel to the gear axle toward the right end panel, its clearing pin extending through the slot in the left end panel, and its indicia visible through the window of the front panel; a gear wheel on and rotatable with the extending end of the counter shaft; a lever extending perpendicular to the counter pin and having a first end and a second end fixedly attached to that end of the counter pin extending through the left end panel; a peg fixedly positioned in the first end of the lever and having an end extending toward the left end panel of the gear housing, said peg having a first segment with a diameter and a length, a second segment between the first segment and the lever and with a diameter greater than the diameter of the first segment and a length, a third segment between the second segment and the lever and with a diameter greater than the diameter of the second segment and a length, and a fourth segment between the third segment and the lever and with a diameter greater than the diameter of the third segment and a length; a scale fixedly mounted on the left end panel of the gear housing and having four recesses located along the arc described by the first segment of the peg when the lever pivots with rotation of the counter pin, the first recess having a diameter substantially equal to that of the first segment of the peg, the second recess having a diameter substantially equal to that of the second segment of the peg and being a first straight line distance from the first recess, the third recess having a diameter substantially equal to that of the third segment of the peg and being a second straight line distance from the second recess, and the fourth recess having a diameter substantially equal to that of the fourth segment of the peg and being a third straight line distance from the third recess; four drive wheels on and rotatable with the gear axle, the first drive wheel having a position along the length of the gear axle which places it in engagement with the gear wheel when the first segment of the peg is in the first recess in the scale, the second drive wheel being positioned on the gear axle between the first drive wheel and right side panel of the gear housing a distance from the first drive wheel equal to the length of the second segment of the peg and having a diameter larger than the diameter of the first drive wheel by an amount equal to the straight line distance between the first recess and the second recess, the third drive wheel being positioned between the second drive wheel and the right side panel a distance from the second drive wheel equal to the length of the third segment of the peg and having a diameter greater than the diameter of the second drive wheel by an amount equal to the straight-line distance between the second recess and third recess, the fourth drive wheel being positioned between the third drive wheel and the right side panel of the gear housing a distance from the third drive wheel equal to the length of the fourth segment of the peg and having a diameter greater than the diameter of the third drive wheel by an amount equal to the straight-line distance between the third recess and the fourth recess, and the diameters of the four drive wheels being such that a point on the first drive wheel travels a specific distance as the rod moves a vertical distance equal to the change in the surface level of a liquid in a pint container when the particular volume of liquid is added, a point on the second drive wheel travels the same specific distance as the rod moves a vertical distance equal to the change in the surface level of a liquid in a quart container when the particular volume of liquid is added, a point on the third drive wheel travels the same specific distance as the rod moves a vertical distance equal to the change in the surface level of a liquid in a half gallon container when the particular volume of liquid is added, and a point on the fourth drive wheel travels the same specific distance as the rod moves a vertical distance equal to the change in surface level of a liquid in a gallon container when the particular volume of liquid is added; and means for rotating the gear axle.

3,274,691
FLUID LEVEL INDICATORS
Charles P. Bolles, Dearborn, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,387
10 Claims. (Cl. 33—126.7)



1. A fluid level indicator comprising, in combination, an elongated element adapted to be inserted into a container of a fluid whose level is to be indicated, temperature responsive means so positioned on the element as to be sensitive to the temperature of the fluid, and a fluid level indicating scale positioned on the element so as to be immersible in the fluid and adapted to be maneuvered on the element by the temperature responsive means distances reflecting the influence of the fluid temperature on the fluid level indicated by the scale.

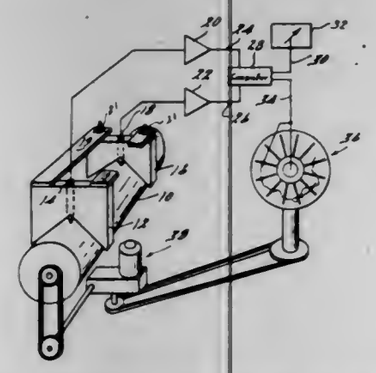
3,274,692
STUD LOCATING DEVICE
Thomas E. Morrison, 2658 Butler, Los Angeles, Calif.
Filed Jan. 14, 1964, Ser. No. 337,634
1 Claim. (Cl. 33—169)



A stud locating device comprising, in combination; a body member having an elongated straight surface portion for engaging the flat surface of a wall and including an elongated wire guide tube having an inlet end secured to said body, said wire guide tube extending away from said straight surface portion and curving to terminate in an outlet end facing in a direction generally parallel to the direction of elongation of said straight surface portion so that the direction of said outlet end may be determined by the direction of said elongated straight surface; and a flexible wire received in said wire guide tube and of a

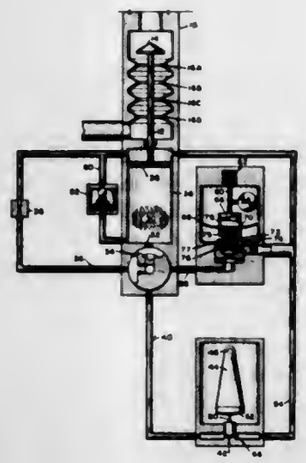
length greater than the length of said wire guide tube so that the ends of said wire extend from said outlet and inlet ends of said wire guide tube whereby said wire guide tube may be passed through a small hole in said flat surface of said wall until said straight surface portion engages said flat surface, said straight surface portion being oriented at right angles to a stud in said wall to be located so that said outlet end is directed towards said stud, said wire then being urged through said wire guide tube until its end passing from said outlet end of said wire guide tube engages said stud in said wall, thereafter said wire guide tube being withdrawn and said stud being located by noting the extent that said wire was urged through said wire guide tube, and in which said wire is guided into said inlet end of said wire guide tube at a point on said body spaced a distance from said straight surface portion equal substantially to one-half the thickness of said stud, the end of said wire from the outlet end of said wire guide tube terminating in an enlargement constituting a stop whereby the center of said stud may be located by retracting said wire back through said wire guide tube after the end of said wire has been urged into engagement with said stud, until said stop engages said outlet end of said wire guide tube, the portion of wire adjacent said point on said body being noted prior to retraction so that said point may be disposed at said hole in said wall after removal of said wire guide tube from said hole with said retracted portion of said wire lying in the direction of said stud, the outlet end of said wire guide tube then denoting the center of said stud.

3,274,693
METHOD AND APPARATUS FOR ROUNDNESS MEASUREMENT
Frederick W. Witzke, Cleveland, Ohio, assignor to The Bendix Corporation, Ann Arbor, Mich., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,371
6 Claims. (Cl. 33—174)



1. A roundness gage for measuring the radial deviation of objects comprising:
a first three pronged V-angle device having a predetermined included angle,
a second three pronged V-angle device having a predetermined included angle different than the included angle of said first device, reciprocably mounted relative to said first device,
first and second displacement transducers respectively mounted in fixed angular relation to said first and second devices adapted to measure the radial displacement of the periphery of said objects relative to said devices, and
means connected to said transducers for factoring the outputs therefrom and combining said outputs to provide a single output indicative of the actual radial deviation of said objects.

3,274,694
APPARATUS FOR MEASURING THE AZIMUTH AND INCLINATION OF A BOREHOLE
Alexander B. Hildebrandt, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed July 15, 1964, Ser. No. 382,783
14 Claims. (Cl. 33—205)



5. A drilling drift indicator for use in drilling a borehole which comprises:
a housing member, said housing member having a first passage means for conveying fluid from one end of the housing member to the other end, one portion of said passage means having a first restriction, a second restriction, a third restriction, and a fourth restriction, such restrictions being equally spaced;
a first hydraulic fluid cylinder within said housing member and having an upper and a lower end;
a pendulum compartment within said housing member;
a compass compartment within said housing member;
a plunger rod within said housing member extending at least from said first restriction downwardly through the upper end of said cylinder;
a cap means mounted on the upper end of said plunger rod;
a piston mounted on the lower end of said plunger rod and within said cylinder;
means biasing said piston upwardly within said chamber;
a discharge conduit in fluid communication with the cylinder beneath said piston;
a first conduit means establishing fluid communication between said discharge conduit and the interior of said cylinder above said piston, said first conduit means having a fixed restriction therein;
a second conduit means having a variable restriction therein and connecting said discharge conduit with said cylinder above said piston;
a third conduit means establishing fluid communication between said discharge conduit and the interior of said cylinder above said piston;
a pendulum pivotally supported within said pendulum compartment;
means to vary the restriction within said second conduit means in response to the position of said pendulum within said pendulum compartment;
a rod loaded with an eccentric weight and rotatably mounted within said compass compartment;
means to restrict the flow within said third conduit means as a function of the position of the eccentric weight;

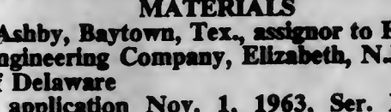
a first dampening fluid within said pendulum compartment;
a second dampening fluid within said compass compartment;
means for equalizing the pressure of said first dampening fluid and said second dampening fluid with that of the pressure within said cylinder above said piston;
valve means having three positions, one position fluidly connecting said discharge conduit with said first conduit means, a second position connecting said discharge conduit with said second conduit means and a third position connecting said discharge conduit with said third passage means;
means to actuate said valve means such that said valve is in its first position when said cap means is between said first and said second restriction, in its second position when said cap means is between said second and third restrictions and in its third position when said cap means is between its third and fourth restrictions;
a second passage means between the cylinder above said piston and the first passage means for conveying drilling fluid through the tool; and
a diaphragm within said second passage means.

3,274,695
LEVEL AND RULE COMBINATION
Dominick Aiola, 112 Church St., Box 214, Washington, Pa.
Filed Mar. 14, 1963, Ser. No. 265,208
1 Claim. (Cl. 33—215)

In a brick mason type of level and rule combination having a longitudinal slot which is relatively short compared to the length of the level and rule combination, a longitudinally extending container within said slot, a plumbing device in said container comprising a plumb bob universally suspended from one end of said container, cross-hairs formed at the other end of said container and cooperable with said plumb bob, and liquid in said container for damping movements of said plumb bob, whereby inclinations of said rule in any direction radially of the longitudinal direction may be detected, said rule having a wooden body portion provided with concave opposed outer surfaces of greatest width, edge surfaces of smaller width which are also concave and provided with central well portions extending along the length of the level and being covered by metallic shields for use as guides for plumbing corners of buildings.

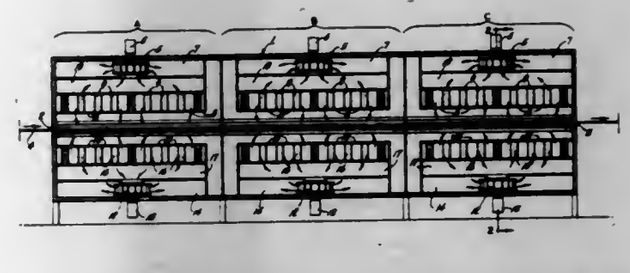
3,274,696
GYROSCOPIC COMPASSES
Douglas Barnett, Northwood, and David Langton Brook, Watford, England, assignors to S. G. Brown, Ltd., Watford, England, a company of Great Britain
Filed July 19, 1965, Ser. No. 472,998
11 Claims. (Cl. 33—226)

1. A method of checking azimuthal deviation of a gyroscopic compass from its settled position, which comprises the steps of generating in the compass a pendulum signal variable with the degree of the deviation; substantially suppressing from said pendulum signal may superposed components therein resulting from periodic movements such as may be caused by pitching and rolling of the body on which the compass is mounted and which are of a high



frequency, transient nature relative to the frequency of azimuth deviations represented by said pendulum signal; and employing the remaining component of said pendulum signal to provide an indication of the angle of azimuthal deviation.

3,274,697
METHOD FOR CONDITIONING WEB- OR SHEET-LIKE MATERIAL
Arent Aronsson, Nacka, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Mar. 2, 1964, Ser. No. 349,535
7 Claims. (Cl. 34—36)

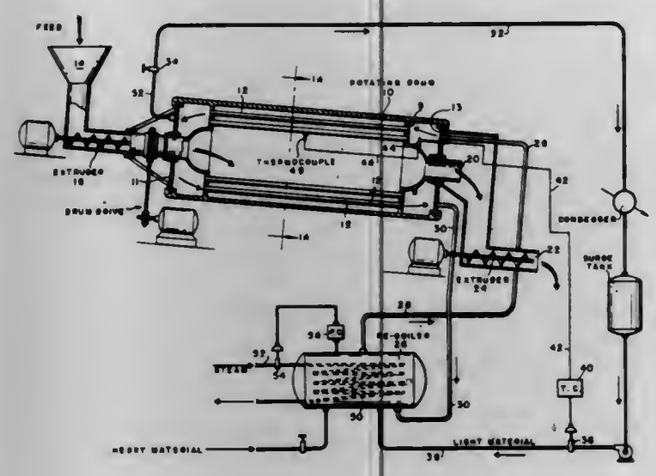


1. A method of conditioning web or sheet-like material in a chamber comprising the steps of: feeding the material to be treated through said chamber, blowing a heated, moist, gaseous medium against one surface of the material, blowing a cold, moist, gaseous medium against the opposite surface of said material to thereby conduct away the heat released by the condensation of moisture in and on the material.

3,274,698
APPARATUS FOR DRYING PARTICULATE MATERIALS
Billy B. Ashby, Baytown, Tex., assignor to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Original application Nov. 1, 1963, Ser. No. 320,898. Divided and this application Nov. 18, 1965, Ser. No. 508,441
6 Claims. (Cl. 34—48)

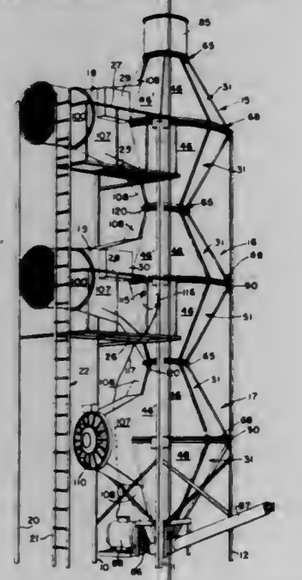
1. In an inclined tube heat exchanger having a rotating drum, upper and lower tube sheets within and depending from said drum, a plurality of tubes extending longitudinally within said drum and depending from said upper and lower tube sheets, upper and lower stationary heads sealingly connected to said drum for allowing rotative movement of said drum relative thereto, means for charging a particulate material into said drum through an inlet at said upper stationary head, and means for discharging said particulate material from said drum at an exit at said lower stationary head, the improvement of
vapor inlet means in the upper portion of said lower stationary head,
condensate outlet means in the lower portion of said lower stationary head,
vent means in said upper stationary head,
reboiler means including heating means,

means for sensing the vapor pressure within said reboiler,
means responsive to said vapor pressure sensing means for controlling said heating means,
bleed conduit means fluidly connecting said vent means with said reboiler,



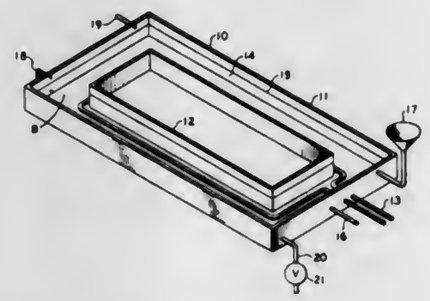
condenser means in said bleed conduit means,
condensate conduit means fluidly connecting said condensate outlet with said reboiler,
and vapor conduit means fluidly connecting said reboiler with said vapor inlet means.

3,274,699
UPRIGHT CROP DRYER
Straut W. Naylor, 302 Miller St., P.O. Box 395, Sterling, Ill.
Filed Oct. 23, 1963, Ser. No. 318,356
16 Claims. (Cl. 34—56)



13. An upright drying chamber structure for a crop dryer comprising: an inner perforated conical-shaped wall; having a large base and small top; an inwardly extending flange projecting from the base; an external upright conical-shaped perforated wall formed about the axis of the inner conical-shaped wall and spaced therefrom, and having a relatively small annular upper end and a relatively large horizontal base; and outwardly extending flanges at the upper end and base; radially extending upright panels traversing the spacing between the inner and outer walls and having opposite inclined edges fixed to the inner and outer walls and defining therewith a series of upright compartments, said upright panels having openings therein for affording communication between the compartments.

3,274,700
GENERATING APPARATUS FOR USE IN REMOVING FLAMMABLE MATERIALS FROM DUCTS
Edward J. Maguire, Sr., 4 Jochum Ave., Larchmont, N.Y.; Eugene F. Maguire, 10 Ellsworth Road, Larchmont, N.Y.; and Edward J. Maguire, Jr., 160 Theodore Fremd Ave., Rye, N.Y.
Original application June 21, 1960, Ser. No. 37,617. Divided and this application July 1, 1965, Ser. No. 483,385
1 Claim. (Cl. 34—104)

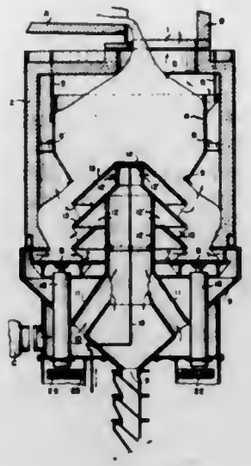


A portable gas-generating apparatus useful in removing flammable materials from the interior surfaces of a stationary duct, which apparatus comprises a horizontally disposed trough having endless inner and outer substantially vertically disposed wall sections and an endless substantially horizontally disposed base section, said endless inner wall defining an opening of sufficient cross-sectional area to permit passage of gas therethrough and said inner, outer and base sections defining an endless open-topped channed adapted to contain a fire-resistant solvent liquid which is to be converted to the gaseous state, an electrical heating element positioned in the lower portion of the trough and located in a generally parallel relationship with the base section, said heating element, upon activation, effecting controlled generation of solvent gas from the fire-resistant solvent liquid contained in the open-topped channel, a releasable flexible duct secured at its upper portion to the lower peripheral edge of the stationary duct and at its lower portion to the outer wall section of the trough, and means provided on the trough to allow rolling movement thereof.

3,274,701
STATIONARY CIRCULAR CONTACT COOLER FOR CALCINED LIME AND OTHER MATERIALS
Gerhard Niemitz, Bronx, N.Y., assignor to Kennedy Van Saun Mfg. & Eng. Corp., New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 349,107
10 Claims. (Cl. 34—164)

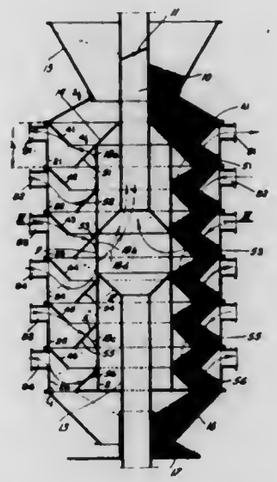
1. In a cooler for hot calcined material such as that of lime, cement and the like, including an upright insulated shell having an opening at its upper end for receiving hot calcined material from a kiln, a metal shell located in the upper portion of the insulated shell and spaced from its inner surface for receiving said material falling through said opening and providing a soaking chamber therefor, an air distributor located at the lower portion of said metal shell and providing therewith an annular passageway for material to be cooled to flow over the air distributor, means for supplying air to said distributor, means defining an annular outlet passageway for cooled material at the lower part of the air distributor,

an annular disc below said outlet passageway for supporting the material along the distributor, and means for



moving said disc to feed and discharge cooled material therefrom.

3,274,702
OVENS FOR TREATING COMPRESSED COAL BRIQUETTES
Gustave Kleinberg, 229 Blvd. Raspail, Paris, France
Filed May 31, 1963, Ser. No. 284,683
Claims priority, application France, June 4, 1962, 899,652
1 Claim. (Cl. 34—171)

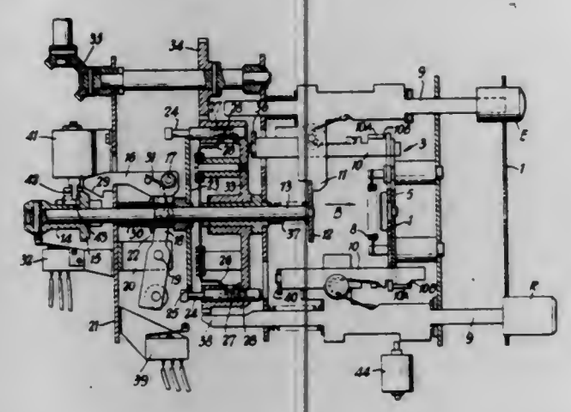


A kiln for the thermal treatment of briquettes comprising a housing including a first cylinder concentric with and enclosed in a second cylinder, said first cylinder having a perforated opening near the center thereof, said cylinders being arranged in spaced relation to define an annular space therebetween, an opening at the upper end of said housing for permitting introduction of said briquettes into said annular space and an opening at the lower end of said housing for discharging said briquettes therefrom, a plurality of first baffle members having edge portions secured to the perimeter of said first cylinder and spaced in a vertical direction relative to each other, the alternate of said first baffle members being perforated to allow gases to pass therethrough, a plurality of imperforate second baffle members having edge portions secured to the inner wall of said second cylinder and spaced in a vertical direction relative to each other, said first and second baffle members comprising a series, the alternate ones of which project in opposite directions, said first and second baffle members further arranged such that the free edge portion of said first baffle members describe a series of circles of equal radius and the free edge portions of said second baffle members describe a series of equal circles of greater radius than that of said first baffle members with the free edge portions of all of said baffle members lying in a horizontal plane intersecting the point of attachment of the opposite set of baffles, a first zone to heat the briquettes near the top of said kiln having inlet openings in said second cylinder near the upper end thereof for introducing the heating gases into said housing between the point of securement and free edge portions of the second baffle member from the top of said second cylinder, whereby the gases pass below said second baffle member upwardly through the briquettes, and one of the perforated baffle members mounted on said first cylinder, thence again through the briquettes, under the topmost baffle mounted on said second cylinder, and out through openings provided above the free edge portion of said topmost baffle member in the second cylinder whereupon the said gases exit from the kiln; a second zone to treat said briquettes near the center of said kiln having inlet openings in said second cylinder near the center thereof for introducing gases to treat the briquettes between the point of securement and free edge portions of the third baffle from the top of said second cylinder, whereby the gases pass below said third baffle member downwardly through the briquettes, through a second perforated baffle member mounted on said first cylinder adjacent to said perforated opening in said first cylinder to selectively permit a portion of said treating gas to exit from the kiln through said first cylinder and the remaining treating gas through the briquettes under the fourth baffle member mounted on said second cylinder, and out through openings provided above the free edge portion of said fourth baffle member, a flap valve mounted within said first cylinder for controlling the amount of treating gases exiting through said first cylinder; a third zone to cool said briquettes prior to discharge from said kiln having inlet openings in said second cylinder near the bottom thereof for introducing cooling gases into said housing between the point of securement and free edge portions of the fifth baffle member from the top of said second cylinder, whereby the gases pass below said fifth baffle member downwardly through the briquettes, through a third perforated baffle mounted on said first cylinder, thence again through the briquettes under the sixth baffle member mounted on said second cylinder, and out through openings provided above the free edge portion of said sixth baffle member in the second cylinder, whereby the briquettes receive homogeneous treatment to produce a uniform product.

3,274,703
TEACHING MACHINES
Arthur Robert Brian Pavey and Alexander Puchnarewicz, Welwyn Garden City, and James Katavolos, Richmond, England, assignors to U.S. Industries Inc. Engineering Limited, Burtonwood, Warrington, England, a British company
Filed Oct. 30, 1964, Ser. No. 407,767
Claims priority, application Great Britain, Nov. 1, 1963, 43,169/63
5 Claims. (Cl. 35—9)

1. In a teaching machine employing text recorded on successive frames of a film and having film transport mechanism for moving the film forwardly and backwardly past a viewing position, a mechanical selector mechanism for selecting the frame to be viewed, the selector mechanism comprising first means co-operating with the transport mechanism for initiating, when operated, forward movement of the film, second means co-

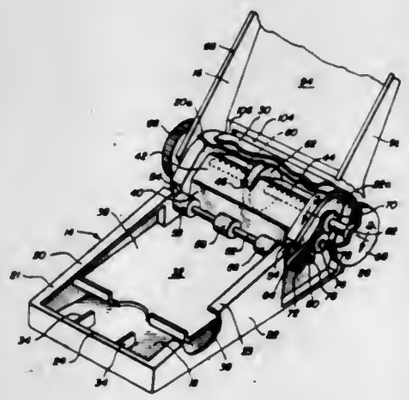
operating with the transport mechanism for initiating, when operated, backward movement of the film, a movable member connected to the transport mechanism for movement in correspondence with the film, a plurality of manually actuatable selector members for selecting a frame subsequent to the initial one to be moved to the viewing position, a manually actuatable return member for selecting the initial frame for return to the viewing position, locking devices associated one with each of the selector members and the return member for locking



the associated member, when actuated, in its actuated condition, a part carried by each selector member for operating the first initiating means when the associated member is actuated, a part carried by the return member for operating the second initiating means when the return member is actuated, and an element on said movable member for engaging, upon movement of the movable member, any locking device maintaining its associated member in its actuated condition for releasing the latter for return to its non-actuated condition whereby the operated initiating means reverts to its unoperated condition to stop movement of the film.

3,274,704
PORTABLE TEACHING MACHINES
Dudley E. Cornell III, Albuquerque, and Robert A. O'Connell, Cedar Crest, N. Mex., assignors to Teaching Machines, Inc., Albuquerque, N. Mex., a corporation of New Mexico
Continuation of application Ser. No. 206,992, July 2, 1962. This application May 3, 1965, Ser. No. 456,884
3 Claims. (Cl. 35—9)

1. In a teaching machine adapted for use with test sheets each bearing successive multiple groups of regularly disposed questions, answers, and answering areas,
a housing;
means for supporting a stack of test sheets within said housing;
means for collecting the test sheets in said housing;
means providing a movement path for test sheets from said supporting means to said collecting means;
a wall in said housing having a writing opening therein adjacent said movement path;
window panel means in said wall adjacent said movement path;
masking means on said wall adjacent said movement path;
a first rotatable shaft mounted on said housing over said stack of sheets and movable up and down thereover;
first roller means mounted on said first shaft rotatably therewith and resting on said stack of sheets for moving the top sheet from said stack to a position beneath said window panel means and said writing opening;
a second rotatable shaft mounted on said housing and spaced beyond said first shaft;
second roller means mounted on said second shaft rotatably therewith for moving said top sheet to said collecting means;
means for operating said first and second roller means synchronously including a manually operated knob and coupling means connected to said first and second shafts;
and a divider separating said coupling means from said sheet supporting means, said collecting means, and said movement path, said divider having openings therein and said first and second shafts projecting through said openings for connection to said coupling means, thereby separating said coupling means from test sheets being moved in said housing to prevent fouling;
whereby upon operating said knob, said top sheet is moved by said first roller means to a position wherein a question is visible through said window panel

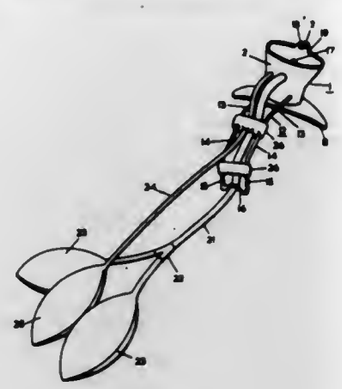


means, its answer is obscured by said masking means, and its answering area registers with said writing opening for writing the answer to said question on the answering area,
and thereafter said top sheet is advanced to move said answering area out of register with said writing opening and in a position visible through while rendered inaccessible by said window panel means, and the answer to said question is rendered visible through said window panel means for checking the written answer,
and thereafter said top sheet is advanced for writing the answers to successive questions and for checking the written answers thereto with said sheet disposed as aforesaid,
and said top sheet is moved by said second roller means to said collecting means after advancing past said window panel means,
and the remaining sheets in said stack are moved successively in like manner to said top sheet.

3,274,705
APPARATUS FOR PRACTISING AND TEACHING EXPIRED AIR ARTIFICIAL RESPIRATION
Francis Bertrand Breakspear, Emsworth, England, assignor to The British Oxygen Company Limited, a British company
Filed Aug. 20, 1963, Ser. No. 303,336
2 Claims. (Cl. 35—17)

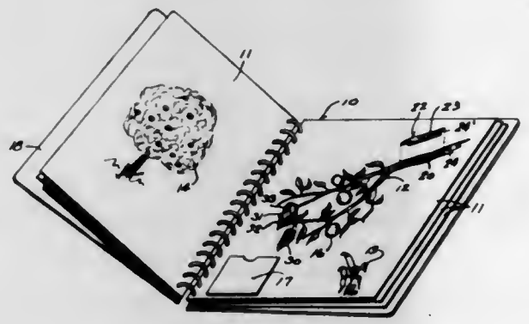
1. Apparatus for practising or teaching expired-air artificial respiration comprising a unit having a mouthpiece and associated nostril for use by a first person practising this method, first passage means connecting the said mouthpiece and associated nostril, support means whereby

the unit may be supported above the mouth of a second person in supine position acting as patient by the head of the said second person, an inflatable bag simulating a lung, second passage means connecting the mouthpiece and the first passage means to the said inflatable bag, and constricting means of substantially rigid material mounted on the unit and substantially rigidly attached to the support means and adapted to guide the second passage



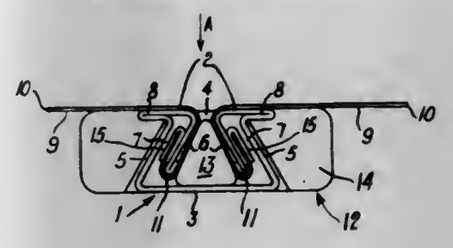
means towards the neck or chest of the second person in such a way that the second passage means is constricted by bearing against the body of the second person if the said second person in supporting the unit does not have his head tilted to the correct position in relationship to his body for expired-air artificial respiration, the constricting means being ineffective to cause constriction of the second passage means when the head of the said second person is correctly tilted.

3,274,706
BOOK HAVING PLASTIC PAGES AND ADHERENT PLASTIC OVERLAYS
Charlotte E. Friend, Milwaukee, Wis.
(311 S. Water St. East, Fort Atkinson, Wis.)
Filed Apr. 2, 1964, Ser. No. 356,730
1 Claim. (Cl. 35—20)



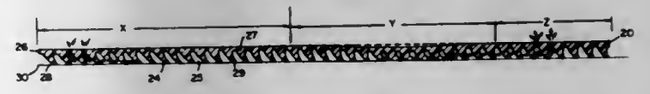
In combination, a page bearing a picture of a natural object, a portion of the picture area having a distinctive outline, and an overlay having a flat lower surface, said lower surface being permanently removable and mutually adherent to the page, at least the upper surface of said page and the lower surface of said overlay being comprised of plastics which are electrostatically adherent to each other, said overlay being further provided with an outline corresponding substantially exactly to the distinctive outline of said portion of the picture area, the upper surface of said overlay being provided with irregular surface features corresponding tactilely to the pictured portion of the natural object represented by said overlay and being colored like the said natural object, a plurality of said pages being bound into a book, said book being provided with a pocket adapted to store said overlays.

3,274,707
CONNECTING MEMBER FOR A BOARD FOR EDUCATIONAL PURPOSES AND A BOARD INCORPORATING SUCH A MEMBER
William Brownie Garden, Kilsyth, near Glasgow, Scotland, assignor to Wilson & Garden Limited, Glasgow, Scotland, a corporation of the United Kingdom of Great Britain and Northern Ireland
Filed Apr. 3, 1964, Ser. No. 357,227
Claims priority, application Great Britain, Apr. 4, 1963, 13,312/63
10 Claims. (Cl. 35—62)



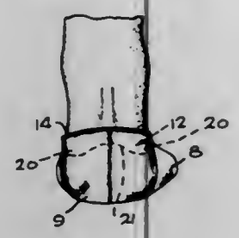
1. A connecting member for a board for educational purposes comprising a hollow bar of trapezoidal cross-section, a longitudinally extending slot formed in one side of the bar, and longitudinally extending channels so presented within said bar adjacent to the sides of said bar on either side of said slot as to be open to the interior of said bar adjacent to the side thereof remote from said side in which said slot is formed whereby the end portions of the sheet associated with the opposed ends thereof to be interconnected may be so located within said slot, with said ends, which present substantially rigid members, positioned within said channels, that insertion and removal of said end portions of the sheet into and from the bar, respectively, in other than the longitudinal direction are prevented.

3,274,708
AIR CIRCULATORY INSOLE
George A. Lukas, 4 W. Labonte Ave., Saco, Maine 04072
Filed Oct. 14, 1965, Ser. No. 495,855
1 Claim. (Cl. 36—3)



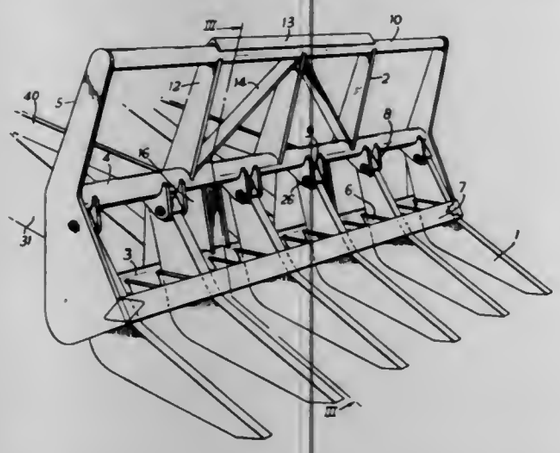
An insole for foot wear, comprising,
(a) a resilient body having an upper imperforate median surface,
(b) air intake ports disposed adjacent one distal end and extending transversely across said body,
(c) air discharge ports extending transversely across the other distal end of said body,
(d) a plurality of resilient support members extending downwardly from said body and angularly declined in the direction of said discharge ports, the angle of said support members with said body being greater than 90°,
(e) each of said support members extending completely across said body and being longitudinally spaced from each other defining compartments therebetween,
whereby said support members are deflected during walking directionally controlling the flow of air from the intake ports to the discharge ports.

3,274,709
FOOT COVER
John E. Lipinski, 116 Laurel Lane, Forest Brook Glen, Wilmington, Del.
Filed Aug. 30, 1965, Ser. No. 483,540
3 Claims. (Cl. 36—10)



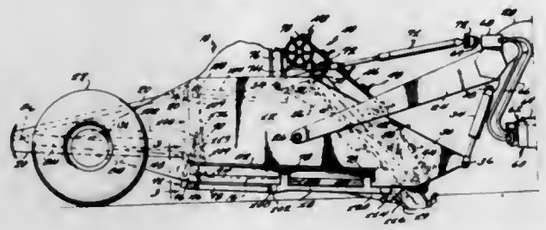
1. In a foot cover comprising a body of flimsy material formed to be stretched about a wearer's foot and including a heel portion, said body having a bottom wall and side walls having top edges defining a foot passing opening, means for reinforcing the heel portion of said body at and adjacent said top edge comprising a counter composed of relatively stiff, flexible material having its top edge conforming to and secured to the top edge of said body and having its lower portion symmetrically curved to define convexly curved end lobe portions and an intervening concavedly curved portion of a radius of curvature approximately twice the radius of curvature of each of said lobe portions; the maximum width of said lobe portions being not more than half the distance between the top edge and bottom portions of said body.

3,274,710
FORK STRUCTURES FOR PIVOTAL ATTACHMENT TO VEHICLE MOUNTED BOOMS
John Frederick Wright, White Owl, Hinton Martell, Wimbourne, Dorset, England
Continuation of application Ser. No. 243,475, Dec. 10, 1962. This application Jan. 5, 1965, Ser. No. 423,508
12 Claims. (Cl. 37—2)



10. A digging and carrying fork structure for digging in the ground and also carrying large objects while permitting smaller objects to pass therethrough, comprising: a plurality of parallel frame members, a plurality of parallel extending tines mounted perpendicular to said frame members, said frame members and tines presenting a generally dish-shaped form in side view, means for releasably securing said tines to said parallel frame members so that one end part of each tine is connected to a first of said parallel frame members, an intermediate part is held between a second of said parallel frame members and a retaining bar parallel to said second frame member, and another end part projects from said second frame member on the side thereof opposite said first frame member, said securing means comprising pairs of apertured lugs secured to said first frame member, the said one end part of each said tine being disposed between a pair of said apertured lugs and formed with an aperture in alignment with said aligned apertures of said lugs, a bolt which extends through said aligned apertures of said lugs and said tine to secure the said one end part of said tine relative to said first frame member.

3,274,711
EARTH SCRAPER WITH RETRACTABLE BOTTOM WALL
Charles M. Johnson and James E. Lowder, Lubbock, Tex., assignors to Johnson Manufacturing Company, Lubbock, Tex., a corporation of Texas
Filed May 13, 1963, Ser. No. 279,987
14 Claims. (Cl. 37—129)

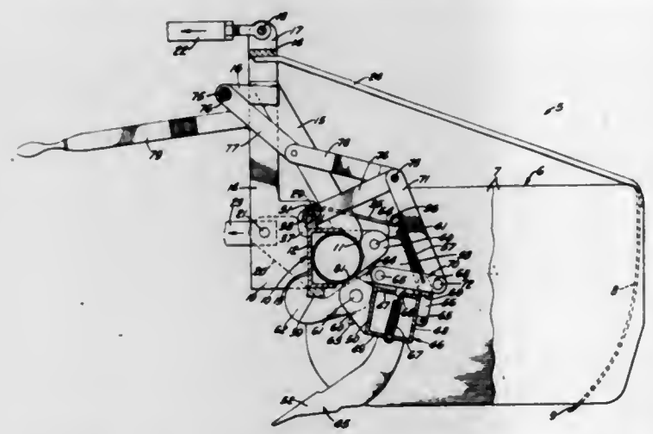


5. In an earth-moving apparatus which includes a mobile, open-front dirt-carrying container, a movable bottom wall section at the front of said container, means mounting said bottom wall section from said container for relative movement forwardly and readwardly, and a dirt-digging scraper blade carried by and disposed in advance of said movable bottom wall section the improvement comprising: auxiliary support means for restraining downward movement of the front of said wall section when said section is in its forwardmost position, said auxiliary support means including a first member carried by the forward portion of said wall section and a second member carried by said container at the forward end thereof in a position to be out of contact with said first member when said bottom wall is in a rearward position and to be engageable with at least the lower surface of said first member when said bottom wall section is in its forwardmost position, to prevent downward movement of said bottom wall section, said first and second members being disposed at the side of said apparatus out of the line of travel of dirt passing over said scraper blade.

3,274,712
RETRACTABLE SCARIFIER
Dwight C. Jones, La Habra, Calif., assignor to Earthcavator Company, Inc., a corporation of California
Filed Apr. 16, 1964, Ser. No. 360,234
1 Claim. (Cl. 37—145)

A scarifier embodied in an earth scraping tool drawn by a powered tractor, said scarifier comprising: a draft beam adapted to be supported rigidly at its opposite ends on said tool; a scarifier bar having teeth attached thereto, said bar being arranged parallel with and generally rearwardly from said beam; pivotally connected lugs fixed on said beam and said bar at symmetrically spaced points thereon for pivotally mounting said bar on said beam on a transverse axis disposed between said bar and said beam whereby said bar is swingable between a downward teeth extending position and an upward teeth retracting position; striker plate means provided upon a forward lower edge of said beam; hook means disposed symmetrically with the central vertical fore-and-aft axial plane of said tool and pivotally mounted on said bar on a transverse axis between said striker plate means and said bar when the latter is in downward position, said hook means being adapted to hook upwardly over said

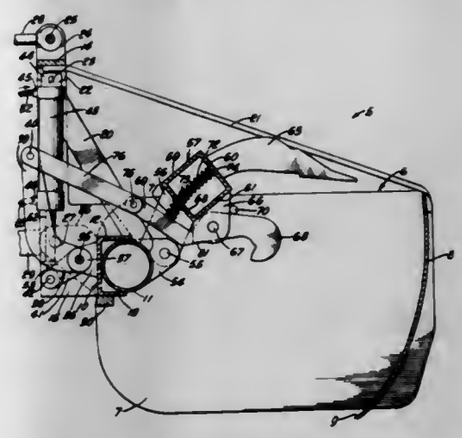
striker plate means when said bar is swung into its downward position; an arm integral with said hook means and extending rearwardly therefrom above said bar when the same is in downward position; spring means rotatively biasing said hook means and said arm about the axis of their pivotal mounting to move said hook means into hooking relation with said striker plate means when said bar is in downward position; a stop on said bar for limiting rotation of said hook means and said arm in an opposite direction and to a degree slightly past that necessary to unhook said hook means from said striker plate means; a first link, one end of which is pivoted to said arm close to the place where said arm is integrally joined with said hook means and on an axis above said bar when the same is in downward position, said link then extending rearwardly across said bar and having a lug underlying said arm whereby lifting on said link will lift on said arm and swing said hook means against said stop; a second spring means relatively biasing said bar to rotate



the same from its downward position to its upward position when said hook means is swung against said stop; and toggle means for applying power to swing said bar against the action of said second spring means and into its downward position, said means including a second link extending downwardly therefrom and pivotally joined at an obtuse angle at its lower end with the rear extremity of said first link when said bar is in its upward position whereby actuation of said toggle means to push said second link downward rotates said hook means and arm against the action of said first spring means and swings said hook means into engagement with said stop, whereupon further downward movement of said second link swings said bar against the action of said second spring means and into the downward position of said bar where a change thus caused in the angular relation between said links renders the first spring means effective in swinging said hook means upwardly into hooking relation with said striker plate means.

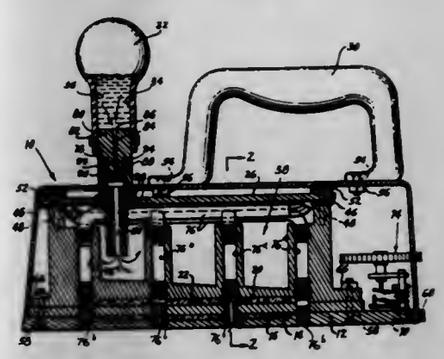
3,274,713
HYDRAULICALLY CONTROLLED SCARIFIER
Dwight C. Jones, La Habra, Calif., assignor to Earthcavator Company, Inc., a corporation of California
Filed Apr. 16, 1964, Ser. No. 360,248
5 Claims. (Cl. 37—145)

1. A scarifier embodied in an earth scraping tool drawn by a powered tractor, said scarifier comprising: a draft beam adapted to be supported rigidly at its opposite ends on said tool; a scarifier bar having teeth attached thereto, said bar being arranged parallel with and generally rearwardly from said beam; pivotally connected lugs fixed on said beam and said bar at symmetrically spaced points thereon for pivotally mounting said bar on said beam on a transverse axis disposed between said bar and said beam whereby said bar is swingable about said axis between a downward teeth extending position and an upward teeth retracting position; striker plate means provided upon a forward lower edge of said beam; hook means disposed symmetrically with the central vertical fore-and-aft axial plane of said beam and pivotally mounted on said bar on a transverse axis, said hook means being adapted to hook upwardly over said striker plate means after said bar has been swung into its downward position; a stop mounted on said bar; means for yieldably holding said hook means in non-locking position and in an engagement with said stop; and reversible hydraulically operable power means mounted on said beam and being connected by a rigid link to said hook means, said power means, when positively power actuated, holding sad bar, through said hook means, in upward position, said power means, when re-



versely power actuated, releasing said bar, permitting it to swing by gravity to its downward position the link connecting said power means and said hook means being effective, after said bar has reached said downward position, to positively overcome said yieldable means and swing said hook means upwardly into locking relation with said striker plate means, said power means holding said hook means in said locking relation until said power means is again positively actuated, whereupon, said power means relaxes its pressure holding said hook means in locking position, positively swings said hook means to non-locking position against said stop then returns said bar to its upward position and continues to hold said bar in said position.

3,274,714
STEAM IRON
Carlos Salomon Abraham, Rep. de Chile 43—16–A, Mexico City, Mexico
Filed Dec. 19, 1963, Ser. No. 331,705
3 Claims. (Cl. 38—77)



1. An iron comprising casing means having a top and a bottom, a sole plate secured to said bottom of said casing means and having a top surface and a bottom surface adapted for ironing, handle means secured to said top of said casing means, structural means defining a vaporizing chamber within said casing means above said sole plate, hollow open topped bosses extending upwardly from said sole plate and having means opening through said sole

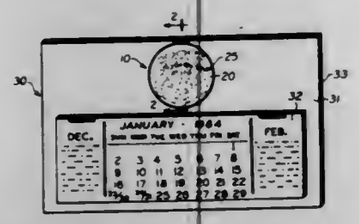
plate at their lower ends, said bosses extending into said vaporizing chamber, said vaporizing chamber having a bottom and a top, open-ended upwardly directed conduit means communicating between spaced points in said vaporizing chamber and the open tops of said bosses, reservoir means adapted to contain a quantity of water, means mounting said reservoir means externally of said casing, passageway means communicating between said reservoir means and said vaporizing chamber, heating means to heat said sole plate to an ironing temperature and said vaporizing chamber to a water vaporizing temperature, said heating means including a first heating unit juxtaposed to said sole plate, a second heating unit, juxtaposed to said bottom of said vaporizing chamber, and a barrier plate interposed between said first and second heating elements.

3,274,715
RECORD FILING DEVICE
Alexander Patton Janssen, Charlottesville, Va., assignor to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,553
2 Claims. (Cl. 40—102)



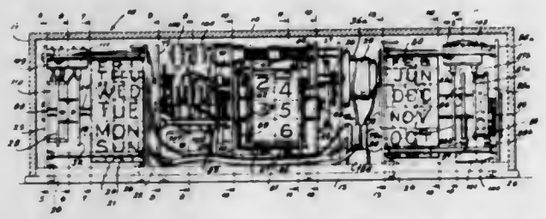
1. A record device comprising a plurality of flexible record panels, a spaced pair of hinges swingingly mounting each of said record panels, and a wire hanger, said hinges each being of uniform contour and comprising a flat main body portion, prongs extending integrally and return bent from one edge of said body portion and lying in plane parallel spaced relation to one face of said body portion projecting through and in engagement with one edge portion of said record panels, and an integral tubular portion at the opposed end of said body lying wholly on said one face and in engagement on said wire hanger and projecting over the engaged edge of the record panel, the length of said tube being greater than that of the adjacent flat main body portion of the hinge, the hinge tubes of one record panel being in substantial endwise abutment with the hinge tubes of an adjacent panel and freely pivotal with respect thereto.

3,274,716
INDICIA APPLICATION
Kermit Wolpin, New York, N.Y., assignor to Hit Sales Corporation, New York, N.Y., a corporation of New York
Filed Mar. 17, 1964, Ser. No. 352,470
3 Claims. (Cl. 40—107)



3. An advertising premium calendar structure permitting different advertising or promtional indicia to be associated therewith, said structure comprising: a baseboard of sheet material, said baseboard having a circular recess therein positioned at a point of desired indicia location; a circular matrix dimensioned to fit within the recess, said matrix having a smooth continuous rim providing a desired smooth regular circular contour about its upper face, said upper face bearing the desired indicia, and lying in a plane substantially coplanar with the surface of said baseboard, a lower face on the obverse side of said matrix formed with a plurality of radially extending striations increasing the surface area thereof, and providing adhesive flow channels serving to direct a drop of fluid adhesive positioned at the center of the matrix to the rim thereof; an indexing indent formed at the edge of the lower face of said matrix, and hidden from view by the upper indicia bearing face of the matrix; and a backing board secured to said baseboard and forming the rear surface of said recess to which said matrix is secured, whereby desired indicia may be separately formed on the matrix which is subsequently secured to the calendar with defects arising during indicia application not requiring discard of the calendar structure, and permitting the use of a variety of different indicia on a standard calendar structure.

3,274,717
AUTOMATIC CALENDAR
Charles H. Herr, St. Louis, Mo., assignor of one-half to L. W. Matheny, Brentwood, Mo.
Filed Apr. 16, 1964, Ser. No. 360,199
10 Claims. (Cl. 40—111)



1. A continuous calendar comprising a first motor adapted to be actuated by an electrical impulse, a first drum rotated by the output shaft of the first motor, said drum having indicia designating the days of the week on the outer surface thereof, a second motor means for supplying an electrical impulse to actuate said second motor in response to rotation of the output shaft of the first motor, two independent rotatable drums movable in response to the rotation of the output shaft of the second motor, said drums having numbered indicia indicating the date of the day of the month on the outer surface thereof, the rightmost drum being numbered from 1 to 0 and the leftmost drum having the numerals—to 3, means for rotating the rightmost drum one digit for each impulse received by the second motor except for the 31st impulse in each 31 impulse sequence, means for rotating the leftmost drum one digit when the rightmost drum moves from 9 to 0 and on the 31st impulse received by the second motor in each 31 impulse sequence, a third motor, a third drum having indicia indicating the month of the year on the outer surface thereof, said drum being movable when the third motor is actuated, means for supplying an electrical impulse to energize the third motor once during each 31 impulse sequence received by the second motor, and means for providing 31 impulses to the second motor for each impulse supplied to the third motor, said means including a plurality of cams controlling switches which energize the second motor one, two, or three extra times on the last day of a 30, 29 or 28 day month, respectively.

3,274,718
INFORMATION DISPLAY PANEL
Ralph G. Panochyk, Grand Rapids, Mich., assignor to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,518
5 Claims. (Cl. 40—124)

1. Indicia structure for an automatic phonograph comprising:

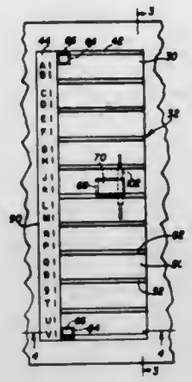
(a) a mounting surface,

(b) an indicia panel pivotally mounted on said surface,

(c) means pivoting said panel on said surface adjacent one end of said panel,

(d) a plurality of parallel grooves in said panel,

(1) said grooves open at the end of the panel remote from said pivotal mounting,

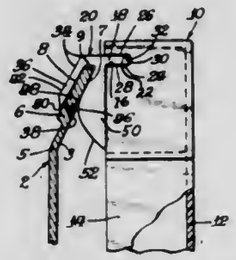


(e) a flap member extending beyond the pivoting means at said one panel end,

(1) said flap member angled with respect to said surface when said panel remote end is resting against said frame, and

(f) means responsive to depression of said flap member for releasing said remote end for movement to a position angled from said surface wherein said grooves are angled from said surface.

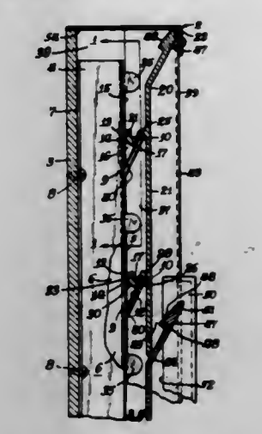
3,274,719
SIGN HANGING STRUCTURE
Wilfried Schubert, Northlake, Ill., assignor to Wagner Sign Service, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 30, 1965, Ser. No. 443,793
14 Claims. (Cl. 40—142)



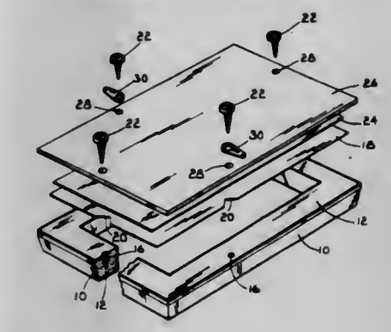
1. A sign structure, comprising: means providing a background panel having upwardly extending elongated rigid camming support surfaces, at least one sign indicia, and means for hanging said indicia on said panel having downwardly extending semi-rigid jaw means, spaced jaw surfaces being outwardly of the sign indicia and effective to be yieldingly cammed apart by said panel camming surfaces for removably providing a connection therebetween, at least one of said camming surfaces having portions disposed at different angles to the opposing surface of the jaw means and being widely spaced at the open end of the jaw means.

3,274,720
DISPLAY SIGN STRUCTURE
Wilfried Schubert, Northlake, Ill., assignor to Wagner Sign Service, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 8, 1964, Ser. No. 394,760
10 Claims. (Cl. 40—143)

1. A display sign structure comprising a plurality of uprights each having a pair of vertically spaced locking lugs projecting outwardly therefrom and defining an angular space therebetween, background panel elements adapted for vertical mounting on said uprights and each having wedge locking means, said elements each having a rear surface on which is mounted a generally V shaped rib having diverging side portions, the lower of the lugs of said pair developing a generally V shaped slot with the plane of the front wall of the upright and providing a downwardly and inwardly sloping wedge surface engageable with a complementary surface on one of said rib side portions, said lower lug being adapted to be sprung forwardly from the front wall of the upright to permit entry of the upper edge of said other side portion of the V shaped rib under the lower edge of the upper lug, and said panel elements having upper sign indicia mounting means.



3,274,721
PICTURE FRAMING
Alwyn J. Dreyer, Lynwill Estate, Boskop, Roodepoort, Republic of South Africa
Filed Mar. 30, 1964, Ser. No. 355,718
2 Claims. (Cl. 40—152)



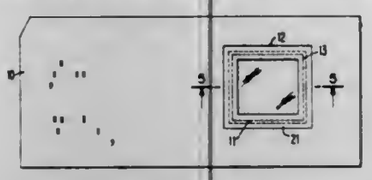
1. A picture frame assembly including a frame, a backing member and a transparent sheet larger than the frame aperture and having notches in its periphery, between which sheet and backing member a picture is adapted to be located, and fastener elements extending through the backing member and the notch spaces in the sheet into the frame to clamp the sheet between the backing member and the back of the frame.

3,274,722
FILM RECORD CARDS AND METHOD FOR MAKING SAME
Ernest P. Kollar, Vestal, and Lewis G. Taft, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 10, 1963, Ser. No. 329,413
3 Claims. (Cl. 40—158)

1. A film record card for use in card record systems comprising:

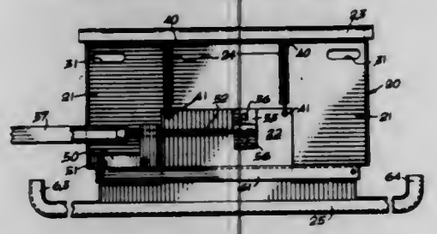
a card having an aperture therein with the edge portions of the card surrounding the aperture being shouldered;

a film insert positioned within said aperture and having a thickness which is less than the thickness of said card, said insert being substantially of the same shape as the shape of the aperture and being smaller in size than the size of the aperture so as to leave a space between the peripheral edge of said insert and the peripheral edge of the card aperture; and



a molded closed-loop frame of polymer material having a T-shaped cross-section for securing said insert to said card, said frame of polymer adhesively contacting the shouldered portions of the card, the marginal edge portions of one face of said insert and the peripheral edges of both said insert and card aperture with said polymer frame lying between the opposite faces of the card and the other face of said insert lying substantially in the plane of the adjacent face of the card.

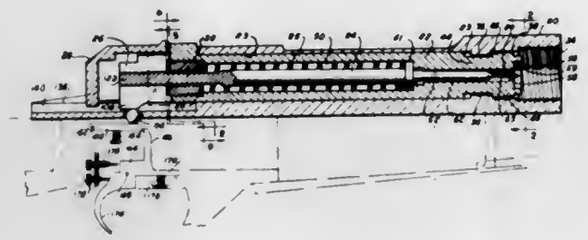
3,274,723
LICENSE PLATE HOLDER
Arthur Jacobs, 3575 SW. 23rd St., Miami, Fla.
Filed Jan. 28, 1964, Ser. No. 340,617
5 Claims. (Cl. 40—209)



3. A license plate frame and holder therefor adapted to be mounted in the recess of a recessed automotive bumper, hinged means for mounting said holder and license plate frame in said bumper recess, said holder having an upper clamping portion adapted to engage the upper edge of said frame and a lower clamping portion adapted to engage the lower edge of said frame, said upper and lower clamping portions being adapted to slidably move toward and away from each other, tension spring means arranged to normally urge said upper and lower clamping portions together, a two part locking device, one part fixed to the lower clamping portion and the other part fixed to the upper clamping portion of the holder, an elongated bolt adapted to operatively engage and connect both parts of said locking device in a manner to prevent relative movement between the upper said lower clamping portions, the mounting means including a back mounting plate adapted to be bolted to the recessed portion of the automobile bumper, a hinge fixed along the upper edge of said back mounting plate and along the upper edge of the holder in a manner to hingedly connect the holder to the bumper and permit it to be swung outwardly from said recessed portion of the bumper.

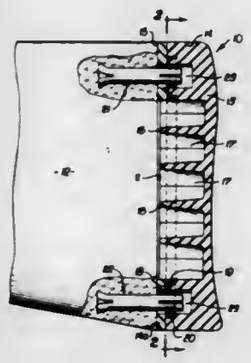
3,274,724
RIFLE BOLT MECHANISM
John H. Brandt, Irving, Tex.
(2120 Irving Blvd., Dallas, Tex. 75207)
Filed June 1, 1965, Ser. No. 459,990
9 Claims. (Cl. 42—16)

1. A rifle bolt mechanism comprising:
(a) a receiver member having a bolt channel therein adapted for being secured at the front end thereof to a barrel member and defining first locking lug means adjacent said front end,
(b) a bolt member rotatably and slidably mounted in said bolt channel defining second locking lug means adjacent the front end thereof for engaging said first locking lug means in locking relation therewith when said bolt is rotated to its firing position,
(c) said bolt member defining a pair of diametrically opposed cam surfaces in the rear wall thereof,
(d) a firing pin asembly mounted within said bolt member and extending from said rear wall thereof,



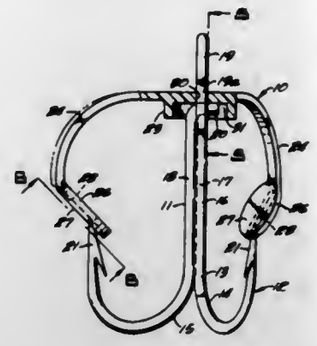
(e) a cocking piece adapted to engage a trigger mechanism securely attached to said firing pin assembly extending from said rear wall of said bolt member and defining a pair of diametrically opposed cams for engaging said pair of cam surfaces, respectively, for withdrawing said firing pin assembly and cocking piece to a cocked position relative to said bolt when said bolt is rotated from said firing position to an unlocked position, and
(f) a non-rotatable bolt sleeve member disposed about said cocking piece to prevent rotation of said cocking piece when said bolt is rotated.

3,274,725
DETACHABLE FIREARM RECOIL PADS
Frank A. Pachmayr, 1220 S. Grand Ave.,
Los Angeles, Calif. 90015
Filed Aug. 2, 1965, Ser. No. 476,590
12 Claims. (Cl. 42—74)



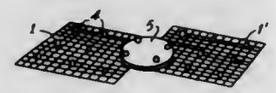
1. The combination comprising a gunstock having an end face, a recoil pad applied thereto including a rubber body peripherally conformed to said face and a metallic reinforcement member bonded to said body, and means for releasably attaching the pad to said face, said means including a pair of fasteners anchored within openings in said stock and having heads projecting from said face into a pair of openings in said reinforcement member and having holding engagement therewith, at least one of said heads being radially resiliently deflectable, said member being releasable from the fastener heads remaining anchored to the gun stock.

3,274,726
WEED GUARD FOR TREBLE HOOK
John Oney, 5872 Woodward Drive, Akron, Ohio
Filed Nov. 6, 1964, Ser. No. 409,492
7 Claims. (Cl. 43—43.4)



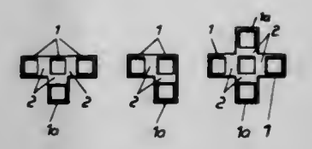
1. A weed guard for a treble hook having a shank terminating in an eye and provided with a transverse locking portion inwardly closely adjacent the eye, comprising: a hub having a central axis; said hub having axially opposite, outer and inner sides, and being of relatively hard but somewhat resilient synthetic resin plastic; said hub having a diametrically elongated slot extending axially therethrough and a groove of less depth than the thickness of the hub in said inner side of same and cross-wise of the slot to communicate therewith at the central portion of the hub; whereby the eye of the hook is yieldingly forcibly insertible axially through the slot to project outwardly of said outer side and engage said locking portion in said groove, thereby to prevent relative rotation of the hub with respect to the shank and whereby a widening portion of the eye overhangs and engages the ends of the slot to prevent axial retraction of the eye from the hub; said hub having integral, resiliently flexible, radial arms having terminal portions for yielding engagement with the hook points inwardly thereof; said flexible arms having outwardly arched portions intermediate said terminal portions and the hub to overhang the hook points, for deflecting weeds away from the points.

3,274,727
MOSAIC PLUG-IN TOY
Werner Zander, 20 Frobelstr., Zirndorf (Nbg. 2), Germany
Filed June 28, 1962, Ser. No. 206,083
Claims priority, application Germany, Aug. 26, 1961, Z 8,931; Sept. 9, 1961, Z 8,962; Oct. 10, 1961, Z 9,011
9 Claims. (Cl. 46—16)



1. A mosaic plug-in toy comprising grid-shaped base plates, each base plate being formed by a plurality of grid bars intersecting at right angles to each other so as to define rectangular grid openings therebetween, said base plate having a plurality of studs of specific length integral with and extending from said grid bars at one side of said base plate substantially at right angles to a plane passing through said grid bars; at least one substantially flat junction plate having a plurality of perforations and a thickness less than the specific length of said studs, the studs of a plurality of adjacent base plates being insertable in the perforations of said junction plate so that said studs protrude through said perforations and said junction plate being adapted to overlap said adjacent base plates and to be frictionally secured by said studs, said studs being adapted to support said base plate on a substantially horizontal supporting surface so that said junction plate and said grid bars are spaced from the supporting surface whereby the fingertips of a user are insertable in the space between the supporting surface on the one hand and said junction plate and said grid bars on the other hand for raising said junction plate and base plate from the supporting surface; and a multiplicity of mosaic element plates having a rear side and plug means extending only from said rear side thereof at substantially right angles thereto, said plug means defining a multicornered figure in cross section having effective cross-sectional dimensions corresponding to those of at least one of the rectangular grid openings of said base plate and being insertable in said rectangular grid openings so that it is frictionally engaged and positively held therein against rotation, said element plates having spacer means and at least one lateral surface portion at said rear side thereof, said spacer means extending from said lateral surface portion a distance less than the specific length of said plug means so that said spacer means is in abutting engagement with the grid bars of said base plate and said lateral surface portion is substantially parallel to the plane passing through said grid bars when said plug means is fully inserted in said grid opening whereby said lateral surface portion of said element plates is engageable by the fingertips of a user for removing said element plates from said base plate.

3,274,728
CONSTRUCTION TOY
Fritz Koch, 16 Plantagenstr., Berlin-Steglitz, Germany
Filed May 28, 1963, Ser. No. 284,294
Claims priority, application Germany, Feb. 16, 1959, K 36,974
3 Claims. (Cl. 46—29)



1. A construction toy comprising, in combination, at least a connector element and a plurality of rod elements adapted to be connected to one another by said connector element, said connector element having a central sleeve of rectangular cross section and two adjacent sleeves of rectangular cross section spaced from said central sleeve and from one another and a pair of substantially rectangular plate-like links interconnecting said adjacent sleeves with said central sleeve at one end portion of said sleeves, said plate-like links each connected along one edge to one side of said adjacent sleeves and connected along the edge opposite to said one edge to sides of said central sleeve respectively that are disposed perpendicularly to one another, said sleeves being formed with passages whose axes are substantially parallel to one another, said rod elements being received in said passages in friction-fit engagement with said sleeves, said plate-like links being disposed in a plane substantially perpendicular to the axes of said passages and being flexible about an axis lying substantially in said plane, whereby said rod elements may be disposed in selected angular positions with respect to each other by flexing said plate-like links.

3,274,729
DOLL HAVING PHOTOCELL-ACTUATED SOUNDING MEANS

Claude Refabert, Paris, France, assignor to Etablissements Clodrey Polyflex, Paris, France, a society of France

Filed June 17, 1964, Ser. No. 375,833
Claims priority, application France, Dec. 23, 1963, 958,250
11 Claims. (Cl. 46—232)

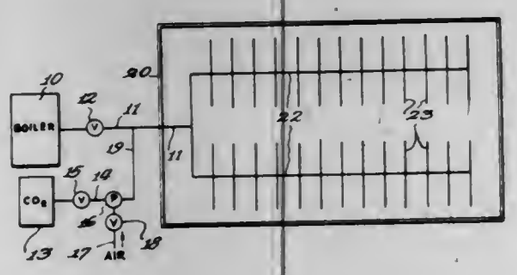


1. A toy comprising, in combination, a doll body, a photoelectric cell carried by the toy in such a position on said doll body normally covered by the clothes of said doll that it can be irradiated by light striking said toy, an electric transducer carried by said toy on the inside thereof, means carried by said toy and operatively connected with said cell for energizing said transducer in response to a given irradiation of said cell by light, and means operative by said transducer for producing a signal when said transducer is operating.

3,274,730
UNDERGROUND GAS DIFFUSION SYSTEM

Robert N. Bose, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware

Filed May 8, 1964, Ser. No. 365,985
6 Claims. (Cl. 47—1)



6. A device for sterilizing soil containing moisture and for supplying carbon dioxide to plants growing in said soil and having below the soil and above the soil portions, comprising: a source of steam; gas permeable conduit means positioned in said soil; means for directing steam from said source into said conduit means for sterilizing contact with said soil; means enclosing said soil and said plants; a gaseous carbon dioxide supply means; an air supply means; means for mixing carbon dioxide and air from the respective supply means to form a mixture; and means for flowing said mixture from said supply means, through said conduit means and into said soil for contact with said below soil portions, for solution in said moisture, and for upward diffusion contact with said above soil portions, said enclosing means serving to maintain said carbon dioxide in contact with said above soil portions.

3,274,731
METHOD OF MULCHING

Richard E. Vigneault, Raleigh, N.C., and Kenneth C. Finster and John V. Landry, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

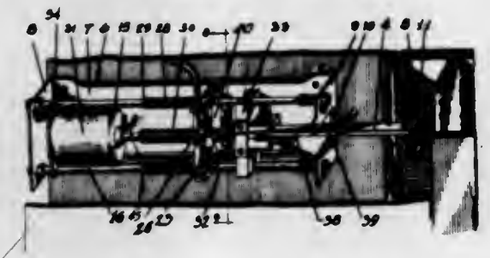
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,831
5 Claims. (Cl. 47—9)

5. An agricultural method which comprises placing and maintaining around a plant, during the growing season, a mulch comprising a polymeric material consisting essentially of a solid, degradable copolymer of ethylene and an ethylenically unsaturated carboxylic acid, said acid being present in the copolymer in an amount from about 2 percent to about 20 percent by weight based on the weight of the copolymer, and subsequently disposed of said mulch by tilling it into the ground.

3,274,732
CAR DOOR ACTUATOR DEVICE

Paul Murakami, 10206 Armand Lavergne, Montreal, Quebec, Canada

Filed Aug. 24, 1964, Ser. No. 391,452
2 Claims. (Cl. 49—280)



1. An actuator for operating a vehicle's door having a door latch mechanism, particularly a thick hollow door having an inner wall and an outer wall and hingedly secured to an adjacent part of said vehicle for rotation relatively thereto about a hinge axis located near one edge of said door and close to the outer wall thereof, said actuator being located between the walls and comprising a straight track at right angle to the hinge axis and secured to one of said walls, a nut block slidably mounted on said track; a reversible electric motor slidably mounted on said track and having a long screw threaded shaft parallel to said track and projecting through a correspondingly threaded hole across said nut block; a bearing block slidably mounted on said track; said shaft terminating into said bearing block for simultaneous axial displacement therewith and free rotation therein; a connector rod secured at one end to said bearing block and freely rotatable about an axis essentially parallel to the hinge axis and similarly at the other end thereof to an adjacent part of said vehicle at a point thereof which is inwardly offset from the hinge axis of the door; cooperating means on said nut block and track to limit the displacement of said nut block on said track; spring means urging said nut block in the direction of said bearing block, and a cable connected to the said nut block and to the door latch mechanism; any displacement of said nut block against the action of said spring means being transmitted by said cable to the latch mechanism so as to cause unlatching of said door.

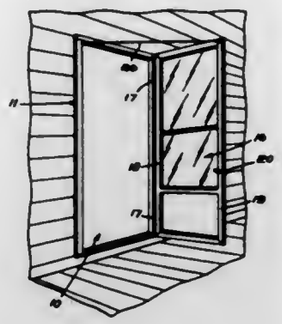
3,274,733
METAL STORM DOOR AND STOP THEREFOR

David N. Bailey, 95 Grove St., South Braintree, Mass.

Filed Feb. 19, 1964, Ser. No. 345,981
3 Claims. (Cl. 49—387)

1. In combination, a door frame, and a metal storm door hingedly mounted within said frame of the type having hollow top, hinge and latch sides, and with said latch side being blocked by a latch, a

weight vertically slidable in one of said sides, said door having an opening in the form of an anti-friction grommet adjacent the upper corner of the latch side thereof, a flexible member extending through said opening and connected to said weight, the free end of the flexible member being attached to the top of the frame for the door

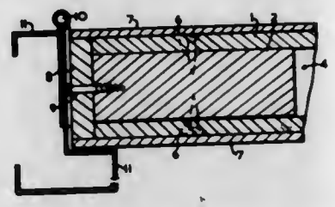


adjacent the latch side of the door when the door is closed, and a resilient bumper secured within said one side adjacent the upper end thereof and engageable by said weight for resiliently limiting movement of said door as it approaches its wide-open position, said position being determined by the length of said flexible member within said door when said door is in its closed position.

3,274,734
FIRE RESISTANT DOOR

Harold Geoffrey Davis, Sydney, New South Wales, Australia, assignor to Padde Pty. Limited, New South Wales, Australia, a company of New South Wales, Australia

Filed Sept. 21, 1964, Ser. No. 397,728
2 Claims. (Cl. 49—503)

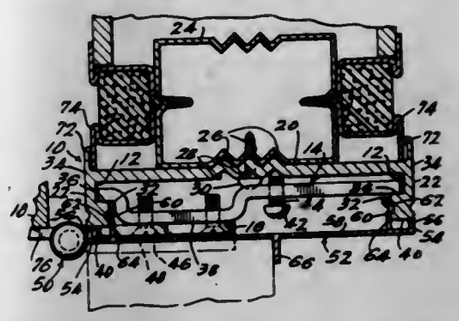


1. A fire resistant door comprising two panels of high density fire resistant material having high thermal insulation and low coefficient of expansion, said panels being fixed to opposite sides of a frame of high density fire resistant material also having high thermal insulation and low coefficient of expansion and providing a space between the panels, said frame comprising stiles flush with the vertical edges of the panels and a head rail located between the stiles and the top edge of the panels and flush therewith, said stiles being covered on their exposed edges by decorative sheets, said space being filled with fire resistant material of low density, said low density fire resistant material comprising blocks laid horizontally in the space between the panels, the lowermost block being flush with the bottom edge of the panels and stiles, decorative sheets covering the exposed faces of said panels, said sheets being made of timber and impregnated with a fire retardant material, the stile at one vertical edge of the door formed of higher density material than the remainder of the frame, door hinges secured to said last mentioned stile, door locking means mounted in the door medially and adjacent the other vertical edge thereof, said higher density stile formed of a densely bonded calcium silicate composition, the remainder of the frame and the panels formed of a less densely bonded asbestos composition, and said blocks are formed of a still less densely bonded calcium silicate composition.

3,274,735
JAMB AND DOOR HINGE SUPPORT

David W. Stackhouse, Bronson, Mich., assignor to The L. A. Darling Company, Bronson, Mich., a corporation of Delaware

Filed Dec. 10, 1964, Ser. No. 417,412
4 Claims. (Cl. 49—504)

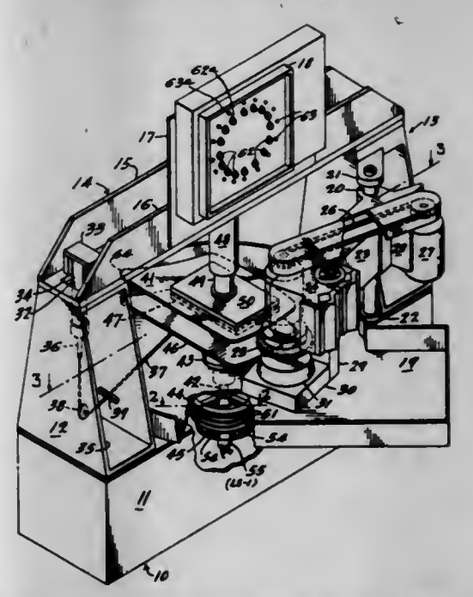


1. A doorjamb assembly comprising: an upright generally U-shaped channel member having a web and a pair of laterally extending flanges respective ones of which are located at opposite ends of said web, said flanges having inner sides which face each other and outer sides which face away from each other, each of said inner sides forming a first recess adjacent said web with a shoulder facing said web, a hinge support plate opposite ends of which are seated in said first recesses, said hinge support plate having a section intermediate said ends which is flush with the lateral outer ends of said flanges when said ends are seated against said shoulders, a hinge having two hinge plates, means fastening one of said hinge plates to said intermediate section of said hinge support plate, at least one jamb screw for forcing said hinge support plate laterally outwardly from said web against said shoulders of said flanges, a generally U-shaped facia strip overlying said channel member laterally outwardly of said hinge plate, and means securing said facia strip to said channel member.

3,274,736
EDGE TOOLING APPARATUS

Roscoe Theron Brokaw, Ann Arbor, Mich., assignor to The Sun Tool & Machine Co., Toledo, Ohio, a corporation of Ohio

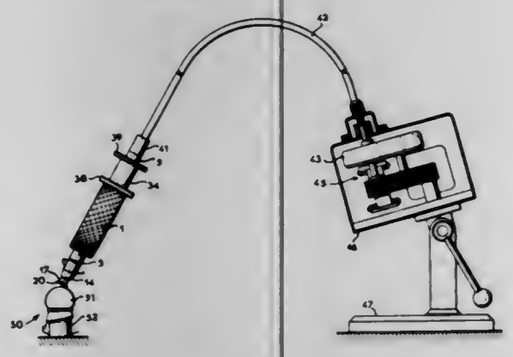
Filed Mar. 20, 1964, Ser. No. 353,404
7 Claims. (Cl. 51—105)



1. In a machine for edge tooling a generally planar workpiece which is unsymmetrical about an axis of rotation normal to the plane of such workpiece, a speed control device comprising, in combination, means for rotat-

ing such workpiece on such axis, switching means, a plurality of variable speed control means responsive to said switching means and means for actuating said switching means at predetermined angular increments of each revolution of such workpiece, whereby the angular speed of such workpiece is separately controlled as it passes through consecutive angular increments.

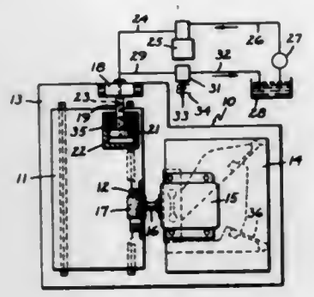
3,274,737
POLISHING OF CORNEAL LENSES
Pierre Michel Rocher and Claude Gabriel Thomas, Saint-Maur, France, assignors to Lentilles Ophtalmiques Rationnelles, Saint-Maur, France, a corporation of France
Filed Sept. 12, 1963, Ser. No. 308,580
Claims priority, application France, Oct. 6, 1962, 911,505
2 Claims. (Cl. 51—131)



1. Polishing apparatus for polishing the rim of corneal lenses, comprising, in combination, a rotary polisher and a hand tool for holding the lens to be polished and rotating it around its axis, said polisher comprising a head made of a resilient material, a rotary shaft on which is mounted said head, while said hand tool comprises a handle having an axial bore, a support spindle carried in bearings fitted in said axial bore of the handle, which bearings are adapted to prevent axial displacement of the spindle, a gripping device for holding the lens to be polished mounted at one end of the spindle, said gripping device being a suction cup made of a resilient material, the bottom of said cup being in communication with an internal axial bore in the support spindle, a piston sliding in said internal bore for moving towards and away from the cup, a rod disposed along the axis of said internal axial bore and fixed to said piston, an actuating sleeve surrounding the spindle and solid with the rod, a screw passing through an elongated opening formed lengthwise in the wall of the spindle and connecting the rod to the sleeve, a return spring disposed in the internal axial bore and surrounding said rod so as to tend to move said piston away from said cup, said apparatus further comprising driving means for the spindle, said driving means comprising a driving motor having an output shaft, a reduction gear connected to said output shaft, a flexible drive connecting said reduction gear to the end of the support spindle opposite to the cup.

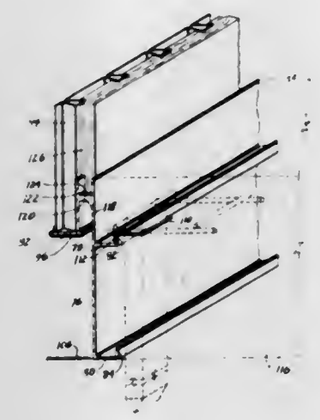
3,274,738
GRINDING MACHINE
Martin L. Kunlholm, Worcester, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Feb. 13, 1964, Ser. No. 344,653
6 Claims. (Cl. 51—165)

1. An internal grinding machine, comprising
(a) a base,
(b) a workpiece support adapted to hold a workpiece, the said support being mounted on the base for transverse sliding motion thereover,
(c) a wheelhead adapted to carry an abrasive wheel pivotally mounted on the base.
(d) a hydraulic linear actuator for bringing about the sliding motion between the support and the base to bring about engagement between the wheel and the workpiece,



(e) a strain gage means associated with the wheelhead for indicating the force between the wheel and the workpiece, and
(f) a control including an electrohydraulic servo valve responsive to a signal from the strain gage means for regulating the feed means to maintain the force between the wheel and the workpiece at a predetermined constant value.

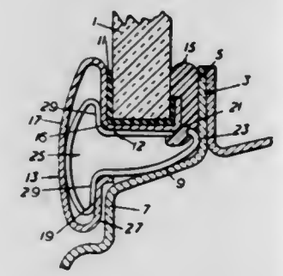
3,274,739
SHEET PANEL ASSEMBLY AND SUPPORTING MEMBERS THEREFOR
Resta S. Gregoire, Washington, D.C., assignor to Gregoire Engineering and Development Company, Adelphi, Md., a corporation of Maryland
Filed June 7, 1962, Ser. No. 200,682
8 Claims. (Cl. 52—169)



1. A sheet panel wall assembly comprising
a plurality of sheet panels, each panel having edge formations at opposite side edges of the panel,
said edge formations being complementary in the formation of an interlocking joint of substantially triangular-ridge outer form between adjacent panels in the assembly, said outer form being that of the edge formation of one of said adjacent panels and having an open apex at the terminal edge of said formation, the other of the adjacent panels having a tongue formation extending through said apex into locking engagement therein,
each panel having at least one substantially triangular ridge fold in it at intervals between said opposite side edges, the folds of the panel sheet at the base

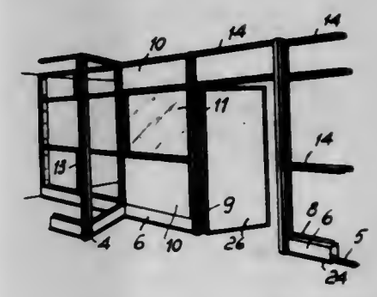
of each ridge being only slightly spaced sufficiently to provide for expansion and contraction of the panel under normal temperature changes without causing the flat panel portions between ridges and between the side edges and adjacent ridges to buckle,
said intermediate ridges and said edge formation ridges extending to the same side of the panels in said assembly presenting a substantially continuous flat surface on the other side of the assembly,
said plurality of panels forming a wall having self supporting vertical rigidity in the direction of said ridges,
a footing extrusion member having a vertical guide web portion extending downwardly with a horizontal ledge extending outwardly at the bottom thereof supporting the bottom edge of said wall,
retaining clip means holding said wall on said ledge and biased against said vertical guide web so as to impart the strength and form of said extrusion member to the rigidity of the panel wall at its lower edge,
an eave support extrusion member having a vertical guide web portion extending upwardly with a horizontal ledge extending outwardly at the top thereof and supported on the upper edge of said wall, and
retaining clip means holding said upper edge under said ledge at the top of said vertical guide web portion and biased against said vertical guide web, so as to impart the strength and form of said eave support extrusion member to the rigidity of the panel wall at its upper edge,
whereby a lightweight, strong and easily assembled wall may be built without the use of any tools or additional framework or attachments, such as screws, rivets, nails or bolts.

3,274,740
MOTOR VEHICLE WINDOW
Leslie Hall, Northfield, Birmingham, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,279
8 Claims. (Cl. 52—208)



1. A motor vehicle window assembly comprising a glass panel;
a window frame defining a glass panel receiving aperture,
said frame including a shoulder vertically spaced from an edge of said panel,
said shoulder terminating in a flange in parallel spaced relationship to a marginal area of one face of said panel;
adhesive means interposed between said marginal area and said flange bonding said panel to said window frame;
at least one spring clip interposed between said panel edge and said shoulder,
said spring clip having at least one resilient leg portion in engagement with said frame shoulder;
a decorative moulding,
and coacting means on said spring clip and said decorative moulding retaining the latter in spring clip concealment position against the other face of said panel.

3,274,741
ASSEMBLABLE AND DISASSEMBLABLE PARTITION
Richard Neagle, Milan, Italy, assignor, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy
Filed May 7, 1962, Ser. No. 192,865
Claims priority, application Italy, May 9, 1961, 8,577/61
5 Claims. (Cl. 52—242)

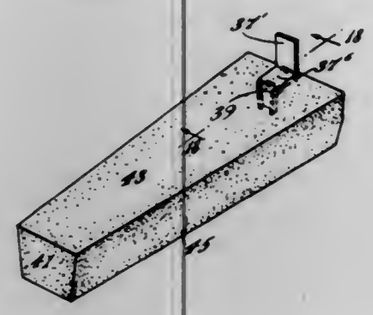


2. A readily assemblable and disassemblable partition comprising:
at least two spaced tubular plug-like outwardly extending synthetic-resin anchoring elements adapted to be secured to a supporting surface;
respective tubular prismatic uprights of synthetic-resin material having socket portions of a configuration corresponding to that of each of said elements and fitting removably thereover while being resiliently held thereon under the elasticity of said material, said uprights each having a pair of respective flanges extending longitudinally therealong on opposite faces of the upright adjacent diagonally opposite corners thereof, at least a first one of said flanges on each of said uprights extending in the direction of the other of said uprights;
a pair of plug-like tubular connecting members of synthetic-resin material, each mounted upon one of said uprights and extending in the direction of the other upright;
a longitudinally extending tubular stringer of synthetic-resin material bridging said uprights and having socket-forming extremities of a configuration conforming to that of said connecting members and removably fitting thereover while being resiliently held thereon under the elasticity of said material; and
a panel of synethic-resin material abutting said stringer and said first flanges of said uprights, said uprights having confronting faces resiliently sandwiching said panel between them, said partition further comprising a T-shaped member intermediate said upright having a vertically extending web portion, and a hollow socle member of synthetic-resin material provided with a groove releasably receiving said web with resilient engagement thereof, said panel abuttingly engaging said socle member and being disposed between the latter and said stringer, said socle member being provided with a pair of longitudinally extending ribs adapted to rest against said supporting surface laterally outwardly of said T-shaped member and a pair of downwardly and outwardly extending longitudinal wing-like projections adjacent said supporting surface, said partition being provided with respective cover members having a pair of flanges forming an acute angle disposed between the respective wing-like projection and said supporting surface with one of the flanges of each of the cover members overlying the respective projection and the other flange of each cover member underlying the respective projection.

3,274,742
REFRACTORY WALL CONSTRUCTION

Wortley B. Paul, Jr., Berwyn, Pa., and George C. Mayhew, Dearborn, Mich., assignors to General Refractories Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 7, 1963, Ser. No. 256,922
3 Claims. (Cl. 52—245)

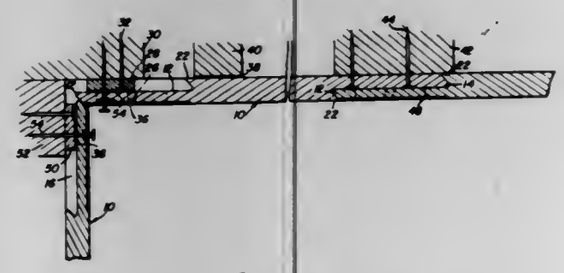


1. An inclined conical refractory wall comprising burned refractory bricks laid in conical course, each brick having a hot end and a cold end with sides extending longitudinally between the ends, the hot end forming an inner inclined conical wall surface with a cold end being substantially parallel thereto, said wall including a lower course of bricks and an upper course of bricks resting directly on the lower course of bricks, each brick of an upper course having an aperture in the lower side of the brick and a metallic projection, the projection including a tab extending downwardly from the cold end of the brick perpendicular to the lower side of the brick adapted to engage against the cold end of a brick of a lower course, a web extending inwardly therefrom along a recess in the lower side of the brick toward the hot end and a leg extending upwardly from the web parallel to the tab and resiliently wedged into the aperture in the lower side of the brick.

3,274,743
INTERLOCKING WALLBOARD

Joseph Louis Blum, Jr., 109 E. Henfer Park, New Orleans 23, La.

Filed July 10, 1963, Ser. No. 294,067
7 Claims. (Cl. 52—284)

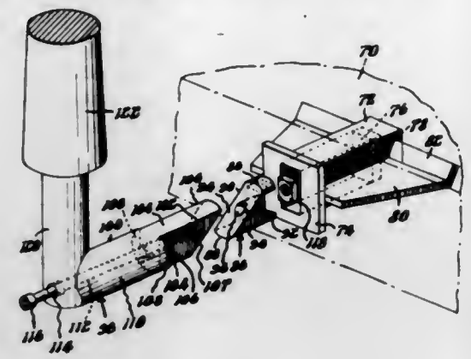


1. A prefabricated wallboard panel comprising an elongated planar member having a beveled marginal edge portion, an elongated recess adjacent said marginal edge portion defining a face and a chamfered portion, a depression formed in said wallboard adjacent said marginal edge portion in the face thereof remote from the recess, a plurality of preformed filler material receiving and bonding apertures in said depression through said planar member, said planar member being adapted to have said marginal edge portion thereof disposed in overlapped engagement with a marginal edge portion of a second planar member also having an elongated recess formed therein but opening in the opposite direction relative to the first mentioned recess.

3,274,744
MOUNTING FOR HANDRAILING

Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa.

Filed Dec. 13, 1963, Ser. No. 330,388
6 Claims. (Cl. 52—704)

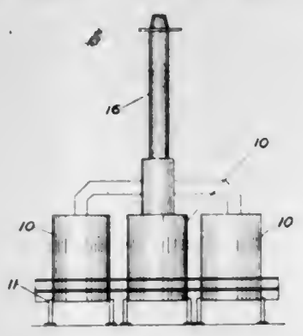


1. In apparatus for securing the posts of handrailings to masonry stair treads, the combination comprising a tubular sleeve adapted for being embedded in and thereby anchored to a masonry stair tread, and a wedge assembly including inner and outer coacting wedges nonturnably fitted into and selectively positioned longitudinally of said sleeve and provided with abutting surfaces inclined relative to the axis of said sleeve, the outer one of said wedges being provided with a head extending across the outer end of said sleeve and adapted for being interposed between said sleeve and the base of the post, a screw extending through said wedges and drawing said wedges together for being wedged tightly in said sleeve in the selected position thereof, and screws threaded into said head and adapted for extending through the base of said post and holding the same to said head in overlying relation to the outer end of the first mentioned screw.

3,274,745
PROCESS FOR CONSTRUCTING A PETROLEUM REFINERY

Calvin J. McManus, Forest Hills, and Francis J. Upton, Little Neck, N.Y., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed July 2, 1962, Ser. No. 206,845
2 Claims. (Cl. 52—745)

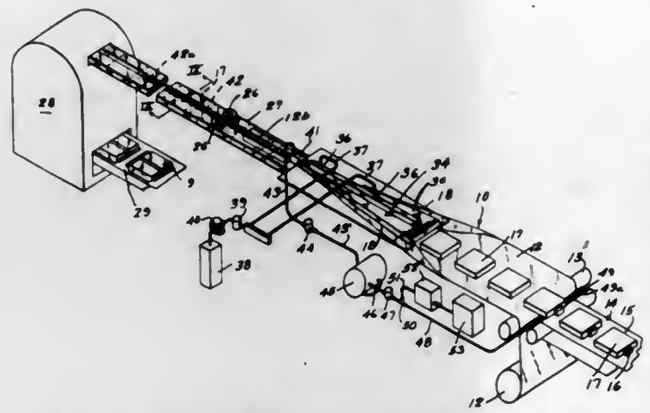


1. A process for constructing a petroleum refinery which has species of equipment elements, pumps and heaters and towers each defining a species, the process comprising the steps of preassembling a plurality of the elements of at least two of the species with each species in at least one separate structural module and with the size and weight of each module determined by handling and shipping limitations, transporting the modules to a desired site, erecting the modules on suitable foundations, operatively interconnecting the equipment elements, structurally integrating the modules.

3,274,746
METHOD OF AND APPARATUS FOR PACKAGING UNITS IN A PRESERVATIVE ATMOSPHERE

Robert C. James, David A. Wilson, and Frank E. Pringle, Jr., Sheboygan, Wis., assignors to Hayssen Manufacturing Company, Sheboygan, Wis., a corporation of Wisconsin

Filed Sept. 9, 1963, Ser. No. 307,406
27 Claims. (Cl. 53—22)

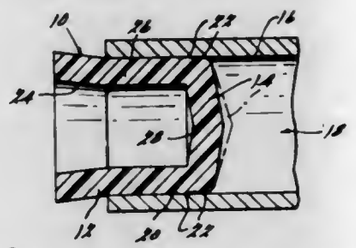


22. In a method of packaging a plurality of spaced units in a forwardly moving elongated tube of gas impervious flexible material adapted to be progressively sealed about said units, the steps of flowing preservative gas in said tube, withdrawing gas from said tube as it is moving forward, and recirculating withdrawn gas over spaced units being moved forwardly into the tube.

3,274,747
METHOD OF SEALING TUBING

John R. Fueslein, Jeddo, and Robert R. Rader, Port Huron, Mich., and Edward C. Roper, Springdale, Conn., assignors to Mueller Brass Co., Port Huron, Mich., a corporation of Michigan

Original application Aug. 14, 1962, Ser. No. 216,841, now Patent No. 3,200,984, dated Aug. 17, 1965. Divided and this application Aug. 14, 1964, Ser. No. 389,597
4 Claims. (Cl. 53—22)



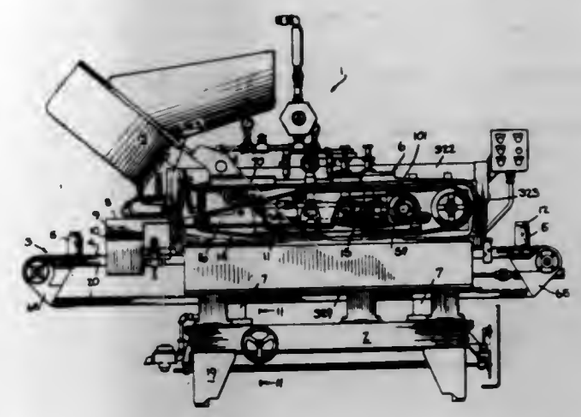
1. A method for maintaining the interior of tubular members devoid of contamination and deposits for prolonged periods of time which comprises the steps of cleaning the interior of the members to remove undersirable deposits from the inner surfaces thereof, purging the interior of the cleaned said members with a substantially moisture-free inert fluid, and thereafter sealing said inert fluid in the interior of said members.

3,274,748
SEALING MACHINE AND METHOD

Cecil P. Roberts and Joseph C. Runco, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed May 10, 1963, Ser. No. 279,458
25 Claims. (Cl. 53—38)

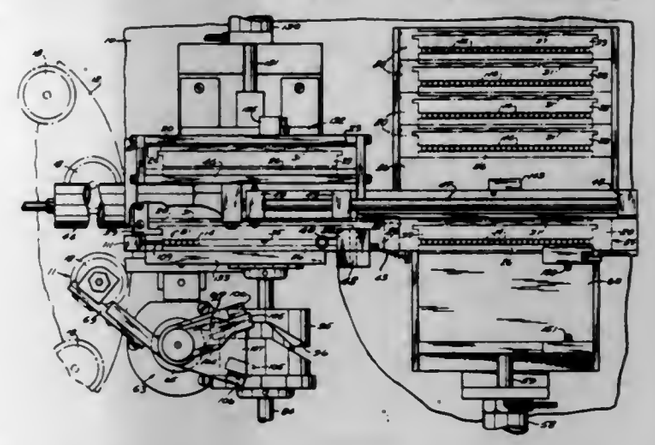
9. The method of sealing a container with a screw cap which comprises the steps of loosely threading the cap to the top of the containers, and thereafter moving the container to carry an off-center portion of the top of the cap into sliding frictional engagement with a retarding member and an opposite off-center portion into frictional engagement with a moving endless belt, moving said endless belt at a speed greater than the speed of the moving container and in the same direction, and equalizing the downwardly directed forces against the cap top by said retarding member and said belt member by transmitting a generally vertical movement in one to an opposite generally vertical movement of the other member.



3,274,749
ARTICLE UNLOADING AND TRANSFER APPARATUS

James O. Hinkle, Emmaus, and Peter Toth, Jr., Bethlehem, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 29, 1963, Ser. No. 284,192
6 Claims. (Cl. 53—251)



1. An unloading and transfer apparatus for unloading articles from holders moved successively into an unloading station and transferring the articles to elongated racks comprising:

means for advancing elongated racks one by one in a path normal to the length of the rack to a rack-loading position in which each rack remains stationary until loaded,

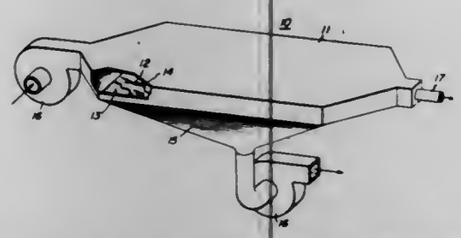
transfer means having gripping jaws for successively removing articles from the holders and depositing them at one end of an elongated rack advanced to a loading position,

pusher means adjacent said one end of a rack so advanced and operable after each article is deposited for sliding the deposited articles along the rack towards the opposite end of the rack,

means for detecting when a desired number of articles have been loaded into a rack, and

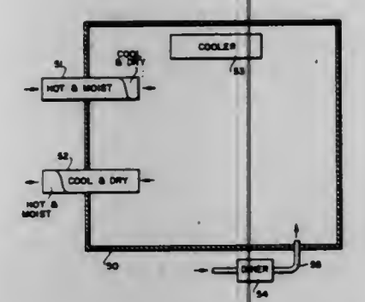
means responsive to said detection for removing the loaded rack from the loading position in a path extending along the length of the rack and for initiating the operation of the advancing means to advance a succeeding rack into the rack-loading position.

3,274,750
PERMEABLE POLYMERIC MEMBRANE GAS SEPARATION
Walter L. Robb, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 28, 1962, Ser. No. 247,904
4 Claims. (Cl. 55—16)



2. A method for separating xenon and krypton from a gas mixture consisting essentially of nitrogen, xenon and krypton comprising the steps of: bringing the mixture into contact with one side of a thin, non-porous silicone rubber membrane, causing a portion of the mixture to permeate through said membrane and removing the gas mixture enriched to a substantial degree in xenon and krypton from the opposite side of said membrane.

3,274,751
PROCESSING OF GASES FLOWING INTO AND OUT OF AN ENCLOSED SPACE
Charles W. Skarstrom, Montvale, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,874
18 Claims. (Cl. 55—33)



13. A method of ventilating a region comprising an enclosed space by transferring gas from said region to a second region of a different moisture content while controlling the transfer of moisture between the two regions which comprises in combination:

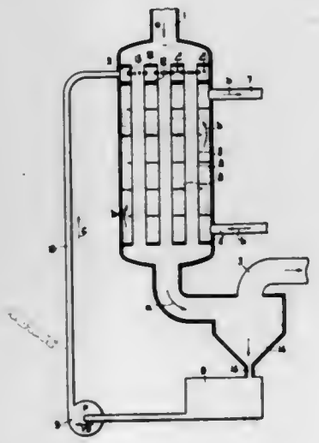
(a) Flowing gas cyclically into said space through a first moisture transfer zone which zone provides a passage between said regions and is characterized by the ability to remove a substantial portion of the moisture content in the gas passing through it per cycle,

(b) Simultaneously flowing gas cyclically outside of said space through a second moisture transfer zone which zone provides a passage between said regions and which zone is characterized by the ability to remove a substantial portion of the moisture contained in the gas passing through it per cycle,

(c) Simultaneously introducing a second stream of relatively dry gas as compared to the gas in said enclosed space into said enclosed space,

(d) Cyclically alternating the direction of flow of gas through said first and second zones, wherein the flow of gas through the zones is such that substantially no breakthrough of the moisture within said zones occurs and wherein flow through a zone into one of said regions is accompanied by flow out of the same region through the other zone.

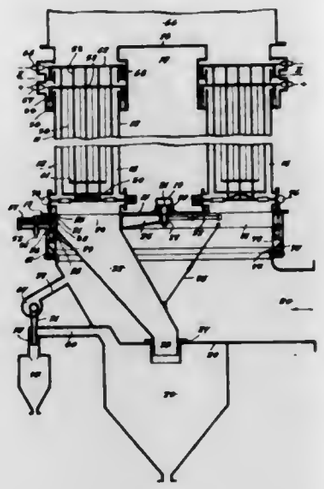
3,274,752
PROCESS AND APPARATUS FOR IMPROVING THE TRANSFER OF HEAT FROM A HOT GASEOUS FLUID
Jean Huyghe and Henri Mondin, Grenoble, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Jan. 28, 1963, Ser. No. 254,142
Claims priority, application France, Feb. 13, 1962, 887,885
8 Claims. (Cl. 55—89)



1. A process for improving the transfer of heat from a hot gaseous fluid flowing through a tubular heat exchanger to a cooling fluid surrounding said tubular heat exchanger, comprising: flowing a stream of said hot gaseous fluid through said tubular heat exchanger; introducing droplets of an auxiliary liquid, which will not vaporize at the temperature of said hot gaseous fluid, into said stream of hot gaseous fluid adjacent the inlet end of said tubular heat exchanger, said droplets mixing with said stream of hot gaseous fluid and forming a film of said auxiliary liquid on the internal wall of said tubular heat exchanger; circulating said cooling fluid in contact with the external wall of said tubular heat exchanger for cooling said hot gaseous fluid and said film of auxiliary liquid; and separating said gaseous fluid from said auxiliary liquid at the outlet from said tubular heat exchanger.

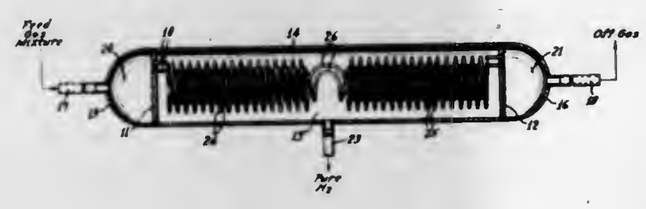
3,274,753
ELECTROSTATIC PRECIPITATORS
Herbert Brandt, Rothemuhle uber Olpe, Westphalia, Germany
Filed May 28, 1964, Ser. No. 370,969
7 Claims. (Cl. 55—111)

1. In an electrostatic precipitator comprising an assembly of a plurality of vertical chambers disposed adjacent to each other in a circle around a vertical axis, dust-laden gas being caused to flow from a duct through the said chambers, each said chamber being provided with an electrode system to which high-tension electric current is supplied, means for periodically shutting off a said chamber from the flow of said dust-laden gas, the flow of current to the electrode system in the said chamber being cut off or progressively reduced during said shut-off period, means for vibrating the said electrode system during said shut-off period to dislodge dust collected on said system, a dust-collecting hopper disposed below the assembly of chambers, and means for directing said dislodged dust into the dust-collecting hopper, the improvement which comprises a chute disposed below the assembly of chambers, said chute having a lower end extending into the dust collecting hopper in axial alignment with the axis of said assembly of chambers and an upper end



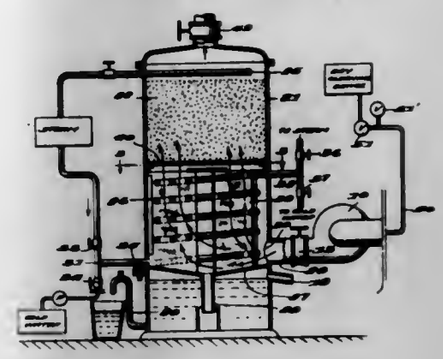
adapted to register with the bottom end of a chamber, means for rotating the chute periodically and stepwise whereby its upper end registers successively with individual chambers, the spacing between the upper end of the chute and the bottom end of a chamber being close without being gas-tight, the top ends of all of the chambers being uncovered, and means for flowing a gas through a shut-off chamber and the chute in register therewith at a velocity of less than fifty percent of the velocity at which the dust-laden gas flows through the chambers.

3,274,754
GAS PURIFICATION APPARATUS
Leonard R. Rubin, Union, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed Jan. 17, 1964, Ser. No. 338,328
5 Claims. (Cl. 55—158)



1. Apparatus for diffusion purification of a gas comprising a chamber having two end walls and an outlet, and a diffusion tube having a wall of non-porous metal through which particular gas permeates, said tube wall being adapted to selectively permeate said particular gas through said tube wall, extending through the chamber and being secured through the two end walls and opening outside the chamber, said tube having one portion within the chamber spirally coiled in one direction and another portion within the chamber spirally coiled in the opposite direction.

3,274,755
APPARATUS FOR THE ADSORPTIVE RECOVERY OF SOLVENTS
Jean R. Montagnon, La Celle-Saint Cloud, and Georges Gourdon, Montrouge, France, assignors to Societe Nouvelle Pica, Paris, France
Filed June 21, 1962, Ser. No. 204,176
Claims priority, application France, July 10, 1958, 110,006
7 Claims. (Cl. 55—171)



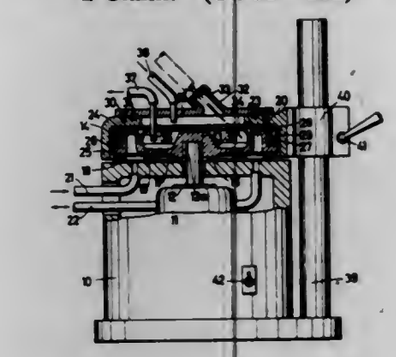
1. Solvent recovering apparatus comprising, in combination, a hollow casing provided at a given elevation with an outlet means capable of being opened and closed; inlet means communicating with the interior of said casing at a second elevation substantially lower than said given elevation; a first pair of means both communicating with said inlet means and alternately operable for alternately introducing solvent-carrying air and pure air, respectively, into said casing through said inlet means; a body of activated charcoal situated in the interior of said casing at an elevation lower than said given elevation but higher than said second elevation and defining a flow path through which air must pass before reaching said outlet means; heat exchanger means situated in said casing beneath said body of charcoal but at an elevation higher than said second elevation; a second pair of means communicating with said heat exchanger means for alternately circulating therethrough a cooling fluid and a heating fluid, respectively; steam conduit means communicating with the interior of said casing at an elevation higher than said body of charcoal for directing steam downwardly through the latter; valve means in said steam conduit means for opening and closing the latter; and separating means situated in said casing at an elevation lower than said second elevation for collecting condensate from said heat exchanger means and separating the condensate into different liquid components thereof, whereby during a first stage of an operating cycle with said outlet means open that one of said first pair of means for introducing solvent-carrying air through said inlet means into said casing and that one of said second pair of means for circulating cooling fluid through said heat exchanger means can be rendered operative so that the solvent-carrying air will have solvent condensed therefrom by said heat exchanger means before passing through said body of charcoal to have further solvent removed therefrom before the air flows out through said outlet means, during a second stage of said operating cycle with said outlet means closed both of said first pair of means can be rendered inoperative while said one of said second pair of means is still maintained operative and steam is directed through said body of charcoal from said steam conduit means to remove from said charcoal solvent to be condensed with steam by said heat exchanger means and received in said separator means, and during a final stage of said operating cycle with said outlet means open the other of said first pair of means can be rendered operative for introducing pure air through said inlet means into said casing while the other of said second pair of

means can be simultaneously rendered operative for circulating heating fluid through said heat exchanger means to heat said pure air before it reaches said body of charcoal to dry the latter before reaching said outlet means.

3,274,756
APPARATUS FOR DEGASSIFYING A LIQUID

Bengt Evert Stern, Mullingstorp, Kuddby, Sweden

Filed Oct. 8, 1962, Ser. No. 229,143
1 Claim. (Cl. 55—182)



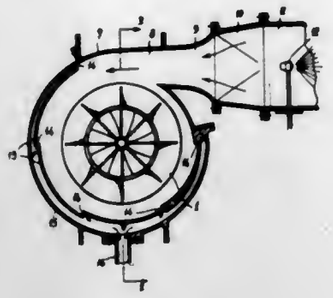
An apparatus for analyzing a sample of a vaporizable material for gases contained therein, comprising a housing, a motor mounted in said housing having a vertical shaft extending upwardly through said housing, a centrifuge bowl removably mounted on the upper end of said vertical shaft above the housing, said bowl being a shallow bowl having a rim which is turned over and extends downwardly to define an annular channel in the under surface of the bowl, said annular channel opening downwardly toward said housing, a bearing on said housing on which said bowl rotates, sealing means between the bottom of said bowl and said housing and comprising a first seal radially outwardly of said annular channel and a second seal radially inwardly of said annular channel, a system of tubes opening into said annular channel through said housing at points opposite said annular channel for conducting a heating medium to and from said annular channel, a cover above said bowl, a gas seal means extending between the inside surface of said cover and the periphery of said bowl and permitting relative rotation between the cover and the bowl, means extending through said cover for projecting a sample into the bowl against the inside surface of the bowl, a gas inlet opening through said cover into the radially inner portion of said bowl and a gas outlet means opening out through the cover from the radially outer portion of said bowl for picking up gases vaporized when a sample is centrifuged and heated, a fixed pillar on said housing, and clamping means vertically movable on said pillar and on which said cover is mounted.

3,274,757
COMBINATION GAS TURBINE AND DUST SEPARATOR

Jean Jacques Wapler, Lille, Nord, France, assignor to Societe Anonyme des Etablissements Neu, Lille, Nord, France, a corporation of France

Filed May 11, 1964, Ser. No. 366,399
Claims priority, application France, May 16, 1963, 18,221, Patent 1,390,923
1 Claim. (Cl. 55—238)

A combination gas turbine and dust separator adapted to be driven by the expansion of dust laden gases, and comprising: a spiral shaped housing, a gas inlet having a convergent portion leading tangentially into said housing, a divergent gas outlet leading axially from said housing, a centripetal type turbine wheel rotatively mounted within said housing coaxially with said gas outlet and immediately adjacent said inlet, said wheel comprising a central hub portion and an outer shield portion, axially extending blades mounted between said hub and shield portions, said blades and said portions providing a centripetal gas passage from outwardly of said wheel into said gas outlet, a spiral shaped plate means mounted between said wheel and the inner wall of said housing and spaced away from

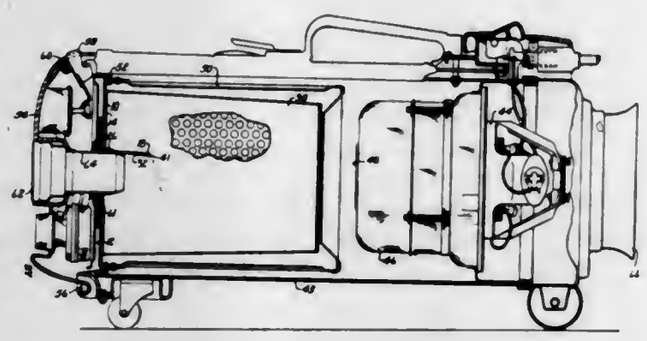


said inner wall, dust discharge openings in said plate means circumferentially spaced apart from each other and leading into the space formed between said plate means and said inner wall, an outlet from said space for the dust collected therein; and a liquid atomizing means in said gas outlet in advance of said convergent portion.

3,274,758
DISPOSABLE VACUUM CLEANER DUST CONTAINERS

Henry O. Parman, Owensboro, Ky., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Filed Jan. 9, 1963, Ser. No. 250,414
1 Claim. (Cl. 55—279)



A disposable dust bag for use in a vacuum cleaner having an inlet conduit, said bag including a relatively stiff end member having an inlet opening, a sheet of rubber-like material secured to said end member and extending across said opening, said sheet having a normally small aperture approximately centered with respect to said inlet opening, a strip of flexible material secured to said end member and extending across said opening and over said aperture, said strip having a frangible section adjacent to one end thereof so as to be severed and forced through said aperture by the introduction of said inlet conduit into said inlet opening, a container of impermeable frangible material secured to said end member and extending across said inlet opening in substantially parallel relation to said strip and notched adjacent to said frangible section so as to be ruptured and forced through said inlet opening along with said strip by the aforesaid introduction of the inlet conduit, and a volatile deodorizing substance in said container releasable to the interior of said bag by the rupturing of the container.

3,274,759
ADJUSTABLE FRAME STRUCTURE FOR AIR FILTERS AND THE LIKE

Vincent G. Bell, Jr., Wayne, Pa., assignor to Safeguard Business Systems Corporation, a corporation of Delaware

Filed Apr. 7, 1965, Ser. No. 446,226
2 Claims. (Cl. 55—482)



1. An adjustable frame structure for window air-filters and the like, comprising:

a first generally-rectangular frame including a first pair of substantially identical horizontally-extending vertically spaced-apart rails and a first pair of end-frame members secured to opposite ends of said rails to hold said rails in substantially parallel relationship to each other;

each of said rails having formed therein a first keyed channel, a second keyed channel, a third channel and a fourth channel, each of said channels extending throughout the entire length of said rails;

said fourth channel in each of said rails facing inwardly of said frame to permit mounting for an air filter therein, said first keyed channel in each of said rails facing oppositely to said fourth channel, said second keyed channel in each of said rails facing horizontally outward from one side of said frame and having a substantially rectangular cross-section, and said third channel in each of said rails facing oppositely to said second keyed channel;

a second generally rectangular frame of substantially the same form as said first frame and including a second pair of horizontally-extending rails substantially identical with each other and with said first pair of rails and each having a first and second keyed channel and a third and a fourth channel all of which are of substantially the same form as said channels in said first pair of rails, and a second pair of end-frame members secured to opposite ends of said second pair of rails to hold said second pair of rails in substantially parallel, vertically spaced-apart relationship, said second pair of end-frame members being of substantially the same form as said first pair of end-frame members;

one of said first pair of end-frame members having a pair of key members integrally formed thereon, each of said key members having a key portion of substantially rectangular cross-section retained in closely-fitting longitudinally-slidable relationship in a different one of said second keyed channels in said second pair of rails, and one of said second pair of end-frame members having a pair of key members integrally formed thereon, each of said last-named key members having a key portion of substantially rectangular cross-section retained in closely-fitting longitudinally-slidable engagement in a different one of said second keyed channels in said first pair of rails;

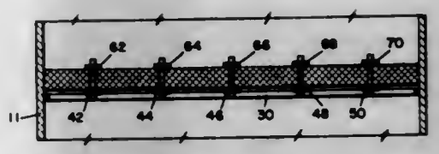
resilient gaskets extending the length of said rails and retained in said first keyed channels thereof; and

connector means extending longitudinally into the ends of said third channels at the ends of each of said rails and secured to said end-frame members and the interior walls of said third channels for securing said end-frame members to said rails.

3,274,760
DEMISTIFIER SCREEN AND SUPPORT THEREFOR

William J. Sage, Edmonton, Alberta, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed July 31, 1964, Ser. No. 386,587
5 Claims. (Cl. 55—491)

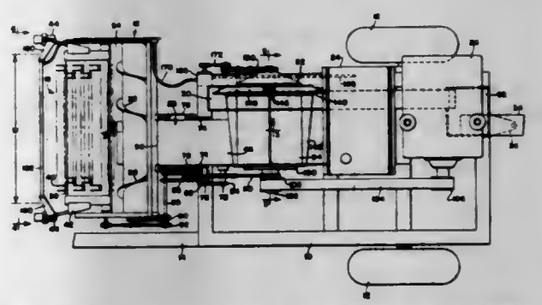


1. A self-supporting screen structure for use internally within a cylindrical vessel through which a fluid flows comprising, in combination, an annular member defining a plane and having at least one interruption therein to provide spaced facing end elements, means for adjusting the spacing between said end elements to thereby expand the outside diameter of said annular member into frictional engagement with the interior walls of said vessels, a plurality of upstanding rod elements having one end secured to an inner portion of said annular member, said rod element extending in a direction perpendicular to the plane of said annular member, a plurality of individual and varying length transverse bar elements extending substantially parallel to one another, having end portions engaging said rod elements, at least one end portion of each bar element having a slot which slidably engages an associated rod element, each said slot being elongated along the lengthwise axis of said bar elements for permitting free relative movement between said rod elements and annular member as said annular member is expanded into contact with said cylindrical vessel, and previous screen means adapted to extend transversely completely across said cylindrical vessel and to overlie said bar elements, and means for securing said screen means to said bar elements.

3,274,761
CROP WAFERING MACHINE

Gust Soteropulos, Harold E. de Buhr, and Blaine W. Gustafson, all of Ottumwa, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Feb. 21, 1964, Ser. No. 346,540
11 Claims. (Cl. 56—1)



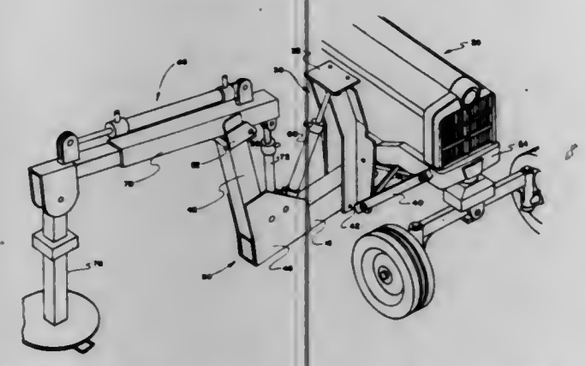
1. A machine for wafering hay and like forage crops from relatively wide previously formed and at least partly cured windrows, comprising: a mobile frame adapted to travel over the field parallel to the windrows; crop pick-up means carried by the frame and of sufficient width to span a windrow and to pick up crops from such windrow and to move the crops rearwardly in a relatively

wide stream; crop-wafering means on the frame in spaced relation to the pick-up means; crop-transfer means on the frame between the pick-up means and the wafering means and having a receiving portion proximate to and for receiving crops from the pick-up means, a delivery portion proximate to and for delivering crops to the wafering means, and feed means for moving crops from the receiving portion to the delivery portion; means on the frame including a container for carrying a crop-wetting liquid; and means on the frame and connected to the container and disposed in proximity to the pick-up means for distributing liquid to the crops over a relatively wide area prior to movement of the crop stream into the aforesaid receiving portion.

3,274,762
MOUNTING FOR MOWER ATTACHMENT

Lewis M. Jolls, 602 Walnut St., Brighton, Mich.; Ilene Timmons, administratrix of said Lewis M. Jolls, deceased

Filed Dec. 5, 1963, Ser. No. 328,331
1 Claim. (Cl. 56—25.4)



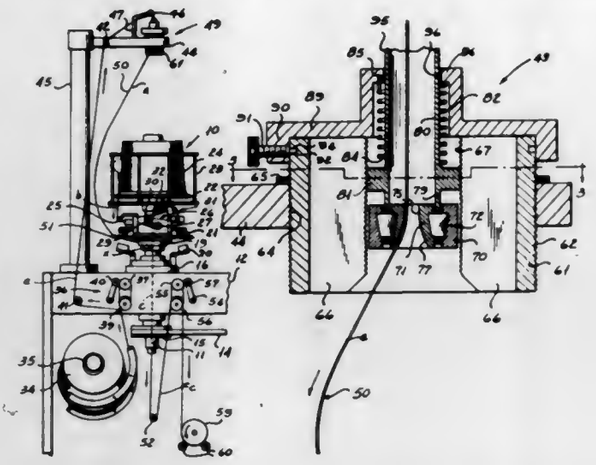
A mounting for a mower attachment on a vehicle having a frame, said attachment having a cutter bar comprising, an elongated beam and an upstanding post forming a generally L-shaped support member, means supported upon said post for pivotally supporting said mower attachment intermediate its ends, a pair of brackets attached to opposite sides of said frame, the lower portions of said brackets extending below said vehicle and being in spaced, parallel relation, means for pivotally supporting the end of said beam remote from said post upon one of said brackets, the other of said brackets disposed to support the end of said beam proximate to said post against horizontal movement but to permit vertical movement thereof, a pair of actuating means each connected at one end to said support member and at the other end, respectively, to the upper portion of said other bracket and to the proximate end of said mower attachment, to adjustably support said mower attachment upon said vehicle.

3,274,763
TWISTING SPINDLE BALLOON CONTROL

Alfred W. Vibber, 290 Churchill Road, West Englewood, Teaneck, N.J.

Filed Dec. 17, 1963, Ser. No. 331,149
7 Claims. (Cl. 57—106)

1. A self-adjusting balloon apex guide comprising a planetary gearing device having a ring and parts rotatable with respect to the ring including a sun coaxial of the ring, and at least one body of revolution functioning as a planet interposed between and drivingly engaging the ring and sun, the sun being in the form of an annular member having a central strand guiding passage therethrough, means for retaining the ring from rotation while permitting its reciprocation along the common axis of the ring and the sun, and means supporting the planetary gearing device and for adjusting it along said axis comprising means connected to the planet to rotate therewith about said axis, means connected to the last named means to drive the planetary gearing device for travel in opposite directions along said axis when the sun rotates

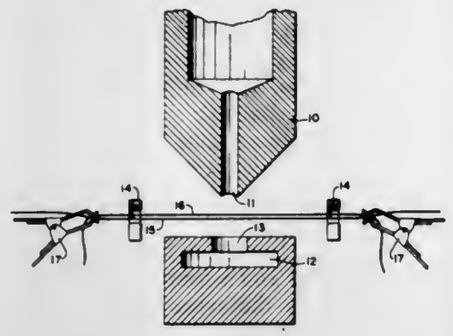


about said axis in respective opposite directions, and resilient means connected to one of the rotatable parts of the planetary gearing device yieldingly to oppose rotation of the sun in the direction of rotation of the balloon.

3,274,764
THREAD JOINT

Conrad J. Gonsalves, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

Original application Nov. 4, 1963, Ser. No. 321,244. Divided and this application Feb. 4, 1966, Ser. No. 525,179
Claims priority, application Netherlands, Nov. 14, 1962, 285,518
1 Claim. (Cl. 57—142)



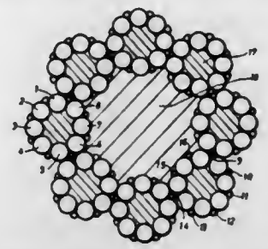
A thread joint formed solely by the ends of at least two multifilament threads having a low twist equal to or less than one turn per inch, said filaments of each thread being entangled with the filaments of the other thread in permanent engagement therewith and without further twist whereby the tensile strength of the joint is substantially the same as that of the thread.

3,274,765
STRANDED ROPE COMPRISING ENDLESS, SYNTHETIC PLASTIC THREADS

Karl Hartmann, Cologne-Stammheim, and Hans-Richard Schmittmann, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed June 18, 1965, Ser. No. 465,055
7 Claims. (Cl. 57—144)

1. A stranded rope of synthetic plastic material comprising strands formed of surface filaments stranded about a core and having fiber tows consisting of parallel elementary plastic filaments inserted externally between the surface filaments wherein said fiber tows in said strands are non-supporting rope elements having substantially no

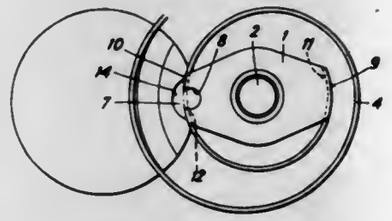


initial tension, said fiber tows being inserted between the surface filaments to prevent wear of said filaments.

3,274,766
FIXING DEVICE OF THE INNER END OF A REGULATING HAIRSPRING IN A TIMEPIECE

Jean-Jacques Desaules and Henri-Louis Henchoz, Le Locle, Switzerland, assignors to Fabrique d'Horlogerie Chs. Tissot et Fils S.A., Le Locle, Neuenburg, Switzerland

Filed Nov. 16, 1964, Ser. No. 411,286
Claims priority, application Switzerland, Jan. 31, 1964, 1,156/64
8 Claims. (Cl. 58—115)

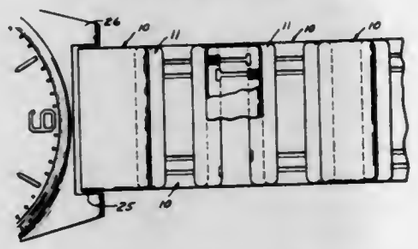


1. In a hair-spring and collet assembly for time pieces, in combination, an outer convex side surface portion on the collet, a portion of the hair-spring inner coil having an inner side surface applied against said outer convex side surface portion of the collet, a blob of material firmly fixed to said portion of the hair-spring inner coil and having a projection extending inwards from the inner side surface thereof, and a lodging in the collet provided in said outer convex said surface portion thereof, the inwardly extending projection of said blob of material entering said lodging and constituting therewith a fixing connection ensuring the anchorage of the hair-spring to the collet.

3,274,767
ELASTICALLY EXPANDABLE WATCHBAND

George G. Henschel, 226—69 Union Turnpike, Flushing, N.Y.

Filed Aug. 14, 1963, Ser. No. 302,173
2 Claims. (Cl. 59—79)

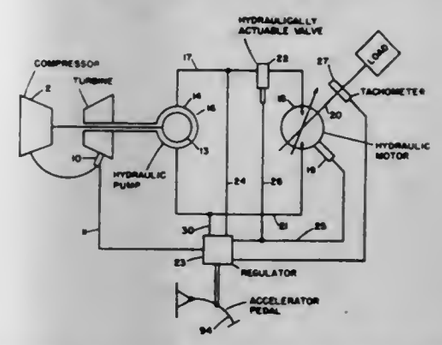


1. A watchband comprising a plurality of upper and lower band links disposed in two spaced-apart superimposed parallel rows. said band links being in the form of a hollow substantially rectangular block having transverse parallel slots in opposite side walls, a coupling link interposed between each adjacent upper band link and lower band link, retaining means fitted in the interior of each of said blocks to define therein guide tracks in registry with said slots, each of said coupling links including a pair of guide tongues protruding from opposite sides of the coupling link, each of said tongues engaging one of the guide tracks of the adjacent upper band link and lower band link, respectively, slidably displaceable along the tracks, and spring means oppositely acting upon the two tongues of each coupling link for biasing the respective band links in both rows and the respective coupling link toward each other.

3,274,768
PRIME-MOVER SYSTEM

Hans-Christof Klein, Hattersheim (Main), Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik Kommandit-Gesellschaft, Frankfurt am Main, Germany, a limited-liability company of Germany

Filed Nov. 26, 1963, Ser. No. 325,916
Claims priority, application Germany, Dec. 3, 1962, T 23,114
14 Claims. (Cl. 60—19)

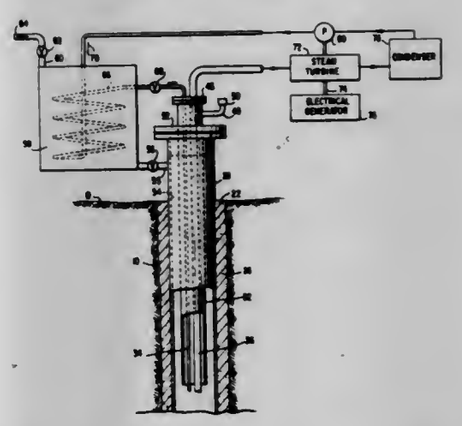


1. A method of operating a turbine prime mover wherein a gas turbine is connected to a compressor feeding said turbine, comprising the steps of:
driving relatively displaceable cooperating pumping members of a hydraulic pump with said turbine and said compressor, respectively, to displace hydraulic fluid at a rate proportional to the difference in speeds of said compressor and said turbine; and
driving a hydraulic motor connected to a load with the hydraulic fluid displaced by said pump.

3,274,769
GROUND HEAT STEAM GENERATOR

Jay B. Reynolds, Fallon, Nev., assignor to J. B. Reynolds, Inc., Fallon, Nev., a corporation of Nevada

Filed May 5, 1964, Ser. No. 364,902
5 Claims. (Cl. 60—26)



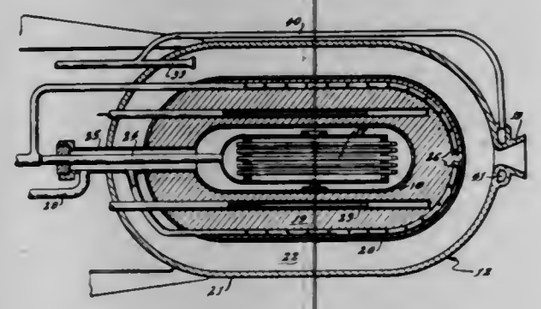
1. A device for extracting energy from the earth comprising a cylindrical container having a closed end insertable into a well and adapted to be filled with fluid, a liquid pipe and a gas pipe extending into said container

and in fluid communication with each other adjacent said closed end of said container, said gas pipe being of larger diameter than said liquid pipe.

3,274,770
METHOD AND SYSTEM FOR SUPPLYING THRUST TO A SPACE VEHICLE

Joseph C. Carter, Elmhurst, and Max B. Rodin, Park Forest, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 9, 1966, Ser. No. 526,667
3 Claims. (Cl. 60—203)

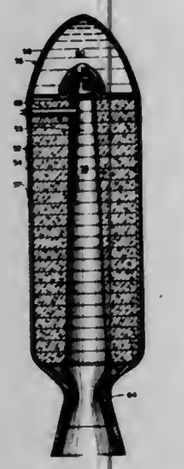


1. A nuclear propulsion system for use in space comprising a solid-core liquid-metal-cooled nuclear reactor, a beryllium reflector surrounding the reactor, means establishing an irradiation zone surrounding the reflector, means for introducing molten lithium hydride enriched in lithium-6 into said irradiation zone, and means for ejecting the resulting gas containing products of the reaction of neutrons and lithium-6 from the irradiation zone to provide thrust.

3,274,771
HYBRID SOLID AND LIQUID FUEL ROCKET

Irving Lieberman, Covina, and Louis Zernow, Downey, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Oct. 23, 1961, Ser. No. 146,755
1 Claim. (Cl. 60—251)

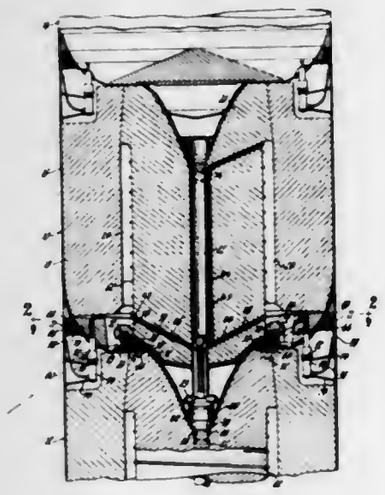


A hybrid rocket of the class described comprising in combination, a housing having a closed forward end and a nozzle at its rear end, a partition wall dividing said housing into a forward and a rear compartment, the rear housing compartment containing a solid fuel grain therein, said solid fuel grain having its outer periphery in engagement with the internal surface of said housing and being provided with an elongated opening extending the length thereof in registration with said nozzle, the forward compartment comprising a tank filled with a liquid oxidizing material adapted to react with the material of said solid fuel grain for achieving combustion, said partition wall including an injection plate as the central portion thereof, said injection plate being provided with a plurality of orifices leading into the elongated opening in said solid fuel grain, dome-shaped closure means on said injection plate covering said orifices to prevent indiscriminate flow of liquid oxidizing material through said orifices into the elongated opening in said solid fuel grain, and said dome-shaped closure means including a pump therein having an intake communicating with said tank filled with liquid oxidizing material and a discharge outlet communicating with said orifices, whereby the operation of said pump forces liquid oxidizing material from said tank through the orifices in said injection plate into the elongated opening in said solid fuel grain, thereby causing a reaction between the liquid oxidizing material and the solid fuel grain generating combustion products which flow out through said nozzle to provide thrust.

3,274,772
CONTINUOUSLY STAGED ROCKET CONSTRUCTION

Cyril M. Hawkins, Indianapolis, Ind., and Albert J. Sobey, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 16, 1963, Ser. No. 295,429
5 Claims. (Cl. 60—225)



1. A rocket engine stage unit adapted to be combined with other like stage units to form a multi-stage solid propellant rocket engine, said stage unit comprising:

an outer casing;

two annular rings of solid propellant disposed within said casing and separated by a space forming an annular gas passage;

an annular exhaust nozzle located adjacent to said annular gas passage at the lower extremity of said casing, said annular nozzle having a two-piece construction including spacers selectable to determine the throat area of said nozzle at assembly;

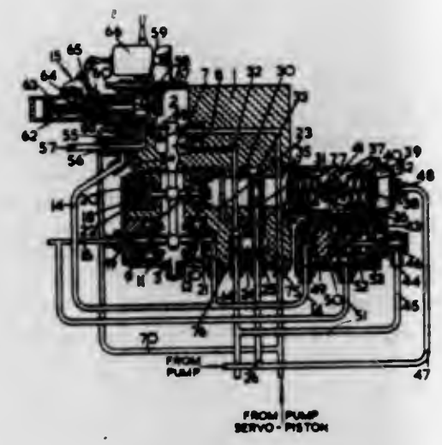
heat responsive ignition means including a thermal initiator, end primers ignited by said initiator, and a detonating fuse extending from said end primers to said solid propellant rings;

and an explosive stage separation means to separate an adjacent stage unit from said stage unit when the combustion of said adjacent stage unit nears completion.

3,274,773
GOVERNOR CONTROL FOR A FUEL SYSTEM OF A GAS TURBINE POWER-PRODUCING PLANT

Robin M. Dakin, Coventry, England, assignor to Bristol Siddeley Engines Limited, Bristol, England

Filed Jan. 13, 1964, Ser. No. 337,251
Claims priority, application Great Britain, Jan. 16, 1963, 1,930/63
4 Claims. (Cl. 60—39.28)



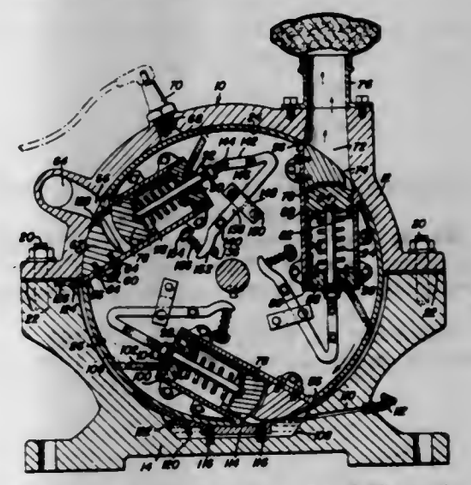
1. A governor control for a fuel system of a gas turbine power-producing plant, including a power turbine, the governor control comprising a pivotally-mounted arm; a valve member carried on said arm and arranged to control the fuel supply to said plant; a first pair of pressure-responsive means positioned to apply a first pair of opposed forces on said arm, one of said first means being responsive to a pressure signal dependent upon turbine speed and the other of said first means being responsive to a fluid pressure signal representing a datum speed; a second pair of pressure-responsive means arranged to apply a second pair of opposed forces on said arm, one of said second means being responsive to a direct feedback pressure derived from the fuel being controlled and the other of said second means being responsive to a delayed feed-back pressure; means defining a chamber; a restricted inlet to said chamber from a fuel supply line; a restricted outlet from said chamber; a first pressure-responsive device, responsive to the internal pressure in said chamber and constituting said delayed feedback means; a second pressure-responsive device, positioned remotely from said first device and responsive to the internal pressure in said chamber; resilient means acting on said second device in opposition to said internal pressure, and a further pressure-responsive device applying an external pressure signal on said second device, the latter thereby being operable to vary the internal pressure in said chamber, as a result of the combined effect of the fluid pressures and the resilient means acting on said second pressure-responsive device, said external pressure signal being a function of the difference between said turbine speed and datum speed pressure signals applied respectively to said first pair of pressure-responsive means.

3,274,774
RECIPROCATING PISTON ROTATING CYLINDER BLOCK ROTARY ENGINE

Nick A. Leone, Lohrville, Wis., assignor of ten percent each to Albert C. Fell, Ann A. Fell, James F. Murray, and Betty J. Murray, Milwaukee, Wis.

Filed Sept. 11, 1964, Ser. No. 395,778
9 Claims. (Cl. 60—39.34)

1. A rotary cylinder reciprocating piston engine comprising a casing defining a generally cylindrical cavity, a rotor journaled in said cavity and substantially filling the latter, said rotor including a generally circular base disk and a cylindrical axially projecting outer peripheral wall projecting laterally of one side of said disk, said peripheral wall being snugly received in said cavity and having a plurality of circumferentially spaced openings formed therein, a plurality of cylinder members secured to said one side of said disk at points spaced circumferentially thereabout and extending generally along chords thereof with one set of corresponding open ends of said cylinder members defining ports sealed relative to the portions of said peripheral wall defining said openings, a piston reciprocable in each of said cylinder members, means operatively connected between said pistons and said cylinder members yieldingly urging said pistons toward said one set of ends and limiting movement of said pistons toward the other set of corresponding ends of said cylinder members, coacting means carried by said pistons and said casing operable to intermittently and



sequentially move said pistons toward the other set of corresponding ends of said cylinder members and release said pistons for returning toward said one set of ends upon rotation of said rotor in said casing, air and fuel inlet means in said casing opening generally radially of said cavity at a point with which said ports are sequentially registered when said coacting means are moving the corresponding pistons toward said other set of ends, exhaust port means in said casing opening generally radially of said cavity at a point spaced circumferentially of said fuel inlet means and with which said ports are also sequentially registerable, and fuel ignition means communicated with said cavity at a point spaced circumferentially thereof between said inlet and exhaust port means and with which said ports are further registerable after their registery with said inlet means and before their registery with said exhaust port means in the direction of rotation of said rotor relative to said casing.

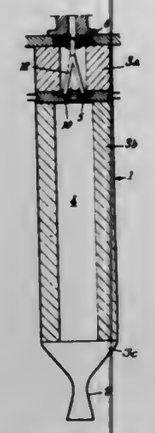
3,274,775
HOT GAS GENERATORS AND IN PARTICULAR ROCKET MOTORS

Pierre Berton, Boulogne-sur-Seine, France, assignor to Office National d'Etudes et de Recherches Aerospatiales, called O.N.E.R.A., Chatillon-sous-Bagneux, Seine, France, a society of France

Filed July 15, 1963, Ser. No. 294,831
Claims priority, application France, July 18, 1962, 904,385
19 Claims. (Cl. 60—39.47)

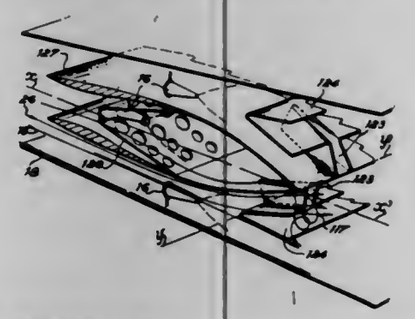
1. A hot gas generator wherein energy is supplied by the reaction with each other of two components, to wit a fluid one and a solid one, respectively, which generator comprises, in combination, a casing, said solid component being disposed in said casing to form therein a reaction chamber for the flow of fluids therethrough, a first injector device for introducing said fluid component into said chamber, means in said chamber downstream

of said injector device forming an obstacle across the longitudinal path of travel of fluids through said chamber



to produce turbulency in the flow of said fluids and a second injector device opening into said chamber and carried by said obstacle.

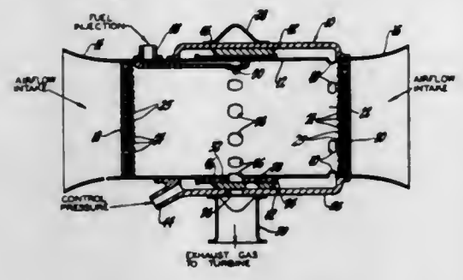
3,274,776
COMBUSTION CHAMBERS OF REACTION PROPULSION UNITS
Maurice Ravel, Morsang-sur-Orge, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France
Filed Jan. 26, 1965, Ser. No. 428,181
Claims priority, application France, July 6, 1964, 980,889
2 Claims. (Cl. 60—39.74)



1. In a propulsion reactor,
a combustion chamber having a pair of highly divergent walls with curved planar interior portions between which a flow of air passes,
a pilot flame stabilizing device within said combustion chamber having a pair of curved planar surface portions opening toward the flow of air passing through said combustion chamber,
at least one burner within said stabilizing device,
at least one additional burner located between said stabilizing device and at least one interior wall of said combustion chamber,
conduit means projecting through said planar surface of said stabilizing device and communicating with said additional burner, and
fuel injector means for feeding carburized fuel to said burners.

3,274,777
WAVE ENGINE GASIFIER
Roy S. Cataldo, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,006
14 Claims. (Cl. 60—39.77)

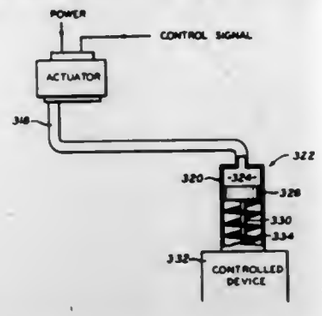
1. An internal combustion wave engine gasifier comprising:
a duct having at least one side wall and a pair of end walls defining a chamber, said chamber having a central portion approximately equidistant from said end walls and adapted to receive a charge of air,
fuel supplying means to deliver a charge of fuel to said chamber central portion for combustion with said air charge, whereby a pair of oppositely directed pressure waves of substantially equal intensity are caused to move outwardly from said central portion, striking said end walls and being at least partially reflected back toward said central portion, said pressure waves being followed by a pair of expansion waves,
exhaust means in said side wall and connecting with said chamber central portion, said exhaust means being openable to permit said reflected pressure waves to force the combustion gases from said central portion and deliver a fresh air charge thereto and said exhaust means being closable to retain said fresh air charge in said central portion and permit said reflected pressure waves to precompress said fresh air charge prior to delivery of an additional charge of fuel for combustion in said central portion, and
fresh air inlet means in each of said end walls and being openable to permit said expansion waves to draw fresh air into said chamber ends for movement to said chamber central portion during a subsequent cycle.



13. A wave engine gasifier comprising:
a cylindrical duct having a peripheral wall and a pair of end walls enclosing a chamber,
a plurality of pressure actuated one-way inlet flapper valves in each of said end walls and adapted to admit air to the ends of said chamber whenever the pressure in said chamber adjacent said flapper valves is substantially below ambient,
a plurality of exhaust opening means annularly spaced around said peripheral wall intermediate said end walls and equidistant therefrom,
an axially reciprocable annular exhaust valve surrounding said valve opening means to control the passage of exhaust products therefrom and
fuel injection means including a fuel spray nozzle, in said chamber equidistant from said end walls and adapted to supply fuel to said chamber at substantially the moment of peak compression caused by shock waves meeting at the center of said chamber whereby to cause detonative combustion of said fuel and start a pair of oppositely directed compression shock waves toward said end walls.

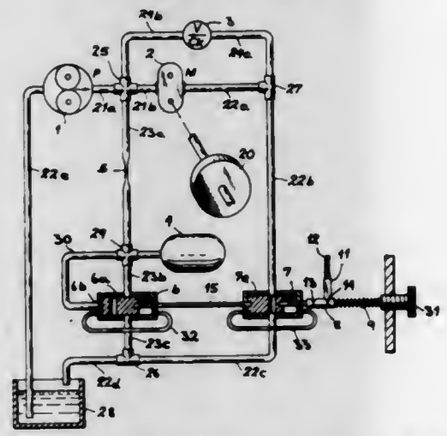
3,274,778
ACTUATOR WITH HIGH FLUID PRESSURE
Joseph M. Tyrner, M.R. 17, Morristown, N.J.
Filed Mar. 10, 1965, Ser. No. 438,556
17 Claims. (Cl. 60—52)

1. An actuator including a body enveloping an internal chamber which corresponds generally to the outer surface of the body in the two dimensions of that surface and which includes walls closely spaced in the dimension perpendicular to said outer surface, said chamber being filled with an electrically-conductive liquid, barrier means in the chamber extending in the narrow dimension and dividing the chamber into a multiplicity of communicating subchambers, an electric circuit for establishing a magnetic flux traversing the chamber in the direction of the narrow spacing and for establishing a current flow through the liquid in a direction transverse of the magnetic flux, and other means including a second electric circuit



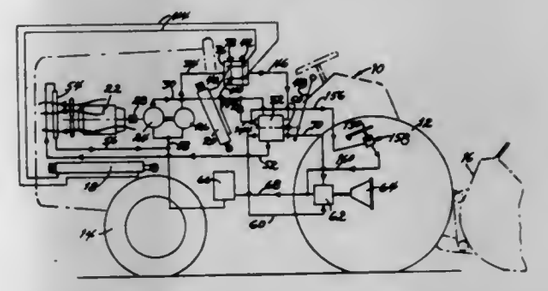
and a flux device on the body and controlled by the second electric circuit whereby to vary the flux established by the first electric means in accordance with control signals imparted to said other means.

3,274,779
FLOW REGULATOR FOR FLUID SYSTEMS
Hans-Christof Klein, Hattersheim, Germany, assignor to Alfred Teves Kommanditgesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 17, 1964, Ser. No. 419,030
Claims priority, application Germany, Dec. 18, 1963, T 25,285
8 Claims. (Cl. 60—53)



1. In a propulsion system for the displacement of a driven unit by a source of fluid under pressure, said system including first conduit means extending from a discharge port of said source to an inlet side of said unit and second conduit means extending from an outlet side of said unit to an intake port of said source, the combination therewith of third conduit means connecting said first conduit means with said second conduit means; throttle meas in said third conduit means; first valve means in said third conduit means between said throttle means and said second conduit means; second valve means in said second conduit means between said outlet side of said unit and a junction of said second and third conduit means, said second valve means being ganged with said first valve means for joint oscillation between a first position and a second position, said second conduit means being unblocked by said second valve means in said first position only for operation of said unit by fluid from said source, said third conduit means being unblocked by said first valve means in said second position only for bypassing fluid from said discharge port to said intake port; accumulator means for fluid under pressure connected to said third conduit means at a location between said throttle means and said first valve means; biasing means coupled with said first and second valve means for tending to maintain same in said first position; and actuating means responsive to fluid pressure at said location for urging said first and second valve means into said second position against the force of said biasing means upon said pressure reaching a predetermined maximum whereby said second valve means blocks said second conduit means ahead of said junction and said accumulator means discharges through said junction until the pressure at said location drops to a predetermined minimum allowing said biasing means to restore said first and second valve means to said first position.

3,274,780
CONTROL SYSTEM FOR HYDRAULIC DRIVE VEHICLES
Karl Salna, Mundelein, and Thorvald G. Granryd, Libertyville, Ill., assignors to International Harvester Company, a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,742
4 Claims. (Cl. 60—53)

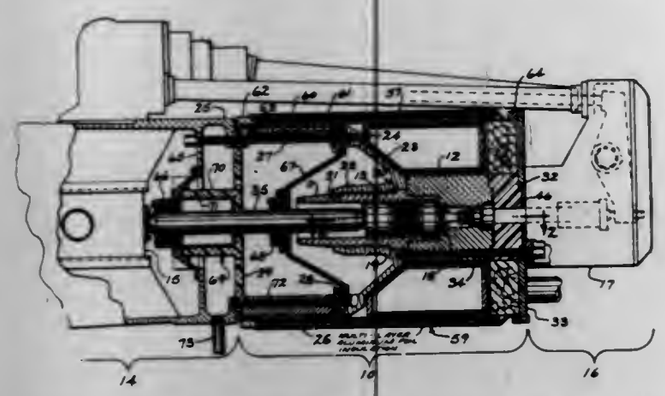


1. In a vehicle supported by traction wheels, the combination including: a source of fluid under pressure; at least one hydraulic motor in driving connection with a traction wheel; a conduit connected with the source of fluid under pressure; selector valve means to selectively interconnect the conduit with the hydraulic motor; relief valve means to vent fluid from the conduit including a port in the conduit, a valve movable to a first position closing the port and to a plurality of other positions opening the port responsive to fluid pressure in the conduit, and spring means to urge the valve to the first position with a predetermined force; other means connected to the relief valve means to vary the predetermined force including a fluid chamber, control fluid under pressure in the chamber, and a piston having two ends, one of the ends connected with the spring means urging the valve and the other end slidable in the chamber between first and second positions responsive to the pressure in the chamber, the spring means being effective in any position of the piston to vent fluid from the conduit; and additional means to selectively vary the fluid pressure in the chamber.

3,274,781
CRYOGENIC EXPANSION ENGINE
Willard A. Morain, Mount Vernon, John L. Ostborg, Springfield, and David White, Columbus, Ohio, assignors to The Cooper-Bessemer Corporation, Mount Vernon, Ohio, a corporation of Ohio
Filed June 17, 1963, Ser. No. 288,235
20 Claims. (Cl. 60—64)

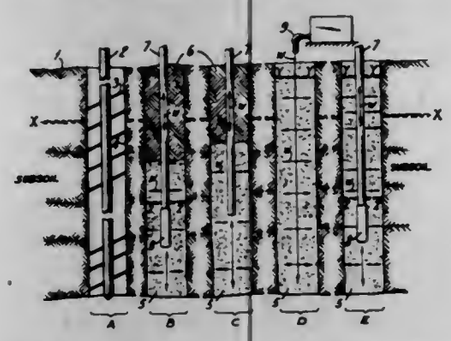
3. A cryogenic expansion engine comprising: a crankcase having a cross head therein mounted for reciprocatory movement of predetermined stroke, a cylinder housing having a cylinder chamber therein in line with said cross head, a piston in said cylinder chamber, a piston rod connecting said piston to said cross head, a partition closing off said crankcase and containing an oil seal which slidably receives said piston rod, said cylinder housing being spaced from said oil seal by a distance at least equal to said predetermined stroke, a heat insulating section positioned between said crankcase and said cylinder housing, a cylinder head on the end of said cylinder housing opposite

from said crankcase, a block of substantially non-compressible insulating material on the opposite side of said cylinder head from said cylinder housing, a valve rocker box positioned against the opposite side of said insulating material from said cylinder head, valve actuating means extending from said valve rocker box through



said insulating material into said cylinder head for regulating fluid flow into and out of said cylinder chamber, and whereby said cylinder housing and cylinder head are maintained at cryogenic temperatures while said crankcase and valve rocker box are maintained at approximately ambient temperatures.

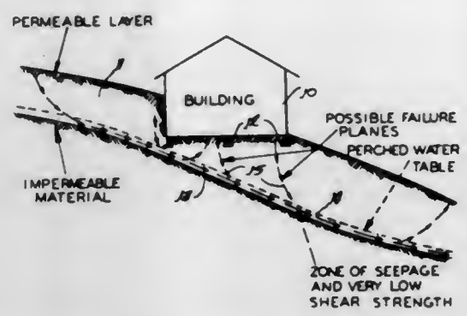
3,274,782
DEWATERING CLAYEY AND SILTY SOIL
Richard E. Landau, Middle Village, N.Y.
(717 Cornwell Ave., West Hempstead, N.Y. 11552)
Filed July 5, 1963, Ser. No. 293,163
6 Claims. (Cl. 61—11)



1. A method for locally controlling the fluid level in clayey or silty soils comprising
(1) forming a cavity in the soil by
(a) penetrating into the soil to the desired depth by helically cutting with a flight auger into the earth formation thereby to form a core of earth,
(b) removing the core from the soil by withdrawing the auger thereby to form a cavity,
(c) disposing a well-point at the desired depth in the cavity,
(2) actuating the well-point as a conduit for fluid flow,
(3) controlling the fluid flow in the well-point to control locally the fluid level in the soil.

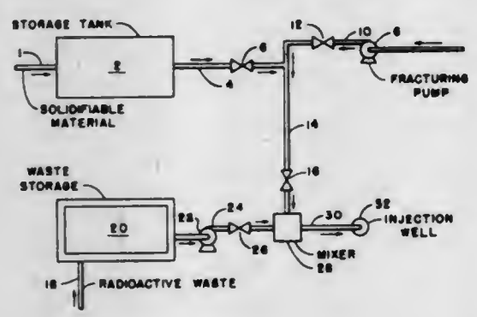
3,274,783
METHOD OF STOPPING LANDSLIDES AND SOIL SHEAR FAILURES
Richard L. Handy, Ames, Iowa, assignor to Soil Technical Associates, Inc., Des Moines, Iowa, a corporation of Iowa
Filed Jan. 10, 1964, Ser. No. 336,941
6 Claims. (Cl. 61—35)

1. In a method of stopping landslides and soil shear failures in soil above a laterally-extending, water-permeable sub-surface soil stratum which overlies a relatively water-impermeable stratum, said permeable soil stratum containing at least 10% by weight on a dry basis of montmorillonitic clay and being substantially saturated with water, thereby providing a perched water table which accentuates the tendency of said sub-surface soil stratum to form a shear zone, the sequence of steps comprising:
locating the position and thickness of said sub-surface soil stratum;



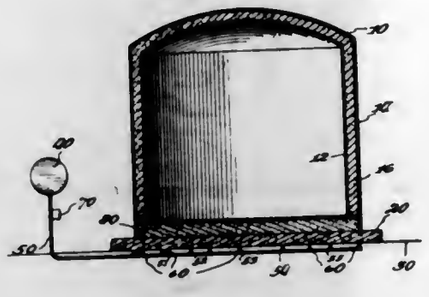
forming a series of vertically-extending, horizontally spaced-apart bore holes extending into said sub-surface soil stratum to approximately the depth of said water-impermeable stratum; and
filling said holes with lime at least up to the top of said perched water table-containing soil stratum, the quantity of lime thus deposited in the portions of said holes within said sub-surface soil stratum being from 0.3 to 9% by weight as calculated on a $Ca(OH)_2$ basis in relation to dry weight of the soil in the portion of said sub-surface soil stratum covered by said bore holes.

3,274,784
COMPOSITION AND METHOD FOR FIXING ATOMIC WASTE AND DISPOSAL
D'Arcy A. Shock, John D. Sudbury, and Preston L. Gant, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Feb. 24, 1961, Ser. No. 88,246
20 Claims. (Cl. 61—36)



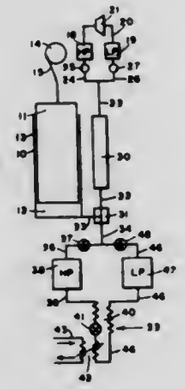
14. A method of subterranean disposal of radioactive waste which comprises providing a wellbore which penetrates an impermeable rock formation, fracturing the impermeable rock formatiton through the wellbore in a substantially horizontal direction to provide at least one fracture therein at a depth sufficient to provide shielding at the surface from the most energetic fraction of radioactive waste to be injected thereinto, said fracture being confined within said impermeable rock formation, injecting a solidifiable material containing radioactive waste into a fracture so formed in said impermeable rock formation and thereafter injecting additional solidifiable material free of radioactive waste to seal the radioactive waste in said impermeable rock formation.

3,274,785
APPARATUS FOR PREVENTING ICE AND FROST FORMATION UNDER LOW TEMPERATURE TANKS
Kenneth W. Lange, Hinsdale, Ill., assignor to Chicago Bridge & Iron Company, Hinsdale, Ill., a corporation of Illinois
Filed June 19, 1963, Ser. No. 289,063
2 Claims. (Cl. 61—36)



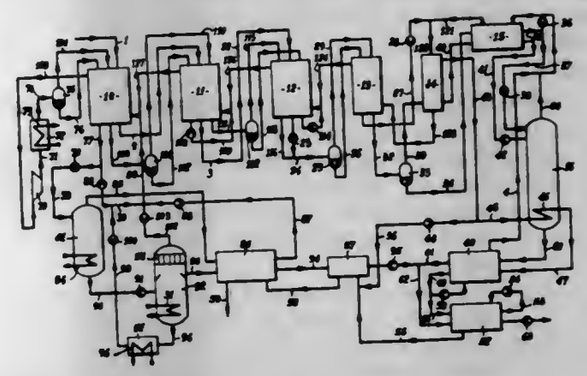
1. Apparatus for the prevention of frost and ice formation below a storage tank comprising:
a plurality of conduits arranged in the ground surface below said tank;
means for generating a substantially dry gas;
a plurality of nozzles secured to said conduits through which said dry gas is emitted; and
means for introducing said dry gas into said conduits and maintaining the pressure of said dry gas below said tank at a level above the ambient atmospheric pressure.

3,274,786
CRYOGENIC REFRIGERATION METHOD AND APPARATUS OPERATING ON AN EXPANSIBLE FLUID
Walter H. Hogan, Wayland, and Robert W. Stuart, Wakefield, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed July 27, 1964, Ser. No. 385,436
33 Claims. (Cl. 62—6)



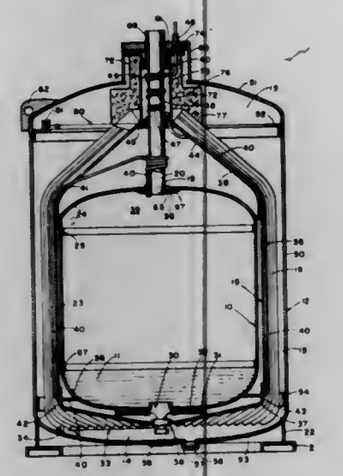
1. A cryogenic refrigeration apparatus in which a movable member defines within an enclosure at least one chamber of variable volume and in which a high-pressure expansible fluid is introduced through a fluid flow path, incorporating at least one heat storage means, into said chamber and is subsequently expanded and then discharged through said fluid flow path to a low-pressure reservoir, characterized by having a Joule-Thomson loop associated with said chamber, said Joule-Thomson loop comprising
(a) a high-pressure ballast in fluid communication with said fluid chamber and adapted periodically to receive cold high-pressure fluid from said chamber,
(b) an expansion valve adapted to expand to further cool said high-pressure fluid delivered thereto from said high-pressure ballast at an essentially constant rate,
(c) a heat exchanger adapted to effect out-of-contact heat exchange between said cold high-pressure fluid entering said expansion valve and the expanded and further cooled fluid resulting from passage through said expansion valve; and
(d) means for returning said expanded and further cooled fluid in heat exchange relationship with said heat storage means to said low-pressure reservoir over at least that period of time corresponding to that part of each refrigeration cycle when said fluid is being expanded and discharged to said low-pressure reservoir.

3,274,787
METHOD FOR COOLING A GASEOUS MIXTURE TO A LOW TEMPERATURE
Maurice Grenier, Paris, and Pierre Petit, Chatenay Malabry, France, assignors to L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed Sept. 2, 1965, Ser. No. 484,541
Claims priority, application France, Sept. 18, 1964, 988,679, Patent 86,485
7 Claims. (Cl. 62—23)



1. In a method for cooling a gaseous mixture to low temperature and producing at least one constituent of this mixture in liquid phase, comprising subjecting a first gaseous mixture to a fractionate condensation in a plurality of heat-exchange stages with at least one of the condensed fractions being expanded to a first pressure and vaporized in heat exchange with said first gaseous mixture undergoing fractionate condensation, expanding to a second pressure said at least one constituent after its condensation and withdrawing said expanded constituent as product, said first pressure being substantially higher than said second pressure, thereafter recompressing said at least one fraction to a third pressure substantially higher than said first pressure, and recombining said recompressed fraction with said first gaseous mixture; the improvement comprising progressively cooling a second gaseous mixture in a plurality of heat-exchange stages with said first mixture, said second mixture having the same main components as said first mixture, and maintaining said first gaseous mixture with said second gaseous mixture separate at least until they are under conditions of temperature and pressure such that said constituent to be produced in liquid phase is at least mostly condensed within said second gaseous mixture and said at least one condensed fraction has been withdrawn from said first gaseous mixture for expansion and vaporization.

3,274,788
CRYOGENIC LIQUID STORAGE VESSEL
Thomas E. Hoffman, Marblehead, Walter H. Hogan, Wayland, Robert M. Lucas, Melrose, and Raymond W. Moore, Jr., Brookline, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed June 14, 1965, Ser. No. 463,792
15 Claims. (Cl. 62—45)



1. In a cryogenic liquid storage vessel formed of an inner vessel having a neck section, an outer vessel and an evacuated space therebetween in which is located radiation shield means, a lateral support system formed of

(a) a bottom lateral support comprising in combination

(1) a vertically disposed stud affixed to the bottom of said inner vessel and having depending therefrom at least three equally spaced extensions forming curved contacting inner vessel lands,

(2) a sheath surrounding the bottom portion of said stud, affixed to said radiation shield and having on its internal walls at least three curved and equally spaced contacting lands in the same plane as said inner vessel lands and alternating in position with said inner vessel lands,

(3) a spacer body of low thermal conductivity positioned to contact the surface of said lands, whereby said inner vessel and said radiation shield are maintained in relative alignment, and

(4) at least three, low thermal conductivity bands equally spaced connecting said sheath and the internal wall of said outer vessel; and

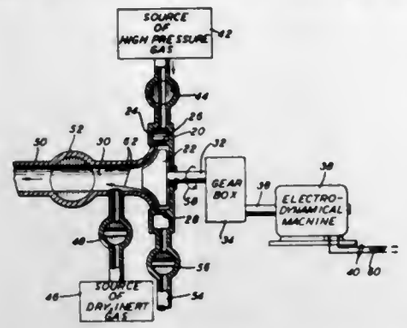
(b) a top lateral support, comprising in combination

(1) connector means joining said radiation shield means with said neck section of said inner vessel, and

(2) at least three, low thermal conductivity bands equally spaced connecting said connector means and the internal wall of said outer vessel.

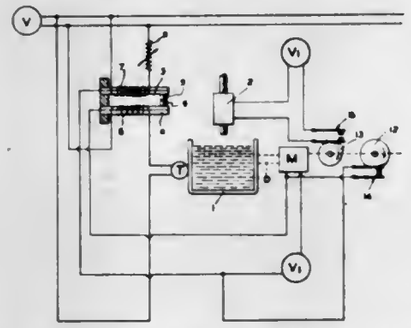
3,274,789
PROCESS FOR REMOVING CONGEALED IMPURITIES FROM A GAS EXPANDER
Harold C. Mitchell, Glen Rock, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 26, 1965, Ser. No. 443,052
12 Claims. (Cl. 62—85)

3. The method of removing congealed matter from the interior of a gas engine operating normally as an expander, comprising the steps of operating the engine for a period of time as a compressor, and feeding a dry, inert gas through the engine to compress and warm the dry, inert gas, whereby the said dry, inert gas is enabled



to melt the said congealed matter, entrain the melted material, and vent the entrained melted matter along with the exhaust stream of the compressed dry, inert gas.

3,274,790
TEMPERATURE SENSING CONTROL MEANS FOR ICE MAKING DEVICES
Jack B. Meister, Morristown, and Raymond J. Staten, Budd Lake, N.J., assignors to Integrated Electronics Corporation, Wharton, N.J., a corporation of New Jersey
Filed June 9, 1965, Ser. No. 462,560
11 Claims. (Cl. 62—135)



1. In an ice making device having a receptacle in which water is cyclically frozen into ice and ejected therefrom, means operable to cause ejection of said ice from said receptacle, and means for controlling cyclic operation of said device in response to the temperature of said ice, said controlling means comprising:

first and second temperature responsive movable members;

electric circuit means for controlling operation of said ejection means, said electric circuit means including cooperable movable electrical contacts each of whose spatial position is controlled by a respective one of said movable members;

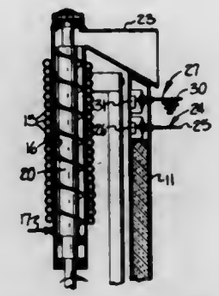
respective first and second heating means for and electrically isolated from said first and second movable members;

means for sensing the temperature of the ice in said receptacle and effective to control said first heating means to cause said first member to move to cause closure of said electrical contacts when the ice has reached a given temperature; operation of said ejection means being responsive to closure of each contacts.

3,274,791
CONTROL SYSTEM FOR ICE MACHINE
John H. Edmisten, 418 W. Main St., Boone, N.C.
Filed July 1, 1965, Ser. No. 468,895
6 Claims. (Cl. 62—137)

1. In an ice machine having a freezing surface, means for refrigerating the freezing surface for the formation of ice thereon, harvesting means mounted to engage ice upon relative movement between the same and the freezing surface for removing ice from the freezing surface in flake form, means for receiving and storing flake ice delivered from the harvesting means, and a control system effective to control the cycling of ice production in response to the quantity of ice in said storage means to produce ice as needed to replenish the quantity stored; the combination therewith of means for delaying the initiation of a cycle of ice production comprising:

ice receiving means disposed in the path of delivery of flake ice from the harvesting means to the storage

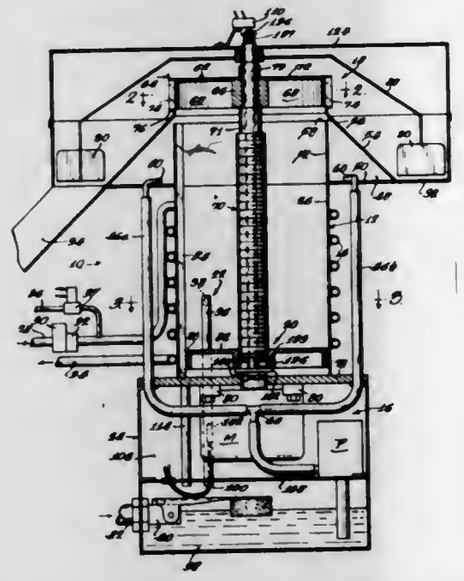


means for receiving and retaining a portion of the ice produced during a cycle of ice production until such retained ice is melted, and

means responsive to retention of ice by said receiving means and operatively connected to the control system for precluding the initiation of a cycle of ice production during retention of ice by said receiving means and for permitting the initiation of a cycle of ice production upon the melting of retained ice,

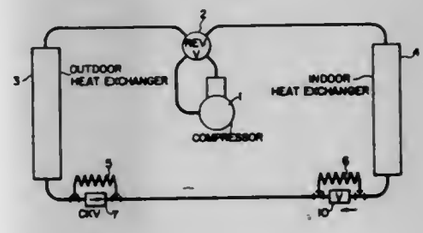
whereby damage to the ice machine which would otherwise result from initiation of a cycle of ice production during an over-iced condition of the freezing surface is avoided.

3,274,792
ICEMAKER WITH PISTON-TYPE ICE REMOVER
Albert G. Weil, Walter A. Zeuschner, and Kenneth W. Zeuschner, all of Chicago, Ill., assignors to Remcor Products Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 16, 1965, Ser. No. 487,710
11 Claims. (Cl. 62—138)



2. In an icemaker: a freezing plate defining an upwardly open freezing chamber adapted to have an ice slab formed on the inner surface thereof; means for flowing water downwardly over the inner surface of said freezing chamber; means for supplying refrigerant to said freezing plate to form ice thereon; ice breaker means including a crusher rotatably mounted at the upper end of said chamber; means for moving formed ice into the path of said crusher including lift plate means mounted within said chamber for movement from adjacent the lower end of said chamber to adjacent said crusher; common drive means for conjointly rotating said crusher and moving said lift plate means; and means responsive to formation of a slab of ice on said freezing plate for stopping the supply of refrigerant and starting operation of said drive means.

3,274,793
HEAT PUMP DEFROST SYSTEM
Richard M. Anderson and Robert A. Essig, Elyria, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 5, 1965, Ser. No. 445,370
3 Claims. (Cl. 62—151)

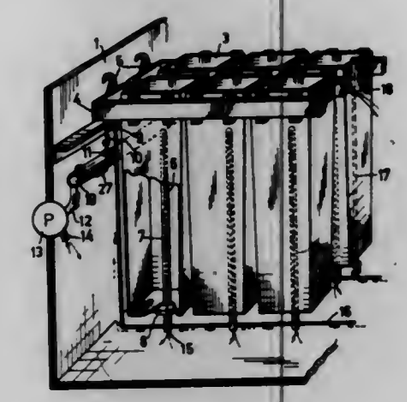


1. A heat pump system comprising, an indoor heat exchanger, an outdoor heat exchanger, means for restricting the flow of refrigerant between said exchangers, and a differential pressure responsive bypass check valve connected in parallel with said restriction means and having means adapted to have an open position together with a partly closed position and a fully closed position to be responsive to the flow of refrigerant between said exchangers in a direction to cool said outdoor heat exchanger to move said check valve to the open position and responsive to the flow of refrigerant under relatively low pressure between said exchanger in a direction to heat said outdoor exchanger to move said check valve to the partly closed position thereby partially bypassing said restriction to accelerate the loading and heating of said outdoor heat exchanger for defrosting purposes and to be responsive to the flow of refrigerant under relatively high pressure between said exchangers in the direction to heat said outdoor heat exchanger to thereby move said check valve to the fully closed position for continued operation and heating of said outdoor heat exchanger.

3,274,794
APPARATUS FOR PRODUCING ICE BLOCKS IN MOLDS
Eugen Wilbushewich, Rotelstrasse 61, Zurich, Switzerland
Filed June 22, 1965, Ser. No. 465,841
Claims priority, application Great Britain, Dec. 12, 1964, 50,699/64
11 Claims. (Cl. 62—349)

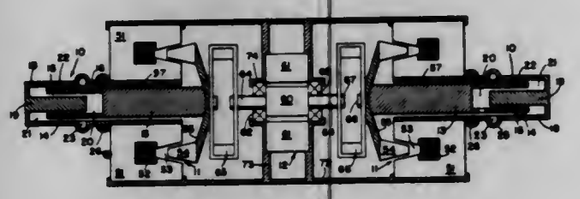
1. Apparatus for producing ice blocks in molds comprising a tank containing cooled brine, a battery of rows of ice molds in said tank, each mold having a base and a vertical axis, and each mold being arranged to be supported in said tank immersed in the brine, an internal finger associated with each mold and closed at an upper end and having a lower end in communication with the brine, the finger extending upwardly from the base of

each mold, a brine supply tube, a conduit connected to the lower ends of said fingers in each row of molds, a common brine pump connected to the brine supply tube, disconnectable coupling means connecting each of said conduits to the brine supply tube, each coupling means comprising a socket part in communication with said supply tube, and a tubular spigot part on the conduit



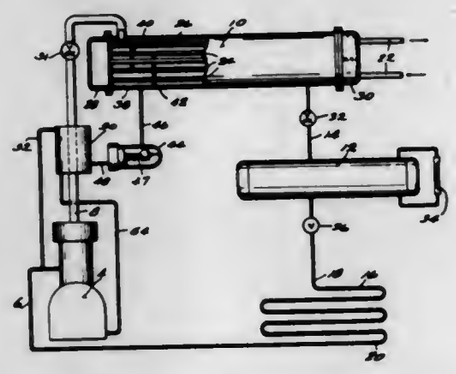
adapted removably to fit into said socket part, said socket part incorporating a spring loaded valve member adapted to close said socket part when a mold is removed from the tank for harvesting, and valve means in circuit with said conduits for selectively sucking off, and forcing into, said fingers, air cooled brine, and thawing water during successive air extraction, freezing and harvesting operations.

3,274,795
FLUID OPERATING APPARATUS
Arthur A. Fowle, Winchester, Theodore P. Heuchling, Concord, Allen Latham, Jr., Jamaica Plain, Charles A. Schulte, Lexington, and Richard E. Kronauer, Harvard, Mass., assignors to Arthur D. Little Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 30, 1964, Ser. No. 363,740
27 Claims. (Cl. 62—403)



1. A rotating, linearly reciprocating fluid handling apparatus, comprising in combination
(a) a stationary fluid-tight enclosure;
(b) a piston having rotating fluid ports associated therewith and being capable of being reciprocated within said stationary enclosure to define therein a fluid chamber of variable volume;
(c) fluid inlet and outlet ports in said stationary enclosure;
(d) electromagnetic linear actuating means directly affixed to said piston and adapted to impart linear reciprocating motion to said piston and to interact with the pressure forces of said fluid in said fluid chamber;
(e) an elastic member connected to said linear actuating means and adapted to provide said piston and said linear actuating means those acceleration forces required for reciprocating said piston which are not provided by fluid in said fluid chamber and said linear actuating means and further to provide whatever average force is required to counterbalance any average difference between the forces delivered by said linear actuating means and those absorbed from said fluid; and
(f) rotary actuating means adapted to rotate said rotating fluid ports relative to said fluid inlet and outlet ports, said linear and said rotary actuating means being synchronized whereby the reciprocating motion of said piston and the relative rotary motion of said rotating ports control the flow of fluid in and out of said fluid chamber.

3,274,796
REFRIGERATION SYSTEM WITH LUBE OIL SEPARATION MEANS
Erich J. Kocher and Joseph N. Long, both of Milwaukee, Wis., assignors to Vilter Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 23, 1965, Ser. No. 489,611
4 Claims. (Cl. 62—473)

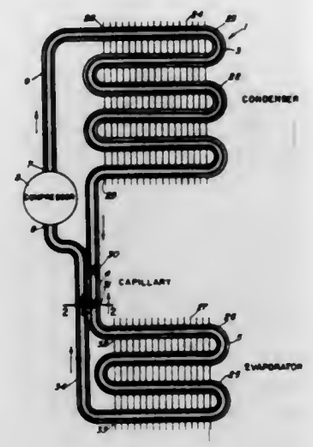


1. In a refrigeration system including an oil lubricated compressor having a hot gas discharge conduit communicating with a condenser, means associated with the inlet to the condenser in communication with the hot gas discharge conduit for initially separating oil from the refrigerant employed in the system, an extraction chamber surrounding a closed portion of said hot gas discharge conduit between the compressor and said initial oil separating means, whereby said discharge conduit provides a heating element for said extraction chamber, and a conduit communicating between said initial oil separating means and said chamber for conducting the initially separated oil having residue refrigerant therein to said chamber, whereby said heating element provides heat for extracting residue refrigerant from the oil, said chamber also having a conduit communicating therewith for discharging refrigerant therefrom and a separate conduit communicating therewith for discharging oil therefrom.

3,274,797
HEAT EXCHANGER INCLUDING A CAPILLARY TUBE SECTION
Richard W. Kritzer, Chicago, Ill., assignor to Peerless of America, Incorporated, Chicago, Ill., a corporation of Illinois
Filed May 8, 1964, Ser. No. 365,905
12 Claims. (Cl. 62—511)

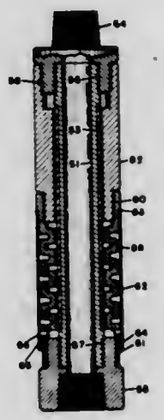
1. A heat exchanger element comprising
(a) a condenser section means,
(b) an evaporator section means, and
(c) a capillary tube section means,
(d) said first two mentioned means each including an elongated conduit having a plurality of adjacent passageways extending lengthwise thereof for simultaneously feeding refrigerant in the same direction through all of said passageways,

(e) said capillary tube section means being in fluid communication with said two first mentioned means and including an elongated conduit having a plurality of adjacent passageways extending lengthwise



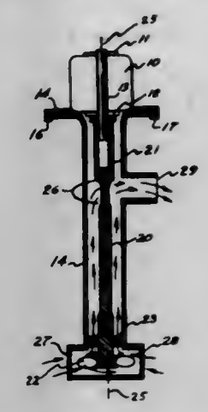
thereof and operatively connected to each other in position to feed said refrigerant alternately in said one direction and in the opposite direction through adjacent ones of said last-mentioned passageways.

3,274,798
VIBRATION ISOLATOR
John H. Wiggins, Jr., Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, a corporation of Delaware
Filed June 17, 1964, Ser. No. 375,861
7 Claims. (Cl. 64—1)



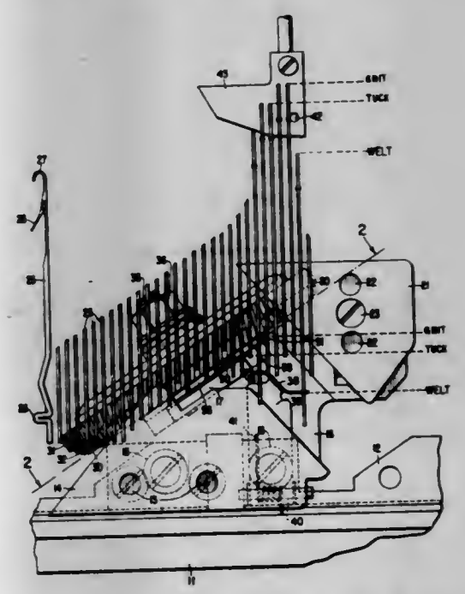
1. A vibration isolator for a rotary drilling column which comprises inner and outer substantially concentric tubular members, the inside diameter of said outer member being at least 10 percent and no more than 20 percent greater than the outside diameter of said inner member, said inner member having a Young's modulus no greater than 15×10^6 p.s.i. and a tensile strength of at least 50,000 p.s.i., said outer member including at least one bellows-like convolution to provide a longitudinal spring constant no more than fifty percent as great as the longitudinal spring constant of said inner member, bearing means within the annular space between said inner and outer members for preventing excessive friction wear, and coupling means at opposite ends of said tubular members for rigid connection in a rotary drill column.

3,274,799
DRIVE-SHAFT ARRANGEMENT FOR A FLUID CIRCULATING DEVICE
Eugene G. Danner, 9122 71st Road, Forest Hills, N.Y.
Filed Mar. 30, 1964, Ser. No. 355,547
3 Claims. (Cl. 64—4)



1. A fluid circulating device including; a tubular housing; a motor having a drive shaft mounted in one end of said housing;
bearing means secured adjacent the other end of said housing;
the axis of said drive shaft and bearing means subject to misalignment,
a substantially rigid shaft rotatably supported near one end by said bearing means and non-rotatably connected at the other end with said drive shaft,
said shaft having a portion of reduced dimension for forming a flexible section, the breadth of said section substantially equal to the diameter of said shaft, and the thickness of said section substantially less than said breadth.

3,274,800
PATTERN CONTROLLING MECHANISM FOR KNITTING MACHINES
Lester Mishcon, Miami Beach, Fla., and Alvin Agulnek, Brooklyn, N.Y., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 4, 1965, Ser. No. 423,182
9 Claims. (Cl. 66—50)



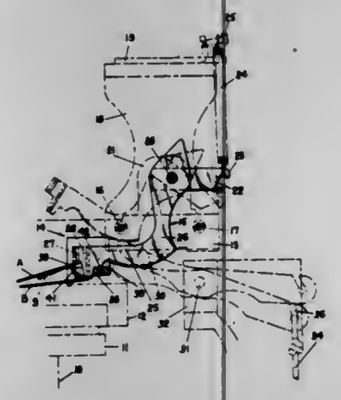
1. In a pattern wheel supporting section block for a circular knitting machine including a fork adapted to accommodate a bearing stud on which a pattern wheel is journaled, means for at will rendering the pattern wheel

ineffective comprising a retractable cam blade formed with a shank, said fork being formed with a slot extending substantially radially of said pattern wheel, means slidably constraining said cam blade shank in said slot for movement substantially radially of said pattern wheel and with said cam blade disposed beneath the level of said pattern wheel.

3,274,801
YARN FEEDING MEANS

Donat H. Fregeolle, Cumberland, R.I., assignor to The Banner Company, Central Falls, R.I., a corporation of Rhode Island

Filed May 28, 1964, Ser. No. 370,910
1 Claim. (Cl. 66—125)



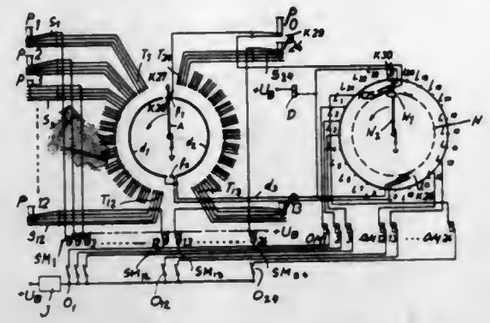
For a knitting machine having a needle cylinder and needles slidably mounted therein, a mouthpiece and a plurality of selectively movable yarn feed levers adapted to cooperate therewith to feed yarn to said needles, said mouthpiece having an inner vertical face with a vertically disposed slot extending partially therethrough, said mouthpiece further including a centrally disposed lever engaging horizontal surface extending from said inner vertical face to the outer edge of said mouthpiece and including a generally rectangular open central portion, yarn camming edges forming the inner side of said open central portion with said edges being sloped angularly downward, extending laterally from each side of, and inclined toward said vertically disposed slot, said yarn feed levers having means to feed two separate yarns when selectively moved to feeding position, said means including dual yarn guiding channels a first of which is adapted to project into said rectangular open central portion where its yarn is adapted to be guided by said yarn camming edges into the lower portion of said slot from which it is adapted to be fed to said needles, and the second being in advance of and vertically spaced from said first guiding channel is adapted to feed its yarn at the level of said horizontal surface.

3,274,802
THREAD SELECTOR APPARATUS

Richard Schmidt, Stuttgart-Vaihingen, and Hans Joachim Stock, Freiburg im Breisgau, Germany, assignors to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany

Filed Oct. 15, 1964, Ser. No. 404,116
Claims priority, application Germany, Oct. 16, 1963, M 58,568
19 Claims. (Cl. 66—138)

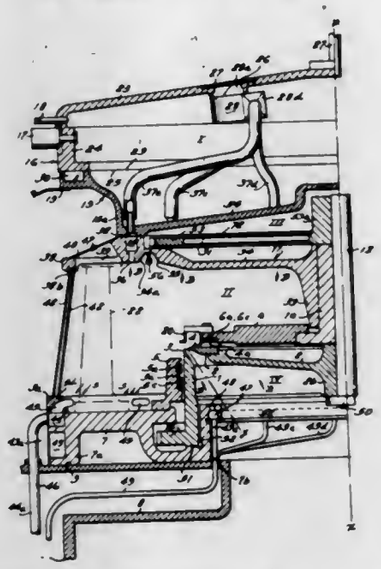
1. Thread selector apparatus for a knitting machine having a series of knitting stations, comprising, in combination, a series of selector magnets at said knitting stations, respectively; a series of operating magnets at said knitting stations, respectively; and a series of thread guide means at said knitting stations, respectively, each thread guide means including a plurality of thread guides for different threads, and being movable by the respective selector magnet between a plurality of positions in which different thread guides are operable by the respective operating magnet to place the thread thereof in a knitting position.



3,274,803
ENCLOSED CIRCULAR KNITTING MACHINE

Richard Schmidt, Stuttgart-Vaihingen, Germany, assignor to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany

Filed Sept. 11, 1964, Ser. No. 395,750
Claims priority, application Germany, Sept. 12, 1963, M 58,175
20 Claims. (Cl. 66—168)



1. A knitting machine comprising, in combination, supporting means; a pair of needle carrier means movably supported on said supporting means and having cooperating portions for performing knitting operations; and housing means for said needle carrier means carried by said supporting means and including at least one transparent wall located opposite said cooperating portions for observation of said portions and of knitting operations.

3,274,804
FOOTLET TYPE SOCK AND METHOD

James L. Thorneburg, Lewis L. Thorneburg, and James D. Keever, all of Statesville, N.C., assignors to Thorneburg Hosiery Mills, Inc., Statesville, N.C., a corporation of North Carolina

Filed May 22, 1964, Ser. No. 369,438
15 Claims. (Cl. 66—171)

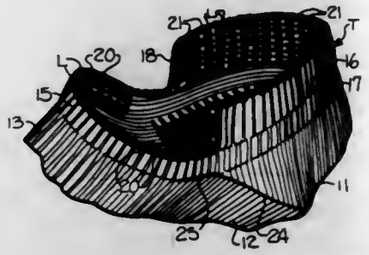
1. A knit footlet type sock adapted to be worn inside of a low-cut shoe and to be substantially covered thereby, said footlet sock comprising

(a) a foot portion including a toe portion, a heel embracing portion, and a seamless tubular portion connecting said toe and heel portions, the lower half of said seamless tubular portion defining a sole portion and the upper half defining an instep portion,

(b) an ankle portion comprising a few complete courses connected to said instep portion and said heel embracing portion and extending upwardly therefrom,

(c) a support tab connected at one end to the portion of the upper course of the ankle portion positioned above said heel embracing portion, said support tab comprising a plurality of partial courses, and

(d) a plurality of rounds of an elastic strand inlaid in the stitch loops of the portion of the upper course of

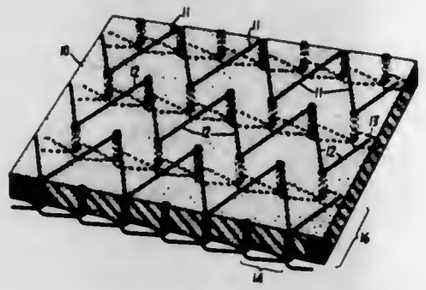


the ankle portion positioned above said instep portion, said rounds of elastic strand also being inlaid in the stitch loops of the terminal partial course of said support tab and forming an elastic selvage edge defining an opening in said footlet sock adapted to receive the foot of the wearer therethrough, sad elastic selvage edge serving to roll said support tab down upon itself and over the upper edge of the heel portion of the shoe to prevent the rear portion of the footlet from sliding downwardly into the shoe.

3,274,805
FABRIC AND METHOD

Daniel Duhl, New Hyde Park, N.Y., assignor to Indian Head Mills, Inc., New York, N.Y., a corporation of Massachusetts

Filed Aug. 9, 1963, Ser. No. 301,059
5 Claims. (Cl. 66—192)



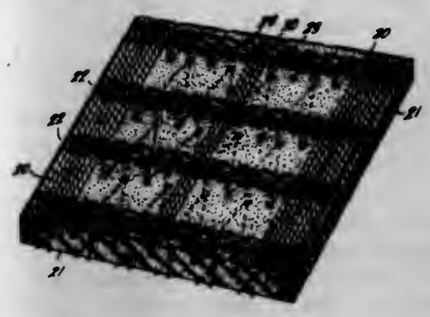
1. A fabric comprising an elastomeric foam sheet encased in a warp knitted fabric, the fabric comprising yarns which alternately form the loops of adjacent loop chains on one surface of the sheet, pierce the sheet, and form interconnected courses on the other surface of the sheet, the loops of the loop chains being moved up onto each other as a result of the knitting of the fabric through the foam sheet while the sheet is in a stretched condition.

3,274,806
FABRIC CONTAINING ELASTOMERIC FILLER AND METHOD

Daniel Duhl, New Hyde Park, N.Y., assignor to Indian Head Mills, Inc., New York, N.Y., a corporation of Massachusetts

Filed Apr. 20, 1964, Ser. No. 361,619
10 Claims. (Cl. 66—192)

1. A fabric having a limited stretch in at least a longitudinal direction comprising an elastomeric foam sheet, a facing for at least one surface thereof and an extension-limiting yarn system, the yarn system being comprised of warp knitted stitches formed into parallel courses of threads which alternately form the loops of adjacent courses of loop chains on one surface of the fabric, which pierce the facing and sheet, and which then form courses on the other surface of the sheet to secure the facing to

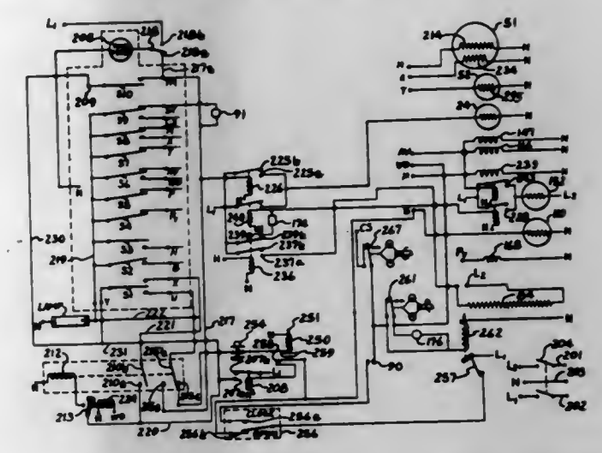


the sheet, the courses of loop chains being oriented in the longitudinal direction.

3,274,807
DRY CLEANING MACHINE

Clifford F. Czech, Ripon, Wis., assignor to McGraw-Edison Company, Ripon, Wis., a corporation of Delaware

Original application July 31, 1963, Ser. No. 298,899. Divided and this application June 30, 1965, Ser. No. 482,003
3 Claims. (Cl. 68—12)



2. In a clothes washing machine of the type using organic washing fluids having a rotatable clothes basket, drive means for basket rotation, safety control means comprising, in combination, a timer means for sequentially controlling said machine through a sequence of washing operations, including rotation of said clothes basket by said drive means for predetermined periods of time, power switch means for energizing and deenergizing said machine, including a switch adapted to be manually reset to a closed position and a solenoid adapted to open said switch upon energization of said solenoid, a normally closed switch means operable for energizing said solenoid and including a mechanical connection for opening said normally closed switch means upon rotation of said clothes basket by said drive means, said timer energizing said normally closed switch means for a selected time interval in said predetermined periods of time to energize said switch solenoid and deenergize said machine upon failure of basket rotation during said selected time interval.

3,274,808
BASKET FOR AUTOMATIC WASHING MACHINE

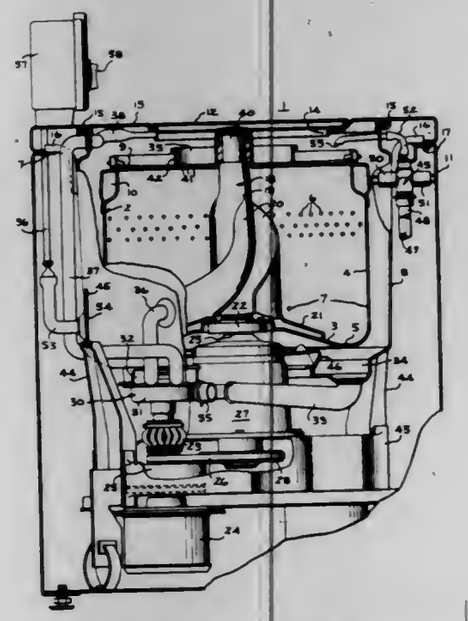
Everett D. Morey, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Sept. 28, 1964, Ser. No. 399,524
3 Claims. (Cl. 68—23)

1. A fabric washing machine including:

(a) an imperforate tub to receive liquid,

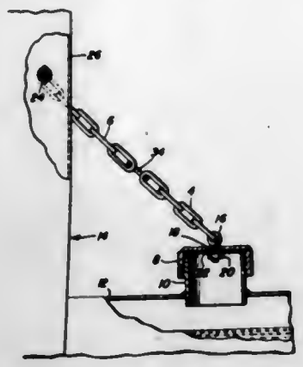
(b) a basket rotatably mounted within said tub to receive fabrics to be washed in the liquid,
(c) liquid supply means adapted to fill said basket and said tub with liquid to a predetermined normal level,
(d) flexing means to cause relative motion between the liquid and the fabrics for washing the fabrics,
(e) drive means connected to said basket for rotating said basket to centrifugally extract liquid from the fabrics at the end of the washing operation, and
(f) pump means connected to said tub and effective to remove liquid from said tub and discharge it back into said basket at a first predetermined low rate of flow during the washing operation, said pump means being effective to remove liquid from said tub and



discharge it to drain at a second predetermined high rate of flow during centrifugal extraction,
(g) said basket having a first plurality of openings in the lower portion thereof of a total area sufficient only to pass said first predetermined rate of flow so that heavy soil removed from the fabrics is discharged from said basket during the washing operation,
(h) said basket having a second plurality of openings therein of a total area sufficient to pass said second predetermined rate of flow, said second plurality of openings being positioned near the normal level of liquid in said tub and said basket for removing liquid from said basket during centrifugal extraction.

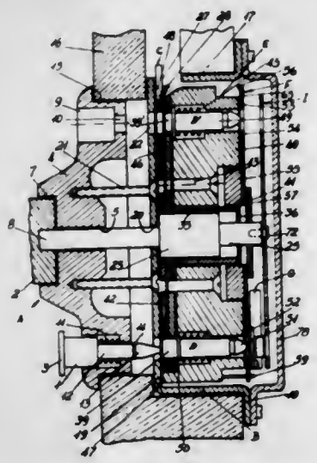
3,274,809
FUEL TANK CAP LOCK
Lawrence S. Kozlowski, Kawkawlin, Mich., assignor of twenty-five percent each to Edward Skipstead, Victor De Rosier, and Martin B. Legatz
Filed Sept. 1, 1964, Ser. No. 393,679
2 Claims. (Cl. 70—163)

1. In combination with a vehicle of the type including a fuel tank having one wall thereof provided with a fill opening, a filler neck secured to said one wall about said opening and projecting outwardly of said one wall, a closure cap removably threadedly secured on the outer end of and closing said filler neck, a link chain assembly having one end anchored to said cap against rotation relative thereto, said vehicle including a portion spaced outwardly of said one wall of said tank, the other end of said link chain assembly being secured to said vehicle portion against rotation relative thereto with said link chain assembly extending away from said one wall toward said vehicle portion in a reasonably taut condition, said link chain assembly including a pair of opposite end link chain sections, and lockable fastener means remov-



ably securing adjacent ends of said sections together against more than limited rotation relative to each other.

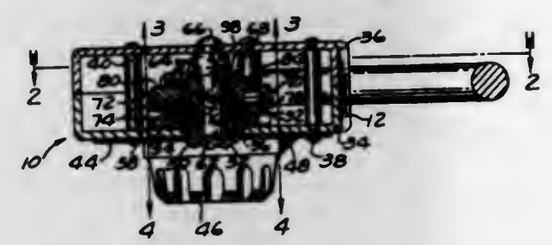
3,274,810
PUZZLE LOCK
Felix Pedro Traversa and Armando Marcos Traversa, both of Boedo 769, Buenos Aires, Argentina
Filed May 5, 1964, Ser. No. 365,006
11 Claims. (Cl. 70—288)



1. A lock for use in combination with a separate door latch, said lock comprising a control disc formed with a plurality of openings therethrough, said control disc being mounted on the inside of a door turnably about a turning axis and being operatively connected to said door latch; turning means having an operating portion at the outside of the door and being spaced from said operating portion connected to said control disc for turning the latter between a first position in which said latch connected thereto is in a locking position and a second position in which said latch is in an unlocked position; a plurality of co-operator members mounted on the inside of said door movable between a locking position in which end portions of said cooperator members are respectively located in said openings of said control disc so as to prevent turning of the latter, and a releasing position; biasing means operatively connected to said cooperator members and biased to yieldably maintain the latter in said locking position; a first plurality of movable operating members having operating portions outside of the door and being respectively coordinated with said cooperator members for moving, when respectively actuated, the co-operator member respectively coordinated therewith from said locking to said releasing position; a plurality of locking means respectively cooperating with said co-operator members for holding the latter in said releasing position; a second plurality of movable operating members having operating portions outside said door; and restoring means cooperating with and actuated by any of said second plurality of

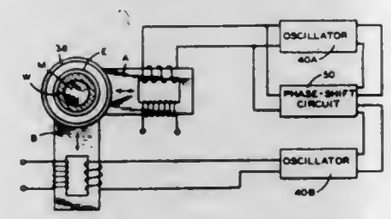
operating members for disengaging said locking means from said cooperator members so that the latter will return to said locking position, whereby said control disc may be turned to move said latch to said unlocked position only when all of said first plurality of operating members and none of said second plurality of operating members are actuated.

3,274,811
COMBINATION LOCK APPARATUS AND SLIP COUPLING THEREFOR
Paul J. Ethington, 1418 Washington Blvd., Birmingham, Mich.
Filed Sept. 26, 1963, Ser. No. 311,860
9 Claims. (Cl. 70—301)



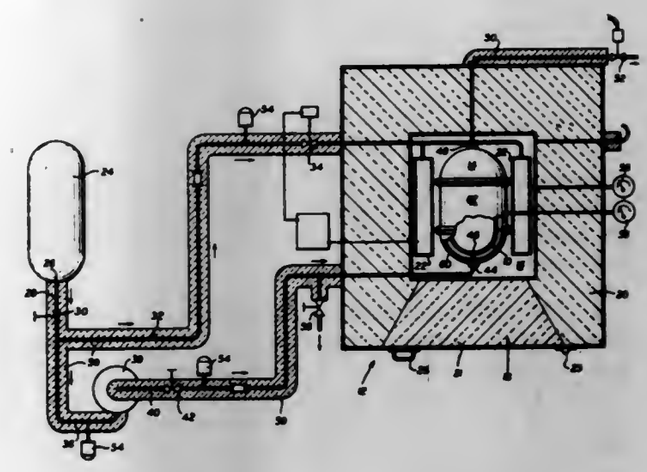
1. A slip coupling comprising a pair of combination lock code elements each of which is of a substantially disc shape having a pair of opposite faces and a code pin projecting from one of said faces, said code elements being arranged in face-to-face engagement so that the pins thereon project in opposite directions therefrom, and a support and retainer element arranged in a supporting relation with said code elements for rotatable movement therewith as a unit, said code elements being supported on said retainer element so that the code elements are rotatable with respect to each other in response to the application of forces to the pins thereon directed so that oppositely directed torques are applied to said code elements.

3,274,812
METHOD AND APPARATUS FOR VIBRATORY SQUEEZE-FORMING OF METALS
Sidley O. Evans, Beaver Falls, Pa., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed July 1, 1964, Ser. No. 379,497
10 Claims. (Cl. 72—60)



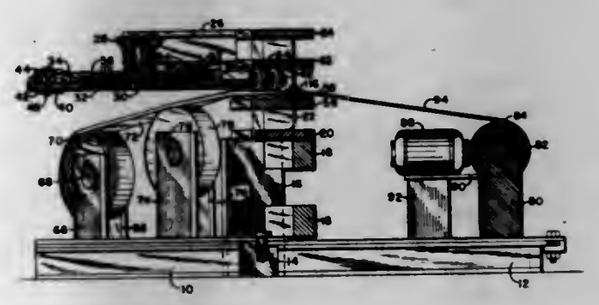
1. A process for squeeze-forming metals which includes forcing a substantially solid state metal member through a die opening by applying axial pressure to said member to perform work thereon whereby a reduction in the cross-section of said member is effected, simultaneously applying transverse vibratory energy to said member from a plurality of vibrating devices which are angularly disposed with respect to each other, and maintaining said vibrating devices out of time phase with each other so as to impart an orbicular vibrational movement to said member.

3,274,813
GENERALIZED STRETCH FORMING
Benjamin J. Aleck, Jackson Heights, N.Y., assignor to Arde-Portland, Inc., South Portland, Maine, a corporation of Maine
Original application Mar. 28, 1962, Ser. No. 183,149, now Patent No. 3,197,851, dated Aug. 3, 1965. Divided and this application July 8, 1965, Ser. No. 470,367
2 Claims. (Cl. 72—62)



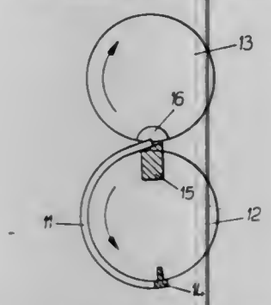
1. Apparatus for forming high tensile strength pressure vessels, comprising a die adapted to receive a vessel blank and having at least a portion of the interior of the size and shape of said vessel, said die having two openings therein, a container, refrigerant in said container, a pump having an inlet and an outlet, a first conduit connecting said container of refrigerant to said pump inlet, a second conduit extending from said pump outlet through one of said openings in said die and adapted to be connected in communication with the interior of said vessel blank for supplying said refrigerant under pressure to the interior thereof to cool and stretch said vessel blank to substantially conform to the interior of said die, and third conduit means for venting the space between said die and said vessel blank.

3,274,814
ROLLING MILL
Elmer D. Dilling, Las Vegas, Nev., assignor to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,808
13 Claims. (Cl. 72—74)



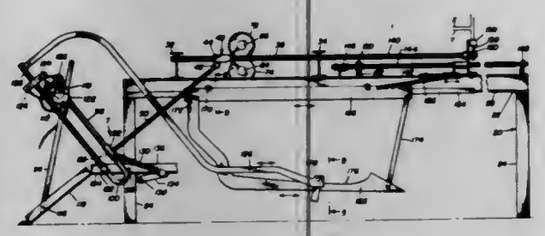
1. A method for reducing the thickness and increasing the width and length of a metal strip which comprises; passing said metal strip over a platen and working said strip to reduce its thickness by pressing against said platen with a thin edge working roller which is moved in successive, adjacent paths diagonally across said strip at an angle to the transverse axis thereof.

3,274,815
METHOD AND APPARATUS FOR MAKING ANTI-FRICTION BEARINGS WITH LOCKING CAMS
Erich Roemer, Kapellenstrasse 60, Wiesbaden 62, Germany
Filed Jan. 25, 1965, Ser. No. 427,782
Claims priority, application Germany, Feb. 1, 1964, G 39,759
7 Claims. (Cl. 72—152)



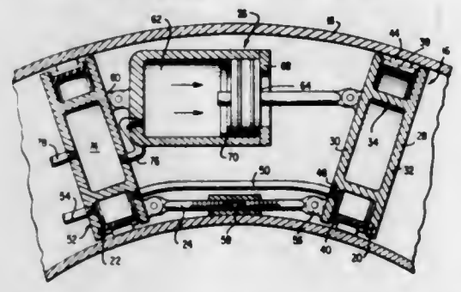
1. The method of making an antifriction bearing with an outwardly displaced segment in its wall at the parting line, consisting in passing the blank between pressure rolls which apply pressures to opposite sides of the blank, incising the wall of the blank at the parting line thereof with at least one knife and displacing outward the incised wall portion into a recess in one of said pressure rolls.

3,274,816
MACHINE FOR TAPERING TUBING
Richard Anthony Held, Rte. 1, Box 90–B3, Ramona, Calif.
Filed Sept. 20, 1963, Ser. No. 310,417
4 Claims. (Cl. 72—189)



1. A machine for changing a uniform outside diameter stock such as a rod or tubing to stock having a taper on the outer surface, said machine comprising in combination:
(A) a frame forming
(1) an elongated guide;
(B) a carriage guided by and movable longitudinally of the guide;
(C) die means carried by the carriage, said die means forming swaging surfaces which, in conjunction, are circular in cross section, which decrease in width constantly for tapering stock, said die means including:
(1) a pair of rollers, each roller having on the periphery thereof, a swaging surface arranged allochirally, said surfaces being semicircular and gradually decreasing in depth radially, said surfaces of the rollers confronting one another when oscillatory movements are imparted to the rollers;
(D) means for reciprocating the carriage along the guide and for simultaneously effecting oscillatory movements in opposite directions to the rollers;
(E) movable means for progressively feeding stock longitudinally thereof between the swaging surfaces of the rollers;
(F) means synchronized with and movable with the movement of the movable stock feeding means and forming a template;
(G) and means governed by the movement of the template for varying the degree of oscillating movements imparted to the roller by varying the length of reciprocating movements imparted to the means (D) for reciprocating the carriage.

3,274,817
INTERNAL PIPE BENDER
James H. Anderson, 1615 Hillock Lane, York, Pa.
Filed Apr. 15, 1964, Ser. No. 359,902
19 Claims. (Cl. 72—298)

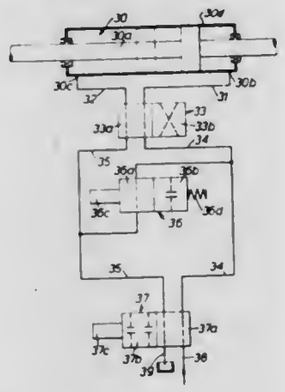


1. An apparatus for bending a tubular structure comprising gripping members positioned within a tubular structure in axially spaced relation to one another, means to actuate said gripping members to engage said tubular structure, a second means interposed between and connecting said gripping members, said second means being operative to effect angular displacement between said gripping members or stretching a portion of the wall of said tubular structure to effect a bend therein.

3,274,818
APPARATUS FOR FORMING ARTICLES
Henry G. Henrickson, Oakland, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,170
9 Claims. (Cl. 72—336)

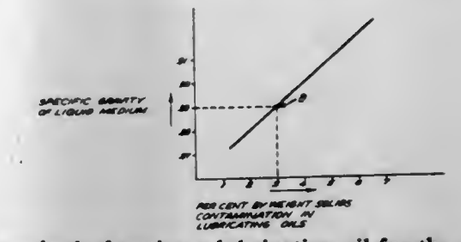
1. A die apparatus for forming cup-shaped articles comprising a stationary die assembly and a movable die assembly reciprocable toward and away from said stationary die assembly; said stationary die assembly including a reversible trimming ring having identical upper and lower article lip-forming surfaces and trimming edges; a mandrel mounted upon a surface of said trimming ring; said mandrel further comprising an article wall-forming portion located in spaced relationship to said trimming ring and an article bottom-forming surface which merges with said article wall-forming portion; means removably securing said mandrel and said trimming ring in said stationary die assembly; a first draw ring surrounding said mandrel; means biasing said first draw ring toward said movable die assembly; a blank-cutting member having a blank-cutting edge surrounding said first draw ring; said movable die assembly including a sleeve-like member provided with article wall and bottom-forming means which are cooperatively associated with the wall and bottom-forming portions of said mandrel and a second draw ring member surrounding said article wall and bottom-forming means of said sleeve-like member and aligned with said first draw ring member; said second draw ring member having an outer blank-cutting edge adapted to cooperate with the blank-cutting edge of said blank-cutting member during the initial movement of said movable die assembly and an inner trimming edge; means biasing said wall and bottom-forming means toward said stationary die assembly and relative to said second draw ring; said wall and bottom-forming means of said sleeve-like member being of such length that when biased by said biasing means the lowermost edge thereof will be in substantially the same plane as said inner trimming edge of said second draw ring whereby upon the bottoming of said movable die assembly with respect to said stationary die assembly the said inner trimming edge of said second draw ring member will move past the lowermost edge of said sleeve-like member and a trimming edge of said reversible trimming ring so as to trim the lip of said cup-shaped article.

3,274,819
FORGING PRESSES
Keith Knowles, Sheffield, England, assignor to The British Iron and Steel Research Association
Filed Apr. 4, 1963, Ser. No. 270,705
Claims priority, application Great Britain, Apr. 4, 1962, 12,840/62
4 Claims. (Cl. 72—421)



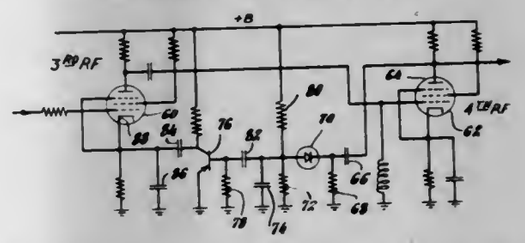
1. A workpiece manipulator for a forging press, comprising a carriage (**9, 10**), carriage drive means (**22–23**) for continuously driving said carriage during a forging pass, a peel (**12**) mounted on said carriage, and peel drive means (**30–39**) for driving said peel longitudinally relative to said carriage, said peel drive means comprising a double-acting piston-and-cylinder assembly (**30**) one element (**30***a*) of which is connected to said peel and the other of which is connected to said carriage and comprising valve means (**33, 36, 37**) operable in a first state in which fluid supplied to both ends of the cylinder for equal and opposite drive forces on the piston whereby said piston effectively floats within said cylinder to permit, during a squeeze, relative movement of said peel and said carriage from a datum position, and operable in a second state in which fluid is supplied to one end of the cylinder and is exhausted from the other end thereof to return, between squeezes, said peel and said carriage to said datum position.

3,274,820
TEST FOR ENGINE OIL CONTAMINATION
Julius M. Komarmy, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,356
3 Claims. (Cl. 73—61)



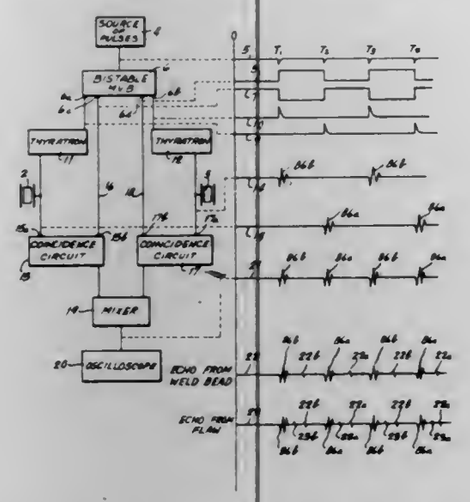
1. A method of testing a lubricating oil for the presence of solids contamination in excess of a predetermined degree of contamination which warrants replacement of said oil, said method comprising the steps of placing a droplet of the contaminated lubricating oil to be tested into a liquid medium, said liquid medium being substantially immiscible with said oil and having a specific gravity such that said droplet will float in said liquid medium when the degree of solids contamination of said lubricating oil is not greater than said predetermined degree of contamination, but said droplet will sink in said liquid medium when the solids contamination content of said droplet exceeds said predetermined degree of contamination, the sinking of said droplet in said liquid medium indicating that said oil is sufficiently contaminated to warrant replacement, and observing the capacity of said oil to sink in said liquid medium.

3,274,821
ULTRASONIC TESTING APPARATUS HAVING IMPROVED RESOLUTION
Frederick Gordon Weighart, Brookfield, Conn., assignor to Automation Industries, Incorporated, El Segundo, Calif., a corporation of California
Filed Oct. 24, 1962, Ser. No. 232,766
2 Claims. (Cl. 73—67.8)



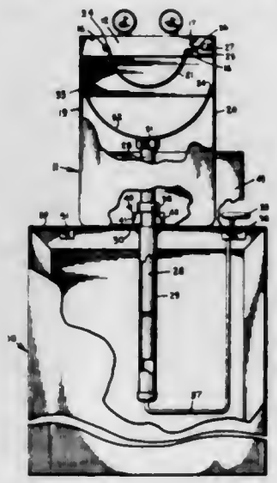
2. An ultrasonic inspection system of a class described for ultrasonically inspecting a workpiece, said system including the combination of
transducer means for transmitting pulses of ultrasonic energy through an entrant surface and into the workpiece, said transducer means being effective to produce echo signals in excess of a predetermined level from said entrant surface and to produce echo signals corresponding to echoes reflected from discontinuities in said workpiece, said echoes from said discontinuities being less than said level,
an amplifier having an input and output, said input being coupled to the transducer means, said amplifier being effective to amplify the echo signals and provide an amplified signal on said output, said amplifier means tending to ring when the signal is in the region of said level,
feedback means coupled from the output back to the input, said feedback means including amplitude responsive means and being effective to decrease the gain of said amplifier whenever the echo signals are in the region of said predetermined level.

3,274,822
APPARATUS FOR ULTRASONIC TESTING
Andrew Stanya, South Euclid, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed Feb. 19, 1963, Ser. No. 259,595
2 Claims. (Cl. 73—67.9)



1. Apparatus for ultrasonic echo testing of a body having a rib on a surface thereof, comprising:
(a) a first transducer in operative relation with the body on one side of the rib for directing a pulsed beam of ultrasonic waves through the body toward the rib and for receiving reflected pulses from discontinuities in the body or from the opposite side of the rib;
(b) a second transducer aligned with said first transducer in operative relation with the body on the opposite side of the rib for directing a second pulsed beam of ultrasonic waves through the body toward the rib from said opposite side and for receiving reflected pulses from discontinuities in the body or from said one side of the rib;
(c) indicating means responsive to pulses received at said transducers;
(d) means for alternately energizing the transducers at separated intervals, comprising:
(1) a bistable circuit having a pair of complementary pulse output terminals such that pulses are generated alternately at the terminals;
(2) two drivers, one for each of the transducers; and
(3) two connections from said pair of complementary pulse output terminals to said drivers, so that the transducers are alternately energized by the drivers at separated intervals determined by the spacing of the pulses generated by the bistable circuit;
(e) blocking means effective upon the energization of each transducer and until the energization of the other transducer to prevent response of the said indicating means to pulses received at the other transducer, comprising:
(1) a pair of complementary square wave output terminals forming a part of said bistable circuit and generating alternate square wave signals in synchronism with said alternate pulses generated by said bistable circuit; and
(2) two coincidence circuits each having two inputs and an output, one input of each coincidence circuit being connected to one of the two transducers, and the other input of each coincidence circuit being connected to one of the square wave output terminals of the bistable circuit, so that upon energization of one transducer the transmission of pulses from the coincidence circuit connected to the other transducer is blocked until energization of said other transducer.

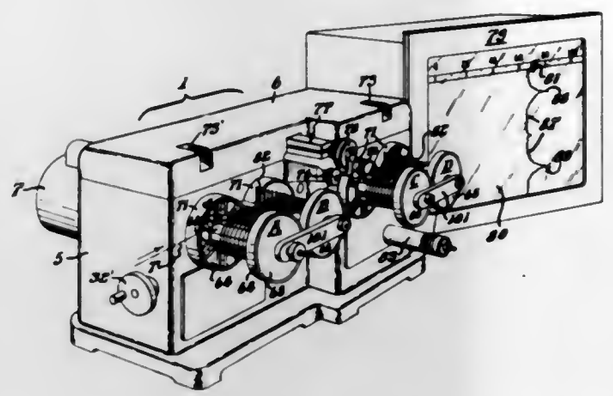
3,274,823
COMPRESSION TEST GAGE FOR JOURNAL BOX LUBRICATING PADS
Thomas W. Potter, Chicago, Ill., assignor to Journal Box Servicing Corporation, Indianapolis, Ind., a corporation of Indiana
Filed May 7, 1964, Ser. No. 365,771
8 Claims. (Cl. 73—94)



1. A device for gaging uniform length resiliency of a journal lubricating pad to be carried in a journal box, comprising
a simulated journal side having separate end to end arcuate surfaces normally in alignment to form an overall surface matching that of the journal side simulated;
means carrying said sections to be individually shiftable transversely of the axis of their curvature;
an arcuate pan having a curvature matching that of a journal box floor;
means shifting said pan toward and away from said sections;
stops limiting travel of said sections toward and away from said pan;
electric circuit means including a source of electrical energy;
a plurality of switches, one for each of said journal sections and actuated by a predetermined distance of travel of the sections in each of two directions;
a signal in said circuit means energized only when all of said switches are actuated by common travel of the sections in one direction as determined by a lubricating pad being held against all of those sections upon said pan being spaced a predetermined distance from the sections; and
a second signal in said circuit means energized when one or more of said switches are reversely actuated upon failure of one or more of those sections being shifted by said pad.

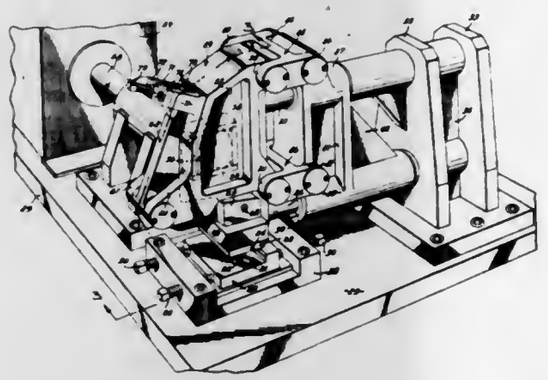
3,274,824
METHOD AND APPARATUS FOR TENSILE TESTING
Robert H. Lawson, Pawtucket, R.I., and John B. Lawson, Wilbraham, Mass., assignors to Lawson Engineering Co., Pawtucket, R.I., a corporation of Rhode Island
Filed May 21, 1964, Ser. No. 369,124
28 Claims. (Cl. 73—95.5)

1. In apparatus for testing strands of material, the combination comprising revolvable means for delivering a strand of material, revolvable take-up means coacting with said delivery means for stretching said strand and operable to take up said strand as it is delivered, the effective girth of at least one of said revolvable means being expansible and contractible, said delivery and take-up means being operative to prevent said strand from slipping under the influence of the stretching effort, means



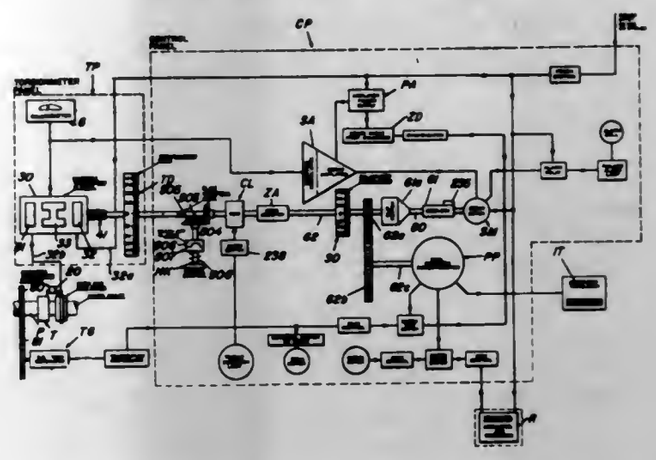
for varying the effective girth of said variable girth revolvable means so as to selectively vary the degree of stretch while the strand is being advanced from said delivery to said take-up means, and means for sensing and obtaining an indication of the effect of the stretching effort upon said strand.

3,274,825
APPARATUS FOR TESTING CONFIGURATED SIPES
John G. Wahlgren, Cuyahoga Falls, Ohio, assignor to Abex Corporation, a corporation of Delaware
Filed Feb. 4, 1964, Ser. No. 342,509
9 Claims. (Cl. 73—100)



1. Apparatus for testing sipes comprising,
a base for receiving the sipes to be tested,
means on said base for fixedly mounting a sipe,
a carriage mounted on said base for multi-directional movements in a plane normal to said base and transverse to the length of said sipe,
a head mounted on said carriage above said sipe mounting means,
a tire simulator mounted on said head with a mating portion for engagement with sipe,
and means for cyclically moving said carriage and head toward said sipe mounting means to apply said tire simulator to said sipe and thereafter moving said carriage transversely of said sipe.

3,274,826
DIRECT READING SHAFT HORSEPOWER METER SYSTEMS
Maxwell Ingram, 15 Hamilton Ave., Dumont, N.J.
Filed Sept. 28, 1962, Ser. No. 226,866
14 Claims. (Cl. 73—136)

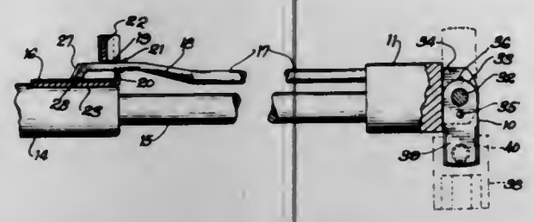


1. In a system for determining the horsepower output of a power rotated shaft, in combination, transducer means operatively connected with said power rotated shaft for developing a voltage directly related to torque in said shaft at any given instant during powered rotation thereof; a galvanometer electrically connected with said transducer means and receiving therefrom said voltage; electronic amplifier means, the input thereof being connected to the input terminals of said galvanometer for amplifying said voltage; a servo motor; a power circuit to said servo motor; said servo motor being electrically connected with and operatively controlled by said amplified voltage from said amplifier means; a driving connection between said servo motor and said transducer means for operation by said servo motor to restore said transducer means to a condition at which said galvanometer indicates a null; a tachometer generator coupled with and driven by said power rotated shaft for generating a D.C. voltage directly proportional to the rate of speed of rotation of said shaft; a potentiometer means including center tapped resistance and a contact member movable across said resistance; means operatively coupling said contact member with said servo motor for movement of said contact member from said center tap to a position of displacement on said resistance corresponding to the extent of operation of said servo motor; a circuit connecting said tachometer generator with said potentiometer for supplying said D.C. voltage directly proportional to the speed of rotation of said shaft to said potentiometer means; and said potentiometer means developing from said position of displacement of said movable contact member relating to torque and in combination with said D.C. voltage proportional to speed of rotation of said shaft, a single output voltage accurately reflecting the horsepower output of said power rotated shaft at any given instant during powered rotation thereof.

3,274,827
FORCE-TRANSMITTING MEASURING MECHANISM
Lee A. Sturtevant, Elmhurst, Ill.
(120 E. Lake St., Addison, Ill.)
Filed Oct. 4, 1963, Ser. No. 313,849
7 Claims. (Cl. 73—139)

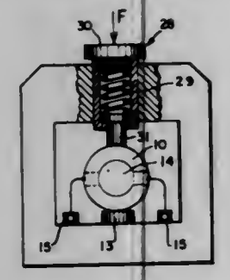
1. A force-transmitting mechanism comprising a force-applying member, a work-engaging member, a head member carrying said work-engaging member, a round torque measuring beam interposed between said force-applying member and said head, a pivotal mounting for said work-engaging member, said pivotal mounting being carried by said head, the pivotal mounting preventing distortion

of said measuring beam by forces or force components received by said force-applying member in any plane other than at right angles to the axis of said work-engaging



member said pivotal mounting including a pivotal axis transversely disposed to said torque measuring beam and at right angles to the axis of said work-engaging member.

3,274,828
FORCE SENSOR
Charles F. Pulvari, 2014 Taylor St. SE., Washington, D.C.
Filed Aug. 27, 1963, Ser. No. 304,852
11 Claims. (Cl. 73—141)



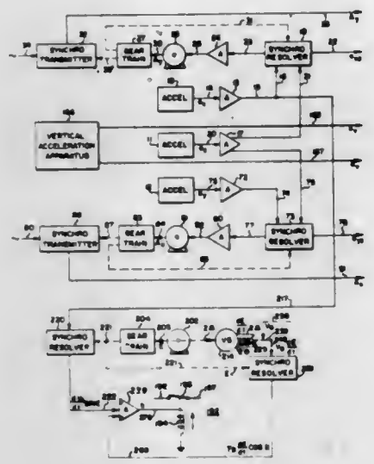
3. A force sensor comprising, in combination: oscillator means including at least one solid-state element in the form of a resonator having an eigen frequency which varies when a force is applied thereto; means connected to said oscillator means for detecting a change in frequency when a force is applied to the element, said oscillator means and said solid-state element being arranged so that the element oscillates in the shear mode, and means for transferring forces below a predetermined maximum to said element on a portion thereof where the propagation wave vector of oscillation for a given direction of propagation is at an insignificant value and in the direction of the neutral plane of shear vibration in which plane particle displacement reverses itself, whereby the frequency may be changed by the application of force without changing the Q of the resonator, said force transferring means including a force applying element in contact with said element, a force receiving element movable relatively toward and away from said force applying element, and a spring disposed between said force elements.

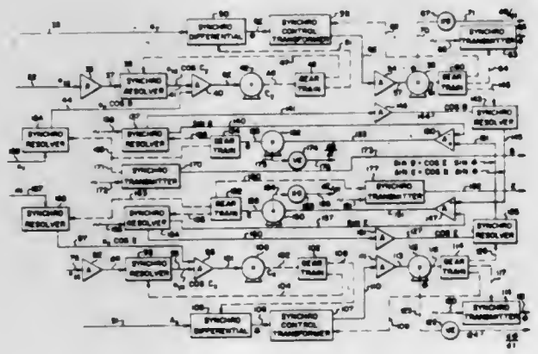
3,274,829
AIRCRAFT INSTRUMENT
Manuel Fernandez, Tampa, Fla., assignor to Honeywell Inc., a corporation of Delaware
Filed June 3, 1963, Ser. No. 291,594
4 Claims. (Cl. 73—178)

1. Vertical reference computing apparatus utilizing orthogonal axes located along the pitch, roll, and yaw axes of a dirigible craft, said apparatus comprising:

first measuring means responsive to the acceleration of the craft along the pitch, roll and yaw axes thereof for producing signals indicative of said acceleration;

second measuring means responsive to craft movement along the true vertical axis for producing a signal indicative of the acceleration of said craft along said vertical axis;



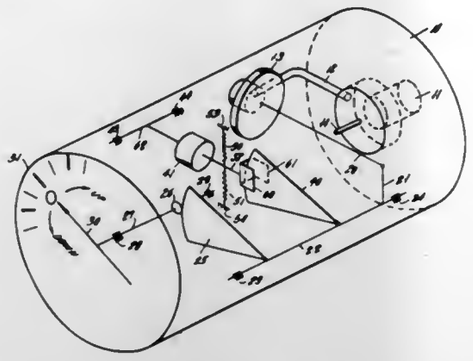


computing means responsive to said signals for providing a first set of angular indications determined by the position of the craft's coordinate axes and the earth cordinate axes with respect to a first line defined by the intersection of a plane containing the roll axis and the true vertical with a plane containing the pitch and yaw axes, and a second set of angular indications determined by the position of the craft's coordinate axes and the earth coordinate axes with respect to a second line defined by the intersection of a plane containing the pitch axis and the true vertical axis with a second plane containing the roll and yaw axes, and first and second set of angular indications defining the position of the coordinate system of the craft in relation to the earth coordinate system; and

means connecting said first measuring means and said second measuring means to said computing means.

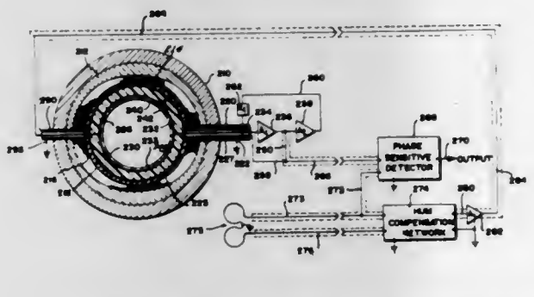
3,274,830
VERTICAL VELOCITY INDICATOR
Walter Angst, Douglaston, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Feb. 18, 1964, Ser. No. 345,672
4 Claims. (Cl. 73—179)

1. A vertical velocity indicator comprising, in combination, pressure-transducer means for measuring a change in static pressure, indicator means for indicating vertical velocity, linkage means for connecting said pressure transducer means to said indicator means, and compensation means operatively connected to said indicator means; said compensation means including means for measuring vertical acceleration and deceleration of said indicator; said compensator means including auxiliary linkage means connected to said indicator means for adjusting the indication of said indicator means in accordance with the lag of said pressure transducer; said auxiliary



linkage means including a first and second link connected through a film of viscous material.

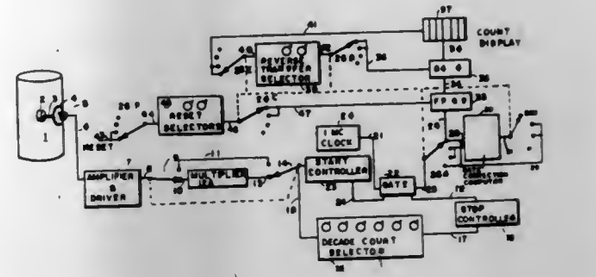
3,274,831
ELECTROMAGNETIC FLOWMETER
Vincent J. Cushing, 9804 Hillridge Drive, Kensington, Md.
Filed Apr. 14, 1965, Ser. No. 449,930
33 Claims. (Cl. 73—194)



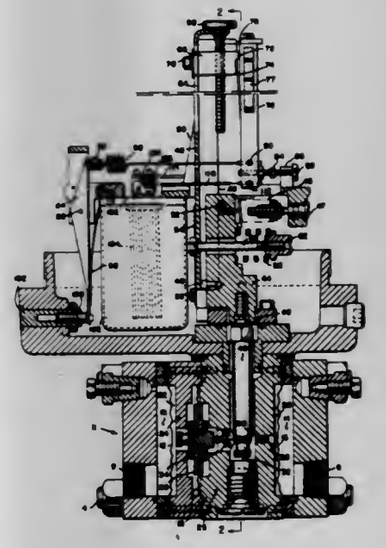
1. Magnetic flowmeter apparatus comprising a tubular means of dielectric material through which fluid is adapted to flow, means for producing an alternating magnetic field within said tubular means, detecting means adjacent said tubular means and within said magnetic field for detecting electrical signals in the fluid flowing through said tubular means, said detecting means including at least two separate detecting electrodes electrically insulated from one another, shield means disposed directly outwardly of at least one of said detecting electrodes with respect to the center of the adjacent tubular means, and an electrical network electrically connected with each of said electrodes and with said shield means whereby said electrodes and said shield means are electrically connected with one another.

3,274,832
DIGITAL TEMPERATURE MEASUREMENT AND DISPLAY SYSTEM
Sanborn Hamilton, Kane, Ill., assignor to Riverbank Laboratories, Geneva, Ill.
Filed Oct. 7, 1963, Ser. No. 316,484
18 Claims. (Cl. 73—339)

18. Apparatus for measuring temperature and direct digital display of temperature comprising a temperature sensitive transducer producing a fundamental frequency proportional to temperature, a frequency multiplier, fundamental frequency signal of said transducer connected to the input of said multiplier, an AND gate, a control circuit, the multiplied frequency signal output of said multiplier connected to input of said AND gate, said control circuit input connected with said transducer and responsive to the fundamental frequency signal output, said control circuit connected to said AND gate, and said AND gate responsive to signals from said control circuit and multiplier so that the gate output signal always is the multiple frequency and initially commences at the same point with respect to fundamental frequency phase and amplitude.



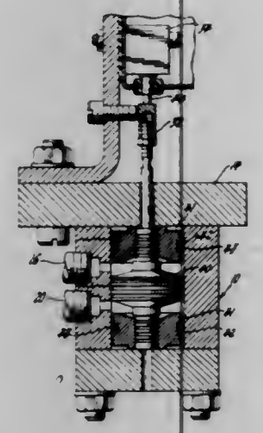
3,274,833
DIFFERENTIAL PRESSURE TRANSMITTERS
Louis A. Ollivier, Huntingdon Valley, and James B. Skitt, Jr., Chalfont, Pa., assignors to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed Apr. 23, 1963, Ser. No. 275,002
5 Claims. (Cl. 73—407)



1. Apparatus providing an output corresponding to differential pressure comprising a pair of flexible elements subject respectively to pressures the difference of which is to provide said output, means defining a pair of chambers between said flexible elements and including a third flexible element constituting a wall between said chambers, liquid within said chambers transmitting pressures exerted on said first mentioned flexible elements to opposite sides of the third flexible element, a lever having two portions one of which is within one of said chambers and the other of which is external thereto, means connecting said lever within the last mentioned chamber to the third flexible element for movement therewith, a flexible diaphragm element closing the last mentioned chamber and secured to said lever to provide a pivotal mounting therefor, the external portion of said lever being provided by two parts, a spring normally holding said two parts in fixed relationship to each other but yielding upon excessive movements of the portion of said lever within its chamber, means detecting the

position of said lever, means responsive to the detecting means to apply a force to said lever to maintain it in a predetermined position, and means providing an output corresponding to said force.

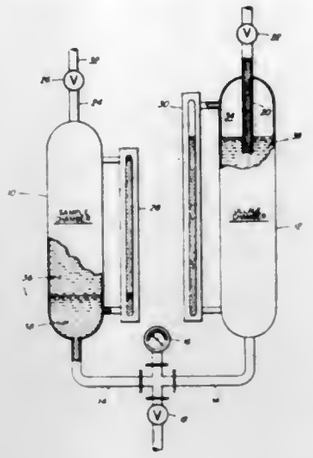
3,274,834
APPARATUS FOR FLUID PRESSURE MEASUREMENT
Ward F. Diehl, New Baltimore, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 325,111
1 Claim. (Cl. 73—419)



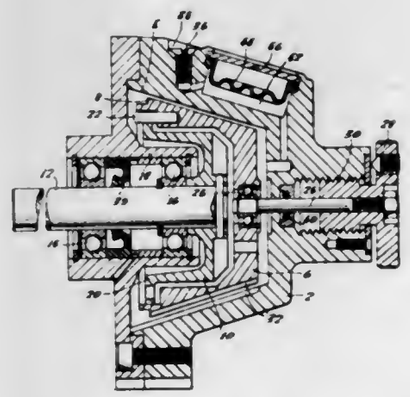
Apparatus for determining whether the pressure exerted by a quantity of hydraulic oil is within a predetermined range comprising: first and second sources of hydraulic oil under respective high and low pressures definitive of said range; first and second pressure comparators each including an enclosing member defining a chamber, a two-sided piston displaceably disposed within the chamber and including portions extending axially outwardly of the chamber in both directions, and stop means adjacent but spaced from said portions for limiting the axial displacement of the piston; means for admitting oil from the first and second sources to one side of the pistons of the first and second comparators respectively; means for admitting said quantity of oil to the other side of the pistons; first and second switch means; first and second actuating plungers disposed in direct axial connection between the first and second pistons and the first and second switch means, respectively, for communicating the position of the pistons to the switch means thereby to condition the switch means accordingly, circuit means connecting the switch means for indicating whether the pressure of said quantity of oil is within said range.

3,274,835
SAMPLE CHAMBER SYSTEM
Donald K. Mosher, Glassboro, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed Mar. 18, 1964, Ser. No. 352,840
3 Claims. (Cl. 73—422)

1. An apparatus for the containment of a volatile liquid sample, which prevents fractionation of said liquid sample upon its withdrawal therefrom, which apparatus comprises means defining two chambers, a substantially unobstructed conduit in communication with each of said chambers at the base thereof, one of said chambers being a sample chamber, the other of said chambers being an ullage chamber of an internal volume larger than that of said sample chamber, means to introduce and to remove a sample to and from said sample chamber, means to remove material from and to apply pressure to the top of said ullage chamber which includes an outage tube extending downwardly into said ullage chamber a sufficient distance to insure adequate ullage, and outlet means by which said apparatus may be evacuated.



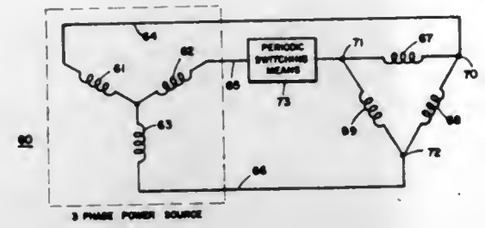
3,274,836
ROTARY DAMPERS
Alan Richard Brine Nash, 39 Abbot's Ride, Farnham, Surrey, England
Filed Oct. 1, 1963, Ser. No. 313,107
Claims priority, application Great Britain, Oct. 5, 1962, 37,684/62
10 Claims. (Cl. 74—574)



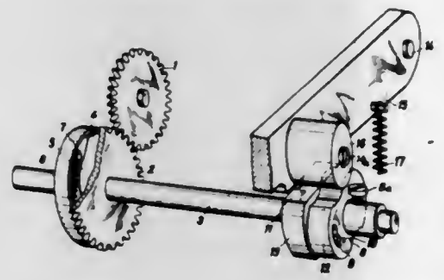
1. A continuous rotation fluid filled damper comprising, in combination, a rotor having a frusto-conical surface, a casing surrounding the rotor, and a support structure, said support structure being rotatably mounted within said casing and being journalled in said casing, said support structure relatively slidably engaging said rotor to maintain the frusto-conical rotor surface coaxial with the correspondingly shaped inner surface of the casing coacting with said rotor surface despite axial movement of the rotor with respect to said support structure, and an adjustable securing device coupled between the rotor and the casing to control the axial position of the rotor in the casing and therefore to control the spacing between said frusto-conical surface on said rotor and said correspondingly shaped inner surface of said casing.

3,274,837
CONTROL APPARATUS
Ralph V. Fenton, Indian Rocks, and William H. Isely, Clearwater, Fla., assignors to Honeywell Inc.
Filed June 1, 1962, Ser. No. 199,502
7 Claims. (Cl. 74—5.7)

1. An improvement in gyroscopic means comprising: a polyphase hysteresis spin motor; means for energizing said motor; means for periodically interrupting one phase of said motor; and means counteracting the effects on said gyroscopic means produced by periodically interrupting said one phase of said motor.



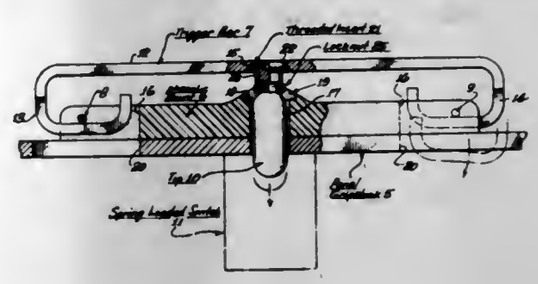
3,274,838
ARRANGEMENT FOR TRANSFORMING A ROTARY MOTION INTO A RECIPROCATING MOTION
Heinz Kelch, Villingen, Germany, assignor to Kienzle Apparate G.m.b.H., Villingen/Schwarzwald, Germany
Filed May 5, 1964, Ser. No. 364,943
17 Claims. (Cl. 74—54)



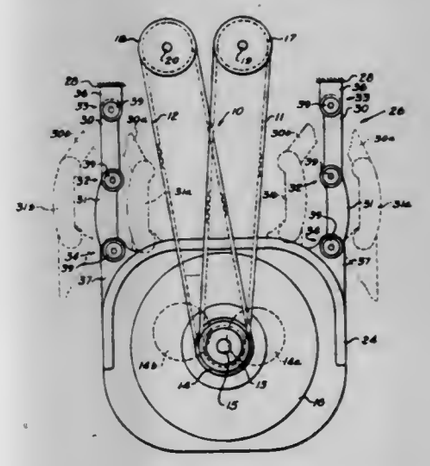
1. An arrangement for transforming a rotary motion into a reciprocating motion, comprising, in combination, a rotary drive member rotating in one direction; a shaft means; uni-directional over-running clutch means connecting said drive member with said shaft means for driving the same in one direction of rotation; a main cam fixed on said shaft means and having at least one rising first cam track having a lower inner end and a higher outer end; an auxiliary cam mounted on said shaft means for free turning movement and having at least a rising second cam track having a lower inner end and a higher outer end; and a reciprocable member having a cam follower baised toward said cam tracks and reciprocated by the same while moving said auxiliary cam between first and second positions in which said outer end of said second cam track trails, or leads, respectively, said outer end of said first cam track in said direction of rotation, said cam follower moving said auxiliary cam from said first to said second position while moving inward from the outer end of said second cam track toward the inner end of said first cam track whereby acceleration of said main cam and of said shaft means in said direction of rotation by engagement of said outer end of said first cam track by said cam follower moving inward is prevented.

3,274,839
ACTUATOR ASSEMBLY
Stanley L. Sather, Pomona, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed May 22, 1964, Ser. No. 369,397
11 Claims. (Cl. 74—102)

1. An actuator assembly comprising: mounting means; a plurality of pins mounted in said mounting means in spaced relationship with each other; actuator means, said actuator means having end portions, each of said end portions being adapted to pivot about an associated one of said pins; and activator means operatively positioned in said mounting means and adjustably attached to said actuator means.

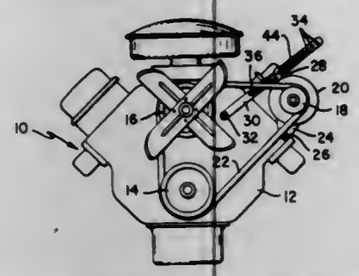


3,274,840
MOTOR SUPPORT
Robert A. Dunn, Willowick, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 12, 1964, Ser. No. 374,781
6 Claims. (Cl. 74—217)



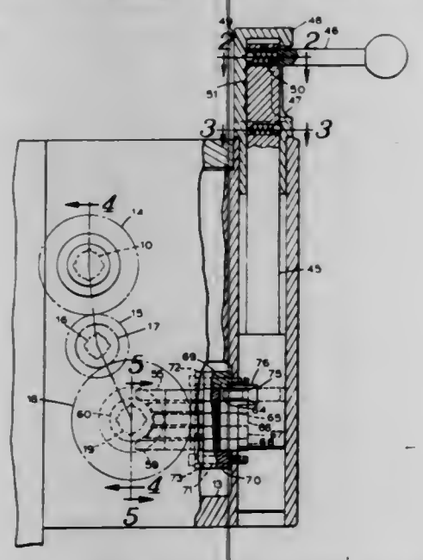
1. In a belt driving system adapted to be readily changed to afford changes in operating speeds and adapted to be self-adjusting after changes in operating speeds, a driving means, a first endless belt means driven by said driving means at a first predetermined speed, a second endless belt means driven by said driving means at a second predetermined speed, a first pulley means driven by said first belt means, a second pulley means driven by said second endless belt means, and a support means connected to said driving means, said support means including a supporting frame, a first link means pivotally secured to said frame, a second link means secured to said first link means for pivotal movement with respect to said first link means, said driving means being pivotally secured to said second link means for both vertical and horizontal movement with the pivotal movement of first and second link means, and including clamping means for clamping said first and second link means against pivotal movement relative to each other and against relative movement with respect to said supporting frame and said driving means, said support means being releasable to suspend the weight of said driving means on said first and second belt means to tighten said first and second belt means, said support means movable with said driving means while said support means is released, said clamping means securing said support means in the position to which said support means is moved to maintain said first and second endless belt means tight.

3,274,841
CONTINUOUS TENSION BELT ADJUSTING BRACKET
John W. Roberts, 6408 Highland Ave., Tampa, Fla.
Filed May 6, 1965, Ser. No. 453,627
3 Claims. (Cl. 74—242.13)



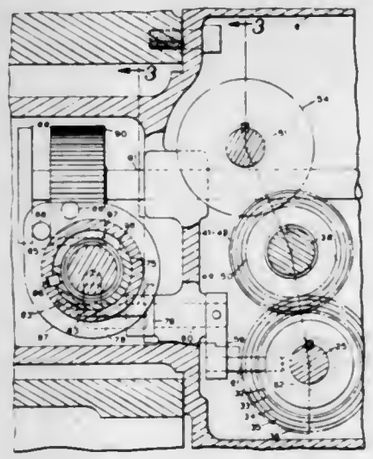
1. A continuous tension belt adjusting device for the belt of an electric generator mounted for pivotal movement, comprising:
an elongate rigid bracket arm, said bracket arm having a slot formed therein intermediate the opposing ends thereof;
means mounting one end of said bracket arm to extend in a plane generally normal to the armature shaft of the generator;
a bracket secured to said generator and having a portion extending outwardly thereof;
first pin means secured to the outwardly extending portion of said bracket having a portion thereof extending into and through the slot in said bracket arm, said first pin means being slidable in the slot in said bracket arm from one end thereof toward the other;
second pin means secured adjacent the other end of the slot of said bracket arm; and
tension spring means connecting said first and second pin means for applying a continuous spring tension against the generator, tending to urge the generator about its pivotal mounting.

3,274,842
LATHE TRANSMISSION MECHANISM
Robert J. Huff, Xenia, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 18, 1964, Ser. No. 368,060
11 Claims. (Cl. 74—335)



1. In a transmission having a plurality of pairs of first gears fixed on a first shaft and a plurality of second gears each axially movable on a second shaft parallel to the first shaft and adapted to engage one and the other of the first gears of a pair when shifted one way and the other from a neutral position, a shifting mechanism comprising:
(a) an axially and rotatably movable control member,
(b) means for defining a series of predetermined axial positions of said control member corresponding to the number of pairs of second gears,
(c) means for defining a neutral angular position and two engaging angular positions on opposite sides thereof for said control member,
(d) a set of shifter members connected, respectively, to said second gears, each of said shifter members operable to move one of the second gears connected thereto along the second shaft,
(e) means for rendering a selected one only of said shifter members operable for moving the one of the second gears connected thereto from the neutral position thereof in one and the other directions along the second shaft when said control member is in each of said predetermined axial positions,
(f) means for operating the selected one of said shifter members in response to angular movement of said control member to one and the other of said engaging positions to move the one of the second gears connected thereto in one and the other directions, respectively, from the neutral position thereof, and
(g) means for axially moving said control member from one to another of said predetermined axial positions and for rotation thereof to each of the engaging positions.

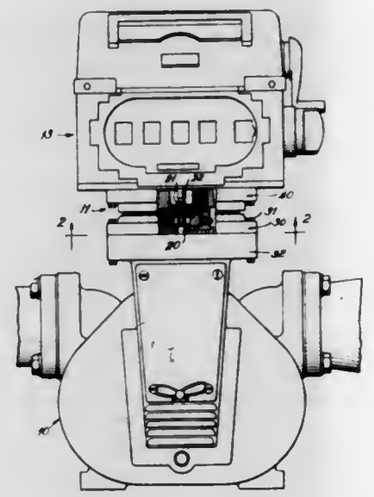
3,274,843
LATHE TRANSMISSION MECHANISM
Harry E. Luebkemann, Wilmington, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 18, 1964, Ser. No. 368,290
10 Claims. (Cl. 74—335)



1. In a transmission, a gear shifting mechanism for movement of a selected one of a plurality of gears along a shaft from and back to a neutral position comprising in combination:
(a) a control member axially movable parallel to the shaft and rotatable from a neutral angular position to an engaging angular position,
(b) a set of shifter members connected, respectively, to said gears, each of said shifter members operable to move the gear connected thereto along the shaft,
(c) actuating means on said control member and positionable therewith for operating a selected one of said shifter members in accordance with the axial position of said control member and upon rotation thereof from the neutral angular position,

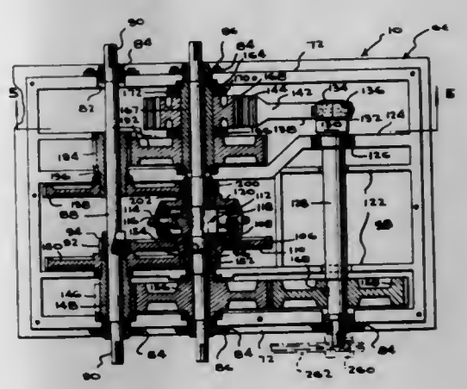
(d) selection means for axially positioning said control member along the shaft to position said actuating means in registration with one of said shifter members, and
(e) means for rotating said control members from the neutral angular position thereof to the engaging angular position when said actuating means is in registration with one of said shifter members.

3,274,844
DRIVE MECHANISMS
William C. Reitz, Jr., Waukegan, Ill., assignor to Liquid Controls Corporation, North Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 250,333, Jan. 9, 1963. This application Aug. 13, 1965, Ser. No. 483,006
3 Claims. (Cl. 74—384)



1. A swivel adapter comprising:
(a) an input and an output shaft each having a spur gear rigidly attached thereto;
(b) a first flange rotatably mounting said input shaft, and a second flange rotatably mounting said output shaft,
(c) means mounting said first and second flanges so that the spur gear on the input shaft and the spur gear on the output shaft are between the two flanges and the input and output shafts define a collinear central axis, and so that the flanges can rotate relative to each other about an axis concentric with said central axis;
(d) a pair of bearing races mounted between said flanges, one of said pair of races being non-rotatably connected to one of said flanges and the other of said pair being non-rotatably connected to the other of said flanges, at least one of said pair of races being axially movable on the flange on which it is mounted;
(e) a bearing cage mounted between said pair of bearing races;
(f) roller bearing means mounted within said bearing cage for maintaining a predetermined minimum spacing between sad races and causing said cage to be rotatable about said central axis;
(g) means for resiliently urging the race that is axially movable toward the other race so that said rolling bearing means is in frictional and rolling engagement with said pair of bearing races and responds to relative angular rotation between said flanges by imparting a predeterminedly smaller angular rotation to said bearing cage;
(h) a pair of meshing spider gears rotatably mounted in said bearing cage so that rotation takes place about spaced axes that are parallel to said central axis, one of said spider gears meshing with the gear on said input shaft, and the other of said spider gears meshing with the gear on said output shaft; and
(i) means for limiting radial displacement of said bearing cage about said central axis.

3,274,845
INTERMITTENT DRIVE UNIT
Edward S. Moran, Sr., 159 Fort Hill Drive, Charleston, W. Va.
Filed Sept. 13, 1963, Ser. No. 308,752
5 Claims. (Cl. 74—394)

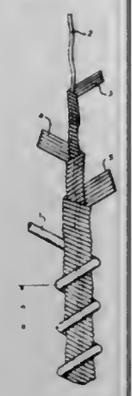


1. A drive unit operatively interposed between a prime mover and a work element comprising:
(a) a base;
(b) an input safety rotatably mounted on the base and being supplied with rotary movement in one direction by the prime mover;
(c) a drive shaft rotatably mounted on the base;
(d) a control axle rotatably mounted on the base;
(e) gear means drivingly-connecting the input shaft to the drive shaft;
(f) a cross-axle fixed to the drive shaft and carrying beveled gears at each end meshed with a crown gear at one side and another crown gear at the other side;
(g) a first gear train drivingly-connecting the crown gear at the one side of the cross-axle to the control axle;
(h) offset crank means on the control axle;
(i) a rack gear carried by the crank means and movable therewith in two directions as the crank means is rotated by the control axle; and
(j) a second gear train drivingly-connecting the crown gear at the other side of the cross-axle to the rack gear.

3,274,846
FLEXIBLE CABLE
Johann Forster, Frankfurt am Main, Germany, assignor of one-half to VDO Tachometer Werke Adolf Schindling G.m.b.H., Frankfurt am Main, Germany, and one-half to Firma Golde & Co. G.m.b.H., Frankfurt am Main, Germany, both corporations of Germany
Filed June 2, 1964, Ser. No. 371,966
Claims priority, application Germany, June 7, 1963, V 24,146
4 Claims. (Cl. 74—422)

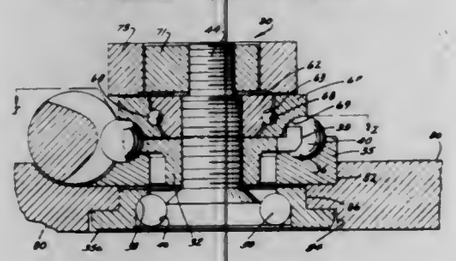
1. A flexible cable for the transmission of tension- and pressure-forces in axial direction of the cable, comprising
a core,
a plurality of layers of wire-windings wound about said core in opposite directions,
an outer running winding wound under tension with a predetermined pitch about said layers of wire windings,

said core comprising a wire of great tensile strength wound helically along its longitudinal axis with said



pitch of said outer running winding and a very large angle of inclination.

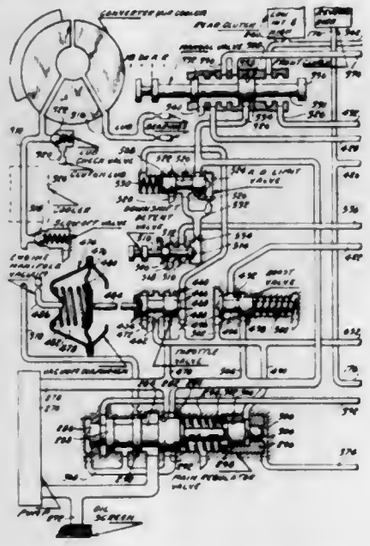
3,274,847
TRANSMISSION
John L. Jones, 231 Diana Ave., Muskegon, Mich.
Filed Feb. 24, 1964, Ser. No. 346,984
10 Claims. (Cl. 74—425)



4. A transmission mechanism, comprising: a worm; a member driven by said worm, said member including a plurality of balls, a concave ball-retaining track, and a caging means for spacing said balls upon said track and for coordinating their movements thereupon; means for securely positioning said worm and said driven member closely adjacent each other, such that the said worm engages and drives the balls of said driven member upon said ball-retaining track, said balls in turn driving said ball caging means; and force-transmitting means operatively connected to and driven by said ball caging means.

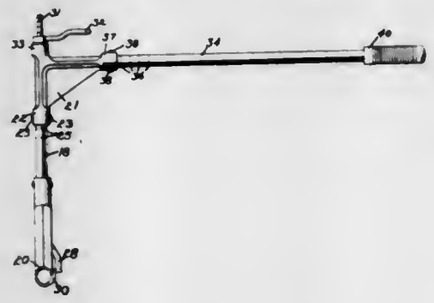
3,274,848
MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM AND AUTOMATIC CONTROL SYSTEM
Eugene W. Konrad, Northville, and Robert P. Zundel, Wayne, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,839
12 Claims. (Cl. 74—472)

2. In a power transmission mechanism for delivering power from a driver controlled engine to a driven shaft, two fluid pressure operated servo means for controlling the relative motion of torque delivery elements of said mechanism, a fluid pressure source, conduit structure including separate portions extending from said source to each servo means, separate fluid pressure distributor valve means disposed in and partly defining each conduit structure portion, governor valve means for producing a first pressure signal that is proportional in magnitude to driven shaft speed, throttle valve means for producing a second pressure signal that is proportional in magnitude to an engine power factor, branch passage means for subjecting movable portions of said distributor valve means to said signals for actuating them, one distributor valve means and the other distributor valve means responding to increasing driven shaft speed for any given driver demand for engine torque to condition said servos for speed ratio shifts from a low speed ratio to an intermediate speed ratio and from said intermediate speed ratio to a high speed ratio respectively, regulator valve means for maintaining a predetermined operating pressure level for said servos, said one distributor valve means being in fluid communication with portions of said regulator valve means and adapted to control dis-



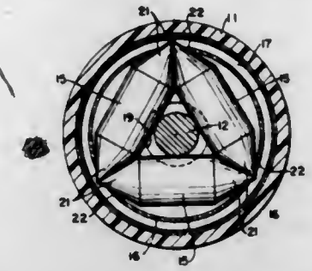
tribution of pressure thereto in response to shifting movement of its movable portions to an intermediate speed ratio position to cause a decrease in effective pressure maintained by said regulator valve means, and cutback control valve means in fluid communication with said one distributor valve means and with said regulator valve means for modifying the influence of the former upon the latter whereby a reduction in the magnitude of pressure maintained by said regulator valve means is accomplished only when the effective pressure developed by said source is greater than a predetermined value.

3,274,849
EXTENSION HANDLE FOR OUTBOARDS
Chris A. Hanson, Sandpoint, Idaho, assignor of one-half to Donald J. Diehl, Sandpoint, Idaho
Filed Dec. 9, 1963, Ser. No. 329,007
5 Claims. (Cl. 74—480)



1. An extension handle for a marine outboard motor having a horizontal carrying handle at the front surface thereof, comprising:
- a vertical member having a releasable clamping element at its lower end adapted to be secured to the motor carrying handle;
- and a forwardly directed member fixed to the upper end of said vertical member, said forwardly directed member having a grip mounted on its forward end.

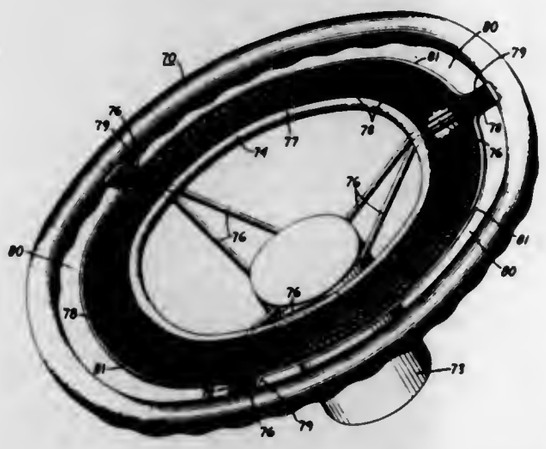
3,274,850
FLEXIBLE PUSH-PULL CONTROL CABLE
Nazarene F. Tascio, 5 Lakeview Ave., East White Plains, N.Y.
Filed Nov. 4, 1964, Ser. No. 408,967
4 Claims. (Cl. 74—501)



1. A flexible push-pull control cable which comprises:
- a flexible outer sheath,
- a flexible control rod centrally positioned within the outer sheath and movable longitudinally with respect thereto, and
- a plurality of individual roller retaining units disposed about the control rod within the outer sheath in substantially stationary contact with said sheath, each roller retaining unit comprising
- a group of rollers disposed about the control rod in substantial rolling contact therewith, the axes of rotation of the rollers of each group being disposed in a plane substantially perpendicular to the longitudinal axis of the control rod,
- an annular roller retainer ring disposed about said group of rollers, the rollers of said group being rotatably mounted in said retainer ring, and
- a roller retaining shell disposed about said roller retainer ring in substantial contact therewith, said retaining shell being substantially in contact with the inner surface of the outer sheath and being substantially stationary with respect thereto,

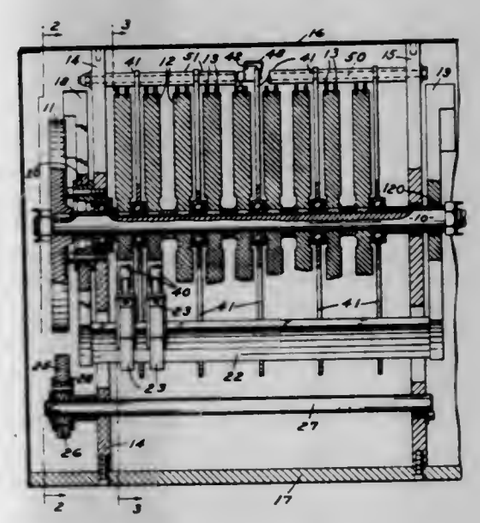
said individual roller retaining units being disposed side by side within the outer sheath throughout the length of the sheath to provide freely rolling and fully articulated support for the longitudinally movable control rod.

3,274,851
STEERING WHEEL ASSEMBLY
Rodger E. Geller, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,302
3 Claims. (Cl. 74—552)



1. On a steering wheel means having a hub portion and a reinforced metal with insulation covering rim portion as well as predetermined rigid support means therebetween, an intermediate structure comprising an auxiliary ring member in a location concentrically between said hub and rim portions, and a resilient body portion of moldable plastic material having an inner periphery along said auxiliary ring member and outer edging along recessing adjacent to said rim portion except for predetermined extensions of said resilient body portion in locations over said rigid support means.

3,274,852
BALL TRACK TIMING DEVICE
Robert J. Ebbert, 135 E. Avon Road, Rochester, Mich.
Filed Mar. 5, 1964, Ser. No. 349,692
20 Claims. (Cl. 74—568)

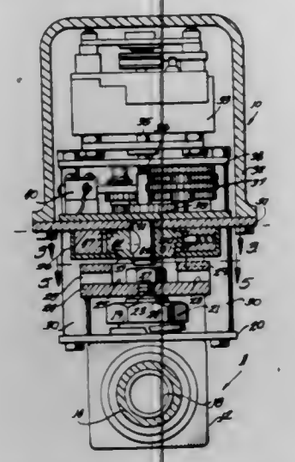


1. A timing device for determining the interval between the median of two events having a variable interval therebetween and a third event of known interval relative to the first event, comprising means for sensing the first event, means for sensing the second event, standard rate means operating during the interval between said first and third events, one-half rate means responsive to said respective sensing means operative during the interval between said first and second events, and means responsive to said one-half rate means upon the occurrence of said second event for determining the interval between the median of said first and second events and said third event.

3,274,853
RATCHET DRIVE ROTARY VALVE ACTUATING MECHANISM
Harold Robert Forsmark, Elmhurst, Ill., assignor to Calco Manufacturing Company, a corporation of Illinois
Filed Nov. 16, 1962, Ser. No. 238,133
3 Claims. (Cl. 74—625)

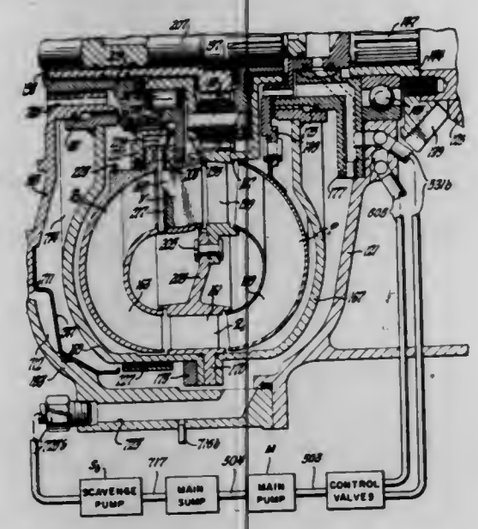
1. A coupling for a motor and valve assembly with said motor including a driver shaft and said valve including a rotatable driven valve stem for rotating said valve to open and closed positions, said stem being coaxially positioned relative to said driver shaft, comprising:
- (a) a rotatable driven member connected to said stem to rotate the same and having a horizontal portion extending radially outwardly from said stem,
- (b) a ratchet member connected to said driver shaft for rotation therewith, said ratchet member including a plurality of teeth and adjacent recessed cam portions sloping outwardly gradually to the peripheral surface of said ratchet member,
- (c) a cylindrical cog carrier rotatably on and coaxially positioned relative to said ratchet member,
- (d) said cog carrier including a central cylindrical recess receiving said ratchet member and an outer circumferentially extending flange,

(e) said flange including a plurality of circumferentially spaced radially extending bores,
(f) a cog slidably disposed in each bore,
(g) means in said bores urging said cogs into said recessed cam portions,



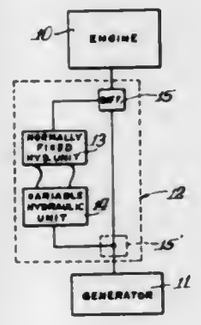
(h) and means on said cog carrier connecting said carrier to said horizontal portion of said driven member, whereby rotation of said shaft in one direction said cog carrier and driven member are rotated,
(i) said cog carrier and said driven member being rotatable in the same direction manually when said ratchet member and driver shaft are stationary.

3,274,854
TRANSMISSION
Oliver K. Kelley, Bloomfield Hills, Kenneth W. Gage, Birmingham, and Richard W. Craig, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Jan. 7, 1959, Ser. No. 785,390, now Patent No. 3,170,534, dated Feb. 23, 1965. Divided and this application Oct. 16, 1964, Ser. No. 404,371
2 Claims. (Cl. 74—677)



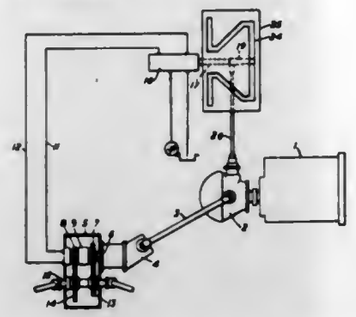
2. In a transmission, a fixed housing, an input member, an output member mounted for rotation with respect to said fixed housing, a fluid drive having a pump connected to said input member, a runner, and a rotary housing within said fixed housing having a wall completely enclosing said pump and runner and providing a fluid operating chamber, a planetary gear unit having first, second and third elements, an element being connected to said rotary housing for rotation therewith, an element being connected to said output member, means for connecting said runner to an element, said rotary housing having a thin annular longitudinally extending wall portion of substantially uniform thickness at the outer perimeter providing an external brake drum surface and an internal cooling surface contacted by fluid circulating through said operating chamber to cool said external brake surface, means to supply fluid to said rotary housing at the inlet to said pump, exhaust means to exhaust fluid from said rotary housing, said pump circulating the fluid supplied to the inlet of said pump across said internal cooling surface and to said runner and to said exhaust means, means to maintain the space between said rotary housing and fixed housing free of fluid, annular brake means located in said space having friction means selectively engaging said brake drum surface to brake said rotary housing to retard rotation of an element of said planetary gear unit to establish a drive.

3,274,855
STARTER-DRIVE SYSTEM
Richard W. Reynolds, Louis Ross, and Charles J. Gantzer, Rockford, Ill., assignors to Sundstrand Corporation, a corporation of Illinois
Filed June 19, 1962, Ser. No. 203,519
40 Claims. (Cl. 74—687)



37. In a transmission for use between a generator and an engine to transmit power in either direction between the generator and the engine for starting the engine from the generator and for driving the generator from the engine, a differential gearing including a generator connectible shaft, an engine connectible shaft, gearing connecting the two shafts in order to drive one from the other, a control shaft, and gearing on the control shaft connected with said interconnecting gearing for varying the rate of rotation of the output shaft of the generator connectible shaft and the engine connectible shaft relative to the rate of rotation of the input shaft thereof depending on the load imposed by the control shaft; a first hydraulic unit, means for varying the displacement of said first hydraulic unit, a second hydraulic unit, means for varying the displacement of said second hydraulic unit, conduit means interconnecting said first and second hydraulic units to deliver fluid therebetween, either of said conduits being capable of being under pressure so that torque can be transmitted in either direction from one hydraulic unit to the other; gearing connecting one of said hydraulic units to said control shaft to control the torque of said control gear, gearing connecting one of said shafts to the other hydraulic unit; a predetermined torque program, means responsive to said predetermined torque program after said generator connectible shaft has attained a predetermined speed for controlling one of said displacement varying means to control the torque delivered by the engine connectible shaft; and means responsive to rotation of the generator connectible shaft when driven by the engine connectible shaft for controlling said one displacement varying means to maintain the generator connectible shaft at constant speed.

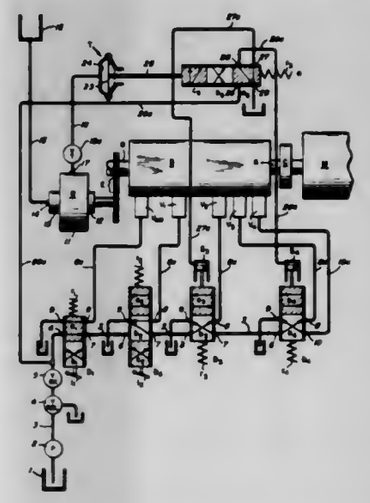
3,274,856
HYDRAULIC APPARATUS
Geoffrey L. Harrison, Scarborough, Ontario, Canada, assignor to Dowty Equipment of Canada Limited, Ajax, Ontario, Canada, a Canadian company
Filed Oct. 21, 1963, Ser. No. 317,537
Claims priority, application Great Britain, Oct. 30, 1962, 41,047/62
4 Claims. (Cl. 74—733)



1. A power transmission comprising a positive displacement pump, a positive displacement motor, hydraulic passage means connecting the pump to the motor, motor speed adjustment means operable on one of the pump and the motor displacements to vary motor speed, a mechanical gearbox, an input shaft for said gearbox driven by the said motor, an output shaft for said gearbox, at least two selectable gears of differing speed ratios engageable within said gearbox between the output and the input shafts, a selector for the gears in the gearbox, a single control operatively connected both to the motor speed adjustment means and to the selector, and a gate locating said control for movement in a predetermined path having a pair of parallel portions corresponding one to low gearbox speed ratio and the other to high gearbox speed ratio, movement in either of which portions adjusts motor speed without adjustment of the gearbox selector, and a transverse connecting portion between the parallel portions having an inclination thereto, movement through said transverse portion serving to move the selector to change mechanical gear and to move the motor speed adjustment means to adjust motor speed inversely in proportion to the proportional change of gear speed ratio, whereby after movement of the control through the said transverse portion, the speed of the output shaft is substantially the same as the speed of the load.

3,274,857
PRESSURE REGULATOR AND A HYDRAULIC CONTROL DEVICE INCLUDING SAID REGULATOR FOR AN AUTOMOBILE GEARBOX
Jean-Paul Brunot, Sens (Yonne), France, assignor to Centre de Recherches de Pont-a-Mousson, Pont-a-Mousson (Meurthe-et-Moselle), France, a French body corporate
Filed Feb. 8, 1963, Ser. No. 257,341
Claims priority, application France, Feb. 13, 1962, 887,860, Patent 1,322,233
6 Claims. (Cl. 74—752)

4. A hydraulic change speed device for changing speeds of a gearbox of a transmission unit having an output shaft in response to the rotational speed of said output shaft, said device comprising hydraulically-actuated elements for respectively changing said speeds of said gearbox, a source of liquid under pressure, a hydraulic actuating circuit connecting said source to said hydraulically-actuated elements, a pilot distributor inserted in said hydraulic actuating circuit and having a slide valve which is slidable between a first position and a second position and controls the supply of said liquid under pressure from said source to each of said hydraulically-actuated elements, movement of said slide valve from said first position to said second position resulting in the course of said movement in said hydraulically, actuated means changing up said speeds of said gearbox, a hydraulic control device for shifting said slide valve, said control device comprising a source of liquid, a hydraulic pressure regulator operating on the centrifugal pump principle and having a fluidtight chamber, a rotary impeller in said chamber, a driving shaft, drivingly connected to said impeller, an inlet passageway putting said chamber in communication with the last-mentioned source of liquid and a pressure outlet passageway communicating with said chamber, the pressure of the liquid issuing from said outlet passageway increasing with increase in the rotational speed of said driving shaft, means drivingly connecting said output shaft to said driving shaft, pressure-transmitting control means movable between a first position and a second position, a conduit putting said pressure outlet passageway in communication with said pressure-transmitting control means,

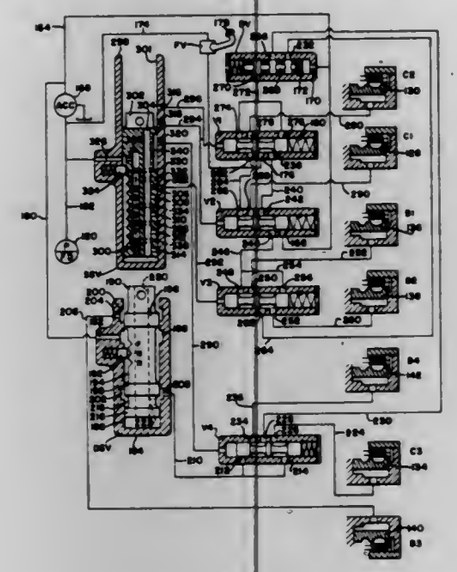


said chamber, said outlet passageway and said conduit constituting a pilot control circuit independent of and separate from said actuating circuit, means operatively connecting said pressure-transmitting control means to said slide valve, and resiliently yieldable means biasing said interconnected control means and slide valve towards said first positions thereof, said pilot control circuit being liquidtight and preventing any relief of liquid pressure in respect of a range of pressures of the liquid in said pilot control circuit corresponding to normal operation of said change speed device, whereby a progressively increasing rotational speed of said output shaft produces a build up of the pressure of the liquid in said pilot control circuit having for result a progressive movement of said slide valve from said first position to said second position thereof in opposition to the action of said resiliently yieldable means and a changing of said speeds of said gearbox.

3,274,858
TRANSMISSION
Raymond J. Meyer, James K. Jensen, and Peter D. Wetrich, Waterloo, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Jan. 17, 1964, Ser. No. 338,338
12 Claims. (Cl. 74—761)

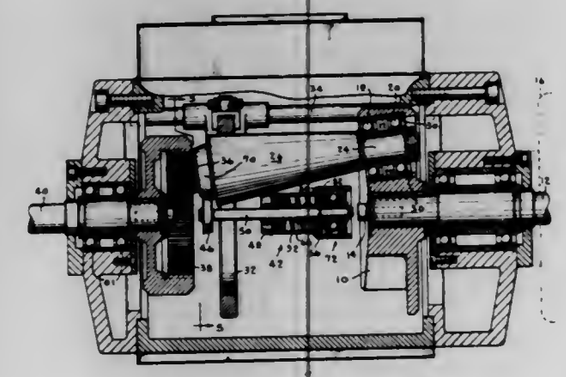
7. A transmission, comprising: a front section having planetary gearing including two clutches and two brakes selectively engageable in four clutch-brake combinations to produce four forward speeds in an intermediate drive element; a rear section including planetary gearing driven by said element, an output shaft, a third clutch acting on said rear section gearing and engageable in all of said four combinations to utilize said four speeds to drive the output shaft at four forward speeds, and a third brake acting on said rear section gearing engageable, in lieu of said third clutch, in all of said four combinations to utilize said four speeds to drive the output shaft in reverse; and

a fluid pressure control system including a pressure source, four selectively chargeable actuators for respectively engaging said front section clutches and brakes, two additional actuators selectively chargeable for respectively engaging the third clutch and third brake, a first valve movable selectively among four positions for connecting



combinations of said four actuators to the pressure source to achieve said four clutch-brake combinations, and a second valve movable between forward and reverse positions independently of the first valve for alternately connecting the two additional actuators to the pressure source to alternately engage the third clutch and the third brake.

3,274,859
TORQUE SWITCH FOR VARIABLE SPEED TRANSMISSIONS
Richard E. Alsch, Lannon, Wis., assignor to Graham Transmissions, Inc., Menomonee Falls, Wis., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,428
12 Claims. (Cl. 74—796)



1. A variable speed transmission having a rotary carrier which is rotated by an input shaft; a plurality of longitudinally tapered planetary rollers having oppositely tapered nose portions and being rotatably mounted in the carrier for rotation with, and in respect to, the carrier; a motion transmitting member rotatable by each of the rollers; a ring member in contact with the motion transmitting members and connected to an output shaft; and an axially movable control ring encircling the rollers and being in contact with the rollers, whereby the contact pressure therebetween determines the torque output of the transmission, comprising in combination:

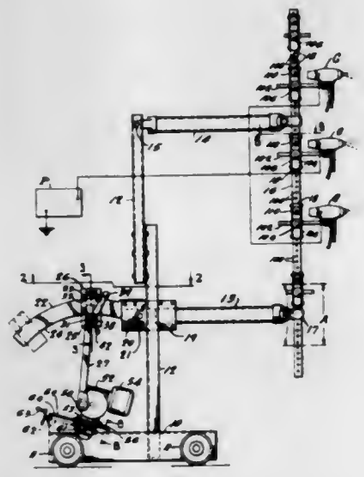
a first pressure roller in contact with the nose portions of the planetary rollers,

a second pressure roller movable relative to said first pressure roller and in contact with the planetary rollers,

spring means exerting a bias on said pressure rollers to establish a predetermined contact pressure between the planetary rollers and the control ring, and

centrifugal means associated with said pressure rollers and said spring means and being operable to vary said bias in response to a change in the rotational speed of said planetary rollers to thereby correspondingly vary said contact pressure.

3,274,860
CONTROLLABLE RECIPROCATOR
William D. Gauthier, Sylvania Township, Lucas County, and Erhard Kock, Toledo, Ohio, assignors to The De Vilbiss Company, Toledo, Ohio, a corporation of Ohio
Filed Mar. 23, 1964, Ser. No. 353,837
3 Claims. (Cl. 74—829)



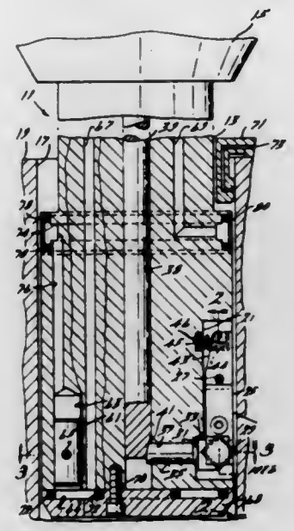
3. A mechanism for reciprocating an electrostatic spray gun or the like comprising a frame, spaced parallel arms pivoted on spaced points on said frame, a gun mounting stem connecting said arms, one of said arms extending on the opposite side of said frame to provide a driving lever for said stem fulcrumed on said frame, drive means including a connecting rod to reciprocate said driving lever, means to adjust the point of connection between said connecting rod and said driving lever towards and away from said fulcrum to vary the length of the reciprocating stroke of said stem, and additional means to adjust the position of the driven end of said connecting rod about said fulcrum to vary the midpoint of said reciprocating movement without significantly changing the length of said reciprocating stroke, said driving lever being arcuate about a center near the midpoint of the adjustment of said additional means.

3,274,861
EXPANDABLE ROTARY BORING TOOL
Albin S. Czubak, Detroit, Mich., assignor to Micromatic Hone Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 8, 1964, Ser. No. 402,503
8 Claims. (Cl. 77—58)

1. In an expandable boring tool including a drive spindle rotatable about a longitudinal axis and reciprocable therealong,

at least one boring tool assembly pivotally carried by said spindle for movement about an axis normal to said longitudinal axis and disposed adjacent the periphery thereof,

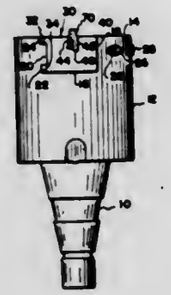
means for pivotally adjusting said boring tool assembly radially of said spindle including a rod movable axially within said spindle and having a longitudinally tapered surface operatively engaging said tool assembly,



and releasable locking means for said tool assembly,

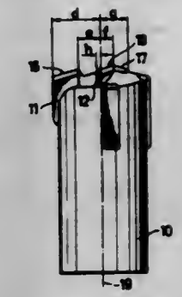
said locking means including a wedge member movable axially within said spindle and engageable with a complementary shaped wedge surface formed on said tool assembly.

3,274,862
BORING BAR
Edward Babich, Farmington, and Robert H. Leidal, Livonia, Mich., assignors to Galaxy Boring Company, Farmington, Mich., a corporation of Michigan
Filed Apr. 12, 1965, Ser. No. 447,333
8 Claims. (Cl. 77—58)



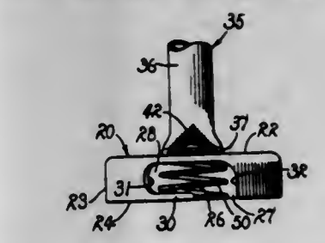
1. An elongated boring bar having a cutter end support section with a face extending normally to the longitudinal axis of the bar; a slot of uniform cross-section formed across the end of the face, said slot having a pair of opposed sides formed from a unitary section skewed with respect to one another so that lines along each parallel to the end face of the bar are parallel to one another and so that the edges of the sides adjacent to the face of the cutting support are closer to one another than the edges at the bottom of the slot, one of the sides extending normally to said end supporting section face and the bottom of the slot extending normally to the other side thereof; a plurality of holes formed through one side of the bar from the side of the slot which extends normally to the end support section face, normally to that side; set screws threaded in said holes; and an elongated cutter having a cross-sectional configuration such as to allow it to slide into the slot from the end and to be locked therein by the set screws.

3,274,863
CHIP CUTTING ROTARY DRILL
Kurt Heinrich Albert Erich Faber, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed Nov. 1, 1965, Ser. No. 505,724
Claims priority, application Sweden, Apr. 12, 1962, 4,068/62; Jan. 22, 1963, 672/63
16 Claims. (Cl. 77—67)



1. A chip cutting rotary drill for metal drilling comprising a shank portion and cutting inserts of sintered hard metal with two main cutting edges extending in opposite direction from the axis of the drill and adapted to generate a forwardly tapering frusto conical surface, said main cutting edges being adapted to generate adjacent annular zones of said frusto conical surface which at least touch each other, at the most a minor part of said zones overlapping each other, the drill further having a central secondary cutting edge which is situated on the same hard metal insert as at least one of the main cutting edges and adapted to generate a rearwardly tapering conical zone, the inner end of said secondary cutting edge extending at least to said axis, said main cutting edges and said secondary cutting edges being so positioned relative to each other that the forwardly tapering frusto conical surface generated by the former will at least touch the rearwardly tapering conical zone generated by the latter, all of said cutting edges being rectilinear and situated substantially in the same plane containing said axis and having front surfaces directed in the same direction as said axis, the total cutting edge length on each side of said axis being at least approximately equal.

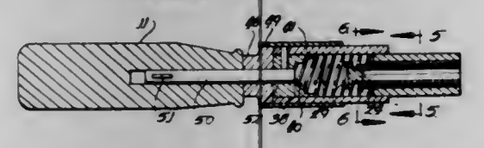
3,274,864
DEVICE FOR REMOVING AND REPLACING RADIATOR CAPS
Kenneth H. Chapman, Bakersfield, Calif., assignor of one-half to Michael A. Easley, Bakersfield, Calif.
Filed Jan. 11, 1965, Ser. No. 424,752
3 Claims. (Cl. 81—90)



1. A device for removing and replacing a cap on a cooling system radiator with the cap having thermally conductive gripping portions comprising cap engaging means having an annular wall adapted to be disposed in circumscribing relation about the cap, said wall including a pair of opposed circumferentially extended slots to receive said gripping portions of the cap between a first admitting and ejecting position with the slots permitting angular movement of the cap engaging means relative to the gripping portions of the cap, and a second cap retentive position with the cap engaging means angularly displaced from said first position with the wall of said

slots in frictional engagement with the gripping portions of the cap; resilient force means having an end mounted on said cap engaging means and an opposite end for direct engagement with said cap to maintain said cap engaging means in said retentive position relative to the cap; and elongated manipulating means connected to the cap engaging means having a distal portion for rotating the cap by an operator at a distance insuring safe removal and replacement of the cap.

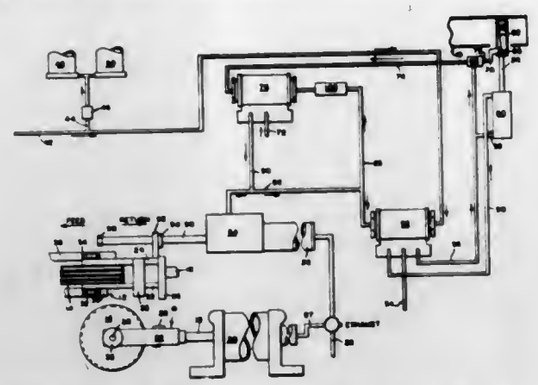
3,274,865
NESTING SOCKET WRENCH
Joseph J. Sweeney, 714 E. Rockwell, Arlington Heights, Ill., and Michael M. Egan, Jr., 8045 N. Kostner Ave., Skokie, Ill.
Filed May 7, 1965, Ser. No. 453,958
7 Claims. (Cl. 81—185)



1. A unitary socket wrench having a handle portion and a socket portion, said socket portion including a plurality of springs adapted to be concentrically arranged within one another; a plurality of concentric, polygonally shaped nested sockets, the intermediate ones of said sockets having the ends of one or more of the side walls thereof bent outwardly to form a shoulder thereon for retaining said sockets within one another, first means secured to the innermost one of said sockets having a spring receiving cavity formed therein; a generally tubular shaped member; the outermost one of said sockets being adapted to one end of said generally tubular shaped member; second means adapted to the opposite end of said generally tubular shaped member and having a plurality of concentrically positioned spring receiving cavities formed therein which have diameters which substantially correspond to the diameters of predetermined ones of said springs; said plurality of spring being retained within said generally tubular shaped member with the ends of one of said plurality of springs being engaged in said spring receiving cavities formed in said first and second means; the ends of the intermediate ones of said springs being engaged in respective ones of said concentrically positioned spring receiving cavities formed in said second means and with said shoulders formed on respective ones of said sockets; and the ends of the outermost one of said springs being engaged with the end edge of said second means and the inner end edge of the outermost socket.

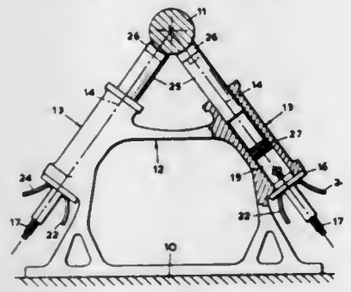
3,274,866
AUXILIARY FACING STOP CONTROL SYSTEM
Gerald B. Lanphere, Central Square, N.Y., assignor to Lipe-Rollway Corporation, Syracuse, N.Y., a corporation of New York
Filed Apr. 10, 1964, Ser. No. 358,833
1 Claim. (Cl. 82—34)

In a bar feed machine having a stock tube and a main cylinder driving a feed carriage for feeding bar stock through said stock tube, the improvement of an auxiliary facing stop control system comprising, an auxiliary feed cylinder having its rod connected to said drive carriage for limited movement relative thereto, said auxiliary cylinder normally supplementing the driving force imparted to said carriage by said main cylinder, stop means in said stock tube for stopping the feed of a fresh bar stock as it approaches the forward end of said tube, signal means operated by said stop means operable to actuate clamp means to clamp the rod of said auxiliary cylinder against further driving advancement and withdraw said stop means from said tube, said drive cylinder driving said carriage an additional amount forward, said amount being determined by the limited movement connection between said carriage and said auxiliary rod, said additional amount of movement positioning said fresh bar stock for end facing and time delay means operable to release said clamp means upon completion of end facing of said bar stock, said limited movement connection between said



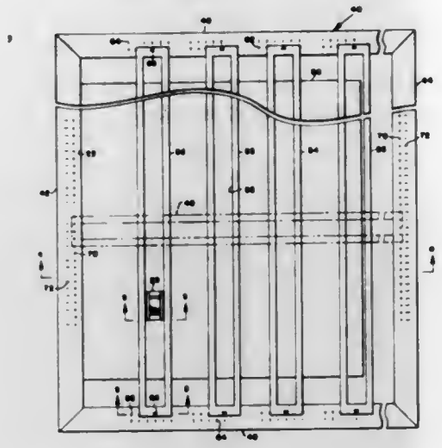
rod and said carriage comprising an arm affixed to said carriage, said rod passing through a clearance aperture in said arm, said rod having a collar removable affixed thereto for variable positioning along said rod and a nut affixed to the outer end of said rod, said arm being positioned on said rod between said collar and said nut to provide said limited movement between said carriage and said rod.

3,274,867
MACHINE TOOL APPARATUS
John Brian Sell, Rugby, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Apr. 30, 1964, Ser. No. 363,961
Claims priority, application Great Britain, May 3, 1963, 11,552/63
1 Claim. (Cl. 82—39)



Machine tool apparatus including a machine tool for carrying out machining operations on a workpiece which is turned on a horizontal axis during a machining operation in the machine tool, including support means for the workpiece arranged to bear at least part of the weight of the workpiece, said support means comprising two fluid-pressure operated stays supported on a firm base, each said stay including a support member for supporting part of the weight of the workpiece and movable axially with respect to said firm base, and a cylinder assembly operatively connected to the support member, the cylinder assembly comprising a fluid-containing cylinder and a piston arranged for axial movement therein under the influence of pressure in said fluid, and said support members being arranged to engage the workpiece at the same cross-section thereof, wherein said cylinders are interconnected through fluid duct means which is connected to hydraulic accummulator means, so that the fluid can pass into and out of said cylinders while a workpiece of non-uniform contour is being turned in the machine tool, whereby the support members can move axially so as to follow said contour, the accumulator means tending to cause fluid pressure in said cylinders to be maintained at a predetermined value.

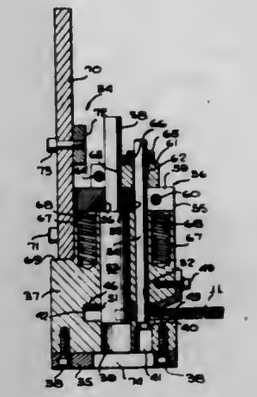
3,274,868
SYSTEM FOR CUTTING FIBERGLASS DUCT BOARD
Theodore M. Williams, 979 Volusia Ave., Daytona Beach, Fla.
Filed Jan. 6, 1965, Ser. No. 423,666
8 Claims. (Cl. 83—5)



1. A device for use in cutting flat fiberglass duct board having a longitudinal edge to provide in one side of the board a plurality of grooves extending parallel to and over the full length of said edge, whereby the board may thereafter be folded along said grooves into a polygonal cross-sectioned duct, comprising a frame having means for the reception of a flat duct board of predetermined maximum nominal length and width, a plurality of elongated guide means, means on the frame providing a stop engageable with said edge of a duct board to locate the same in a predetermined position relative to the frame, and means locating each of said guide means on the frame in a selected one of a plurality of positions spaced apart laterally of the guide means, said guide means extending over said means for the reception of a duct board so as to be in closely overlying relation to a board received therein and each having means for the guiding of a cutting tool in its movement longitudinally of the guide means, said guide means being spaced apart a distance which is a function of the desired cross-sectional dimensions of a duct to be formed from a board cut using said device, said guide means and said means on the frame for reception of a duct board having a length substantially in excess of said maximum nominal length, and additional tool-engageable guide means cooperable with a tool to provide a joint cut extending parallel to the grooves, said additional guide means being disposed on the side of said first-mentioned guide means opposite said stop, and means for locating said additional guide means in a selected one of a plurality of positions in each ot which said additional guide means extends in parallel co-planar relation to said first-mentioned guide means.

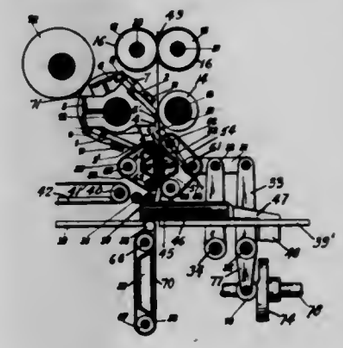
3,274,869
METHOD OF SIMULTANEOUSLY PUNCHING A HOLE AND PIERCING AN EDGE PORTION IN THE LIP OF A PLASTIC BAG
Thomas E. Piazze, Mount Vernon, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application June 19, 1962, Ser. No. 203,567. Divided and this application Apr. 16, 1964, Ser. No. 360,219
6 Claims. (Cl. 83—52)

3. The method of forming an opening within the lip of a plastic bag formed of thin gauge sheet material, which openings is separated from the transverse lip defining edge of said bag by material having a predetermined longitudinal extent, said method comprising simultaneously removing a portion of said lip to define said open-



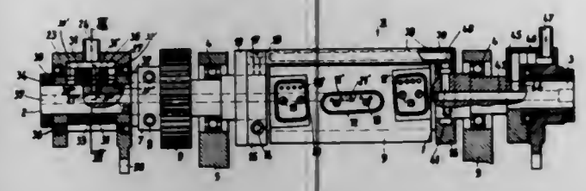
ing and piercing at least that portion of said transverse edge which is longitudinally aligned with said opening.

3,274,870
MEANS FOR CUTTING A WEB TO PRODUCE OVERLAPPED SHEETS
Alfred Schmermund, 60 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed June 4, 1963, Ser. No. 285,352
Claims priority, application Germany, June 8, 1962, Sch 31,596
8 Claims. (Cl. 83—88)



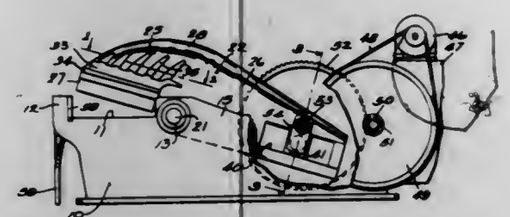
1. In a packing machine in which an article to be packed is embraced in a U-shaped manner by a wrapping having a longer and a shorter portion of wrapping material in overlapping relationship and in which the two wrapping material portions are cut from a single web of said material, the combination of a rotatable cutter, a counter roller positioned for cooperating with said cutter, a first cutter blade and a second cutter blade on said cutter for cutting by pressure against said counter roller, means for feeding a web of said wrapping material between said cutter and said counter roller prior to a cut effected by said first cutter blade, means for accelerating the feed of said wrapping material between said cutter and said counter roller subsequent to the cut effected by said first cutter blade and prior to a cut effected by said second cutter blade so as to bring a second cut portion into overlap with a first cut portion, a first and second suction belt arranged along the path of movement of the wrapping material and after the cutter when viewed in the direction of feed of said wrapping material, for taking over the further transport of said longer wrapping material portion subsequent to cutting by said first cutter blade, and a third suction belt opposite said first suction belt for transporting the end of said shorter wrapping material portion into overlap with said longer wrapping material portion.

3,274,871
WINDOW-CUTTING DEVICE FOR ENVELOPES AND BAG-MAKING MACHINES
Günter Ehlscheid, Niederbieber uber Neuwied, Germany, assignor to Richard Winkler, Rengsdorf uber Neuwied, Germany, and Kurt Dunnbier, Gladbach, Germany
Filed Jan. 19, 1965, Ser. No. 426,627
Claims priority, application Germany, Jan. 24, 1964, W 36,040
8 Claims. (Cl. 83—99)



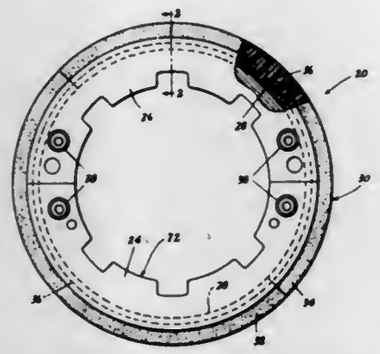
1. A window-cutting device for cutting several windows into blanks for envelopes and flat bags, said cutting device comprising, in combination, a rotary cutting roller and a counter roller for successively feeding blanks to be cut therebetween, several closed cutting knives mounted on said cutting roller, said cutting roller including ports in each of the surface areas bounded by said knives, ducts for connecting the ports of each knife with a supply of suction air and ducts for connecting said ports with a supply of pressure air, control means actuated by said rotary cutting roller and controlling said ducts for sequentially connecting said ports at predetermined time intervals with said suction ducts and said pressure ducts and for disconnecting said ports at said predetermined time intervals from said ducts, timing means coacting with said control means for varying said time intervals independently for the ports of each of the said knives, guide means supported on the peripheral wall of said cutting roller for guiding the leading edge of each blank to be cut, and setting means for varying the circumferential position of said guide means in reference to said cutting knives.

3,274,872
METAL SHEARS
James O. F. Kirsten, Box 86, Lannon, Wis.
Filed Jan. 12, 1965, Ser. No. 425,017
9 Claims. (Cl. 73—339)



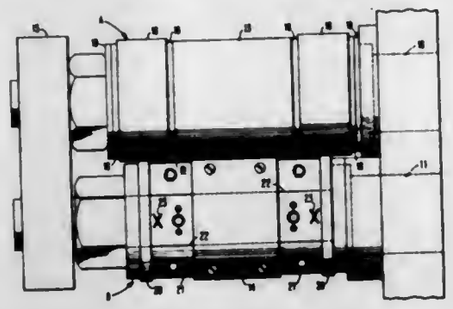
1. In a power-driven shear for cutting metal workpieces, a base having a forward portion providing a table for supporting the workpieces during shearing, a shear blade mounted along an edge of the base forward portion and substantially coextensive with the length of the table, the base having a holding block at the forward end of the table and extending above the table for limiting forward moving of workpieces during shearing and relative to the table, a jaw pivoted on the base adjacent the rearward end of the table and having portions extending forward and rearward from the pivot point, a shear blade mounted on an edge of the forward portion of the jaw for coaction with the base shear blade, the base table being wider than the general thickness of the jaw and extending laterally toward one side from the coacting edges of the shear blades, and a power drive mounted on the base and comprising a source of power and speed reducing gearing driven by the power source and means connecting the gearing with the jaw for oscillating the jaw to secure shearing coaction of the blades.

3,274,873
ROTARY ANVIL CONSTRUCTION
Louis E. Sauer, St. Louis, Mo., assignor to L. E. Sauer Machine Company, St. Louis, Mo., a corporation of Missouri
Filed June 1, 1964, Ser. No. 371,455
6 Claims. (Cl. 83—347)



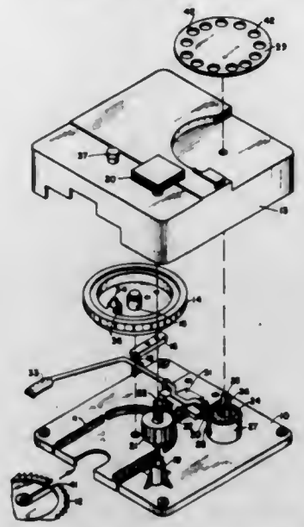
1. In combination, an anvil for rotary die cutting, and the like, comprising an annular base member, and an annular unitary cover mounted on said base member for annular movement bodily in respect thereto, said base member and said cover including axially spaced interfitting annular grooves and ridges, said grooves being constructed for substantially tangential mounting therein of said ridges.

3,274,874
WEB PERFORATING MECHANISM WITH RESILIENT SLEEVE SUPPORTED BACK-UP ROLL
Walter C. Treiber, Endwell, and Richard A. McGill, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 10, 1964, Ser. No. 395,489
5 Claims. (Cl. 83—348)



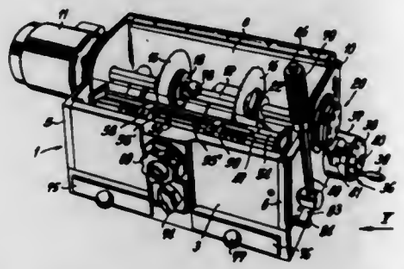
1. In a perforating mechanism for a traveling web of sheet material, the combination of;
a pair of rotatable feed roll assemblies between which the web passes;
one of said feed roll assemblies being provided with radially disposed perforating tools and bearer rolls located near said tools; and
the other of said feed roll assemblies being provided with back-up rolls each of which has an elastic sleeve for resiliently supporting same, said sleeves being compressively positioned with respect to the axes thereof and coacting with said bearer rolls for accurately positioning said bearer rolls and tools with respect to said back-up rolls regardless of change in distance between the axes of said feed roll assemblies.

3,274,875
APPARATUS FOR SELECTIVELY REMOVING TOOTHED PORTIONS OF A TOOTHED CAM
Milton Chernack, West Hempstead, N.Y., assignor to Prestodial Inc., Manhattan County, N.Y.
Filed Aug. 28, 1964, Ser. No. 392,783
2 Claims. (Cl. 83—411)



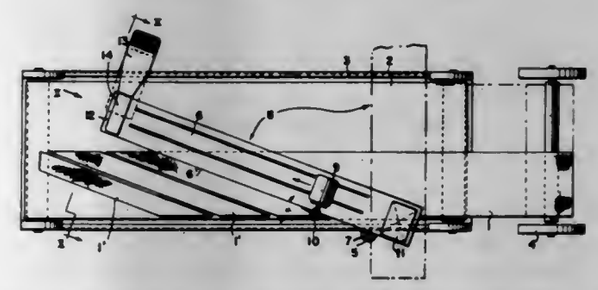
1. A programming device comprising, a base plate, a cover mounted above said plate, a main gear mounted for rotation between said base plate and said cover, a pinion gear in meshing relationship with said main gear mounted for rotation between said base plate and said cover, a means for rotating said pinion gear, a ratchet gear mounted for rotation between said base plate and said cover said ratchet gear having regular gear teeth in meshing relationship with said main gear, a dial attached to said ratchet gear for sequentially positioning a toothed cam, a knife blade attached to said plate, said blade being positioned over the teeth of said toothed cam and a lever attached to said base plate and positioned over said knife blade whereby the activation of said lever depresses the knife blade so that the selected teeth of said toothed cam are cut off.

3,274,876
APPARATUS FOR SYMMETRICALLY CUTTING A CAST LINE
Karl Debus, Bad Homburg vor der Hohe, Germany, assignor to Linotype G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 13, 1964, Ser. No. 403,526
Claims priority, application Germany, Oct. 15, 1963, L 46,049
20 Claims. (Cl. 83—415)



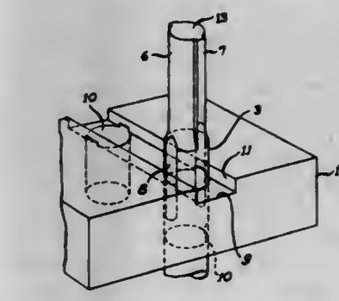
1. An apparatus for symmetrically cutting a workpiece, comprising, in combination, a support; cutting means including two cutting members spaced in one direction from each other and mounted on said support spaced equal distances from a transverse plane of symmetry; holding means mounted on said support for supporting a workpiece, said holding means being movable on said support in a direction transverse to said one direction; a centering device mounted on said support in a position symmetrical to said plane of symmetry and adapted to engage said workpiece and to block further movement of the same in said one direction when the same is disposed on said holding means in a centered position in which a selected point thereof is located in said plane of symmetry; and operating means for moving said holding means to a position in which said cutting members cut said workpiece equal distances from said selected point thereof.

3,274,877
BIAS CUTTER FOR WEBS, ESPECIALLY FOR LAYERS OF TIRES
Alfred Seyler, Hannover, Germany, assignor to Continental Gummi-Werke A.G., Hannover, Germany
Filed Nov. 16, 1964, Ser. No. 411,315
Claims priority, application Germany, Nov. 19, 1963, C 31,458
4 Claims. (Cl. 83—473)



1. An apparatus for cutting fabrics, especially on the bias, comprising; a table having a horizontal top over which the fabric can be moved in the direction of its length, vertical pivot means stationarily mounted adjacent the table at one side of the table, a beam pivotally supported on said pivot means and extending horizontally over said table top, cutter means moveably guided along said beam for horizontal movement on the beam in the direction of the length of the beam and operable to cut fabric on said table top in the direction of the length of said beam, said beam being swingable in a horizontal plane on said pivot means to such an operative angle as to dispose the free end of the beam which is at the end thereof opposite said pivot means within the lateral limits of said table top, a carriage moveable adjacent the table on the side thereof opposite said pivot means, and means supportingly connecting the end of the beam opposite said pivot means to said carriage.

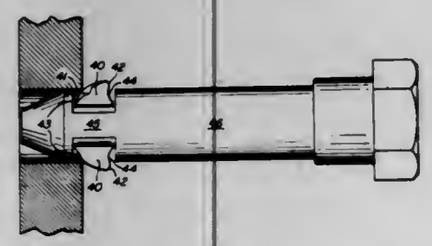
3,274,878
APPARATUS FOR MOUNTING PIERCING PUNCHES
John Calisto Vecchi, Natrona Heights, Pa., assignor to Oberg Manufacturing Co., Inc., a corporation of Pennsylvania
Filed Oct. 23, 1964, Ser. No. 405,942
1 Claim. (Cl. 83—698)



In a punch holder and punch block for mounting a plurality of piercing dies having cylindrical body portions with grooves disposed in a cylindrical bore of said

block, means for securing said piercing dies in said block and holder, said piercing dies having shaped cutting faces and having a flat side in fixed relation to the shapes of the cutting faces, and said punch holders having a slot common to a plurality of dies, the walls of which constitute flat body portions for engaging the flat side of said piercing dies to maintain alignment of the cutting faces relative to the punch holder and shaped faces of other piercing punches mounted in said holder.

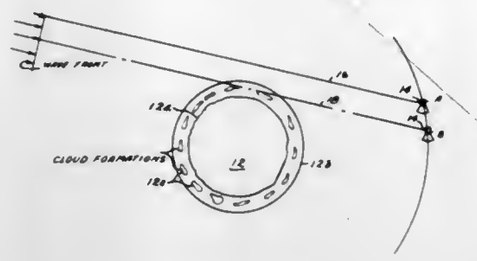
3,274,879
SELF-LOCKING CLEVIS PIN
Harry S. Poller, Moab, Utah, assignor of sixty percent to Atlas Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 24, 1964, Ser. No. 421,166
7 Claims. (Cl. 85—5)



1. A self-locking clevis pin, comprising
a shank having a portion of reduced diameter adjacent one end thereof,
an enlarged head at the opposite end of said shank for retaining said pin in a receiving hole in structure separate from the pin, said head being configurated for convenient grasping and pushing or pulling and turning simultaneously so the pin can be inserted in or extracted from the receiving hole; and a pair of stiffly flexible, resilient and non-retractable fins projecting oppositely from the reduced portion of said shank laterally of said reduced portion but within the length threof, the material of said fins being adapted to flex laterally of the fins and to wrap around the pin and said fins extending outwardly from the pin a distance adapted to securely latch the pin in the receiving hole without overlapping or exceeding in diameter the unreduced portion of the shank when wrapped around the reduced portion thereof during insertion and extraction of the pin in and from the receiving hole, the corners of each fin being curved as shoulders to insure effective resistance to axial forces but substantially minimum resistance to rotational and axial forces applied simultaneously to said pin, and the edges of the fins extending transversely to the shank being formed with reverse curves thereon, said reverse curves beginning adjacent to the shank and joining the curves of the corners.

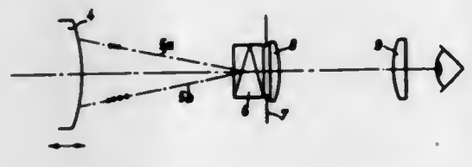
3,274,880
METHOD AND APPARATUS FOR OCCULTATION DETECTION FOR SPACE NAVIGATION
Robert L. Lillestrand, Minneapolis, Minn., William M. Hilt, Dayton, Ohio, and Daniel C. Harrington, Minneapolis, Minn., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 31, 1963, Ser. No. 255,295
5 Claims. (Cl. 88—1)

1. A method of determining the time of ingress of a star behind a first body in space as viewed from a second body in space comprising the steps of generating and recording the level of a signal proportional to the intensity of radiant energy received from the star through an aperture of a given area when the path of radiation is clear of the first body and any atmosphere thereabout, increasing said aperture area by a predetermined percentage of area by removing radiation blocking means, and generating a triggering signal when the signal attenuates



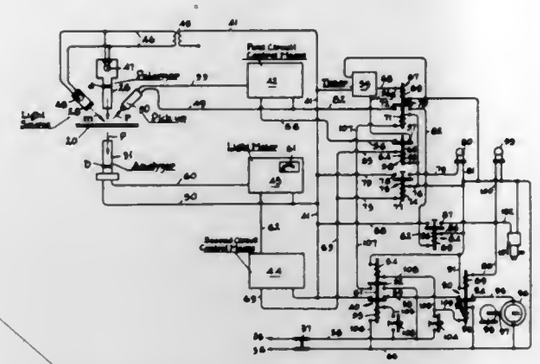
to a value having a predetermined relation to said recorded signal as the first body intercepts the path between the star and the second body.

3,274,881
COMBINED VIEWFINDER AND RANGEFINDER WITH COMPOSITE BIREFRINGEMENT PRISM ASSEMBLY FOR PHOTOGRAPHIC CAMERAS
Hans Sauer, Heidenheim (Brenz), Germany, assignor to Carl Zeiss, Oberkochen, Wurttemberg, Germany
Filed Nov. 30, 1961, Ser. No. 156,037
Claims priority, application Germany, Dec. 6, 1960, Z 8,411; Feb. 24, 1961, Z 8,574
3 Claims. (Cl. 88—2.6)



1. A combined viewfinder and rangefinder for photographic cameras, comprising a finder objective, an image inverting system, and an eyepiece lens forming an optical system with an optical axis along which said objective is movable, a beam combiner arranged on the optical axis between the objective and the image inverting system, said beam combiner being composed of three triangular shaped prism elements arranged in contact in alternate opposed relation, of which at least two consist of optically double refractive material with their optical axes normal to the axis of the optical system and angularly displaced one from the other 90°, said triangular prisms being arranged so that the outer walls of the outermost prisms extend in parallel relation and perpendicular to the axis of the optical system, said beam combiner being located on the optical axis at a position encompassing the focal plane of the finder objective, said beam combiner being operative to deviate image rays forming two partial ray paths from opposite lateral portions of the finder objective into coincidence when the finder objective is properly focused, the coincidence focal plane of the beam combiner being perpendicular to the optical axis, the partial ray paths being symmertical to the optical axis and having an included angle of at least 5°, at least one polarizer located on the optical axis adjacent the eyepiece focal plane, covering the entire eyepiece image and oriented to block the polarized light component of one partial ray path and transmit the polarized light component of the other partial ray path and a birefringent element of reduced size combined with said polarizer and disposed adjacent the side of the polarizer facing the incoming light rays and producing a phase retardation of $\lambda/4$ in the path of the light rays to define a reduced coincidence image rangefinding area.

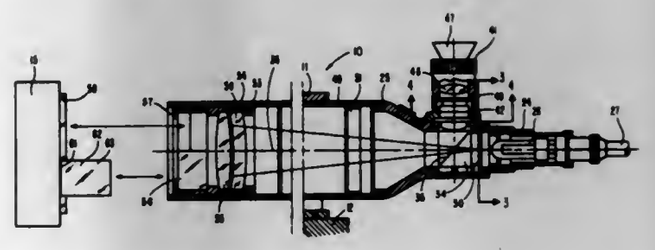
3,274,882
INSPECTION APPARATUS FOR TRANSPARENT GLASS SHEETS
Arthur E. Krieger, Toledo, and Kenyon E. Golding, Waterville, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 15, 1960, Ser. No. 56,273
7 Claims. (Cl. 88—14)



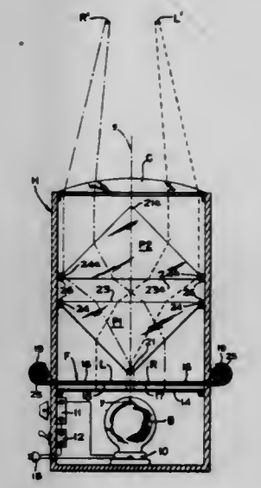
1. An inspection apparatus for transparent glass sheets, comprising a conveyor for supporting and moving a sheet forward along a substantially horizontal path, a light source for directing a beam of light at an angle on a sheet, a light pick-up unit for receiving the light beam from the light source which is reflected from the sheet, polarized light emitting means positioned at one side of the sheet between the light source and the pick-up unit and an analyzer for receiving polarized light rays from said polarized light emitting means positioned at the opposite side of the sheet in alignment with said polarized light emitting means, a timer for producing a signal after a predetermined time lapse, first circuit control means electrically connected with and interposed between the light pick-up unit and the timer and operable to activate said timer when energized by said light pick-up unit in response to the light reflected from the sheet, a motor for driving said conveyor, normally open switch means electrically connected with and interposed between the motor and the timer, said switch means closing in response to said signal from said timer to halt the operation of said motor, a second circuit control means, a light meter electrically connected with and interposed between said second circuit control means and said analyzer and operable to energize said second circuit control means when a predetermined amount of polarized light passes through said sheet and is received by the analyzer, a normally closed switch electrically connected with the second circuit control means and interposed between the first circuit control means and the timer, said normally closed switch being opened to break the circuit to said timer upon energizing of said second circuit control means by said light meter thereby de-activating the timer to allow continued operation of the motor, said second circuit control means being inoperable when insufficient polarized light passes through the sheet to said analyzer permitting continued operation of said timer.

3,274,883
OPTICAL ANGULAR ORIENTATION MEASURING SYSTEM
Richard W. Kern, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 15, 1961, Ser. No. 95,898
7 Claims. (Cl. 88—14)

1. An optical system for establishing the angular orientations of a physical object with respect to three mutually perpendicular axes comprising, in combination: an auto-collimating optical means and an ancillary optical means, said auto-collimating optical means comprising a collimator lens system, an optical object positioned in a focal plane of said collimator lens system, a source of light illuminating said optical object, a beam splitting prism positioned between said optical object and said collimator lens system and adapted to intercept the light from the source, a reticle positioned in a focal plane of said collimator lens system and receiving a portion of the light passing through said beam splitting prism after said light has passed through said collimator lens system, said physical object being positioned in spaced relation with respect to said collimator lens system, a first reflective surface on said physical object for reflecting at least a portion of the collimated beam of light passing from said collimator lens system to provide a first reflected image of said optical object on said reticle, the location of said first reflected image relative to said reticle providing information concerning the orientations of said physical object about two of said axes, said ancillary optical means comprising means for deflecting a portion of said collimated beam of light passing from said collimator lens system through an angle of deviation, and a second reflective surface carried by said physical object disposed to intercept the deflected collimated beam, said second reflective surface reflecting said intercepted deflected beam in a predetermined manner to cause the beam so reflected to be directed back into said collimator lens system, said ancillary optical means providing a second reflected image of said optical object on said reticle, and the relative disposition of said second reflected image containing information concerning the angular orientation of said physical object about the third of said axes when compared with said first reflected image.



3,274,884
STEREOSCOPIC FILM VIEWING APPARATUS
Charles H. Sortor, Fresno, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed May 29, 1961, Ser. No. 113,189
2 Claims. (Cl. 88—29)



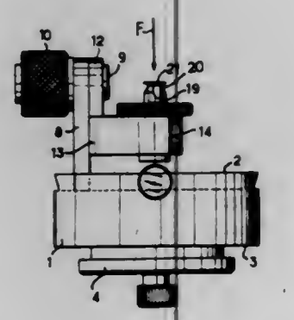
1. Apparatus for viewing stereoscopic photographic scenes having adjoining edges and disposed in the order in which they were exposed in the camera, comprising

means for supporting adjoining scenes for viewing, means for illuminating the scenes, means for crossing the beams of light emanating directly from the scenes comprising a pair of prisms, said prisms forming isosceles triangles having coplanar apices, the planes of the bases of said prisms being spaced from but parallel to one another, the apices of said prisms lying in a plane that substantially intersects the midline between the scenes, and a single converging lens facing the apex of the prism that is remote from said scene supporting means, said scene supporting means being inside of the principal focus of said lens, said lens forming virtual images of the crossed beams of light emanating directly from the scenes in order that the scenes can be viewed stereoscopically.

3,274,885
INSTRUMENTS FOR CHECKING CORNEAL LENSES

Pierre Michel Rocher and Claude Gabriel Thomas, Saint-Maur, France, assignors to Lentilles Ophtalmiques Rationnelles, Paris, France, a corporation of France

Filed Nov. 30, 1962, Ser. No. 241,374
Claims priority, application France, Jan. 9, 1962, 884,261
1 Claim. (Cl. 88—56)



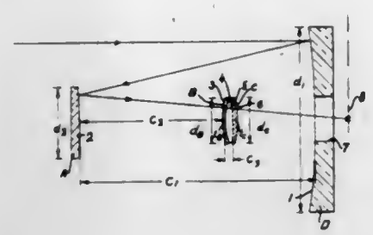
For use with a microscope having a viewing axis, an instrument for checking corneal lenses by permitting the rim of a corneal lens to be observed with said microscope, said instrument comprising a support, a member mounted on said support for movement about a first axis, a lens carrier mounted for rotation on and relative to said member about a second axis perpendicular to said first axis, said carrier being adapted to support thereon a lens to be observed in such a manner that the optical axis of the lens coincides with said second axis, said first and second axes being spaced apart a distance substantially equal to half the diameter of the lens to be observed, the height of said carrier being such that first axis intersects the rim of a lens in position on the carrier, and said first and second axes being positioned so that said first axis intersects and is perpendicular to said viewing axis of a said microscope and said second axis is swingable about said first axis in a plane which includes said viewing axis of said microscope.

3,274,886
CASSEGRAIN TELE-OBJECTIVE

Seymour Rosin, Massapequa Park, N.Y., assignor to Scanoptic Incorporated, New York, N.Y.

Filed Aug. 21, 1962, Ser. No. 218,319
17 Claims. (Cl. 88—57)

1. A tele-objective comprising, in combination, a primary mirror having a parabolic reflecting surface concave to the front, and being formed with an aperture; a secondary mirror having a spherical reflecting surface convex to the rear and confronting said parabolic reflecting surface, said mirrors being aligned along an optical axis, the diameter of said secondary mirror being smaller than the diameter of said primary mirror; the radius of the entire spherical reflecting surface being equal to the radius of curvature of the central portion of said parabolic reflecting surface so that said primary and secondary mirrors have the same focal length, the distance between said reflecting surfaces being greater than half of said focal length so that the image plane is located rearwardly of said primary mirror and outwardly of the air space

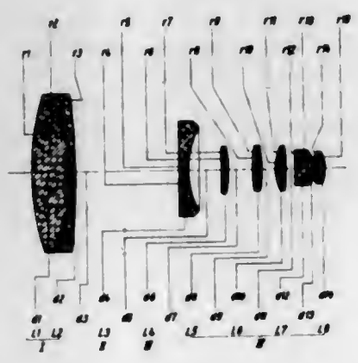


between said mirrors whereby rays pass through said aperture; and lens means including at least two lens elements located between said mirrors concentric with said optical axis and together having zero power, the distance between said lens means and said spherical surface and the curvature of said lens elements being selected so that spherical aberration, coma and astigmatism are corrected.

3,274,887
FOUR-COMPONENT OBJECTIVE HAVING TWO MOVABLE COMPONENTS

Karl Heinrich Macher, Bad Kreuznach, Rhineland, Germany, assignor to Jos. Schneider & Co., Optische Werke, Bad Kreuznach, Rhineland, Germany, a corporation of Germany

Filed Jan. 16, 1963, Ser. No. 251,921
Claims priority, application Germany, Apr. 6, 1962, Sch 31,267
2 Claims. (Cl. 88—57)



1. An optical objective comprising a biconvex doublet L7, L2 constituting a fixed positive first component I, a lens L3 constituting a negative second component II, a lens L4 constituting a negative third component III, and a fixed positive fourth component IV consisting of a plurality of air-spaced lens members L5, L6, L7, L8; said second and third components being movable, relatively to each other and to said first and fourth components, into a first position in which the objective has a relatively small focal length, a second position in which the objective has an intermediate focal length, and a third position in which the objective has a relatively large focal length; said lenses L1 to L8 having radii of curvature *r*1 to *r*15 and thicknesses and separations *d*1 to *d*14 whose numerical values, based upon a value of 100 units for an intermediate overall focal length, together with their refractive indices n_d and Abbé numbers ν are substantially as given in the following table, with the spacings *d*3, *d*5 and *d*7 given for said second position:

				n_d	ν
I	L1	*r*1 = +290.98	*d*1 = 42.50	1.61772	49.78
	L2	*r*2 = −216.32	*d*2 = 7.50	1.75520	27.53
		*r*3 = −760.07	*d*3 = 115.36	Air space	
II	L3	*r*4 = −7550.72	*d*4 = 10.00	1.62041	60.29
		*r*5 = +101.16	*d*5 = 39.35	Air space	
III	L4	*r*6 = −88.75	*d*6 = 5.00	1.62041	60.29
		*r*7 = −209.77	*d*7 = 27.80	Air space	
IV	L5	*r*8 = +260.02	*d*8 = 10.00	1.52310	50.93
		*r*9 = −172.42	*d*9 = 15.00	Air space	
	L6	*r*10 = +50.80	*d*10 = 12.50	1.74400	44.90
		*r*11 = −575.75	*d*11 = 12.00	Air space	
	L7	*r*12 = −78.31	*d*12 = 13.75	1.74080	28.05
		*r*13 = +31.25	*d*13 = 4.00	Air space	
	L8	*r*14 = +42.03	*d*14 = 15.00	1.67790	55.52
		*r*15 = −59.76	d_{total} = 329.76		

3,274,888
INORGANIC REFLEX-REFLECTIVE AGGREGATE

Robert C. Vanstrum, White Bear Lake, Thomas L. Harrington, St. Paul, and Chi Fang Tung, Lincoln Township, Washington County, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Jan. 19, 1962, Ser. No. 167,272
11 Claims. (Cl. 88—82)

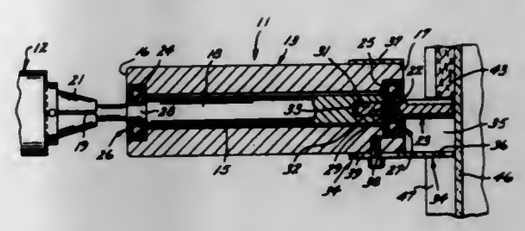


1. All-inorganic weather-resistant and crush-resistant reflex-reflecting freely-flowable aggregate particles comprising reflex-reflecting complexes all of which are in the form of a monolayer thereof completely surrounding and partially embedded in an underlying spheroidal inorganic core having a thickness of glassy material, at least on its outer surface portion, equal to the depth of penetration of said complexes into said core, said complexes each consisting essentially of a glass microsphere having an associated underlying hemispherical specular-reflecting metallic coating, said metallic coating being embedded between the glass of said complexes and the glassy material of said core and serving as a reflector of incident light passing through the microspheres of said complexes as well as an intermediate layer to which the glass of said complexes and the glassy material of said core are firmly bonded, the structure of said aggregate particles being further characterized in that the glassy material of said core has a softening temperature at least about 100° C. below the softening temperature of the glass of said microspheres, and a thermal coefficient of expansion at least about equal to, up to about 100% greater than, the thermal coefficient of expansion of the glass of said microspheres.

3,274,889
ROUTING ATTACHMENT ADAPTER FOR A POWER-DRIVEN HAND DRILL

Wallace A. Ferris, Huntington Park, Calif., assignor to Stamicarbon N.V., Heerlen, Netherlands

Filed May 18, 1964, Ser. No. 368,230
14 Claims. (Cl. 90—12)



1. A routine attachment adapter for a power-driven hand drill, comprising: a longitudinally apertured longitudinal body member having a rear end and a front end and having a longitudinal bore therein extending through the length thereof from said rear end to said front end thereof; and a longitudinal shaft member rotatively received within and mounted within said bore of said longitudinal body member and having a rear torque-receiving end portion adapted to be engaged and coupled to a torque-applying power-driven hand drill, said longitudinal body member being supported only by said longitudinal shaft member and being physically separate from the torque-applying power-driven hand drill when the hand drill is engaged and coupled to said rear torque-receiving end portion of said shaft member, said shaft member having a forward end effectively provided with a rotary laterally operable cutting tool extending forwardly from the front end of said longitudinal body member; said longitudinal body member being provided with a guide and gauge means adjacent to said rotary cutting tool and cooperable for manually controlled guiding abutment along a solid surface for guiding said cutting tool along a desired cutting path in a direction substantially transverse with respect to the longitudinal direction of said bore, said guide and gauge means comprising a guide tip provided with a mounting and coupling portion for coupling said guide and gauge means with respect to said longitudinal body member for mounting said guide tip in a desired laterally offset guiding relationship with respect to said cutting tool, said guide tip having a planar portion lying in a plane parallel to but slightly perpendicularly displaced from a longitudinal axis of said forwardly extending rotary cutting tool and being positioned in said parallel plane at one side of said cutting tool, thereby effectively providing and defining a laterally open cutting access region on the opposite side of said cutting tool from said planar portion of said guide tip.

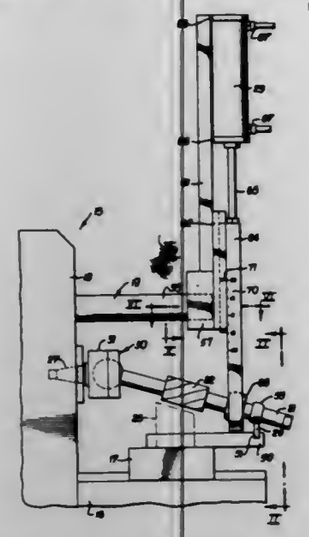
3,274,890
UNIVERSAL MILLING MACHINE

Clarence E. Hills, Los Angeles, Calif. (13512 S. Purche Ave., Gardena, Calif.)

Filed Jan. 14, 1965, Ser. No. 425,562
9 Claims. (Cl. 90—13)

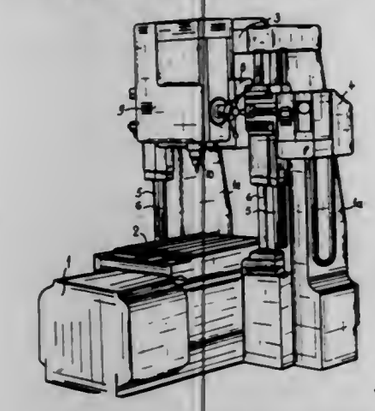
1. In a milling machine for milling surfaces on a work piece in accordance with a preselected configuration provided by a template, the combination of: a base frame; a machine bed on said frame; a machine head on said frame, said head and bed being relatively movable; a rotatable driving shaft carried by said head; an arbor shaft extending over said bed and having a cutting tool thereon; swivel means connecting said driving shaft to

said arbor shaft for rotating the arbor shaft and providing relative angular movement therebetween in a selected



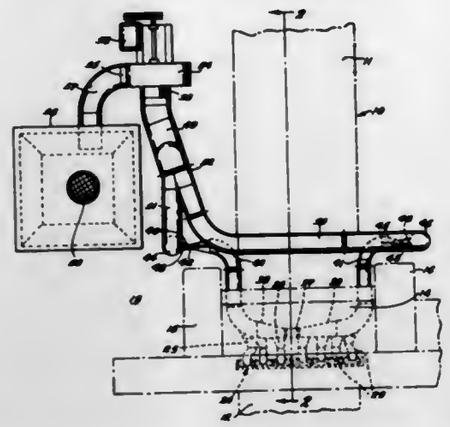
plane; and means slidably connected to the arbor shaft remote from the driving shaft for supporting said arbor shaft during such angular movement.

3,274,891
CLOSED-FRAME MACHINE
Germain Rollat, Geneva, Switzerland, assignor to Societe Genevoise d'Instruments de Physique, Geneva, Switzerland, a firm of Switzerland
Filed June 24, 1965, Ser. No. 466,748
Claims priority, application Switzerland, July 1, 1964, 8,649/64
4 Claims. (Cl. 90—16)



1. In a tool-machine, such as a centre-marking, milling or boring machine, or a measuring machine having a closed frame, that is to say, a machine of the type which comprises a movable horizontal crosshead which is parallel to the table of the machine and moves along two vertical columns, being controlled by two vertical screws each located at one end of the crosshead, and a headstock-carrying slide which is movable along the said crosshead, in such a machine, a fixed cam-member, a first feeler carried by the crosshead and movable along the said cam-member during vertical movement of the crosshead, a second cam-member carried by the crosshead and movable under the control of the said first feeler and a second feeler carried by the slide and movable along the said second cam-member during movement of the slide, the said second feeler being adapted to actuate a control mechanism, thereby to operate at least one of the said screws so as to cause it to rotate in one direction or the other, according to the position in height of the crosshead and the transverse position of the slide, and thus to maintain the crosshead parallel to the table whatever the position of the crosshead and of the slide.

3,274,892
DUST CONTROL APPARATUS FOR METAL WORKING MACHINES
Eugene A. Carsey, Cincinnati, Ohio, assignor to The Kirk & Blum Manufacturing Co., Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 30, 1965, Ser. No. 443,908
4 Claims. (Cl. 90—24)



1. Dust collecting apparatus for a metal working machine having a vertically reciprocated cross slide and a traversing tool rest on the cross slide comprising a composite, laterally extending hood mounted on the cross slide alongside the path of the tool slide rest, said hood having a number of side-by-side intake nozzles interconnected at their intake ends, each nozzle having a reduced discharge end, a cross over pipe positioned on the cross slide, said cross over pipe having a lateral row of spaced apart fittings, a pipe connecting the reduced discharge end of each nozzle to a fitting, the intake ends of the nozzles extending laterally the width of the hood and disposed closely adjacent the tool path, a collector stand pipe positioned beside the machine, a conduit connected to the cross over pipe and having a vertically sliding connection with the stand pipe, a filter means, and fan means continuously exhausting the stand pipe into the filter means.

3,274,893
POWER-BOOSTED, PUSH-PULL, CABLE CONTROL APPARATUS
John B. Hurlow, 2616 Welt Parkway, Tacoma, Wash.
Filed Feb. 24, 1964, Ser. No. 346,623
4 Claims. (Cl. 91—49)

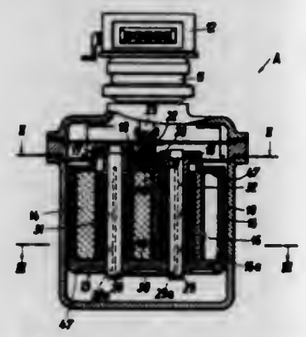


1. For use in power-boosted, push-pull cable control apparatus including input and output push-pull cables, a servo booster cylinder comprising

(a) a hollow case having longitudinally spaced inlet and outlet ports,
(b) a packing ring mounted inside the case between the ports,
(c) a hollow piston mounted for axial movement inside the case and packing ring,
(d) a piston ring on the piston in sliding sealing contact with the inside bore of the case, spaced from the packing ring and at the opposite side of the outlet port,
(e) ports through the walls of the hollow piston on each side of the piston ring,
(f) a hollow valve spool mounted for axial movement within the piston,

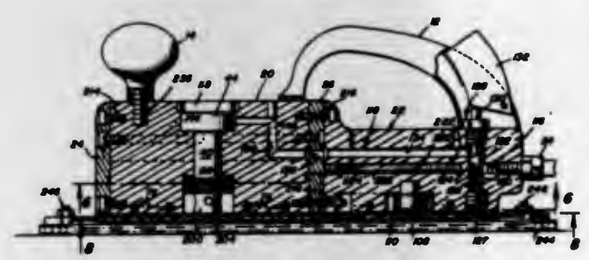
(g) spaced inlet ports on one end of the spool adjacent the inlet port through the case,
(h) valve sleeve means mounted inside the piston in working relation to the inlet ports,
(i) an outlet port through the spool between the ports on the piston,
(j) spaced sealing ring means between the piston and spool, one on each side of the outlet port,
(k) and connecting means for connecting the valve spool to the input push-pull cable and the piston to the output push-pull cable.

3,274,894
HYDRAULIC APPARATUS
Carl Jünger, Mannheim, Germany, assignor to Bopp & Reuther G.m.b.H., Mannheim-Waldhof, Germany
Filed Jan. 24, 1962, Ser. No. 168,455
1 Claim. (Cl. 91—87)



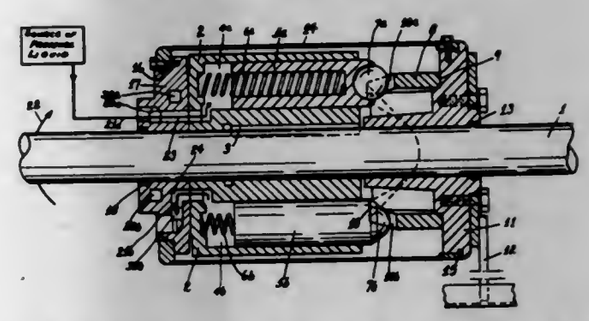
In a hydraulic apparatus, in combination, a pair of cooperating fluid displacing rotary gears having intermeshing teeth and recesses formed between the adjacent teeth thereof, the whole depth of said teeth being such that, during penetration of a tooth of one of said gears into the mating recess of the other gear, the minimum volume of the space formed between the root of the recess and the tip of the mating tooth is sufficient to permit the fluid contained in said space to form a first stream which is adjacent to the flanks of the teeth bounding said space and a more rapid second stream surrounded by said first stream, said streams flowing in the axial direction of said teeth.

3,274,895
DOUBLE PISTON PNEUMATIC FILING MACHINE
Otto Hendrickson, Azusa, Calif., assignor of one-third to Al Lohbeck, Arcadia, Calif.
Filed Sept. 4, 1963, Ser. No. 306,527
14 Claims. (Cl. 91—179)



1. A pneumatic filing machine, comprising: a body having cylinder bore means, valve chamber means and combination intake and exhaust passage means therein, said combination means communicating the ends of said cylinder bore means with said valve chamber means; piston means slidingly received within said cylinder bore means and adapted to reciprocate in said cylinder bore means; valve means positioned in said valve chamber means and operably associated with said piston means for alternately admitting fluid under pressure to one end of said cylinder bore means and venting the other end of said cylinder bore means to the ambient atmosphere in response to the reciprocation of said piston means; and tool carrier means closely underlying said piston means, and means drivingly connecting the piston means with the tool carrier means adjacent the front end of the body, said cylinder bore means comprising a pair of parallel juxtapositioned cylinder bores, said piston means including a pair of double ended pistons slidingly received within said cylinder bores, said body and tool carrier means being substantially twice as long as the cylinder bores whereby the tool carrier means are reciprocated by force exerted at the forward ends thereof.

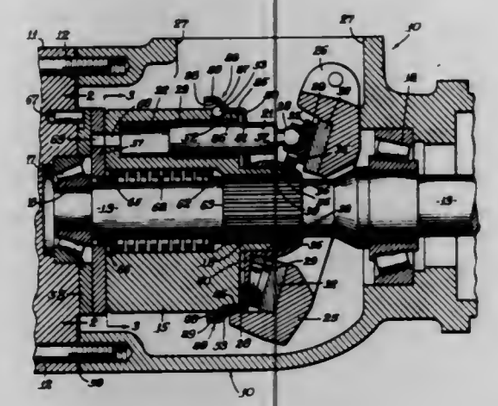
3,274,896
LIQUID PRESSURE OPERATED MOTOR
Mikko Terho, Naantali, Finland
(% Autolava Oy, Raisio, Finland)
Filed Oct. 7, 1963, Ser. No. 315,427
2 Claims. (Cl. 91—198)



1. A device in which reciprocating motion given a piston by a liquid under pressure is transformed into rotational motion comprising a housing having opposing parallel end walls, one of said end walls having an inner flat bearing surface, a shaft journalled in said end walls perpendicular thereto and to said flat bearing surface, a cylinder block keyed on said shaft in said housing and having an end wall in bearing contact with said bearing surface, said cylinder block being formed with a cylinder bore extending parallel to said shaft, a piston slidably mounted in said cylinder bore, said piston being formed at its end remote from said flat end wall surface with a recess containing a ball, a stationary crown mounted on the other end wall of the housing concentrically with said shaft and formed with inclined cam edges facing said piston along which the ball is movable responsive to force exerted on the ball by the piston, said crown being formed with flattened edges between adjacent pairs of inclined cam edges, said flattened edges being in at least two different planes perpendicular to the shaft axis, said flattened edges alternately comprising crest edges closest to the cylinder block and valley edges farthest from said cylinder block, the inclined cam edges alternating in inclination so that the ball alternately moves along said inclined cam edges toward and away from said cylinder block and travels on said flattened crest and valley edges between such movements to prevent rectilinear movement of the piston, a coiled spring disposed axially in said piston and bearing between said piston and said end wall of the block, urging said block end wall into sealing and bearing contact with said flat bearing surface, urging the piston away from the cylinder block and maintaining the ball in contact with the crown edges at all times, the block end wall having a passage opening at said bearing surface and communicating with the adjacent end of the cylinder bore, said one housing end wall having inlet and outlet passages opening at said bearing surface at locations to at times respectively register with said block end wall passage, means to supply pressure liquid into the cylinder bore through said inlet passage and block end wall passage a short time before the ball starts to move along an adjacent inclined cam edge in a direction away from

the cylinder block, whereby to cause said ball to engage the inclined cam edge, said inclined cam edge exerting a reaction on the piston to rotate the shaft, said block end wall passage moving out of registry with said inlet passage to seal said inlet passage a short time after the ball has reached the next adjacent flattened valley edge, and means to register said block end wall passage with said outlet passage, whereby to exhaust said cylinder bore, a short time before the ball moves off said flattened valley edge and engages the next adjacent inclined cam edge.

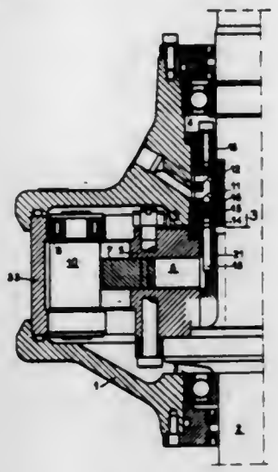
3,274,897
PISTON RETURN MECHANISM
Donald B. Reinke, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed Dec. 23, 1963, Ser. No. 332,775
18 Claims. (Cl. 91—199)



1. A hydraulic fluid translation device including a cylinder block, a plurality of pistons with inner ends disposed for reciprocation within cylinders in the block and protruding therefrom at one end of the block, an inclined cam plate facing said one end of said block, a bearing surface on said cam plate, the outer ends of said pistons having bearing means being adapted to slidably follow said bearing surface, means mounting said cylinder block and cam plate for relative rotation, inlet and outlet means communicating successively with ports from said cylinders upon relative rotation of the cylinder block and cam plate, hold-down means engaging said bearing means and movable toward and away from a position retaining said bearing means in engagement with said bearing surface, means urging said hold-down means toward said position responsive to relative rotation of said cylinder block and cam plate and means blocking said hold-down means from movement greater than a predetermined distance away from said position during start-up of said device.

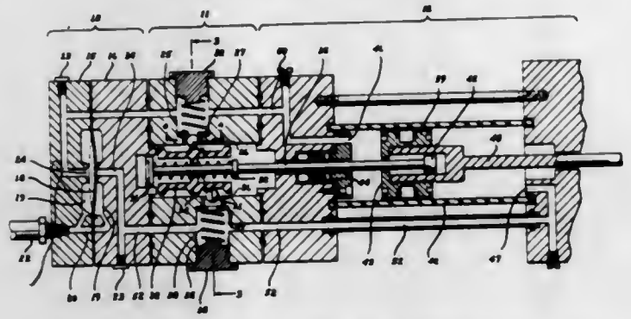
3,274,898
HYDRAULIC MOTOR
Jacques Faisandier, Chatillon-sous-Bagneux, France, assignor to Societe anonyme dite: Societe d'Applications des Machines Motrices, Issy-les-Moulineaux (Seine), France
Filed Dec. 24, 1963, Ser. No. 333,049
Claims priority, application France, Jan. 2, 1963, 920,314
2 Claims. (Cl. 91—205)

1. A hydraulic motor comprising in combination
a stator,
a rotor mounted in said stator for rotation about an axis of rotation,
a plurality of cylinders disposed in radial arrangement in said rotor,
piston members received in said cylinders,
a reaction member having a surface in said stator for controlling the movement of said piston members in said cylinders, said surface being multi-lobed to impose on said pistons upon rotation of said rotor at least three strokes per revolution,
said rotor comprising a flat valve seat surface disposed perpendicularly to said axial rotation,
an annular valve plate having a flat surface for making contact with said flat surface of said rotor during rotation of said rotor,
a conduit in the rotor for each cylinder discharging at one end into one of the cylinders and at the other end through an orifice of said distributor surface of said rotor and having at least one rectilinear portion in the immediate vicinity of said distributor surface of said rotor,



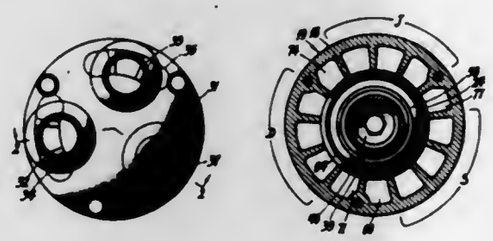
said valve plate being disposed in a floating manner and having an axis perpendicular to the flat surface of said stator having orifices arranged to sequentially communicate with the orifices of said conduit during rotation of said rotor, a plurality of piston members in said valve plate, each having an axial bore and being engaged partly in a corresponding cavity of the valve plate and partly in a corresponding cavity of the stator, a spring in said cavity of the stator bearing at one end on said piston member and at the other end on said stator, for pressing said valve plate in the direction of said flat surface of the rotor.

3,274,899
RECIPROCATING FLUID MOTOR
Howard W. Stump, 3339 W. State Ave., Phoenix, Ariz. 85021
Filed Dec. 31, 1964, Ser. No. 422,777
6 Claims. (Cl. 91—265)



1. Apparatus for translating fluid pressure into reciprocating motion comprising:
(a) a pressure box divided into two separate pressure chambers by a flexible diaphragm, (1) each separate pressure chamber having sealable outlet means, (2) said outlet means being sealable by said flexible diaphragm when in contact therewith, (3) each separate pressure chamber adapted to communicate through mainfold means with a source of fluid pressure,
(b) exhaust means comprising a pair of alternately closing exhaust valves communicating with an exhaust vent,
(c) a closed operating cylinder having forward and rear portions, (1) a piston disposed in said cylinder, (2) a forward fluid port in said cylinder forward of said piston, (3) a rear fluid port in said cylinder rearward of said piston,
(d) pressure manifold means connecting one pressure chamber outlet means with one exhaust valve and said forward fluid port,
(e) pressure manifold means connecting the other pressure chamber outlet means with the other exhaust valve and said rear fluid port, and
(f) actuating means operatively communicating between said piston and said exhaust means whereby said exhaust valves alternately close corresponding to the relative position of said piston in said cylinder.

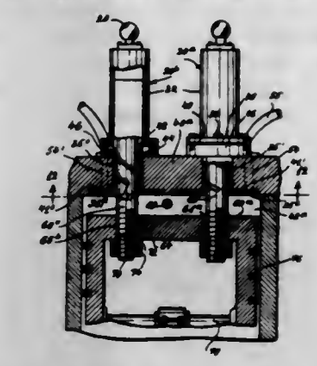
3,274,900
HYDRAULIC MACHINE
Sidney David Hough, 42 Leicester Ave., Glen Waverley, Victoria, Australia
Filed Apr. 3, 1964, Ser. No. 357,238
Claims priority, application Australia, Apr. 4, 1963, 29,214/63
9 Claims. (Cl. 91—298)



1. An hydraulic machine of the type driven by means of pressure fluid and comprising a pair of reciprocatory elements each reciprocable in a bore and each serving as a valve to control the reciprocatory motion of the other; comprising a hollow cylindrical casing and a hollow cylindrical liner located with the casing and spaced therefrom and defining a bore, a plurality of longitudinally extending ribs extending between the casing and the liner to divide the space therebetween to form a plurality of longitudinally extending ducts, and a plurality of ports positioned at predetermined axial and circumferential positions with respect to the bores, each said port providing communication between the bore and a duct according to its circumferential position, wherein at least part of said liner is of complex structure and comprises an outer sleeve and an inner sleeve and a spacer therebetween.

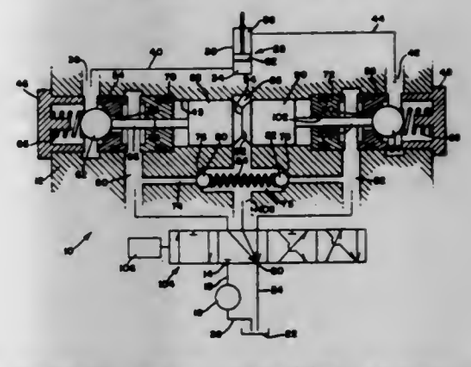
3,274,901
OSCILLATING PORT VALVE
Oscar A. Yost, 302 W. 22nd St., New York, N.Y.
Filed Sept. 28, 1964, Ser. No. 399,715
20 Claims. (Cl. 91—392)

1. A valve assembly for cyclically opening and closing a port in the wall of a structure, comprising a cylindrical sleeve, an annular flange plate extending radially outward of one end of said sleeve and juxtaposable against said wall to cover said port, means for supporting said sleeve for oscillatory rotation on its axis while said plate remains juxtaposed to said wall, and an axially reciprocatable cylindrical valve core extending axially into said sleeve, said core and sleeve having mutually engaging helical threaded means so that the sleeve and plate oscillate rotationally while the valve core reciprocates, said flange plate having an opening at its periphery disposed to uncover and cover said port cyclically as the flange plate



oscillates rotationally while the valve core reciprocates axially.

3,274,902
HYDRAULIC CONTROL SYSTEM
Richard M. Kleckner, Waterloo, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,249
8 Claims. (Cl. 91—420)

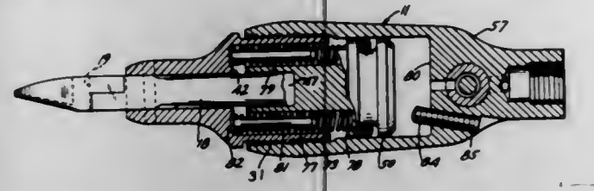


1. A hydraulic system comprising: a source of fluid pressure; a hydraulic motor having alternate inlets; a first and second conduit means respectively connected to said alternate inlets; a control valve means operatively connected to the source of fluid pressure and to said first and second conduit means for selectively supplying fluid under pressure to said conduit means; a first and second check valve respectively mounted in said first and second conduit means between the control valve means and the motor and biased against return of fluid from said motor; a third conduit means interconnecting the first and second conduit means between the control valve means and the first and second check valves respectively; a pair of check valves operably mounted in said third conduit means for preventing the flow of fluid from the third conduit means to the first and second conduit means respectively; and hydraulic means actuated by fluid pressure between the check valves in the third conduit means to unseat the first and second check valves.

3,274,903
PISTON MOTOR
Howard R. Fischer, New Hartford, Livio F. Marcantonio, Utica, and Marcel P. D'Haem, New Hartford, N.Y., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Original application Oct. 26, 1961, Ser. No. 147,956, now Patent No. 3,177,583, dated Apr. 13, 1965. Divided and this application Feb. 2, 1965, Ser. No. 429,768
2 Claims. (Cl. 92—13)

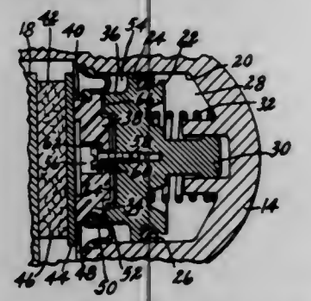
2. A pneumatic reciprocating motor comprising a cylinder providing a piston chamber opening through the front end of the cylinder, a cylinder head screwable into the front end of the cylinder for a selective distance, the piston having an extension projecting forwardly and being axially slidable within the cylinder head, the piston

extension having a plurality of longitudinal grooves in its outer surface, the cylinder head having in its interior surface a plurality of longitudinal grooves, each registering with and complementing an associated groove on the piston extension, a plurality of helical compression springs, each disposed in a pair of said complementary grooves and interposed between the piston and cylinder head to



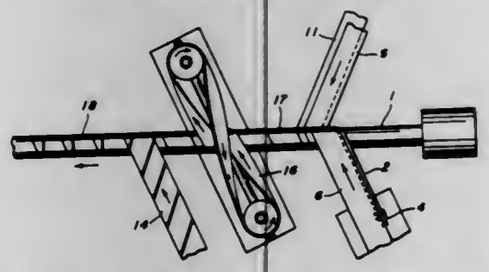
urge the piston rearwardly, fluid pressure means for moving the piston forward with sufficient force to overcome the opposition of said compression springs, a slot in the piston extension, and means carried by the cylinder head removably engageable with the slot to enable rotation of the cylinder head together with the compression springs and piston as a unit relative to the cylinder.

3,274,904
VENTED BRAKE WHEEL CYLINDER ASSEMBLY
Gerald B. Jacoby, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 30, 1964, Ser. No. 407,723
3 Claims. (Cl. 92—99)



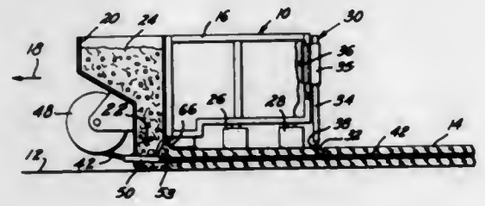
2. A piston assembly comprising a piston having an insulator block secured to one end thereof and passage means in said assembly extending radially inward at the joint between said block and said piston and axially outward through a center portion of said block.

3,274,905
METHOD OF MAKING A COMPOSITE CONTAINER
John N. Demsey, Jr., Murrysville, Pa., and James A. Huber, Cleveland, Ohio, assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 4, 1965, Ser. No. 461,397
5 Claims. (Cl. 93—94)



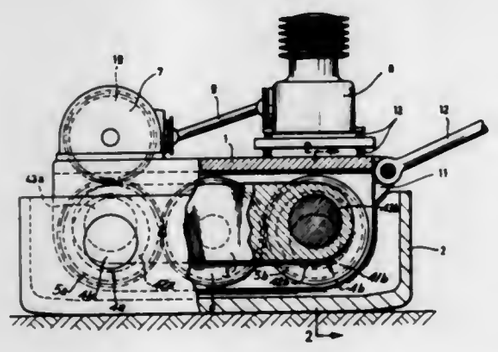
1. In a method of making a composite metallic foil-paper container, the steps comprising:
(a) spirally winding a metallic foil liner ply over an elongated mandrel;
(b) spirally winding a longitudinally offset paperboard ply over said liner ply with a continuous and coextensive layer of thermoplastic adhesive interposed between said liner ply and said paperboard body ply; and
(c) continuously bonding said plies by elevating the temperature of the composite wrap to the heat sealing temperature of said adhesive.

3,274,906
JOINT INSTALLATION APPARATUS
Lee Worson, Long Beach, and Robert F. Dill, Westminster, Calif., assignors to Edoco Technical Products, Inc., Long Beach, Calif., a corporation of California
Filed Dec. 9, 1963, Ser. No. 328,957
5 Claims. (Cl. 94—39)



1. Apparatus for providing a joint in concrete laid upon a prepared base, said apparatus comprising:
a frame movable forwardly over said prepared base;
a smoothing element carried by said frame and having a downwardly and rearwardly directed portion for forcing concrete downwardly;
an elongated joint insert laying tube having a passage for receiving a joint insert and further having a discharge portion spaced immediately below said portion of said smoothing element for discharging the joint insert for embedment in the plastic concrete as said apparatus moves forwardly;
and vibration means for vibrating said smoothing element and said discharge portion whereby plastic concrete passing through the space therebetween tends to consolidate about said discharge portion and about the discharged joint insert.

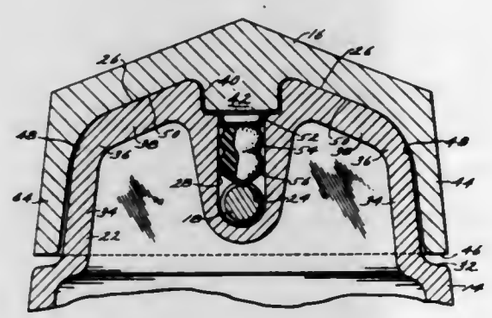
3,274,907
VIBRATING AND TAMPING DEVICES
Konrad Haage, Esslingen-Kimmichsweiler, Germany, assignor to Heusser-Deimag A.G., Cham-Zg, Switzerland
Filed Aug. 9, 1963, Ser. No. 301,151
Claims priority, application Germany, Aug. 16, 1962, D 39,630
11 Claims. (Cl. 94—48)



1. In a vibrating and tamping device for compacting a mass located beneath the device, in combination, first support means; a pair of rotary crank means, each of said

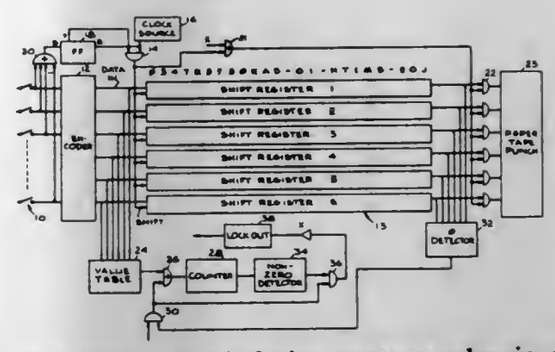
rotary crank means including means for supporting the respective crank means on said first support means; for rotation about a predetermined axis of rotation and first and second crank pins angularly displaced from each other by 180° about said axis of rotation and the axes of said first and second crank pins being respectively parallel to said axis of rotation, said pair of rotary crank means having at any given instant the same angular positions relative to said support means, during operation of the device, so that at any given instant the angular position of said first crank pins with reference to the axes of rotation of the pair of crank means are identical and said second crank pins of said pair of crank means also have respectively with respect to said axes of rotation identical angular positions displaced by 180° about said axes of rotation with respect to the positions of said first crank pins; working plate means operatively connected to said first crank pins for movement therewith and located at the lowest part of the device during operation thereof, said working plate means being the only part of the device which engages the mass which is worked on by the device and said first crank pins rotatably mounted in said working plate means which latter constitutes a second support means; and balancing plate means operatively connected to both said second crank pins for movement with the latter for counterbalancing the movement of said working plate means to eliminate inertia forces, said balancing plate means remaining at all times out of engagement with the mass which is worked on by the device.

3,274,908
TAMPING DEVICE
Gerald E. Grant, East Peoria, and Eugene L. Helton, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 22, 1964, Ser. No. 384,388
5 Claims. (Cl. 94—48)



1. A tamping device comprising an elongated support member having a base portion and a projecting portion with inwardly offset side walls terminating at angularly related planar top surfaces, a hollow tamping foot formed to be freely received on said projecting portion and including angularly related planar surfaces which mate in contact with the first mentioned planar surfaces, said tamping foot being formed to substantially enclose said inwardly offset side walls, a retaining member located through axially aligned openings in said projecting portion and in said foot for releasably holding said foot on said support member, said opening in said projecting portion being of sufficient size to allow said retaining member a limited degree of transverse movement whereas the openings in said foot closely receive said retaining member, a detent mechanism located outboard of said opening in said projecting portion including a resiliently biased member engageable with a peripheral portion of said retaining member for urging the angularly mated surfaces on said projecting portion and on said tamping foot in forceable contact.

3,274,909
APPARATUS FOR SPACING CHARACTERS
Markvard Hauerbach, Mountain View, Calif., assignor to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 8, 1963, Ser. No. 300,769
6 Claims. (Cl. 95—4.5)

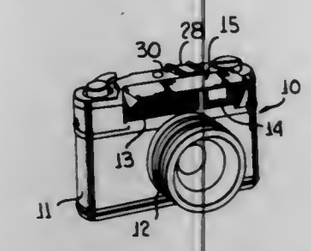


1. In a system for displaying messages wherein each message includes first and last portions and each portion is comprised of a plurality of ordered characters including first and last characters, a display device including a cathode ray tube; means for generating a beam in said display cathode ray tube; means for initially generating a video signal representative of said first character in said first portion and for successively generating video signals representative of subsequent characters in said first portion; means effective concurrent with said generation of said video signal representative of said first character in said first portion for deflecting said display tube beam to a first position and effective concurrent with the generation of each successive video signal for incrementally deflecting said display tube beam in a forward direction toward a second position; means for secondly generating a video signal representative of said last character in said last portion and for successively generating video signals representative of prior characters in said last portion; means effective concurrent with said generation of said video signal representative of said last character in said last portion for deflecting said display tube beam to said second position and effective concurrent with the generation of each successive video signal for incrementally deflecting said display tube beam in a reverse direction toward said first position; a memory storing information defining the space in which each character in said message is displayed; means for summing the space attributable to each character in said message for developing a total character space; means for determining the space difference between said total character space and the total space provided for said message; means determining the number of spacer characters that can be displayed in said space difference; means for successively generating video signals representing said number of spacer characters; and means effective concurrent with said generation of said video signals representative of said spacer characters for incrementally moving said display tube beam through said space between the leftmost character in said second portion and the rightmost character in said first portion.

3,274,910
SUNSHADE FOR CAMERA
Neil S. Williams, 1345 7th St. S., Fargo, N. Dak.
Filed July 14, 1964, Ser. No. 382,457
4 Claims. (Cl. 95—11)

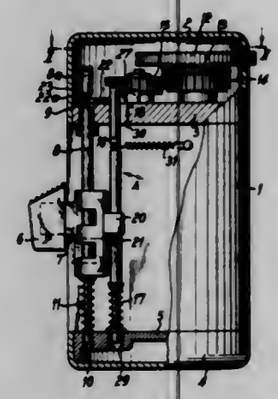
1. A sunshade attachment for conventional cameras of the type having a built-in exposure meter, a sunshade attachment comprising a shade member, said shade member including an upper horizontal shade element, a depending flange at a rear edge of said shade element terminating in an upstanding hook formation, an elongated slot in said depending flange extending lengthwise

of said depending flange, and a support for mounting said shade member on a camera, said support including an elongated arm having a reversely folded forward portion terminating in a depending terminal flange, said arm extending through said slot and said terminal flange being



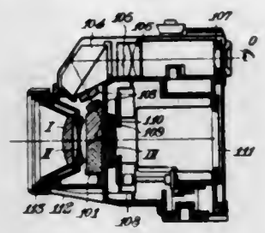
seated in said hook formation with said reversely folded portion being disposed beneath said shade element, said arm being narrower than said slot whereby adjustment of said shade member transversely of said arm may be accomplished.

3,274,911
FILM-TRANSPORT AND SHUTTER-RELEASE INTERLOCK MECHANISM FOR CAMERAS
Paul Greger and Heinz Rehn, Braunschweig, Germany, assignors to Voigtlander A.G., Braunschweig, Germany
Filed Dec. 30, 1964, Ser. No. 422,211
Claims priority, application Germany, Jan. 10, 1964, V 25,165
10 Claims. (Cl. 95—31)



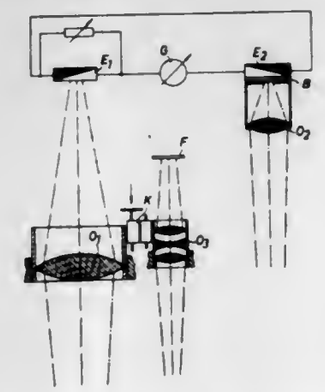
1. In a camera, film transport means for transporting film in the camera, shutter release means for releasing a shutter of the camera, releasable film transport lock means having a locking position preventing operation of said film transport means to transport film in a direction displacing unexposed film to a position to be exposed, and said film transport lock means having a release position releasing said film transport means for transporting the film in said direction, and releasable shutter release lock means having a locking position preventing operation of said shutter release means and a release position releasing said shutter release means for operation, said film transport lock means and said shutter release lock means directly engaging each other and said film transport lock means when in its locking position maintaining said shutter release lock means in its release position releasing said shutter release means for operation, said shutter release lock means assuming its locking position when said film transport lock means is in its release position releasing said firm transport means for transporting film in said direction, and said film transport means displacing said film transport lock means back to said locking position thereof at the end of the transportation of an unexposed film frame to a position to be exposed, said film transport lock means, when returning to its locking position, displacing said shutter release lock means to its release position releasing said shutter release means for operation.

3,274,912
SINGLE-LENS REFLEX CAMERA
Tadashi Kasahara, Tokyo, Japan, assignor to Konishiroku Shashin Kogyo Kabushiki-Kaisha, Tokyo, Japan, a corporation of Japan
Filed Feb. 27, 1962, Ser. No. 176,027
Claims priority, application Japan, Mar. 1, 1961, 36/6,748
6 Claims. (Cl. 95—44)



1. A single lens reflex camera comprising a photographic objective having a large angle field of vision, a diaphragm in front of said objective, two small reflectors in front of said diaphragm and spaced from the optical axis of said camera, and an optical finder system adjacent said objective and diaphragm into which said reflectors reflect a portion of the light entering the camera, said optical finder system having a focusing panel in the real image plane of said finder system with two flat surfaces on the side thereof onto which the light from the reflectors is incident and having the other side spherical, said flat surfaces each being inclined at an angle to the optical axis of said finder system and to each other at an angle determined by the position of said two small reflectors, each surface having an extension extending into the other inclined surface past a line of intersections of said surfaces, said extensions having the edges thereof which are adjacent straight and lying in a plane which includes the optical axis of said finder system and is perpendicular to said surfaces.

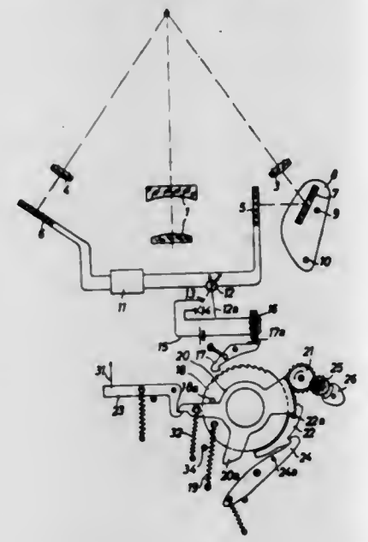
3,274,913
FOCUSING APPARATUS FOR CAMERAS AND THE LIKE
Klaus Biedermann and Franz Jakob, Unterhaching, Munich, Alfred Kubitzek, Grunwald, Munich, and Hans-Peter Simson, Tutzing, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed June 10, 1964, Ser. No. 374,099
Claims priority, application Germany, June 14, 1963, A 43,325
21 Claims. (Cl. 95—44)



1. In a photographic camera, in combination, an objective lens; a focusing arrangement for said objective lens comprising a pair of photoelectric means each including a photo-sensitive element and adapted to create electrical impulses the intensity of which depend on variation of the intensity of the light reaching the respective photo-sensitive element, the photo-sensitive element of at least one of said photoelectric means constructed so as to be adapted

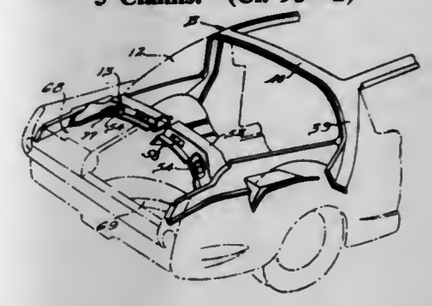
to cause the respective photoelectric means to create different electrical impulses depending not only on the intensity but also the distribution of light reaching said photosensitive element, and means for directing real images of the same object onto both of said photo-sensitive elements, at least one of said means being adjustable for varying the sharpness of the image on at least the photo-sensitive element of said one photoelectric means so that the respective photoelectric means creates electrical impulses which depend in intensity upon variations of the sharpness of the image on the respective photo-sensitive element; and focusing means for focusing said objective lens and being actuated by said combined electrical impulses of both said photoelectric means only when the variations of electrical impulses of said one photoelectric means due to variations of distribution of light reaching the photosensitive element of said one photoelectric means do not coincide with variations of the electrical impulses of the other of said photoelectric means due to variation of distribution of light reaching the photo-sensitive element of the other of said photoelectric means.

3,274,914
CAMERA FOCUSING DEVICES
Friedrich Biedermann, Günter Fauth, and Franz Jakob, Unterhaching, Munich, Hans-Peter Simson, Tutzing, and Erwin V. Wasielewski, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed June 10, 1964, Ser. No. 374,116
Claims priority, application Germany, June 21, 1963, A 43,384
26 Claims. (Cl. 95—44)



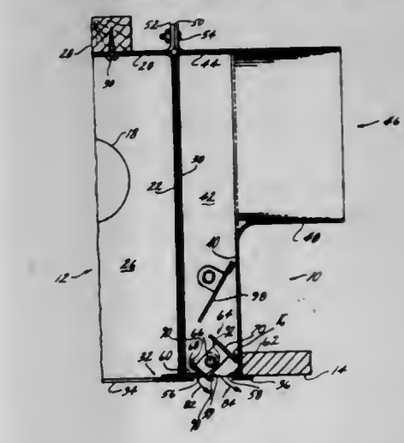
1. In a range finder, in combination, a pair of optical means respectively situated adjacent the junctions between the base of a predetermined triangle and the sides thereof, said sides of said triangle intersecting distant from said base at the subject and said sides of said triangle respectively coinciding with the optical axes of said pair of optical means; a pair of photosensitive transducers respectively receiving light from beams which extend along said optical axes, said photosensitive transducers constructed and arranged so as to effect the production of equal signals only in response to impingement of identical light beams of equal intensity and equal configuration in identical locations on said photosensitive transducers while in the event of impingement of light beams of unequal intensity and equal configuration in identical locations or of equal intensity and equal or unequal configuration in different locations on said photosensitive transducers the production of different signals will be effected; and means for comparing the thus produced signals for determining their relative characteristics.

3,274,915
VEHICLE BODY INTERIOR VENTILATION ARRANGEMENT
Robert C. Ziegenfelder, Warren, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed July 24, 1964, Ser. No. 384,839
5 Claims. (Cl. 98—2)



1. In a vehicle body having an opaque roof section overlying the passenger seating area and a large transparent window panel positioned rearwardly of the seating area, said window panel extending rearwardly and downwardly from said opaque roof section and a trunk area positioned rearwardly of said window panel, a hollow beam member extending transversely of the vehicle body at the rear end of said window panel and supporting same, ventilation ports in portions of said beam member opening into the body interior and other ports in said beam members opening to the atmosphere having valving associated therewith to control the exhaust of air from the body interior across the interior side of said window panel, through the hollow beam member, and outwardly to the atmosphere, an upstanding panel member mounted across the body interior beneath said window to separate the passenger area from the trunk area of the body, and other openings in said hollow beam member opening into said trunk area to provide for exhaust of air from said trunk area through said valved other ports in said hollow beam member.

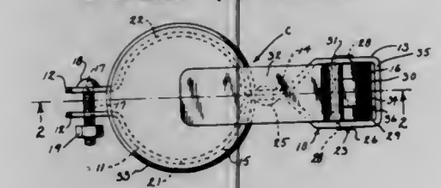
3,274,916
AIR DIFFUSING DEVICE WITH ADJUSTABLE AIR TURNING VANE
William J. Waeldner, Waverly, and Carl W. Palmquist, Clarks Summit, Pa., assignors to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed June 16, 1964, Ser. No. 375,490
15 Claims. (Cl. 98—40)



1. A device for controlling the direction of air emanating from an air distribution system; said device comprising first and second longitudinally extending side walls, means for supporting said walls in laterally spaced relationship so that the device can be entered in an elongated opening in a ceiling or the like, first and second air deflecting lips depending inwardly from the lower edge

portions of said first and second side walls and defining an elongated air discharge outlet therebetween, an elongated air turning vane assembly, means pivotally supporting said vane assembly for movement about a longitudinal axis which is spaced between and slightly above said lips, said vane assembly having an elongated vane member located in downwardly spaced radial relation to said assembly axis, and said vane assembly being movable between first and second positions whereat said vane member is positioned in air turning relationship with said first and second lips respectively for the deflection of the air away from the vertical and in opposite generally horizontal directions.

3,274,917
PROTECTIVE COVER FOR EXHAUST PIPES
William P. Tolbert, Sr., Fort Madison, Iowa, assignor to Gleason Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 17, 1964, Ser. No. 345,462
6 Claims. (Cl. 98—59)



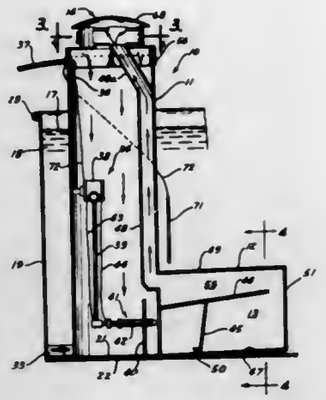
1. An automatic self-closing protective cover assembly adapted to be affixed to the upstanding exhaust pipe of a fuel combustive system to prevent entry of foreign material therein while said fuel combustive system is inoperative comprising; a split ring bracket formed from a single length of heavy gauge metal to include, an open end band portion of a size and configuration to substantially encircle the peripheral surface of said pipe, an open protective cage portion spaced therefrom, and a joining bridge section formed from adjacent parallel stretches of said metal in contacting relationship; a cover normally seated over the discharge end of said pipe closing off the same; a balance arm formed from a single strip of material, means associated with said arm and said protective cage for pivotally mounting said arm intermediate its ends at a point within said protective cage portion, one end of said arm being secured to said cover and forming a support therefor, the other end of said arm extending downwardly and angularly to form a counterbalance for said cover, whereby pressure from exhaust gases will cause said cover to move off the discharge end of said exhaust pipe; means limiting the pivotal movement of said arm; and means for adjustably securing said band portion and bracket to said exhaust pipe.

3,274,918
STOCK TANK HEATER COVER APPARATUS
Mathew H. Stapleton, Jefferson, Iowa
Original application July 9, 1963, Ser. No. 293,744, now Patent No. 3,212,494, dated Oct. 19, 1965. Divided and this application Aug. 23, 1965, Ser. No. 481,834
1 Claim. (Cl. 98—62)

A cover apparatus for a stock tank heater, the heater having a burner box, a heater housing secured to the base of the burner box, and gas burner means mounted within said burner box at the base thereof; said cover apparatus comprising:

a plate adapted to be detachably mounted on the upper end of the burner box and spaced above the normal level upper edge of the burner box whereby air passages are formed between the plate and said upper edge, said plate having an opening formed in a normally horizontally disposed portion thereof, said opening defined by an upturned lip;

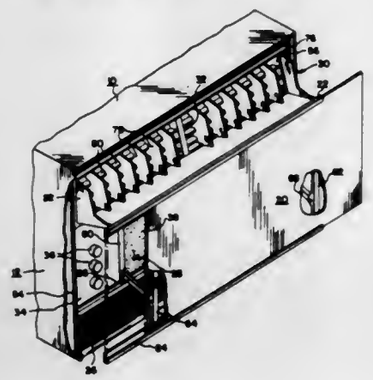
a circular collar member having a plurality of arcuately spaced, depending leg portions mounted on said plate and surrounding said opening, said collar member having a diameter greater than that of said lip but less than the diameter of said plate, said collar member having in addition a plurality of upwardly extended portions formed in arcuately spaced relation about the upper edge thereof;



a cover mounted above and extended over said collar member, the undersurface of said cover concave relative to said collar member, said cover having a diameter greater than that of said collar member; and

an exhaust stack adapted to lead from a position at said upper end of said burner box within said opening to a position downwardly within the burner box, said exhaust stack adapted to have fluid communication with the heater housing as the only fluid exhaust means therefor.

3,274,919
ROOM AIR CONDITIONER
Evert S. Wegman, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 26, 1965, Ser. No. 435,537
6 Claims. (Cl. 98—94)



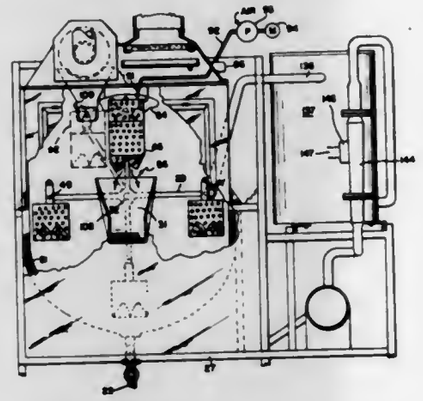
1. A retractable and extendable front panel and vane assembly for a room air conditioner, comprising:

a first frame adapted to be secured to the room face of said air conditioner, and including means dividing said face into a lower air inlet, and an upper air outlet;

a rectangular second frame carrying a closure panel and pivotally linked to said first frame for movement of said second frame from an open lower position in which said panel is spaced outwardly from said air inlet, to a closed upper position in which said panel lies retracted against said room face and over said air outlet;

said vane assembly being generally L-shaped in transverse cross-section with one leg of said L mounting a series of directional vanes, and the other leg of said L carrying a generally imperforate wall, said vane assembly serving as a pivotal link between the upper edge of said second frame and said first frame so that said second frame and closure panel and said vane assembly move between said retracted and extended positions as a unit.

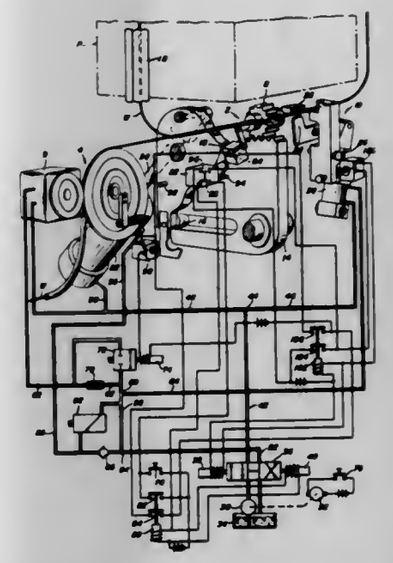
3,274,920
CONTINUOUS DEEP FAT FRYER
John O. Benson, Mayer, Minn., assignor to General Mills, Inc., a corporation of Delaware
Original application Feb. 14, 1963, Ser. No. 258,577. Divided and this application Feb. 12, 1965, Ser. No. 432,089
3 Claims. (Cl. 99—404)



1. A deep fat fryer apparatus for cooking food products in a cooking oil which comprises a container for hot cooking oil; buckets for carrying the products to be cooked; means for moving the buckets relative to said container through an operational cycle of constant duration wherein said buckets are successively charged with products, submerged in the cooking oil, and purged of the products; means for purging said bucket of said products; means for charging said buckets with the products; a power operated timing device interconnecting said means for charging, said means for purging, and said means for moving to effectuate the operational cycle and to drive said means for moving; a heater remotely located with respect to said container for heating said oil; and a circulatory system for continuously circulating the heated oil between said heater and said container.

3,274,921
CONTROL SYSTEM FOR WIRE-TYING APPARATUS
Marchand B. Hall, Olympia Fields, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 431,647
6 Claims. (Cl. 100—4)

1. A control system for a wire-tying apparatus including a guide track for the wire, joining means forming a portion of said track, a gripper jaw pivoted adjacent the far end of said means in the direction in which wire is fed through the track, pinch rolls effective to feed wire into said track and on reversal to tension a tie wire about an article within said track, said system comprising a reversible fluid motor driving said pinch rolls, a fluid pressure cylinder connected with said joining means, a fluid circuit connected to said motor and to said cylinder, a reversing valve in said circuit, first means actuating said valve to direct fluid toward said motor, and to said cylinder to operate said cylinder to move said joining means to initial operating position, a full-flow valve in said fluid circuit between said reversing valve and said motor, means for operating said full-flow valve, means operated by completion of the movement of said joining means to initial operating position connected with said full-flow valve-operating means effective to actuate the same to open said full-flow valve after said joining means reaches initial operating position whereby said motor is operated to drive said pinch rolls



in the direction to feed a tie wire through said joining means, around said track and through said joining means a second time, second means actuating said reversing valve to direct fluid to said motor to operate said motor to drive said pinch rolls in the reverse direction to retract said tie wire from said track, and to said fluid pressure cylinder to operate the same to actuate said joining means in a direction to form a joint, a pressure sequence valve in said fluid circuit between said reversing valve and said fluid pressure cylinder adapted to effect operation of said joining means only on the increase of the pressure in said fluid circuit to a predetermined value.

3,274,922
REFUSE COMPACTOR
Lawrence C. Hefner, 519 Avenue B, Redondo Beach, Calif.; Sarah G. Hefner, surviving spouse of said Lawrence C. Hefner, deceased
Filed June 19, 1964, Ser. No. 376,370
7 Claims. (Cl. 100—52)

1. A refuse compactor comprising:

a support frame,

a container fixedly mounted on said frame having a pivotally supported door member covering the bottom end thereof and an access door near the top end thereof,

a platen member,

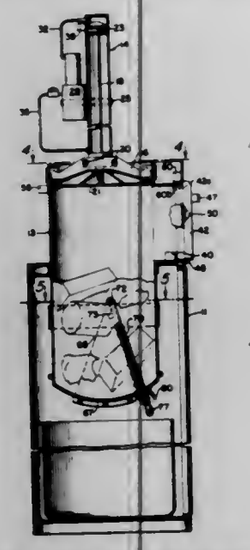
means for slidably supporting said platen member within said container for motion along the longitudinal axis thereof,

hydraulic drive means for driving said platen along said longitudinal axis, said drive means including a hydraulic pump and a reversible electrical motor for driving said pump,

an electrical power source connected to said motor,

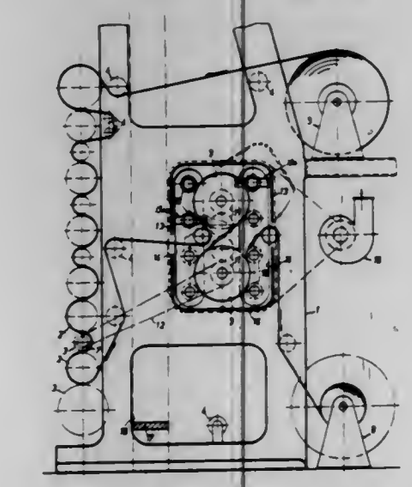
means for maintaining said access door locked when said platten is in other than a predetermined position, and

means for automatically reversing the driving direction of said hydraulic drive when the compacting force applied by said platen exceeds a predetermined magnitude, said reversing means including a pressure sensitive switch responsive to the hydraulic pressure in



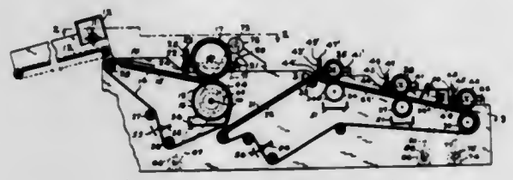
the output of said hydraulic drive means and electrical switch means responsive to said pressure sensitive switch for changing the connections between said power source and said motor to reverse the rotation direction thereof.

3,274,923
MACHINE FOR TREATING PAPER WEBS, ESPECIALLY SATINING OR GLAZING CALENDER
Erhardt Münch, Krefeld-Fischeln, Germany, assignor to Joh. Kleinewefers Sohne Maschinenfabrik, Krefeld, Germany
Filed Aug. 17, 1964, Ser. No. 389,951
Claims priority, application Germany, Aug. 24, 1963, K 45,535
2 Claims. (Cl. 100—70)



1. In a machine for finishing paper webs, especially for imparting a satin finish to at least one face of a web passing through the machine; roller stand means in the form of spaced frame members, a row of calendering roller means arranged in substantially coplanar relation in the roller stand means at one side of the frame members, paper web supply means and paper web take-up means arranged at the other side of the frame members, and a brushing unit in the roller stand means between the said sides of the frame members and between the ends of said row of calendering roller means so as to have substantially a central location in said roller stand means, said brushing unit comprising a pair of main rollers in adjacent parallel relation, means for driving said main rollers in respectively opposite directions, deviating roller means in the roller stand means including deviating roller means for guiding a paper web therein to and from said main rollers so the paper web can pass around a substantial portion of the periphery of at least one of said main rollers while exposing at least one face of the web for treatment, a plurality of brushing rollers adjacent each main roller and distributed circumferentially thereof about the said portion of the periphery of the pertaining main roller for brushing the face of the paper web exposed on the pertaining main roller, and hood means partially enclosing said main rollers and brushing rollers for conveying air thereover to remove dust generated during the brushing operation, said frame members having aperture means at the ends of said brushing unit exposing the ends of at least said brushing rollers to facilitate servicing thereof, said aperture means also serving as air inlet and air outlet means for said hood means, and air impelling means connected to the aperture means of at least one of said frame members for moving air through said hood means.

3,274,924
APPARATUS FOR DEWATERING PULPY MATERIAL
Douglas Pringle Walker, Rte. 2, Box 160, Mount Vernon, Washington
Continuation of application Ser. No. 312,667, Sept. 30, 1963. This application Nov. 29, 1965, Ser. No. 510,192
10 Claims. (Cl. 100—153)

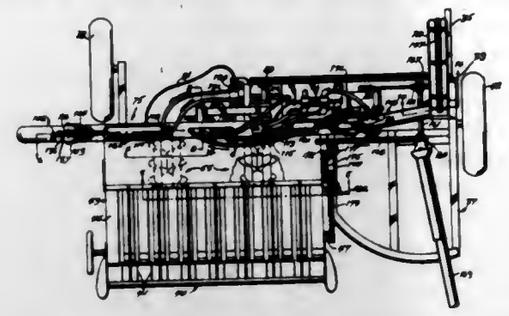


1. A pulp-dewatering machine comprising a first pair of top and bottom rollers in superposed pressing relationship and rotating in opposite directions, respectively, to provide a feed nip at one side thereof, the top roller being rubber-covered and the bottom roller being of hollow, hard-surfaced construction and perforated, a second pair of top and bottom rollers in superposed pressing relationship located at the discharge side of said first pair of top and bottom rollers and rotating in opposite directions, respectively, to provide a feed nip at the side thereof adjacent to said first pair of top and bottom rollers, both the top roller and the bottom roller of said second pair of rollers being rubber-covered, and water-absorbent belt means passing between the rollers of both pairs of rollers, transporting pulp into the feed nip of the first pair of rollers and also transporting pulp from the discharge side of the first pair of rollers into the feed nip of the second pair of rollers.

3,274,925
VIBRATOR TYPE WAFERIZER
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 2, 1964, Ser. No. 415,380
26 Claims. (Cl. 100—186)

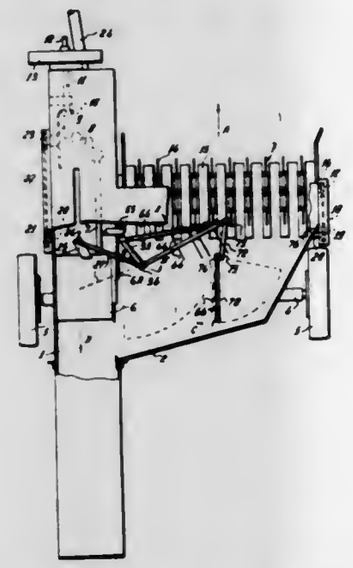
11. A hay waferizer, comprising: a first-stage feeding unit for compacting hay substantially to bale density; a second-stage unit for forming hay wafers, said second-stage unit including a waferizer cylinder, a hay inlet into said waferizer cylinder from said first-stage unit, a waferizer piston in said cylinder, compound drive means connected

to said piston for simultaneously imparting thereto a primary reciprocation and a second reciprocation, said sec-



ondary reciprocation being of greater frequency than said primary reciprocation.

3,274,926
BALING MACHINES
Cornelis van der Lely, Zug, Switzerland, assignor to Patent Concern N.V., Willemstad, Curacao, Netherlands Antilles, a limited-liability company of the Netherlands Antilles
Filed June 26, 1964, Ser. No. 378,269
Claims priority, application Netherlands, July 1, 1963, 294,796
13 Claims. (Cl. 100—188)

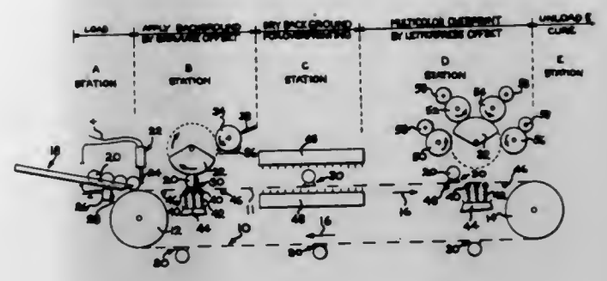


1. A feeding device for a baling machine, having a feeding chamber, a system of articulated and pivotable interconnected coupling rods, one end of said system being pivotably connected to a reciprocating baling plunger in a baling chamber, two feed arms in said feeding chamber, each of said arms being pivotably linked to said system about a fixed substantially vertical axis, said arms being spaced from each other and being pivotably connected to each other by said coupling rods, said coupling rods being actuated by said plunger to swing said arms and said arms having crop-engaging means for moving crop material into said baling chamber.

3,274,927
METHOD AND APPARATUS FOR DECORATING CONTAINERS
Kenneth G. Lusher, Perrysburg, and Lowell J. Wells, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed June 26, 1964, Ser. No. 378,290
5 Claims. (Cl. 101—40)

1. In a method of decorating an article with a background color having an overprint thereon,

the steps of,
loading the article into a jig and then moving the article along a linear path,
applying a first color to the article by moving a printing medium into printing relation with the article, said printing medium being carried on a member rotating in a manner tending to oppose the linear movement of the article,



exposing the article to radiation to dry said first color, and without removing the article from the jig after the first printing, applying an overprint on the dried first color by an operation wherein the printing medium is carried on a member rotating in a manner tending to oppose the linear movement of the article.

3,274,928
PLANOGRAPHIC PRINTING PLATE
Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York
Filed Dec. 13, 1965, Ser. No. 517,881
10 Claims. (Cl. 101—149.2)

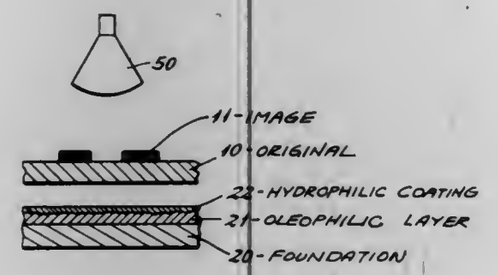


1. A planographic printing plate comprising a foundation, a hydrophilic planographic printing coating on one surface thereof and a volatile liquid-applied pressure-transferable oleophilic layer on the opposite surface thereof, said layer having a dry, clean, rub-resistant surface and being based upon a binder material from the group consisting of cellulosic plastics and synthetic thermoplastic resins and mixtures thereof, and containing oleophilic imaging material for the placing of ink-receptive images on a planographic printing surface under the effects of imaging pressure.

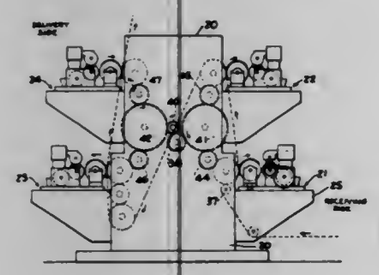
3,274,929
PLANOGRAPHIC PRINTING PLATE AND PROCESSES
Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York
Filed June 13, 1962, Ser. No. 202,188
4 Claims. (Cl. 101—149.2)

2. A heat-imageable planographic printing plate comprising a flexible foundation sheet having on the surface

thereof a heat-meltable oleophilic layer comprising the residue of an aqueous wax emulsion comprising discrete, minute particles of wax, an emulsifying agent and water after the evaporation of said water, said layer having a thickness within the range of from 3 to 5 points, a melting temperature within the range of from 120° F. to 200° F. and having a rough uneven surface providing good receptivity for a hydrophilic printing coating, and having on said rough uneven surface a water-insoluble hydrophilic printing coating comprising 1 part by weight of a hydrophilic binder material and from 3 to 7 parts by weight of an absorbent filler and having a thickness of from 0.5 to 2 points and which is capable of remaining solid and being penetrated and rendered oleophilic by said oleophilic layer when the plate is heated to a temperature within the range of 120° F. to 200° F., said oleophilic layer not being capable of rendering said printing coating oleophilic under the effects of imaging pressure.

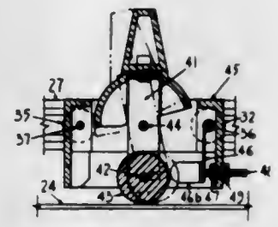


3,274,930
ROTARY PRINTING PRESS WITH MEANS FOR REVERSING CYLINDER ROTATION
Herbert Nagel, Southfield, Mich., assignor to Wolverine Flexographic Mfg. Co., Farmington, Mich., a corporation of Michigan
Filed Sept. 22, 1965, Ser. No. 489,293
6 Claims. (Cl. 101—180)



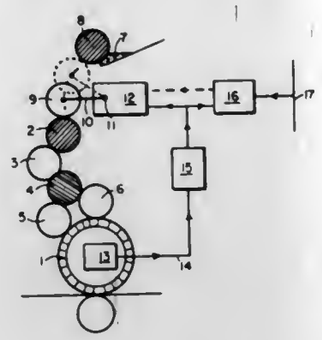
1. In a flexographic rotary printing press for printing a plurality of printing color images on a web, said press to be selectively set to print all of said images on one side of the web and to be selectively reset to print some of said images on the opposite side of the web and thus to print simultaneously on both sides of the web, a plurality of color printing units, each of said units including a plate cylinder carrying a printing plate, an ink transferring cylinder rotatable in either direction and adapted to transfer ink to said printing plate, an impression cylinder adapted to press the web against the printing plate of its respective unit only, the plate cylinder and the impression cylinder of a portion of the plurality of said color units being adapted to be rotated in both directions independently of the cylinders of the remaining units, driving means for rotating the cylinders of the units, means to selectively reverse the direction of rotation of said cylinders in said reversible color units only, roll means for rethreading the web on cylinders of reversible color units for adapting such color unit to print on the opposite side of the web with the other units to continue printing on the same side, clutch means operatively interposed between the plate cylinder and said ink transferring cylinder at least in the reversible color printing units, said clutch means including wedging-in elements adapted to provide driving connection between the plate cylinder and the ink transferring cylinder when the plate cylinder is driven in one direction, said wedging-in elements being responsive to reversing the direction of rotation of the plate cylinder by coming out of their wedge-in positions and thus destroying the driving connection and to provide for idling in the opposite direction, said clutch means being adapted to be manually reset, while remaining in its operative position, when the direction of rotation of its color unit is reversed and when so reset to provide similarly driving connection between said cylinders in the opposite direction and idling in the direction of previous driving.

3,274,931
PRINTING APPARATUS
James MacDowell Patterson, Jr., Springfield, Va., assignor to Farrington Business Machines Corporation, Springfield, Va., a corporation of Massachusetts
Filed June 26, 1964, Ser. No. 378,189
2 Claims. (Cl. 101—269)



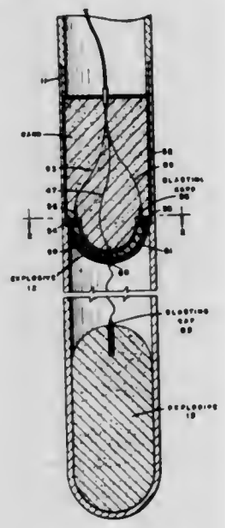
1. In the art of printing machines of the type adapted to use portable printing plates, a machine comprising a frame, a tray mounted on the frame at least a portion thereof forming a plane which defines a printing bed, means for positioning on the printing bed printing means to enable an impression to be transferred therefrom, means for positioning on said tray the document to be imprinted, means for providing at least a pair of spaced guide rails above and parallel to the plane of the printing bed, a housing, a pair of shafts extended through said housing, bearings mounted on the end of said shafts and adapted to be directed by said guide rails over the printing bed, a platen head assembly having a handle, a pair of members fixed to and extending from said handle, a shaft with a platen head assembly having a handle, a pair of members fixed to and extending from said handle, a shaft with a platen roller rotatably mounted on said extension members, a rod for pivotally mounting said platen head assembly in said housing, adjustment means for setting the distance to be displaced between the platen roller and the plane of the printing bed when the platen head assembly is rocked into engagement with the adjustment means, said adjustment means comprising means mounted in swivelling fashion from one of the shafts extending through the housing and adapted to abut the extension members carrying the platen roller, screw means threaded through one wall of said housing adapted to abut said swivel mounted means, and means for locking said threaded screw.

3,274,932
INK FOUNTAIN ROLLER INTERRUPTING MEANS
Roger M. Caza, St-Andre-sur-Cailly, Seine-Maritime, France
Filed Dec. 5, 1962, Ser. No. 242,468
Claims priority, application France Dec. 5, 1961
5 Claims. (Cl. 101—351)



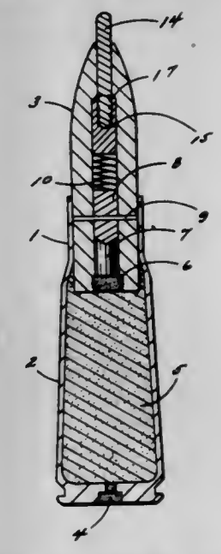
1. In a printing machine having at least a printing drum, an ink fountain roller, an oscillating roller and a ductor roller, said ductor roller rotating in movable levers, the combination of first means insuring a constant rotation speed of said ink fountain roller and second means for a repetitive cyclic operation corresponding to a predetermined rotation of said printing drum, said second means first placing said ductor roller for an adjustable time portion of said cyclic operation into contact with said fountain roller and, second, placing said ductor roller into contact with said oscillating roller during the rest of said cyclic operation.

3,274,933
APPARATUS FOR EXPLOSIVE CHARGE DRILLING
Leon H. Robinson, Jr., and Robert H. Friedman, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed May 24, 1963, Ser. No. 284,775
4 Claims. (Cl. 102—21.6)



1. Apparatus for use in earth drilling, comprising:
an elongated housing;
nondirectional first explosive charge means at the lower end of said housing;
a thin cup-shaped supporting member positioned in said housing above said explosive charge means, extending outwardly from the axis of said housing and upwardly and away from said explosive charge means;
a second explosive charge means lining the inner surface of said supporting member;
first detonating means connected to said first explosive charge means;
second detonating means connected to said second explosive charge means adapted upon activation thereof to detonate said second explosive charge means a predetermined interval after activation of said first detonating means and before the energy produced by detonation of said first explosive charge means reaches said second explosive charge means; and
means for simultaneously activating said first and second detonating means.

3,274,934
COMBINATION CARTRIDGE
Philip E. Johnson, Malden, Mass., assignor of fifty percent to Michael C. Lessa, Wakefield, Mass.
Filed Nov. 13, 1964, Ser. No. 411,054
5 Claims. (Cl. 102—38)

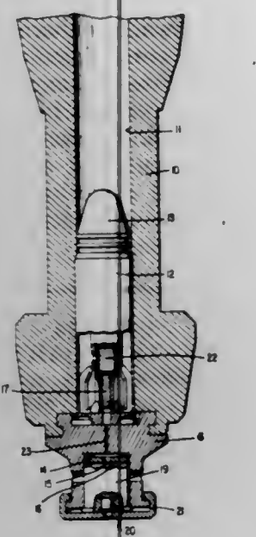


1. An ammunition cartridge of the class described, a cartridge having a generally tubular casing having an open end and a closed end, a cartridge primer inserted in said closed end, a propellant within said cartridge in structural and functional contact with said cartridge primer, an elongated projectile having forward and rearward ends, said rearward end extending in said cartridge casing and closing said open end of said casing, said projectile having a longitudinal bore extending entirely through said projectile, a projectile primer closing said bore at the rearward end of said projectile and in structural and functional contact with said propellant, a firing means within said bore extending forwardly of said forward end of said projectile, shearing means connecting said firing means to said projectile, said firing means when actuated functions to actuate said projectile primer which in turn actuates said propellant, said propellant being alternatively actuated by said cartridge primer or said projectile primer.

3,274,935
PRACTICE AMMUNITION
Hans Stadler, Nurnberg, and Heinz Gawlick and Rudolf Stahlmann, Furth, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Aug. 12, 1964, Ser. No. 408,711
Claims priority, application Germany, Aug. 13, 1963, D 42,233
20 Claims. (Cl. 102—41)

1. A practice ammunition, especially for mortars, comprising:
a shell dummy provided with inset barrel means and having a tail portion,

ejector charge means located within said tail portion and ignited during loading of the mortar,



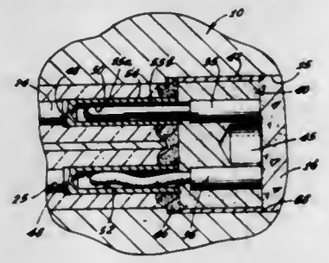
a small-caliber training shell accommodated within said inset barrel means and including propellant charge means,
and means for igniting said propellant charge means by said ejector charge means.

3,274,936
EXPLOSIVE SPEARHEAD
Salvatore John Messina, Cortaro, Ariz. (4526 E. 20th St., Tucson, Ariz.), and Joseph Herndon Pulliam, 2652 W. Arthur Place, Tucson, Ariz.
Filed Aug. 25, 1964, Ser. No. 391,886
1 Claim. (Cl. 102—48)



An explosive spearhead for use with a round of ammunition having a body portion, an outstanding peripheral ejection flange at one end of said body portion, and a primer at said one end, said explosive spearhead comprising a breechblock, a firing pin carried by said breechblock, an outer barrel of uniform smooth internal diameter carried by said breechblock in circumscribing relationship with respect to said firing pin and having an open end in spaced relationship to said firing pin, a breechblock face slidably received within said outer barrel, an aperture defined through said breechblock face in aligned relationship with said firing pin, spring means normally urging said breechblock face away from said firing pin, and inner barrel of smooth uniform external diameter slidably received within said outer barrel and having a first end juxtaposed to said breechblock face and a second end extending further from said firing pin than said open end of said outer barrel, said inner barrel being slidably removable from the open outer end of said outer barrel and internally dimensioned to receive therein in sliding relationship said body portion of said round of ammunition and replaceable in said outer barrel with said ejection flange engaged between said first end of said inner barrel and said breechblock face and said primer aligned with said aperture in said breechblock face, said inner barrel and said round of ammunition being retained in said outer barrel solely by the snug fitting relation of said inner and outer barrels, said breechblock including an annular cup-shaped portion defining a counterbore, said firing pin being carried within said counterbore with a terminal end of the same extending sufficiently beyond said cup-shaped portion to pass through said aperture on said breechblock face and piercingly engage said primer on movement of said breechblock face toward said breechblock against the urging of said spring means by impact of said second end of said inner barrel with a target, and vent means including aligned apertures in said outer barrel and said cup-shaped portion of said breechblock, connecting the interior of said cup-shaped portion with the atmosphere.

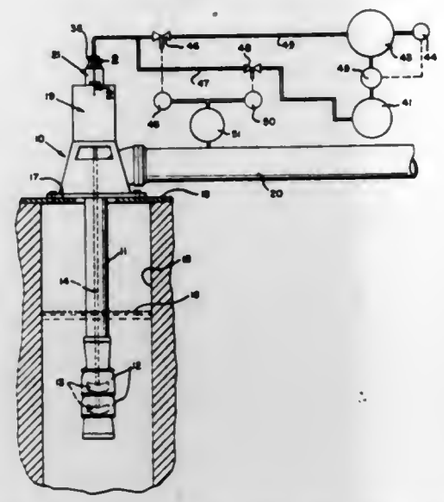
3,274,937
DETONATION SQUIB
James C. Kyle, Glendora, Calif., assignor, by mesne assignments, to Physical Sciences Corporation, a corporation of California
Filed Apr. 11, 1963, Ser. No. 272,384
12 Claims. (Cl. 102—70.2)



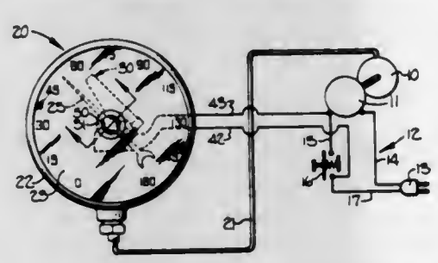
10. In a detonation device wherein detonation is accomplished by closing a circuit upon an electrically-responsive explosive element upon the application of a particular voltage to the circuit, the combination of:
a first conductor,
a second conductor having a female portion for receiving the first conductor, and
first ceramic material fused to the second conductor in enveloping relationship to the first conductor,
second ceramic material fused to the first conductor and disposed between the first conductor and the female portion of the second conductor at a position at which the first ceramic material is fused to the second conductor, the second ceramic material being formed by two portions separated by a gap to provide a spark between the first and second conductors and across the gap to obtain a detonation of the device upon the application of the particular voltage through the circuit.

3,274,938
CONTROL APPARATUS FOR ADJUSTING PRESSURE-FLOW CHARACTERISTIC OF A PUMP
Paul B. McCracken, El Cerrito, Calif., assignor to Berkeley Pump Company, Berkeley, Calif., a corporation of California
Filed Oct. 11, 1963, Ser. No. 315,502
6 Claims. (Cl. 103—11)

1. In combination, a turbine type pump having an impeller disposed within a pump bowl housing, means for rotating said impeller at a substantially constant speed, actuating means for moving said impeller axially of said pump bowl housing to vary the clearance between surfaces and change the pressure-flow characteristic of said pump, and control means responsive to predetermined operating conditions for energizing said actuating means and adjusting said clearance, said actuating means comprising a hydraulic cylinder, a source of hydraulic fluid, a high pressure line for conducting fluid to said cylinder from said source of fluid, a low pressure line for conducting fluid from said cylinder to said source of fluid, a first control valve disposed in said high pressure line, and a second valve disposed in said high pressure line, and a second control valve in said low pressure line, said control means being adapted for selectively opening and closing said first and second control valves.

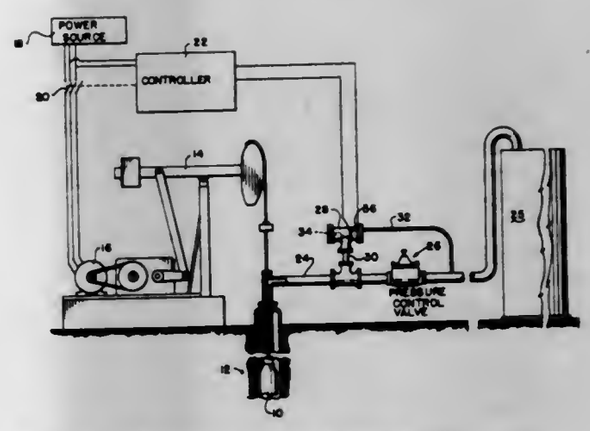


3,274,939
MERCURY SWITCH
Charles H. Foster, 211 W. 6th St., Rutherfordton, N.C.
Filed July 29, 1964, Ser. No. 386,089
1 Claim. (Cl. 103—25)



The combination of a pump, motor means for operating said pump, a pressure gage connected to said pump for indicating the output fluid pressure thereof and including rotatable pressure responsive shaft means mounted within said gage and having a pressure indicating pointer mounted thereon, a mercury switch rotatably mounted on said gage shaft means for rotation therewith and operatively connected to said motor means for stopping operation of said pump at predetermined maximum and minimum output pump pressures and for permitting operation of said pump within an operating range of pressures between the predetermined maximum and minimum pressures, said mercury switch being adjustably mounted on said pressure indicating gage shaft means for varying said predetermined maximum and minimum pressures at which said mercury switch will stop operation of said pump, said mercury switch comprising a generally cylindrical elongate body portion containing mercury and having an offset portion therein intermediate the ends thereof defined by a pair of angular downwardly extending and converging bottom walls meeting at a vertex, the included angle between said bottom walls of said offset portion being approximately 108° and thereby providing a range of operating pump pressures corresponding to an arc of movement of about 70° of the pointer of said pressure gage, and a pair of spaced electrical contacts mounted within said offset portion at the vertex thereof, the mercury within said switch being located in said offset portion at the vertex thereof when the output pressure of said pump is within the range of operating pressures to close said switch for operating said pump and being located away from the vertex of said offset portion when the output pressure of said pump is above the predetermined maximum pressure and below the predetermined minimum pressure to open said switch for stopping operation of said pump, and a manually operated switch operatively connected to said motor means in parallel to said mercury switch for operating said pump at any pressure.

3,274,940
CONTROL SYSTEM FOR WELL PUMP
Robert A. Cottrell, Box 4066, Midland, Tex.
Filed Jan. 12, 1965, Ser. No. 424,892
2 Claims. (Cl. 103—25)

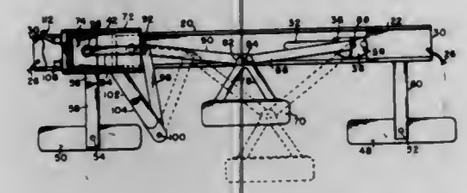


1. An oil well pumping system having
(a) a pump in the well,
(b) a motor drivingly connected to the pump,
(c) a discharge line connected to the pump in the well,
(d) a hydraulic pressure control valve means for maintaining the hydraulic pressure on the pump at a greater amount than the pressure in the discharge line downstream the pressure control valve means when the pump is pumping liquid,
(e) a bypass fluid passageway open at all times connecting the discharge line above stream and downstream of the pressure control valve means,
(f) the bypass fluid passageway being small as compared to the opening through the pressure control valve means,
(g) sensing means attached to the system for determining if liquid displacement from the pump is greater than can be accommodated by the bypass fluid passageway,
(h) means connecting the sensing means to the motor for continuing the operation of the motor responsive to the sensing means determine that the liquid is greater than can be accommodated by the bypass fluid passageway, and
(i) said hydraulic pressure control valve means also functioning as means for maintaining a liquid level in said sensing means when said liquid displacement is greater than can be accommodated by the bypass fluid passageway.

3,274,941
PUMP ACTUATED BY OCEAN SWELLS
Edward L. Parr, 301 N. Cuyamaca, El Cajon, Calif.
Filed Oct. 30, 1964, Ser. No. 407,831
4 Claims. (Cl. 103—68)

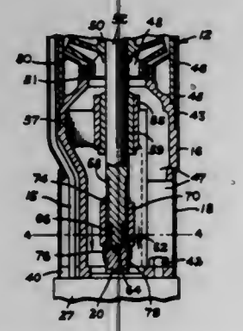
1. A pump, comprising in combination:
(A) a frame;
(B) a pair of floats carrying the frame, said floats being spaced from one another at such distance so as to float substantially simultaneously on the crests of swells of the water in the ocean;

(C) means for retaining the frame in position in which the floats are raised and lowered substantially in unison by the swell movement of the water;
(D) a movable element, connected with the frame, for effecting pumping;
(E) a third float positioned for raising and lowering substantially contra to the movement of the pairs of floats by the swells in the water;



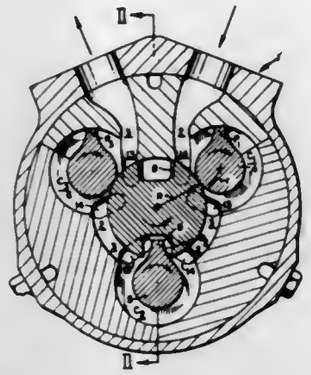
(F) and means responsive to the relative movement between the third float and the pair of floats for moving the movable pumping element;
(G) means for pivotally connecting the pair of floats to the frame;
(H) and means for pivotally connecting the third mentioned float with the movable pumping element.

3,274,942
PUMPS
Kenneth R. Lung, Morehead City, N.C., assignor to The Tait Manufacturing Company, Dayton, Ohio, a corporation of Ohio
Filed Sept. 29, 1964, Ser. No. 400,077
3 Claims. (Cl. 103—87)



1. In a submersible pump including a motor having a submersible casing and a projecting motor shaft having external key means formed on the end portion thereof, an inlet housing rigidly mounted on one end of said motor casing, a pump casing rigidly connected to the other end of said inlet housing, a pump shaft rotatably mounted within said inlet housing and including external key means formed on the end portion thereof, at least one impeller mounted on said pump shaft in spaced relationship with said pump casing, threaded means for connecting said pump shaft to said motor shaft in aligned spaced relationship, and a coupling surrounding the end portions of said pump and motor shafts and having internal key means for engaging said external key means on said pump and motor shafts to provide a positive drive connection therebetween, the improvement comprising means for slidably mounting said coupling on at least one of said shafts to provide for axial shifting of said coupling for disengaging the positive drive connection between said pump and motor shafts without changing said aligned spaced relationship of said shafts so that said pump shaft can be rotated relative to said motor shaft to provide axial adjustment between said shafts for spacing said impeller precisely in relation to said pump casing without disassembling said pump.

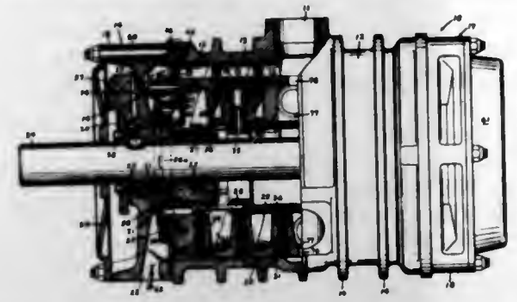
3,274,943
ROTARY POWER DEVICE
Frank Berry, Corinth, Miss., assignor to Differential Hydraulics, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Dec. 11, 1964, Ser. No. 417,578
6 Claims. (Cl. 103—125)



1. A rotary hydraulic power unit of the rotary abutment type comprising a casing having three annular cylinders each having an inlet and an outlet and a rotor shaft carrying a piston rotor with a piston slidably arranged in the cylinder to traverse the cylinder in rotary movement, a rotary abutment arranged in said casing with its axis parallel to the rotor shafts, said annular cylinders being distributed around said abutment shaft and lying in a common plane, said abutment having a pair of recesses to clear each of the three pistons as it passes the abutment, the pistons having a base radius which is one-half the radius of the abutment and the piston rotors rotating in 2:1 relation to the abutment,
(a) the abutment recesses meshing closely with the pistons so that the tips of the pistons substantially close with the edges of the abutment recesses as the pistons pass through the recesses, and
(b) ducts leading from at least one end of the abutment at points which are in communication with the abutment recesses when the pistons are clearing through the recesses, said ducts extending into communication with at least one of said inlets and outlets of the cylinders to accommodate flow of liquid prevented from flowing around around the tips of the pistons by the construction defined in (a) above,
by virtue of all of which the height of the pistons for a given size of unit can be increased without creating objectionable pulsation due to restriction of flow around the piston tips, the increased piston height so accommodated yielding a higher volume of liquid flow per stroke of the pistons.

3,274,944
SCREW VANE PUMP
Frederick L. Parsons, 759 Morningside Road, Ridgewood, N.J.
Continuation of application Ser. No. 436,534, Mar. 2, 1965. This application Sept. 30, 1965, Ser. No. 491,710
14 Claims. (Cl. 103—130)

1. Pumps, compressors and the like comprising a casing having an internal cylindrical wall, a drive shaft in said casing concentric with said wall, means in said casing supporting said drive shaft for rotation, an eccentric mounted on said shaft for rotation therewith, a cylindrical rotor in said casing of less external diameter than said cylindrical wall, means resiliently mounting said rotor on said eccentric for gyration in said casing and engagement with said wall, said resilient means urging said rotor against said wall, a generally helical groove in the exterior of said rotor, a helical vane fitting in said groove and engaging said wall throughout substantially the entire length of said vane, said groove being deeper than the width of the vane to enable said rotor to move radially relative to said vane, means positioning opposite ends of said vane relative to said rotor to enable said relative



radial movement between said vane and rotor, an inlet in said casing adjacent one end of said vane and an outlet in said casing adjacent to the other end of said vane.

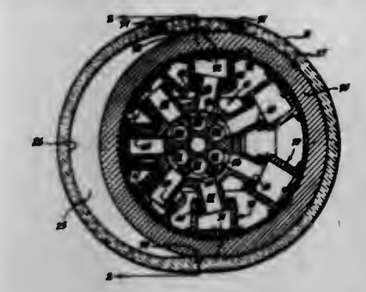
3,274,945
ROTARY VANE MACHINE
Karl Eickmann, 2420 Isshiki Hayama-machi, Kanagawa-ken, Japan
Filed July 2, 1963, Ser. No. 292,217
Claims priority, application Germany, July 6, 1962, E 23,161
9 Claims. (Cl. 103—136)



1. In a rotary vane machine, a machine rotor composed of a central rotor part and a rotor side wall axially on each side of said central rotor part radially projecting therefrom, said rotor having at least one cavity therein extending through said central rotor part and into said rotor side walls, said cavity including at least one slot open at the periphery of said rotor and extending substantially radially along its axial length into said rotor, but terminating in the axial direction within said rotor side walls; and vane means guided in said slot and having a radial extension substantially matching the diameter of said central rotor part so as to be retractible into said cavity in said central part, at least one of the longitudinal walls of said slot having a plane sliding surface limiting said slot and adapted to engage with and to slidingly guide said vane means, at least the axial end portions of said slot extending in radial direction entirely through both said rotor side walls and opening at two points of the peripheries of said rotor side walls.

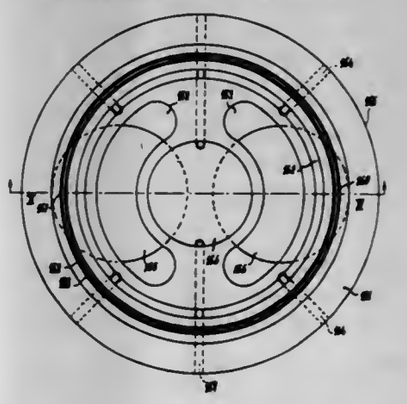
3,274,946
PUMP
Edward E. Simmons, 140 Meridian Hills Blvd., Indianapolis, Ind.
Filed Apr. 13, 1964, Ser. No. 359,336
7 Claims. (Cl. 103—161)

1. A hydraulic pump and motor comprising a housing, a cylindrical race mounted within said housing, a spindle fixed to said housing, a rotor rotatably received on said spindle for rotation within said race about an axis located eccentrically relative to the axis of said cylindrical race, said rotor having a plurality of radial spokes with a radial passage through each of said spokes each of said spokes having a rounded ball shape at its distal end, said spindle having a pair of passages therethrough one of which opens on one side of said spindle and the other of which opens on the other side of said spindle and over both of which said rotor rotates, and cup-like elements each received over a respective spoke and having an outer surface which rides against the inside of said race whereby rotation of said rotor occurs simultaneously with the passage of fluid



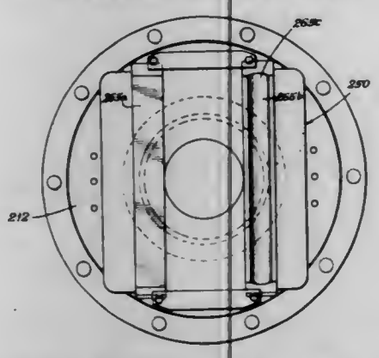
from one of said passages through said rotor into the other of said passages, said cup-like elements being free to expand away from their respective spokes when friction between said race and cup-like elements causes said elements to be heated.

3,274,947
HYDRAULIC PUMP OR MOTOR
Cornelius Otto Jonkers, Delft, and Foppe H. Fockens, Maasland, Netherlands, assignors to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company
Original application Aug. 31, 1960, Ser. No. 53,289, now Patent No. 3,132,486, dated May 12, 1964. Divided and this application Dec. 31, 1963, Ser. No. 334,814
8 Claims. (Cl. 103—162)



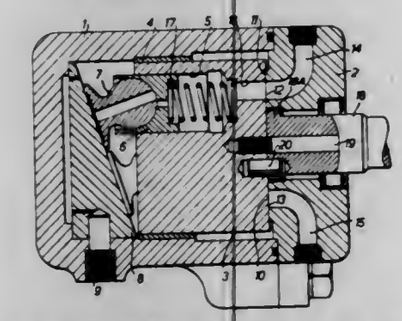
1. A hydraulic pump or motor having a housing with a plurality of chambers each containing a sliding piston, a port plate abutting said housing, said port plate and said housing having abutting surfaces in slidable engagement, said housing and said port plate being rotatable relative to one another about an axis of rotation, said port plate having a first port which forms part of a low pressure fluid duct in said pump and a second port which forms part of a high pressure fluid duct in said pump, said housing and said port plate being movable relative to one another in a direction substantially parallel to said axis of rotation but relatively immovable with respect to one another in directions perpendicular to said axis of rotation, the abutting surface of said port plate being provided with two grooves, the first of said grooves being in constant communication with low pressure fluid by a closed circuit provided in the port plate, one end of which directly communicates with low pressure fluid and the other end of which opens in the first of said grooves, the second of said grooves being in constant communication with high pressure fluid by a closed circuit provided in the port plate, one end of which directly communicates with high pressure fluid and the other end of which opens in the second of said grooves, said grooves being substantially circular in configuration and arranged substantially concentrically.

3,274,948
PUMP OR MOTOR WOBBLER MOUNTING
Stephen S. Baits, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed July 2, 1964, Ser. No. 379,821
7 Claims. (Cl. 103—162)



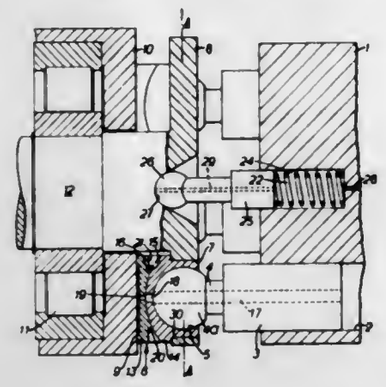
1. A variable displacement hydraulic unit, comprising: a housing member, a valve element having inlet and outlet ports therein, a cylinder block rotatable relative to said valve element and having cylinders therein serially communicable with said ports during said rotation, pistons slidable in said cylinders, a cam member pivotally mounted in said housing; a pivotal mounting for said cam member including two spaced arcuate ways on one of said members, said ways lying generally in a common arcuate plane, spaced shafts mounted on the other of said members each extending over both of said ways, said shafts being spaced apart on a circle defined by the pivotal axis of said cam members, rollers mounted on each of said shafts and engaging said ways, means on one of said ways for preventing relative lateral movement of the rollers engaging said one way, and said other way having a surface permitting relative lateral movement of the rollers engaging said other way whereby only one of the ways defines the lateral position of the came member in the housing.

3,274,949
AXIAL PISTON PUMP OR MOTOR
Oswald H. Thoma, Cheltenham, England, assignor to Hydraulic-Drive A.G., Glarus, Switzerland, a Swiss company
Filed Aug. 10, 1964, Ser. No. 388,529
6 Claims. (Cl. 103—162)



1. An axial piston fluid displacement pump or motor comprising a rotary cylinder block, a connecting shaft secured to said block at one end thereof, said block having three equally spaced parallel cylnder bores closely adjacent to the rotary axis of the cylinder block, such that the pitch circle diameter of the radially innermost parts of the bores is substantially less than the diameter of the connecting shaft where it engages the block, a non-rotary slanting cam disc at the end of said block remote from said connecting shaft, pistons slidable in said bores and engaging said cam disc, a stationary ported valve body at the same end of said block as said connecting shaft, said valve body having an axially directed surface, against which one end surface of the cylinder block bears, and said axially directed surface of the valve body being formed with inlet and outlet control openings to cooperate with ports in said end surface of the cylinder block communicating with each cylinder bore, the center of the ports being displaced radially outwards from the respective centers of the bores in the cylinder block, thus affording an increased central area for attachment of the shaft.

3,274,950
AXIAL PISTON FLUID PUMPS OR MOTORS
Oswald H. Thoma, Cheltenham, England, assignor to Unipat A.G., Glarus, Switzerland, a Swiss company
Filed Jan. 11, 1965, Ser. No. 424,638
Claims priority, application Germany, Jan. 14, 1964, T 25,423
8 Claims. (Cl. 103—162)



1. An axial piston fluid machine having a plurality of generally parallel cylinder bores, pistons slidably disposed in said cylinder bores, a sliding shoe to which each piston is pivotally connected, a rotary drive member which circumferentially and radially locates the shoes with axial or longitudinal freedom of movement, a thrust member having a plane surface which is inclinable relative to the axis of the pistons to transmit axial thrust, the shoes engaging the thrust member, each shoe being formed in at least two parts of which one part is located in the rotary drive member and restrained against circumferential, radial or pivotal movements, and pivotally connected to the respective piston, and another part bears against the plane surface and is pivotally connected to the first part.

3,274,951
RAILROAD TRACK GRIPPING APPARATUS
James W. Christoff, Minneapolis, Minn., assignor to Mannix International Inc., Minneapolis, Minn.
Filed June 10, 1964, Ser. No. 373,925
3 Claims. (Cl. 104—7)



1. Apparatus for travelling along a railroad track while simultaneously lifting a span of said track, the rails of which are joined together by angle bars, comprising:
(a) a vehicle comprising a pair of carts spaced apart along the track and a boom interconnecting said carts,
(b) a lifting frame vertically movably mounted on said boom intermediate said carts,
(c) at least four groups of rail-lifting rollers,
(d) each group comprising a plurality of rollers with at least one roller of the group positioned on each side of a rail of said track,
(e) each roller including a flange portion for supportingly engaging the underside of a rail head,

(f) each group including means for moving the rollers thereof between a closed, rail-embracing condition and an open, rail-releasing condition,
(g) said moving means for each group being operable independently of the moving means for each other said group,
(h) and means mounting all said roller groups on said frame with a pair of said roller groups engaging each rail of the track with said pair of groups spaced from each other in the longitudinal direction of the vehicle with a clear space between the two nearest rollers of adjacent groups on each side of the vehicle greater than the longest angle bar in use on said track, the rollers of a first group of each said pair of groups being movable by said moving means to open condition to avoid an angle bar while the second group of such pair remains in closed condition, so that the side of the track on which such pair is situated remains supported from said lifting frame by said second roller group, the first roller group being recloseable beyond the angle bar to maintain such support from said lifting frame before opening the second roller group to avoid the angle bar.

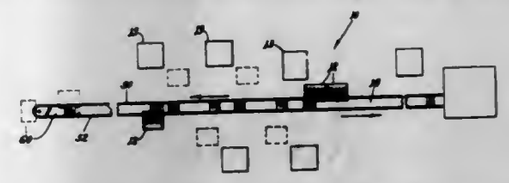
3,274,952
RAILROAD TRACK GRIPPING APPARATUS
Stephen I. Fekete, Minneapolis, Minn., assignor to Mannix International Inc., Minneapolis, Minn.
Filed June 10, 1964, Ser. No. 374,098
10 Claims. (Cl. 104—7)



1. Apparatus for gripping a section of railroad track, the rails of which are joined together by angle bars, comprising:
(a) a plurality of groups of rail gripping rollers,
(b) each group comprising a plurality of rollers with at least one said roller positioned on each side of a rail structure,
(c) each roller including a flange portion for grippingly engaging the underside of a rail head of said rail structure,
(d) each group including means for moving said rollers between a closed, rail-embracing condition and an open, rail-releasing condition,
(e) said moving means for each group being operable independently of the moving means for each other group,
(f) and detection means associated with each group positioned immediately forwardly and rearwardly of each group for detecting an angle bar on said rail structure,
(g) the detection means for each group being connected to the roller moving means of the same group to actuate the latter on detention of an angle bar to move the rollers to open condition.

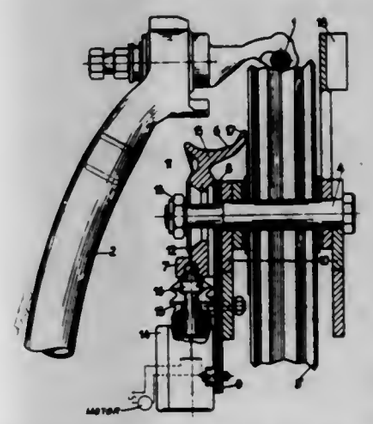
3,274,953
CONVEYOR CONTROL DEVICES
Edward S. Babson, Ipswich, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed June 2, 1964, Ser. No. 372,059
6 Claims. (Cl. 104—172)

1. A conveyor system comprising a tow chain extending around a direction changing wheel to form separate conveyor runs, a guide plate disposed over said chain shaped to provide a guide ridge and a camming surface in both sides of the guide ridge whereby an article carrying device having chain engaging means and spring biased detent means may be engaged and disengaged with the tow chain by lateral movement toward and away from the chain, said guide plate extending over each run and terminating in spaced relation to the wheel, and a guide cover disposed over the wheel, said cover



having a retaining rim disposed about a portion of the periphery of the wheel and having ends extending into alignment with the ends of the guide plate, said retaining rim being shaped to prevent lateral movement of the detent means in relation to the rim and being positioned in relation to the wheel to retain the chain engaging means in engagement with the chain.

3,274,954
CABLE OPERATING CONTROL MECHANISM
Emil Doppelmayr, 10 Rickenbacherstrasse, Wolfurt, Vorarlberg, Austria
Filed Apr. 27, 1964, Ser. No. 362,673
Claims priority, application Austria, May 10, 1963, A 3,834/63
11 Claims. (Cl. 104—178)

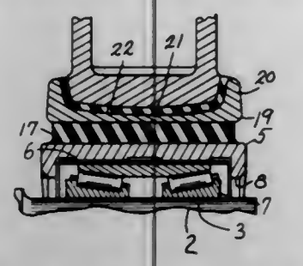


1. Cable control mechanism for an electrically driven aerial cable comprising a guide roller on said cable, a cable support adjacent said cable guide roller alongside the normal path of the cable for supporting said cable when it slips from said roller, an electric switch in the circuit for the drive of said cable mounted on said cable support, a frame for said roller, said cable support being movably mounted on said frame and relative thereto so that said cable support is able to act directly and independently of oscillations and tilting motions of said cable on said electric switch to stop the drive of said cable.

3,274,955
RESILIENT ROLLER BEARING ADAPTER
David G. Thomas, Erie, Pa., assignor to Lord Corporation, a corporation of Pennsylvania
Filed Sept. 3, 1963, Ser. No. 306,009
1 Claim. (Cl. 105—224.1)

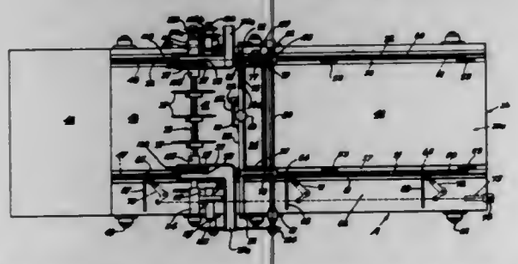
In combination with a railway truck frame having spaced pedestal jaws and a railway car journal having a roller bearing between the pedestal jaws, an adapter cap plate between the pedestal jaws recessed on its underside to receive the roller bearing and having end play clearance with respect to the jaws, said frame having a downwardly presented load carrying surface between the upper ends of the jaws and said cap plate having an upwardly

presented load receiving surface spaced below the load carrying surface, a top plate having its upper surface spaced below and presented to the load carrying surface and having upwardly extending flanges straddling said load carrying surface and in end thrust transmitting relation to the frame, said top plate having its lower surface spaced above and presented to the load receiving surface



on the cap plate, a body of elastomer sandwiched between and having lower and upper surfaces respectively anchored to the upwardly presented load receiving surface of the cap plate and to the lower surface of the top plate and carrying the car load in compression and the end play in shear, and a coating of elastomer bonded to the upper surface of the top plate and engaging and conforming to the load carrying surface of the frame.

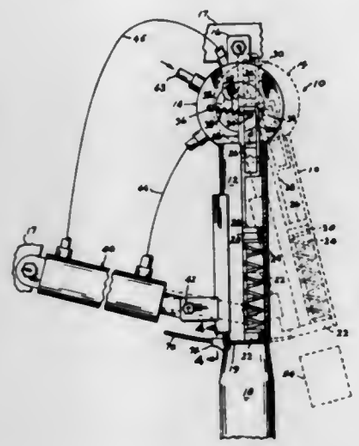
3,274,956
FRENCH ROLL DOUGH PROCESSING MECHANISM
Benjamin R. Francia, 1530 De Anza Way, and Mario A. Pera, 1728 Sweetbriar Drive, both of San Jose, Calif.
Filed June 26, 1964, Ser. No. 378,348
14 Claims. (Cl. 107—8)



1. A dough processing mechanism for making French rolls comprising
a frame,
a conveyor for moving dough pans in aligned, end-to-end relation in a path along the frame,
a plurality of rotary cutter disks mounted co-axially and in axially spaced relation above the path of the pans with the peripheries of the cutter disks positioned to cut through dough products on the pans, each of the cutter disks having a notch in its periphery to receive the ends of adjacent pans therein, and
dough pick-up means mounted on the axially outward side of each endmost cutter disk to pick up end trimmings cut by each endmost cutter disk from such dough products.

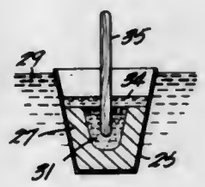
3,274,957
HAY WAFER REGULATOR
Robert E. Goolsby, 701 S. Harvard, Perryton, Tex., and Donald E. Yount, Perryton, Tex. (1816 7th Ave., Greeley, Colo. 80631)
Filed May 3, 1962, Ser. No. 192,257
8 Claims. (Cl. 107—14)

1. A hay wafer length control device for connection with a hay wafering machine having a hay wafer forming die, comprising: a tubular body, a control valve connected to one end of said tubular body, said valve having a valve control pin; an ear on said valve pivotally connecting said valve to said machine with said body coaxially aligned with said die; a centrally apertured partition within said body; a control rod axially disposed within said body through the aperture in said partition, said control rod projecting beyond the end of said body toward said valve; a loop formed on the outwardly projecting end portion of said control rod and loosely surrounding said valve control pin; a plate axially connected to said control rod within the end portion of said body adjacent said die; a pressure operated cylinder pivotally connected at one end to said machine, said cylinder having an extend-



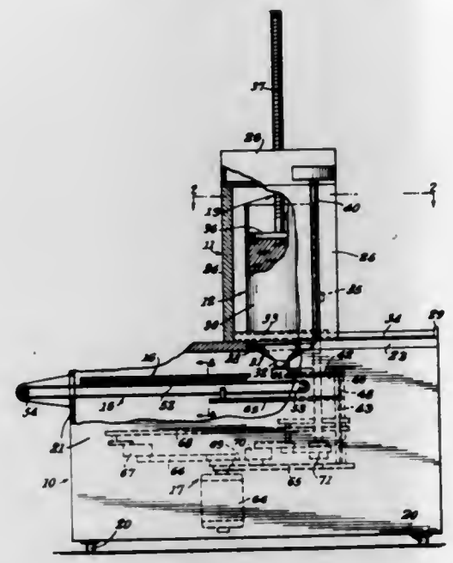
able piston shaft pivotally connected by its free end to the end of said body adjacent said die; tubing interconnecting said control valve and said cylinder with a source of pressure, whereby hay forced into said body from said die moves said control rod in one direction to open said valve and extend said piston shaft to move said body away from said die; and spring means within said body between said partition and said plate for moving said control rod in the opposite direction, closing said valve, retracting said piston shaft and returning said body to hay wafer receiving position.

3,274,958
COMESTIBLE
Edwin J. Otken, North Brunswick, N.J., assignor to Good Humor Corporation, Brooklyn, N.Y., a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 299,968
3 Claims. (Cl. 107—54)



3. A method of making a comestible comprising the steps of placing ice cream in liquid form in a mold, converting at least some of said ice cream in the outer region of said mold to solid form while maintaining said ice cream in the center region of said mold in liquid form, inserting into said mold a nozzle means, dispensing normally solid candy in liquid form through said nozzle means and into said mold, displacing with said candy at least part of said liquid ice cream from said center region, said candy and the part of said ice cream remaining in liquid form constituting a handle-means receiver, inserting handle means into said handle-means receiver, and converting said handle-means receiver to solid form, the step of displacing with said candy at least part of said liquid ice cream and the step of inserting the handle means being in any order.

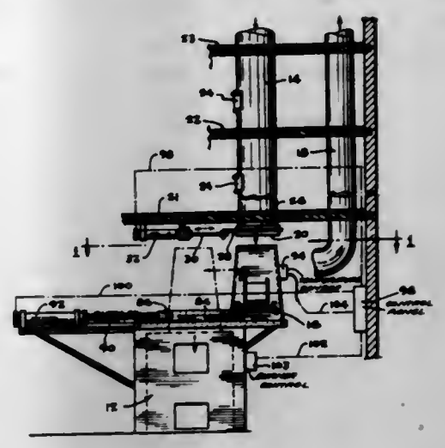
3,274,959
BUN DIVIDER AND ROUNDER
James A. Jimenez and Harold H. Olmsted, both of 6252 N. Hart Ave., Temple City, Calif.
Filed Oct. 23, 1962, Ser. No. 232,484
5 Claims. (Cl. 107—68)



1. A bun divider and rounder comprising
(a) a base housing having a support top,
(b) a dough container having a lower discharge opening, mounted on and movable on said support top between an operative position and a dough-filling position,
(c) a housing extension on the base housing located to house the dough container when in operative position,
(d) means mounted in the housing extension to apply dough-extruding pressure on the dough in the container in said operative position of the container,
(e) means including a rotary slicer to cut through dough extruded from the discharge opening of the container to form a bun divided from said dough,
(f) a conveyor to receive the bun of dough thus divided and to transport the same away from the discharge opening of the container, and
(g) means for engaging the periphery of the bun, while so transported, to round the same.

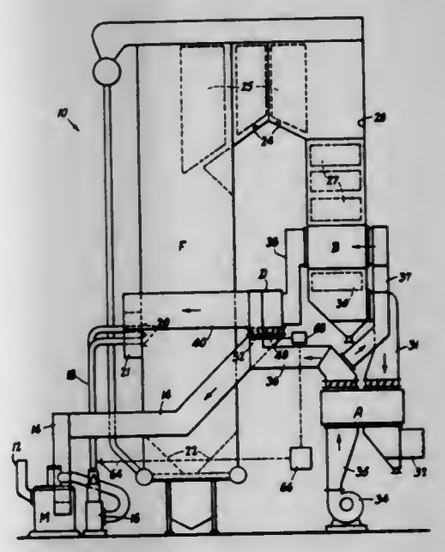
3,274,960
INCINERATOR
Richard Goder, 4241 N. Honore St., Chicago, Ill.
Filed Jan. 2, 1964, Ser. No. 335,150
4 Claims. (Cl. 110—7)

1. An improved waste materials incinerator assembly for a multiple story building comprising, in combination: an incinerator having a primary combustion chamber, a secondary chamber and a precipitator chamber, a charging chute extending continuously from the incinerator through each story of the multiple story building and having an opening at each story of the building for introduction of waste materials therein, said chute having a discharge opening at the incinerator terminal thereof whereby said materials pass down said chute toward the incinerator terminal thereof; a movable charging hopper in a first position being in registration with the incinerator terminal of the charging chute and in a second position being in registration with the materials charging opening in the incinerator, said hopper adapted in said first position to receive the waste mate-



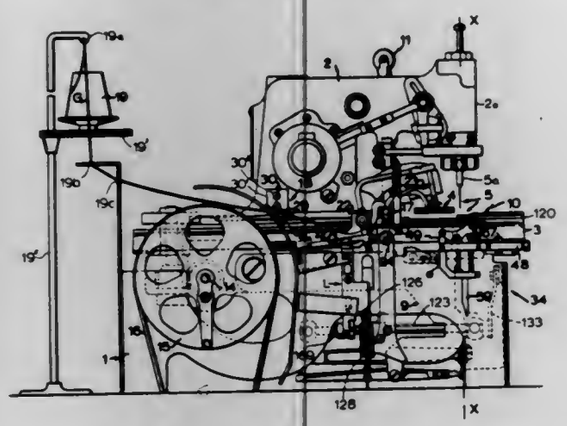
rials passing through the charging chute; and, operating means to move said hopper into its first and second positions, respectively.

3,274,961
SYSTEM FOR HEATING AIR AND DRYING FUEL
Robert N. Wiechard, Hartford, and John B. Anderson, West Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,855
5 Claims. (Cl. 110—56)



1. In a fuel burning system comprising a mill for pulverizing fuel, a furnace for burning said fuel and generation of combustion gases, an air heating system for supplying air to said furnace and to said mill for drying of the fuel, the combination of a first air heater, a second air heater, a distribution chamber, duct means for conducting heated air from said first air heater to said second air heater, means for dividing said distributing chamber into a first portion and a second portion, duct means for conducting heated air from said first air heater to said first chamber portion, duct means for conducting heated air from said second air heater to said second chamber portion, duct means for conducting heated air from said first chamber portion and from said second chamber portion to said mill, and duct means conducting heated air from said first chamber portion and from said second chamber portion to said furnace.

3,274,962
GIMP-FEED MECHANISM FOR BUTTONHOLE-STITCHING MACHINES
Hermann Pudelko, Bielefeld, Germany, assignor to Dürkoppwerke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed June 28, 1965, Ser. No. 467,438
Claims priority, application Germany, Aug. 26, 1964, D 45,278
12 Claims. (Cl. 112—65)



1. In an automatic buttonhole-stitching machine comprising support means, a fabric-carrying table longitudinally shiftable upon said support means, stitch-forming means on said support means co-operating with said table for stitching a buttonhole upon a fabric carried thereby, drive means connected with said table and said stitch-forming means and actuatable for displacing said table from a starting position relative to said stitch-forming means into a stitching position wherein the sewing of a buttonhole is commenced and for operating said stitch-forming means and said table to form the buttonhole and for hereafter returning said table to said starting position, and an actuating element shiftably mounted on said support means and operatively connected with said drive means for actuating same following an initial movement of said element prior to energization of said drive means, the combination therewith of:

gimp-supply means for dispensing a gimp to be stitched into the buttonhole by said stitch-forming means;

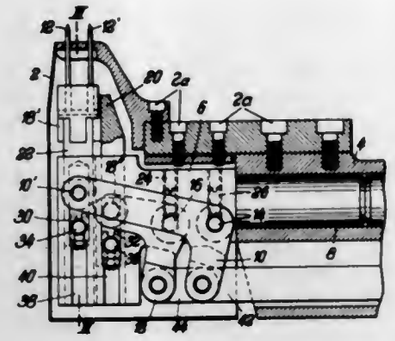
means forming a path for said gimp from said supply means to said stitch-forming means;

gimp-preparation means along said path including said element and effective upon displacement of said element prior to actuation of said drive means for drawing a length of gimp from said supply means and disposing it loosely at said gimp-preparation means; and

gimp-clamping means on said table between said gimp-preparation means and said stitch-forming means for clamping the free end of said gimp upon conclusion of a buttonhole-stitching operation and during operation of said gimp-preparation means but thereafter releasing said gimp for incorporation of the prepared length thereof in the buttonhole.

3,274,963
NEEDLE DRIVE MECHANISM FOR BAG SEWING MACHINES
Hans-Otto Keller, Frankfurt am Main, and Günter Sommer, Kelsterbach, Germany, assignors to Maschinenfabrik Moenus A.G., Frankfurt am Main, Germany, a firm
Filed Dec. 1, 1964, Ser. No. 415,111
Claims priority, application Germany, Feb. 8, 1964, M 59,859
6 Claims. (Cl. 112—213)

1. In a machine for making trunks, bags or the like in which the side walls thereof are sewed to the bottoms and to the covers, said machine having a carrier arm containing reciprocable driving means for the sewing and feeding mechanism; a stationary housing secured to the end of the carrier arm; a transport block horizontally rockably mounted in said housing; said mechanism including sewing and feeding needle bars reciprocably mounted in



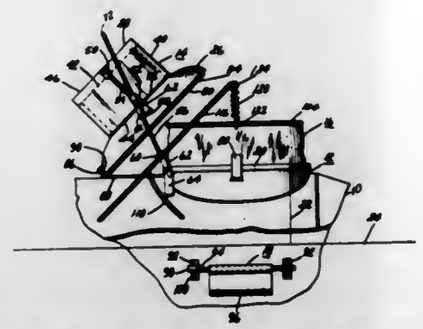
said block; and angular driving levers for said bars pivotally mounted on said block each having a relatively short downwardly extending arm connected to said driving means respectively and having a relatively long horizontal arm connected with its related bar, whereby the said housing will have a minimum height to permit sewing of relatively small trunks and bags.

3,274,964
RE-CLOSABLE HERMETICALLY SEALED CONTAINER
Elmer W. Griese, Jr., Skokie, Ill., assignor to Ekco Containers, Inc., a corporation of Illinois
Original application Feb. 12, 1964, Ser. No. 344,405. Divided and this application Sept. 24, 1965, Ser. No. 490,009
5 Claims. (Cl. 113—121)



1. In the production of a can top for application to a can body to form a reclosable hermetically sealed package, the method that comprises forming sheet metal can stock to provide a cross wall with attaching structures about the periphery thereof including an upstanding continuous chine wall and an outwardly projecting flange on said chine wall for seaming the top into position on a can body, subjecting said cross wall to drawing and forming operations wherein a central portion of the cross wall spaced inwardly from said chine wall is punched free from said cross wall and the inner border portion of said cross wall is formed as a continuous sealing and supporting upper ledge rigid with an adjacent to said chine wall and with a downwardly stepped portion providing a continuous lower ledge the inner edge of which is formed as a curl to define a relatively large pre-cut opening in the cross wall, placing a disk-like wall member made from can stock loosely in position on the lower ledge with its upper surface in the plane of said upper ledge, and placing an impervious stiff cover in the space bordered by said chine wall and adhesively securing the same to said metal wall member and to said upper ledge in a hermetically sealed relation continuously and throughout the entire periphery of said upper ledge.

3,274,965
HATCH COVER AND CONNING TOWER MECHANISM
Franklin E. Rigsby and Woodrow Rigsby, both of 9525 Fritz Road, Fort Wayne, Ind.
Filed July 16, 1964, Ser. No. 383,042
9 Claims. (Cl. 114—16)



8. For use in a submarine, a hull having an opening therein, a conning tower of flexible, foldable and waterproof sheet-like material, one end of said tower being positioned in registry with said opening, means sealing said one end to said hull, said tower being selectively extensible outwardly from said hull and foldable to a collapsed position within said opening, said hull in the region immediately beneath said tower being open for occupancy by an operator, said tower being disposed outside said region in both collapsed and extended conditions.

3,274,966
WATER SURFING CRAFT
Scott C. Rethorst, 1661 Lombardy Road, Pasadena, Calif.
Filed July 6, 1965, Ser. No. 469,426
11 Claims. (Cl. 114—62)

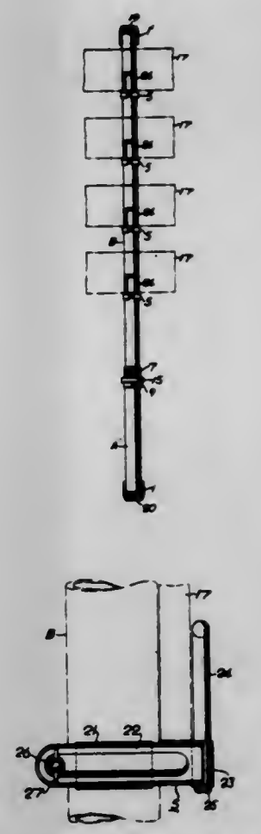


1. A water craft comprising:

a hull having a bottom element which is longitudinally concave down substantially over its entire length, and which has a sharp leading edge from which its lower surface extends aft with a concave curvature and from which its upper surface extends aft to at least some extent with a convex curvature substantially parallel to the lower surface, so that substantially the entire water flow along said bottom element has an upwardly oriented convex interface configuration, and thrust producing means for propelling said craft in longitudinal direction, thereby causing water to flow underneath said hull producing upwardly directed centrifugal force for sustaining said craft.

3,274,967
SHORING STANCHIONS FOR MARINE USE
Toshio Igaue, Koboku-ku, Yokohama, and Tamotsu Shimodera, Tokyo, Japan, assignors to Mitsui Osk Lines, Ltd., Osaka, Japan, and Kobe Steel Works, Ltd., Kobe, Japan
Filed Oct. 26, 1964, Ser. No. 406,619
Claims priority, application Japan, Oct. 26, 1963, 38/80,748, 38/80,749
1 Claim. (Cl. 114—75)

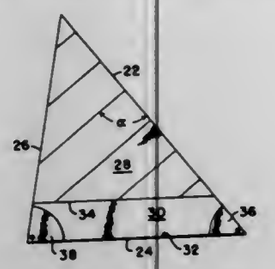
A shoring stanchion for marine use comprising in combination: a lower tubular pole having a bore, an upper tubular pole having a lower portion which is adapted to fit into the bore of the upper portion of said lower tubular pole, a coupling tube having diametrically opposed U-shaped slots and having an exterior wall surface which is threaded, said coupling tube being adapted to fit over the upper portion of said lower tubular pole, said upper tubular pole having diametrically opposed vertically spaced openings in the lower portion of its wall, a knock pin adapted to be inserted through said slots and said openings for positioning the upper pole with respect to the lower pole a nut being engageable with the outer thread of said coupling tube for supporting said pin from underneath, and supporting brackets mounted on said stanchion for supporting planks in a horizontal position on the stanchion such that the planks serve to secure marine cargo in a desired position, said supporting brackets including a pair of side plates, each of said side plates having an opening through one end thereof, bracing plates arranged on the inner sides of said side plates for embracing a pole of the stanchion, an inverted U-shaped frame having two legs, a cylinder being fixedly secured to the other end of each of said side plates for receiving a respective one of said legs of said U-shaped frame so that the side plates are positioned at right angles with respect to the U-shaped frame, a headed bolt adapted to pass through the openings provided in the one end of said side plates, and a nut mounted on said bolt whereby said nut and bolt coact with said side plates for clamping the brackets to the pole.



3,274,968
SAIL
Paul E. Hayes, 5 Rowell Ave., and Richard F. Hayes, 10 Storey Ave., both of Beverly, Mass.
Filed Sept. 15, 1964, Ser. No. 396,663
5 Claims. (Cl. 114—103)

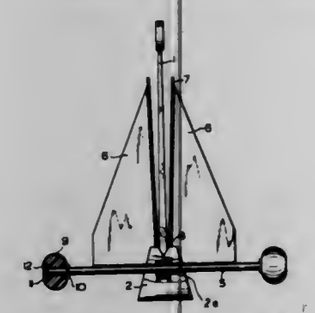
1. A loose-footed sail including a plurality of panels of woven sailcloth defining the major area of said sail, said sailcloth being substantially stretch-free in its warp and woof directions, a leech edge on said sail parallel to one of said substantially stretch-free directions of said sailcloth comprising said major area of said sail and generally normal to said other of said stretch-free directions,

a foot edge on said sail, a bottom edge on said major area of said sail generally parallel to said foot edge, said bottom edge comprising bias cut edges of a portion of said plurality of panels, substantially stretch-free means



joining said bottom edge of said major area along said bias cut edges to said foot edge, and a luff edge on said sail at a discrete angle to said leech edge and to said foot edge and extending therebetween.

3,274,969
ANCHOR
Erwin Baas, Up de Schanz 66, Hamburg-Nienstedten, Germany
Filed Dec. 18, 1964, Ser. No. 419,344
Claims priority, application Germany, Dec. 21, 1963, B 74,771
3 Claims. (Cl. 114—208)

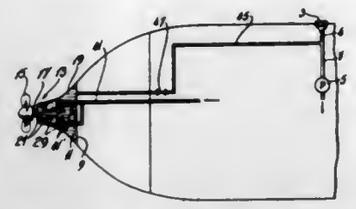


1. A plate anchor which comprises: an anchor shank having one end portion provided with means adapted to receive a chain, an anchor head, stock means extending through the other end portion of said shank and through said head and pivotally connecting said shank and said stock means to each other to permit a tilting movement of said shank and said head relative to each other, said head including two fluke members arranged on opposite sides of and substantially symmetrically with regard to the titlting plane of said shank, each of said fluke members including a plate of an approximately triangular formation and in proper anchoring positio of said anchor having its major surface approximately parallel to the anchoring ground, and substantially round members respectively rotatably mounted at the ends of said stock means and having a diameter representing a multiple of the diameter of said stock means and being adapted when said flukes are in nearly upright position on the anchoring ground to support said anchor on the anchoring ground and to guide the same thereon into the proper anchoring position of said fluke members.

3,274,970
NON-CLOGGING WATER INTAKE FOR WATER VESSELS
Otton Daniel, 2860 Darling Place, Montreal, Quebec, Canada
Filed Oct. 23, 1964, Ser. No. 406,117
6 Claims. (Cl. 115—.5)

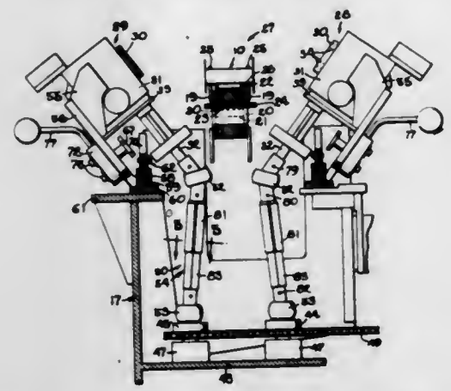
1. Non-clogging water intake means for water vessel having a propelling screw and a stern portion leading to said screw, the combination comprising:

(a) means defining a water compartment in said stern portion;
(b) a water box on each of the port and starboard sides of said stern portion in said compartment and adjacent said screw; said boxes disposed below the water line of said vessel in the area of turbulence created by said screw; each box having an opening facing outwardly of said water compartment;



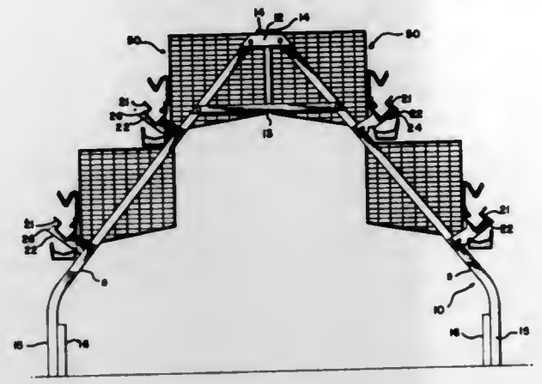
(c) a screen on each box across said opening to allow water into said boxes;
(d) a pump in said vessel;
(e) means to discharge water from said boxes into said compartment, and
(f) water tap means interconnecting said compartment and pump to draw water from said compartment.

3,274,971
CARTON CLOSING MACHINE
Carl J. Beert, Rockford, Ill., assignor to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,430
2 Claims. (Cl. 118—239)



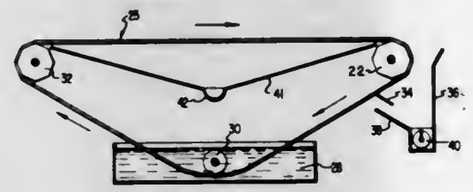
1. In a machine for gluing and closing the flaps on the ends of cartons, the combination of, a frame, a carrier on said frame for advancing cartons along a horizontal path with the flaps at one end of the cartons open and disposed in a vertical plane paralleling said path on one side thereof, a drum disposed on said one side with the periphery of said drum normally tangent to said plane to roll on the flaps of passing cartons, means for supplying glue to the periphery of said drum for transfer to said flaps, a support disposed below said drum, a shaft fast at one end on and coaxial with said drum and journaled on said support for rotation about its axis, a power actuator for rotating said shaft to roll said drum along the passing flaps, means pivoting said support on said frame for swinging about a fulcrum spaced from and generally parallel to said path to tilt said drum away from said plane into an out-of-the-way position, and a drive connection between said shaft and said power actuator including a first universal joint mounted on the lower end of said shaft, a second universal joint journaled on said frame below said first joint and connected to said actuator to be rotated thereby, and an axially extensible shaft extending between and coupled to said joints whereby said drive connection tilts and extends to accommodate swinging of said lower shaft end as said drum tilts to said out-of-the-way position.

3,274,972
EGG LAYING BATTERIES
Everett M. Keen and Anthony J. Siciliano, Millville, N.J., assignors to Keen Manufacturing Corporation, Millville, N.J., a corporation of New Jersey
Filed Apr. 15, 1965, Ser. No. 448,300
14 Claims. (Cl. 119—48)



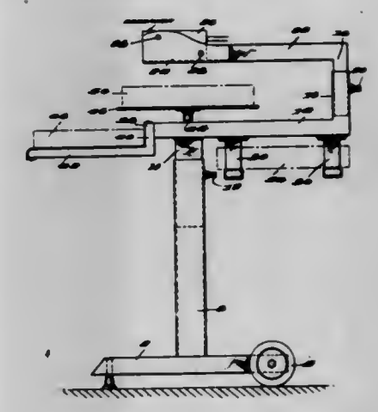
1. In a cage battery for laying hens, a plurality of upright frames, each comprising a pair of downwardly and outwardly sloping members defining a substantially inverted V-shaped unit, disposed in longitudinally spaced parallelism,
a bracket outstanding from each of said sloping members at a given level intermediate the height of the members,
an elongated generally channel shaped trough disposed in said brackets,
and a plurality of cages arranged side by side in a longitudinal series between said frame units, being hooked to said troughs and supported thereby.

3,274,973
CONFINEMENT FEED METHOD AND APPARATUS THEREFOR
Louis S. Woods, Rte. 1, Adrian, Mo., and Virgil W. Morris, Rte. 1, Butler, Mo.
Filed June 9, 1964, Ser. No. 373,784
11 Claims. (Cl. 119—51.11)



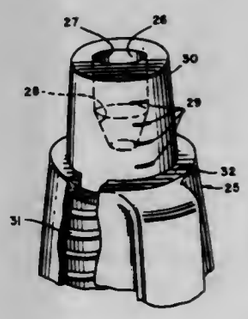
1. Animal environment and articulated flooring which presents a substantially solid surface for animal support and provides for separate accumulation of liquid and solid waste matter comprising
floor board means including a plurality of individual elongated floor boards having substantially rectilinear longitudinal side edge configuration,
continuous conveyor means for the floor board means including continuous linkage means with individual links and means for securing individual floor boards to individual links to present a substantially solid surface for animal support when the continuous linkage means travels in a substantially horizontal plane,
drive means for the continuous conveyor means including cog means for contacting the individual links to move the continuous linkage means out of a horizontal plane without disturbing the means for securing individual floor boards to the individual links, and
drainage pan means between an upper work path of the continuous conveyor means and a lower return path of the continuous conveyor means, the drainage pan means being disposed to service substantially the entire upper work path of the continuous conveyor means.

3,274,974
BABY CHICK DEBEAKING AND PACKING MECHANISM
Lamar Reynolds, Rte. 2, Box 140, Gainesville, Ga.
Filed Mar. 4, 1965, Ser. No. 437,164
8 Claims. (Cl. 119—103)



1. A device for use in handling baby fowl, comprising a stand, a horizontal support mounted on said stand to turn about a vertical axis for receiving a chick restraining shipping box, said stand having tray-receiving means thereon at the front to receive and support an incubator tray in a position in front of and at a level slightly below said horizontal support, said stand having a forwardly extending arm extending above said horizontal support, and debeaking mechanism carried by said arm in a position to allow debeaking of fowl by a operator standing in front of the device.

3,274,975
BALL POINT PEN INCORPORATING A POINT RECONDITIONING DEVICE
James G. P. Dehlsen, South Pasadena, Calif., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin
Filed Nov. 9, 1964, Ser. No. 409,887
1 Claim. (Cl. 120—1)



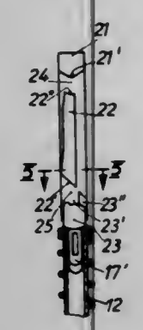
A ball point writing instrument comprising a tubular outer barrel open at its forward end, a writing unit with a writing tip comprising a socket member provided with a writing ball rotatably retained therein by an annular forward lip portion of said socket closely spaced from said ball ahead of the center of said ball and of tapered external configuration, said writing unit being removably housed within said barrel for movement between a projected position in which said writing tip projects through

the open end of said barrel and a retracted position in which said writing tip is withdrawn into said barrel, an axially reciprocable pushbutton restrained against rotation relative to the barrel and projecting rearwardly from the rearward end of said barrel, resilient means urging said pushbutton in a rearward direction, and a device for reducing the clearance between said lip and said ball, said device comprising wall means forming a rearwardly opening recess in the rearward end of said pushbutton adapted to receive the writing tip of said unit when said unit is removed from said barrel, said wall means being of greater hardness than the socket member of said tip and defining a plurality of surface areas immovable relative to one another adapted simultaneously to engage the forward lip portion of said tip along lines corresponding substantially to the generatrix of said exterior forward portion of said tip at spaced intervals about the periphery thereof whereby the rotative insertion of said tip into said recess under axial force acting against said resilient means causes said forward lip portion to be constricted by the surface areas of said wall means of the device.

3,274,976
MULTIPLE PEN COMPRISING A PLURALITY OF WRITING POINTS OF DIFFERENT COLORS

Francis Levoin, Lugano, Paradiso, Switzerland, assignor to Real Patentauswertungs Anstalt, Vaduz, Liechtenstein

Filed Dec. 17, 1964, Ser. No. 419,063
Claims priority, application Switzerland, June 27, 1964, 8,474/64
4 Claims. (Cl. 120—42.13)

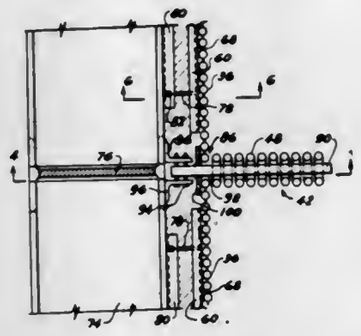


1. A multiple pen comprising a plurality of elongated writing elements within an elongated casing, each said element having a point for writing with a different colored ink, said elements being individually lengthwise reciprocable between extended writing position and retracted position, resilient means continuously urging all said writing elements toward said retracted position, a blocking member rotatable about said axis and about which said writing elements are disposed, said blocking member having alternate cavities and projections about its periphery, each writing element having three inwardly extending projections spaced apart lengthwise along its upper end, the upper two of said three projections being spaced apart by a first cavity and the lower two of said three projections being spaced apart by a second cavity, the upper and middle of said three projections having downwardly inclined lower surfaces that incline in the same direction, said downwardly inclined surface of said upper projection bearing against a blocking member projection when the associated writing element is in said writing position, said inclined surface of said middle projection bearing against a blocking member projection when the associated said element is in said retracted position, said inclined surfaces being directed in a sense to impose torque about said axis on said blocking member projections.

3,274,977
ARRANGEMENT OF A BUCKSTAY SYSTEM FOR WIDE FURNACE STEAM GENERATORS

Earl K. Rickard, East Granby, Conn., and Henry Schroeder, Jackson Heights, N.Y., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Nov. 12, 1964, Ser. No. 410,521
8 Claims. (Cl. 122—240)

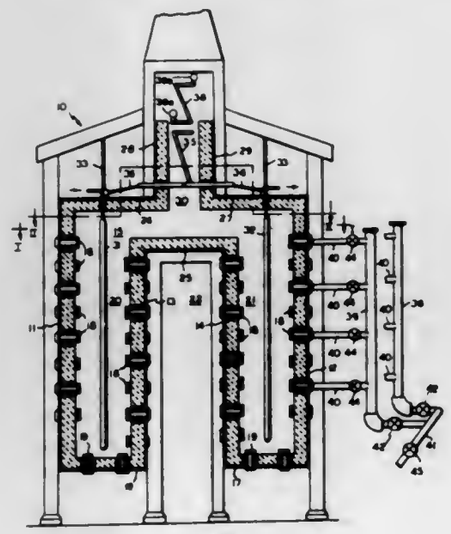


1. A vapor generator having a furnace with upright, rectangularly disposed tubulous side walls; a tubulous division wall dividing said furnace into spaced chambers; a furnace stiffening system surrounding said furnace including horizontally arranged buckstay means secured to and supported on the tubes of said side walls externally of said furnace; means for reducing the unsupported span of said buckstay means including tie means positioned intermediate the ends of said buckstay means, said tie means extending through said furnace parallel to said division wall between a pair of opposed side walls; openings in said side walls permitting passage of said tie means, means external of said furnace securing the opposite ends of said tie means to said buckstay means; and the tubes of said division wall enclosing said tie means for cooling said tie means.

3,274,978
VERTICAL TUBE FLUID HEATER

Edward H. Palchik, Queen Village, N.Y., Thomas F. O'Sullivan, Wilton, Conn., and William Tucker, Great Neck, N.Y., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Feb. 24, 1964, Ser. No. 346,733
6 Claims. (Cl. 122—356)



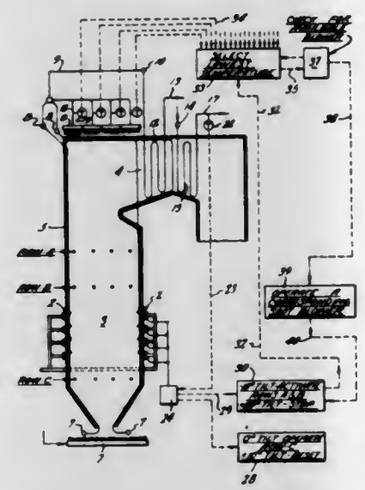
1. A heater for fluids comprising:
(a) end walls and a floor;
(b) a side wall disposed between said end walls;

(c) a second side wall of smaller height disposed parallel to said first side wall and forming a radiant heating section;
(d) a roof mounted on said end walls and said first side wall and forming an opening between said roof and the upper portion of said second side wall;
(e) upper side and end walls mounted on said roof and around said opening and defining a convection section with said end walls, the axis of said convection section being offset from the axis of said radiant section, and said convection section being in flue gas communication only with said radiant section via said opening;
(f) vertical process tube means positioned intermediate said side walls in said radiant section;
(g) a plurality of rows of radiant burners positioned in said side walls of said radiant section, each row of burners having a manifold associated therewith and each manifold having valve means whereby each row of burners is individually controlled;
(h) convection heating means in said convection section, said means comprising first and second serpentine conduit means;
(i) crossover means in fluid communication with said vertical process tube means and said first serpintine conduit means, one serpentine conduit means being in fluid communication with a single process tube means;
(j) inlet means for said first serpentine conduit means;
(k) inlet and outlet means for said second serpentine conduit means; and
(l) outlet means for said vertical process tube means.

3,274,979
SOOT BLOWER OPERATION FOR VAPOR GENERATOR FURNACES

Elwood P. Petit, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,559
11 Claims. (Cl. 122—392)

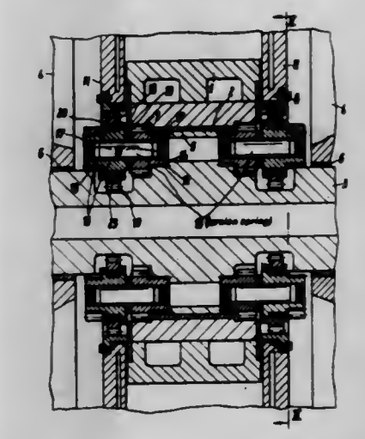


1. A vapor generator furnace comprising: means for burning an ash bearing fuel within the furnace; a plurality of groups of tubes lining the walls of said furnace in parallel flow relation; means for passing fluid through said tubes whereby the temperature of the fluid is increased; means for sensing the total heat absorbed by the fluid passing through each of said group of tubes; at least one soot blower associated with each group of tubes; and means for operating a soot blower associated with a group of tubes in response to the heat absorption sensing means related to the corresponding group.

3,274,980
ROTARY PISTON INTERNAL COMBUSTION ENGINE

Hubert Abermeth, Cologne, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany

Filed Aug. 23, 1963, Ser. No. 313,405
Claims priority, application Germany, Aug. 31, 1962, K 47,622
7 Claims. (Cl. 123—8)

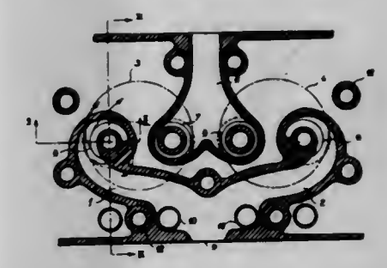


1. In a rotary piston machine, especially rotary piston internal combustion engine: a rotatable shaft with an eccentric, a piston journalled on said eccentric and provided with first gear means, housing means surrounding said piston and provided with second gear means, and a gear set supported by said eccentric and comprising two pinions respectively meshing with said first and second gear means, said gear set also including torsion spring means interconnecting said pinions.

3,274,981
CYLINDER HEADS FOR INTERNAL COMBUSTION ENGINES

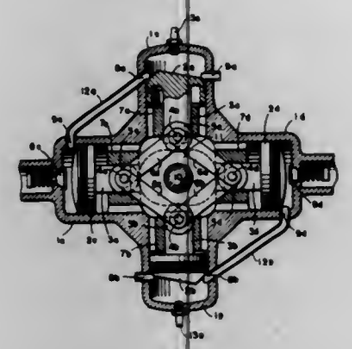
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works

Filed Mar. 30, 1964, Ser. No. 355,730
Claims priority, application France, Apr. 8, 1963, 930,834, Patent 1,361,447
5 Claims. (Cl. 123—30)



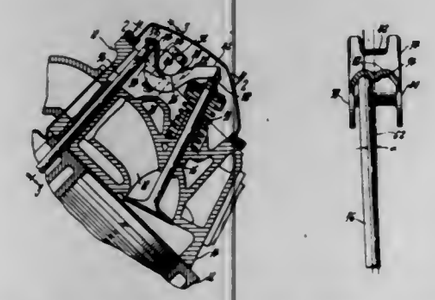
1. A cylinder head for internal combustion engines having at least two in-line cylinders, said head comprising an inlet and exhaust valve seat associated with each cylinder, the inlet seats of adjacent cylinders being positioned on either side of their corresponding outlet seats, a common inlet port for the inlet seats of adjacent cylinders, an inlet passage connecting said inlet port with its corresponding inlet seats, each of said inlet passages being routed slightly obliquely with respect to a line passing through the central longitudinal axes of said cylinders and terminating in a volute which leads up to and skirts the corresponding inlet valve seat before passing into said cylinder, the inner vertical wall of said inlet passage at the mouth of said volute being spaced at least as great a distance from the central longitudinal axis of said inlet seat as the inner annular wall of said inlet seat.

3,274,982
TWO-CYCLE TWO-CYLINDER INTERNAL COMBUSTION ENGINE
Masaaki Noguchi, Nagoya, and Shigeru Sakakibara, Aichi, Japan, assignors to To Yota Motors Company, Limited, Aichi Prefecture, Japan
Filed Sept. 23, 1964, Ser. No. 398,575
3 Claims. (Cl. 123—56)



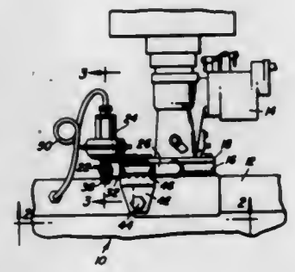
1. A two-cycle two-cylinder internal combustion engine comprising an engine shaft, a control cam of double lobed cocoon shape fixed to said engine shaft, two opposed engine cylinders each having a piston, two opposed feed pump cylinders each having a piston, said opposed cylinders being arranged radially with respect to the engine shaft in a cruciform, a piston rod of each of said pistons in the said four cylinders, each piston rod being provided on its inner end with a rotatable antifriction roller, and a linkage connecting the axes of said four antifriction rollers to form a parallelogram and adapted to hold said four antifriction rollers in rolling contact with the cocoon shaped cam edge of said control cam on the engine shaft.

3,274,983
SLOPING PUSH ROD ROCKER ARM MOUNTING
Russell L. Herring, Grosse Pointe Woods, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,917
5 Claims. (Cl. 123—90)



1. Valve gear for an internal combustion engine and comprising
- at least one valve actuating rocker arm, each said rocker arm being mounted for rocking movement around a predetermined axis,
- stop means preventing sliding movement of each said rocker arm in one direction along its axis,
- resilient means yieldingly opposing rocking movement of each said rocker arm in one direction and
- a push rod engaging each said rocker arm at a location spaced from its axis and opposing the force of said resilient means to rockingly actuate said rocker arm in said one direction, the direction of force of said push rod upon said rocker arm being disposed at an angle to a plane perpendicular to said axis whereby a component of said push rod force acts in a direction along said axis, said push rod force angle being the sole means to prevent movement of said rocker arm axially away from said stop means.

3,274,984
AUTOMATIC VACUUM SPOILER FOR INTERNAL COMBUSTION ENGINES
James J. Dolfi, Sr., P.O. Box 434, Torrance, Calif.
Filed May 17, 1963, Ser. No. 281,119
1 Claim. (Cl. 123—124)

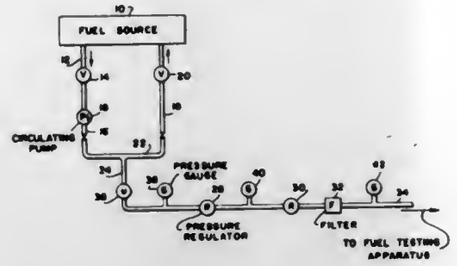


In combination, an internal combustion engine including an intake manifold, a vacuum spoiler for said manifold, said spoiler comprising an air conduit supported exteriorly of said manifold and including inlet and outlet ends, extension conduit means communicating the outlet end of said conduit with the interior of said manifold, the inlet end of said conduit being communicated with the ambient atmosphere, said conduit being of one-piece construction and including a pair of diametrically opposite circumferentially extending slots formed therethrough and spaced circumferentially thereabout, an elongated plate-like valve member of a width less than the outside diameter of said conduit and of a thickness slightly less than the width of said slots, said valve member extending through said slots and being longitudinally reciprocal transversely of said conduit, the opposite side edges of said gate valve member and the portions of said conduit defining the opposite ends of said slots being disposed in slidable guiding engagement with each other and the opposite side faces of said gate valve member being disposed in closely spaced relation with the portions of said conduit defining the opposite sides of said slots whereby the said conduit will have a shearing action on foreign deposits accumulated on said side faces upon longitudinal shifting of said valve member, said valve member including an apertured portion and being selectively longitudinally shiftable between first and second positions with said apertured portion in and out of registry with the interior of said conduit, and force means connected to said valve member and operatively associated with said engine to selectively shift said valve member between said first and second positions in response to predetermined operating conditions of said engine.

3,274,985
FUEL SUPPLY SYSTEM
Alfred E. Traver, Great Neck, and George A. MacDonald, Floral Park, N.Y., assignors to Mobil Oil Corporation, a corporation of New York
Filed Mar. 19, 1965, Ser. No. 444,918
6 Claims. (Cl. 123—139)

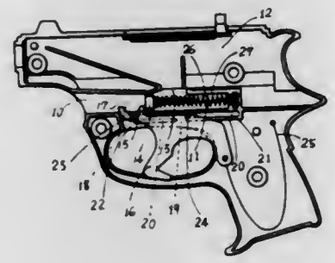
1. In a fuel supply system for supplying a liquid fuel at a first rate to an engine from a source of supply remote from the engine, the combination of fuel movement means substantially devoid of fuel-stagnation means for withdrawing fuel from the source of supply and moving it at substantially uniform velocity past a location close to the engine at a second rate faster than the first rate, a chamber, coupling means coupling together the fuel-movement means at said location and the chamber for

supplying liquid fuel to the chamber at a third rate intermediate the first and second rates, the coupling means including a first conduit having a portion thereof inclined upwardly in the direction of fuel flow to facilitate the passing of bubbles of gas therethrough into the



chamber, the chamber including a gas space above the normal level of liquid fuel therein to receive the gas bubbles, an outlet from the chamber for supplying fuel from the chamber to the engine, and overflow means for conveying away from the chamber liquid fuel therein that exceeds a predetermined level.

3,274,986
TOY GUN WITH DOWNWARDLY INCLINED STRIKER SPRING
Hiroshi Yano, % Sekiden Kagaku Kogyo Co., Ltd., No. 2, 1-chome, Jinai-cho, Moriguchi-shi, Osaka, Japan
Filed Aug. 24, 1964, Ser. No. 391,433
1 Claim. (Cl. 124—27)

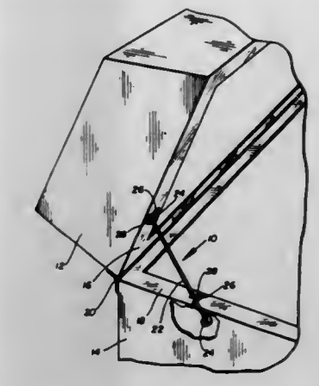


A toy gun comprising:
a housing;
a longitudinal bore in said housing;
a spring chamber aligned with the rear end of said bore;
a striker coil spring; and
means mounting a rearward portion of said spring in said spring chamber and a forward portion of said spring in said bore with the longitudinal axis of said forward portion of said spring inclined downwardly from the longitudinal axis of said bore whereby said forward portion of said spring will move in a straight direction in said bore when expanding from a compressed state.

3,274,987
HOOD SUPPORT FOR CHARCOAL COOKER
Earle Grant Hastings, Jr., Tulsa, Okla., assignor to Hasty-Bake Manufacturing Company, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Jan. 14, 1965, Ser. No. 425,387
7 Claims. (Cl. 126—25)

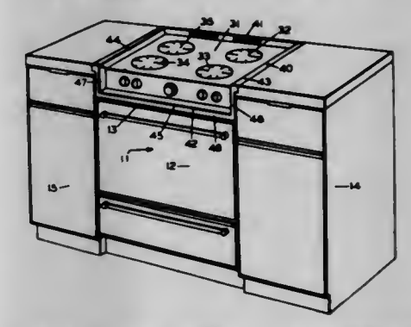
1. In a charcoal cooker, the combination comprising:
- a body portion having a flange at the top of said body portion, said flange having an opening therein consisting of a T-slot and T-stem;
- a hood portion having a flange at the bottom thereof, said flange having an opening therein consisting of a T-slot and T-stem;

said T-slots and T-stems in said body portion and said hood portion being positioned so that when the hood portion is closed upon said body portion said T-slots and T-stems substantially coincide; and



- a hood stop disposed within said T-stem and T-slot of said body portion and within said T-stem and T-slot of said hood portion.

3,274,988
GAS RANGE
George McArthur, Jr., Delaware County, Ohio, assignor to The Sunray Stove Company, Delaware, Ohio, a corporation of Ohio
Original application Feb. 20, 1961, Ser. No. 90,236, now Patent No. 3,176,677, dated Apr. 6, 1965. Divided and this application Aug. 27, 1964, Ser. No. 392,427
6 Claims. (Cl. 126—39)

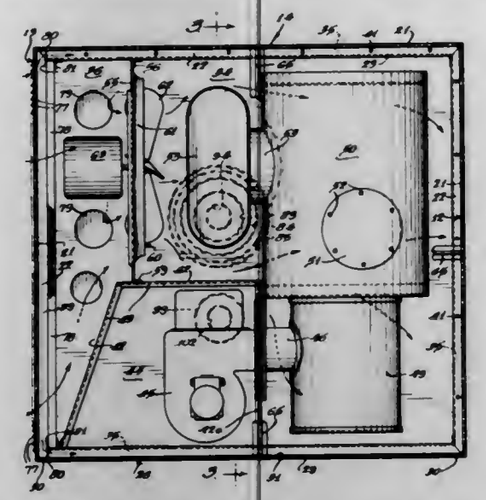


1. A separable frame for effecting cooperation between the top of a recessed top gas range and cabinets abutting the sides of said range, said frame consisting of a rear rail and a forward rail, the rear rail being substantially straight and unitary and the forward rail being unitary and substantially U-shaped, said forward rail having two side rail portions and a front rail portion, each said side rail portions being provided with outwardly extending flanges to overlie the abutting edges of said side cabinets and the front rail portion being also U-shaped having two downwardly extending legs and a horizontally extending lower connecting portion between the lower ends of said legs.

3,274,989
AIR HEATER
Kenneth S. Jenson and Frederick W. Suhr, Wisconsin Rapids, Wis., assignors to Preway, Inc., a corporation of Wisconsin
Filed Dec. 31, 1963, Ser. No. 334,693
5 Claims. (Cl. 126—110)

1. An air heater, comprising: a housing having an exterior wall defining at least an air inlet and an air outlet for said air heater; means defining an air heating chamber within said housing so that intake air is directed through separate branch flow paths from said inlet, one of said flow paths defining a blanket of insulating air between said exterior wall and said heating chamber, the other of

said flow paths defining a generally direct route from said inlet, through said heating chamber, to said outlet; a blower mounted in said housing for drawing air in from a room, through said separate flow paths and discharged



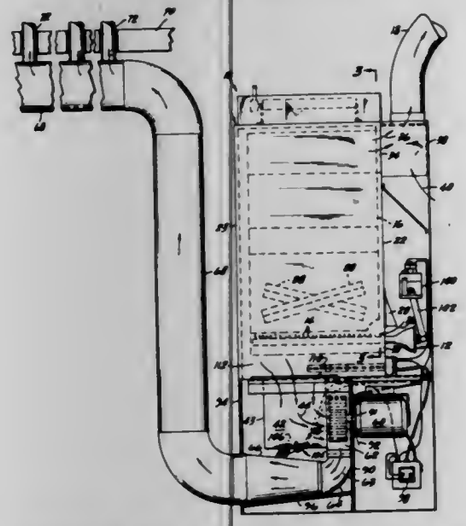
as heated air back to the room; and a filter in said other flow path adjacent said inlet creating a resistance to the flow of air through said other flow path to insure the flow of air induced by said blower into said insulating flow path while filtering air through said other flow path.

3,274,990

MASS-PRODUCTION LOW-COST FURNACE FOR SUPPLYING HIGH-TEMPERATURE HIGH-VELOCITY AIR FOR DOMESTIC HEATING

Calvin D. MacCracken, Tenafly, N.J., assignor, by mesne assignments, to Calmac Corporation, Boston, Mass., a corporation of Massachusetts

Filed Aug. 12, 1964, Ser. No. 389,121
12 Claims. (Cl. 126—110)



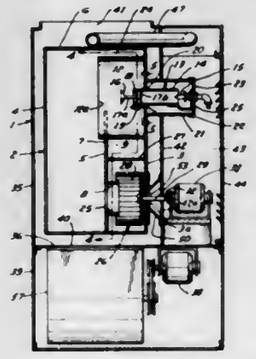
1. In a domestic hot air furnace for space heating, apparatus for providing high velocity air at an elevated temperature in the range from 250° F. to 375° F. comprising fuel burner means for providing hot gas products of combustion, means for providing combustion air to support the combustion, heat exchanger means including a plurality of walls surrounding said burner means and extending upwardly above said burner means for conducting the hot gases upwardly, exhaust duct means connected to the upper portion of said heat exchanger means for conducting away the gas products of combustion after their upward flow within the walls of said exchanger means, suction plenum chamber means positioned below said heat exchanger means, a blower having its intake communicating with said suction plenum chamber for maintaining the pressure within said suction plenum chamber below atmospheric pressure, a plurality of baffle walls in closely spaced relationship with respective exchanger walls for defining a plurality of narrow passages adjacent to said exchanger walls and for blocking off air flow through said furnace except through said narrow passages, said narrow passages each communicating at their lower ends with said suction plenum chamber, air inlet means including a filter for supplying air to the upper ends of said narrow passages, an outer jacket around said furnace, an insulation layer within said jacket and closely adjacent to said jacket providing a narrow cooling air space between said jacket and said insulation layer, the lower portion of said cooling air space communicating with said suction plenum chamber for drawing cooling air through said cooling space between said jacket and insulation layer for maintaining the casing of said furnace cool during operation.

3,274,991

HEATING FURNACE

William L. Schmieler, 19609 Winslow Road, Shaker Heights, Ohio 44122

Filed June 23, 1965, Ser. No. 466,183
19 Claims. (Cl. 126—110)



1. A furnace comprising a hollow heat exchanger having a peripheral wall, and front and rear walls, respectively, and an intermediate partition wall between, and in spaced face to face relation to both the front and rear walls, said intermediate wall having an inlet for products of combustion near one end and an outlet for said products near the other end, the space between the front wall and intermediate wall providing a recirculating duct connecting the outlet and inlet;

a combustion chamber disposed in said space at said one end and having an open discharge end which is aligned with said inlet and directed toward the rear wall;

said chamber having a peripheral enclosing wall spaced from the peripheral wall of the exchanger so that products from said duct can impinge on one side of said peripheral wall of the chamber and flow in surrounding relation thereto, said peripheral wall of the chamber at the discharge end being arranged in spaced relation, transversely of the discharge end, to the periphery of the inlet so as to form therewith an annular passage for discharging toward the rear wall;

burner means for discharging hydrocarbon fuel into the chamber in a direction toward the open discharge end, means having air induction ports connected directly to the atmosphere and arranged to permit induction of air into the chamber for sustaining combustion therein;

a power driven recirculating blower connected with the interior of the exchanger so as to recirculate products of combustion from said outlet into surrounding relation to the chamber and thence through said inlet;

bleeder duct means in communication with the exchanger and operable for bleeding to the atmosphere a fraction of the products being recirculated; and

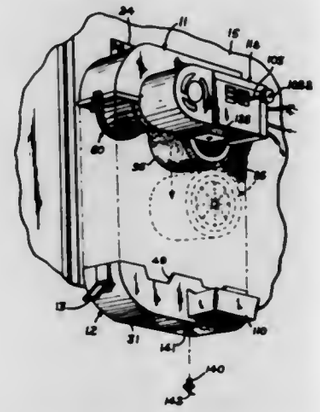
the discharge end of the chamber and periphery of the inlet of the heat exchanger being spaced apart and arranged so that the recirculated products blown through the duct, combined with the bleeding of products of combustion into the atmosphere, create a low pressure zone around the discharge end of the chamber.

3,274,992

HUMIDIFIER

Warner W. Martin, Olmstead Falls, Ohio, assignor to The Lau Blower Company, Dayton, Ohio, a corporation of Ohio

Filed July 6, 1965, Ser. No. 469,496
9 Claims. (Cl. 126—113)



1. A humidifier assembly adapted for mounting on a furnace or the like comprising, a housing defining an air flow chamber and having one side adapted for mounting on the furnace, spaced inlet and outlet openings in said one side adapted to communicate with the interior of the furnace, said housing being split along a horizontal plane and including upper and lower portions, said upper portion adapted to be secured on the furnace, releasable means for securing said lower portion to said upper portion so that said lower portion may be detached from said upper portion for cleaning without detaching said upper portion from the furnace, an outer wall on said upper portion of said housing, drive means mounted on said outer wall exterior of said air flow chamber and having a tubular drive shaft which extends through said outer wall into said chamber, an evaporator drum assembly in said air flow chamber between said inlet and said outlet, said evaporator drum assembly including highly porous material secured on a support frame, a support shaft extending through said tubular drive shaft into releasable engagement with said support frame to connect said drum assembly to said drive shaft for rotation therewith, means defining a reservoir in said housing below said drum assembly for wetting said material, and means associated with said air flow chamber for moving air through said outlet opening to increase the moisture content of the air.

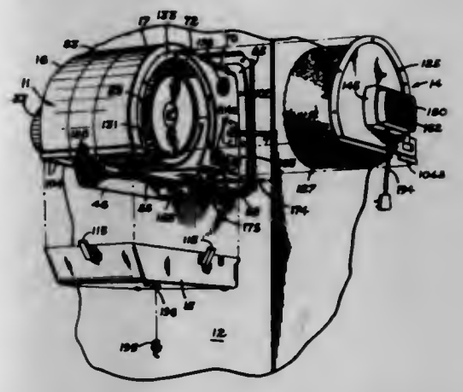
3,274,993

HUMIDIFIER

Warner W. Martin, Olmstead Falls, Ohio, assignor to The Lau Blower Company, Dayton, Ohio, a corporation of Ohio

Filed Sept. 13, 1965, Ser. No. 486,683
12 Claims. (Cl. 126—113)

1. A high capacity humidifier of the character described adapted to have one side thereof secured adjacent a vertical wall of a furnace or the like comprising, a housing having a vertical partition dividing said housing into air inlet chamber and humidification chamber, means defining a circular opening in said partition to interconnect said chambers, means on said one side of said housing adapted to connect said chambers to the interior of the furnace or duct, said housing having a removable side wall which forms one side of said humidification chamber, a highly porous evaporator drum mounted on said side wall and disposed in said humidification chamber, said drum having an outer size smaller than the size of said side wall so that said drum can be removed from said housing with said side wall, means for wetting said



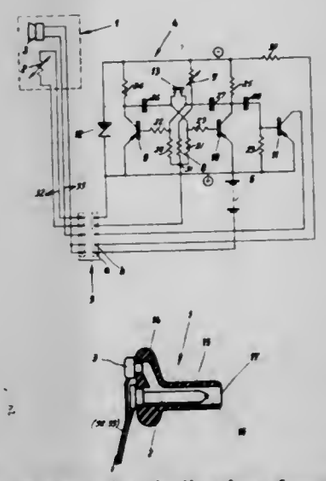
drum, said drum having an open end adjacent said partition, a motor mounted on a side wall opposite said first side wall and having its drive shaft extending into said housing through said air inlet chamber and said circular opening and into the interior of said drum, and a single inlet centrifugal blower wheel mounted on said shaft and disposed within said drum with its inlet aligned with said circular opening for effecting high velocity flow of air between said chambers, said blower wheel adapted to force air through the said evaporator drum to evaporate water therefrom to increase the moisture content of said air.

3,274,994

ARRANGEMENT FOR INDICATING FUNCTIONAL DISTURBANCES IN A LIVING BODY

Walter Sturm, Larchenring, Germany, assignor to Quarzlampen Gesellschaft m.b.H., Hanau am Main, Germany

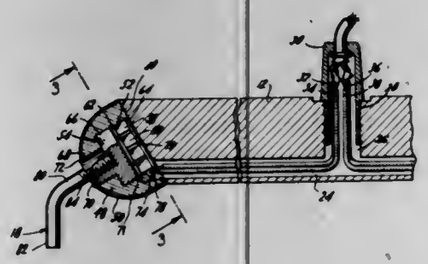
Filed Dec. 7, 1962, Ser. No. 243,149
Claims priority, application Germany, Dec. 8, 1961, Q 687
7 Claims. (Cl. 128—2)



1. An arrangement for indicating functional disturbances in a living body, particularly of mining personnel working underground, comprising, in combination a housing means having a wider outer portion of a given diameter adapted to be seated in the concha of the ear and an

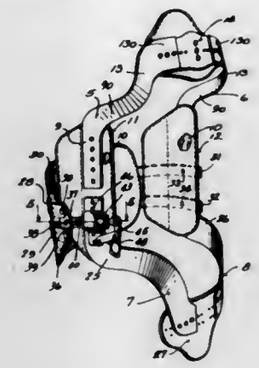
elongated narrower inner portion of a diameter less than said given diameter, only said elongated inner portion being adapted to be fitted into the auditory canal of an ear so as to be worn on a living being, said housing being closed at its outer end for preventing intrusion of ambient air into the auditory canals and forming a compartment; electric temperature detector means arranged in said compartment in such a manner that when said narrower inner portion is disposed in the auditory canal of an ear said temperature detector means is exposed to the body temperature only, and is protected from the temperature of the ambient air outside the auditory canal, said temperature detector means having an electric characteristic which changes with changes of the temperature to which it is exposed; and electric signaling means comprising an acoustical signal issuing means arranged also in said compartment of said housing means for giving when actuated an acoustical signal to be heard only by said living being who wears said housing means and signal producing electric circuit means actuating said signal issuing means and connected with said detector means for producing a signal when said temperature exceeds a predetermined value and accordingly said electric characteristic assumes a predetermined value.

3,274,995
THERMOELECTRIC DENTAL PROBE
William Eidus, 1 Bonnie Court, Spring Valley, N.Y.
Filed July 9, 1963, Ser. No. 293,679
5 Claims. (Cl. 128—2)



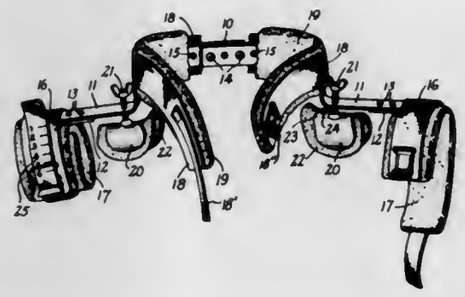
1. A thermoelectric probe for heat-transfer application to selected areas of a human body, said probe comprising an elongated probe member of heat-conductive material, a thermocouple housing mounted at each end of said probe member and a thermocouple module mounted within each of said housings, each thermocouple module comprising a group of semiconductor elements connected at their ends by opposed groups of electrically-conductive plates to form an electrical series of said semiconductor elements with the groups of plates constituting respectively hot and cold junctions of said thermocouple module when electrical current is fed to said series, a pair of leads connected to the ends of each semiconductor element series, and means for electrically connecting said leads to a current source, the cold junction plates of one module and the hot junction plates of the other module being located in intimate heat-exchange association with said probe member, a heat-conductive socket located within each thermocouple housing in heat-exchange association with the plates thereof opposite to said probe member, and a probe tip of heat-conductive material removably mounted within each socket and extending outwardly of the respective thermocouple housing, said probe member being sufficiently heat conductive to transmit the generated cold from the cold junction plates of said one module toward the center of said probe member, and to transmit the generated heat from the hot junction plates of said other module in the opposite direction toward the center of said probe member, whereby said generated heat and cold neutralize each other within said probe member.

3,274,996
SURGICAL BRACE
Eugene L. Jewett, Maitland, Fla., assignor to Florida Brace Corporation, Winter Park, Fla., a corporation of Florida
Filed Sept. 1, 1961, Ser. No. 135,510
4 Claims. (Cl. 128—78)



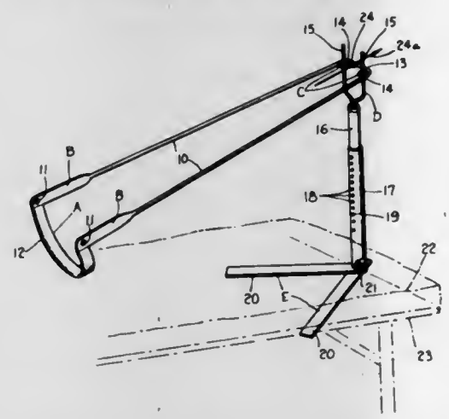
1. A surgical brace comprising laterally spaced torso side pads; frame means connecting the side pads and comprising sternal bars and pubic bars connected with the side pads, a lumbar pad having strap means connecting it with said frame means, a sternal pad having means connecting it with the sternal bars and a pubic pad having means connecting it with the pubic bars; the sternal bars extending upwardly from the respective side pads and thence extending substantially directly forwardly and curvilinearly toward each other and thence extending upwardly in approximate parallelism to the level of connection with the sternal pad, the sternal pad comprising an internal plate having an opening and the means connecting it with the sternal bars including a finger extending into said opening, the finger and plate having marginally notched portions in interlocked connection, the plate being self-adjustable with respect to the finger.

3,274,997
BRACES FOR CORRECTING HIP DISLOCATION
George F. Hewson, Jr., Palisade, N.J., assignor to St. Luke's Hospital Center, New York, N.Y., a corporation of New York
Filed Sept. 23, 1963, Ser. No. 310,787
1 Claim. (Cl. 128—78)



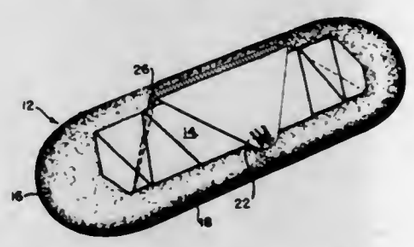
In a brace for treating congenital hip dislocation, the combination of a rigid frame including a pelvic bar of longitudinally curved contour for conformably engaging a peripheral portion of a patient's torso and two laterally arranged thigh bars each secured to an end portion of said pelvic bar, each thigh bar including an upright portion secured at its upper end to a portion of said pelvic bar and an arm portion extending substantially perpendicular from said upright portion, said arm portions extending outwardly from said pelvic bar in opposite directions and substantially colinear, each of said arm portions having band means at its outer end adapted to be fastened around and encircle a patient's lower thigh opposite the outer end of the femur, each thigh bar having a pressure plate mounted on the arm portion adjacent the upright portion, said pressure plate being concave and having a flared inner edge portion to conform to the thigh and body junction, said pressure plate mounting means including adjustable means to exert corrective pressure on the upper thigh in a direction toward the femur head while the outer end of the femur is held against displacement by said band means encircling the patient's lower thigh above the knee joint.

3,274,998
LEG SPLINT
Robert C. Grier, Jr., 303 W. Prentiss Ave., Greenville, S.C.
Filed Dec. 16, 1963, Ser. No. 330,746
3 Claims. (Cl. 128—85)



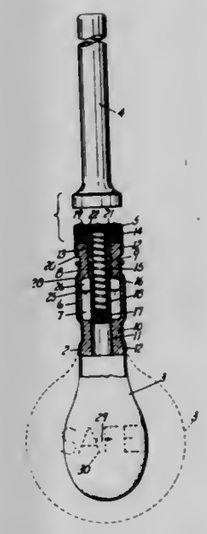
1. In combination, a leg splint having a pair of spaced rigid aligned members for extending on either side of a leg of a patient, means joining one end of said aligned members affording spaced loop portions for attaching devices to the splint, a stand having an upper portion with spaced projections accommodated by said loop portions, a base having elongateu laterally adjustable members, and vertically adjustable means joining the upper portion with the base.

3,274,999
ANATOMICAL DRESSING
Danforth R. Robinson, 442 Springfield Ave., Summit, N.J.
Filed July 29, 1963, Ser. No. 298,104
4 Claims. (Cl. 128—156)



1. An anatomical dressing comprising,
an absorbent pad having a front side and a back side, and a flexible envelope normally flat-folded in relation to said pad,
said envelope having closed rear and side wall portions and an open mouth edge portion from opposite sides of which a pair of tabs extend,
one of said tabs being attached on its outer side to said back side of the pad leaving the main body of said envelope free from attachment to said pad, said main body of the envelope being folded to normally lie on said one tab with the other tab extending free exteriorly of the back side of said pad, whereby said other tab may be manually pulled to open the mouth of said envelope and permit said envelope to turn inside out while receiving the folded pad and said one tab which is attached thereto in completely enclosed position within the envelope.

3,275,000
SINGLE DOSE FOAMED MEDICATION APPLICATOR
Max E. Bowen, 30885 W. Six Mile Road, Livonia, Mich.
Filed May 20, 1963, Ser. No. 281,608
8 Claims. (Cl. 128—272)

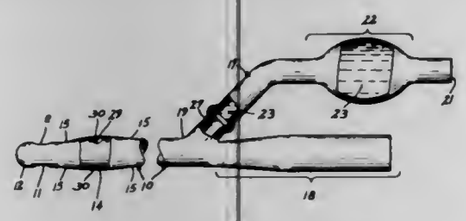


8. A medicinal dose capsule adapted to be used with an applicator comprising,
a double ended capsule having opposite first and second ends and openings formed in each end communicating with a central dose cavity containing a charge of medicating material under expansible gas pressure,
a common closure for said openings removable through the opening in said first end and extending in sealing relation through the opening in said first end and through said cavity into closing engagement in the inner end of the opening in said second end of said capsule,
said closure maintaining closing engagement within said opening in said first end of said capulse until after the closing engagement with the opening in said second end of said capsule is broken upon removing movement of the closure,
and an expansible and contractable chamber forming member connected to said in said second end of said capsule and adapted to receive the fully expanded charge of said medicating material.

3,275,001
SELF-INFLATABLE CATHETER
Dean A. Rosecrans, Gardena, Calif., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed May 22, 1962, Ser. No. 196,668
5 Claims. (Cl. 128—349)

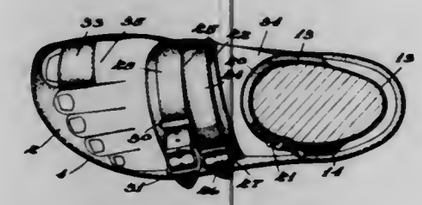
1. A catheter construction comprising:
(a) elongated tube-like means defining a pair of longitudinally extending passages, one of said passages being a body fluid discharge passage and the other being a retaining bag filling passage;
(b) said means having adjacent its forward end at least one orifice formed in said discharge passage to permit the flow of body fluid into said discharge passage;

(c) a resilient distensible wall member attached to said tube-like means and forming an inflatable retaining bag positioned rearwardly spaced from but adjacent said orifice;
(d) a second resilient distensible wall member movable between an expanded stressed position and a contracted position and which defines a fluid reservoir rearwardly spaced from said retaining bag and constructed to contain a fill liquid;
(e) said filling passage communicating with said inflatable bag and connected to said second distensible wall member;
(f) said second resilient distensible wall member being closed except for said connection between said filling passage and said second distensible wall member;
(g) releasable closure means positioned to close com-



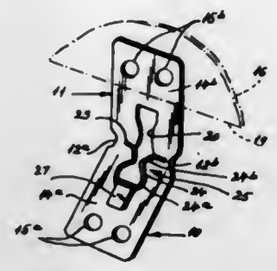
munication between said reservoir and said inflatable bag until released;
(h) a fill liquid in said reservoir expanding said second resilient distensible wall member thereby creating stresses therein opposing expansion which if unopposed would contract said second resilient distensible wall member and which places said fill liquid under pressure from said second resilient distensible wall member; and
(i) the resilient distensible wall member forming said inflatable retaining bag being inflatable at a lower internal fluid pressure than the pressure on said fill liquid in said reservoir so that when said releasable closure means is released, fill liquid will pass into and inflate said inflatable retaining bag.

3,275,002
CORRECTIVE SANDAL
William M. Scholl, 213 W. Schiller St., Chicago 10, Ill.
Filed June 14, 1963, Ser. No. 287,870
3 Claims. (Cl. 128—581)



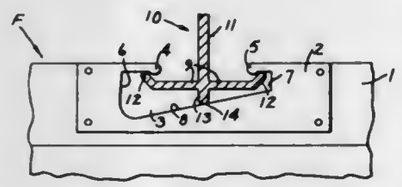
1. In a corrective sandal,
an outer sole,
an inner sole secured to said outer sole and having slots at predetermined locations therein,
a strap for engaging the foot adjacent the heel,
a strap for engaging the foot over the instep,
a separate strap having a portion extending in and out of certain of said slots to define a toe loop,
each of said straps having terminal end portions extendtending through certain of said slots and anchored between said soles, and
means defining a track between said soles for free movement of said toe loop strap portion which extends in such direction that when tightened the large toe is urged toward the inside of the foot.

3,275,003
MULTI-PURPOSE RETENTION CLIP
Coleman R. Chamberlin, Thompson Ridge, N.Y.
(P.O. Box 122, Newburgh, New Windsor, N.Y.)
Filed Jan. 30, 1964, Ser. No. 341,201
1 Claim. (Cl. 129—16.7)



A clip assembly for a cylindrical object, comprising a flat article having a straight edge, a tab formed from a pliable rectangular sheet metal body folded in half along a transverse line to define two juxtaposed panels, said article having an end portion disposed between said panels with registering holes in the panels and said end portion, rivets engaged in the registering holes securing said panels and said end portion of the article together with a major portion of the tab extending outwardly of said edge of the article, said tab having a centrally located keyhole-shaped notch opening inwardly and longitudinally thereof from the line of said fold, said tab having two loops at the fold line spaced apart by said notch, a generally U-shaped spring clip interposed between said panels and bordering said notch, said clip having a straight bight, a pair of outwardly bowed leg portions adjoining opposite ends of the bight, a pair of inwardly bowed other leg portions adjoining the outwardly bowed leg portions, and a pair of feet extending in aligment in opposite directions outwardly of ends of the respective other leg portions, said feet being slidably engaged in said loops respectively, said tab having a tongue folded inwardly at an inner end of said notch on one panel and enclosing said bight of the clip to prevent lateral displacement of the clip, said outwardly bowed leg portions extending inwardly of the notch and defining a seat for said cylindrical object when inserted laterally into the notch, said inwardly bowed other leg portions extending inwardly of the notch to serve as camming elements spreading apart for admitting said object into the notch and then retracting to serve as abutments for holding said object in the notch, said tongue disposed between said panels and overlapping the edge of said end portion of the article between the panels.

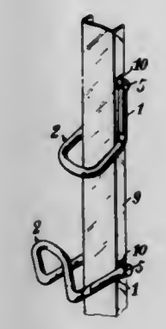
3,275,004
SUSPENSION FILING SYSTEM FOR FOLDERS AND OTHER DOCUMENT CONTAINERS
Georg Alfred Zippel, Muhlweg, Altdorf, near Nurnberg, Germany
Original application Apr. 19, 1960, Ser. No. 23,195, now Patent No. 3,165,104, dated Jan. 12, 1965. Divided and this application July 8, 1964, Ser. No. 381,007
1 Claim. (Cl. 129—16.7)



A suspension type filing device, comprising:
an elongated and rigid supporting rail of uniform cross section having first and second, parallel and substantially coplanar flange means extending along the opposite lengthwise sides thereof and projecting in opposite sideward directions, the remote edge portions of said flanges projecting upwardly thereof, said rail also having a rib projecting downwardly from the lower side of the supporting rail below said flange means;
a folder fabricated from sheet material and having an upper suspension edge portion;
a substantially flat and stiff suspension member secured to said suspension edge portion, said member having a recess opening through the upper edge thereof, said recess being defined by a bottom edge, a pair of spaced, side edges and a pair of carrier noses extending toward each other from the upper ends of said side edges, one of said side edges being longer than the other and the bottom edge of said recess sloping upwardly from the bottom end of the longer side edge to the bottom end of the shorter side edge, said carrier noses having downwardly extending beads along their adjacent edges and the distance between the remote sides of the beads on said carrier noses being approximately equal to the distance between adjacent sides of the edge portions on said flange means, said rail being relatively movable transversely thereof into said recess and into a position with respect thereto so that said noses are respectively engaged by and supported upon said flange means with said beads between said edge portions, said adjacent sides of said edge portions being closely adjacent said beads to oppose movement of said suspension member transversely of said rail when said rail is in said position, the distance between at least a portion of said one side edge and the one carrier nose adjacent said other side edge of said recess being greater than said distance between the remote edges of said flange means on said rail;
said rib extending downwardly below said flange means into contact with a central portion of said bottom edge when said flange means are in supporting positions beneath said carrier noses, whereby pivoting of said suspension member and said folder around the lengthwise axis of said rail is positively opposed, said rail being relatively movable within said recess from said supporting position toward said one side edge so that said rib is moved away from said central portion of said bottom edge and the flange means is moved from beneath the one carrier nose, whereby said folder can be moved downwardly away from said rail.

3,275,005
LOOSE-LEAF BINDERS HAVING PIVOTABLE RINGS
Georges Emmanuel Cott, Enghien les Bains, France, assignor to Societe Anonyme Reliure Industrielle S.T.D., Seine et Oise, France, a corporation of France
Filed Oct. 28, 1964, Ser. No. 407,185
Claims priority, application France, Oct. 31, 1963, 952,530, Patent 1,383,043
7 Claims. (Cl. 129—24)

1. A loose-leaf binder comprising a flat support member and at least two rings pivotally coupled to said support member for receiving loose sheets, each ring comprising first and second tubular elements, and a transverse member rigidly fixed to each of said elements at extremities thereof, said transverse member being mounted on said support member for pivotal movement to locate said ring in first and second positions, said first element and said transverse member being co-planar, said second element comprising a first portion co-planar with said first element and with said transverse member, an elbow on said portion, and an arcuate, substantially semi-circular portion coupled to said elbow, said arcuate portion being located in a plane parallel to said transverse member and forming, in said first position of said ring, a continuous slide-track for perforated sheets threaded on said ring, said arcuate portion comprising an elbowed extremity located in alignment with said first element and separated therefrom to define a gap through which the sheets may be extracted from said ring or inserted



thereon when said ring is in said second position, said arcuate portion in said first position being in a plane perpendicular to the plane of said support member while said first element, first portion and elbowed extremity are in said plane of the support member, whereas in said second position said first element, first portion and elbowed extremity are pivoted out of the plane of said support member so that said gap is disposed for said extraction and insertion of sheets.

3,275,006
SMOKING PIPE
Earl Wayland Krizan, 5317 Wooten Drive, Fort Worth, Tex.
Filed Sept. 3, 1964, Ser. No. 394,209
4 Claims. (Cl. 131—183)

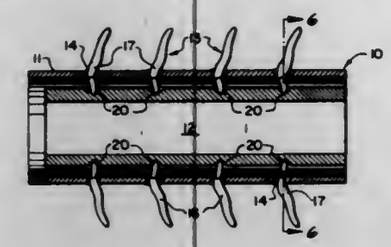


1. In a smoking pipe including a bowl, a ring within said bowl around the inner wall thereof, a perforated disc transversely received in said ring, a lift arm connected with an edge of the disc and extending upwardly to the rim of said bowl, means slidably receiving and guiding said arm and connected disc, and a cylindrical tobacco cartridge received in said ring above said disc, said ring being tapered downwardly and inwardly and the peripheral portion of the lower end of said cylindrical cartridge being dimensioned to engage the innermost portion of said tapered ring.

3,275,007
SELF-GRIPPING HAIR CURLER
William E. Thackeray, South Ogden, Utah, assignor to Norman F. Agricola, Ogden, Utah
Filed Dec. 9, 1963, Ser. No. 329,104
8 Claims. (Cl. 132—40)

1. A hair curler, comprising a roller tube; gripping means at all times extending through the wall of said roller tube; actuator means in engagement with said gripping means; and cooperative locking means on said tube and said gripping means whereby reciprocation of said actuator means between first and second extreme

positions through said tube moves said gripping means between a first positive locked position protruding from



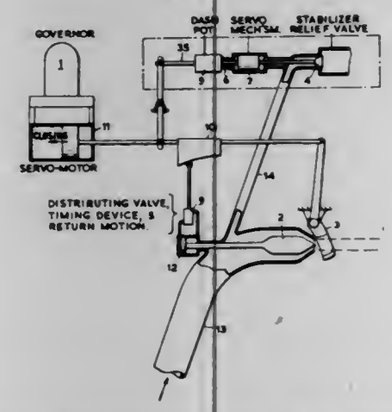
the tube and a second positive locked position lying substantially flat against the outer surface of said tube.

3,275,008

REGULATION OF HYDRAULIC TURBINES

Gleb Kerensky, Netherton, England, assignor to The English Electric Company Limited, London, England, a British company

Filed July 27, 1965, Ser. No. 475,047
Claims priority, application Great Britain, Feb. 27, 1959, 6,865/59; May 11, 1959, 16,041/59; June 26, 1959, 22,045/59
15 Claims. (Cl. 137—25)



1. A device for regulating water flow through a water turbine having a penstock for leading a flow of water to the turbine, comprising a governor, quantity control means connected to said governor to reduce the flow of water in the penstock on increase of speed sensed by said governor, first relief valve means connected to the penstock to vent water therefrom and connected to said governor to be operated thereby in the sense of opening on increase of speed, second relief valve means connected to the penstock to vent water therefrom, said second relief valve means having a stroke which is only a small part of said governor stroke and having a flow capacity which is only a small fraction of the flow capacity of said first relief valve means, and a yieldable connection between said second relief valve means and said governor to operate said second relief valve means in the sense of opening on increase of speed, and to allow said governor to over-run said second relief valve means when the latter reaches the end of its stroke.

3,275,009

PNEUMATIC CONSTANT SPEED CONTROL APPARATUS FOR POWER MACHINES

Josef Frania and Fritz Scheele, Hannover, Germany, assignors to Westinghouse Bremsen-Gesellschaft m.b.H., Hannover, Germany

Filed Feb. 27, 1963, Ser. No. 261,430
Claims priority, application Germany, Mar. 2, 1962, W 31,772
5 Claims. (Cl. 137—36)

1. A pneumatic constant speed control apparatus for automatically maintaining the revolutions per unit time of a power machine at selectively predetermined values, comprising:

(a) a first pressure chamber having walls and an output port therein,

(b) a first piston axially slidable within said first chamber and extending through one of said walls,

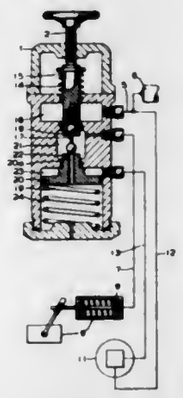
(c) an intake passageway within said first piston terminating at one end at an aperture at the end face of said piston, said aperture formed to comprise a valve seat within said passageway, and said passageway terminating at the other end at an aperture disposed away from the said end face, the latter said opening adapted to be communicated with a pressure supply line,

(d) an intake valve member in said passageway and adapted to seat internally on said aperture comprising a valve seat,

(e) a second pressure chamber having walls and disposed adjacent said first pressure chamber,

(f) a piston in said second pressure chamber and having an axially extending portion slidably extending through one of said walls of said second pressure chamber and into said first pressure chamber, said second piston disposed coaxially with said first piston,

(g) means in said second pressure chamber and disposed on one side of said second piston biasing said second piston to one extremity of its travel,



(h) an exhaust passageway extending through said second piston and terminating at one end in the end face of said axially extending portion to form a valve seat, and terminating at the other end at an aperture communicating with said second pressure chamber on the same side of said piston as the said biasing means,

(i) an exhaust port at the end of said second chamber on the same side of said piston as the said biasing means,

(j) an exhaust valve member adapted to externally seat upon said valve seat in said second piston,

(k) means rigidly connecting said exhaust valve member to said intake valve member for closing said intake valve while opening said exhaust valve when said first and second pistons are spaced apart a distance exceeding a predetermined distance and for opening said intake valve while closing said exhaust valve when said first and second pistons are spaced apart a lesser distance than said predetermined distance,

(l) an input port in said second pressure chamber for supplying pressure to the pressure chamber on the side of said piston opposite said side having said biasing means,

(m) means connected between the pressure supply and the input port in said second pressure chamber for providing an output pressure to said input port, said output pressure being proportional to the revolutions per unit time of an engine, and

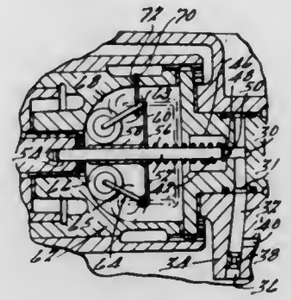
(n) pressure responsive throttle regulator means for providing fuel to said engine and connected to the output port of said first pressure chamber.

3,275,010

CENTRIFUGAL MASS TYPE GOVERNOR

Thomas R. Stockton, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed May 23, 1963, Ser. No. 282,702
2 Claims. (Cl. 137—53)



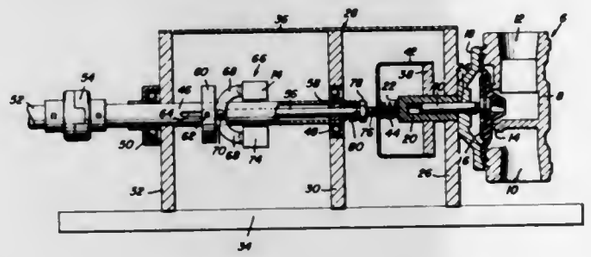
1. A fluid pressure governor assembly comprising, in combination, a rotating governor body, a conduit containing a fluid under a varying pressure, orifice means in an upstream portion of said conduit, a fluid exhaust opening in another portion downstream of said orifice means, and flow restricting valve means variably slidable into and out of said opening to control the rate of flow through said orifice means and the pressure of the fluid in said another portion, means biasing said valve means to close said opening, and substantially radially movable speed responsive flyweight members rotatable by said body and acting on and aiding said biasing means with forces changing as a function of the change in speed of rotation of said body, and a contoured cam surface engaged by said flyweight members in their radial movement for varying the bias on said valve means and the pressure in said another portion as a function of the speed of rotation of said shaft and the curvature of said cam surface.

3,275,011

MAGNETIC AND SPEED RESPONSIVE FLOW DEVICE

John D. Berezansky, Mineral Point, and George D. Gdovichin, Ebensburg, Pa., assignors to Jabco., Inc., a corporation of Pennsylvania

Filed July 31, 1964, Ser. No. 386,536
10 Claims. (Cl. 137—53)



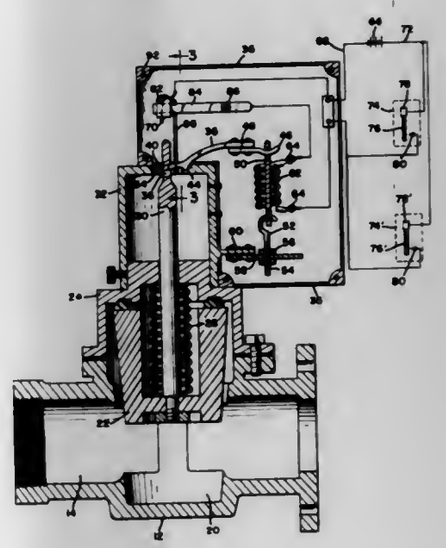
1. A fluid flow control device comprising a valve unit including a fluid pressure-opened valve member, means comprising a permanent magnet for closing said valve member, and means responsive to the action of centrifugal force for actuating said magnet, said magnet including a slidable ring, the first-named means further comprising a slidable core operable by said ring and operatively engaged with the valve member, the second-named means comprising a tubular rotary shaft, a rod slidably mounted in the shaft, means operatively connecting said rod to the ring, a centrifugal governor mounted on the shaft, and means operatively connecting said governor to the rod.

3,275,012

SAFETY VALVE SYSTEM FOR FLAMMABLE LIQUIDS AND GASES

Augustus A. Howard, 801 Marin Road, El Sobrante, Calif., and George H. Weise, 3121 Ricks Ave., Martinez, Calif.

Filed Apr. 10, 1963, Ser. No. 272,107
8 Claims. (Cl. 137—76)



1. A valve for arresting the flow of flammable fluid in response to an increase in ambient temperature proximate the valve comprising a body defining a conduit for the fluid, a sealing member transversely slidable in said body relative said conduit between a fluid flow arresting position and a fluid flow passing position, means for biasing said sealing member toward the fluid flow arresting position, a rod affixed to said sealing member and extending exterior said body for operating said member, said rod having an aperture therein adjacent the end thereof extending exterior said body, a lever having one end adapted to be received in said aperture, a portion of said body adjacent said aperture forming a fulcrum for said lever, a fusible link for securing the opposite end of said lever in a position to hold said sealing member in a fluid flow passing position against said biasing means, the fulcrum forming portion of said body releasably receiving said lever and defining a pivotal support for said lever when said lever is received in said rod aperture and secured by said fusible link, said lever being adapted so that the distance from the fulcrum to the link exceeds the distance of the fulcrum to the rod aperture, said fusible link being exposed to ambient conditions proximate said body, so that upon a rise of ambient temperature said fusible link fuses to permit said biasing means to move said sealing member to the fluid flow arresting position.

3,275,013

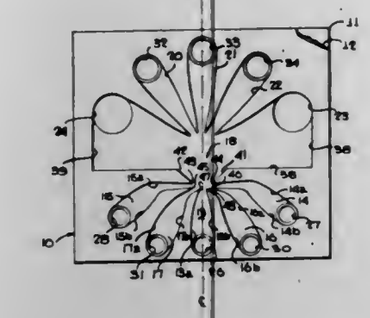
HIGH GAIN PURE FLUID AMPLIFIER

John R. Colston, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Aug. 13, 1963, Ser. No. 301,743
8 Claims. (Cl. 137—81.5)

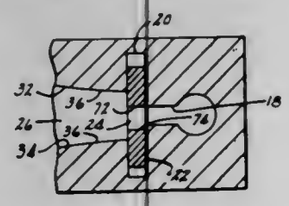
1. A pure fluid amplifier comprising a power nozzle having an orifice for issuing a constricted power stream therefrom, a chamber positioned downstream of said power nozzle for receiving the power stream, output means

positioned downstream of said chamber for receiving fluid therefrom, a control nozzle having an orifice for issuing a control stream in interacting relationship with the power stream so as to effect displacement thereof relative to said



output means, and means positioned between the orifice of said power nozzle and the orifice of said control nozzle for venting a portion of the control flow to a region external to said pure fluid amplifier.

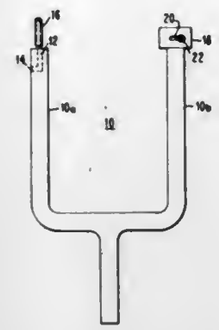
3,275,014
FLUID CONTROL MEANS
Emil Robert Plasko, Walled Lake, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,390
2 Claims. (Cl. 137—81.5)



1. In a fluid switch comprising an outlet duct and two opposed fluid lock-on walls downstream therefrom defining two low pressure regions effective to selectively lock flowing fluid against the opposed walls by boundary layer action: the improvement comprising a slideway extending transversely across the outlet end of the duct; an orifice member movably mounted in said slideway; and mechanical power means operably arranged to move the orifice member between a first position in which it directs the fluid toward one of the low pressure regions and a second position in which it directs the fluid toward the other low pressure region; the orifice in said movable member defining two opposed orifice side edges, the spacing between the side edges being materially less than the spacing between the lock-on walls so that the downstream face of the orifice member forms separate steps between respective ones of the orifice side edges and respective ones of the lock-on walls; one step being shorter than the other in the first position of the movable member, and the other step being shorter than said one step in the second position of the movable member, whereby the fluid will lock onto that wall which is adjacent the shorter step.

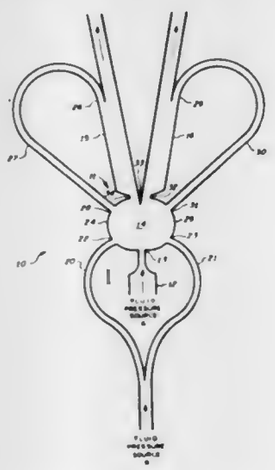
3,275,015
TUNING FORK OSCILLATOR
Johann H. Meier, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 29, 1963, Ser. No. 319,835
10 Claims. (Cl. 137—81.5)

1. A fluid pressure oscillator comprising,
(a) a tuning fork having a predetermined natural frequency,
(b) means for applying fluid from a source of fluid pressure directly to the tuning fork exciting the tuning fork, and



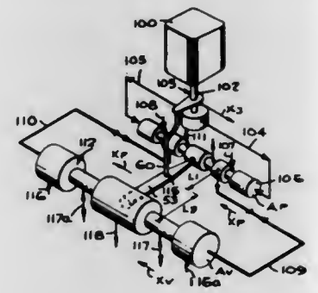
(c) fluid gating means controlled by the tuning fork for controlling fluid from a fluid pressure source to produce fluid pressure pulses at a rate which is the natural frequency of the tuning fork.

3,275,016
FLUID LOGIC DEVICE UTILIZING TRIGGERABLE BISTABLE ELEMENT
Orin L. Wood, Salt Lake City, Utah, assignor to Sperry Rand Corporation, Great Neck., N.Y., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,451
1 Claim. (Cl. 137—81.5)



A pure fluid logic device comprising,
(a) a bistable pure fluid logic element having a power stream input channel for defining a power stream, first and second control stream input channels simultaneously responsive to a common control stream source for defining first and second control streams of substantialy equal magnitude respectively cooperative with said power stream, first and second output channels each defining a path of fluid flow, and a chamber formed by the intersection of said input and output channels whereby said power stream may flow through either one of said output channels in the absence of a control stream, said first and second output channels having respective first and second cusps adjacent to said chamber for providing a dynamically stable oscillating jet,
(b) first and second feedback control stream input channels for defining first and second feedback control streams respectively cooperative with said power stream,
(c) said first and second output channels being connected to said first and second feedback control stream input channels, respectively, and
(d) said first control stream and said first feedback control stream being cooperative to cause said power stream to be deflected in a first direction and said second control stream and said second feedback control stream being cooperative to cause said power stream to be deflected in a second direction.

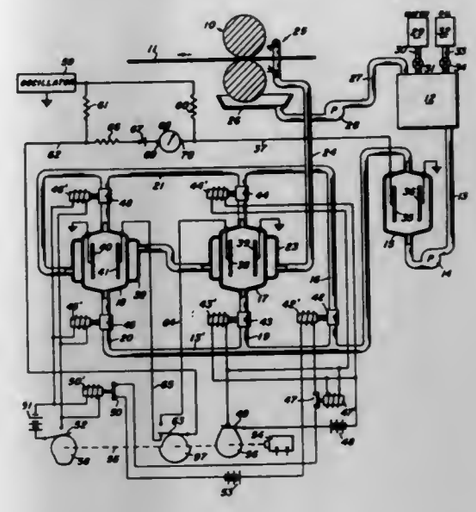
3,275,017
THREE-STAGE SERVO VALVE
Augustus P. Henry, Camarillo, Calif., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 349,002
6 Claims. (Cl. 137—83)



1. A three-stage servovalve comprising a first-stage valve, said first-stage valve including a fluid input port and a fluid output port in said first-stage valve and a pair of passageways connected to said first-stage valve, said first-stage valve including means responsive to a signal force applied to said first-stage valve to valve fluid from said input port into one of said passageways and from the other of said pasageways to said outlet port from said first-stage valve, a second-stage valve, said second-stage valve including a spool, control pressure chambers one at each end of said spool, said passageways connected to said chambers, a fluid inlet port and a fluid return port in said second-stage valve, a pair of control pressure passageways connected to said last named fluid inlet port and to said fluid return port, said second-stage spool valving fluid from said last named inlet port to one of said last named passageways and from the other of said last named passageways to said last named return port, a third-stage valve, said third-stage valve including a spool, a pair of control pressure chambers one at each end of said third spool, said last named passageways connected to said last named control pressure chambers, a fluid inlet port and a a fluid return port in said third-stage valve and a pair of load ports in said third-stage valve, said third-stage spool valving fluid from said last named input port to one of said load ports and from the other of said load ports to said last named return port, force feedback means from said second and third-stage spool to said first-stage valve.

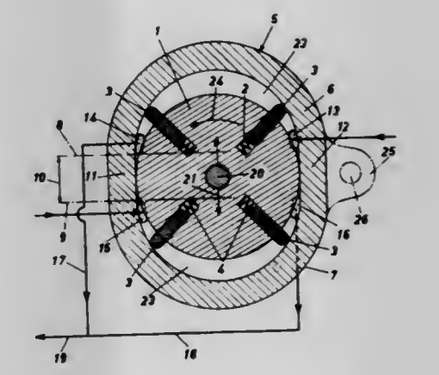
3,275,018
APPARATUS FOR MEASURING AND CONTROLLING THE CONCENTRATION OF ROLLING OIL
William L. Roberts, Murrysville, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 15, 1963, Ser. No. 258,798
15 Claims. (Cl. 137—88)

1. The combination with a system for circulating a quantity of two nonmiscible liquids of substantially different dielectric constants, of a first chamber in said system through which said liquids circulate continuously and having capacitor elements therein, a second chamber having capacitor elements therein, means for alternately connecting said second chamber to said system and isolating it therefrom, a bridge circuit including the capacity of the liquid between the elements of said first chamber, and



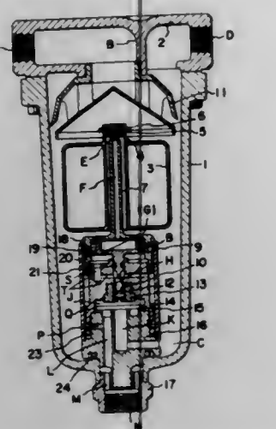
means successively operating said connecting means first to fill said second chamber with liquid and then isolate it from the system, and means effective a predetermined time after filling and isolation of said second chamber to connect the elements of said second chamber in said bridge circuit.

3,275,019
DOSAGE APPARATUS
Karl Ivar Edwardh, Linnegatan 4, Goteborg, Sweden
Filed May 31, 1963, Ser. No. 284,618
Claims priority, application Sweden, June 1, 1962, 6,170/62
4 Claims. (Cl. 137—99)



1. A dosage device for fluids comprising a closed rotor housing, said housing being formed by a middle hollow portion open at its opposite ends, said ends lying in a pair of spaced parallel planes, and a hollow half-cylinder attached to each of said ends, a cylindrical rotor having a plurality of feeding means movably mounted on said rotor and biased to engage a wall formed in said housing, an inlet and an associated outlet for each half cylinder located adjacent the respective planes, the inlet and the outlet of one half cylinder lying on opposite sides of a transverse plane at right angles to said first mentioned planes, said rotor being rotatable about an axis adjustably supported relative to the housing for relative movement approximately at right angles to said parallel planes.

3,275,020
AIR TRAP
Katsuji Fujiwara, 191 Nishitani Hiraoka-cho, Kakogawa-shi, Japan
Filed June 16, 1965, Ser. No. 464,463
Claims priority, application Japan, July 22, 1964, 39/42,237, 39/42,238
4 Claims. (Cl. 137—195)



1. An air trap for discharging liquid separated from compressed gas lines, such as compressed air lines, said air trap comprising, in combination, a housing including an inlet for liquid-containing compressed gas, a gas outlet, a liquid discharge outlet and a liquid sump in communication which said inlet; a floating disc valve controlling communication between said sump and said liquid discharge outlet, and subjected on one surface to air under pressure and on its other and seating surface to liquid in said sump; float means displaceable in said sump in accordance with the liquid level therein; means, including said one surface of said disc valve, defining a pressure chamber normally containing gas under pressure; gas pressure responsive operating means operable to open said disc valve; means biasing said operating means to an inactive position in which it is ineffective on said disc valve; a normally closed pilot valve controlling communication between said sump and said operating means; and gas bleed-off means connecting said operating means to said liquid discharge outlet; said float, when the liquid in said sump attains a first predetermined level, opening said pilot valve for the gas pressure in said sump to actuate said operating means to open said disc valve to connect said sump to said liquid discharge outlet and, when the liquid in said sump falls to a second predetermined level, closing said pilot valve for bleeding of gas from said operating means for movement thereof to its inactive position by said biasing means; said disc valve, when said sump is substantially emptied of liquid, being subjected to gas flow over said one surface to increase the pressure in said chamber, for biasing of said disc valve to the closed position by the pressure difference corresponding to the difference in velocity between flowing gas and flowing liquid.

3,275,021
COMBINED GAS INLET CONDUIT AND ELECTRODE FOR LIQUID CONVEYING APPARATUS
Compere Loveless, Overland Park, Kans., assignor to Union Tank Car Company, a corporation of New Jersey
Continuation of application Ser. No. 169,449, Jan. 29, 1962. This application Feb. 10, 1964, Ser. No. 343,816
11 Claims. (Cl. 137—209)

1. In apparatus for pneumatically conveying liquid material containing surface-adhering solids, such as sewage and the like, comprising:

(A) an electrically grounded receptacle for accumulating said material and having a material inlet and a material outlet;

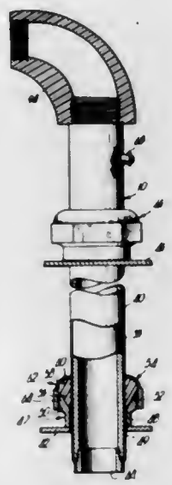
(B) a source of pressurized gas and a gas inlet conduit to said receptacle for ejecting said material through said outlet;

(C) an electrical circuit comprising a source of electrical energy, an electrode for sensing a predetermined level of said material, and electrically energized means for controlling flow of said pressurized gas; and

(D) the improvement wherein said gas inlet conduit and electrode are combined to comprise:

(1) hollow tubular means including an electrically conductive end extending into said receptacle,

(2) means electrically insulating said end from said receptacle,



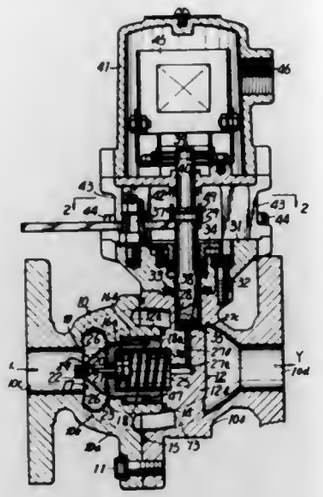
(3) means connecting the interior of said hollow tubular means to said source of pressurized gas,

(4) said hollow tubular means having an interior diameter large enough to admit pressurized gas into said receptacle at a rate sufficient to eject said material from said apparatus, said pressurized gas also serving to remove adhering solids from said end, and

(5) means electrically connecting the interior of said end to said circuit so as to complete said circuit by grounding through material above said predetermined level contacting an electrode surface, defined by the interior of said end, of sufficient area to increase the life thereof by promoting low current density.

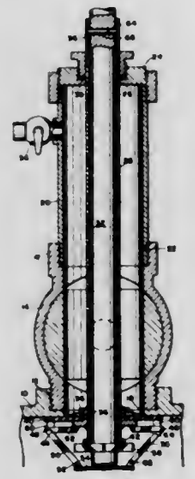
3,275,022
VALVE ASSEMBLY
Hiroto Kobayashi and Kosaku Aibara, Kawasaki, Japan, assignors to Kabushiki Kaisha Keihin Seiki Seisakusho, Kawasaki, Japan, a corporation of Japan
Filed Jan. 4, 1963, Ser. No. 249,417
2 Claims. (Cl. 137—221)

1. In a pilot-operated valve assembly, the improvement comprising a valve body having a fluid inlet passage and a fluid discharge passage, a hollow piston slidably mounted in said body with a sufficient gap therebetween so as to cause said piston to assume a floating condition when fluid flows through said gap, said piston comprising a hollow cylindrical element having an enlarged flange portion and a cone piece detachably fixed thereto, a pilot fluid passage extending through said cone piece, and said valve body and providing a flow path from said fluid inlet passage, through said hollow cylindrical element to said fluid discharge passage, a solenoid operated plunger for opening and closing the pilot flow passage at the downstream end thereof, a first sealing ring mounted on said hollow cylindrical element and abutting said enlarged flange portion, a second sealing ring mounted between said cone piece and said hollow cylindrical element so that when the valve assembly is in a closed position said first sealing ring will prevent



fluid flow through said gap between said valve body and said hollow piston and said second sealing ring will prevent fluid flow between said cone piece and said inlet passage.

3,275,023
TEMPORARY SEALING MEANS FOR CONDUIT UNDER PRESSURE
Morris M. Raspante, 5908 Michael St., San Diego, Calif.
Filed Feb. 17, 1964, Ser. No. 345,414
4 Claims. (Cl. 137—315)



1. Apparatus for temporarily sealing an opening in a chamber containing fluid under pressure facilitate removal of a valve closing said opening, said apparatus comprising:

a sleeve member;

means on one end of said sleeve member for connection to the valve on the side thereof remote from said chamber;

closure means on the other end of said sleeve member;

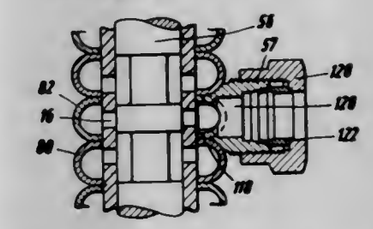
an elongated hollow support member extending through said closure means in sealing relation therewith;

a rod slidably mounted in said support member;

a thin disc of flexible material constituting an annular seal secured adjacent one end of said support member;

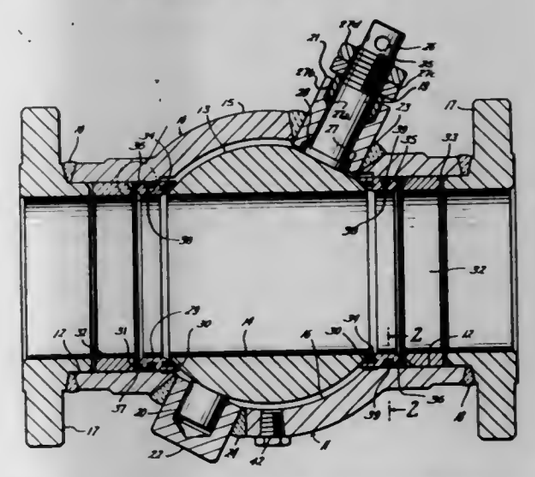
and clamping means connected between adjacent ends of said rod and said support member for engaging and holding the periphery of said thin, flexible annular seal in engagement with the inner wall of said chamber adjacent and surrounding said valved opening.

3,275,024
CASINGS FOR VALVE ASSEMBLIES
Otto Kracht and Hans Schumacher, Werdohl, Germany, assignors, by mesne assignments, to Kadron G.m.b.H., a corporation of Switzerland
Filed Apr. 6, 1964, Ser. No. 357,553
Claims priority, application Germany, Apr. 11, 1963, K 49,462
14 Claims. (Cl. 137—315)



1. A valve assembly comprising control bushings including control pistons, tubes interconnecting said control bushings, said tubes having at least two flat walls extending parallel to each other, said flat walls being provided with apertures the main axes of which extend substantially perpendicularly to the surfaces of said flat walls, flat walls of neighboring tubes extending in parallel relationship to each other, said control bushings penetrating through said apertures of said tubes and being soldered to said tubes.

3,275,025
BALL VALVE
Ludwig R. Kowalski, Belleville, N.J., assignor to Cameron Iron Works, Inc., Houston, Tex.
Filed Oct. 16, 1963, Ser. No. 316,598
6 Claims. (Cl. 137—330)

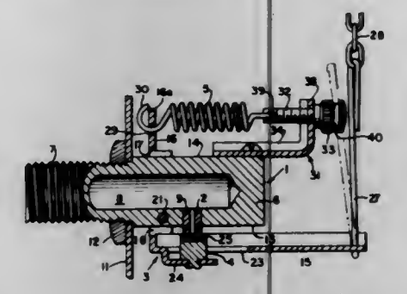


1. A valve, comprising a body having a flowway therethrough, a ball-shaped plug rotatably mounted within the flowway for controlling flow therethrough, an annular seat rotatably mounted about its axis within the flowway and engaging at its inner end with said plug, the axis of rotation of said plug being disposed at an acute angle with respect to the axis of the seat so that the frictional engagement of the plug with the inner end of the seat during rotation of the plug in one direction will urge said seat in one rotational direction about its axis and during rotation of the plug in the other direction will urge said seat in the other rotational direction about its axis, and means providing greater resistance to the urging of said seat in said one direction than in said other direction.

3,275,026
POULTRY WATERING VALVES

James B. Godshalk, Chester Springs, Pa., assignor to Fox Products Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 17, 1964, Ser. No. 360,599
5 Claims. (Cl. 137—408)



1. In a poultry watering valve of the type described, the combination of

an elongated valve body having

a transverse shoulder intermediate its ends and facing one end of said body,

a longitudinal bore opening through said one end, and

a lateral opening communicating with said bore and located between said shoulder and the other end of said body;

fastener means engageable over said one end of said body to cooperate with said shoulder for securing said body to an upright wall member of a watering receptacle,

said body extending generally horizontally when so secured and said lateral opening then being directed downwardly;

a rigid operating lever comprising first and second arms,

said first arm extending generally transversely of said body between said shoulder and said lateral outlet and having an end portion above said body and another portion below said body,

said second arm extending beneath said body from said other portion of said first arm and terminating in a free end projecting beyond said other end of said valve body,

said free end being equipped with means for attachment to a suspension member for supporting the combination of the watering receptacle and valve via said lever;

pivot means engaged with said first arm and said body and mounting said lever on said body for pivotal movement about a horizontal axis extending transversely of said body;

a fixed valve element carried by said body at said lateral opening and having an orifice disposed to discharge water downwardly into the receptacle;

a movable valve element carried by said second arm of said lever and projecting upwardly toward said body,

said movable valve element being so located as to engage said fixed valve element and close the valve when said second arm of said lever swings upwardly toward said body;

fixed bracket means secured to said body and having an upright portion spaced from said end portion of said first arm in the direction of said other end of said body; and

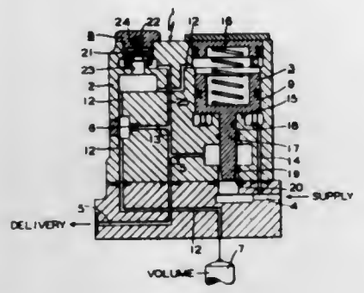
a tension spring onnected between said upright portion of said bracket means and said end portion of said first arm of said lever,

said spring extending generally parallel to and above said body and biasing said lever in a direction tending to swing said second arm downwardly away from said body.

3,275,027
REGULATING VALVE DEVICE

Richard L. Wilson, Level Green, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed June 19, 1964, Ser. No. 376,327
4 Claims. (Cl. 137—489)



1. A fluid flow regulating device comprising:

(a) a casing having

(i) a supply passage adapted for connection to a source of fluid supply under pressure,

(ii) a delivery passage adapted for connection to a fluid pressure responsive apparatus, and

(iii) a third passage communicating said fluid supply passage with said delivery passage,

(b) means for varying the size of said third passage increasingly and decreasingly in a range having a predetermined minimum, said predetermined minimum providing constantly open communication between said supply passage and said delivery passage,

(c) piston means responsive to the predominant sum of fluid force and spring-biasing force in a first chamber relative to the pressure in a second chamber to operate said size varying means to decrease the size of said passage, and responsive to a predominant fluid pressure in said second chamber over the fluid force and spring-biasing force in said first chamber to operate said size varying means to enlarge said third passage, said first chamber being communicated with said delivery passage, and said second chamber being communicated with said supply passage, and

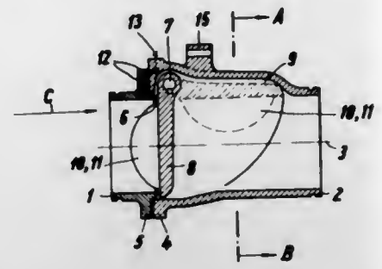
(d) time delay means disposed between said delivery passage and said first chamber for delaying transmission of pressure changes in said delivery pipe to said first chamber.

3,275,028
NON-RETURN VALVE ARRANGEMENT FOR PIPE-LINES

Karl Reppert and Erich Konrad, Zweibrucken, Germany, assignors to Dinglerwerke Aktiengesellschaft, Zweibrucken, Germany

Filed June 13, 1963, Ser. No. 287,707
Claims priority, application Germany, June 15, 1962, D 24,968
2 Claims. (Cl. 137—527.6)

1. A non-return valve comprising a casing having a straight flow path therethrough, said casing comprising two axially aligned sections, flange joint means detachably connecting said sections, an annular valve seat on one section adjacent said joint, the other section having a recess at one side opening into said path, a transverse shaft rotatably mounted in said other section and projecting into said recess adjacent said joint, a flapper valve member fixed to said shaft and movable into engagement with said seat to close said flow path, said valve member being movable into and substantially filling said recess to provide an unobstructed flow path through said casing, a valve control lever removably received on said shaft exteriorly of said casing, and an exterior boss on one of said sections, said boss having an aperture there-

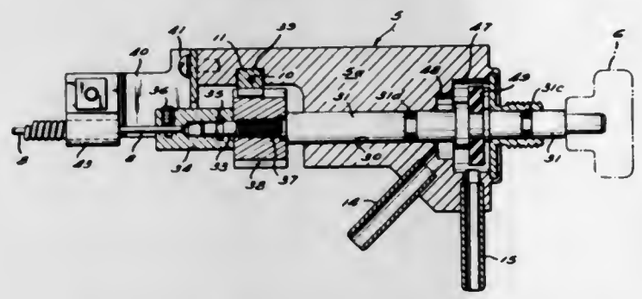


through, whereby upon removal of said lever from said shaft, said lever may be passed through said aperture to provide a handle for carrying said valve.

3,275,029
DASH CONTROL UNIT

Ellis M. Wellman, Erie, Pa., assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 8, 1964, Ser. No. 336,412
5 Claims. (Cl. 137—560)



1. Automotive control apparatus comprising a body adapted to be mounted on the instrument panel of an automobile, said body having an axial bore therein to slidably and rotatably mount a control rod, said body having a pinion cavity opening through one side of the body, said control rod proportioned to extend at opposite ends of said bore, a control knob fixed to said rod at one end of the rod, a pinion fixed to the other end of said rod in said pinion cavity, a rack having teeth in mesh with said pinion, said body having re-entrant notches to receive and guide said rack for reciprocation transversely of the body in response to control rod rotation, means to attach a brake wire at that end of the control rod remote from the knob, said body having a vacuum inlet and a vacuum outlet, valve means carried by said rod to open and close said inlet with respect to said outlet in response to control rod reciprocation.

3,275,030
WATER TREATMENT APPARATUS

William R. Alvin, Coral Gables, Fla. (11681 SW. 72 Place, Miami, Fla.)

Filed June 1, 1964, Ser. No. 371,392
4 Claims. (Cl. 137—565)

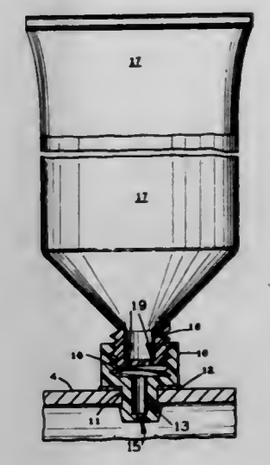
1. A water supply system comprising a motor driven pump having an inlet and outlet means,

a suction pipe connecting said inlet means with a source of water and pressure pipe means connecting said outlet means to a water distribution system,

a plug means secured in said suction pipe having a threaded bore therein and a coaxial metering bore of predetermined smaller diameter,

a collapsible container for retaining a quantity of liquid chemical having a threaded nozzle in mating engagement with said threaded bore,

at least one orifice through said nozzle into said container positioned for feeding said liquid chemical therefrom whereby said chemical will flow from said container through said metering bore of said plug

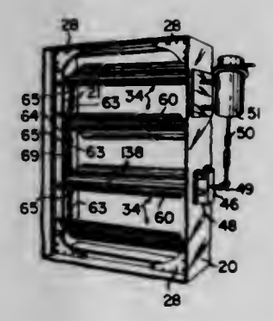


by suction into said suction pipe for dispersion in said water when the latter is pumped from said source through said suction pipe into said pressure pipe and said system when said pump is energized.

3,275,031
DAMPERS AND SEAL MEANS THEREFOR

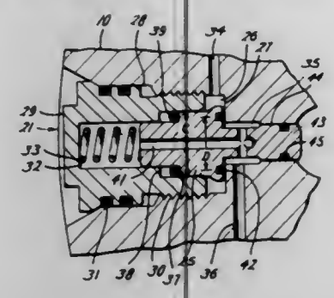
Harold W. Alyea, Waukesha, and Edward D. Jurasinski and Eugene V. Fliss, Milwaukee, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 29, 1963, Ser. No. 254,671
11 Claims. (Cl. 137—601)



1. A damper blade comprising like sheet metal halves each formed with opposite edge seal-receiving grooves which are parallel to each other, the halves being so positioned and secured in back-to-back relation that the edge seal-receiving grooves cooperate to provide tubular seal receptacles, the outer edges of said seal-receiving grooves terminating short of meeting to provide slots of less width than the cross-sectional size of said seal receptacles, trunnions projecting from the end edges of the blade intermediate the grooves, and elongated flexible sealing members having enlarged cross-sectional portions in said receptacles and having external sealing portions projecting from said slots and of enlarged cross-section beyond the slots, at least one of said sealing members of each blade having its enlarged cross-sectional portions of different size, and said seal receptacles being of a cross-sectional size to receive either of said enlarged cross-sectional sealing member portions, whereby the sealing member is interchangeable in position to vary the amount which projects externally of the seal receptacle to thereby compensate for tolerance variations.

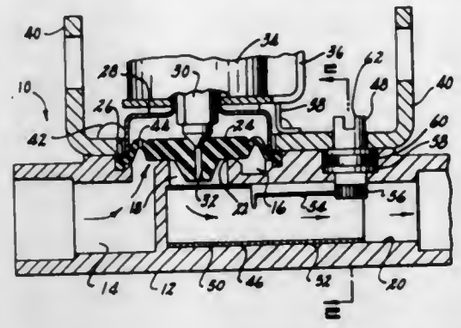
3,275,032
VALVE
David L. Gruller, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex.
Filed Apr. 30, 1964, Ser. No. 363,732
8 Claims. (Cl. 137—608)



1. A manifold comprising a common conduit and a plurality of individual conduits connected to the common conduit to allow fluid to flow from one conduit to the other through the common conduit, and valve means located in each individual conduit for controlling the flow of fluid between each individual conduit and the common conduit, said valve means comprising a valve body having a cavity therein, the cavity being located so all of the fluid flowing through the individual conduit flows through the cavity thereby dividing the conduit into first and second portions connected by the cavity, a valve seat supported by the body and a valve member movably mounted in the body for movement into and out of sealing engagement with the valve seat to control the flow of fluid through the cavity, a seal member for sealing between the valve member and the cavity to isolate a portion of the cavity from the second portion of the conduit, a passageway connecting the isolated portion of the cavity with the first portion of the conduit; a pressure face on the valve element located to allow the seal member to move into and out of engagement therewith depending upon which portion of the conduit contains the higher pressure so the higher pressure will always exert a force on the pressure face, urging the valve element toward the valve seat, the area of the pressure face being equal to the effective area of the valve member against which pressure in the two portions of the individual conduit acts urging the valve member away from the valve seat; means for moving the valve element out of engagement with the valve seat to allow fluid to flow through the conduit and resilient means urging the valve member into sealing engagement with the valve seat.

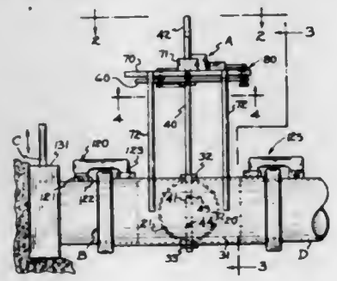
3,275,033
ADJUSTABLE LIQUID METERING MEANS FOR SHUT-OFF VALVES
James A. Kozel, Franklin, and Gerald L. McClure, Warren, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 3, 1963, Ser. No. 270,442
5 Claims. (Cl. 137—613)

2. In a shut-off valve comprising a housing forming a horizontally directed entrance passage, an annular inlet chamber connected with said entrance passage, an outlet chamber concentric with the inlet chamber and cooperating therewith in defining a valve seat, and an exit passage directed horizontally from the outlet chamber in alignment with the entrance passage; a diaphragm extending across the inlet and outlet chambers to control flow past the valve seat; means for controlling the diaphragm comprising an upstanding armature guide having a flange overlying the peripheral edge area of the diaphragm, a plunger type armature within the guide, and a solenoid surrounding the guide; and a bracket positioned on the upper face of the housing in overlying relation to the armature guide flange whereby to retain the guide and diaphragm in place: the improvement comprising a metering element disposed in the exit passage for movement across the outlet chamber; and a rotary upstanding operator for the metering element mounted in the uppermost wall of the housing and extending downwardly into the exit passage, said bracket overlying part of the operator to retain same in its mounted position; said



operator being disposed in a portion of the housing located alongside the solenoid whereby the solenoid and operator are each accessible from above the valve housing; said metering element comprising a hollow thin-walled element engaging the exit passage surface for movement from a substantially fully closed position extending across the outlet chamber to a substantially fully open position approximating the full capacity of the shut-off valve.

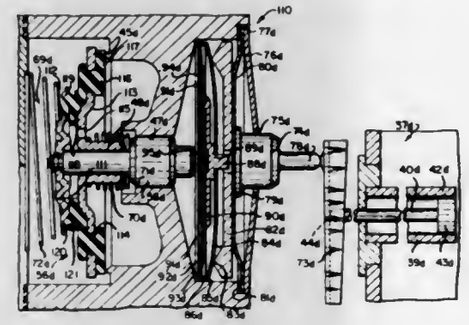
3,275,034
IRRIGATION VALVE
Fred S. Tadlock, 8 Jackson St., Woodland, Calif.
Filed May 10, 1963, Ser. No. 279,564
10 Claims. (Cl. 137—624.19)



1. A valve for the control of the flow of water in an irrigation line comprising: valve case means having a passageway extending therethrough for receiving a flow of water; a valve plate pivotally mounted in said passageway for blocking and releasing the flow of water; and a stem extending through said valve case means and secured to said valve plate for pivotal movement thereof; said valve plate having at least three successive positions, the first position wherein said valve is closed, a second position wherein said valve is open and a third position wherein said valve is closed; a control wheel spaced from said valve case means and secured to the extended stem so that the position of said valve plate will be varied by rotation of said control wheel; a mounting plate spaced from said valve case means and adjacent said control wheel; a plurality of outward extending support legs, each secured at one end to said valve case means and at the other end to said mounting plate; coil spring means connected between said mounting plate and said control wheel to rotatably urge said control wheel in one direction; a plurality of spaced movably mounted stop means connected to said mounting plate to engage cooperating stop structure on said control wheel and prevent spring driven rotation beyond predetermined positions; said mounting plate having a surface area spaced outside of

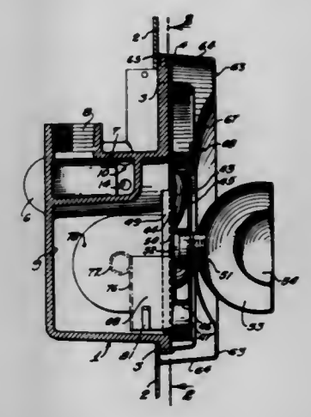
the external perimeter of movement of said stop structure on said control wheel; said first movably mounted stop means being constructed and arranged to cooperate with said stop structure to lock the wheel in said first valve position against rotation by the spring, and said second movably mounted stop means being attached to said mounting plate at the surface area spaced outside of the external perimeter of said movement of said stop structure to cooperate with said stop structure to lock said control wheel in said second valve position against rotation by the spring; said second stop means being related to the stop structure in such a manner that moving said stop means releases the wheel for rotation by said spring; third stop means connected in spaced relationship from said second movable stop means being adapted to position said plate means in said third position; and actuating means for sequentially moving said first and second stop means to release said control wheel to cause said plate means to sequentially move from closed to open and back to closed.

3,275,035
PLURAL SEQUENTIALLY OPERATED SNAP ACTION VALVES
Le Roy W. Freeby, Huntington Beach, and Wilbur F. Jackson, Rolling Hills, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Nov. 20, 1962, Ser. No. 238,899
6 Claims. (Cl. 137—630.14)



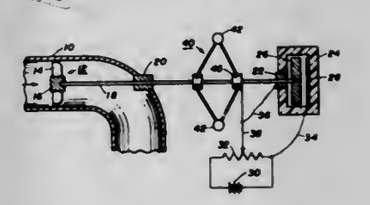
1. In combination, a housing having a passage means leading from an inlet to an outlet, a supplemental valve seat disposed in said passage means and interconnecting said inlet with said outlet, a supplemental valve member having a resilient surface means cooperably with said supplemental valve seat and having a main valve seat interconnecting said inlet with said outlet, said supplemental valve member having aperture means passing therethrough and surrounded by said main valve seat, said main valve seat being formed of resilient material integral with said resilient surface means of said supplemental valve member, said supplemental valve member having opening means passing therethrough with a resilient member molded to said supplemental valve member and passing through said opening means to define said resilient surface means on one side of said supplemental valve member and to define said main valve seat on the other side of said supplemental valve member, a main valve member cooperable with said main valve seat and having a stem slidably passing through said supplemental valve member, a first spring disposed between said stem and said supplemental valve member to tend to maintain said main valve member against said main valve seat, a second spring disposed between said housing and said supplemental valve member to tend to maintain said supplemental valve member against said supplemental valve seat, a snap-action member for controlling opening movement of said valve members, said snap-action member when snapped over center in one direction only opening said main valve member, said snap-action member when further moved in said one direction opening said supplemental valve member, and a resilient amplifying member disposed between said snap-action member and said stem to cause said supplemental valve member to substantially snap open even though said snap-action member had previously been snapped over center.

3,275,036
SLIDING HANDLE MIXING VALVE
Lloyd Spencer, 220 Patrician Way, Pasadena, Calif.
Filed Oct. 7, 1965, Ser. No. 498,198
15 Claims. (Cl. 137—636.1)



1. A mixing valve, comprising:
(a) a pair of parallel valve units having cam follower elements for opening and closing said valve units;
(b) a cam structure movable in a predetermined plane traversing said cam follower elements; and
(c) means limiting said cam structure to an essentially triangular path in said plane, whereby said cam follower elements describe corresponding triangular paths on said cam structure, the areas within said paths on said cam structure forming cam areas contoured to effect movement of said cam follower elements individually, in unison, or in opposition thereby to cause corresponding opening and closing of said valve units.

3,275,037
FLUID FLOW CONTROL DEVICE
Peter Andress, Jr., Arlington Heights, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Jan. 10, 1964, Ser. No. 336,978
9 Claims. (Cl. 138—46)



1. A fluid flow control device comprising a conduit, rotor means disposed in said conduit for rotation by the axial flow of a fluid through said conduit, a coupling including a rotatable member and a nonrotatable member having spaced opposing surfaces and a field-responsive fluid confined between said surfaces, said rotatable member being mechanically connected to said rotor means and rotatable therewith, means for applying to said field-responsive fluid a field adapted to increase the viscosity thereof, and governor means responsive to the rate of fluid flow in said conduit to vary the field applied to said field-responsive fluid.

3,275,038
REINFORCED HELICALLY CORRUGATED FLEXIBLE HOSE

Fred T. Roberts and Robert E. Roberts, Wilton, Conn., assignors to Fred T. Roberts & Company, Wilton, Conn., a partnership composed of Fred T. Roberts and Robert E. Roberts

Original application June 26, 1959, Ser. No. 823,085. Divided and this application June 3, 1964, Ser. No. 379,065

3 Claims. (Cl. 138—122)



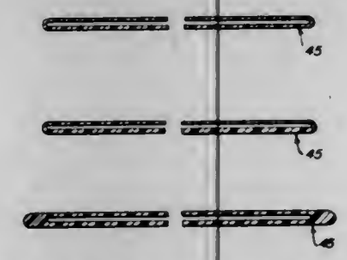
1. A mold-formed helically corrugated reinforced hose comprising a molded tubular body of moldable elastomeric material having at least one tubular layer of stretchable open mesh fabric therein, said body being set in final molded form and providing a self-sustaining body having helically corrugated walls with the fabric thereof being in stretched condition to conform to the corrugations of the walls and with the elastomeric material extending through the mesh in the fabric and forming a smooth outer surface on the helically corrugated wall, a winding of resilient wire supported upon said smooth surface of said self-sustaining body and disposed in and conforming to the troughs of the helical corrugations, and a cover of elastomeric material extending over at least some of the winding of wire and bonded to the body to hold the wire in position thereon.

3,275,039
SEAMLESS EXTRUDED THERMOPLASTIC SELF-SUSTAINING LAY-FLAT CONTINUOUS TUBE

Herbert O. Corbett, Canandaigua, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed Oct. 10, 1961, Ser. No. 144,253

2 Claims. (Cl. 138—148)



1. As an article of manufacture, a self-sustaining extruded seamless and lay-flat continuous tube of thermoplastic film, said tube comprising a pair of substantially parallel flat sheets of thermoplastic material, said sheets being relatively spaced from each other and joined along their longitudinal edges by substantially semicircular bead portions, at least one of said flat sheets and semicircular bead portions being of a different gauge from that of the remaining portions of said lay-flat tube.

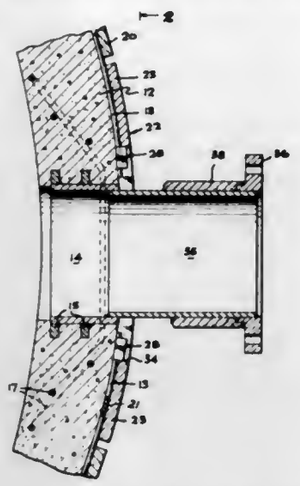
3,275,040
OUTLET CONSTRUCTION FOR CONCRETE PIPE AND METHOD OF MAKING SAME

Delbert A. Hausmann, Glendale, and Alfred B. Szulc, Alhambra, Calif., assignors to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California

Filed May 27, 1963, Ser. No. 283,442

11 Claims. (Cl. 138—176)

1. In an outlet construction for a concrete pipe having a concrete core body and wrappings therearound of high tensile wires under tension, an outlet sleeve in the core body providing an outlet opening therethrough, a saddle plate overlying the wires in a region about said opening and having an open area encompassing the opening in the pipe core body, and means cooperatively associated with the saddle plate securing the individual turns of wires in



tension in the open area of the saddle plate at opposite sides of the opening in the pipe, said secured turns each being interrupted between its regions of being secured whereby the opening in the pipe is not obstructed.

3,275,041
BACTERIA-RESISTANT FABRIC

Beverly E. Williams, La Grange Park, Ill., assignor to Hodges Research and Development Company, New York, N.Y., a corporation of California

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,087

12 Claims. (Cl. 139—424)

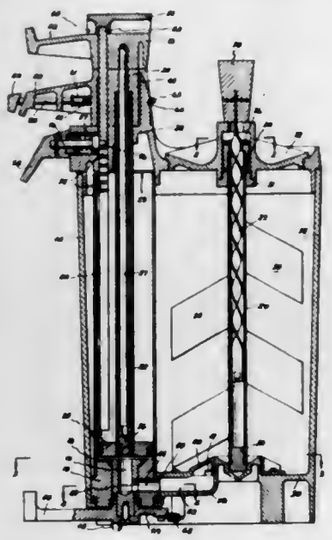
1. A fine-mesh lint-free fabric exhibting high resistance to microorganisms comprising yarns of ramie fiber, said yarns being single ply yarns twisted at least 10 t.p.i. and having a fine yarn count in excess of 13, the yarn density of said fabric in both directions being at least 40 yarns per inch throughout said fabric.

3,275,042
LIQUID DISPENSING APPARATUS

Atis Strazdins, 16 Dumfries Ave., Mount Ousley, Wollongong, New South Wales, Australia

Filed Sept. 17, 1964, Ser. No. 397,261

12 Claims. (Cl. 141—27)



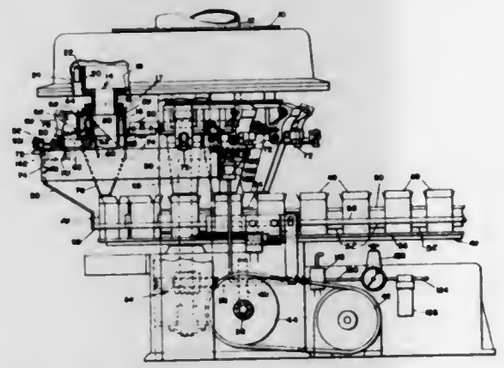
1. Liquid dispensing apparatus comprising: a main measuring cylinder having a cover at one end and a liquid outlet at the other end, a main piston slidable in said main cylinder; a main piston rod whereon said main piston is mounted, which extends externally of and is slidable through said cover, and which is tubular thereby to consistute a fractional measuring cylinder; a first boss on the outer end of said main piston rod able to abut the outer face of said cover, a fractional piston slidable in said main piston rod, a fractional piston rod whereon said fractional piston is mounted and which extends externally of and is slidable through said first boss, a second boss on the outer end of said fractional piston rod able to abut the outer face of said first boss, an index rod which is slidable through said cover and both of said bosses and which extends externally of said second boss, a stop on the outer end of said index rod able to abut the outer face of said second boss, and means for holding said index rod in selected adjustment relative to said cover.

3,275,043
PACKAGING MACHINE

Geoffrey F. Dobbyn, Braintree, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts

Filed May 27, 1963, Ser. No. 283,220

6 Claims. (Cl. 141—142)



6. In a rotary volumetric filling machine, in combination, a plurality of measuring chambers mounted to be continuously moved in a rotary path, means for filling said chambers during their movement through one portion of said rotary path, a conveyer for presenting successive containers into operative position to receive the measured loads during their movement through another portion of said rotary path, each of said measuring chambers having a pivotally mounted shutter, means for opening said shutters including a stationary cam rail, a cam roll operatively connected to said pivotally mounted shutter for cooperation with said cam rail, said cam roll being mounted to move vertically into and out of cooperative engagement with said cam rail, control means including means for detecting the absence of a container on the conveyer, and means responsive thereto for effecting vertical movement of the roll to a position above and out of operative engagement with the rail when a container is found to be absent from the conveyer to receive said load.

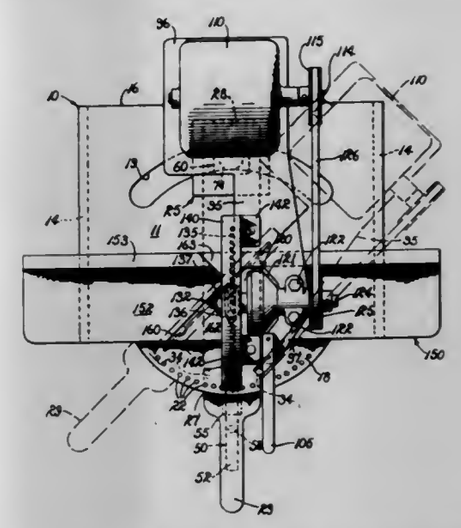
3,275,044
POWER DRIVEN MITER SAW

Edward J. Kisling, 4965 E. Tulare, Fresno, Calif.

Filed May 15, 1964, Ser. No. 367,741

4 Claims. (Cl. 143—6)

1. A power driven miter saw comprising a base having an arcuate slot therein; a miter box rigidly mounted on the base in a predetermined plane of reference and having a centrally disposed saw slot therein; a saw arm support assembly including a lower plate rotationally mounted beneath the base on a substantially vertical axis concentric with said slot in the base, and a substantially upright pedestal movably mounted on the base providing a depending guide portion extended through said slot in the base for connection to said lower plate; caster means on said lower plate and on said pedestal providing substantially frictionless movement against their respectively adjacent portions of the base; a saw arm having predetermined forward and rearward ends mounted at its rearward end on said pedestal for pivotal movement about a substantially horizontal axis; a saw blade rotatably mounted on said forward end of the arm above said miter box in a plane substantially normal to said plane of reference of the miter box with the plane of the blade passing through said axis of the lower plate of the support assembly and through said slot in the miter box to permit angular positioning of the blade with respect to said plane of reference; interlock means mounted on said lower plate selectively engageable with the base automatically releasably to hold said lower plate and the blade in said angularly adjusted positions; and motor means mounted on said rearward end of the arm having driving connection to said blade and being substantially heavier than said saw blade and said forward end of the arm so as normally gravitationally to lower said rearward end of the arm about said horizontal axis concurrently to raise the forward end thereof and the blade upwardly away from said miter box.

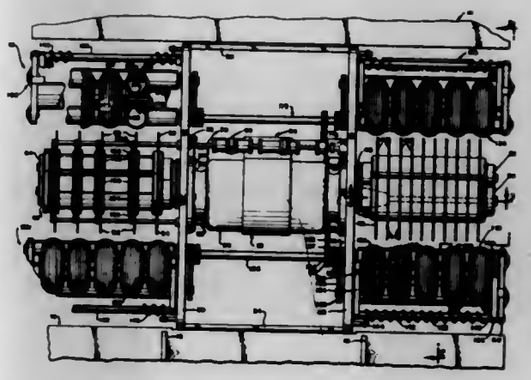


3,275,045
EDGER

Howard K. Beeley, Eugene Oreg., assignor, by mesne assignments, to Klamath-Ward, Inc., Eugene, Oreg., a corporation of Oregon

Filed Mar. 2, 1964, Ser. No. 348,661

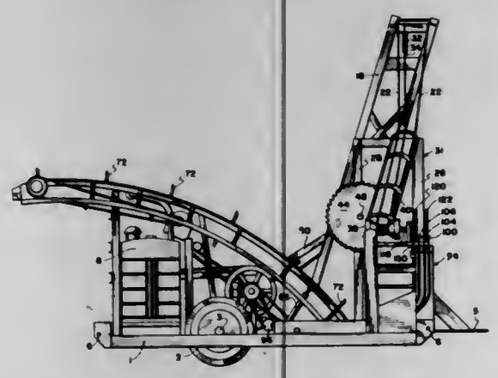
8 Claims. (Cl. 143—37)



1. In an edger,
a pair of side frame plates mounted in parallel, vertical positions, one of the plates having an opening therein,

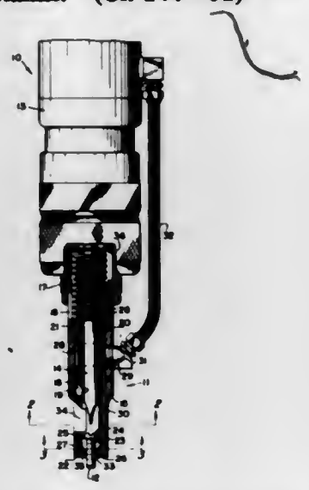
a double ended motor having a pair of end plates,
one end plate being provided with a boss fitting in the opening,
the motor having a shaft having an end projecting through the opening,
means securing the end plates to the side frame plates to rigidly mount the motor on the side frame plates and rigidly secure the side frame plates against movement relative to each other,
a saw assembly including an arbor and a plurality of saws carried by the arbor,
and means for detachably securing one end of the arbor to the end of the shaft projecting through the opening.

3,275,046
PORTABLE PULPWOOD CUT-OFF AND LOADING MACHINE
Thomas Ezell Moyers, Hugh C. Moyers, and Ashton P. Moyers, all of Rte. 1, Montrose, Ark.
Filed May 11, 1964, Ser. No. 366,525
5 Claims. (Cl. 143—46)



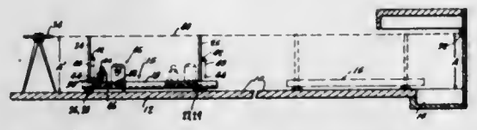
1. A portable cut-off and loading machine comprising a base frame, means on said base frame allowing movement thereof to different locations along the ground, an elevator conveyor unit mounted on said frame and extending from a lower position adjacent one end of said frame to an upper position above and beyond the other end of said frame, a first pair of spaced lugs projecting outwardly from said elevator conveyor and movable along said elevator conveyor from the lower end thereof to the upper end thereof in a substantially continuous circuit, a second pair of spaced lugs projecting outwardly from said elevator conveyor and being opposed and arranged in transversely spaced relation with respect to the first pair of lugs and movable from the bottom of said elevator conveyor to the top thereof in a substantially continuous circuit, an inclined table at said one end of said frame and inclined downwardly towards the lower end of said elevator conveyor, a rotatable spiked feed roller at one side of said frame adapted to move a log disposed thereon into said machine, a vertical abutment at the opposite side of said frame from said roller for stopping the advancement of said log, a pivotal saw support having a portion thereof movable towards and away from said log, a rotatable saw blade mounted on the end of said saw support adjacent said log and movable into and out of engagement with said log for cutting through said log, said log thereafter falling off said inclined table onto the elevator conveyor so as to be engaged by the spaced lugs thereon for movement from the lower end of said elevator conveyor to the upper end thereof from whence said log is discharged over the upper end of said elevator conveyor, a boom projecting vertically and transversely outwardly from said one side of said frame, a pulley means mounted to the upper end of said boom, a cable extending over said pulley and having a hook means at the outer free end thereof, a rotatable winch connected with the other end of said cable for winding up or paying out said cable whereby said hook means is engageable with a log for the purpose of directing said log into engagement with said feed roller.

3,275,047
FASTENER HOLDER FOR POWER TOOLS
Melvin L. Kulman, Sayre, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 19, 1964, Ser. No. 390,686
17 Claims. (Cl. 144—32)



7. A fastener holder for a power tool having a fastener-engaging member mounted for rotation and rotatably driven by a rotary motor, said fastener holder comprising:
(a) a housing surrounding said fastener-engaging member and connected at one end to said power tool for axial movement relative to the latter,
(b) a recess in the distal end of said housing,
(c) said recess adapted to receive the head of a fastener therein,
(d) stop means in said recess to abut the head of said fastener, and
(e) passage means in said housing communicating with a source of pressurized air and with said recess to direct the pressurized air against the underside of the head of a fastener and thereby force and maintain the head against said stop means until the head is engaged by said fastener-engaging member.

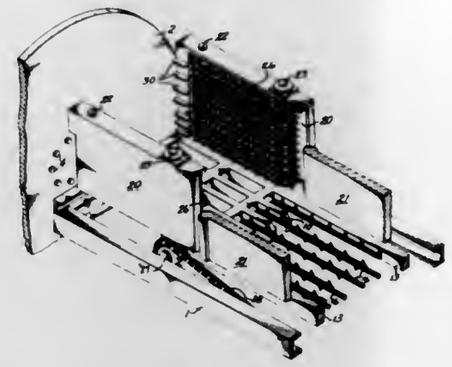
3,275,048
APPARATUS FOR FINISHING SURFACES
Lowell E. Statler, Bellevue, Ohio (Clyde, Ohio), and Chauncey A. R. Keller, Clyde, Ohio
Filed July 6, 1961, Ser. No. 122,258
3 Claims. (Cl. 144—115)



1. In a surfacing apparatus, in combination, a base member having a fore and aft end, a surface finishing instrumentality, electrically energizable motor means mounted on said base member, means mounting the surface finishing instrumentality on the fore end of said base member in such fashion that said instrumentality is reciprocable lengthwise relative to said base member and in contact with the surface to be surfaced, means driven by said motor means for recopricating said surface finishing instrumentality, and a plurality of supporting casters for the base member, said instrumentality including a head mounted transversely to the longitudinal axis of said base, a plurality of vertically-depending, side-by-side,

blade-like cutter elements adjustably carried on said head and means allowing said blade elements to individually move vertically responsive to surface irregularities.

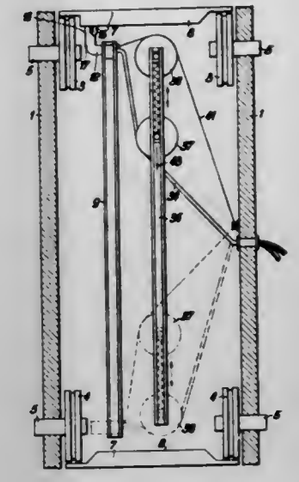
3,275,049
APPARATUS FOR PRODUCING FIBROUS WAFERS OR FLAKES
John M. Gunn, 9010 NE. 37th, Bellevue, Wash. 98004
Continuation of application Ser. No. 203,245, June 18, 1962. This application Jan. 25, 1965, Ser. No. 427,676
1 Claim. (Cl. 144—176)



A wood flake-cutting machine comprising a continuously-rotating flake-cutting cutterhead carrying a flake-cutting knife, generally horizontal channel-shaped means defining a work feed passage extending into a position closely adjacent to said cutterhead, constantly-rotating feed chain sprockets supported at the end of said channel-shaped means adjacent to said cutterhead, feed chains extending along the bottom of said work feed passage, engaged with said feed chain sprockets and engageable with curved-side workpieces in such work feed passage, each having the length of its grain extending transversely of such work feed passage and a curved side downward, to move said workpieces transversely of their lengths along such passage, work-supporting and guiding blades at opposite upright sides of the work feed passage, disposed in substantially horizontal planes parallel to the work feed passage and extending between the location of said feed chain sprockets in the work feed passage and said cutterhead and into close proximity to the cutting path of said cutterhead knife, engageable simultaneously with opposite ends, respectively, of each workpiece for supporting such workiece independently of the bottom of the work feed passage and guiding such blade-engaged workpiece for substantially linear movement along the work feed passage to said cutterhead in a constant attitude relative to said cutterhead until virtually the entire workpiece has been cut into flakes, rotary-disk grooving cutters at opposite sides of the work feed passage located in advance of said blades along such passage and spaced from the bottom of the work feed passage corresponding to the spacing of said blades from the bottom of such passage, and hold-down means adjacent to said grooving cutters operable to hold a workpiece down in contact with said feed chains.

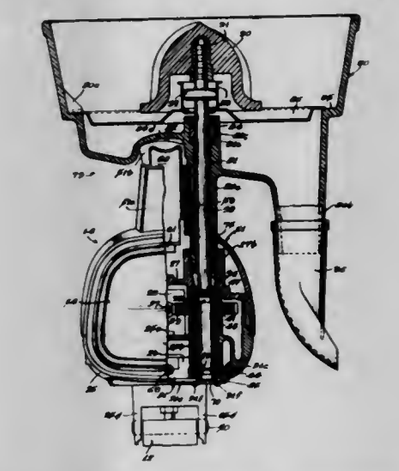
3,275,050
CONTINUOUS CHAIN PRESS FOR THE WOOD INDUSTRY
Walter Köhler, Gutersloh, and Willi Riesmeier, Lubbecke, Westphalia, Germany, assignors to Firma Ima-Klessmann K.G., a corporation
Filed Mar. 30, 1964, Ser. No. 355,744
10 Claims. (Cl. 144—281)

2. A steam-heated endless chain press for pressing wood sheets and the like comprising a frame, a hollow endless chain adapted to receive steam therein for heating it, guide means supporting said chain from said frame and guiding said chain for lengthwise movement in an elongated orbit, steam supply and discharge conduit means connected between said frame and said endless chain, and conduit guide means guiding portions of said steam supply



and discharge conduit means between their ends for reciprocation within the orbit of said endless chain in synchronism with orbital movement of the connections between said steam supply and discharge conduit means and said endless chain.

3,275,051
JUICE EXTRACTOR ATTACHMENT FOR MIXER
Ivar Jepson, Oak Park, and Gilbert R. Wolter, Elmhurst, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 10, 1963, Ser. No. 250,554
8 Claims. (Cl. 146—3)



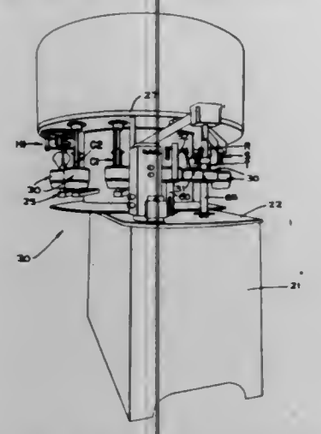
1. A citrus fruit juice extractor comprising a power unit including a housing having an upwardly directed post portion projecting from said housing, means in said housing defining a gear chamber including an upwardly directed projection disposed wholly within said housing, said projection being open at its upper end, rotatable means within said gear chamber accessible through the open upper end of said projection, means defining an opening in said housing adjacent said post portion aligned with the axis of said projection, a recess defined in said post portion adjacent said opening, a juice bowl having a depending portion, said depending portion being receivable in said recess and said opening and the lower end thereof being receivable in the open upper end of said projection firmly to support said juice bowl above said post portion, and a reamer in said juice bowl including a shaft rotatable within said depending portion, the lower end of said shaft being drivingly engageable with said rotatable means.

3,275,052
METHOD OF SECTIONIZING CITRUS FRUIT

Wilber C. Belk, Lakeland, Fla., assignor to FMC Corporation, a corporation of Delaware

Original application Mar. 9, 1961, Ser. No. 109,798. Divided and this application Aug. 17, 1964, Ser. No. 395,350

10 Claims. (Cl. 146—236)



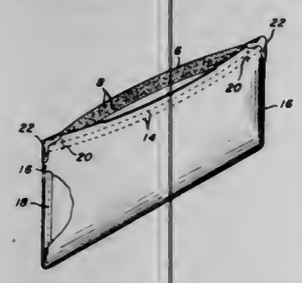
1. In a method of sectionizing peeled citrus fruit having a plurality of generally pie-shaped segments disposed around a central axis, each segment being enclosed by two generally radially disposed membranes, the steps of holding a fruit in fixed position, making a plurality of cuts around the blossom end of the fruit, each cut extending through the peripheral membrane and into a portion of one of the meat segments and extending from one radial membrane to the adjacent membrane, removing the loose material from said cuts to provide short paths between the radial membranes, and making cuts between each radial membrane of the fruit and the adjacent meat segment, each cut extending from the point where one of said paths meets a membrane to the periphery of the fruit.

3,275,053
PURSE AND METHOD OF MANUFACTURING THE SAME

Joseph A. Kabana, Moon Township, Allegheny County, Pa. (144 Delaware Drive, Coraopolis, Pa. 15108)

Filed Mar. 16, 1964, Ser. No. 352,217

7 Claims. (Cl. 150—42)



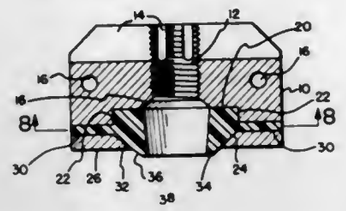
1. A purse comprising a one piece member folded upon itself with the top thereof being open, a side seam connecting said one piece member along each side thereof from the bottom to the top thereof, opposed folded over portions on the inside of the one piece member at the top thereof, a flat female closure member fastened to one of the said folded over portions and extending to within a short distance of the sides of the purse, a flat male closure member fastened to the other of the said folded over portions and extending to within a short distance of the sides of the purse, and a transverse bar tack adjacent each end of said closure members inwardly of the adjacent side seam and extending through the purse including the closure members and folded over portions, said closure members closing the said open top when pressed together.

3,275,054
COMPRESSION LOCKING NUT

David Ohl, Rochester, N.Y., assignor, by mesne assignments, to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania

Filed Dec. 15, 1964, Ser. No. 418,431

10 Claims. (Cl. 151—5)



1. A compression locking nut comprising a metallic nut body having a central bore threaded throughout a substantial part of the length of the nut body from the top face thereof and having an unthreaded cavity of substantially larger diameter than said threaded bore extending a substantial distance through another part of the length of the nut body and opening through the bottom face of the nut body, and a body of a plastic elastomer material which has memory positioned within said unthreaded cavity, the nut being characterized in that

(a) said unthreaded cavity is undercut so as to be of substantially larger diameter at a point spaced axially inwardly from said bottom face than its diameter at said bottom face; the opening in said bottom face and the undercut portion of said cavity being connected by a section of frusto conical shape that has a total included angle in the range of 70° to 120° extending from the outer face toward the undercut portion;

(b) said nut body has at least one lateral passageway extending from said unthreaded cavity approximately radially outwardly to an outer lateral face of said nut body;

(c) said body of plastic elastomer material has a central axial opening which, throughout its entire axial length, is slightly larger in diameter than the maximum diameter of the threads of a bolt on which the nut is to be used;

(d) said body of plastic elastomer material has an external periphery fitting tightly in the undercut portion of said unthreaded cavity and has an integral portion extending laterally into and filling said lateral passageway in said nut body, the tight fit of said plastic body in said cavity and the presence of said integral portion of said plastic body extending into said passageway together serving to anchor said plastic body permanently in said nut body and to prevent separation thereof under conditions of repeated use, removal and re-use of the nut;

(e) said body of plastic elastomer material projects axially beyond said bottom face of said nut body;

(f) the portion of said plastic elastomer material which projects beyond the bottom face of said nut has an outer lateral face of frusto-conical shape of decreasing diameter in an axial direction away from said bottom face of the nut body, the total included angle of said frusto-conical face being the same as the total included angle of the frusto-conical section connecting the undercut cavity and the outer nut face;

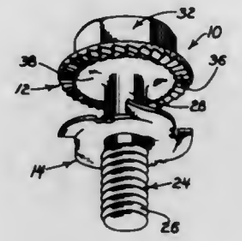
(g) and wherein the volume of the projecting plastic material is substantially equal to the volume of the space between the central axial opening through the plastic body and the inwardly adjacent outer surface of a bolt on which the nut is threaded, and characterized in that when the projecting plastic portion engages a resisting member, it will be deformed axially to a nonprojecting position flush with the bottom of the nut and will be deformed radially inwardly into such space and tightly grip the threads of the bolt and without being deformed radially outwardly between the bottom face of the nut body and the resisting member.

3,275,055
BOLT AND WASHER ASSEMBLY WITH COOPERATING PAWL AND RATCHET MEANS

Charles E. Gutshall, Roselle, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Feb. 4, 1964, Ser. No. 342,486

3 Claims. (Cl. 151—37)



2. Manifold assembly comprising,

(a) a first manifold body member having a threaded aperture,

(b) a second manifold body member having an unthreaded aperture larger than and aligned with said aperture in said first manifold body member,

(c) bolt means having a shank means portion and a head means portion,

(d) said shank means portion comprising a threaded entering end and an unthreaded portion adjacent said head means,

(e) said head means comprising,

(1) a torque imparting means portion,

(2) a washer bearing surface portion, and

(3) a ratchet surface portion,

(f) said bearing surface portion being characterized as being intermediate the unthreaded shank means portion and the ratchet means portion and disposed at an angle slightly offset from a plane transverse to the axis of said bolt means and extending upwardly and outwardly away from its juncture with said unthreaded portion of said shank,

(g) washer means mounted on said unthreaded portion of said bolt means intermediate said bearing surface portion and the margin of said second manifold body means surrounding the aperture means therein, said washer means comprising,

(h) a substantially flat body means portion having a radial extent substantially coextensive with the extent of said bearing surface portion,

(i) first and second tooth means disposed on the outer periphery of the underside of said washer means for penetrating and providing complementary surfaces in the margin of said second manifold workpiece surrounding the aperture therein,

(j) said first tooth means comprising a row of teeth in direct line compression relationship between said bearing surface and said second manifold member workpiece and symmetrically disposed about said body means of said washer means,

(k) said second tooth means comprising a second row of teeth being radially offset from and obliquely disposed relative to said first row of teeth and at least partially in direct compression relationship to said bearing surface and said second manifold workpiece margin surrounding the aperture therein,

(l) spring-strut arm means having a first portion integrally attached to the radial margin of said body means of said washer means and having a second portion circumferentially disposed about said body means and provided with free ends cooperable with the ratchet teeth means on said head of said bolt means, the free ends being offset from the plane of said body means in a direction opposite to said first and second tooth means on said washer means, said threaded entering end of said shank means adapted to engage the threaded aperture of said first manifold body member thereby inducing tension in said bolt means, the bearing surface portion of said head means dishing said flat body means into the unthreaded aperture of said second manifold body member and embedding said first and second tooth means into the margin of said second manifold workpiece surrounding the aperture therein,

(m) the end surface of said free arms cooperating with an abutment surface on said ratchet-teeth means to provide a one-way clutch lock on initial tightening of the bolt member and providing a mechanical strut wedging action between said bolt member and said teeth of said washer means embedded in said second workpiece to prevent unauthorized retrogressive rotation thereof independent of the loss of the spring action of said spring-strut arms after annealing thereof by subjection of the entire assembly to sequential heating and cooling in the field environment.

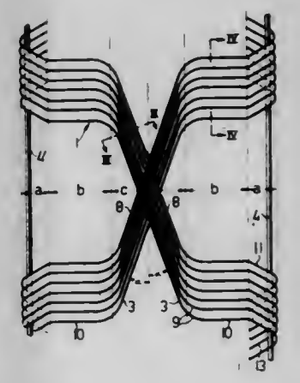
3,275,056
PNEUMATIC VEHICLE TIRE

Hans Menell, Ahlem, Hannover, Germany, assignor to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany

Filed Feb. 23, 1965, Ser. No. 434,442

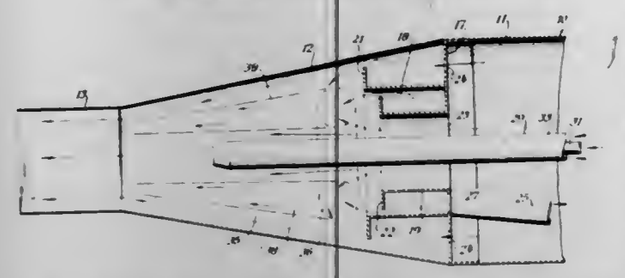
Claims priority, application Germany, Feb. 25, 1964, C 32,241

18 Claims. (Cl. 152—356)



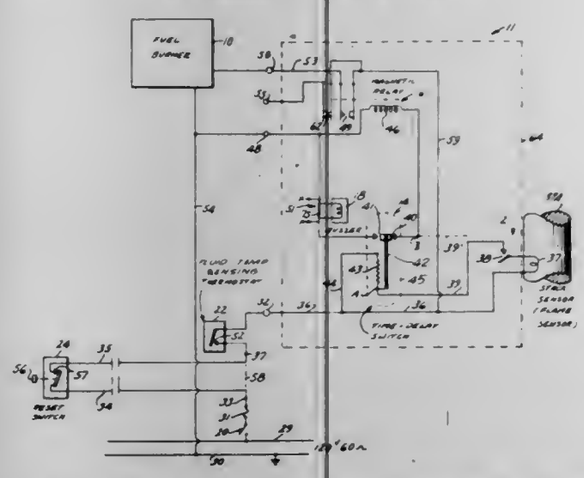
1. A pneumatic vehicle tire having a tread strip and two oppositely located side walls and bead cores, which includes: two carcass layers, each of said carcass layers having substantially parallel thread means with a section thereof arranged below said tread strip, the thread means of said two sections crossing each other while respectively forming substantially the same angle with the circumferential direction of the tire, said angle being in the range of from 5 to 25°, the thread means of at least one of said carcass layers extending from below said tread strip in opposite directions through both of said side walls at a substantially right angle with regard to the circumferential direction of said tire and around said bead cores, those portions of said thread means which are located in said side walls being spaced from each other by a greater distance than the distance between those portions of the same thread means which are located below said tread strip.

3,275,057
TUNNEL BURNERS
Trevor Ward, Dewsbury, England, assignor to Hotwork Limited, London, England
Filed July 1, 1964, Ser. No. 379,522
5 Claims. (Cl. 158—11)



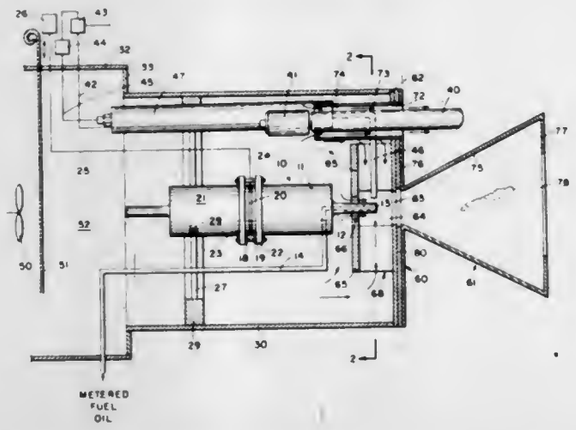
1. A tunnel burner using gaseous fuel, said burner comprising a casing forming a generally conical combustion zone tapered toward an open end of the casing, said end constituting a nozzle for discharging the products of combustion in the burner, a pair of concentrically disposed tubes mounted in said conical combustion zone parallel to the center axis thereof, said tubes defining an annular inner space between each other and an annular outer space between the outer one of said tubes and the casing wall, a first feed means for directing a flow of gaseous fuel through said inner annular space into said combustion zone, a second feed means for directing a flow of air through said outer annular space and the inner one of said tubes into said combustion zone, and flow-deflecting means at the flow discharge end of the inner one of said tubes, said deflecting means deflecting the flow of gaseous fuel toward the inner wall of the outer tube, thereby creating a turbulence in the flow of gaseous fuel entering the combustion zone.

3,275,058
OIL BURNER CONTROL SYSTEMS
Jack R. Gage and Bernard Diamond, Hicksville, N.Y., assignors to D-G Controls, Inc., Hicksville, N.Y., a corporation of New York
Filed Nov. 27, 1963, Ser. No. 326,501
13 Claims. (Cl. 158—28)



1. A safety oil burner control for controlling the operation of an oil burner system and for de-energizing the burner in the event of malfunction of the system, said control comprising at least three terminals, one of these terminals being designated the burner terminal and being adapted to be connected to the oil burner, another of these terminals being designated the thermostat terminal and being adapted to be connected through a thermostat to one side of a source of electrical power, another of these terminals being designated a ground terminal and being adapted to be connected to the opposite side of the electrical source from the thermostat terminal; an electrical relay having normally open contacts and a coil for closing said contacts in response to a flow of electrical current through said coil, said relay contacts being in circuit between said thermostat terminal and said burner terminal for interrupting the supply of electrical power to said burner terminal when said relay contacts are open; a time-delay thermally-actuated switch having normally open and normally closed contacts and a resistance heating element for closing the normally open contacts and for opening the normally closed contacts after an appropriate time delay, said heating element, said normally-closed contacts of the time-delay switch and said relay coil being in a first circuit in series relationship between said thermostat terminal and said ground terminal; combustion energy responsive means being effectively shunted across said heating element for by-passing electrical current around said heating element when said combustion-energy responsive means is actuated by energy resulting from combustion; and a warning device, said heating element, said normally-open contacts of the time-delay switch and said warning device being in a second circuit in series relationship between said thermostat terminal and said ground terminal, said second circuit conducting electrical current actuating said warning device and keeping said heating element heated for maintaining said normally-open contacts in their closed position after said normally-open contacts have closed.

3,275,059
NOZZLE SYSTEM AND FUEL OIL BURNER INCORPORATING IT
John E. McCullough, Carlisle, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed May 10, 1965, Ser. No. 454,393
13 Claims. (Cl. 158—28)



1. A burner adapted to burn atomized fuel oil in the form of low-velocity particles in a continuously supplied stream of an oxygen-containing combustion fluid, comprising in combination

(a) delivery means for providing at an atomizing surface low-velocity fuel oil droplets which lack significant kinetic energy;

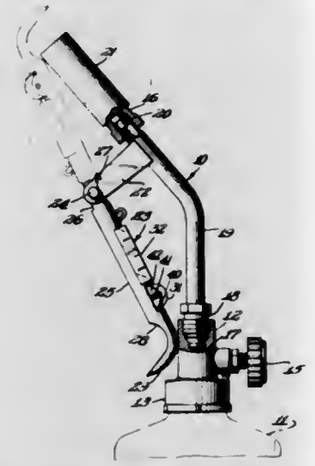
(b) means forming a central passage in which said delivery means is located;

(c) means for axially directing a first portion of an oxygen-containing combustion fluid around said delivery means into said central passage;

(d) means for tangentially directing a second portion of said combustion fluid into said central passage for mixing with said first portion to form a fluid vortex around said fuel oil particles at the point of their delivery, said vortex being capable of suspending said fuel oil particles; and

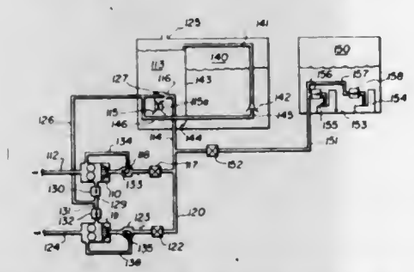
(e) imperforate cone means, having an inwardly extending lipped edge at its larger discharge end, in fluid communication with said central passage and defining a portion of a combustion zone whereby the fuel oil is substantially all vaporized and partially burned prior to its discharge from said cone means.

3,275,060
COMBINED PROPANE TORCH AND IGNITER ASSEMBLY
William L. Lindgren, Sycamore, Ill., assignor to Turner Corporation, Sycamore, Ill., a corporation of Illinois
Filed Dec. 18, 1963, Ser. No. 331,402
4 Claims. (Cl. 158—33)



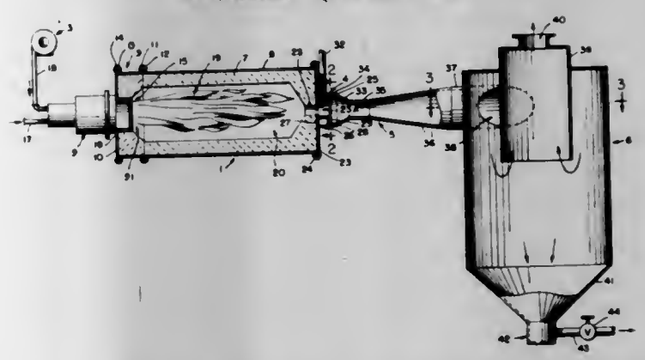
1. In a spark igniter and in combination with a torch having a burner tube having a burner assembly extending from the end thereof and having communication with a source of supply of gas, means for igniting the gas issuing from said burner assembly comprising an igniter tube movably mounted on said burner tube for movement toward and from the open end of said burner assembly and normally biased into a position remote from said burner assembly, said igniter tube having a hooded end portion extending to one side thereof over the end of said nozzle assembly and spaced therefrom and having communication with the interior of said igniter tube, and flame initiating means mounted on said igniter tube closely adjacent said hood and including a spark wheel rotatably mounted on said igniter tube adjacent said hood and extending into said igniter tube, and a flint extending along said tube and biased into engagement with said spark wheel to create a spark in the region of said hood.

3,275,061
FUEL FEEDING SYSTEMS
Robert L. Williams, Howard E. Corner, and William B. Bell, Wichita, Kans., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,261
3 Claims. (Cl. 158—36.4)



1. A fuel feeding system for an aircraft engine comprising: a fuel tank, a pump comprising a first and second stage arranged in series, first and second ejector pump means, the first of said ejector pump means being disposed in said tank and feeding through a fuel intake line to the second ejector pump means which in turn feeds into the intake of the first stage of said pump, a first pressure boost feedback line delivering from the discharge of the first stage to nozzle means of the first pump ejector means, and a second pressure boost feedback line delivering from the discharge of the second stage to nozzle means of the second ejector pump means.

3,275,062
HEATING, EVAPORATING AND CONCENTRATING APPARATUS AND PROCESSES
Arthur Williams, Munster, Ind., assignor to Submerged Combustion, Inc., Hammond, Ind., a corporation of Indiana
Filed May 22, 1964, Ser. No. 369,528
6 Claims. (Cl. 159—4)

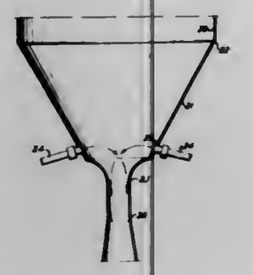


1. In a heating apparatus an elongated combustion chamber lined with a refractory material and having an inlet and an outlet at opposite ends, a burner mounted in said inlet, a tubular member outside of said combustion chamber and adjacent said outlet, a combustion gas discharge tube of substantially smaller diameter than said tubular member and positioned within said tubular member, said discharge tube being in alignment with said outlet to define a combustion gas passageway extending downstream from said combustion chamber, a transverse, upstream wall and a transverse, downstream wall defining together with said discharge tube and said tubular member an annular chamber about said discharge tube, said downstream wall having a plurality of slanted openings therein, the center lines of said openings converging obliquely, coincidentally, and axially downstream at a point downstream of said discharge tube in alignment with said passageway, means for feeding a liquid into said annular chamber, an elongated converging-diverging hollow member having a tubular wall enclosing a converging portion and having a diverging portion integral with an intermediate connecting throat portion, said converging portion having an inlet opening which is larger than the passageway in said tubular member, said converging portion enclosing but not intersecting the center lines of said slanted openings, and said diverging portion having an outlet opening, said combustion chamber, said tubular member and said converging-diverging hollow member all being secured together, with the converging portion of said converging-diverging hollow member removably secured to said tubular member.

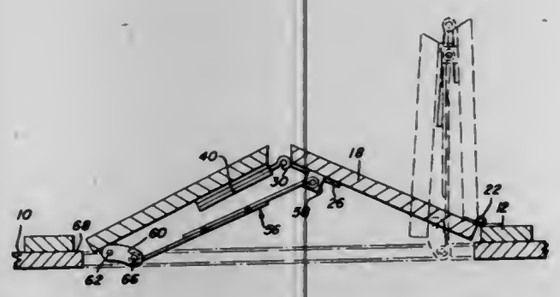
3,275,063
APPARATUS AND METHOD FOR GAS CONTACT SPRAY DRYING
John P. Tailor, Box 597, Davenport, Iowa 52805
Continuation of application Ser. No. 347,656, Feb. 25, 1964, which is a continuation of application Ser. No. 839,109, Sept. 10, 1959. This application Dec. 14, 1965, Ser. No. 518,515
4 Claims. (Cl. 159—4)

1. In the method of drying a wet solids-containing material at an initial low temperature by contacting the same with a hot drying gas at an initial high tempera-

ture to produce dry solids and wet gas having final temperatures intermediate said initial high and low temperatures, the improvement which comprises forcing said hot drying gas at an initial velocity of 25 to 100 feet per second in streamline flow through a zone narrowing in cross-section in the direction of gas flow to produce an accelerating gas stream and introducing said material into said zone in particulate form in a direction transverse of the flow of said accelerating gas stream, said zone narrowing in cross section to such an extent, as correlated to the relative flow rates of said gas and material and respective initial temperatures thereof, that said gas accelerates therein to a velocity of 250 to 1000 feet per second while decreasing in volume upon cooling from its initial temperature to its final temperature, whereby particles of said material are entrained and accelerated in streamline flow by said gas stream to dry the particles.

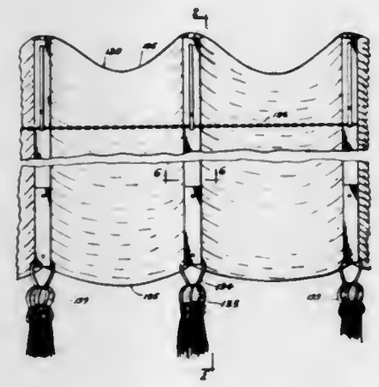


3,275,064
FOLDING DOOR
Leslie Niels Hansen, Box 557, Hurricane, Utah
Filed Aug. 14, 1964, Ser. No. 389,591
4 Claims. (Cl. 160—206)



1. In combination, a door frame including first and second opposite edge portions and a third edge portion extending between corresponding ends of said first and second edge portions and defining a door opening between said first and second edge portions, a door assembly including first and second doors, said first door being pivotally secured along one edge portion to said first edge portion, means pivotally securing the corresponding edge portion of said second door to the free edge portion of said first door, means slidably securing the free edge portion of said second door to said third edge portion for movement therealong, the adjacent edge portions of said doors being spaced apart, arm means pivotally connected at its opposite ends to the free edge portion of said first door and to the remote edge portion of said second door, said door assembly when fully extended, being of slightly greater width than said opening, the first-mentioned means including first and second hinge component means pivotally secured together, said first hinge component means being fixedly secured to one of said doors and the second hinge component means being mounted on the other of said doors for reciprocal movement between two limit positions toward and away from the adjacent edge portion of said second door, means connected between said second hinge component means and the other door yieldingly urging said second hinge component means toward said one door, said second edge portion of said frame including abutment surface means disposed in a plane generally paralleling the medial plane of said opening and projecting into the latter from said second edge portion, said means slidably securing said free edge portion of said second door to said third edge portion of said frame and said arm means including means operative to force said free edge portion of said second door laterally into tight abutting engagement with said abutment surface means upon final movement of said doors to the fully closed planar positions.

3,275,065
CURTAINS
Julia R. Maras, Buhl, Minn.
(1203 Pokigama Ave. S., Grand Rapids, Minn.)
Filed Jan. 25, 1963, Ser. No. 254,554
2 Claims. (Cl. 160—330)



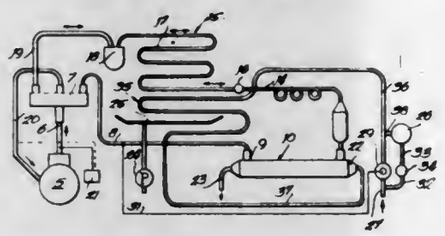
1. An adjustable width continuous panel draw curtain for filling a desired width portion of an opening comprising a curtain panel of a maximum width greater than the width of the portion of the opening to be covered, slides attached to the curtain at a plurality of spaced locations along the top edge of the curtain, a flexible strand element extending along the said top edge of the curtain between the two side edges of the curtain, said flexible strand being of a length corresponding to the width of the portion of the opening to be covered by said curtain, means fastening said flexible strand elment adjustably to the top edge of the curtain at spaced locations with each spaced location being adjacent each slide with the length of the portion of the flexible element between adjacent slides being such as to limit the effective width of the curtain to less than said maximum width whereby when the curtain is extended to fill the said portion of the opening the said flexible element limits the width of the extended curtain and controls the fullness of each portion of the curtain between each pair of adjacent slides by the relation of the length of the flexible element between the said pair of adjacent slides relative to the width of curtain material between the said same pair of adjacent slides, said curtain having gathers extending between said side edges and generally parallel to said top edge, an elongated stiffening tape-like structure extending transversely to said gathers and secured to said curtain from said top edge to the bottom edge and including relatively stiff strand means along each edge of the tape-like member, said tape-like member being readily bendable along a line parallel to said top edge and relatively non-bendable along a line transverse to the plane of the curtain whereby a neat appearance is maintained in said curtain.

3,275,066
STIFFENER FOR THIN SHEET MATERIAL
Ben Dolberg, 8561 W. Olympic Blvd., Los Angeles, Calif.
Filed June 8, 1964, Ser. No. 373,336
16 Claims. (Cl. 160—330)



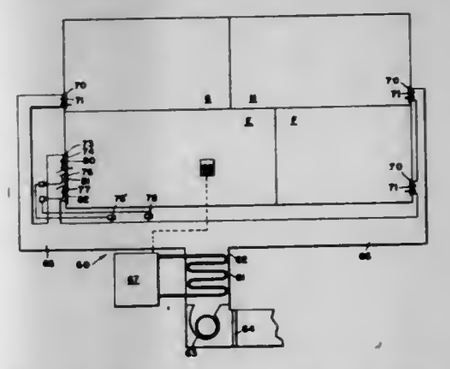
1. A stiffener for an otherwise unsupported upper side edge portion of a drapery, comprising: a longitudinal flat stiff thin sheet stiffening member, said longitudinal flat thin sheet stiffening member being adapted to be positioned within a flat inner sheath comprised by and defined within an otherwise unsupported upper side edge portion of a drapery, said longitudinal flat thin sheet stiffening member having a substantially flat front surface and a substantially flat rear surface and being provided with a plurality of vertically longitudinally spaced similar aperture means, each aperture means including a transverse hole and an upwardly rearwardly angularly inclined effectively conical guide-way means starting at said front surface at a position below said transverse hole and extending upwardly angularly rearwardly toward said rear surface and into vertical communication with said transverse hole, whereby to be adapted to receive a substantially U-shaped rear pin portion of a drapery hook upwardly therethrough into supporting engagement with respect to said transverse hole and with an upright rear part of said rear portion of said drapery hook lying behind and immediately adjacent to and in substantially parallel relationship with respect to said rear surface of said longitudinal stiffening member so as to minimize any tendency of said rear pin portion of said drapery hook to protrude through a rear portion of said flat sheath of said drapery during the upward angular insertion of said rear pin portion of said drapery hook into said supporting engagement with respect to any one of said transverse holes of said plurality of vertically spaced aperture means.

3,275,067
REVERSIBLE HEAT PUMP SYSTEM
David H. Sniader, 1225 Spruce St., Winnetka, Ill.
Filed Nov. 5, 1963, Ser. No. 321,627
6 Claims. (Cl. 165—29)



1. A heat pump system for selectively heating and cooling a room comprising, in combination, a refrigerant compressor, a reverse cycle valve, an evaporator coil for selectively heating and cooling the air within said room and a heat exchanger connected in operative relation, said exchanger including a water medium heat exchange means, and a water heating means communicatively connecting a source of cooled water to the inlet side of the water medium heat exchange means for heating said water only during operation of said system for heating said room, and a secondary coil positioned adjacent to said evaporator coil, said secondary coil being interposed in series relation between the discharge side of said water heating means and the said inlet side of said heat exchanger whereby said secondary coil is heated by said water heating means only during operation of said system for heating said room.

3,275,068
AIR DISTRIBUTION SYSTEM
William L. McGrath, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Original application Jan. 18, 1962, Ser. No. 167,106, now Patent No. 3,163,100, dated Dec. 29, 1964. Divided and this application Nov. 9, 1964, Ser. No. 409,904
2 Claims. (Cl. 165—31)



1. In an air distribution system for supplying conditioned air to a plurality of zones to be conditioned, the combination of a central station for conditioning air comprising a heat exchanger, temperature responsive control means for controlling operation of said central station, duct means communicating said central station with each zone to be conditioned, adjustable damper means for controlling the discharge of air from the duct means into the zones to be treated, mechanism responsive to the attainment of preselected pressure conditions within the duct means to vent the duct means to one of said zones thereby maintaining a predetermined minimum quantity of air flow in heat exchange relationship with the heat exchanger in the central station, said mechanism including means responsive to a first predetermined pressure condition in the duct means and a second predetermined pressure condition in the duct means to adjust said damper means, said adjustable damper means including a first damper, and a second damper, and said means including a first control to actuate the first damper in response to a first determined pressure in the duct means and a second control to actuate the second damper in response to a second predetermined pressure in the duct means.

ERRATUM

For Class 165—47 see:
Patent No. 3,275,495

3,275,069
AIR CONDITIONING APPARATUS
Anthony H. Kelly, Upper Arlington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 7, 1964, Ser. No. 343,289
3 Claims. (Cl. 165—64)

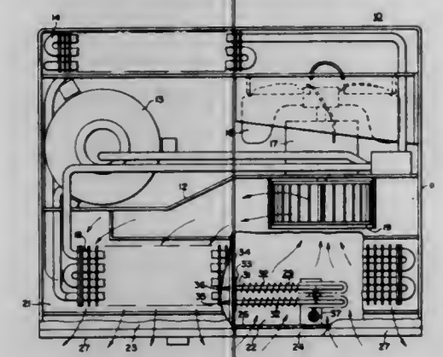
1. Room air conditioner apparatus for conditioning the air of an enclosure, comprising:
a refrigerating system,
a housing for said refrigerating system,

said housing having an inlet opening for entry of air from said enclosure into said housing and an outlet opening for discharge of conditioned air from said housing to said enclosure,

air translating means disposed in said housing for causing a stream of air to flow into said inlet opening and discharge from said outlet opening,

said refrigerating system having a heat exchanger disposed in the path of said air flow,

a sheathed electric resistance heating element being shaped from a single continuous tubular member

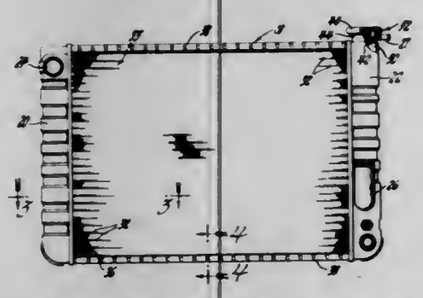


first bent back upon itself at its center and then wound in an opening-spiral from said center to the terminal ends of the two legs to form each of the said legs of said heating element into a spiral paralleling the other said leg,

said element being disposed in said inlet opening with said spiral form center generally centrally located in said opening and said terminal ends located out of said inlet opening,

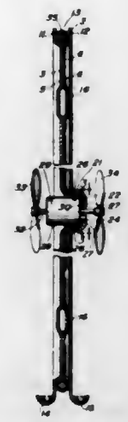
said legs lying in successive planes transverse to the direction of said air flow path through said inlet opening.

3,275,070
CROSSFLOW RADIATORS
Paul K. Beatenbough, Medina, and Robert W. Bishop, Lockport, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 9, 1963, Ser. No. 271,743
2 Claims. (Cl. 165—111)



1. A crossflow radiator comprising only two elongated tanks each having a vertical side, the said tanks being an inlet tank and an outlet tank, a core with tubes extending horizontally and connecting the vertical sides of said tanks to form flow passages leading from said inlet tank to said outlet tank, said inlet tank having a coolant inlet, said outlet tank having a coolant outlet, a pressure actuated air vent connected to atmosphere and located at the top portion of said outlet tank in free communication with tubes of said core, the horizontal cross sectional area within the said top portion of said outlet tank being clear and sufficiently large relative to the coolant flow rate through the said tubes to permit air to separate from said coolant upon the latter discharging from said tubes into said outlet tank, and the path for fluid defined by said two tanks and tubes being in only one horizontal direction.

3,275,071
HEAT EXCHANGERS
Richard W. Kritzer, Chicago, Ill., assignor to Peerless of America Incorporated, Chicago, Ill., a corporation of Illinois
Filed May 8, 1964, Ser. No. 365,893
5 Claims. (Cl. 165—121)



1. A heat exchanger comprising

(a) a two-ply panel,

(b) each of said plies having an inner face and an outer face,

(c) said inner faces being disposed in juxtaposition to each other throughout the major portion of their areas,

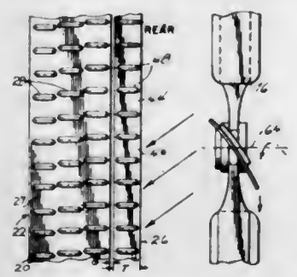
(d) said plies defining a passageway therebetween for feeding refrigerant through said panel,

(e) a motor mounted on and carried by said panel in inwardly spaced relation to the outer periphery thereof substantially centrally of said panel, and

(f) fan blade means mounted on, and operatively connected to said motor for rotation thereby in a direction effective to feed air inwardly against, and then outwardly substantially across and in contact with the entire outer surface of at least one of said outer faces,

(g) said outer faces being substantially unobstructed outwardly of said motor.

3,275,072
RADIATOR CORE GUARD
Raymond F. Suchomel, Elmhurst, Ill., assignor to International Harvester Company, a corporation of Delaware
Filed Aug. 14, 1964, Ser. No. 389,531
9 Claims. (Cl. 165—134)



1. In a cooling system comprising radiator structure with side members and a core therebetween, said core having horizontal fins joined by rows of uniformly spaced apart vertical tubes, of which the individual tubes of each row have a slightly staggered position relative to the individual tubes of the next row, and a pusher fan on the inner side of the radiator structure, the combination with said radiator structure:

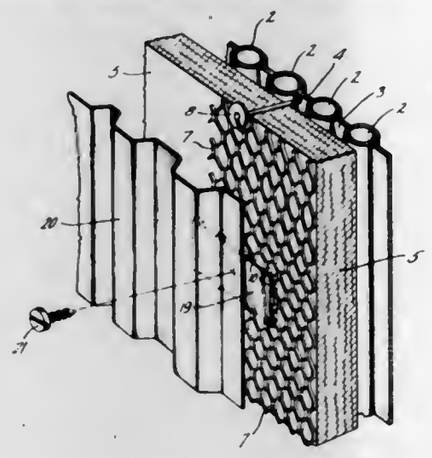
of a supported core guard for attachment to said radiator structure in a spaced-apart relation inwardly offset from the radiator core and parallel to the plane thereof;

said guard comprising a row of vertical tubes made of flat tubing and having their major cross-sectional axes parallel to the direction of air flow;

horizontally disposed, vertically spaced-apart fins holding said tubes in the row with substantially the same tube center-to-center spacing as the tubes of the inner row of tubes in the core; and

attachment brackets connected between the core guard and the side members whereby the core guard is supported in the relation described and with each tube substantially aligned in the vertical plane of a tube in said inner row of tubes in the core, so as to be interposed, and take the impact of fan-thrown particles directly upon the fins and tubes of the guard.

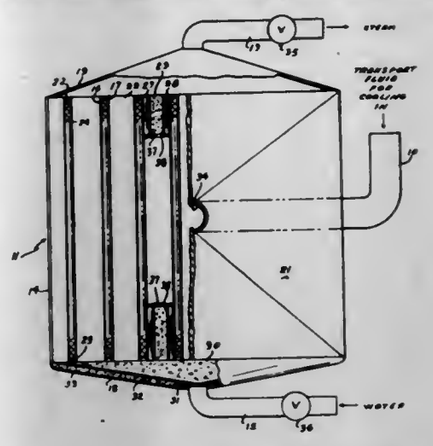
3,275,073
FASTENING OF ATTACHMENTS SUCH AS BOILER CASING TO EXPANDED METAL
Meyer Pincus, Hazardville, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,332
4 Claims. (Cl. 165—136)



4. An apparatus for applying boiler casing to a furnace and furnace wall tubing lining the walls thereof comprising: a blanket of insulating material securely fastened to the furnace wall tubing; said blanket having an expanded metal mesh on its outer surface; a plurality of clips, each clip having a flat metallic plate and a plurality of rigid dart-shaped projections approximately perpendicular to said plate; each dart comprising a triangular member supported at the center of its base, so that the edges of the base form shoulders, with the supporting member maintaining said base a distance from the flat plate approximately equal to the thickness of the expanded metal mesh; said clips being forced against the expanded metal mesh so that the dart-shaped projections pass therethrough and the shoulders engage thereon; an outer casing placed firmly against the expanded metal and clips; and means for securing outer casing to said clips.

3,275,074
PLATE TYPE EVAPORATIVE COOLER AND WICK THEREFOR
Robert L. Campbell and Mohamed B. Kudsi, Dayton, Ohio, assignors to United Aircraft Products Inc., Dayton, Ohio, a corporation of Ohio
Filed Sept. 10, 1963, Ser. No. 307,837
11 Claims. (Cl. 165—166)

1. Evaporative cooling means in a plate-type heat exchanger, including at least two spaced apart pairs of heat conductive plates, each pair defining a flow path for a heated fluid, a layer of liquid holding material intermediately disposed between said pairs of plates and spaced therefrom, and multiple purpose strip fin devices on opposite sides of said layer of material in mutually contacting heat transmitting relation between said pairs of plates and said liquid holding material, said devices



positioning said material and being made of heat conductive material with an undulating crimped configuration providing escape paths for vapor released from said material.

3,275,075
VISCOSITY CONTROL IN PETROLEUM RECOVERY
William B. Gogarty, Littleton, and Russell W. Olson, Denver, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Apr. 27, 1965, Ser. No. 451,304
6 Claims. (Cl. 166—9)

1. The process comprising adding to a soluble oil a predetermined amount of aqueous diluent sufficient to form a microemulsion of predetermined viscosity, injecting said microemulsion into a subterranean oil-bearing formation through at least one injection well drilled into said formation, displacing said microemulsion and crude petroleum in said formation toward at least one production well drilled into said formation, and recovering crude petroleum through said production well.

3,275,076
RECOVERY OF ASPHALTIC-TYPE PETROLEUM FROM A SUBTERRANEAN RESERVOIR
Lorld G. Sharp, Irving, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Jan. 13, 1964, Ser. No. 337,134
12 Claims. (Cl. 166—11)

1. A method for the recovery of asphaltic type petroleum from a subterranean reservoir wherein a fluid capable of miscibly displacing said petroleum is injected into said reservoir through a first well and moved through said reservoir to a second well and injection of said fluid effects precipitation of asphaltic constituents from said petroleum and thereby reduces the permeability of said reservoir from the standpoint of obtaining a desired rate of flow into said reservoir of said fluid and said fluid bypasses through highly permeable zones in said reservoir, comprising the steps of:

(a) effecting combustion of said petroleum in said reservoir in the presence of an oxidizing fluid adjacent to a first well penetrating said reservoir to remove said petroleum from said reservoir from a distance from said first well such that reduction in permeability of said reservoir by precipitation of asphaltic constituents will not be of significance from the standpoint of obtaining a desired rate of flow of said fluid and highly permeable zones within said reservoir beyond said distance from said first well will be saturated to a large extent with gas whereby permeability of said zones to said fluid is reduced,

(b) discontinuing said combustion of said petroleum,
(c) thereafter injecting into said reservoir through said first well said fluid capable of miscibly displacing said petroleum from said reservoir and displacing said petroleum within said reservoir toward said second well whereby precipitation of asphaltic constituents from said petroleum by said fluid will not occur within said reservoir at a distance from said first well that reduction in permeability of said reservoir by said precipitation will be of significance from the standpoint of obtaining a desired rate of flow of said fluid and the movement of liquid in said zones having reduced permeability as a result of said gas saturation tends to be blocked whereby bypassing of said fluid is minimized, and
(d) recovering said petroleum from said reservoir through said second well.

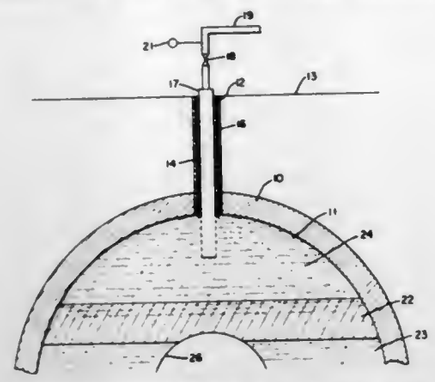
3,275,077
RECOMPLETION OF WELLS
Floyd A. Smith, Tulsa, Okla., and Joseph W. Graybeal, Midland, and Mercer H. Parks, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,438
7 Claims. (Cl. 166—25)



1. The method of plugging selected perforations in a cased and perforated well bore, comprising:
packing particulated sulfur into all of the perforations;
heating the particulated sulfur in said selected perforations until the particulated sulfur therein is fused together to form a plug that adheres to the walls of the perforations; and
producing the well to remove the unfused sulfur particles from the perforations other than said selected perforations.

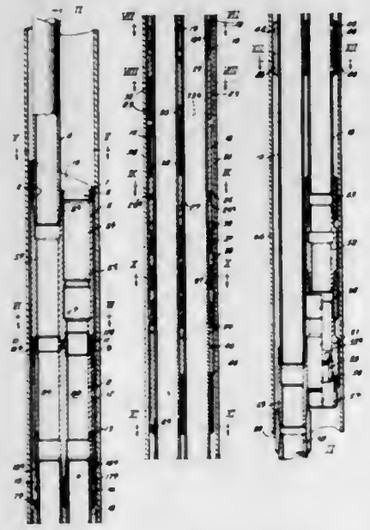
3,275,078
METHOD FOR DISPLACEMENT OF FLUIDS IN UNDERGROUND STORAGE OF GASES
Frank Rieber, Jr., Littleton, Colo., assignor to Interstate Service Corporation, doing business as Ball Associates Ltd., Denver, Colo., a corporation of Maryland
Filed July 29, 1963, Ser. No. 298,355
3 Claims. (Cl. 166—42)

1. A method for underground storage of fluids which comprises the steps of: introducing into a confining geological formation, containing an absorbed underground fluid, a displacing liquid which is at least partially miscible, both with the fluid to be stored and the absorbed underground fluid; introducing the liquid to be stored into the confining geological formation; forming a layer of the displacing liquid between the zone of absorbed underground fluid and the zone of storage fluid; applying pressure to the zone of storage fluid to push the layer of displacing liquid downwardly for displacing the underground fluid from the formation and expanding the storage space above the layer of displacing liquid; and introducing the



storage fluid into the storage space thus formed for storage therein.

3,275,079
DUAL STRING HYDRAULIC PACKER
Morgan L. Crow, Dallas, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Jan. 23, 1963, Ser. No. 253,429
16 Claims. (Cl. 166—122)

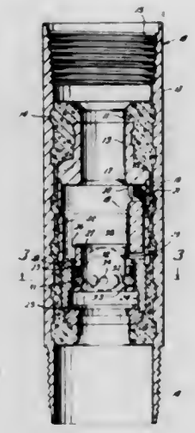


5. In a well packer, a tubular body having a pair of longitudinal passages therethrough; a pair of tubular mandrels attached in, and extending below, the passages; at least one packer sleeve surrounding the mandrels; a support secured to one of the mandrels below the packer sleeve; slips secured to the support below the sleeve; expander means surrounding the mandrels below the sleeve arranged to move the slips outwardly; hydraulically actuated telescoping members, one of which is stationary and the other of which is movable downwardly against the upper end of the packer sleeve to compress same; means to apply hydraulic pressure from one of the passages between the telescoping members; hydraulically actuated slip pistons mounted in the wall of the body and movable outwardly thereof; and means to apply hydraulic pressure from one of the passages to the inner ends of the hydraulically actuated slip pistons.

3,275,080
VALVE RELEASE MECHANISM FOR A WELL DEVICE
Wayne F. Nelson and Gil R. Boyd, Waxahachie, Tex., assignors to Koehring Company, Waxahachie, Tex., a corporation of Wisconsin
Filed May 15, 1964, Ser. No. 367,659
4 Claims. (Cl. 166—225)

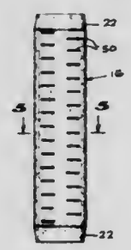
1. A well device adapted for installation in a well string comprising,

a body having a flow-way therethrough and adapted to be made up in a well string,
an annular valve seat in said body surrounding said flow-way,
a flapper valve adapted to engage said annular valve seat, seating of said flapper valve on said seat closing flow upwardly through said flow-way,
an annular element within said body normally holding said flapper valve out of engagement with said seat,
means releasably securing said annular element to said body in a position holding said flapper valve out of engagement with said seat, and



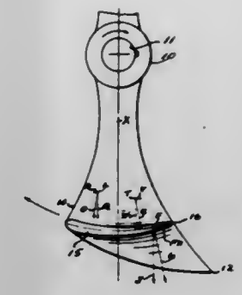
a plurality of support elements movably mounted in said annular element and extending into the bore of said annular element,
said support elements adapted to support a closure element within the bore of said annular element, allowing pressure above said annular element to release said securing means and move said annular element to a position out of engagement with said flapper valve,
movement of said annular element allowing said support elements to move out of supporting relation to said closure element, whereby said closure element is discharged from said bore of said annular element.

3,275,081
METHOD OF LINING WATER WELLS AND NON-CORROSIVE LINER THEREFOR
John R. Beylik, 11118 Luitwieler Ave., Whittier, Calif.
Filed Nov. 26, 1963, Ser. No. 326,035
1 Claim. (Cl. 166—228)



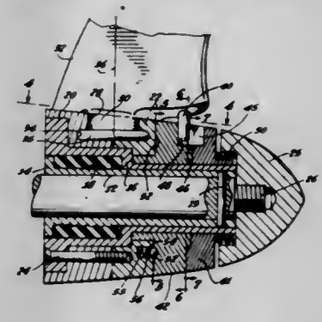
A unitary non-corrosive liner section for water wells comprising a cylindrical body of asbestos-cement having a plurality of perforations, each perforation being in the form of an elongated slot extending transversely of the body and defined by a pair of parallel side walls extending in planes normal to the longitudinal axis of the body and by a pair of outwardly diverging end walls, said perforations being disposed in rows extending longitudinally of the body.

3,275,082
PROPELLERS FOR WATER CRAFT
Robert E. Stark, 176 Crestwood Drive, Avon Lake, Ohio
Filed Aug. 19, 1965, Ser. No. 481,000
9 Claims. (Cl. 170—160.5)



1. A propeller of the class described comprising a hub, at least one propeller blade extending from the hub and formed integrally therewith, said blade being of a material having limited flexibility and being resilient, a fin attached to the low pressure side of the blade and arranged to cause an increase in the pitch of the blade with an increase in r.p.m.

3,275,083
VARIABLE PITCH PROPELLER
Norman J. Allin, Hermosa Beach, Calif., assignor to Bradley A. Kendis, trustee
Filed Oct. 15, 1965, Ser. No. 496,549
6 Claims. (Cl. 170—160.13)

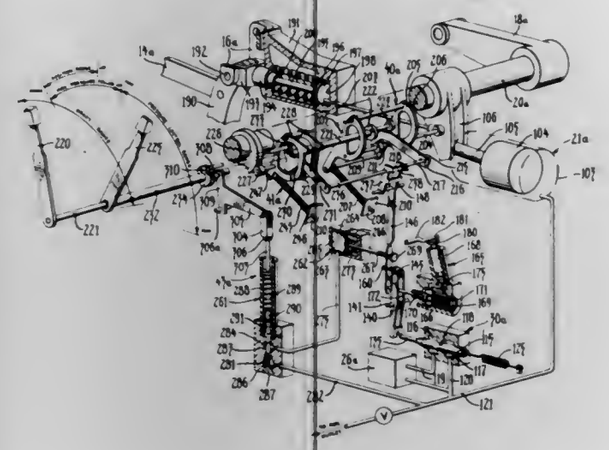


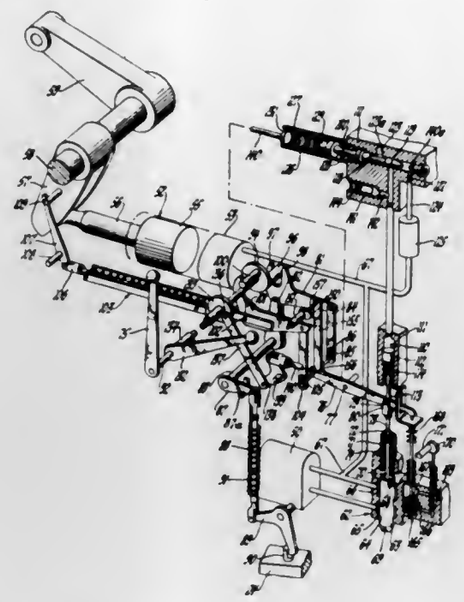
1. In a variable pitch propeller driven by applied power to act on ambient fluid, the combination of:
a rotary hub structure adapted to be driven by the applied power;
a plurality of blades rotatably mounted on the hub structure for adjustment in pitch,
each of said blades having a finger spaced radially from its axis of pitch adjustment,
a portion of the rotary hub structure being rotatable relative to the rest of the hub structure and being responsive to the fingers of the blades to change to two different states alternately in response to successive oscillations of the blades about their pitch axes,
said portion of the hub structure at its two states confining the fingers of the blades at two different pitch adjustments of the blades,
whereby the pitch of the blades may be changed from one of the alternate pitch adjustments to the other by interrupting the applied power and then again applying the power to cause thhe ambient fluid to create successive opposite moments on the propellers to oscillate the propellers thereby to change the state of said portion of the hub structure.

3,275,084
TRACTOR HYDRAULIC CONTROL SYSTEM

Ernest V. Bunting, Detroit, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland

Filed Jan. 31, 1964, Ser. No. 341,548
10 Claims. (Cl. 172—9)





1. In a tractor having a hitch linkage and hydraulic actuator for lifting said linkage upon admission of fluid under pressure to said actuator, a control system comprising, in combination, a source of fluid under pressure including a control valve arranged to direct fluid to and from said actuator, a draft control linkage coupling said hitch linkage and said valve for discharging fluid from said actuator upon a decrease from a predetermined draft load on said hitch linkage, a position control linkage coupling said hitch linkage and said valve for stopping the addition of fluid to said actuator when the hitch linkage reaches a predetermined height, and a pressure control linkage including means for sensing the fluid pressure in said actuator connected to said valve for stopping the addition of fluid to said actuator when a predetermined pressure is exceeded, said draft control linkage, position control linkage and pressure control linkage each being effective to take over and override the others for stopping the addition of fluid to said actuator when a corresponding one of said predetermined load, height or pressure conditions is reached.

3,275,085
POWER OPERATING AND CONTROL SYSTEM FOR TRACTORS

Ernest V. Bunting, Detroit, and Edwin J. Skiba, Warren, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland

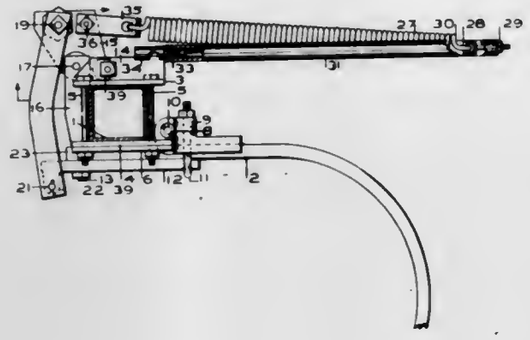
Filed Aug. 1, 1962, Ser. No. 214,123
24 Claims. (Cl. 172—10)

1. In a hydraulic system for a tractor, including a pressure fluid main actuator for raising and lowering an implement coupled to the tractor, the combination of a pump having a fluid supply connection to the main actuator, valve mechanism including flow control means shiftable from a neutral position in which fluid is locked in the main actuator into alternatively available supply and exhaust positions in which pressure fluid is respectively delivered to the main actuator and drained from the main actuator, means biasing said flow control means toward one of said latter two positions, a second pressure fluid operated actuator operable to shift said flow control means against its bias, pressure responsive means connecting said main actuator and said second actuator for draining said second actuator when the pressure in the main actuator falls below a predetermined value and opening said main actuator to said second actuator when the pressure in the main actuator exceeds the predetermined value and means for adjusting said pressure responsive means to respond to selected different pressures.

3,275,086
SPRING RELEASE LOCKING ATTACHMENT FOR CULTIVATOR SHANKS

George Henry Morris, 37 6th Ave. N., Yorkton, Saskatchewan, Canada

Filed Feb. 26, 1964, Ser. No. 347,431
7 Claims. (Cl. 172—266)

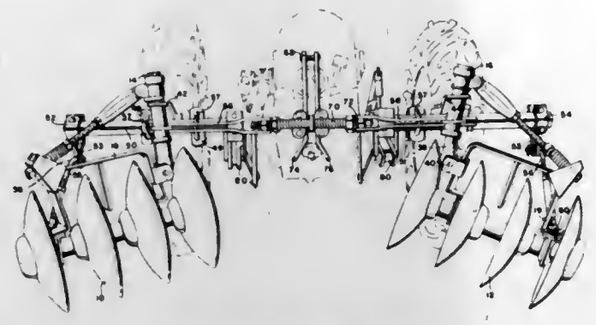


1. In a spring release mounting for a cultivator shank, the cultivator including a cross frame bar to which the shank is attached, a bracket on the cross frame bar, means rearwardly pivotally attaching the shank to the bracket with the shank suspended below and projecting forwardly of the bracket, a rocker plate pivotally mounted on the cross frame bar bracket vertically disposed and projecting upwardly and forwardly of the bracket, links pivotally attaching to the upper forward portion of the rocker plate, means pivotally attaching the links to the shank forwardly of the frame bar bracket, a spring mounting bracket on the cross frame bar bracket projecting rearwardly, and an expansion spring rearwardly anchored to the rearwardly projecting bracket and forwardly connected to the rocker plate, and by which upward movement of the shank rear portion by the link connection of its forward portion with the rocker plate pivots the rocker plate forward and the movement of the shank is thereby opposed by said spring.

3,275,087
ADJUSTABLE DISC HARROW

William H. Petitt, Chattanooga, Tenn., assignor to The Harriman Manufacturing Company, Chattanooga, Tenn., a corporation of Tennessee

Filed Feb. 3, 1965, Ser. No. 431,492
9 Claims. (Cl. 172—572)

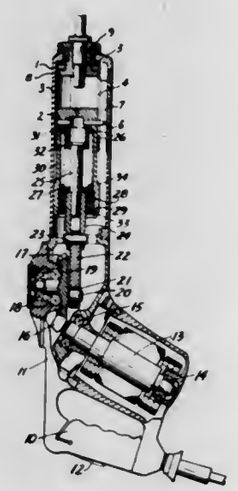


7. An adjustable disc harrow, comprising:
(A) a tool bar;
(B) first and second tie rod brackets mounted on said tool bar;
(C) linkage bracket means mounted on said tool bar;
(D) first and second disc gang assembly means mounted on said tool bar, said gang assembly means including first and second kingpins set at predetermined angles from vertical; and
(E) first and second tie rods having first ends attached to said first and second disc gang assembly means, respectively, and second ends for selectively attaching to said first and second tie rod brackets and said linkage bracket means respectively.

3,275,088
REVERSING MEANS FOR PERCUSSION HAMMERS

Wilhelm Schröttle, Munich, Germany, assignor to Hermann Wacker and Peter Wacker, both of Munich, Germany

Filed Mar. 16, 1964, Ser. No. 351,977
Claims priority, application Germany, Mar. 15, 1963, W 34,108
2 Claims. (Cl. 173—110)

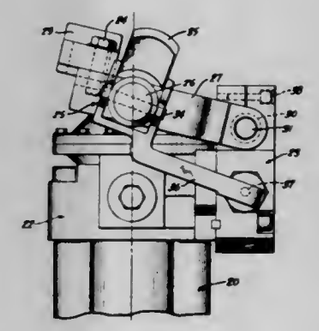


1. A power driven percussion hammer and drill of the type provided with a tool turning means and comprising a housing, said tool turning means comprising a reciprocating sleeve arranged in the lower end of said housing, a first toothed disk provided on the lower end of said sleeve, a tool guiding socket disposed in the lower end of said housing, a second toothed disk provided on said socket and disposed opposite said first toothed disk and means for raising said first toothed disk to engage and turn with said second toothed disk, said means comprising a percussion piston having a driver pin and said sleeve being in force transmitting relation with said piston and having a rifle slot receiving said driver pin for reciprocating movement therein for turning said sleeve and said first toothed disk.

3,275,089
HANDLE MEANS FOR PERCUSSIVE TOOL

Willard D. Kaiser, Grove City, and James C. Swain and George E. Manning, Columbus, Ohio, assignors, by mesne assignments, to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Nov. 5, 1963, Ser. No. 321,610
7 Claims. (Cl. 173—162)

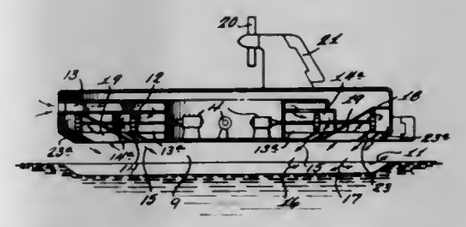


1. In a fluid pressure actuated percussive tool having a vibratory tool body, a handle frame, means resiliently securing said handle frame to said vibratory tool body laterally offset from the central axis of said tool to isolate said handle frame from the percussive action of said vibratory tool body, gripping means on said handle frame located in a plane substantially coinciding with the central axis of the tool, and a counterweight on said handle frame located adjacent to said gripping means remote from said resilient securing means.

3,275,090
METHOD AND APPARATUS FOR INCREASING THE EFFECTIVENESS OF AIR CUSHION VEHICLES

Carl Weiland, Seefeldstrasse 124, Zurich, Switzerland

Filed Oct. 16, 1958, Ser. No. 767,575
Claims priority, application Switzerland, Oct. 22, 1957, 51,837
18 Claims. (Cl. 180—7)

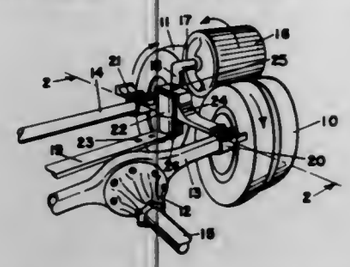


13. The method of supporting a body, having a substantially airtight undersurface, above and in close proximity to a pressure-retaining lower surface, the steps comprising: emitting air under pressure from and beneath the body to develop between the undersurface and a lower surface a cushion of air under superatmospheric pressure sufficient to lift the body to a stable elevation above the lower surface; and retarding the flow of air outwardly from between the surfaces along at least a portion of the periphery of the undersurface by emitting from the body a downwardly-directed jet-like curtain of air extending along the peripheral portion of the undersurface, and spaced outwardly of the location where the air was emitted to develop the cushion.

3,275,091
TRACTION DEVICE FOR VEHICLES

Joseph B. Steck, R.D. 1, Hadley, Pa., and Donald H. Slater, R.D. 1, Fredonia, Pa.

Filed Aug. 20, 1964, Ser. No. 390,848
2 Claims. (Cl. 180—22)

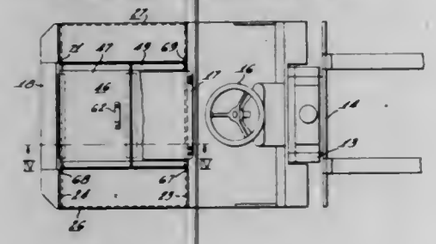


1. A drive for a vehicle having ground engaging rear drive wheels and ground engaging idler load supporting wheels,
- spaced parallel load supporting transversely extending rear axles on said truck comprising a drive axle and an idler axle,
- said drive wheels being disposed on said drive axle and said idler wheels being disposed on said idler axle,
- two horizontal bars each supported at one side of said truck,
- one end of each said bar being supported on said idler axle and the other end of each said bar being supported on said drive axle,
- a fluid actuated member attached to an intermediate part of each said bar,
- a bracket supported on each said fluid actuated member,
- a link on each said bracket rotatably receiving a traction idler,
- said bracket being urged downwardly by said fluid actuated member when said fluid actuated member is actuated, moving said traction idler into driving engagement with said idler wheels and said drive wheels.

3,275,092
ELECTRIC TRUCK BATTERY COMPARTMENT

Dean A. Matthews, Chicago Heights, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed May 5, 1964, Ser. No. 364,911
19 Claims. (Cl. 180—68.5)

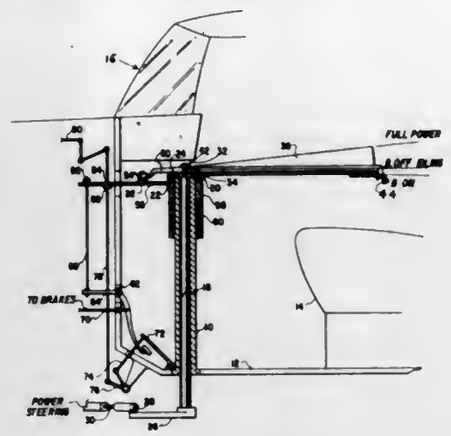


1. An electric lift truck comprising:
- a truck frame including a portion adapted to support a battery,
- side panels releasably connected to said frame at opposite lateral sides of said portion,
- a top panel releasably interlocked with said side panels and
- a driver's seat connected to said frame, said seat being shiftable between an occupant receiving position overlying said top panel in which a substantial portion of the weight of the operator is transferred through the seat to said top panel to maintain the latter in interlocking engagement with said side panels and a shifted position wherein said seat does not overlie said top panel and the latter may be removed from its interlocking engagement with said side panels.

3,275,093
HAND COMBINED VEHICLE STEERING, POWER, AND BRAKING CONTROL HANDLE

Walter S. Pawl, 2844 Powder Mill Road, Adelphi, Md.

Filed Sept. 4, 1964, Ser. No. 394,577
12 Claims. (Cl. 180—77)

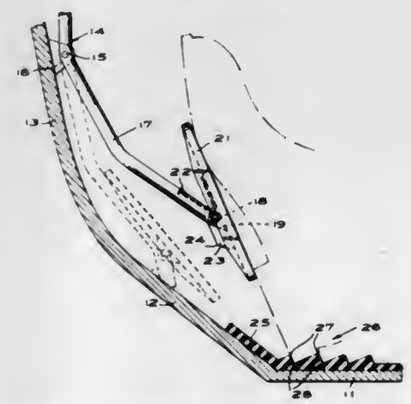


1. A unitary hand control system for automotive vehicles which have a power control linkage, a brake control linkage, a steering control linkage, and a front seat compartment for the driver, comprising:
- a steering post in said compartment near said front seat,
- a steering shaft rotatably mounted in said post, having a steering control lever extending rearwardly from its top to a point convenient for the driver,
- said control lever being pivoted on said steering shaft to swing vertically and having an arm extending forwardly from its pivot, and a lost motion connection between the end of said arm and the power and brake control linkages to affect their controls in adjacent ranges of the swing of said control lever, the full power and brakes-on positions being at opposite ends of said ranges.

3,275,094
MOTOR VEHICLE PEDAL SUPPORT

Everett P. Kennedy, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed July 22, 1964, Ser. No. 384,383
4 Claims. (Cl. 180—90.6)

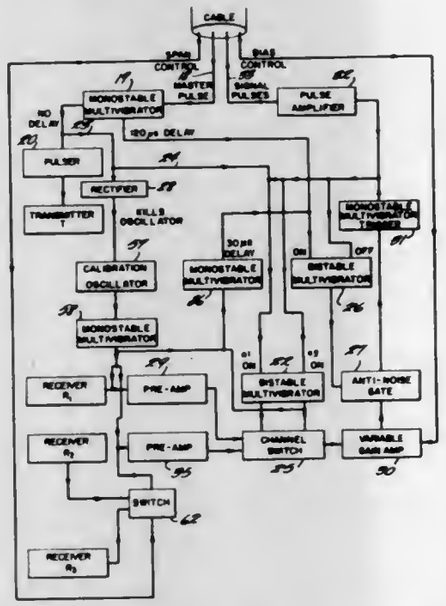


1. A motor vehicle comprising a passenger compartment defined in part by a horizontally extending floor pan and an adjacent vertically extending dash panel, a lever supported for pivotal movement about a pivot axis spaced a substantial vertical distance above said floor pan, said lever being rotatable from a normal position to a depressed position, said lever having a portion thereof extending downwardly from said pivot axis toward said floor pan and inwardly of said passenger compartment from said dash panel, an elongated pedal, means supporting said pedal upon said lever portion intermediate the upper and lower ends of said pedal for pivotal movement of said pedal relative to said lever portion to conform to the most comfortable foot position of the vehicle operator, biasing means interposed between said lever portion and said pedal for urging said pedal in the same pivotal direction as the movement of said lever from its normal to its depressed position, stop means for limiting the pivotal movement in said direction of said pedal relative to said lever portion under the influence of said biasing means, said biasing means being yieldable under the influence of forces exerted upon said pedal by the foot of the vehicle operator, motion transmitting means interconnecting said lever with a pedal-operated component of said vehicle, a pad extending across at least a portion of said floor pan, and a heel rest formed by said pad adjacent to and below said pedal, said heel rest comprising a plurality of serrations having raised portions terminating adjacent depressed bights, said bights being longitudinally spaced at varying distances from said dash panel to establish alternate fulcrum positions for the heel of the vehicle operator.

3,275,095
ACOUSTIC WELL LOGGING APPARATUS

Robert B. Blizard, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Sept. 21, 1959, Ser. No. 841,401
8 Claims. (Cl. 181—.5)

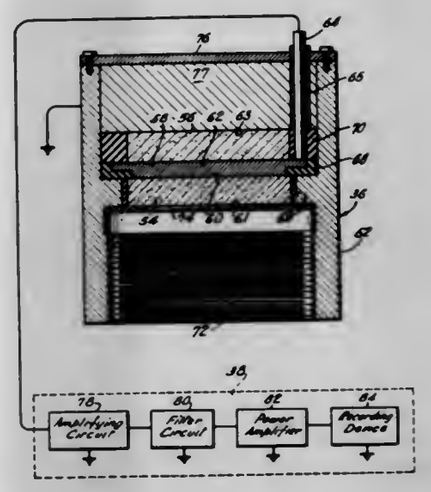


1. Well logging apparatus for determining the travel time of acoustic wave energy through the earth formations traversed by a bore comprising a logging tool adapted to travel through the bore, said tool including longitudinally spaced acoustic means for periodically generating and receiving acoustic wave energy, means in said tool responsive to acoustic wave energy for deriving pairs of electrical signals in which signals of each pair are spaced a time duration apart representative of the time required for acoustic wave energy to travel through the earth formations between at least two of said acoustic means at a predetermined spacing, integrating means coupled to said signal deriving means for obtaining indications of the total travel time of acoustic wave energy along intervals of the bore, said integrating means including means for periodically generating pulses in a predetermined manner and means for counting said pulses, said integrating means being responsive to said pairs of electrical signals in such a manner that said counting means counts said pulses during the time duration between the signals of each of said pairs, means coupled to said acoustic means for changing said predetermined spacing, and means coupled to said counter means for varying the counting rate of said counter means as said predetermined spacing is changed.

3,275,096
TWO CRYSTAL MICROPHONE ASSEMBLY FOR WELL SOUNDING

Arthur H. Lord, Bellaire, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 10, 1963, Ser. No. 272,508
4 Claims. (Cl. 181—.5)



1. A microphone assembly comprising a housing having a chamber at one end thereof, first and second piezoelectric crystal transducers, said first crystal transducer being disposed to receive acoustic energy passing through said chamber, a compression plate interposed between said first and second transducers so as to act as a buffer and as an electrical interconnection between said first and second crystal transducers, an output terminal electrically connected to said compression plate, means for insulating said terminal from said housing, the faces of each of said crystal transducers contacting said compression plate having opposite polarities, annular support means for insulating said compression plate from said housing, and a diaphragm disposed between said first transducer and said chamber so as to cover said first transducer and to electrically connect the other face of said first transducer to said housing, said second transducer being mounted within said housing so as to provide electrical contact between the other face of said second transducer and said housing.

3,275,097
MARINE SEISMIC CABLE SYSTEM

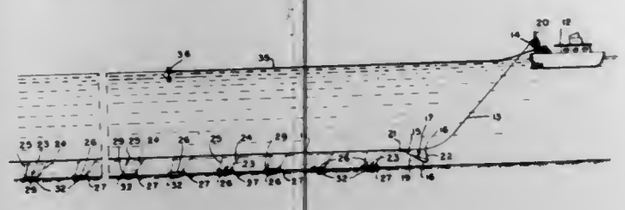
George M. Pavey, Jr., Dallas, Tex., assignor to Sonic Engineering Company, Dallas, Tex.

Filed June 17, 1964, Ser. No. 375,718
12 Claims. (Cl. 181—.5)

1. In a waterborne system for seismic prospecting for geological structures disposed beneath a body of water, in combination,
- (1) a positively buoyant elongated flexible streamer having a plurality of detecting devices disposed at intervals therein,
- (2) a flexible lead-in cable connected to the head end of the streamer for effecting a towing connection to a moving vessel,
- (3) means on the vessel for applying a towing force to said connection while the vessel is moving along a course and for removing said towing force at will,

(4) a depressor connected to said cable at the head end of the streamer for maintaining the head end of the streamer near the bottom of the body of water while the streamer is being towed, said depressor having sufficient mass to sink and anchor the head end of the streamer as the towing force is removed therefrom, and

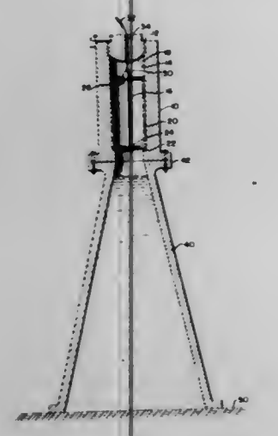
(5) a plurality of negatively buoyant vehicles connected at the fore and aft portions thereof respectively to



the streamer at regular intervals, each of said vehicles being sufficiently heavy when submerged to engage said bottom continuously as the vehicle moves therealong and having

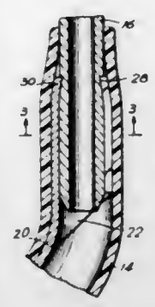
(6) means depending downwardly therefrom for furrowing the bottom thereby to increase the resistance of the streamer to lateral drift sufficiently to cause the streamer throughout the length thereof to be forcibly restrained from departure from the line defining the course of the vessel.

3,275,098
METHOD AND APPARATUS FOR GENERATING SEISMIC WAVES
William S. Filler, 302 Bradley Ave., Rockville, Md.
Filed Dec. 27, 1960, Ser. No. 78,701
7 Claims. (Cl. 181—.5)



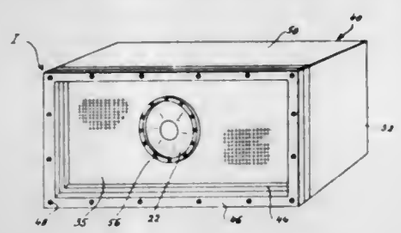
1. A method for transmitting a directed concentrated shock wave to the ground which comprises, detonating a substantial quantity of high explosive in an energy release region, said region being confined in all directions save one exit area, said energy release region being several times the volume of the high explosive generating thereby a supersonic shock wave, passing the shock wave along a generally tubular path commencing at the exit area of said energy release region, and transmitting the shock wave to the ground from the terminus of said tubular path, the tubular path having previously been positioned relative to the ground so that the shock wave issuing therefrom is transmitted to the ground, and wherein the energy is released by detonation of a high explosive charge suspended in spaced apart relation to the confining bounds of said energy release region.

3,275,099
STETHOSCOPE EAR TUBE MOUNTING
Irving A. Speelman, Roslyn Heights, N.Y., assignor to Propper Manufacturing Company, Inc., Long Island City, N.Y., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 501,490
2 Claims. (Cl. 181—24)



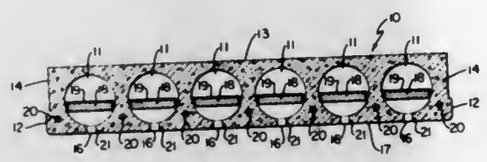
1. A stethoscope comprising an elongated flexible tube having at one end a pair of branching tube portions, a pair of rigid elongated ear tubes having lower ends received in said branching portions in fluid communication therewith, and a U-shaped elongated leaf spring extending in said branching portions and having end portions interconnecting said ear tubes at said lower ends for biasing the ear tubes towards each other, said ear tube ends and said spring end portions having interengaged complementary fittings, one of said complementary fittings having external groove means with the other complementary fitting having a portion interengaged with said groove means to provide for the independent swiveling of said ear tubes about the axes thereof for adjusting the ear tubes to the user while positively restraining the disengagement thereof from said spring and branching portions.

3,275,100
LOUDSPEAKER ASSEMBLY HAVING LOUDSPEAKER WHOLLY SUPPORTED BY VIBRATORY DIAPHRAGM
William S. Dunning, Kampfe Lake, Bloomingdale, N.J.
Filed June 16, 1965, Ser. No. 464,451
4 Claims. (Cl. 181—31)



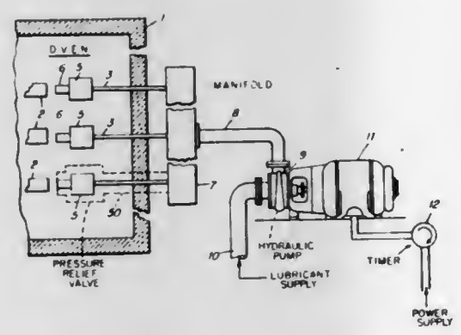
1. A loudspeaker assembly comprising a magnetic loudspeaker having a rigid conical apertured frame with an annular flange at its wider end, a magnet secured to the apical end of the frame, a conical vibratory cone nested in the frame, electrically energized driving means carried by the magnet and operatively connected to the apical end of the cone to drive the same axially, said cone having a peripheral rim registering with and abutted to said flange, a membranous diaphragm having an opening therein, means securing both the flange of the frame and the rim of the cone to the edge of said opening in sealing relationship, so that the entire magnetic loudspeaker is supported only by the diaphragm and is free from all other external support, a resilient, narrow gasket extending all around the periphery of the diaphragm and secured thereto at one edge of the gasket, an enclosure having an opening therein, and means securing the other edge of said gasket in hermetic sealing relationship all around the opening in the enclosure so that the diaphragm is supported in flat, stretched vibratile condition with the loudspeaker carried only by the diaphragm, the diaphragm having a free vibratory area at least as large as that of the cone.

3,275,101
ACOUSTIC STRUCTURAL UNIT
Thomas G. Morrissey, Denver, and George Bradley Davis, Jr., and Harold H. Short, Boulder, Colo., assignors, by direct and mesne assignments, of forty percent to James G. Milne, Jr., Lucerne, Colo., forty percent to Harold H. Short, and twenty percent to George Bradley Davis, Jr.
Filed Dec. 16, 1963, Ser. No. 330,803
9 Claims. (Cl. 181—33)



1. An acoustic load bearing structural unit which comprises an elongated flexural slab of reinforced concrete having a plurality of elongate cavities formed therein in transversely spaced substantially parallel relationship with respect to each other, each of the cavities having elongate aperture means formed through a wall of the cavity forming a perforated surface and establishing communication between the inside of the cavity and the atmosphere, the ratio of the total surface area of the apertures to the total area of the perforated surface being in the range from about 7 to about 15 percent, fibrous sound absorbing material in each of said cavities, said fibrous material occupying throughout its length a portion only of the cross-sectional area of said cavity, and a septum inserted in each of the cavities adjacent the side of said sound absorbing material distal to said aperture means for controlling the effective volumes of the cavities in communication with the atmosphere.

3,275,102
HIGH TEMPERATURE LUBRICATION PROCESS
Rudolph J. Holzinger, Haddonfield, N.J., Lawton E. Reid, Kansas City, Mo., and Gilbert D. Blake, Overland Park, Kans., assignors to Mobil Oil Corporation, a corporation of New York
Filed Sept. 11, 1963, Ser. No. 308,273
8 Claims. (Cl. 184—1)



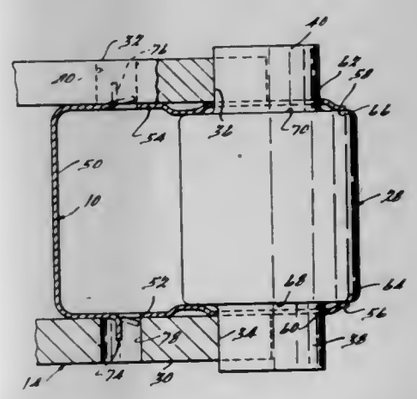
1. In a process for applying water-in-oil emulsion lubricants to hot moving mechanisms operating within a heated zone at ambient temperatures above about 300° F., the steps comprising:

(1) conveying the emulsion lubricant to and into the said heated zone;

(2) maintaining the said emulsion lubricant in an emulsified state under such temperature and pressure conditions as to prevent conversion of the water in the emulsion lubricant into steam prior to its application; and

(3) directing said emulsion lubricant in an exposed steam through said heated zone toward the hot moving mechanism, contact therewith causing the water to evaporate on the surface of the said mechanism, whereby the said evaporation cools and cleans the surface of the said mechanism and leaves a deposit of oil on the said surface.

3,275,103
BRAKE ROLLER RETAINER
Lyman R. Lyon, Royal Oak, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 11, 1965, Ser. No. 494,489
1 Claim. (Cl. 188—78)



In a brake assembly comprising a brake shoe having a pair of spaced webs, an S-cam, and a roller interposed therebetween,

a generally U-shaped roller retainer having a bight portion extending between the web portions of said brake shoe, and leg portions extending generally parallel to the web portions of said brake shoe, the leg portions of said retainer having axially aligned circular bores therein for the acceptance of opposite ends of said roller,

the periphery of the bores in the leg portions of said retainer being axially offset to define bearing surfaces, respectively, engageable with said roller to limit axial movement thereof, and

interlocking means on each of said legs engageable with the web portions of said brake shoe, respectively, for securing said retainer to said brake shoe.

3,275,104
BRAKE CYLINDER ASSEMBLY WITH CONTINUOUSLY ACTING SLACK ADJUSTER
Joseph G. Stipanovic, McKeesport, and Francis R. Racki, Pittsburgh, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Sept. 29, 1964, Ser. No. 400,027
6 Claims. (Cl. 188—196)

1. A brake cylinder assembly comprising:

(a) a casing,

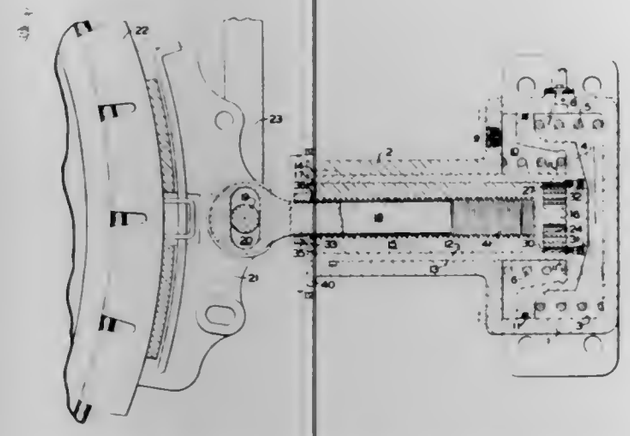
(b) a piston slidably operable therein,

(c) biasing means serving to bias said piston normally to a certain position and yieldingly permitting movement of said piston out of its normal position responsively to fluid pressure acting thereon one face thereof,

(d) a hollow cylindrical piston stem extending coaxially from the face of said piston opposite to said one face of said piston,

(e) a push rod for actuating a braking element, said rod having an externally screw-threaded portion,

(f) a sleeve rotable in a fixed axial position in said stem and having an internally threaded bore into which said screw-threaded portion of said push rod screws, rotation of said sleeve in opposite directions causing axial projection or retraction of said push rod from or into the sleeve, and



(g) means exerting a continuous torque in one direction on said sleeve to cause said push rod to constantly exert a light force on the braking element and effective to axially project said push rod with respect to said sleeve to take up slack as wear on the braking element occurs.

3,275,105
SHOE FOR SPOT TYPE DISC BRAKE
Robert Maxime Eugene Petit, Saint-Mande, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France
Continuation of application Ser. No. 306,834, Sept. 5, 1963. This application May 14, 1965, Ser. No. 465,815
Claims priority, application France, Sept. 15, 1962, 909,604, Patent 1,340,988
1 Claim. (Cl. 188—250)



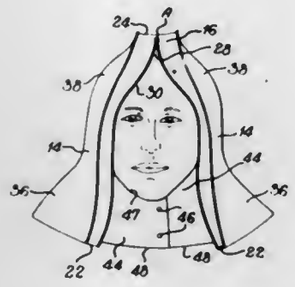
A brake including a brake shoe comprising a support member, a friction lining on one face of the support member, said brake shoe having a central portion and two edges, a fixed abutment, one of said edges contacting said fixed abutment along a contact surface, the thickness of the shoe central portion before wear and the width of said contact surface being substantially equal, said one edge having a thickness substantially greater than the thickness of said central portion whereby said contact surface maintains a substantially constant width as said friction lining wears away.

3,275,106
COMBINATION CARRYING CASE AND PROTECTIVE HOOD
Ralph A. Rush, 22 Bernard Road, East Brunswick, N.J.
Filed June 22, 1965, Ser. No. 465,852
9 Claims. (Cl. 190—1)

5. A combination carrying case and protective hood for the person comprising:

a body having an exterior and an interior and including opposed panels of relatively flexible material, said panels having opposed longitudinal edges and opposed lateral edges interconnecting said longitudinal edges, opposed longitudinal sides interconnecting the panels along the longitudinal edges and opposed lateral sides interconnecting the panels along the lateral edges and interconnecting the longitudinal sides;

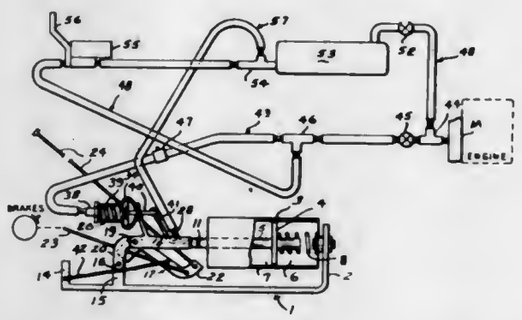
an opening extending continuously along one longitudinal side, a portion of the opposite longitudinal side and an interconnecting lateral side, thereby leaving the opposite lateral side and the remainder of said opposite longitudinal side intact such that the panels and the intersecting intact sides will establish the crown of the hood when the opening is open;



closure means for selectively maintaining said opening closed; and

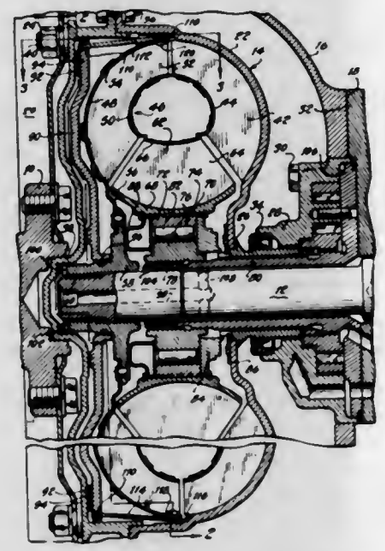
securing means fixed to the interior of said body along the panels for cooperating with portions of the head of said person to maintain the hood in place thereover.

3,275,107
AUTOMATIC EMERGENCY BRAKING SYSTEM RESPONSIVE TO MOTOR CONTROL
Damon I. Wolfe, 219 W. Main St., West Carrollton, Ohio
Filed June 17, 1960, Ser. No. 36,892
13 Claims. (Cl. 192—3)



1. An automatic control system for emergency brakes comprising, means defining a main vacuum line, means connected in said main line defining an auxiliary line, means for producing a vacuum in said lines, normally closed valve means in said auxiliary line, means in said auxiliary line to maintain a vacuum therein on subsequent failure of said vacuum producing means to do so, brake control means having a braking and a brake release position, said brake control means respectively having, on the one hand, an operative connection to said main line and the means maintaining a vacuum in said auxiliary line, and, on the other hand, an operative connection to the emergency brakes and being arranged thereby to automatically respond to a predetermined vacuum condition in said main and auxiliary lines to assume a brake release position and means in connection with said normally closed valve means having an operative connection to said vacuum producing means and arranged thereby to open said valve means to maintain the vacuum in said main line sufficient to cause the control means to be retained in a brake release position on a predetermined failure of the vacuum producing means to do so.

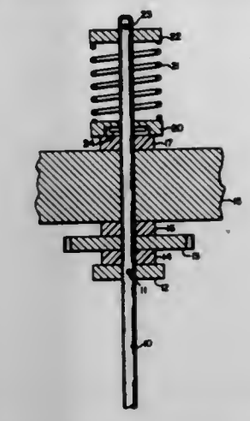
3,275,108
DAMPER FOR TORQUE CONVERTER LOCK-UP CLUTCH
Norman T. General, Farmington, and Po-Lung Liang, Lincoln Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 23, 1964, Ser. No. 406,061
6 Claims. (Cl. 192—3.3)



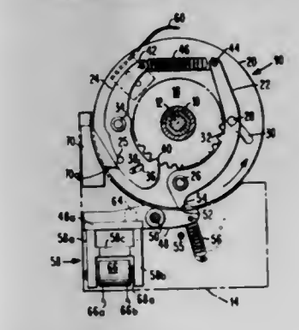
1. In a torque delivery driveline for delivering torque from a driving member to a driven member arranged coaxially with respect to each other, a plurality of recesses formed in one of said members at a radially outward location with respect to the common axis, cantilever spring means secured to the other member and extending in a generally axial direction, the extended ends of said spring means being received within said recesses, and said spring means comprising a yieldable portion engageable with one side of said recesses upon torque delivery through said driveline, another portion of said spring means frictionally engaging said recesses, said other portion of said spring means being adapted to create frictional dampening forces upon deflection of said one portion of said spring means during fluctuations in the magnitude of the torque delivered through said driveline, said driveline including a hydrokinetic mechanism having an impeller and a turbine defining a torus and being situated in fluid flow relationship, a selectively engageable friction clutch having two engageable friction parts, said driven member carrying one friction part and being shiftable under the pressure in said torus into engagement with the other friction part, said turbine being rotatable with and connected to said driven member and said impeller carrying said other friction part.

3,275,109
FRICTION COUPLING AND BRAKE CONTROL APPARATUS
Gregory J. Ganley, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,629
6 Claims. (Cl. 192—7)

1. In combination: an input shaft; a fixed member with respect to which said shaft is rotatable; an output element rotatable with respect to said shaft and to said member; first friction coupling means between said shaft and said element; second friction means between said member and said element; third friction means between said shaft and said member; and means maintaining interengagement of said member, said element, said shaft, and said friction means.



3,275,110
LATCH OPERATED CLUTCH WITH DUAL PAWLS
Theodore A. Lasky, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 21, 1964, Ser. No. 391,176
10 Claims. (Cl. 192—28)



1. A clutch comprising:

a member to be driven,

a driving member,

a primary clutch member carried by one of said members for engaging the other member in driving relation,

a secondary clutch member carried by said one member for engaging the said other member in driving relation,

stationary means selectively operable to engage and actuate the primary clutch member to effect disengagement from said other member,

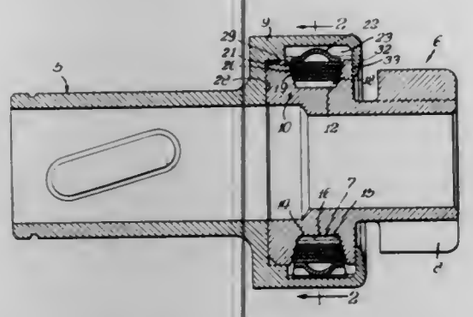
stationary cam means actuating the secondary clutch member to move it into engagement with said other member before the primary clutch member is disengaged,

and resilient biasing means for the primary and secondary clutch members.

3,275,111
BAND CLUTCH WITH CUP SHAPED OUTER MEMBER
Ernest U. Lang and Edwin E. Mallory, Niles, Mich., assignors to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed June 26, 1964, Ser. No. 378,233
1 Claim. (Cl. 192—41)

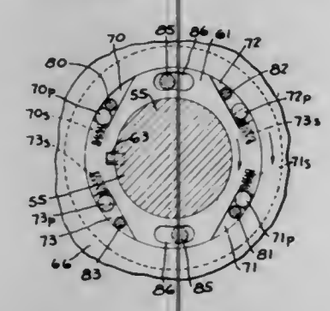
A unitary clutch assembly consisting essentially of outer and inner clutch members, said outer clutch member having a cup-shaped portion of hardened steel stock at one

end thereof, said cup-shaped portion having an annular internal shoulder at its inner end, said inner clutch member having one end thereof disposed coaxially of the axis of said cup-shaped portion and in telescoping relation thereto, said one end of said inner clutch member being of hardened steel stock having bearing surfaces at its inner end in bearing engagement with said annular internal shoulder of said cup-shaped portion, one-way



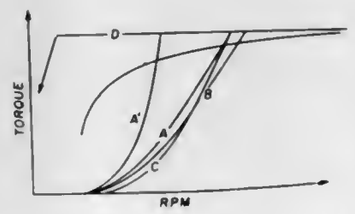
torque transmitting means between said one ends of said clutch members, and flange means integral with but softer than said cup-shaped portion at the open end thereof extending radially inwardly toward and having bearing engagement with the outer end of said inner clutch member to retain said clutch members assembled in coaxial relation with respect to each other and with said torque transmitting means in assembled relation therebetween.

3,275,112
REVERSIBLE ONE WAY CLUTCH
Herbert Nagel, Detroit, Mich., assignor to Wolverine Flexographic Mfg. Co., Detroit, Mich., a corporation of Michigan
Substituted for abandoned application Ser. No. 202,460, June 14, 1962. This application July 6, 1964, Ser. No. 380,334
1 Claim. (Cl. 192—44)



In a clutch mechanism, a rotatable outer member having a central cylindrical recess and a rotatable inner member operatively arranged within said recess to have its outer surface adjacent the inner cylindrical walls of the cylindrical recess, said inner member being provided in its outer surface with an even plurality of wedge recesses, one-half of said recesses pointing in one direction with respect to member rotation and the other half in the opposite direction, a corresponding plurality of driving pins operatively arranged in said recesses, said pins having diameter smaller than the greatest depth of said recesses, a reversing member associated with said inner member and having a corresponding plurality of fingers projecting into said recesses in front of said driving pins in such positions that in one position of the reversing member the driving pins in one half of the recesses are free to move into their respective wedging-in positions between the inner and the outer member for drivingly connecting the same while the driving pins of the other half of the recesses are held by their respective fingers back at their respective idling positions, with said reversing member being adapted to be moved and fixed in another position relative to the inner member, at which position the fingers that previously held half of the pins in their respective idling positions move to allow said pins to wedge in for driving in the opposite direction while the remaining fingers move their respective pins in the idling position, the reversing member comprising a pair of annular plates mounted adjacent the ends of the inner members, screws spaced from said fingers and extending through axially extending passages in the inner member, the diameter of each passage being greater than the diameter of each screw in a circumferential direction relative to the axis of the clutch mechanism, said screws secured to said plates so as to maintain said plates in engagement with opposite ends of said inner member, and said fingers extending between and secured to said plates.

3,275,113
CLUTCH
Bunzo Hirano, 539 Nishinoshima, Toyotamura, Iwata-gun, Shizuoka, Japan
Original application Sept. 9, 1963, Ser. No. 307,681. Divided and this application Oct. 19, 1965, Ser. No. 510,726
6 Claims. (Cl. 192—52)



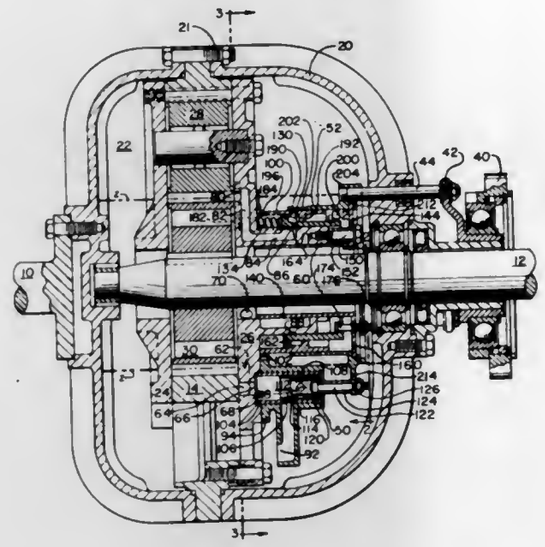
1. A clutch comprising a driving member, a driven member, means mounting said members for rotation about a common axis and for limited relative translation along said axis to vary the effective axial thrust between said members, a driving disc rotatable about said axis, an elastic body connecting said driving disc and driving member for rotation as a unit and for limited relative angular movement about said axis in response to deformation of said elastic body, by and proportional to torque applied to said driving disc, said deformation acting to decrease the effective thrust between said members, and means responsive to rotational speed of said driving disc and effective to urge the same axially toward said driving member with a force proportional to said rotational speed, and correspondingly increase the thrust between said members, through said elastic body.

3,275,114
CONSTANT SPEED CONTROL MEANS FOR VARIABLE POWER TRANSMITTING HYDRAULIC APPARATUS
John R. Thomas, 437 Floyd, Wichita, Kans.
Filed Aug. 17, 1964, Ser. No. 389,945
21 Claims. (Cl. 192—61)

21. In hydraulic apparatus employing fluids and transmitting torque from a rotary driving member to a rotary driven member at selective levels of speed which are effected by control means varying the quantity of fluid being circulated in fluid passageways between driving and driven means, constant speed control means maintaining the selected speed being transmitted from said driving member to said driven member, comprising:

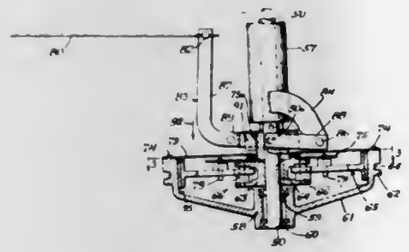
(a) pressure sensitive means sensitive to static pressures in said fluid passageways and giving a control action responsive to variation in pressure above and below levels selected in said pressure sensitive means by said control means, and

(b) means regulating the quantity of fluid circulated in said fluid passageways and connected to and adjusted responsive to control action from said pressure sensitive means, whereby a constant output speed effect is achieved because the level of static pressure in said passageways varies as quantities of fluid being circulated varies and because any change in torque



tending to change speed of relative rotation between said rotary driving and driven members results in changes in static pressure thereby acting on said pressure sensitive means and in turn adjusting said regulating means to increase or decrease fluid being circulated to restore the same to its level before imposition of change in torque.

3,275,115
CLUTCH
John R. Timberlake, Downers Grove, Ill., Harvey O. Halstensgard, La Habra, Calif., and Arlie J. Thayer, Brookfield, Ill., assignors to International Harvester Company, a corporation of Delaware
Continuation of abandoned application Ser. No. 153,830, Nov. 21, 1961. This application Jan. 27, 1965, Ser. No. 440,974
3 Claims. (Cl. 192—75)



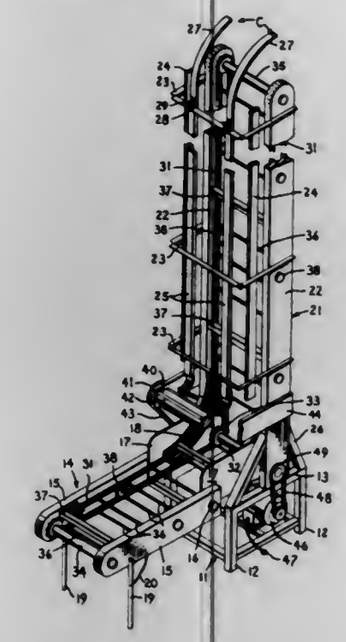
1. A self-locking and self-unlocking clutch for an intermittently operated machine such as a bale thrower wherein the clutch automatically locks in engaged position after actuation and automatically unlocks to terminate the machine operating cycle after a predetermined period of operation, comprising: a supporting structure for said clutch, said supporting structure including a rotary drive shaft forming a clutch driven member, a clutch driving member having a driving surface, said clutch driving member being mounted for rotation on said supporting structure, a hub fastened on said drive shaft for rotation therewith, a clutch arm having a driven surface at one end thereof and a counterweight at the other end thereof, means pivotally mounting said clutch arm on said hub intermediate said driven surface and said counterweight, said clutch arm being pivotal between a first position wherein said driving member driving surface and said clutch arm driven surface are disengaged and a second position wherein said driving member driving surface and said clutch arm driven surface are engaged to form a driving connection between said clutch driving member and said clutch driven member, said pivotal mounting means being located with respect to said driving member driving surface to lock said clutch arm in said second position when said driving member driving surface and said clutch arm driven surface are engaged to form said driving connection, said counterweight being located with respect to said pivotal mounting means to produce a centrifugal force for unlocking said clutch arm from said second position and moving it to said first position to completely break said driving connection between said clutch driving member and said clutch driven member to terminate an operating cycle of said intermittently operated machine after a predetermined period of operation, actuating means joined to said clutch arm for pivoting it from said first position to said second position, cycle initiating means on said supporting structure for applying a force to said actuating means, said cycle initiating means being rendered inactive after application of said force to enable said actuating means and said clutch arm to return to said first position when said counterweight produces said centrifugal force.

3,275,116
AIR POWERED TOOL WITH OVERLOAD CUTOFF
Paul W. Martin, Springfield, Ohio, assignor to The Aire-tool Manufacturing Company, Springfield, Ohio, a corporation of Ohio
Filed Oct. 12, 1964, Ser. No. 403,114
12 Claims. (Cl. 192—150)



1. A power tool comprising; a housing, a rotary air actuated motor within said housing, a passageway through which a supply of air under pressure is delivered to said motor, a valve for controlling the air through said passageway, means normally closing said valve to shut off said supply of air, a spindle adapted to be moved axially inwardly and outwardly of said housing under certain conditions of operation, rotation transmitting clutch means including an axially movable member between said motor and said spindle adapted to disengage at a predetermined torque resistance to rotation of said spindle, a valve opening member adapted to open said valve upon the axial inward movement of said spindle, and a trip member pivotally mounted on said spindle and operative to normally transmit the axial inward movement of said spindle to said valve opening member to open said valve, said axially movable member of said clutch means being adaptable to contact and release said trip member upon a predetermined resistance to rotation of said spindle permitting said means to close said valve upon the release of said trip member.

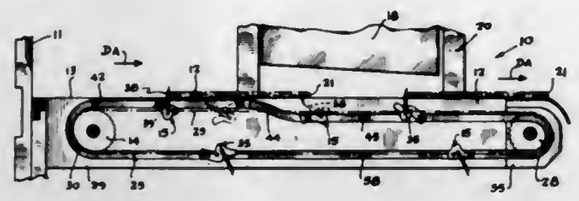
3,275,117
COMPACT VERTICAL BALE ELEVATOR
Terrence O. Weigel, R.F.D. 1, Sauquoit, N.Y.
Filed Oct. 19, 1964, Ser. No. 404,566
2 Claims. (Cl. 198—7)



1. A vertical bale elevator comprising a support base, a bale receiving bed depending horizontally from a side of said base; elevator frame means including opposing vertical beams carried by said base and guide rails spaced from said beams for guiding said bales; discharge guides comprising an arcuate member, pivotally connected at one end to the top of said frame means, and a loading torsion spring connected between said frame means and said guide, said torsion spring adapted to maintain said guide in normal bale discharge position and adapted to permit movement of said guide during passage of a bale thereby, and adapted to positively propel said bale forward in discharge relationship to the elevator frame means; driven elevator chain means comprising a pair of endless link chains disposed along said vertical beams and said bed operative to move a bale from said bed into said frame means and elevate the bale; bale support flights spaced along said chain means for moving said bales vertically up said chain; drive means interconnecting said chains for movement at the same speed; a bale feed roller including cleats operative to urge a bale upwardly into said frame means from said bed; and power means comprising a motor operatively connected to said drive means and said feed roller.

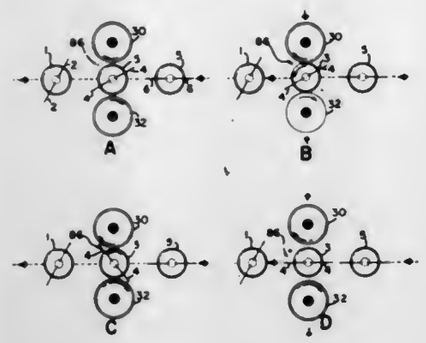
3,275,118
TRIMMING MACHINE
William B. McCain, Hinsdale, and Raymond I. Bulka, Oak Lawn, Ill., assignors to Chicago Machinery Laboratory, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 15, 1965, Ser. No. 448,347
10 Claims. (Cl. 198—19)

1. In a signature machine having an operating station to which signatures are delivered prior to being operated upon and from which said signatures are removed after being operated thereupon; a continuous cam means having a first cam portion extending from a first location to said operating station, a medial cam portion at said operating station and a terminal cam portion extending from said medial cam portion at said operating station to a second location; an endless band; a first and a second driving finger rotatably mounted on said endless band at spaced locations; a cam following portion on the first of said driving fingers engaging said first cam portion of said cam means and for holding said first driving finger in an operative position to engage a signature and to push the signature to said operating station, said medial cam portion of said continuous cam means adapted to force said first finger to rotate to an ineffective position and said terminal cam portion of said cam means holding said first



finger in said ineffective position, and a cam following portion on said second finger to hold said second finger in ineffective position along said first portion of said cam means, said medial portion of said cam means forcing said second finger to rotate to an operative position to engage a signature and to push said signature from said operating station, said terminal portion of said cam means holding said second driving finger in an operative position to move said signatures.

3,275,119
LEAD-IN WIRE ORIENTING APPARATUS
Stanley C. Shappell, West Boxford, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,335
2 Claims. (Cl. 198—33)



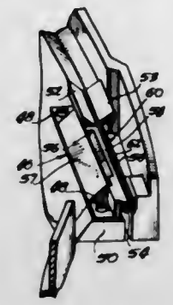
1. Apparatus for effecting orientation, in a pre-determined reference plane, of the lead-in wires extending from an end of a substantially tubular lamp envelope and lying in a random plane, said apparatus comprising:

means for rotating said tubular lamp envelope about its own longitudinal axis;

a normally closed electrical circuit including a pair of electrical contacts and a deflectable conductive finger, said finger normally bridging said electrical contacts and lying in the path traversed by said lead-in wires during rotation of said lamp envelope, said finger being deflectable out of engagement with one of said electrical contacts by engagement therewith of only one of said lead-in wires whereby said normally closed electrical circuit is opened;

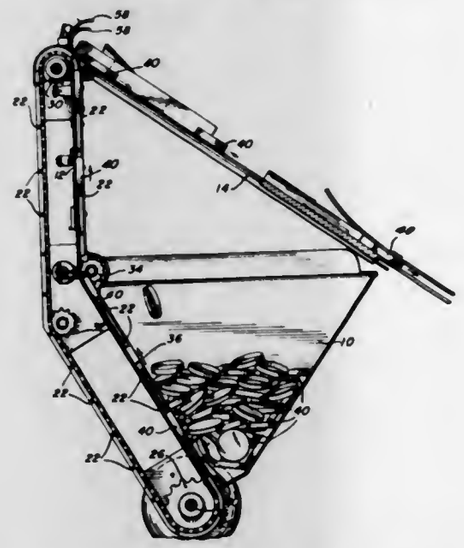
and means, controlled by the opening of said normally closed electrical circuit, for terminating the rotation of said lamp envelope whereby said lead-in wires are caused to assume a disposition in a pre-determined reference plane.

3,275,120
ALIGNMENT MEANS FOR VIBRATORY FEEDERS
George J. Gardner, Fairview, Pa., assignor to Automation Devices, Inc., Erie, Pa., a corporation of Pennsylvania
Filed May 25, 1964, Ser. No. 369,686
4 Claims. (Cl. 198—33)



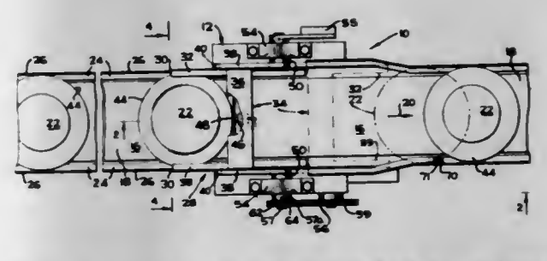
1. Alignment means for a vibratory feeding device for vertically aligning parts, each of which includes a head portion and a tail portion, said feeding device having a ledge and an inclined track, said alignment means comprising a first member having a sloped portion which constitutes an extension of said track, a portion which is step-shaped having an upper step thereof cut-away in a sloped fashion to provide a spill-way for parts and to provide a narrow rail, a pair of elongated apertures formed in said first member at each of its ends and fastening means extending through said elongated apertures for adjustably securing said first member to said ledge, and a second member having a sloped portion which constitutes an extension of said track and a portion which is cut away to provide a narrow rail which together with said narrow rail on said first member define a track, fastening means for adjustably securing said second member to said feeding device, said second member being positionable to provide an adjustable slot between said pair of narrow rails for receiving and vertically aligning said parts with the tail portion thereof extending downwardly through said slot and said head portion riding on said track.

3,275,121
LID ARRANGEMENT APPARATUS
Martin Mueller, Chicago, Ill., assignor to Seymour C. Graham
Filed Nov. 19, 1964, Ser. No. 412,510
7 Claims. (Cl. 198—33)



1. An apparatus for unscrambling and orienting container lids, each of said lids having a closed side and a skirt member depending therefrom to frame an open side which comprises: a hopper for containing a plurality of lids, one wall of the hopper being substantially flat and extending at an inclined angle with respect to the horizontal; a back member above said wall having a substantially vertical planar surface connected in continuous relationship with said wall; lid conveying means associated with said hopper for conveying the lids contained therewithin, said conveying means including a plurality of horizontally extending platforms in parallel with one another; driving means connected to said platforms for moving said platforms upwardly parallel to said one wall for receiving the lids and thereafter upwardly parallel to said back member for orienting the lids, said moving platforms extending from said back member at a distance which is farther from said back member than the center of gravity of said lids when said lids have their closed sides facing said back member and nearer to said back member than the center of gravity of said lids when said lids have their open sides facing said back member, whereby improperly oriented lids will fall from said platforms; and means for distributing the oriented lids from said conveying means to a delivery station.

3,275,122
PLATE INVERTING MECHANISM
Heinz F. Carlson, Santa Clara, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,234
10 Claims. (Cl. 198—33)



1. Plate inverting apparatus comprising a continuously driven conveyor arranged to convey from upstream to downstream positions a lane of plates lying in random upright and inverted positions, a plate gripper mounted over said conveyor, means mounting said plate gripper for movement between a receiving position in which said conveyor moves the leading upright one of said plates into supported relation with said plate gripper, an intermediate position wherein the supported plate is out of engagement with said conveyor, and a discharge position in which the initially upright plate is inverted and its downstream rim portion lies on said conveyor, means carried by said plate gripper for slidably receiving the laterally opposed rim portions of said leading plate for movement of the plate with said gripper, power means for effecting movement of said gripper from said receiving position to said discharge position, and means for sensing the presence of a plate supportingly engaged by said plate gripper in said receiving position and operative to energize said power means for movement of said gripper to said discharge position.

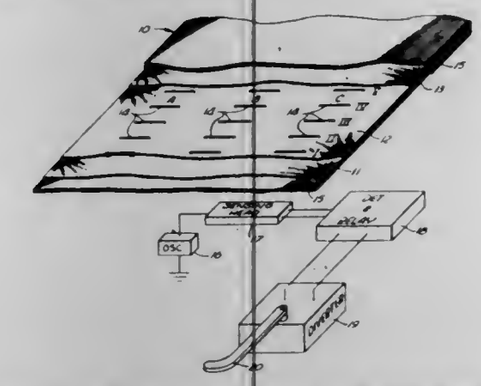
3,275,123
CONVEYOR BELT WITH CODE ELEMENTS
David C. Prosser, Minnetonka Village, and Jacob A. Ronning, Jr., Wayzata, Minn., assignors, by mesne assignments, to Cutler-Hammer, Inc., a corporation of Delaware
Filed Feb. 27, 1963, Ser. No. 261,323
2 Claims. (Cl. 198—38)

1. An endless conveyor belt for extending over a conveyor frame and driving mechanism and for use with magnetic coding and detecting apparatus comprising:

(a) a plurality of flat plies of reinforcing non-mag-

netic woven fabric forming an endless body of tension resisting material having flexibility and adapted for cooperatively engaging the conveyor frame and driving mechanism;

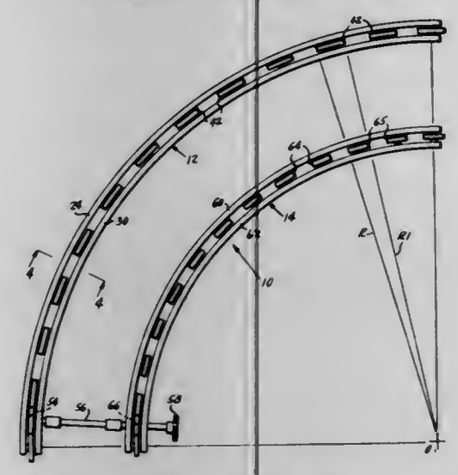
(b) a plurality of separated magnetic code retaining elements spaced apart so that each is capable of being magnetized with a portion of a code and retaining a magnetic field for code sensing purposes until demagnetized, said elements fixedly secured to at least one of said plies of fabric and arranged in at least one non-continuous row extending longi-



tudinally of said belt, the longest dimension of said elements being substantially less than the width of the conveyor belt, said code retaining elements being of elongate shape and disposed with the longer dimension of said elongate shape extending transverse to the direction of the row containing said elements;

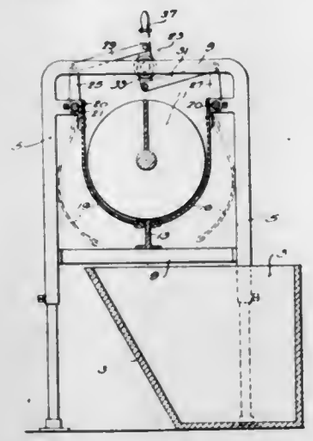
(c) and an elastic non-magnetic material completely encircling and impregnating said plurality of plies of fabric to form a laminated belt with said code retaining elements completely embedded therein.

3,275,124
BELT DRIVEN LIVE ROLLER CONVEYOR
Harry L. Lutes, Centerville, and Robert J. Smith, Dayton, Ohio, assignors to Kornylak Corporation, Hamilton, Ohio, a corporation of New Jersey
Filed Oct. 22, 1964, Ser. No. 405,702
8 Claims. (Cl. 198—127)



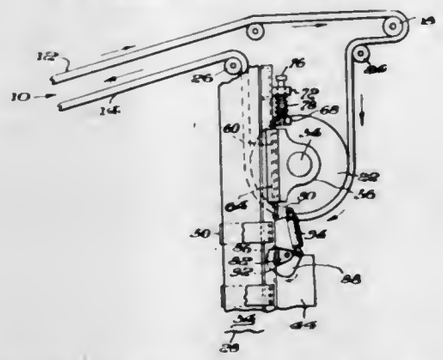
1. In a power driven roller conveyor, two parallel rollerways, each formed on the arc of a circle, and wherein each rollerway comprises a pair of spaced apart channels having their bases facing one another, rollers longitudinally spaced mounted between the channels and projecting slightly above the channels, idler rollers located between the channels below and intermediate the first mentioned rollers, and wherein each roller is substantially a section of a cone parallel to its base, and the vertex of which is the center of curvature of the rollerway belt means for driving the rollers, means urging the idler rollers toward the other rollers and the belt means, and means for moving the belt means.

3,275,125
AUGER FEEDER
George D. Prentice, Milwaukee, Wis., assignor to A. F. Klinzing Co., Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 21, 1964, Ser. No. 419,879
4 Claims. (Cl. 198—205)



1. An elongated auger type feeder comprising:
a frame;
a centrally located rail extending the length of the frame;
an auger screw rotatably mounted in said frame and resting on said rail;
a pair of curved doors pivotally mounted on said frame on opposite sides of the auger screw to enclose the lower portion of the auger screw and to abut said rail when closed; and
means to pivotally open said doors to disperse feed along the length of the feeder.

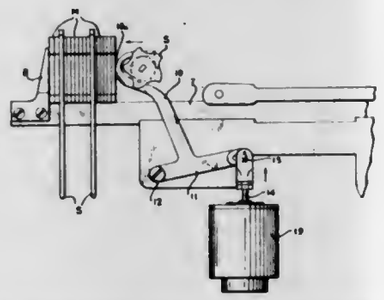
3,275,126
SAFETY DEVICE FOR SUSPENDED CONVEYOR TAKE-UP MECHANISMS
Harry F. Hartzell, Jr., Allison Park, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Feb. 17, 1965, Ser. No. 433,306
5 Claims. (Cl. 198—208)



1. A take-up mechanism for an endless flexible conveyor belt comprising
a vertically movable counterweight frame having a pair of speed side members,
a fixed guide member operable to guide said counterweight frame in a vertical direction,
an idler roller having shaft end portions positioned in overlying relation with said frame side members,
support members for said shaft end portions, said support members connected to said frame side members and movable linearly relative thereto,

resilient means urging said support members in a first direction relative to said frame side members, said support members arranged to oppose said urging means by the tension of an endless flexible conveyor belt reeved around said idler roller, and
means to engage said counterweight frame to said fixed guide member upon movement of said support members in a downward direction relative to said support frame by said resilient means urging said support members in a first direction upon release of tension in said endless flexible conveyor belt reeved around said indler roller.

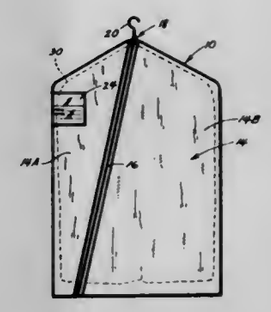
3,275,127
ASSEMBLING APPARATUS FOR LINECASTING MACHINES
Karl Debus, Bad Homburg vor der Hohe, Germany, assignor to Linotype G.m.b.H., Frankfurt am Main, Germany
Filed Feb. 16, 1965, Ser. No. 433,025
20 Claims. (Cl. 199—21)



1. In a linecasting machine, in combination, assembling apparatus comprising an assembler slide having an abutment mounted for moving in an assembling direction; transporting means disposed so that a portion of said assembler slide is located between said abutment and said transporting means, said transporting means being driven to successively assemble matrices on said portion of said slide in a row extending in said assembling direction and to stepwise move said abutment in said assembling direction distances corresponding to the thickness of regular matrices by the pressure exerted by said transporting means through the assembled matrices on said abutment; and auxiliary spacing means operable for moving said abutment in said assembling direction a greater distance corresponding to the thickness of a comparatively large matrix so that said abutment is moved away from said transporting means for providing additional space for large matrices.

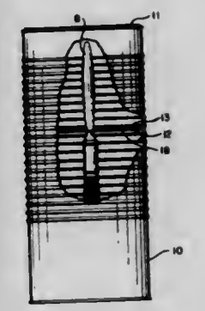
3,275,128
GARMENT COVER
Charles W. Neely, Corydon, Iowa, assignor to Neely Manufacturing Co., Inc., Corydon, Iowa, a corporation of Iowa
Filed June 3, 1965, Ser. No. 461,110
3 Claims. (Cl. 206—7)

1. In a garment cover,
an envelope container having forward and rearward panels forming a compartment therebetween suitable for housing a garment,
said forward and rearward panels being comprised of an opaque material and each having inside and outside surfaces,
an access opening in said envelope container suitable for inserting or removing a garment into or out of, respectively, said compartment,
an opening in at least one of said panels,
a transparent closure means in said compartment secured to the inside surface of said one panel and closing said opening, said closure means having inside and outside surfaces,
and a pocket means superimposed on said closure means at the inside surface thereof, said pocket means cooperating with said transparent closure means to form a pocket therebetween,
said pocket having an access opening positioned inside said compartment,
said pocket means being smaller in area than said closure means,



said pocket means being positioned on said closure means in the area of said opening in said one panel to leave a portion of said closure means uncovered,
said uncovered area of said closure means extending only from the top edge of said pocket means to the top edge of said opening in said one panel,
the access opening into said pocket being between the top edge of said pocket means and the inside surface of said closure means.

3,275,129
PAINT BRUSH KEEPER
Donald H. Snyder, Blissfield, Mich.
Filed Apr. 8, 1964, Ser. No. 358,274
3 Claims. (Cl. 206—15.1)

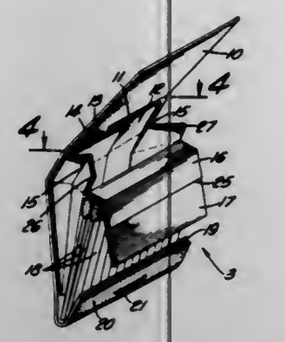


1. A paint brush keeper comprising a can closed at the bottom and open at the top, means for closing the top, a series of vertically spaced circumferential grooves disposed interiorly of the can, a resilient wire bracket of generally semi-circular shape adapted to be snapped into a selected groove, a rod for suspending paint brushes thereon, and means spaced inwardly from each end of said wire for supporting the end portions of said brush suspending rod.

3,275,130
MATCHBOOK WITH ASHTRAY COMPARTMENT
Ernest G. Van Leeuwen, 7120 Melrose Ave., Los Angeles, Calif.
Filed Sept. 3, 1964, Ser. No. 394,213
2 Claims. (Cl. 206—38)

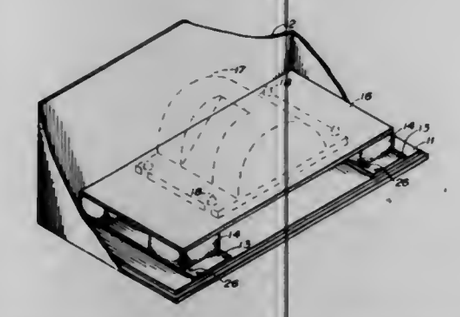
1. A matchbook of the type wherein a bank of paper matches is contained in a cover which extends upwardly to form a front tab bearing a striking strip, across the

bottom, up the back and downwardly in front to form an opening or closing tab the improvement comprising: a paper member attached to said bank of matches adjacent the bottom thereof and extending up over the top of said matches and downwardly in front thereof; said



paper layer also extending across the sides of the book and having overlapping portions affixed to the back of said book; the sides of said member being foldable inwardly and extending upwardly beyond the top of said matches; and a metalized sheet attached to said member to form a closed metal pocket when said book is closed.

3,275,131
SHOCK ABSORBING SYSTEM FOR CONTAINERS
Arthur W. Erickson, 2510 De Koven Ave., Belmont, Calif.
Filed Apr. 2, 1965, Ser. No. 445,071
6 Claims. (Cl. 206—46)



6. A package suitable for objects which are to be protected from jars and shocks, comprising a box, a shock absorbing unit resting on the bottom of said box, said shock absorbing unit comprising a lower base plate, resilient foam blocks secured to the upper surface of said base plate, an upper plate secured to and overlying said resilient foam blocks, and a plurality of insertable resilient foam modules which are insertable between said upper and lower base plates to increase the load carrying and shock absorbing capacity of said unit.

3,275,132
DISPENSER FOR MATERIAL IN SLENDER STICK FORM
George W. Hultgren, Bridgeport, Conn., assignor to United Tool & Plastics, Inc., Bridgeport, Conn., a corporation of Connecticut
Filed Feb. 17, 1964, Ser. No. 345,370
2 Claims. (Cl. 206—56)

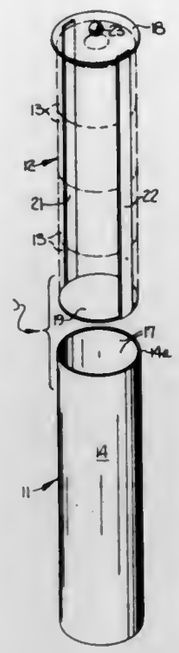
1. A dispensing device for an elongate stick-like article comprising a hollow body of plastic material forming an article-receiving tube open at one end and having a transverse wall at the other end having a central aperture therein provided with at least one flat side wall, said body adjacent said other end being cylindrical, an operator of plastic material having a tubular end and a bore of reduced diameter extending inwardly therefrom, said tubular end telescopically receiving said cylindrical portion of the body to be mounted thereon for relative rotation, cooperating projection and recess means on said telescoped portions of the body and operator to releasably hold the body and operator against longitudinal separation, said resilient plastic material of the cooperating body and operator permitting the projection to snap into said recess incident to the telescoping thereof, said body having a finger grip configuration on the outer surface thereof adjacent the end of the operator mounted thereon, an article carrier having an article mounted thereon slidably mounted in the tube and having a screw rigidly connected thereto, said screw projecting through the central aperture in the body and into the bore in said operator and



having at least one flat side to cooperate with the flat side wall of the aperture in the transverse wall to prevent rotation of the screw and carrier in the body, and a separate feed nut threaded on the projecting portion of the screw and normally located adjacent the transverse wall, said bore in said operator adjacent said tubular portion being enlarged and forming an open-ended socket receiving said nut having an end portion for engaging the nut when the operator is assembled on the body, said wall and end of the socket holding the nut in said normal position in said socket, said socket and nut having cooperating engaging side walls provided with means for preventing relative rotation between the operator and nut whereby rotation of said operator on said body, while the body is held by the finger grip configuration, causes the nut to cooperate with the screw and advance or retract the article carrier and cause the article mounted therein to be projected from or retracted within said body for use or storage.

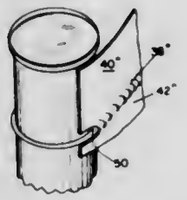
3,275,133
PAPER ROLL DISPENSER
Ruby A. Wood, 1786 Opal Ave., Charleston, S.C.
Filed June 15, 1965, Ser. No. 464,158
3 Claims. (Cl. 206—56)

2. A paper roll dispenser comprising, in combination, a tubular housing having an upper edge, an insert for supporting a plurality of paper rolls receivable within said housing in telescoping relationship therewith, means for supporting said insert in said housing, said insert comprising a top and bottom member, a pair of rigid side strips interconnecting said top and bottom members and arranged in a diametrically opposed, spaced apart relationship corresponding to the diameter of said rolls, said side strips having an arcuate cross sectional shape corresponding to the outer surface of said rolls, said bottom member being arranged to support a plurality of rolls in vertically stacked relationship and in yieldable retaining engagement between said side strips to permit said rolls to be individually inserted and removed in



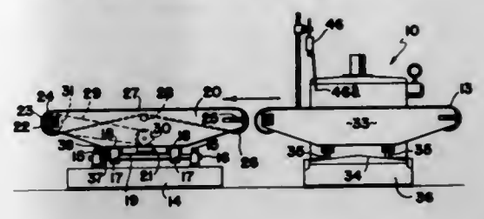
a snap fitting operation when said insert is withdrawn from said housing.

3,275,134
LABEL PACK
Kenneth D. Bixler, Huntington, N.Y., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed July 17, 1964, Ser. No. 383,403
8 Claims. (Cl. 206—65)



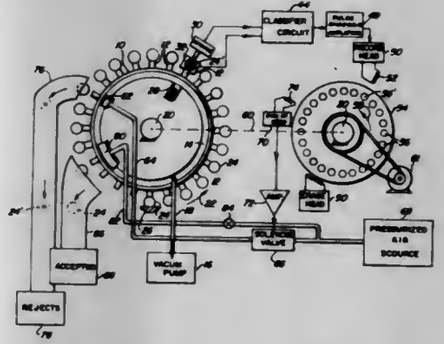
1. A package comprising:
a first cylindrical container;
a second cylindrical container positioned end-to-end coaxially with said first container and having generally the same peripheral length as said first container, said second container having a chime at the end thereof adjacent said first container; and
a single common label adhesively affixed to said containers to unite said containers in said end-to-end coaxial relation, said label having
(a) adhesive on two opposite edges thereof,
(b) a weakened portion of the plane of contact between said containers and intersecting said label portions having adhesive thereon, and
(c) a clearance cut along one of said adhesive coated edges at the end of said weakened portion, said chime extending through said clearance cut so that said chime extends beyond a plane tangent to said containers through said label portion having adhesive thereon.

3,275,135
CHECKWEIGHING AND ASSORTING SYSTEM HAVING A TILTABLE CONVEYOR BELT
Leo J. Niese, Toledo, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Dec. 23, 1963, Ser. No. 332,515
16 Claims. (Cl. 209—74)



16. A checkweighing system comprising, in combination, a checkweigher including conveyor means, and a segregation device including an endless conveyor belt, the conveyor means and the conveyor belt being arranged to move articles to be checkweighed and segregated in main stream flow from a loading end of the conveyor means to a discharge end of the conveyor belt, and means for tilting the conveyor belt to one side of said main stream flow.

3,275,136
APPARATUS FOR DETECTING SEEDS IN FRUIT
Kenneth M. Allen, Newberg, and Lyle H. Van Dyke, Jr., and Rex L. Breunsbach, Portland, Oreg., assignors to Allen Fruit Co., Inc., Newberg, Oreg., a corporation of Oregon
Filed Oct. 9, 1964, Ser. No. 402,818
10 Claims. (Cl. 209—74)

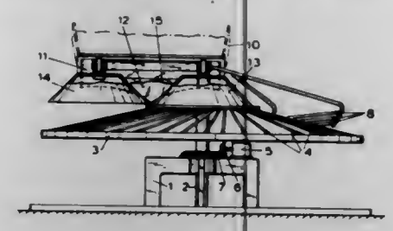


1. Apparatus for detecting seeds in fruit comprising:
a source of light;
means for positioning the fruits adjacent said source to cause the light emitted therefrom to be transmitted through one fruit;
detector means positioned in two different light paths in common with said one fruit to receive the light transmitted from said one fruit in two different directions and to produce an electrical signal whose amplitude depends upon the amount of light received by said detector means which decreases in one of said paths when the fruit contains a seed; and
classifier means connected to said detector means, for producing an output signal when the change in amplitude of the detector output signal is sufficiently great to indicate the presence of a seed in said one fruit.

3,275,137
FRUIT SIZING AND SORTING MACHINE
Jan M. van den Munckhof, 65 Meterikseweg, Horst, Limburg, Netherlands
Filed Feb. 3, 1964, Ser. No. 341,893
Claims priority, application Italy, Feb. 13, 1963, 3,167/63
9 Claims. (Cl. 209—99)

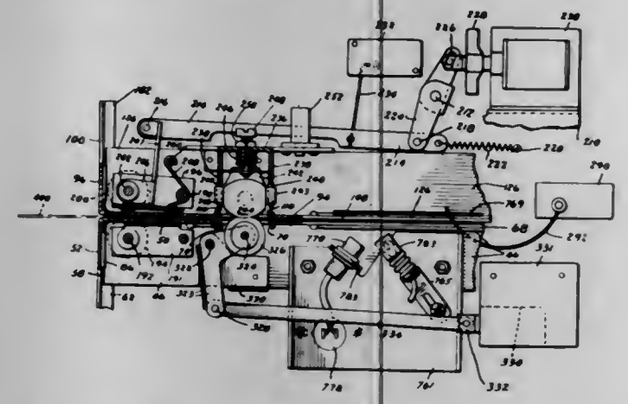
1. A machine for sorting to size fruit, or the like, comprising a substantially vertical hub, means for rotating the

hub about its axis, a plurality of substantially equiangularly spaced, outwardly directed spokes fixed to the hub and forming a fruit supporting surface, and a stationary guide member above and spaced from said fruit supporting surface and extending substantially in a spiral from near



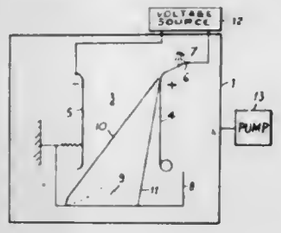
said hub toward the outer edge of said fruit supporting surface, each pair of said spokes cooperating with the guide member to form a three sided sorting slot for the fruit which increases in size as the fruit supporting surface turns with respect to the stationary guide member.

3,275,138
METHOD AND APPARATUS FOR DETECTING CURRENCY
Bernard S. Cahill, Mount Prospect, Ill., assignor to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Original application Jan. 24, 1961, Ser. No. 84,643, now Patent No. 3,180,491, dated Apr. 27, 1965. Divided and this application Aug. 2, 1963, Ser. No. 299,576
8 Claims. (Cl. 209—111.7)



6. Apparatus for identifying and accepting authentic currency comprising bill-gripping members that can grip a bill, a light-sensitive element, said bill-gripping members and said light-sensitive element being movable relative to each other to cause relative movement between two differently-colored portions of a bill and said light-sensitive element, said light-sensitive element receiving light from both of said differently-colored portions of said bill during at least part of the relative movement of said light-sensitive element and said bill-gripping members, a circuit responsive to changes in the amount of light received by said light-sensitive element, said circuit providing an accept signal only if the bill is authentic and of predetermined denomination and causes light from both of said differently-colored portions thereof to reach said light-sensitive element, said circuit not providing an accept signal if said bill is not authentic or is not of predetermined denomination or does not cause light from both of said differently-colored portions thereof to reach said light-sensitive element, and a member that has a portion thereof which directs a finite, predetermined, minimum amount of light onto said light-sensitive element whenever a bill is not in position to cause light to fall onto said light-sensitive element, said portion of said member being much smaller than said bill and at least one of said differently-colored portions of said bill being spaced inwardly of the edges of said bill so said bill completely overlies said portion of said member, and thus substantially keeps said portion of said member from directing light onto said light-sensitive element, for a period of time commencing prior to the instant the innermost of said differently-colored portions of said bill starts directing light onto said light-sensitive element and concludes after both of said differently-colored portions of said bill have directed light onto said light-sensitive element, said light-directing member having a light-directing value which is close to the light-directing value of one of said differently-colored portions of said bill, whereby the values of light received by said light-sensitive element prior to, during, and after said bill causes light to fall onto said light-sensitive element are within predetermined limits, said light-directing value of said light-directing member being sufficiently different from the average of the light-directing values, of those portions of said bill which will direct light onto said light-sensitive element, to cause said light-sensitive element to experience a change in the intensity of the light thereon whenever a bill causes light to reach said light-sensitive element.

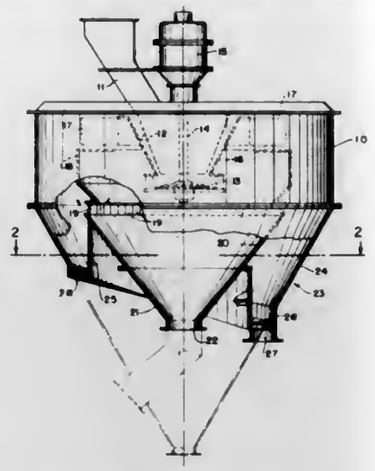
3,275,139
METHOD AND APPARATUS FOR ELECTROSTATIC SEPARATION OF FINE POWDERS
Charles Y. J. Bouteille, 156 Avenue de Chabeuil, Valence, Drome, France
Filed May 15, 1962, Ser. No. 194,850
Claims priority, application France, May 16, 1961, 861,950
6 Claims. (Cl. 209—129)



1. Apparatus for the electrostatic sorting of fine electrically conducting particles of the order of one micron and smaller in size, comprising an enclosure, means for evacuating said enclosure, a first electrode in said enclosure and being extended at its upper end by a ramp positioned to receive the particles to be sorted, a second electrode in said enclosure spaced from said first electrode, means for applying a voltage between said electrodes such that said first electrode is positive with respect to said second electrode, and means for collecting the sorted particles.

3,275,140
AIR SEPARATOR WITH FLUIDIZED DISCHARGE
Frits Rasmussen, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware
Filed Apr. 11, 1963, Ser. No. 272,288
5 Claims. (Cl. 209—139)

1. In an air separator of the closed circuit type for separating a finely divided material into coarse and fine fractions including a substantially closed casing, means in said casing defining concentric inner and outer chambers spaced from the top of said casing, said inner chamber for collecting the coarse fraction and said outer chamber for collecting the fine fraction, means for maintaining an air current flowing upwardly in the inner chamber and flowing downwardly in the outer chamber, means for introducing finely divided material into the inner chamber for entrainment of the fine fractions in the air stream for transfer to the outer chamber and collection of the coarse fractions in the inner chamber, an inner chamber outlet in said casing and outer chamber outlet in said casing, the improvement in combination therewith comprising means for maintaining the distance between the top of the casing and the chamber outlets



at a minimum, said means comprising an air pervious closure means for the bottom of one of the chambers inclined toward said one chamber outlet for diffusing air into the material above the closure to fluidize the material and cause it to flow over the closure to the outlet.

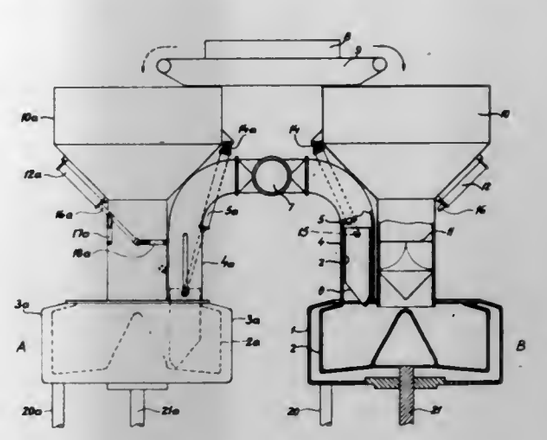
3,275,141
BENEFICIATION OF LANGBEINITE-CONTAINING MATERIALS
Albert Adams and Sam E. Tschappler, Carlsbad, N. Mex., and Hans U. Ziemer, Essen (Ruhr), Germany, assignors to International Minerals & Chemicals Corporation, a corporation of New York
Filed Jan. 31, 1964, Ser. No. 341,518
18 Claims. (Cl. 209—166)



1. A process for the benefication of a material containing discrete particles of minerals of the group consisting of langbeinite, leonite and schoenite, and discrete particles of gangue which comprises subjecting said mineral-containing material to froth flotation in the presence of an anionic flotation reagent in a brine containing potassium, sodium, magnesium, chloride and sulfate ions, said brine containing magnesium ions in the amount of about 0.5 to about 1.8% by weight, sulfate ions in the amount of 0.5 to about 5.0% by weight, and potassium ions (calculated as KCl) in the amount of about 1.8 to about 5.0% by weight, said brine being substantially saturated with respect to sodium chloride.

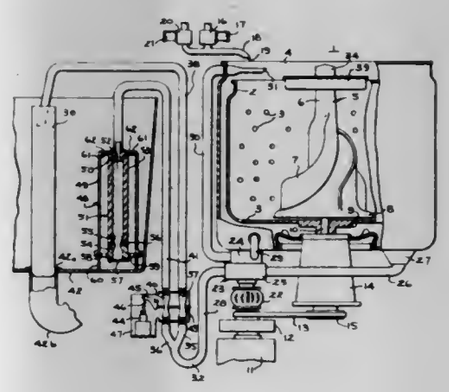
3,275,142
METHOD AND APPARATUS FOR EMPTYING AND FILLING CENTRIFUGES
Sven G. Ekegren, Uttran, and Per V. H. Bladh, Tullinge, Sweden, assignors to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden
Filed Aug. 15, 1963, Ser. No. 302,433
Claims priority, application Sweden, Aug. 27, 1962, 9,262/62
8 Claims. (Cl. 210—78)

1. In the centrifugation of a compressible fibrous material with the use of a centrifuge rotor and an exhaust pipe, the method which comprises filling the rotor with said material while accelerating the rotor to an operating speed for centrifuging said material, forming an annular body of centrifuged material in the outer part of the rotor, introducing said pipe into the rotor and in proximity to said



body while reducing the rotor speed, inducing a suction in said pipe whereby material is sucked from the rotating body by the pipe and discharged from the rotor, withdrawing said pipe from the rotor, and refilling the rotor with a new batch of said material while accelerating the rotor to said operating speed.

3,275,143
FILTER WITH CLEANING MEANS
John Bochan, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 24, 1963, Ser. No. 318,571
7 Claims. (Cl. 210—120)



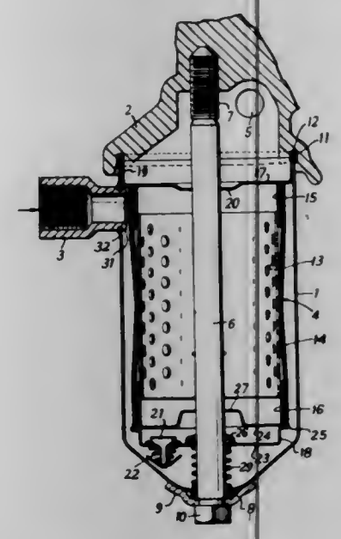
1. For use with a liquid re-use system; a filter assembly comprising:

(a) a hollow filter element forming a passage therethrough and having a porous wall effective to filter liquid passed therethrough from the outside to the inside of said filter element,

(b) said passage having a restricted portion adjacent one end thereof to cause a portion of the liquid flowing through said passage toward said one end to pass through said porous wall from the inside to the outside of said filter element to clean said filter element,

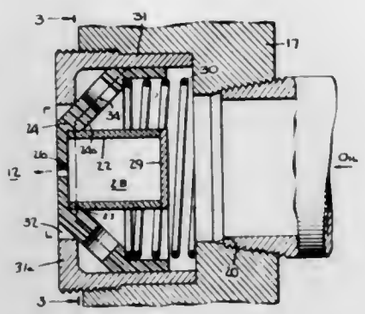
(c) and check valve means arranged to prevent flow in through said one end of said passage and to permit flow out through said one end, thereby requiring liquid passing into said filter element to pass through said porous wall.

3,275,144
FLUID FILTERS
Peter William Stripp, Plymouth, Devon, and Edwin Colin Spry, Plympton, Devon, England, assignors to Tecalemit (Engineering) Limited, Plymouth, Devon, England
Filed July 18, 1963, Ser. No. 296,069
Claims priority, application Great Britain, July 19, 1962, 27,917/62
1 Claim. (Cl. 210—130)



A fluid filter comprising: a body portion formed with a passage for the fluid being filtered; a cover having an open end which engages and forms a seal with said body portion; coupling means at said cover for connection to fluid being filtered and including an inlet boss fitted into a hole in said cover and a ring locking said boss to said cover, said coupling means being formed at least in part of a resilient material to allow limited angular movement of the inlet boss relative to said cover; an inner pressure member having a central opening; an outer pressure member; an annular filter element engaged between said pressure members; pressure means between said outer pressure member and said cover biasing said pressure members against said filter element so as to form fluid seals within the filter between said pressure means and said filter element such that fluid flowing between said coupling means and said passage passes through and is filtered by said filter element; a threaded stud passing through said cover, said pressure members, and said filter element, said stud being spaced apart from said filter element and said inner pressure member to define a passageway therebetween, said outer pressure member being formed on a top part and cup-shaped bottom part, one of said parts having edge portions bent over the edge of the other part to secure said parts together at their edges to define a hollow pressure member, said stud passing loosely through a central opening in said top part to define a passageway therebetween, said stud further passing through a central aperture in said bottom part, a sealing ring of elastomeric material between said bottom part and said stud, said pressure means loading said sealing ring to bias said sealing ring into sealing engagement with both said bottom part and said stud, said bottom part being provided with an aperture spaced from the first mentioned aperture to define a valve seat; and a normally closed pressure relief valve of the mushroom type mounted on said bottom part including a valve member adapted to seat against said valve seat, a stem extending through said second mentioned aperture out of said hollow pressure member, a retaining member carried by said stem at its end opposite said valve member and a helical coil spring interposed between said retaining member and said bottom part biasing said valve closed and adapted to open when the pressure difference between the fluid entering and the fluid leaving said filter exceeds a predetermined value to allow fluid to bypass the said filter element.

3,275,145
FILTER FOR CHECK VALVE
Alphonse A. Jacobellis, Huntington Station, N.Y., assignor to Security National Bank of Long Island, Huntington, N.Y., a national banking association
Filed Dec. 17, 1962, Ser. No. 245,210
2 Claims. (Cl. 210—136)



1. A filter assembly comprising:
(a) a housing having a front wall, a front opening in said front wall and a rear opening,
(b) a valve slidably mounted in said housing, said valve having (1) a front wall with an orifice therethrough, (2) an annular angled wall extending rearwardly and outwardly from said front wall of said valve, and (3) a side wall in sliding sealing relationship with said housing; said valve being in normal sealing relationship with said front opening of said housing, said angled wall of said valve including openings therethrough rearward of the sealing point between said valve and said front opening of said housing, said orifice in said front wall of said valve being in communication with the environment in front of said front opening of said housing when said valve is in said normal sealing relationship with said front opening of said housing,
(c) bias means for holding said valve in normal sealing relationship with said front opening of said housing, whereby (1) when said valve is in said normal sealing relationship with said front opening of said housing, said orifice is the only passage from the environment in front of said front opening of said housing through said valve; and (2) when said valve is opened, said orifice and said openings in said angled wall are the only passageways from the environment in front of said front opening of said housing through said valve, and
(d) an enclosure mounted on the rearwardly facing side of said front wall of said valve so that said orifice provides communication between the interior of said enclosure and the environment forward of said front wall of said valve, said enclosure having an annular wall portion concentric with said annular angled wall of said valve,
(e) a portion of said annular wall portion of said enclosure constituting a filter element, said filter element and said orifice constituting the sole means for fluid to flow into or out of said enclosure,
whereby the forward flow of fluid (from the rear to the front of said housing) will pass through said filter element into said enclosure and out said orifice into the environment in front of said front wall of said housing, and whereby the rearward flow of fluid will overcome said bias means to open said valve so that fluid will flow through said openings in said angled wall of said filter to impinge against the outer walls of said filter element thereby washing away whatever particles said filter element has separated from the forwardly flowing fluid.

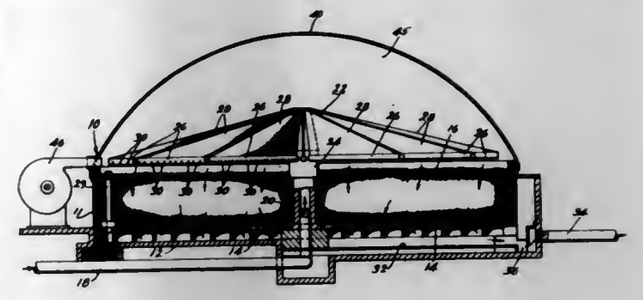
3,275,146
LAUNDRY MACHINE WITH IMPROVED BALANCING MECHANISM
Glen R. Severance, Benton Harbor, and Keith D. Salisbury, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed May 1, 1964, Ser. No. 364,114
17 Claims. (Cl. 210—144)



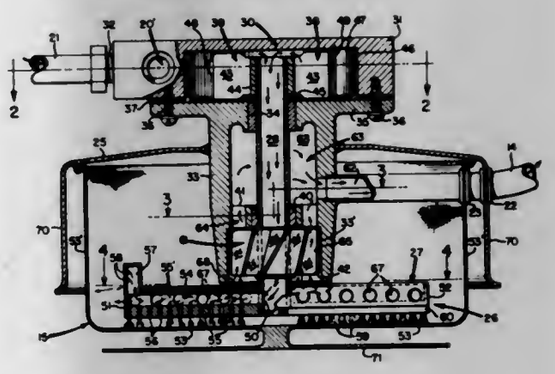
1. Laundry apparatus including a support, a rotary basket drum and means mounting the drum on the support providing for limited oscillating deflections of the drum relative to the support toward opposite sides of a center line transversely through the axis of rotation of the drum in response to acentric loads in the rotating drum,
means for counterbalancing the acentric loads mounted to oscillate with the drum,
and means for automatically controlling the balancing means comprising a pinion mounted to oscillate about its own axis and also to oscillate with the acentric loading oscillations of the drum and a rack member mounted on a stationary portion of said support and meshing with the pinion to effect oscillations of the pinion about its own axis during oscillation movements of the pinion with the drum.

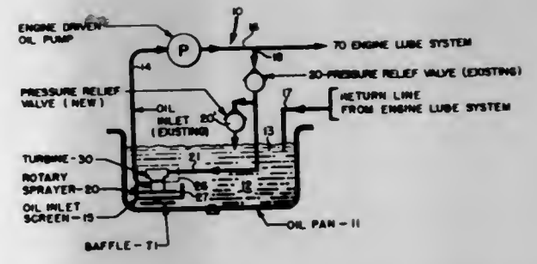
3,275,147
FILTERS
Louis Charles Gilde, Pennsauken, N.J., assignor to Campbell Soup Company, Camden, N.J., a corporation of New Jersey
Filed July 14, 1964, Ser. No. 382,525
1 Claim. (Cl. 210—150)

A filter for waste fluid material comprising a bed of filter material, means for distributing fluid waste material over the top surface of said bed of filter material, a flexible cover overlying and completely closing the top surface of said bed of filter material, a blower communicating with the space between the cover and the top surface of the filter bed for maintaining air above atmospheric pressure in the space between said cover and the bed of filter material, and a trap for separately discharging filtered waste fluid and air from below the filter bed.



3,275,148
ANTI CLOG DEVICE FOR LUBRICATING SYSTEM
Lawrence Vicino, 415 5th St., Gilroy, Calif.
Filed Oct. 7, 1963, Ser. No. 314,323
5 Claims. (Cl. 210—168)



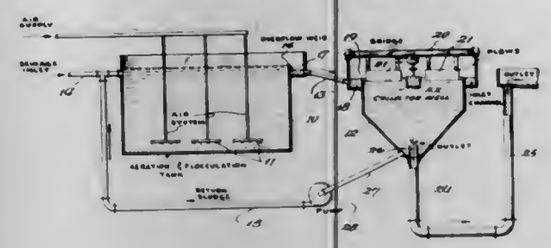


1. In combination with the oil pressure system of an internal combustion engine having an oil inlet screen submerged in its crank case oil sump and confining the open end of an oil inlet conduit going to the oil pump of such oil pressure system for drawing oil under vacuum from said oil inlet screen, a turbine housing confined within said oil inlet screen having an open inlet end for receiving oil therefrom and a discharge end communicating with the open end of said oil inlet conduit, a turbine wheel in said turbine housing between its open inlet end and its discharge end, a shaft secured to said turbine wheel and extending into said oil inlet screen, a sweep arm secured to said shaft within said oil inlet screen for turning movement therein and having a pair of diametrically opposed hollow blades each having oil inlet apertures at their leading edges for scooping oil into said hollow blades, said hollow blades having an opening therein adjacent the open inlet end of said turbine housing for discharging the oil scooped into said blades into the open inlet end of said turbine housing and past said turbine wheel and toward the discharge end of said turbine housing and into said oil inlet conduit.

3,275,149
APPARATUS FOR SEWAGE PRETREATMENT FOR OUTFALL DISPOSAL

Harvey F. Ludwig and Russell G. Ludwig, Arcadia, Calif., assignors to FMC Corporation, a corporation of Delaware

Filed Dec. 5, 1963, Ser. No. 328,258
3 Claims. (Cl. 210—195)

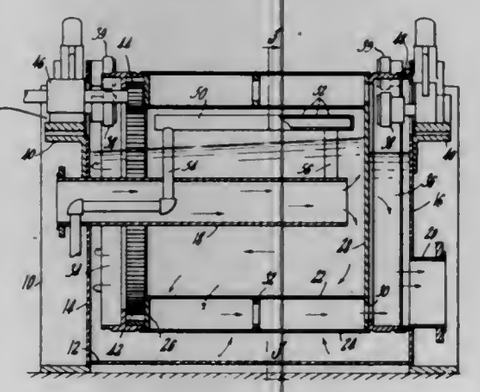


1. Apparatus for treatment of sewage for outfall disposal which comprises a holder for a mass of sewage matter, air dispersing means positioned below the normal liquid level in said holder, a conduit for introducing influent sewage into said holder, a skimming tank of inverted truncated cone configuration spaced exteriorly of said holder, a peripheral influent channel at the top of said conical skimming tank, conduit means interconnecting said holder and said peripheral channel for movement of aerated sewage from said holder to said peripheral channel, means for flowing aerated sewage from said channel into said skimming tank, means for removing floatables from the surface of the aerated sewage in said skimming tank, conduit means communicating with the small end of said conical skimming tank for withdrawing and disposing of a suspension of solids therefrom and means for returning a portion of the suspension of solids from said skimming tank to a zone of mixing with influent sewage being introduced in said holder.

3,275,150
INTERNALLY FED DRUM FILTER

Ross A. Tait, Dorval, Quebec, Canada, assignor to Sherbrooke Machineries Limited, Montreal, Quebec, Canada, a corporation of Canada

Continuation of application Ser. No. 256,173, Feb. 4, 1963. This application Oct. 12, 1965, Ser. No. 500,478
11 Claims. (Cl. 210—327)



1. In a decker of the type having a vat for containing pulp stock,

a drum rotatable within said vat adapted to collect filtered stock thereon as it rotates, and

means for rotating said drum within said vat,

said drum comprising

an outer cylindrical filter screen,

an inner cylindrical filter screen within and concentric with said outer filter screen, and

means supporting said inner and outer filter screens in spaced relation to provide an annular open space therebetween,

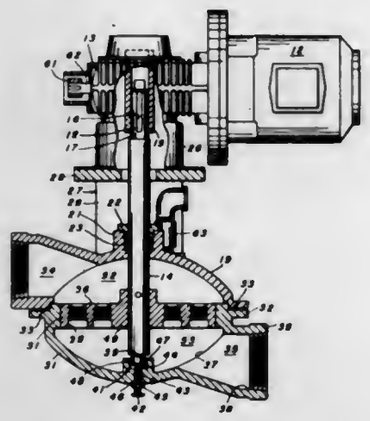
first fluid carrying means communicating with a source of pulp stock external to said vat and extending within said inner filter screen for supplying pulp stock to the inner surface thereof such that said pulp stock is partially thickened by said inner filter screen as said drum rotates, and

second fluid carrying means communicating the inner surface of said inner filter screen with the outer surface of said outer filter screen for conveying partially thickened pulp stock from the former and against the latter as said drum rotates such that filtered stock is collected upon the outer surface of said outer filter screen.

3,275,151
DISC-TYPE STRAINER

Hugh B. Carr, Carnegie, Pa., assignor to S. P. Kinney Engineering, Inc., Carnegie, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 154,570, Nov. 24, 1961. This application July 19, 1965, Ser. No. 482,014
1 Claim. (Cl. 210—333)



A rotary disc-type strainer comprising:

(a) a body formed of two hollow concavo-convex dome-shaped sections arranged with their concave faces in confronting relation and having confronting peripheral flanges secured together in water-tight contact, said sections defining an interior of generally elliptical shape in vertical section,

(b) a shaft supported by said body having its axis conicident with an axis passing through the centers of said dome-shaped sections,

said shaft having one end thereof extending through the center of one section, said one section having a packing gland at its center through which the shaft extends and beyond which the shaft projects,

(c) means on the projecting end of the shaft for rotating said shaft,

(d) means providing a thrust bearing for the shaft at the center of the other section and being accessible from the exterior of said other section for adjusting the shaft in an axial direction,

(e) a strainer disc with straining media therein secured to said shaft in the plane of the confronting flanges of the sections and the long axis of the elliptical interior of the body,

(f) one of said sections having a ring portion surrounding the disc and having a substantially sliding fit with the periphery of the disc,

(g) one of said dome-shaped sections having an inlet pipe connection projecting therefrom parallel with the plane of the disc and terminating in an elliptical inlet port immediately above the disc, said elliptical port having its long axis parallel with the surface of the disc, the top of the port, due to the curvature of the dome, being closer to the center of said dome-shaped section than the peripheral flange thereof, the port in the direction of its shorter elliptical axis defining an arc extending the greater portion of the total distance from the peripheral flange of the section to the center of the section,

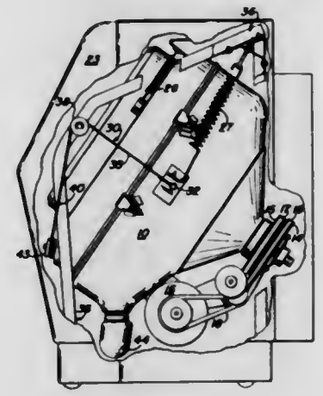
(h) said inlet pipe connection being integral with said one section and extending diametrically outward from said port, said shorter axis increasing in dimension and said long axis decreasing in dimension in the direction away from said port until said pipe is circular,

(i) the other section having an outlet port and connection similar to the inlet port and connection but located diametrically opposite the inlet port and connection, a fixed backwash enclosure on said section having the inlet pipe thereon, said enclosure terminating in an end surface parallel with the surface of the disc toward which it is directed and close to which it terminates, said enclosure having a backwash outlet passage extending through the dome-shaped section in a direction normal to the plane of the disc, said means for adjusting the shaft in an axial direction enabling the disc to be moved toward and away from the end surface of said backwash enclosure.

3,275,152
SUSPENSION SYSTEM FOR CENTRIFUGAL EXTRACTORS

Walter W. R. Searle, Beaconsfield, England, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio

Filed Mar. 5, 1964, Ser. No. 350,147
Claims priority, application Great Britain, Jan. 19, 1960, 1,993/60
13 Claims. (Cl. 210—364)

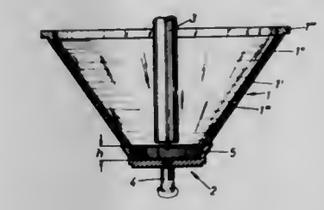


1. A centrifugal extractor comprising; a first structure defining a supporting framework, a second structure including a non-rotary tub, a spin basket having a longitudinal axis, said basket being mounted for rotation in said tub about said axis, a suspension system mounting said second structure on said first structure with said axis of said spin basket inclined to the vertical, said suspension system including resilient means attached to said first and second structures and applying an upward force to said second structure in a direction substantially perpendicular to said axis of said spin basket, said suspension system further including differential supporting means movably attaching said second structure to said first structure for limited relative movement of said second structure with respect to said first structure in any direction except axially rearward, the movement of said second structure when said spin basket is rotating being such that any point on said axis of said spin basket substantially generates a circle, said differential supporting means being secured to said first structure by attaching means, said attaching means lying in a reference plane which is substantially perpendicular to the said axis of said spin basket and spaced from said second structure in a direction axially of said axis of said basket, said axis intersecting said plane at a point, said differential supporting means providing a supporting force which always acts substantially through said point under all normal conditions of use of said extractor.

3,275,153
SIEVE-CENTRIFUGE

Wolfram Hirsch, Monheim, Rhineland, Germany, assignor to Hein, Lehmann & Co. A.G., Dusseldorf, Germany, a firm of Germany

Filed Oct. 17, 1963, Ser. No. 316,930
4 Claims. (Cl. 210—369)

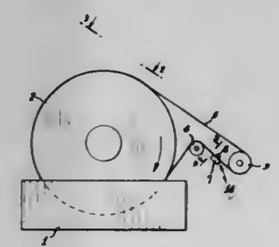


1. A sieve-centrifuge, particularly for viscous sugar masses, comprising in combination with a rotary frustoconical sieve drum having a narrower lower end and means directed toward said lower end for supplying the mass to be centrifuged; an accelerator pot located at said lower end and rotating along with the drum, the inner side and bottom surfaces of said accelerator pot being roughened and non-perforated and consisting of ribs extending concentrically to the axis of the drum and grooves between said ribs to impart increased frictional and entraining action to masses moving upon said inner and bottom surfaces.

3,275,154
COMB FOR STRING TYPE VACUUM FILTER

Samuel D. Fritz, New York, N.Y., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

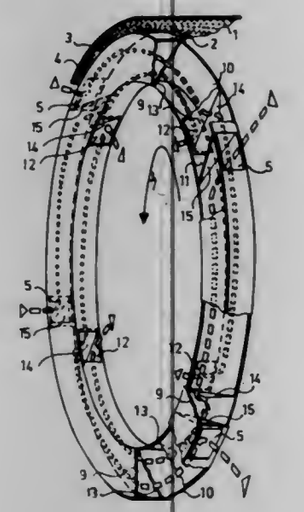
Filed July 19, 1965, Ser. No. 472,830
2 Claims. (Cl. 210—386)



1. In a continuous rotary drum filter of the type comprising in spaced parallel relationship a vacuum drum and a discharge roll and having a plurality of parallel endless strings composed of a synthetic resin material passing over the drum and roll, the strings being spaced from each other axially of and passing over the drum and roll, a string aligning comb having an elongated body portion with a plurality of fingers spaced laterally of each other longitudinally of the body portion and extending in a common direction, sleeve members co-

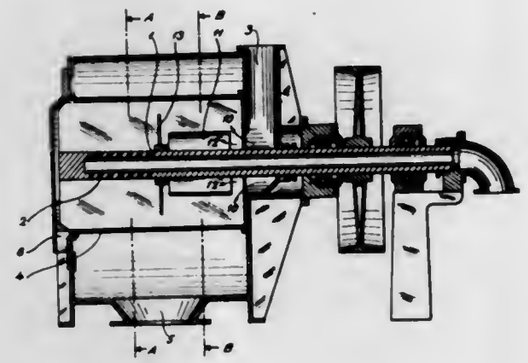
axially mounted on the fingers, the sleeve members being composed of a synthetic resin material resistant to abrasion by said strings, the body portion and fingers being composed of a stiff and rigid material different from that of the sleeve members and being capable of withstanding relatively high temperature operating conditions, the comb being positioned in parallel relationship with the discharge roll and positioned to receive between each pair of adjacent sleeves an endless string passing over the discharge roll.

3,275,155
ROTARY SUCTION FILTER DRUM
Lars Erik Karl Axel Tell, Karlstad, Sweden, assignor to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden, a Swedish company
Filed Dec. 8, 1965, Ser. No. 512,425
Claims priority, application Sweden, Dec. 14, 1964, 15,124/64
7 Claims. (Cl. 210—404)



1. A rotary suction filter drum comprising an outer cylindrical, perforated casing, an inner cylindrical casing spaced from said outer casing, a plurality of axially extending walls in the space between said outer and inner casings dividing said space into a plurality of axially extending cells, at least one opening in said inner casing from each one of said cells, and a discharge duct extending from each one of said openings circumferentially along the inner surface of said inner casing rearwardly with respect to the direction of rotation of the drum, said discharge ducts being divided into several groups axially disposed side by side in the drum, each one of said groups comprising an even number not smaller than four of discharge ducts disposed in one and the same plane perpendicular to the axis of the drum and having their associated openings in said inner casing evenly spaced around the circumference of said inner casing, each discharge duct in each one of said groups extending from its associated opening in said inner casing opposite to the direction of rotation of the drum past the first subsequent opening in said inner casing associated with the same group of discharge ducts not to open into the interior of the drum until adjacent the next subsequent opening in said inner casing associated with the same group of discharge ducts, whereby each discharge duct is over its first portion from its associated opening in said inner casing to the first subsequent opening in said inner casing running immediately close to the inner surface of said inner casing and over its remaining portion to its opening into the interior of the drum running somewhat radially spaced from said inner casing and having another discharge duct belonging to the same group of discharge ducts running between it and the inner surface of said inner casing.

3,275,156
STRAINER OF THE CENTRIFUGAL TYPE
Seppo Olavi Valtanen, Olli Juhani Punttila, and Ulf Viking Sjölund, all of Karhula, Finland, assignors to A. Ahlström Osakeyhtiö, Karhula, Finland, a company of Finland
Filed Dec. 23, 1963, Ser. No. 332,575
4 Claims. (Cl. 210—415)

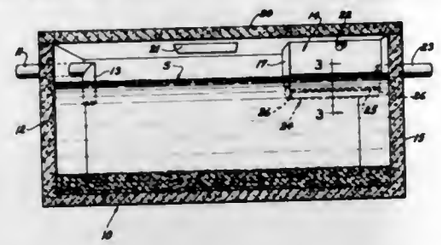


1. A strainer of the centrifugal type adapted for the further alluviation of fibers such as cellulose pulps, comprising an elongated cylindrical perforated strainer drum, a rotatable hollow rotor shaft having a bore therein mounted coaxially of the strainer drum, means to rotate said shaft, means to admit a liquid suspension of fibers into the bore in the hollow rotor shaft, said rotor shaft having a plurality of holes through the wall thereof, a plurality of generally radially extending blades affixed to the rotor shaft to rotate therewith within the strainer, said blades being so disposed on the shaft that the holes in the wall of the shaft lie close to and in advance of the forward faces of the respective blades which lead in the direction of rotation of the rotor shaft and blades, and a paddle mounted on the radially outer end of each of the blades, the paddles forming general prolongations of the respective blades and having their outer ends closely confronting but spaced somewhat from the inner surface of the strainer drum, the paddles and blades at the zone of connection therebetween presenting openings therethrough whereby said liquid suspension is caused by centrifugal force to flow along the forward faces of the blades, out through said openings at the connections between the outer ends of the blades and the paddles, and into contact with fibers collected on the inner surface of the strainer, in order further to alluviate such collected fibers.

3,275,157
OUTLET DEVICE FOR WASTE PITS, SEPTIC TANKS AND THE LIKE
Denver J. Stamps, 324 Woods Mill Road, Manchester, Mo.
Filed Sept. 26, 1963, Ser. No. 311,842
5 Claims. (Cl. 210—521)

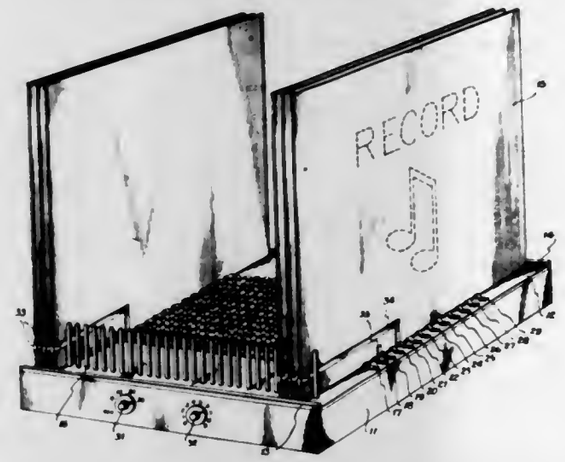
2. In outlet means for a septic tank, a housing in said tank having opposed side and end walls and at least one bottom wall directed angularly relative to said other walls, said bottom wall having a lower edge spaced from said other walls to form an opening into said housing, an outlet conduit leading from said housing above said opening, and a solids diverter member mounted in said opening and having a first surface in spaced relation with said lower edge of said bottom wall and extending into said opening

to form a slot, and said member having a second surface spaced from said slot and directed at an angle to said first



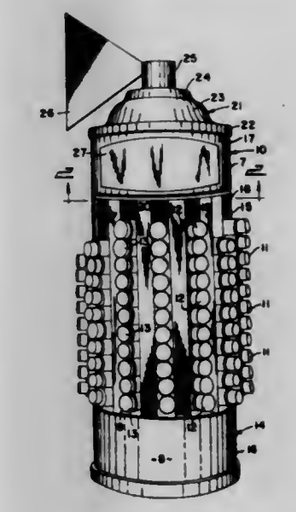
surface said second surface extending laterally outwardly beyond said lower edge of said bottom wall to divert solids from said opening into said housing.

3,275,158
ENVELOPE CONTAINER STORAGE DEVICE
Ronald Glass, Washington, D.C., and Raymond Andrel, Vienna, and Albertis S. Harrison III, Fairfax County, Va., assignors to Keltec Industries Inc., a corporation of Virginia
Filed Sept. 22, 1964, Ser. No. 398,245
7 Claims. (Cl. 211—40)



1. An envelope container storage means for storing a plurality of relatively flat envelopes having at least one substantially uniform edge comprising a support surface, means for supporting said envelopes on said surface on said uniform edge in juxta position, means for positioning said envelopes in a uniform manner with respect a reference line on said surface, at least first and second pluralities of conductive strips each strip in said pluralities electrically isolated one from the other and disposed in a common relation at substantially all points thereon with respect said reference line and at respective distances therefrom, an electrical energy source having two output terminals, first and second switch means having a plurality of switch selection terminals, each of said switch means being electrically connected to respective output terminals of said electrical energy source, and adapted to interconnect said respective output terminal and any one of said plurality of switch selection terminals; means electrically connecting each of said switch selection terminals in said first switch means to a respective conductive strip in said first plurality thereof; means electrically connecting each of said switch selection terminals in said second switch means to a respective conductive strip in said second plurality thereof; two terminal indicator means adapted for electrical energization, first metallic interconnection means affixed to said envelope and disposed thereon to interconnect a respective terminal of said indicator means and one selected conductor in said first plurality thereof when said envelope is positioned in said uniform manner, and second metallic interconnection means affixed to said envelope and disposed thereon to interconnect a respective terminal of said indicator means and one selected conductive strip in said second plurality thereof when said envelope is positioned in said uniform manner.

3,275,159
DISPLAY DEVICE
William A. James, Bay Village, and John J. Wallace, Cleveland, Ohio, assignors to The Sherwin Williams Company, a corporation of Ohio
Filed Jan. 15, 1965, Ser. No. 425,756
3 Claims. (Cl. 211—49)



1. A device having the configuration of a conventionally designed pressurized spray container for displaying and storing containers, comprising in combination:

(a) a body portion including:

(1) a cylindrical portion disposed intermediate the ends of the body portion and mounted for rotation about its own longitudinal axis, a section of the cylindrical portion taken in a plane normal to its said longitudinal axis including:

(i) a plurality of circumferentially spaced recesses extending radially into the cylindrical body, each recess being formed between a pair of opposing planar wall surfaces;

(ii) the recesses being substantially coextensive with said cylindrical portion and parallel to its said longitudinal axis;

(b) a top portion for covering the body portion, comprising stepped cylindrical portions of succeeding smaller diameters, the uppermost cylindrical portion configured to represent a spray nozzle;

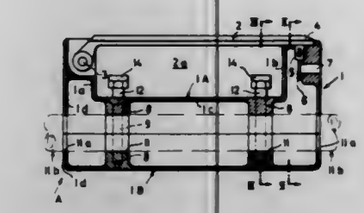
(c) a triangularly shaped display panel secured to, and extending from the spray nozzle portion of said top portion, the display panel designed to receive and display advertising indicia; and

(d) means for mounting the cylindrical portion for rotation about its own longitudinal axis.

3,275,160
CLAMPING DEVICE FOR SKIS
Walter Zürker, 33 Zugspitzstrasse, Garmisch-Partenkirchen, Germany
Filed Apr. 21, 1964, Ser. No. 361,390
Claims priority, application Germany, Apr. 26, 1963, Z 10,081; July 9, 1963, Z 10,216; Aug. 8, 1963, Z 10,286; Dec. 21, 1963, Z 10,545
29 Claims. (Cl. 211—60)

1. A clamping device for skis, comprising a base member; fastener means located in said base member for detachably securing said base member to a support struc-

ture; a cover member attached to and movable with reference to said base member between a first position in which said members define between themselves at least one passage for reception of a ski in such a way that a portion of the ski is surrounded by said members, and a second position in which the ski may be withdrawn from

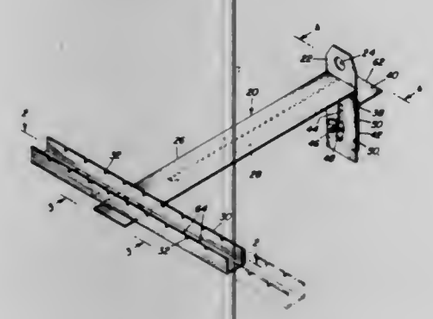


said passage; adapter means being adapted to be moved to a position in said passage for changing the effective cross-sectional area of said passage so that in dependence on the position of said adapter means said passage may accommodate portions of one or more skis; and a locking device arranged to positively lock said members to each other in the first position of said cover member.

3,275,161
CLOTHES RACK FOR AN AUTOMOBILE

Gordon W. Robertson, 1057 Bonita Drive, Encinitas, Calif.

Filed Nov. 6, 1964, Ser. No. 409,518
2 Claims. (Cl. 211—87)



1. A clothes rack adapted to be hung from a standard hook in an automobile comprising:

(A) A vertically extending plate having a hole for receiving a hook;

(B) a horizontally extending arm having an end stationarily fixed to and extending from one side of the plate and below said hole;

(C) a horizontally extending stabilizing arm extending from the opposite side of the plate and in a lower plane than the first mentioned arm;

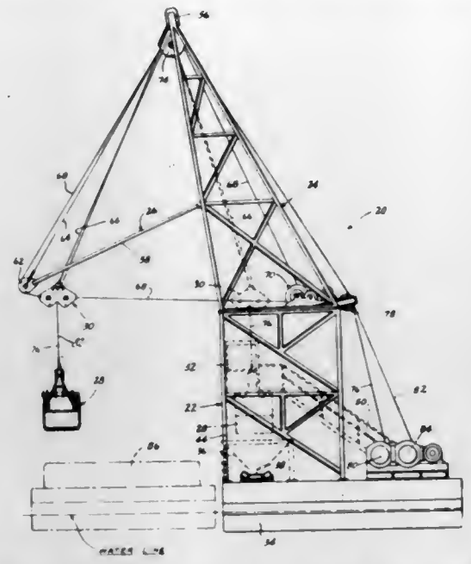
(D) and fastening means, adjustable vertically relative to the plate, for securing the stabilizing arm to the plate.

3,275,162
TOWER CRANE WITH LOADING BOOM

Linder Deimund, 403 N. Main St.; Linder P. Deimund, Rte. 1, Box 310; and Richard N. Deimund, 227 N. Middle, all of Cape Girardeau, Mo.

Filed June 28, 1965, Ser. No. 467,293
7 Claims. (Cl. 212—76)

1. A crane comprising a tower, a boom supported from said tower and extending over a crane loading area, and means for moving a clamshell bucket from the end of said boom through an opening in the interior of said tower to an unloading area, said means comprising a tandem sheave and bucket holding and closing lines connected to the bucket and passing through the tandem sheave and over sheave means at the top of the tower

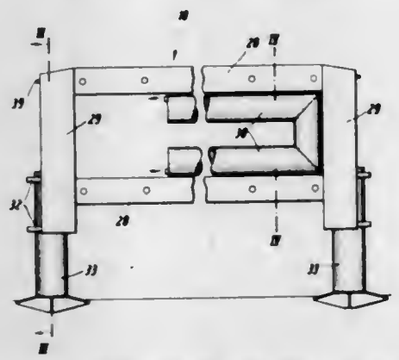


to separate hoist means for the holding and closing lines, and said tandem sheave being suspended from the top of the tower by a suspension line.

3,275,163
HYDRAULICALLY OPERATED DEEP DREDGER SHOVEL FOR MOUNTING ON SUPPORT VEHICLES

Hans Schaeff, Langenburg, Wurttemberg, Germany, assignor to Firma Karl Schaeff KG., Maschinenfabrik, Langenburg, Wurttemberg, Germany

Filed Dec. 16, 1964, Ser. No. 418,739
Claims priority, application Germany, Dec. 18, 1963, Sch 34,344, Sch 34,345
5 Claims. (Cl. 212—145)



1. A hydraulic deep bucket dredger for attachment to a carrier vehicle comprising:

(a) a frame adapted to be attached to the carrier vehicle,

(b) lateral, downwardly extending support legs,

(c) a slide carriage transversely slidable on said frame,

(d) said frame including an upper and a lower horizontal hollow member, and a pair of substantially vertical members,

(e) said frame having at least one hook on said upper member and a connecting shaft on said lower member for attachment to the carrier vehicle,

(f) an oil container positioned in said frame,

(g) said support legs including hydraulic cylinders positioned and slidably mounted in said vertical members,

(h) said hydraulic cylinders including piston rods secured to said vertical members and held against axial movement,

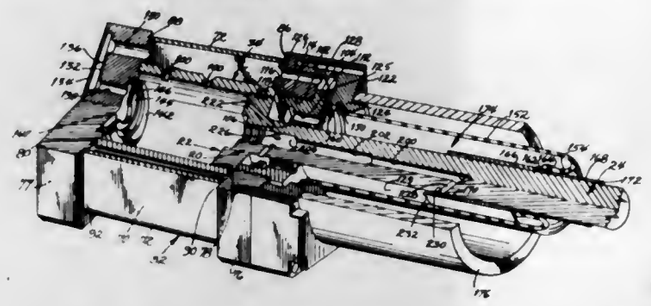
(i) said slidable carriage having a pivoting plate and a pivot drive mounted thereon, said pivot drive connected to said pivoting plate for rotation thereof,

(j) a boom operatively connected to said pivot plate.

3,275,164
HYDRAULIC DRAFT GEAR ARRANGEMENT

William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Continuation of application Ser. No. 439,630, Mar. 15, 1965. This application Feb. 2, 1966, Ser. No. 533,751
9 Claims. (Cl. 213—43)



1. A hydraulic cushioning device for draft gear or the like and operative to cushion buff and draft impacts comprising:

a housing,

a cylinder mounted in said housing,

a piston member reciprocably mounted in said cylinder,

said piston member comprising a piston head positioned in said cylinder and a piston rod projecting outwardly of said cylinder,

said piston head including a high pressure generating side upon buff impact to said cushion device,

said piston head and rod being a one piece piston member,

means for effecting a hydraulic liquid seal between said rod and said housing,

pressure relief valve means carried by said piston member,

said relief valve means comprising:

a bore formed in said rod and extending longitudinally thereof and inwardly of the head end thereof,

a valve member reciprocably mounted in said bore and proportioned to substantially complement the width of said bore,

resilient means biasing said valve member outwardly of said bore,

stop means for limiting the movement of said member outwardly of said bore,

and an actuator member shiftably mounted in said head and having one end thereof operably engaging said valve member and the other end thereof exposed at said high pressure side of said piston head,

said resilient means being prestressed to position said valve member at predetermined positions,

said piston head being formed with conduit means extending between said high pressure side thereof and the position of said valve member when in its said predetermined position,

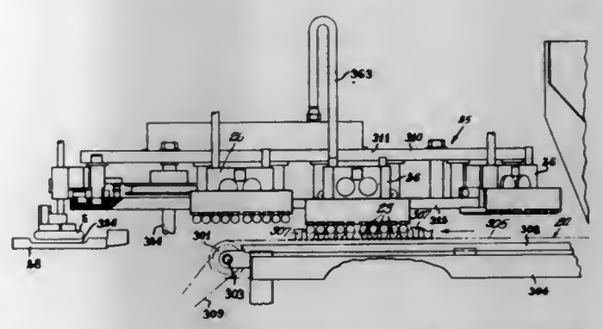
and accumulator means operably connected with said bore inwardly of said relief valve means,

said actuator member shifting said valve member against the action of said resilient means to place said piston head conduit means into communication with said accumulator means when said piston head high pressure side is subjected to pressures above a predetermined maximum.

3,275,165
TRANSFER MECHANISM FOR SMALL ELONGATE ARTICLES

Andrew H. Vedvik, Madison, Wis., assignor to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois

Original application Jan. 29, 1963, Ser. No. 254,745, now Patent No. 3,217,766, dated Nov. 16, 1965. Divided and this application July 20, 1965, Ser. No. 473,447
6 Claims. (Cl. 214—1)

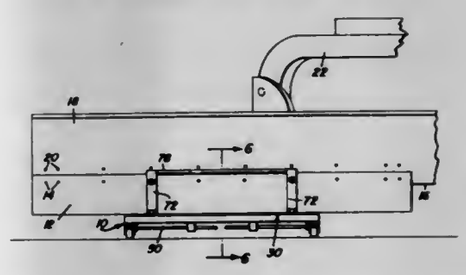


1. Apparatus for transferring groups of elongate articles having the form of small sausages from a supply conveyor to a discharge station which comprises a supporting frame including vertically spaced plates of generally triangular shape arranged one above the other, a conveyor chain mounted on supporting sprockets which are disposed in a triangle and in a common plane with the sprockets mounted on shafts which are parallel and normal to the plane of the bottom frame plate, a plurality of pick-up heads pivotally connected to said conveyor chain and having a portion thereof extending outboard of the perimeter of said supporting frame, spaced cam rollers on said heads received in cam tracks in said frame plates for guiding the heads in a generally triangular path extending at one side of the supporting frame above a supply conveyor on which the articles are arranged in single line, side-by-side relation, each of said heads having an article pick-up member mounted on the bottom thereof so that it is movable in a path which is normal to the path of movement of the head, and means for applying suction to the pick-up member so as to pick up successive groups of articles and transport said articles to a discharge station along an adjoining side of said supporting frame.

3,275,166
BLADE CHANGER DOLLY

Nile Shannon, Carnarvon, Iowa

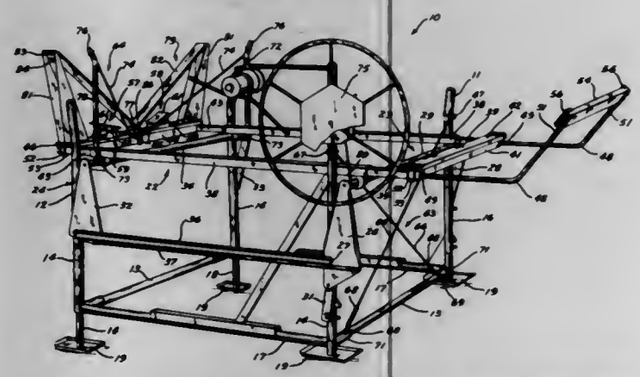
Filed Dec. 31, 1963, Ser. No. 334,872
8 Claims. (Cl. 214—1)



1. A dolly for supporting and adjustably positioning the blade of a scraper moldboard comprising a wheeled support frame consisting of rigidly connected side and end members enclosing a central opening, a pair of vertically swingable lift arms slidably mounted on said frame and manually operable through said opening, abutment members on said arms, a platform comprising rigidly connected side and end members enclosing an opening, means guidingly securing said platform to said frame including pins on said platform loosely and slidably received in

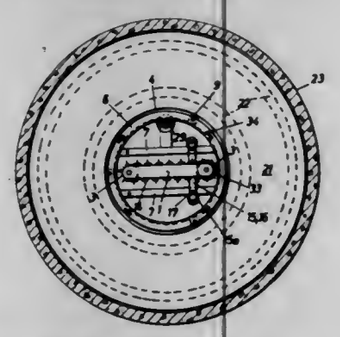
sockets on said frame, said platform being of equal width but lesser length than said frame with said openings in registration, a U-shaped carriage mounted upon said platform and having laterally projecting pegs for engagement in bolt holes in a scraper moldboard blade to support the latter, fulcrum brackets rising from the end members of said platform adjacent one end of said end members, the arms of said U-shaped carriage being pivoted each to one of said fulcrum brackets for vertical tilting of said carriage about a horizontal axis, said end members of said platform overlying said abutment members for lifting of said carriage and platform when said lift arms are lifted upwardly.

3,275,167
BOAT CENTERING AND STOP APPARATUS
Byron L. Godbersen, Ida Grove, Iowa
Filed July 15, 1964, Ser. No. 382,889
5 Claims. (Cl. 214—1)



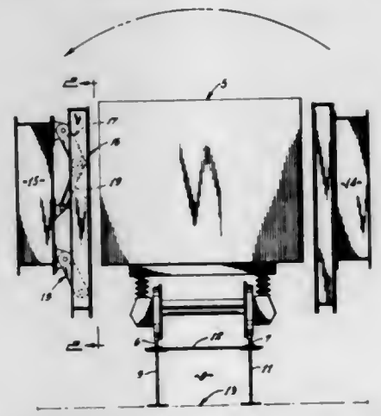
1. A portable boat hoist comprising in combination:
ground engageable frame means;
boat engageable means including a relatively flat platform, said platform having longitudinally extensible end members; and
means adjustably connected to one paid of said end members and movable longitudinally thereof, said means adapted to engage the prow of a docking boat and to simultaneously stop and slightly lift same with the transom thereof placed over the other pair of extensible ends said transom engageable with said other pair of extensible ends to aid stopping the boat in response to said slightly lifted prow movement.

3,275,168
DEVICES FOR REMOVING STORED MATERIAL FROM SILOS
Josef Schleich, Eichendorffstrasse 3, Ansbach, Germany
Filed Sept. 24, 1964, Ser. No. 398,869
Claims priority, application Germany, Sept. 24, 1963, Sch 33,910
17 Claims. (Cl. 214—17)



1. In a silo having a cylindrical outer wall and an annular base with a central opening, a device for removing stored material from said silo, said device comprising a circular member extending through said opening, means to mount said member for rotation within and respect to said opening, a pair of parallel beams extending across said member, a support member mounted on said beams for longitudinal sliding movement with respect thereto, and a milling arm carried by said support member and adapted to extend to the outer wall of said silo upon said support member being moved to a predetermined position with respect to said beams.

3,275,169
ROTARY RAILROAD CAR DUMPER
Raymond H. Sabin and Edward E. Cheek, Cleveland, Ohio, assignors to McDowell-Wellman Engineering Company, a corporation of Ohio
Continuation of application Ser. No. 349,306, Mar. 4, 1964. This application Oct. 13, 1965, Ser. No. 511,263
5 Claims. (Cl. 214—55)

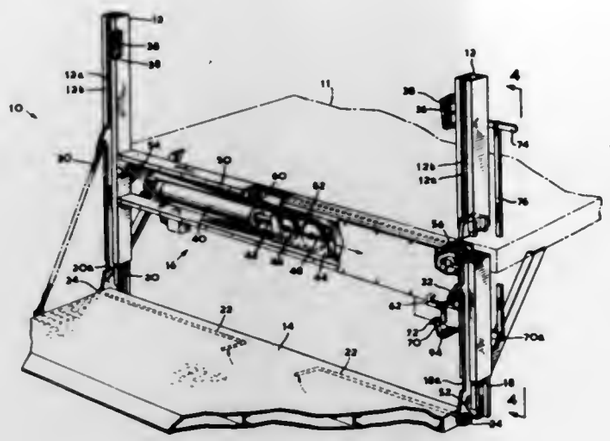


1. In a rotary railroad car dumper having a fixed dumper side wall, a trackway extending through the dumper and immovable relative to the fixed dumper side wall, means for clamping a railroad car on the trackway, and means for rotating the dumper, the improvement which comprises:
(a) a movable wall in the dumper for engaging an adjacent side wall of a railroad car positioned in the dumper to support the car as it is rotated;
(b) means for mounting the movable wall on said fixed dumper side wall such that the wall moves parallelogrammatically towards and away from said railroad car side wall, said means including at least one pair of parallel spaced link arms mounted for rotating in planes normal to the longitudinal axis of the trackway, said link arms being rotatably mounted on said fixed dumper side wall in linear spaced relation from each other and the trackway when measured in a plane normal to the plane of the trackway; and
(c) means coupled with at least one of the link arms for rotating the link arms and holding them in a plurality of positions, whereby the movable wall is parallelogrammatically moved into and out of engagement with the railroad car side wall and held thereagainst in supporting relation to the car as it is rotated, the weight of said car and movable wall being transferred to said dumper through said link arms.

3,275,170
HYDRAULIC LOADING DEVICES
Allister S. MacRae, Leaside, Ontario, and John C. Martin, Toronto, Ontario, Canada, assignors to Diesel Equipment Limited, Toronto, Ontario, Canada
Filed Oct. 5, 1964, Ser. No. 401,539
18 Claims. (Cl. 214—75)

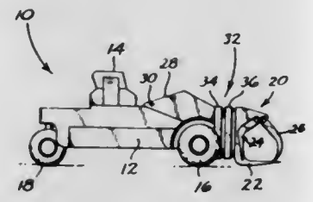
1. A hydraulic lifting apparatus for attachment to a raised floor comprising a pair of spaced apart vertical post members fixed to said floor, a pair of slide members

carried by and adapted to slide vertically relative to said posts, a platform extending between and pivotally attached to the lower ends of said slide members whereby said platform may be pivoted from a first substantially horizontal position to a second substantially vertical position, and vice versa, a hydraulic ram, flexible linkage



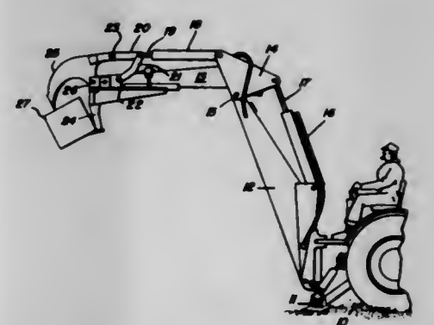
means extending from said ram to said slide members whereby actuation of said ram raises and lowers said platform, and means for releasably securing said platform in said second substantially vertical position in such manner that said platform may be secured in said vertical position during raising and lowering of said platform.

3,275,171
VEHICLE WITH SWINGABLE LOAD-SUPPORTING STRUCTURE
Richard C. Shore, Portland, Oreg., assignor of fifty percent to Scott S. Corbett, Jr., Portland, Oreg.
Filed May 19, 1964, Ser. No. 368,675
1 Claim. (Cl. 214—131)



In a vehicle,
a vehicle frame and a boom pivoted at one end on said frame, load-supporting means disposed at the end of said boom opposite its said one end,
a pair of hinge mechanisms adjacent opposite sides of the boom connecting the boom and load-supporting means and permitting the load-supporting means to be pivoted selectively about transversely spaced vertical axes,
each of said hinge mechanisms including pin means that may be shifted so as to break down the hinge mechanism thus to disconnect the load-supporting means from the boom at the hinge mechanism,
power-operated means for each pin means mounted on the boom for so shifting the pin means,
motor means connected to a central portion of the load-supporting means and said boom, operable on actuation to thrust said central portion away from the boom, and
control means for the power-operated means for the pins of the pair of hinge mechanisms, whereby each may be actuated, selectively,
said control means including a device actuated by one of the hinge mechanisms, when the same completes a connection between the boom and load-supporting means, freeing for actuation the power-operated means for the other hinge mechanism, and a device actuated by said other hinge mechanism, when the same completes a connection between the boom and load-supporting means, freeing for actuation the power-operated means for said one hinge mechanism.

3,275,172
WRECKING AND LOADING TOOL FOR USE WITH A BACK HOE
Wedad J. Smith, El Paso, Tex., assignor to Wrex-All Implements, Inc., Thibodaux, La., a corporation of Louisiana
Filed May 4, 1965, Ser. No. 453,066
4 Claims. (Cl. 214—138)

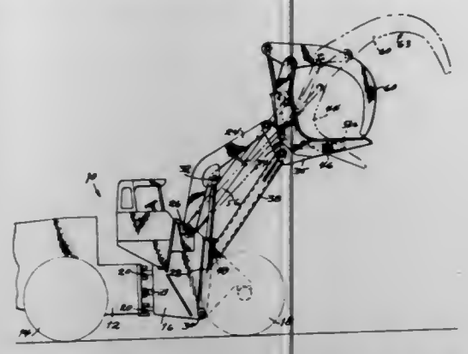


1. For use with a back hoe or the like the bucket of which has been removed having a dipstick, actuating cylinder and ram connected to an actuating linkage; a wrecking and loading tool comprising
(a) tool attaching means adapted to be secured to the free end of the dipstick and having a securing element adapted to removably secure said tool attaching means to said dipstick,
(b) static jaw means rigidly secured to said tool attaching means, and
(c) a movable jaw crescent shaped having a pointed free end movably mounted on said tool attaching means positioned to cooperate with the static jaw and adapted to be connected to the ram so as to engage objects between said jaws so that the tool and dipstick can transfer the object to be moved.

3,275,173
LOAD HANDLING VEHICLE
Keith W. Kampert, Libertyville, and Richard F. Zimmerman, Waukegan, Ill., assignors to International Harvester Company, a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,820
1 Claim. (Cl. 214—767)

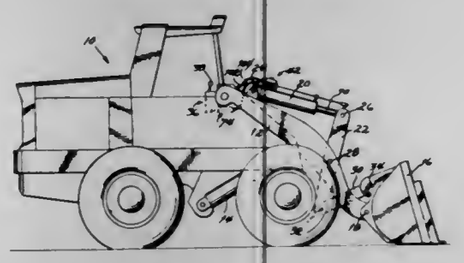
A load handling attachment for mounting on a vehicle frame comprising: a boom pivotally mounted at one end to the frame for movement in a generally vertical plane; a support member pivotally mounted on the other end of the boom, the support member having an arm extending forwardly of the other end of the boom; means including a link in parallel relationship to the boom connected between the frame and the support member to move the arm with an upward and forward motion as the boom is elevated; first tong means pivotally connected to the arm; an extensible hydraulic ram pivotally connected at its one end to the frame about an axis substantially coin-

cident with the pivotal mounting of the boom to the frame and at its other end to the first tong means; second



tong means pivotally mounted on the first tong means; and motor means to pivot the second tong means relative to the first tong means to grip the load.

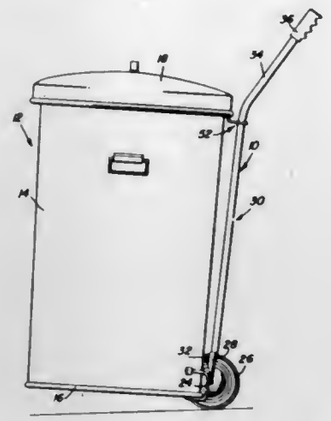
3,275,174
AUTOMATIC LEVELING DEVICE
Joseph H. Konefes, Libertyville, Ill., assignor to International Harvester Company, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,866
1 Claim. (Cl. 214—761)



In an automatic leveling device for a material handling bucket operated between level, carry, and dump positions by means of a hydraulic ram, the combination including: a bucket position indicator assembly mounted on the ram, the assembly including a drum having bucket position indicia thereon and being rotatably mounted on the head end of the ram and means to rotate the drum in response to extension and retraction of the ram; a camming surface on the drum; a cam follower in operating contact with the camming surface; first valve means selectively operable to direct hydraulic fluid to the ram for pivoting the bucket between the level, carry and dump positions; a source of air pressure; air operated motor means to neutralize the first valve means and terminate pivoting of the bucket; and second valve means in operating relationship with the cam follower to connect the source of air pressure with the motor means for operation thereof when the bucket reaches the level position.

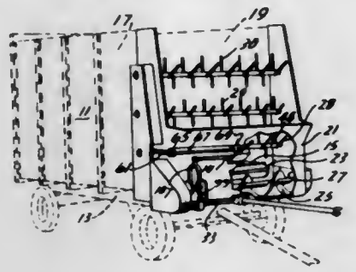
3,275,175
CONTAINER TRANSPORT DEVICE
Robert T. Arnold, % Arnold Metalcraft Co., P.O. Box 122, Lowell, Ind.
Filed May 14, 1964, Ser. No. 367,442
7 Claims. (Cl. 214—383)

1. A transport device comprising in combination a container having a vertical wall with a top rim and a bottom, an axle, a pair of wheels rotatably mounted by said axle, a pair of laterally spaced container-engaging devices fixedly secured to the axle between the wheels, each of said engaging devices including an upper projecting portion engageable with the vertical wall of the container spaced above the bottom and a lower projecting portion extending forwardly beyond the upper portion below the bottom of the container, said lower projecting portion including a forwardly extending arm having an end remote from the axle and an engaging element connected to said end engageable with the container in vertically spaced relation to the upper portion, whereby said container is supported between said pair of engaging devices.



2. The combination of claim 1 including an elongated handle secured to the axle between said pair of engaging devices, and hook means slidably mounted on the handle for engaging the top rim of the container.

3,275,176
FORAGE WAGON CLUTCH
John E. Kasten, 136 Concord Lane, West Bend, Wis.
Filed July 6, 1964, Ser. No. 380,404
9 Claims. (Cl. 214—519)

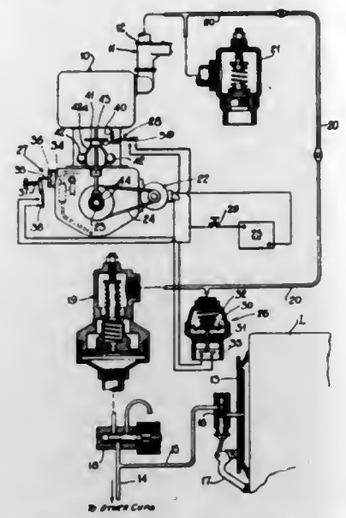


1. In a forage wagon, the combination of a wheeled support, a conveyer movably carried by said support, a beater rotatably carried by said support, power transmission means on said support adapted for receiving rotary power independently of the travel of the wagon, first clutch means for connecting said power transmission means for connecting said power transmission means to said conveyer, second clutch means for connecting said power transmission means to said beater, and means including a single control lever for selectively operating said second clutch between respective positions engaging and disengaging said beater with said power transmission means and, when said second clutch is in engaged position, for selectively operating said first clutch between respective positions engaging said conveyer with said power transmission means for movement at two different rates of speed.

3,275,177
SAFETY ARRANGEMENT FOR ENGINE OPERATED ACCESSORY
William J. Barto, Philadelphia, Pa., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Jan. 15, 1964, Ser. No. 337,771
8 Claims. (Cl. 214—650)

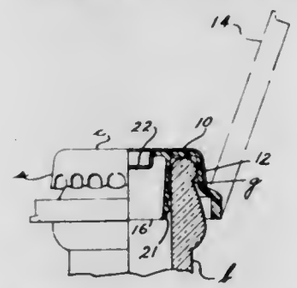
1. In a lift truck having a load gripping device that requires for its safe operation the application of a degree of power to said device, an internal combustion engine normally operating for supplying power to said device,

a motor effective when energized to drive said internal combustion engine at a speed that will supply said degree of power, and control means responsive to a de-



crease in the speed at which the engine operates whereby to energize said motor, so that the engine may effect safe operation of said load gripping device when said engine fails to operate normally.

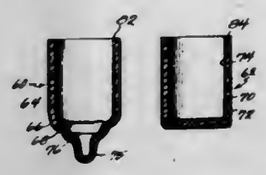
3,275,178
SEALING GASKET USED WITH CROWN TYPE BOTTLE CAPS
Walter C. Lovell, 5 James St., Hazardville, Conn., Harold R. Jorey, Springfield, Mass., and Patricia A. Lovell, Hazardville, Conn.; said Jorey and said Patricia A. Lovell assignors to said Walter C. Lovell
Filed Dec. 6, 1963, Ser. No. 328,552
11 Claims. (Cl. 215—40)



1. A sealing gasket to be used in combination with a crown type bottle cap, said gasket comprising as integrally formed portions a disc portion adapted to overlie the mouth of the bottle and to be compressed thereagainst by the cap, a strap depending from one side of the disc portion and adapted to be confined between the bottle and the skirt of the cap and a ring connected to the lower end of the strap, said ring being generally parallel to said disc portion and large enough to be telescoped over the top of the bottle and adapted to be lifted over the cap so that an upward pull may be exerted on the strap to pry the cap from the bottle.

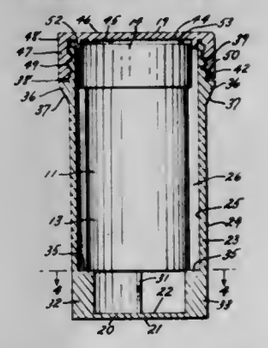
3,275,179
SPIN WELDED THERMOPLASTIC CONTAINER
John H. Lux, Charlestown, Md., and Ernest O. Ohsol, Wilmington, Del., assignors, by mesne assignments, to Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Powder Company, New Castle, Del., a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,497
11 Claims. (Cl. 220—4)

1. A spin-welded container having wall means, said wall means comprising an upper vertical section and a lower vertical section, each section comprising a foam thermoplastic resin portion and at least one non-porous, substantially unfoamed, tough skin of the same resin in-



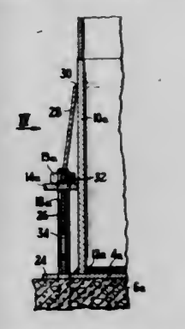
tegral with said foam portion and a narrow horizontal fused portion substantially devoid of foam welding said vertical portions together.

3,275,180
MAILING CONTAINER CONSTRUCTION
Philip S. Optner, Roslyn Heights, N.Y., and Richard E. Kresge, Elizabeth, N.J., assignors to Lermer Packaging Corporation, Garwood, N.J., a corporation of New Jersey
Filed Jan. 4, 1965, Ser. No. 423,138
3 Claims. (Cl. 220—17)



1. In a synthetic resinous tubular mailing container, a hollow cylindrical body having a first closed sealed end and a second open end, said open end having a threaded outer surface, and an annular flange adjacent said threaded surface; and a correspondingly internally threaded cap selectively engageable upon said open end, said annular flange being in abutted relation with respect to said cap when the latter is in engaged condition, and having an external effective diameter substantially equal to that of said cap; and resilient detent means for indicating when said cap is properly located with respect to said flange.

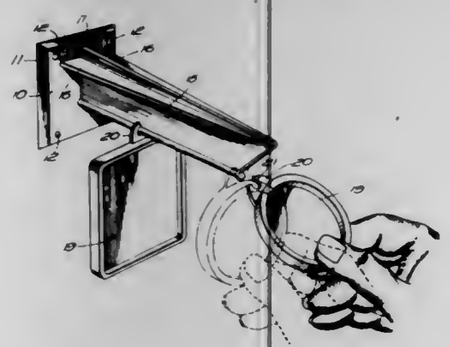
3,275,181
MECHANICAL COUPLING DEVICE, ESPECIALLY FOR PRESSURE VESSELS
André Leclou, Saint-Maur-des-Fosses, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed June 13, 1963, Ser. No. 287,583
Claims priority, application France, July 24, 1962, 904,967
6 Claims. (Cl. 220—18)



1. In a mechanical coupling device for a vessel having a longitudinal center line, first end and second wall components for the vessel subjected to stresses which tend to

separate said components, a mechanical coupling device between said first and said second components, said device comprising first and second elements secured to said first and to said second components, respectively, said elements being located radially outwardly from said second wall components, and coupling means parallel to said center line located radially outwardly from said second wall component and adapted to draw said components together, mechanical force transfer means connecting at least one of said elements and the corresponding one of said components, said transfer means being connected to said element at a distance from the longitudinal center line of the vessel substantially equal to that of said coupling means and connected to the corresponding one of said components at a level along the center line remote from the level of attachment thereof to said element.

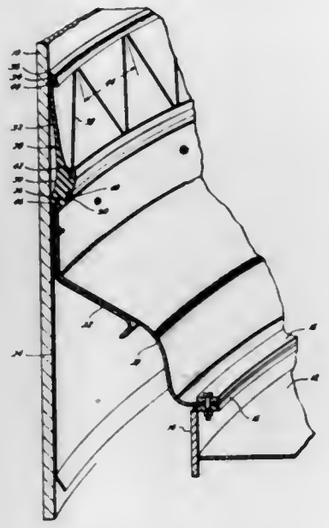
3,275,182
SEAL
Philip Grasso, Stanford, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Original application Jan. 23, 1962, Ser. No. 168,127, now Patent No. 3,189,185. Divided and this application Jan. 13, 1964, Ser. No. 343,178
2 Claims. (Cl. 220—24)



1. A seal for enclosing a container, said seal having a central wall, an integral peripheral wall having spaced inner and outer walls in cross-section and a connecting wall therebetween to define a groove adapted to receive the peripheral edge or mouth of the container, said inner and outer walls disposed in planes being generally normal to the plane of said central wall such that said seal groove is of a stiffness materially greater than that of said central wall, a mounting tab integral with and extending outwardly from said outer groove wall, said tab further being disposed generally normally to said outer wall, said tab having an opening in a central portion thereof and a slot extending between the opening and the edge of the tab, said slot being of lesser width than said opening so as to provide a pair of opposed legs on each side of said slot and said tab being formed of flexible resilient plastic material so that said legs are distortable from their normal plane to a twisted configuration by the introduction of a member therebetween so as to provide an enlarged temporary opening for said member.

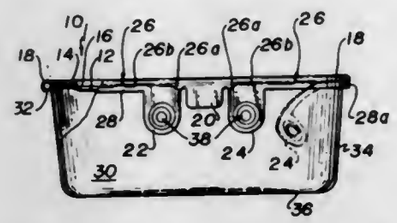
3,275,183
SECONDARY SEAL
Kenneth D. Challenger, Gibsonia, Pa., assignor, by mesne assignments, to Helmerich & Payne, Inc., Tulsa, Okla., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,660
7 Claims. (Cl. 220—26)

4. In combination with an open end container for holding liquids,
a floating roof therefor adapted to move upwardly and downwardly in said container with changes in the liquid level in said container,
a primary seal having a plurality of shoes supported by said roof in contact with the inside wall surface of said container, and
a secondary seal affixed on the inwardly extending top edges of said plurality of shoes of said primary seal and slidably contacting said inside wall surface,
said secondary seal comprising a flexible annular member having



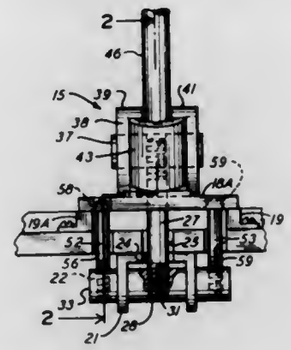
a relatively thickened annular edge fixedly engaging the inwardly extending top edges of said plurality of shoes,
a relatively thinned intermediate annular portion, and
a thickened wall-engaging edge, and including
an undulatory spring spanning said intermediate portion and bearing against said edge portions to bias said wall-engaging edge into engagement with said wall.

3,275,184
CLOSURE HAVING TEAR STRIP OPENING MEANS
Henry G. Henrickson, San Leandro, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Oct. 19, 1964, Ser. No. 404,580
5 Claims. (Cl. 220—54)



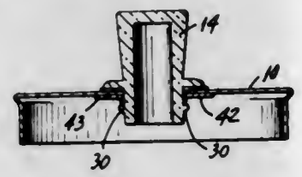
1. In combination with a container body a releasable and reuseable cap therefor, said cap being provided at the outer periphery thereof with a curled-over flange which is adapted to sealable engage the side wall of the container body, said flange being provided with removable tear away sections, a hinge portion and a liftable tab, each of the removable tear away sections being disposed intermediate to and in interconnecting relationship with the hinge portion and the liftable tab, said removable tear away sections being initially joined to said flange by weakened areas imposed in said flange, each removable tear away section including a tear tab projection at the end thereof disposed adjacent the liftable tab whereby the tear tab projections and weakened areas can cooperate to facilitate separation of the removable tear away sections from the flange and initial release of the cap from sealable engagement with the container body and whereby the hinge portion can provide for pivotal movement of the cap about the can body upon the grasping and upward movement of the liftable tab by the user.

3,275,185
CLAMPING APPARATUS
Bert N. Svenson, 10747 Spry St., Norwalk, Calif.
Filed Oct. 29, 1964, Ser. No. 407,439
18 Claims. (Cl. 220—55)



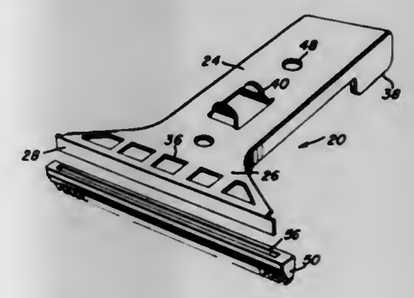
1. An adjustable cam clamp for clamping a workpiece to a work rest and comprising a threaded arbor bolt, means pivotally securing the threaded arbor bolt to the work rest, a cam arbor secured to the threaded arbor bolt, a clamping cam journalled on the cam arbor and adapted to bear against and urge the workpiece into clamping relationship with the work rest, handle means adapted to turn the clamping cam about the cam arbor, means for relative rotation between the cam arbor and the threaded arbor bolt such that the cam arbor is displaced relative to the means securing the arbor bolt to the work rest, said securing means adapting the threaded arbor bolt to arcuate motion toward and away from the work rest, and workpiece restraining means connecting between the workpiece and the securing means such that the workpiece hinges away from the work rest in association with the threaded arbor bolt.

3,275,186
PERCOLATOR COFFEE POT AND TOP THEREOF
Martin Himmel, Mount Vernon, N.Y. (% Bloom's Houseware, 415 E. Tremont Ave., Bronx, N.Y.)
Filed Apr. 13, 1964, Ser. No. 359,294
10 Claims. (Cl. 220—82.5)



1. A percolator top member made of transparent material and being hollow and closed at its upper end and having a lower end portion open at its lower end, said top member having an annular transversely disposed portion extending radially outwardly of said lower portion and facing in one direction, and a clamp member having an annular portion disposed transversely of the axis of said top member and facing in an opposite direction, and a portion extending from said annular portion of said clamp member and offset therefrom in the direction of the axis of said top member, interengaging means on the lower end portion of said top member and on said offset portion of said clamp member, whereby to clamp said top member and clamp member to opposite sides of a substantially flat top wall of a percolator lid interposed between said annular portion of said top member and said clamp member, and having an opening through which said lower end portion may pass, whereby said top member may be clamped to any lid whose top wall opening is larger than said lower end portion of the top member and smaller than the outer periphery of the annular portion of said top member and the outer periphery of the annular portion of said clamp member.

3,275,187
PAINTER'S UTILITY IMPLEMENT
Raymond L. Lamoureaux, R.D. 3, Cortland, N.Y.
Filed Sept. 25, 1964, Ser. No. 399,288
2 Claims. (Cl. 220—90)

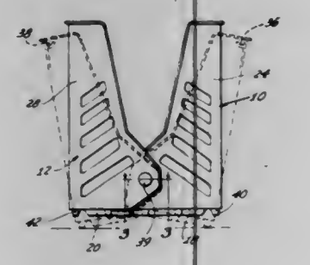


1. A painter's utility implement comprising an elongated body, a transversely enlarged head forming a continuation of the body at one end thereof, said head having an upturned flange transversely across the outer end thereof, said flange being planar throughout the height thereof and terminating in an upwardly directed straight upper edge extending along the full length thereof, a pair of spaced side walls projecting upwardly from the longitudinal sides of the body, said walls extending along a major portion of the length of said body, said walls diverging outwardly and continuing along the opposite sides of the head, at least one hole through said head between the flange and the elongated body, a pair of side wall extensions adjacent the free end of the elongated body, each of said extensions being generally coplanar with one of said side walls and projecting upwardly at approximately a right angle therefrom, mounting means depending from said body for releasable engagement with a paint can rim, and an elongated surface working attachment, said attachment having, along one edge thereof, an elongated slot of a length, width and depth so as to frictionally and releasably receive substantially the entire flange, the edge of said attachment opposite from said one edge being positioned outwardly from the flange edge generally in the plane of the flange edge and being in the form of a surface working edge.

3,275,188
RECEPTACLE
James D. Wilson, Long Beach, Calif., assignor to Banner Metals, Inc., Compton, Calif., a corporation of Ohio
Filed Jan. 18, 1965, Ser. No. 426,062
3 Claims. (Cl. 220—97)

1. A nestable-stackable container including: a first member defining a first side wall for the container, further defining a first portion of a bottom for the container extending perpendicularly to said first side wall, and further defining a first pair of right-angled triangular-shaped sections each having an apex adjacent the upper edge of said first side wall and each forming a first portion of each of a pair of end walls for the containers, said first portion of each of said end walls extending perpendicularly to said

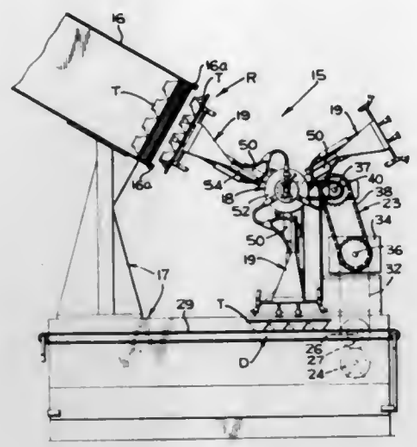
first side wall and perpendicularly to said first portion of said bottom; a second member defining a second side wall for the container, further defining a second portion of the bottom for the container extending perpendicularly to said second side wall and adapted to overlap said first portion of said bottom, and further defining a second pair of right-angled triangular-shaped sections each having an apex adjacent the upper edge of said second side wall and each forming a second portion of each of the aforesaid pair of end walls for the container, said second portion of each of said end walls extending perpendicularly to said second side wall and perpendicularly to said second portion of said bottom and adapted to overlap respective ones of said first portions of said end walls; a pair of pin members positioned adjacent said bottom portions and extending through the overlapping portions of respective ones of said end walls pivotally to couple said first member to said



second member for angular movement of said first and second members between an opened and a closed condition about an axis extending adjacent and transversely of said bottom; first stacking means mounted on respective ones of said side walls at the respective upper edges thereof, said first stacking means comprises a pair of first stacking members formed integral with respective ones of said side walls and extending along the respective upper edges thereof to define a pair of stacking grooves; and second stacking means mounted on respective ones of said first and second members, said second stacking means comprises a pair of second stacking members each having a bead-like configuration and formed integral with respective ones of said first and second members and extending across the underside of the respective bottom portions thereof in alignment with respective ones of said first stacking members to be received in the first stacking members of a like receptacle.

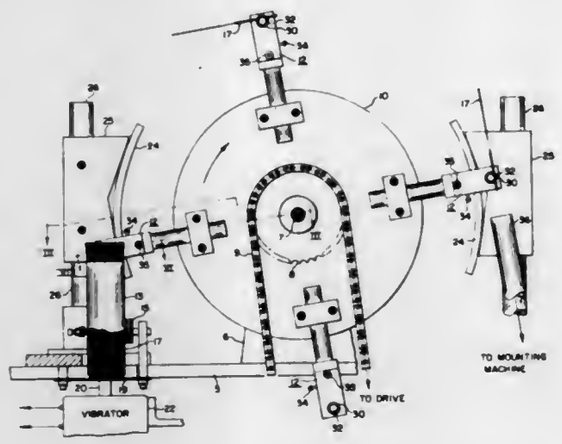
3,275,189
TRAY FEEDING APPARATUS
Harry G. Goldsborough and Carl J. Gerlach, Green Bay, Wis., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,810
10 Claims. (Cl. 221—36)

1. Apparatus for de-nesting pocketed trays from a stack of trays with each tray having a floor and flared end walls projecting therefrom, comprising a magazine for supporting a stack of nested trays and having an open end through which the trays are individually withdrawn, tray supporting fingers secured to opposite portions of said magazine and projecting within said open end in position to engage opposite edges of the end walls of the foremost tray, first gripping means movable in a direction normal to the plane of said floor into position to grip the floor of the tray, second gripping means comprising carriages, curved arms secured to said carriages and projecting toward said end walls from said carriages, gripping elements on the ends of said arms movable in a direction transversely of and normal to said first gripping means into gripping engagement with the flared end walls to first grip and then partially collapse said end walls by pulling the end walls inwardly out of engagement with the tray supporting fingers, and means for moving said



first and second gripping means with the foremost tray attached thereto away from said magazine and stack of trays therein.

3,275,190
LEAD-WIRE FEEDING APPARATUS
Phillip A. Livera, Bloomfield, and Samuel B. Lyons, West Orange, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 8, 1965, Ser. No. 446,548
8 Claims. (Cl. 221—93)



1. An apparatus for withdrawing lead-wires from a bundle and feeding them individually to a conveyor for subsequent use, said apparatus comprising:

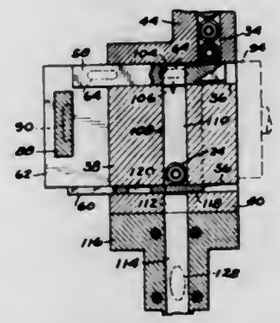
(a) a container for holding a bundle of stacked lead-wires slanting in one direction slightly from the vertical;

(b) means operatively associated with said bundle of stacked lead-wires in said container to cause said lead-wires to traverse a generally circular path in their direction of slant;

(c) a transfer member provided with an arm having a pick-up finger operable to grasp an individual lead-wire in said container; and

(d) drive means for operating said transfer member to cause said arm to move said pick-up finger into said bundle with attendant grasping of an individual lead-wire and the withdrawing thereof from said container, and said transfer means upon continued operation thereof moving said arm and pick-up finger to cause the latter to deposit its grasped individual lead-wire on a conveyor for further transmission thereof.

3,275,191
ARTICLE-FEED APPARATUS HAVING AN ARTICLE TRANSFER MEANS AND FLUID MEANS TO PROPEL ARTICLES THROUGH A TUBE
Murdo A. MacDonald, Bloomfield Hills, Mich., assignor to Tru-Tork, Inc., Birmingham, Mich., a corporation of Michigan
Filed June 29, 1965, Ser. No. 467,866
12 Claims. (Cl. 221—175)



1. Apparatus for feeding one at a time from a source to a delivery point a series of articles, each having surface portions by engagement with which said article is orientable in a predetermined attitude, said apparatus comprising:

a track, and means operable to introduce said articles into said track in a predetermined attitude,

a transfer movable laterally of said track and having an opening which in one position of said transfer is aligned for reception of an article from said track, and in another position is displaced from said track,

means defining a guideway positioned for reception of an article from said opening in said other position of said transfer, said guideway extending downwardly so that a received article passes gravitationally therethrough, a flexible tube having a longitudinal passageway therein extending to said delivery point, means mounting said tube so that said passageway is positioned to receive an article from said guideway,

said track, transfer opening, guideway, and passageway having control surfaces which are operative by engagement with said surface portions of said articles to hold the same in their predetermined attitude,

a closure movable laterally to and from alignment with an intermediate portion of said guideway and being thereby operative to close and open said guideway,

motor means operable to move said transfer and closure so that said transfer opening and closure are moved to and from alignment with said guideway substantially simultaneously,

means operable when said closure is aligned with said guideway to introduce air under pressure into a portion of said guideway below said closure for propelling an article through said passageway to said delivery point, and to discontinue said pressure when said closure is retracted from said guideway,

said closure, when in alignment with said guideway, providing a transitional support for an article received from said transfer and a pneumatic closure for containing said air under pressure,

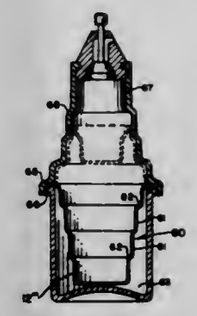
the control surfaces of said passageway having relatively larger tolerances with respect to said surface portions of said articles than control surfaces upstream thereof to facilitate curving of said tube without binding against articles passing therethrough and to facilitate escape of air past articles propelled thereby in said tube.

3,275,192
SHEET DISPENSER
Georg Cranskens, Wedel, Holstein, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany, a corporation of Germany
Filed Feb. 17, 1964, Ser. No. 345,156
Claims priority, application Germany, Feb. 25, 1963, L 44,205
10 Claims. (Cl. 221—259)



10. A device for dispensing sheets from at least two stacks, comprising an upwardly open lower container having a side forming an outlet for sheets from a respective stack receivable in said lower container; an upper container mounted upon said lower container and completely covering same for receiving another stack of sheets to be dispensed; means supporting said upper container upon said lower container for reciprocating movement of said upper container toward and away from the outlet side in a plane of the upper container; and feed means affixed to said upper container and shiftable therewith for successively feeding sheets from the stack in said lower container past said outlet side during successive reciprocations of said upper container upon said lower container, said upper container having an access opening permitting withdrawal of sheets from the stack in said upper container.

3,275,193
CONTAINER AND METHOD RELATING TO TELESCOPICALLY EXPANDED DIAPHRAGMS
Irwin R. Barr, Baltimore, Md., assignor to Aircraft Armaments, Inc., Cockeysville, Md., a corporation of Maryland
Continuation of application Ser. No. 179,970, Mar. 15, 1962. This application Dec. 21, 1964, Ser. No. 423,631
11 Claims. (Cl. 222—1)



1. The method of forming a larger enclosed chamber from a smaller enclosed chamber defined by a telescopically expandable folded tubular body portion closed at one end and a further fluid-tight-interconnected body portion having an open end and an opposite closed end facing the closed end of said telescopically expandable body portion, said folded tubular body portion being formed of material capable of cold flow to a substantially permanent deformtion and having a plurality of annular smoothly undulating folds disposed along its length and between said closed end and said open end of said further interconnected body portion, comprising exerting a longitudinally expanding pressure on said one closed end of said folded tubular body portion in a direction longitudinally away from said closed end and toward said open end of said further interconnected body portion and along the direction of potential telescopic expansion thereof through

said open end, and telescopically longitudinally moving said closed end and the connecting undulating folded side wall material of said folded tubular body portion from within itself and away from said opposite closed end and through said open end, and sequentially plastically deforming said undulating folds through an inside-out incremental rolling reverse bend and radially stretching and expanding the material of the inner folds beyond its elastic elongation limit but within the elongation-to-rupture limit upon passing of said inner folds through said reverse bend, all of said steps being effected as a function of differential pressure on said one closed end of said folded tubular body portion to thereby turn said tubular body portion inside out and expand said chamber.

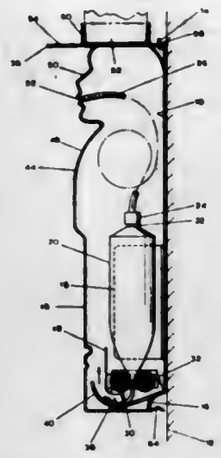
3,275,194
DISPENSER OF TREATMENT MATERIALS INTERPOSABLE BETWEEN TWO GARDEN HOSE PORTIONS
Morgan M. Moulder, Camdenton, Mo.
Filed Sept. 17, 1964, Ser. No. 397,087
3 Claims. (Cl. 222—48)



1. A container adapted for connection with ordinary garden hose comprising a cylindrical body member defining a chamber and having a radially inner outwardly extending inlet and outlet, said inlet and outlet being threaded to provide hose coupling means; said body member provided at either end with a radially outer outwardly extending circumferential flange extending a distance at least substantially coplanar with said inlet and outlet; a cylindrical member axially aligned within said chamber and in communication with said coupling means, said cylindrical member together with said cylindrical body member defining an annular chamber; said cylindrical member provided with means for communicating said annular chamber with said cylindrical member comprising a cylindrical tube having its longitudinal axis disposed transverse to the longitudinal axis of said body member and provided with an aperture for communicating said annular chamber with said cylindrical member and dispensing means axially aligned in said cylindrical tube.

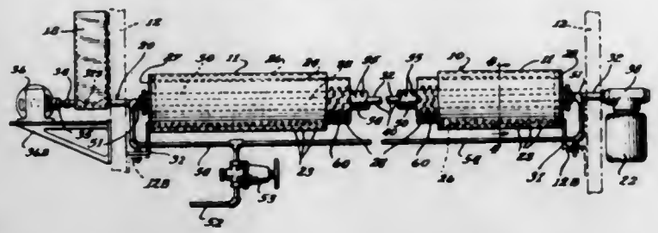
3,275,195
INTEGRATED HOLDER AND DISPENSER
Patricia M. Reinstra, 413 S. H, Imperial, Calif.
Filed June 7, 1965, Ser. No. 461,700
9 Claims. (Cl. 222—102)

1. In combination:
(A) a collapsible tube containing a fluid to be dispensed by the collapsing of the tube, said tube having an outlet at one end thereof;
(B) means forming a support for the tube;
(C) a frame having an outlet;
(D) a separate flexible hose connected to the outlet of the tube and extending to the outlet in the frame;
(E) a pair of rollers for frictionally receiving the opposite end of the tube therebetween for compressing



the tube for squeezing the fluid through the outlet of the tube and for progressively moving the outlet of the tube toward the rollers;
(F) and means for rotating one of the rollers.

3,275,196
ANTI-OFFSET POWDER DISTRIBUTOR
Russell C. Warczak, Chicago, Ill., assignor to Intercompany Corporation, a corporation of Illinois
Filed July 1, 1964, Ser. No. 379,637
13 Claims. (Cl. 222—193)

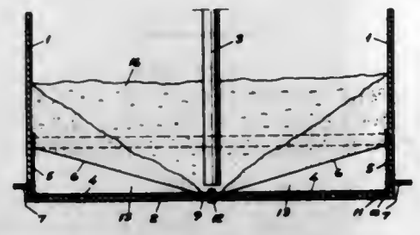


9. In an anti-offset powder distributor for printing presses, a bridge structure adapted to be mounted transversely across and adjacent to the path of advancing sheets issuing in succession from a delivery end of a printing press, means having spaced dispensing openings carried by said bridge structure for mechanically distributing powder across the span of the bridge structure, means for directing air past said dispensing openings with an aspirating effect to withdraw powder from said dispensing openings and entrain said powder in said air, means for varying said aspirating effect, and means defining an enclosed path terminating in uniformly spaced delivery openings through which such air and the entrained powder are discharged in a uniformly distributed relation across the entire span of said bridge structure.

3,275,197
INFLATABLE DISCHARGE DEVICE
Leif Sune Ingolf Eklund, Malmo, Sweden, assignor to Interconsult Aktiebolag, Malmo, Sweden, a corporation of Sweden
Filed Oct. 23, 1964, Ser. No. 406,086
Claims priority, application Sweden, Oct. 24, 1963, 11,685/63
9 Claims. (Cl. 222—195)

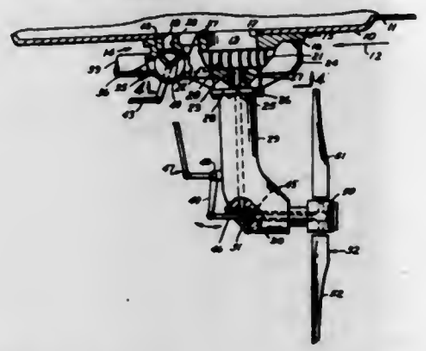
2. A discharge device for a container holding powdery and granular materials which comprises:
(a) an inflatable membrane member having a top of a flexible pervious material and sides and bottom constructed of a flexible, impervious material;

(b) means for attaching said member to the inside of the container so that when the member is inflated, it forms a V-shaped incline extending downward from said sidewalls toward the center portion of said bottom;
(c) a pressure-air source communicating with the space defined by the top, sides and bottom of said membrane; and



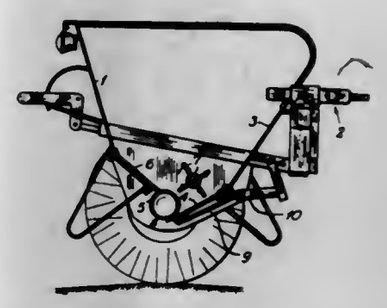
(d) means for discharging the powdery and granular materials after they have become fluidized by the pressure air;
whereby said pressure air inflates said member and simultaneously passes through the pervious portion of said membrane to fluidize the material disposed above said membrane inside said container, thus facilitating egress of the materials from the container.

3,275,198
AIR STREAM DRIVEN PUMPING SYSTEM
Conrad R. Barlow, Redondo Beach, Calif., assignor, by mesne assignments, to Transland Aircraft, Inc., Redondo Beach, Calif., a corporation of California
Continuation of application Ser. No. 185,257, Apr. 5, 1962. This application Sept. 20, 1965, Ser. No. 502,793
13 Claims. (Cl. 222—310)



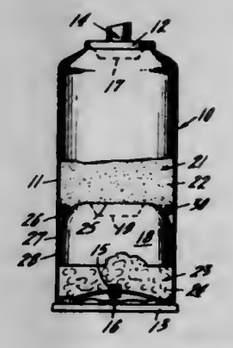
1. A fluid handling system adapted to be mounted in an opening in the bottom of a tank having a port in the bottom thereof, comprising:
a base plate attachable to the bottom of the tank, said base plate having a pair of holes; a rotary pump mounted underneath one of said holes and rotating in a plane in close proximity and parallel to the extension of the base plate, said pump having an outlet port extending substantially at right angles to said one hole;
means for selectively connecting said outlet port to the other one of said pair of holes and to conduit means provided for connection to a spray boom;
a propeller drivingly connected to the pump for driving said pump; and
means for mounting said propeller to said base plate so that the propeller faces the airstream, with the airstream in the axial region of the propeller bypassing the pump, said propeller having a plane of rotation, said planes forming a dihedral angle so that said pump sits at an angle to the airstream and to confront the airstream with less than its major cross-sectional area.

3,275,199
SPREADING DEVICE FOR FINE STREWING MATERIAL SUCH AS SALT OR FERTILIZERS
Alfred Thomsen, Askov, pr. Vejen, Denmark
Filed Nov. 9, 1964, Ser. No. 409,760
Claims priority, application Denmark, Sept. 19, 1964, 4,617/64
6 Claims. (Cl. 222—313)



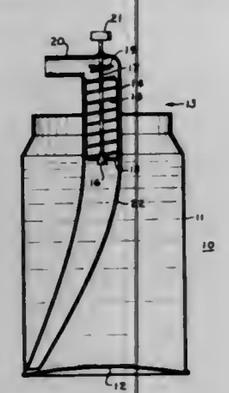
1. A spreading device for fine strewing material such as salt or fertilizers and with a container the bottom of which has a slot extending transversely of the direction of travel of the device, along which slot there is provided a rotating spreading roller with projecting carrier members and below which roller there is a plate of rubber or a similar resilient material pressing with its upward-facing surface against the underside of the roller, the said plate being of a material so soft that the carrier members, which consist of a large number of low, in vertical projection rather steep ribs having substantially greater longitudinal spacing than the longitudinal thickness of said ribs, may be substantially received in the rubber material when the plate, which opposite the roller is supported by one or more regulable pressure members, is pressed against the roller by the said pressure members.

3,275,200
PRESSURIZED DISPENSING CONTAINER
Alexander Livingstone, Washington, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Original application Nov. 16, 1962, Ser. No. 238,208. Divided and this application Dec. 14, 1964, Ser. No. 425,992
4 Claims. (Cl. 222—389)



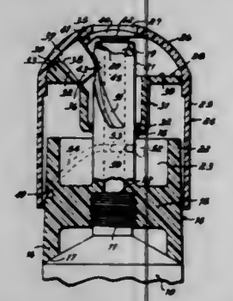
1. A dispensing container, comprising a tubular body sealed at opposite ends and mounting valve means at one of said ends, an imperforate generally cup-shaped piston mounted in an inverted position within said body and movable therein, said piston dividing the interior of said body into a product chamber and a propellant chamber, and a relatively flexible annular wax seal member freely received between said piston and said body and not connected to said piston or said body preventing product and propellant admixture.

3,275,201
FLUX COMPOSITION PACKAGE
William R. Tedeschi, Norwich, and Donald A. McCarthy, Milford, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 10, 1964, Ser. No. 350,814
21 Claims. (Cl. 222—402.25)



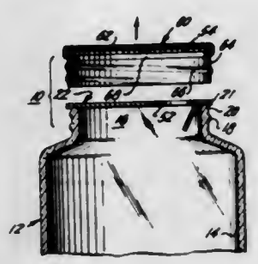
1. A pressurized flux package comprising a pressure-tight container having a valve-controlled opening and containing a composition for use in producing a flux composition on metal surfaces to be united by brazing, soldering, welding, and the like, comprising a mixture of a flux composition and a volatile propellant in liquid phase, the composition being connfied in the container under the vapor pressure of the propellant, said propellant being a non-flammable halogenated hydrocarbon containing at least one fluorine atom, said propellant having a vapor pressure in the range from about 15 to about 300 pounds per square inch gauge at 0° C.

3,275,202
CLOSURE DEVICE FOR CONTAINERS HAVING AN AXIAL ROTARY AND LONGITUDINALLY MOVABLE APERTURED CAP
David H. Trott, 3351 Stettinius Ave., Cincinnati, Ohio 45208
Filed May 25, 1965, Ser. No. 458,698
9 Claims. (Cl. 222—520)



1. A closure device comprising a first member adapted to be connected to a container or the like having a dispensing opening, said first member having a neck extending therefrom with a passage therein communicating with the dispensing opening of the container when said first member is connected to the container, a second member surrounding said first member and having an opening in one end for passage of said neck therethrough when said second member moves axially relative to said first member by rotation of said second member about the axis of said passage in said neck, said second member having a cap mounted thereon and disposed within said second member, said cap being movable from a position in which it closes and seals said passage in said neck to an open position in which it is out of the path of said neck, means to move said cap from its passage closing position to a position in which said cap blocks the path of said neck, and said cap and said neck having cooperating means to move said cap from its blocking position to its open position and vice versa during rotation of said second member about the axis of said passage in said neck, said cooperating means causing movement of said cap from its blocking position to its open position only when said second member is moved only rotatably about the axis of said passage in said neck of said first member and not during axial and rotatable movement of said second member with respect to said first member.

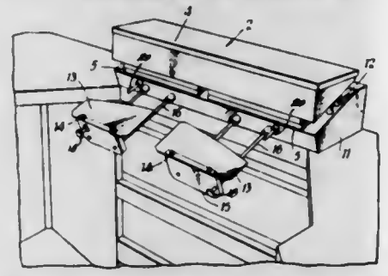
3,275,203
LOW VAPOR PERMEABILITY CONTAINER CLOSURE INCLUDING PUSH-OUT TAB FOR FORMING POUR MOUTH AND METHOD FOR MAKING SAME
Fred Nossal, Brooklyn, and Max Klein, Bronx, N.Y., assignors to Ferdinand Gutmann & Co., Brooklyn, N.Y., a corporation of New York
Filed July 19, 1965, Ser. No. 472,816
7 Claims. (Cl. 222—541)



3. A closure for a container having a neck terminating in an open mouth, said closure including:
(a) a low water vapor permeability flat circular multilayer laminated flexible sheet inner seal completely overlying and closing said mouth;
(b) a low water vapor permeability bond securing the seal completely around its periphery to the rim of the mouth;
(c) a low water vapor permeability flat circular stiff resilient liner coextensive with and superimposed over the inner seal, the liner having a margin jutting radially outwardly of the rim of the mouth;
(d) the liner having a facing which is in face-to-face contact with the inner seal;
(e) said facing being solid at room temperature and forming a bond between the liner and the inner seal, said facing being fluidifiable upon the application of heat;
(f) the bond between the inner seal and the rim being stronger than the bond between the liner and the inner seal so that when the liner is pulled away from the container it will separate from the inner seal and the inner seal will remain connected to the rim;
(g) a slit in the inner seal;
(h) said slit defining the boundary of the body of a tab except for its base, said base being integral with the inner seal;
(i) said slit running through at least the lamination of the inner seal proximate to the interior of the container and ending short of the surface of the liner distant from the interior of the container;
(j) said slit being disposed wholly inwardly of the rim and being formed while the facing is fluidified by heating and can flow back from a displaced location in the vicinity of the slit to solidify upon cooling and restore any impairment of the integrity of the inner seal and liner whereby as long as the liner is bonded to the seal the integrity and low vapor permeability of the closure is maintained;

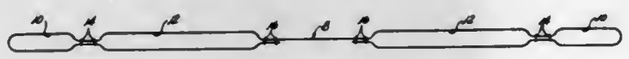
(k) said slit providing a weakened zone in the inner seal to facilitate bending of the tab about its base away from the remainder of the seal so as to leave an opening of restricted area for the dispensing of any material stored within the container; and
(l) a skirted cap threadedly engaging the neck of the container, the crown of the cap pressing the liner against the inner seal and the cap having an internal protrusion spaced from and near the crown and underlying the jutting margin of the liner so that when the cap is unscrewed from the neck the cap strips the liner from the seal and holds the liner near the crown of the cap.

3,275,204
PRESS FOR FORMING COLLARS, CUFFS AND THE LIKE FOR WEAR
Nigel Sturges, Chatham, and Leonard Charles Nutton, Rochester, England, assignors to Sewprima Limited, Brompton, England, a British company
Filed Apr. 6, 1964, Ser. No. 357,672
Claims priority, application Great Britain, Apr. 8, 1963, 13,848/63
2 Claims. (Cl. 223—2)



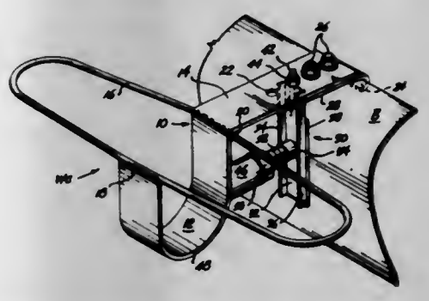
1. A press for forming garments such as collars, cuffs and the like for wear, including a stationary block, a movable block spaced in its press-open position from said stationary block, a casing member supporting said movable block, a layer of resilient material attached to said movable block and forming a facing therefor and opposing said stationary block, said layer substantially covering the upper surface of the movable block, means for moving said movable block towards and away from said stationary block between pressing and non-pressing positions, heating means for said stationary block, a former for the reception of a garment to be pressed, a carriage on which said former is mounted, said carriage being supported on shafts slidable in said casing member, means for guiding said former to a position between said stationary block and said movable block and switch means adapted to be operated by movement of said carriage to release power to press said stationary block and said movable block together when said former lies between them.

3,275,205
STRAP FOR RESCUE, CARRYING, AND EMERGENCY USE
James W. Howd, 1200 Hammel St., and Robert E. Howd, 177 Stevenson, both of Akron, Ohio
Filed May 21, 1965, Ser. No. 457,689
3 Claims. (Cl. 224—6)



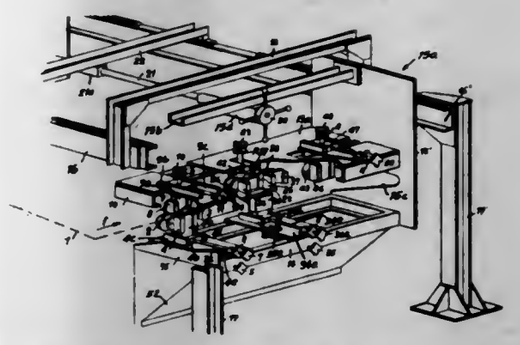
1. A reinforced carrying strap of about 4 to about 15 feet in length for general use but being adapted to be wrapped around the human body to serve as a carrying harness which comprises an elongate belt of high strength, flexible material where each end is folded back on the belt and stitched to the belt to form a loop, and wherein opposed portions of each formed loop are stitched together at at least one point whereby there are at least two loops each of the size to form a handle on each end of the strap.

3,275,206
SPORTS CYCLE CARRIERS
Paul H. Croft, 7241 S. Tacoma Way, Tacoma, Wash.
Filed Dec. 29, 1964, Ser. No. 421,980
4 Claims. (Cl. 224—42.03)



1. A wheel chock attachment for an automotive vehicle bumper, said attachment comprising means for underlying and supporting a portion of a cycle wheel, and mounting means connected thereto for mounting the attachment onto a bumper, and said mounting means including a forwardly extending tongue member having a terminal hook at its forward end for engaging the upper edge of the bumper, an elongated bumper contacting member depending downwardly from said tongue, rearwardly of said terminal hook, means pivotally mounting the upper end of said member onto said tongue, and brace means located below said tongue and comprising a screw housing including a head having a forwardly directed, internally threaded opening formed therein, and a screw threadable into and out from said opening, said screw having a head which bears against the rear of said bumper contacting member.

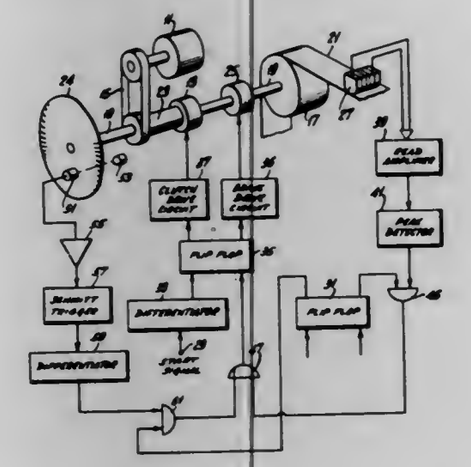
3,275,207
METHOD OF AND APPARATUS FOR CUTTING GLASS
Jean Preudhomme, Franiere, Namur, Belgium, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Apr. 14, 1965, Ser. No. 448,134
Claims priority, application France, Apr. 21, 1964, 971,693
21 Claims. (Cl. 225—2)



19. The method of automatically severing a band of glass from a ribbon of reinforced glass moving in its own plane in the direction of its length, and having a scored line in a first surface thereof, parallel with said direction, comprising, maintaining said ribbon in its plane of movement while exerting a force on the band at a first station, to break the band along said line, and subsequently at a second station positively moving the band out of said

plane by exerting thereon a force normal to said plane to thereby sever the reinforcement holding said band to the ribbon.

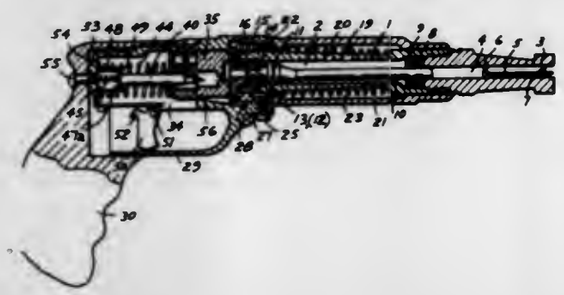
3,275,208
INCREMENTAL TAPE DRIVE SYSTEM
Eleuthere Poumakis, East Islip, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Sept. 14, 1964, Ser. No. 396,064
10 Claims. (Cl. 226—9)



1. An incremental magnetic storage tape drive system comprising,
a capstan for driving a magnetic storage tape,
a motor,
a clutch operable when energized to couple the output of said motor to drive said capstan,
a brake operable when energized to brake said capstan,
bi-stable means having a first stable state and a second stable state,
means operable to energize said clutch only when said bi-stable means is in said first stable state,
means operable to energize said brake only when said bi-stable means is in said second stable state,
means selectively operable to set said bi-stable means in said first stable state, and
means responsive to the movement of said capstan to a predetermined position to set said bi-stable means to said second stable state.

3,275,209
NAIL-DRIVING DEVICE
Kern Börje Emanuel Hansén, Myrsjovagen 8, Saltsjo Boo, Sweden
Filed Oct. 10, 1963, Ser. No. 315,313
Claims priority, application Sweden, Oct. 23, 1962, 11,332/62; Apr. 29, 1963, 4,672/63
12 Claims. (Cl. 227—10)

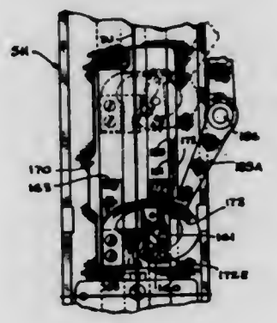
1. A nail driving device comprising an outer housing and an inner housing encompassed by the outer housing, said inner housing being lengthwise displaceable in reference to the outer housing and having a lengthwise bore; a muzzle for receiving a nail to be driven at one end of the bore of said inner housing, said muzzle having an inner diameter substantially equal to the largest outer diameter of the nail; an end wall at the other end of said inner housing bore, said end wall having an aperture therethrough to define a chamber for receiving an explosive charge therein; a handle assembly pivotally mounted on said outer housing for pivoting the handle assembly into and out of abutment with the outside of said apertured end wall of said inner housing bore, said handle assembly comprising a triggering assembly including a firing pin and a spring coacting with said pin for propelling the same into said chamber to detonate a charge inserted therein, spring loading means slidable in said handle assembly and controlled by the position of the inner housing in reference to the outer housing, said spring loading means being engaged with said apertured housing end wall for loading said firing pin spring by displacement of the inner housing toward said handle assembly, locking means coacting with said firing pin for locking the same against the action of said spring, said locking means being displaceable in unison with said spring loading means, release means movable to a position for releasing said locking means, said release means being operable in a predetermined position of displacement thereof thereby freeing said firing pin for propulsion into said chamber by the action of said spring, a piston displaceable in said inner housing, a driver for driving a nail received in the muzzle, said driver being secured to said piston and extending therefrom toward the muzzle, the length of the driver being such that the driver protrudes into the muzzle bore with a close fit when the piston is positioned in the inner housing to abut against said apertured housing end wall, detonation of a charge received in said chamber generating a gas pressure propelling the piston from said abutting position toward the muzzle thereby causing the driver to drive the nail, said inner housing having intermediate the length of its bore at least one venting port permitting escape of air from the bore until the piston passes said port while being propelled toward the muzzle, the remaining part of travel of the piston in the direc-



tion toward the muzzle causing compression of the air in said housing bore ahead of the piston, the gas pressure generated by detonation of the charge being dissipated through said port, whereby the compressed air in said housing bore part brakes the piston and re-expansion of the compressed air returns the piston to said abutting position, a first re-coil compensating spring means including a first coil spring disposed in the outer housing and encompassing the inner housing, said first coil spring urging the inner housing outwardly in reference to the handle assembly, a second re-coil compensating spring means including a second coil spring disposed within the handle assembly and urging said spring loading means for the firing pin spring into a position in which the firing pin spring is relaxed, said first and said second coil springs and said firing pin spring being axially aligned with said housing bore so that displacement of the inner housing deeper into the outer housing and toward the handle assembly through a predetermined distance effects loading of the two coil springs and the firing pin spring, displacement of the inner housing relative to the outer housing and toward the handle assembly loading said first and second coil springs and moving said spring loading means into the position loading the firing pin spring and said locking means into the position for release by said release means, the release of the energy stored in the two loaded coil springs upon detonation of the charge by releasing the firing pin and the braking force of the compressed air acting cumulative in the direction in which

the nail is propelled by the driver and in opposition to the force of the gas pressure generated by the detonation of the charge thereby substantially neutralizing the recoil force generated by said gas pressure.

3,275,210
SIGNATURE MACHINE
William B. McCain, Hinsdale, and James F. Cosgrove, Western Springs, Ill., assignors to Chicago Machinery Laboratory, Inc., Chicago, Ill., a corporation of Illinois
Original application Dec. 17, 1962, Ser. No. 245,322. Divided and this application Jan. 25, 1965, Ser. No. 427,624
6 Claims. (Cl. 227—82)



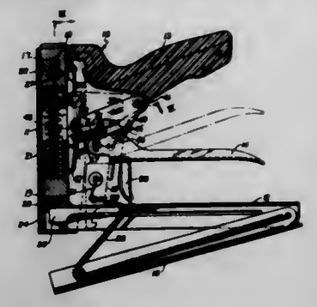
1. In a machine wherein a wire staple is to be used to join sheets or the like, apparatus including a stapling head through which a wire is fed to be advanced to a staple forming position, reciprocal gripper jaws having a wire advancing stroke to so feed a wire through the head when the gripper jaws are closed on the wire, means for holding open the jaws during the return stroke thereof, a pivotal wire holder retaining the wire and normally presenting the wire to the gripper jaws; and means for pivoting said holder to displace the wire from said jaws during the open state of the latter when it is desired to prevent formation of a staple.

3,275,211
SURGICAL STAPLER WITH REPLACEABLE CARTRIDGE
Leon C. Hirsch, Scotch Plains, and Frank Ourednik, Union City, N.J., assignors to United States Surgical Corporation, Baltimore, Md., a corporation of Maryland
Filed May 10, 1965, Ser. No. 454,300
8 Claims. (Cl. 227—124)



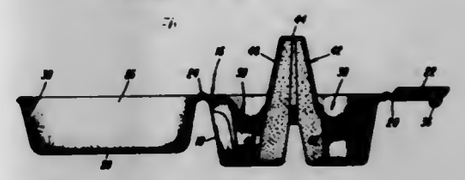
1. A staple cartridge, comprising a body portion of generally U-shaped cross section; a plurality of aligned staple retaining slots penetrating the body portion; a pair of rails disposed in spaced apart relation along the body; and a planar plate affixed to the body portion in spaced apart relation with the rails and protruding beyond the lateral dimension of the body portion to form grooves between it and each of the rails, said body portion being recessed to receive pin means.

3,275,212
STAPLER
Oscar H. Johnson, Holden, Mass., assignor to Parker Mfg. Company, Worcester, Mass., a corporation of Massachusetts
Filed July 22, 1964, Ser. No. 384,336
7 Claims. (Cl. 227—132)



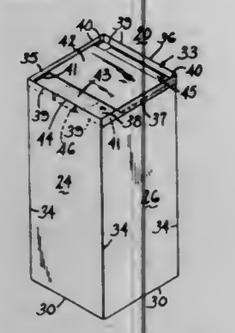
1. A stapler, comprising
(a) an elongated base adapted to carry a supply of staples and to feed them toward one end,
(b) an elongated housing extending at a right angle to the said base and having a hammer movable longitudinally of the housing toward the said one end to drive a staple,
(c) an elongated cantilevered grip extending at a substantial angle to the housing at the end opposite the end which is associated with the base,
(d) a trigger for actuating the hammer hingedly fastened to the said housing between and extending in the same general direction as the base and the grip,
(e) a spring in the housing pressing with one end against the said hammer,
(f) a cap mounted in the housing and engaging the other end of the spring,
(g) means connecting the housing and the cap to lock the cap in one of a plurality of accurately-spaced positions relative to the housing for the selection of spring pressure and hammer force,
(h) a lever mounted in the housing for pivotal movement about one end,
(i) a lifter pivotally mounted on the other end of the lever and having a hook at one end for engagement with the hammer, and
(j) a roller mounted on the actuating trigger and engaging the lever between the ends.

3,275,213
CONTROLLED STOCK FORMATION
Richard F. Reifers, New Canaan, Conn., assignor to Diamond International Corporation, a corporation of Delaware
Original application Mar. 18, 1964, Ser. No. 352,787. Divided and this application Aug. 11, 1965, Ser. No. 489,451
2 Claims. (Cl. 229—2.5)



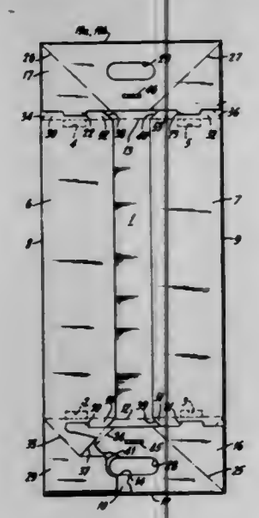
1. In an egg carton molded of pulp comprising a cover portion and a bottom portion having cells therein adapted to hold the eggs, said bottom portion having an upstanding separator post between said cells adapted to engage the under surface of the cover portion when the carton is closed, the improvement wherein the upper portions of said separator posts have a uniformly lesser effective thickness of pulp and weight per square inch than the remaining portion of said carton whereby the denesting resistance of said carton is reduced.

3,275,214
CONTAINERS AND CLOSURES THEREFOR
Pasquale S. Carangelo, West Haven, Conn., assignor, by direct and mesne assignments, of one-third to Alfred Celentano, New Haven, Conn., and one-third to Anthony P. Dello, Hamden, Conn.
Filed May 28, 1964, Ser. No. 370,867
7 Claims. (Cl. 229—17)



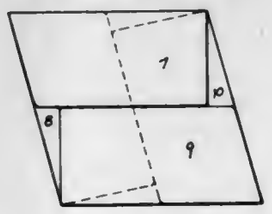
1. A blank for producing a quadrilateral container comprising four attached body panels, said body panels separated from each other by at least one crease line, a bottom sealing flap means coupled to said body panels, said bottom flap separated from the body panels by a crease line, a top pouring flap coupled to one of said body panels, said top flap including a rectangular member having one side separated by a first crease line from said one of said body panels, and a second crease line parallel to and spaced apart from said first crease line, three flange flaps coupled to the three other sides of the rectangular member and separated from said rectangular member by crease lines, two of said three flange flaps only extending from the second crease line to the crease line separating the third of said flange flaps from the rectangular member.

3,275,215
CONTAINER
Richard E. Paige, New York, N.Y., assignor to The Paige Company Containers, Inc., New York, N.Y., a corporation of New York
Filed May 18, 1965, Ser. No. 459,521
6 Claims. (Cl. 229—31)



1. A unitary structure for folding into an open tray, comprising a single blank of rigid but foldable paperboard;
a central rectangular bottom panel 1,
side panels 6, 7 hingedly connected to opposite sides of said bottom panel,
end panels 10, 11 hingedly connected to opposite ends of said bottom panel 1 with two slots 4, 5 and 2, 3 adjacent each end hinge,
a double-hinge section comprising a narrow intervening panel, lying adpacent the outer edge of each end panel 10, 11,
an additional end panel 16, 17 lying adjacent the outer hinge of each double-hinge section;
said additional end panel 16, 17 being divided into three sections by two 45° hinges 24, 25, each hinge starting at the juncture of the side edge and inner edge of said additional panel and extending outwardly to terminate at the outer edge of said additional panel, thus forming two generally triangular panels, each of which has a tab 20, 21 and 22, 23 extending therefrom;
two-panel web sections 29, 30, 31, 32 hingedly connecting one side of each end panel 10, 11 to the corresponding side of a side panel 6. 7, said web comprising a generally triangular panel 37, 38, 39, 40 hingedly connecting the side panel to a central 45° hinge 33, 34, 35, 36, and the second web panel connecting the side of the end panel 10, 11 to said 45° hinge;
all four web sections 29, 30, 31, 32 being offset inwardly of the corners of the bottom panel 1 to space the hinges defining the sides of the side panels inwardly from the end panel;
the connected side 6,7 and web panels 29, 30, 31 32 being folded over to a position overlying their adjacent bottom and end panels, and the additional end panels 16,17 being folded over to overlie the folded-over webs;
the inner surface of each additional end panel being adhesively fastened to the outer surface of each extended web panel, to form a prefolded, unitary structure which can be erected into an open paperboard tray.

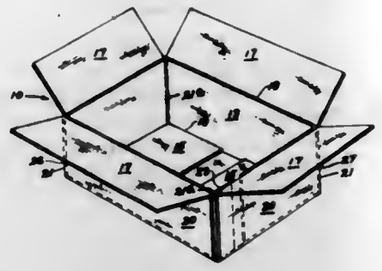
3,275,216
CONTAINER
Raymond L. Collins, Brevard, N.C., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed June 1, 1964, Ser. No. 371,343
6 Claims. (Cl. 229—37)



1. A container including two pairs of side walls, the walls of each pair being substantially parallel, and at least one closure flap extending from the same end of each of said side walls,
each said flap having an edge substantially perpendicular to an another edge disposed at an acute angle to its line of juncture with its side wall,
whereby the container cross-section is rectangular, when said perpendicular edges are disposed alongside said side walls, and parallelogram-shaped, when said edges are otherwise disposed.

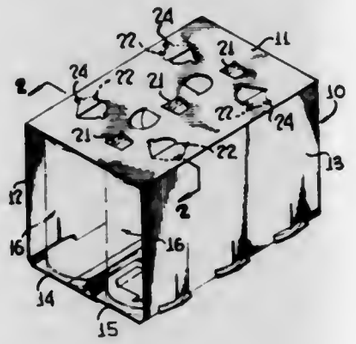
3,275,217
BOX WITH LAMINATED CORRUGATED COLLAR
Clinton L. Dornbush, Palo Alto, and Ward H. Francillon, San Jose, Calif., assignors to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia
Filed Nov. 25, 1964, Ser. No. 413,818
2 Claims. (Cl. 229—37)

1. A box comprising a parallelepipedon box of double-faced corrugated paper which side walls and top and bottom flaps and a double-faced corrugated paper collar the same height as said walls and of the same perimeter as that of the walls and glued to said walls,
said strip being offset relative to the ends of the side



walls of said box, to provide a short flap bridging across the end edges of the box side walls and closing the edges of said box.

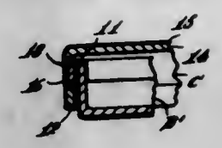
3,275,218
CARTON
Robert H. Ganz, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed June 26, 1964, Ser. No. 378,346
17 Claims. (Cl. 229—40)



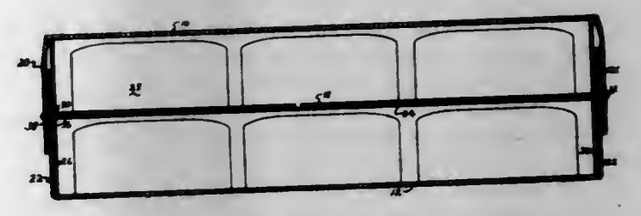
1. In a carton having an interior for receiving cans, a carton panel adapted to oppose ends of cans, a can locking tab struck from said carton panel and hingedly connected thereto along one edge of said locking tab, said locking tab being reversely folded relative to said carton panel into the interior of the carton and having means for reception within a recessed can end and engagement with a seam of the can to limit movement of the can relative to the carton, and means entirely within the limits of said carton panel and independent of a can locking said locking tab in its folded position.

3,275,219
SELF-LOCKING BOX
William H. McKechnie, Northboro, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Original application Aug. 5, 1964, Ser. No. 387,606. Divided and this application June 14, 1965, Ser. No. 463,502
4 Claims. (Cl. 229—45)

1. A self-locking box comprising inner and outer cup-shaped parts which telescope together with the edge of the inner part inside the outer part and the edge of the outer part outside the inner part, an internal shoulder on one side of the outer part facing away from said edge of the outer part, and a flap on the corresponding side of the inner part having its free end directed away from said edge of the inner part to engage behind said shoulder when the parts are telescoped together, the outer part having a depressible portion opposite said flaps so that the flap may be disengaged from said shoulder by pressing inwardly on the said portion to unlock the box, the inner part comprising a layer of material covered with sheet material which bends easily, said sheet material extending across the junction between said flap and inner part and being secured to both the flap and inner part on opposite sides of the junction, said layer having a cut along said junction to facilitate folding the flap outwardly with said sheet material serving as a hinge.

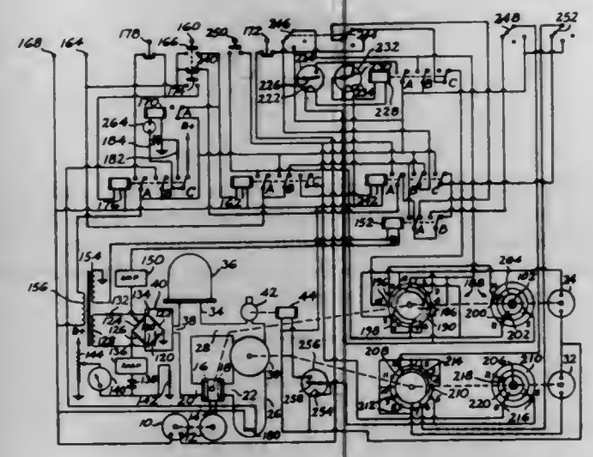


3,275,220
BAKERY BOXES
Loy O. Hubbard, 3601 37th St., Lubbock, Tex. 79413
Filed Mar. 25, 1965, Ser. No. 444,937
7 Claims. (Cl. 229—47)



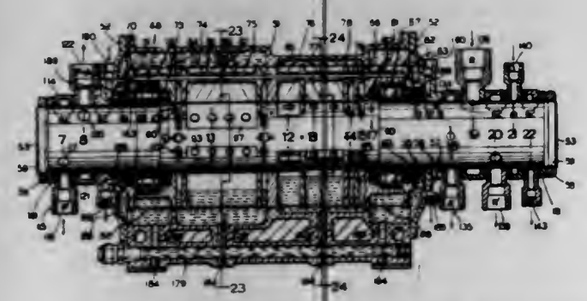
1. In a box made of stiff pasteboard with natural springiness, said box having,
(a) a top, bottom, and two sides,
(b) on each end of the box a top flap hinged to the top, a bottom flap hinged to the bottom, and a side flap hinged to each of the sides.
(c) the side flaps being the same width as the sides so that when they are closed before the top and bottom flap they give rigidity to the box, and
(d) a center divider extending in a plane parallel to the top and bottom and half-way therebetween,
the improvement comprising:
(e) a bolt attached to the end of edge of the center of the divider and extending inwardly along the divider,
(f) a hole in the bottom flap so that when it is folded up, before the top flap is folded down, the bolt protrudes through the hole, and
(g) a female connector attached in the top flap,
(h) said female connector having a keyhole opening with a circular portion and a slot portion therein,
(i) the keyhole opening arranged so that when the top flap is closed the slot portion has its longitudinal axis vertical and is below the circular portion within the female connector,
(j) said bolt extending through said female connector and resting at the bottom of the slot so that the female connector with the bolt results in additional transverse rigidity to the box by preventing the top flap from moving relative to the bolt attached to the divider, and
(k) a head on the end of the bolt to prevent the top flap from opening,
(l) said head being rounded,
(m) said female connector having an inward depression thereon to direct the rounded head of the bolt through the circular opening thereof.

3,275,221
AUTOMATIC HIGH VACUUM SYSTEM
Thomas J. Holce, Forest Grove, Oreg., assignor, by mesne assignments, to Varian Associates, Palo Alto, Calif., a corporation of California
Continuation of application Ser. No. 132,614, Aug. 21, 1961. This application May 27, 1965, Ser. No. 459,231
10 Claims. (Cl. 230—2)



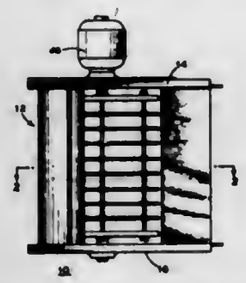
1. A vacuum system comprising a diffusion pump provided with an inlet, a mechanical vacuum pump bypass conduit communicating with said inlet, a mechanical vacuum pump backing conduit communicating with the diffusion pump, a mechanical vacuum pump communicating with the bypass and backing conduits, bypass valve means in the bypass conduit, backing valve means in the backing conduit, electrically actuated drive means operatively engaging the bypass and backing valve means, valve means in the diffusion pump inlet, electrically actuated drive means operatively engaging the diffusion pump inlet valve means, and electrical timer means operatively associated with the bypass and backing valve drive actuator means for controlling operation of the latter to open and close said valve means alternately on a predetermined time sequence when the pressure in said inlet is elevated above a predetermined value.

3,275,222
ROTARY LIQUID PISTON MACHINES
Andre J. Meyer, 848 N. Jackson Drive, Fayetteville, Ark. 72701
Filed Jan. 11, 1965, Ser. No. 424,581
15 Claims. (Cl. 230—116)



1. In a liquid piston machine a combustor and a unitary structure comprising a plurality of pumps and motors including an air pump, a mixture pump and a product gas motor interposed between two air motors, said pumps and motors having individual rotors coaxially connected to each other and adapted for rotation about a stationary member, means for taking the influx to the air pump out of the atmosphere and for feeding a mixture of fuel and air to the mixture pump, means for delivering the compressed efflux of said mixture pump and part of the compressed air issuing from said air pump to said combustor, means for supplying the outflow of the combustor to the product gas motor and part of the compressed air to the air motor and means for discharging the exhaust gas of said motors into the atmosphere.

3,275,223
FLUID MOVING MEANS
Andrew J. Fowell, South Bound Brook, N.J., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,857
5 Claims. (Cl. 230—125)

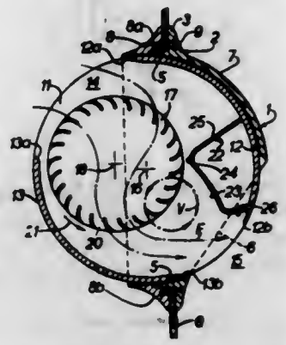


1. A shear force crossflow gas mover comprising, end plates, a plurality of annular members including inner and outer edge portions positioned between said end plates, means for supporting said members in axially spaced relationship to form a rotor having an elongated centrally located completely unobstructed cylindrical cavity defined by the inner edge portions of said annular members, said annular members being spaced from each other sufficiently close to exert a shear force on the gas between the surfaces of said members, a housing surrounding said rotor and forming for said rotor an inlet and an outlet, the cross-sectional area of said inlet being greater than the cross-sectional area of said outlet, said housing including a first wall portion smoothly diverging from said rotor in a direction from the inlet to the outlet, the portion of said first wall portion adjacent said inlet being a rolled back lip member, a second wall portion spaced from said rotor and extending from said outlet to said inlet in the direction of rotation of the rotor, said second wall portion including a portion smoothly and continuously converging toward said rotor in the direction from said outlet to said inlet and portions separating said inlet from said outlet comprising surface members which converge as the distance from said rotor increases, and means for rotating said supporting means in said housing so that all of said members rotate about a common axis of rotation aligned with said elongated cylindrical cavity to cause the shear force exerted on the gas to establish a whirling body of fluid having an axis of rotation parallel to and displaced from the axis of rotation of said annular members and angularly positioned between said inlet and said outlet in the direction of rotation of said rotor.

3,275,224
VENTILATING FANS
Edmund Helmuth Bush, Taplow, England, assignor to Firth Cleveland Limited
Filed Mar. 2, 1965, Ser. No. 436,555
Claims priority, application Great Britain, Mar. 4, 1964, 9,227/64; Oct. 16, 1964, 42,379/64
9 Claims. (Cl. 230—125)

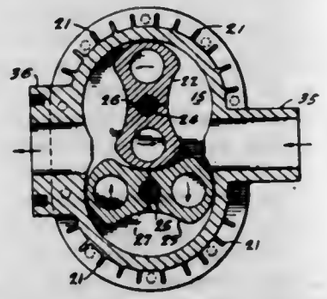
1. A ventilating fan of the cross-flow type comprising an outer structural unit adapted to be fixed in position; an inner structural unit mounted for rotation with respect to the outer unit about an axis fixed in relation thereto; and a motor-driven bladed cylindrical cross-flow rotor mounted for rotation in predetermined direction about an axis parallel to and spaced from the rotational

axis of the inner unit and fixed in relation thereto; said units providing openings opposite the rotor and to either side of the outer unit in both of a first and a second angularly spaced position of the inner unit, first and second guide walls extending the length of the rotor; rotor and guide walls co-operating in each of said positions of the inner unit to set up a vortex having a core region eccentric of the rotor axis and adjacent the first guide wall and to thereby induce a flow of air from one open-



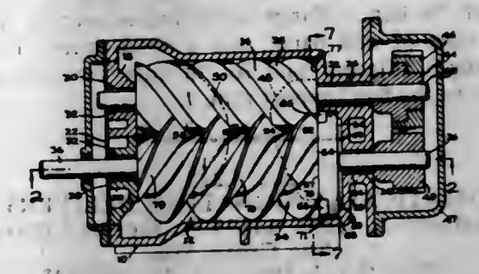
ing through the path of the rotating blades of the rotor to the interior of the rotor and thence again through the path of the rotating blades to the other opening; rotation of said inner unit between said two positions changing the orientation of said guide walls relative to the rotor whereby to reverse the direction of flow between said openings; and the rotational axis of the rotor being spaced to one side of that of the inner unit with the first guide wall to the other side of the latter axis.

3,275,225
FLUID COMPRESSOR
Forrest O. E. Schultz, Owosso, Mich., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 6, 1964, Ser. No. 357,561
8 Claims. (Cl. 230—141)



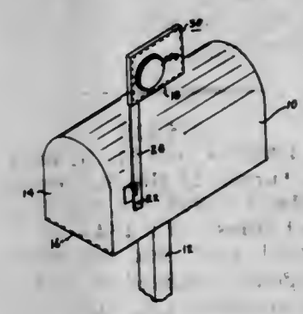
1. In fluid compressor apparatus comprising, in combination: wall means defining a compressor chamber having an inlet for fluid to be compressed and an outlet for compressed fluid; a pair of rotatable lobed rotors disposed within the chamber on spaced axes; and means for rotating the rotors in unison in opposite directions; and characterized in that each rotor comprises a plurality of lobes of substantially epicycloidal configuration and an equal number of recesses of substantially hypocycloidal configuration alternated between successive lobes, wherein each epicycloidal lobe is generated by a point on the circumference of a rolling circle of a diameter not greater than A rolling on a portion of the exterior of a base circle of a diameter B and wherein each hypocycloidal recess is generated by a rolling circle of a diameter not less than A rolling on an inside adjacent portion of the same base circle, in which A is determined by the formula $A=B/2N$ where N is equal to the number of lobes; and further characterized in that the spacing between rotor axes is equal to B.

3,275,226
THRUST BALANCING AND ENTRAPMENT CONTROL MEANS FOR SCREW TYPE COMPRESSORS AND SIMILAR DEVICES
Joseph E. Whitfield, P.O. Box 325, York, Pa.
Filed Feb. 23, 1965, Ser. No. 434,294
11 Claims. (Cl. 230—143)



1. In a fluid compressor or similar device of the type having a housing forming intersecting cylindrical rotor chambers, a suction port and a discharge port arranged diagonally opposite each other in the rotor chamber side walls adjacent the end walls of said housing, and a plurality of complementary helically threaded rotors rotatably supported within said rotor chambers and cooperating with each other and the chamber walls to form pockets at the suction end of the rotors for receiving fluid through said suction port, to advance said pockets and the fluid therein axially along the rotors and to discharge the fluid from said pockets through said discharge port as said rotors revolve about the axes thereof, and wherein said pockets become sealed before running out after normal communication between the pockets and the discharge port is cut off, means for venting directly to the discharge port the fluid trapped in said sealed pockets comprising a control disc fixed to one of said rotors at the discharge end thereof having a cylindrical peripheral surface which rotates in sealing relationship with a surrounding surface fixed relative to the end wall of the housing adjacent the discharge port, an opening in said surrounding surface leading to said discharge port, and a plurality of venting passages in said disc opening to the peripheral surface thereof through which the fluid trapped in said sealed pockets may escape to the discharge port when the ends of said passages in the peripheral surface of the disc are in communication with the opening in the surrounding surface.

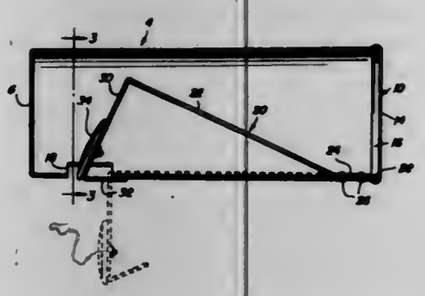
3,275,227
MAIL BOX SIGNAL DEVICE
Leonard E. Bogue, 18340 Cleveland Road, South Bend, Ind.
Filed Mar. 1, 1963, Ser. No. 262,074
4 Claims. (Cl. 232—34)



1. A signaling device for a mail box having a rectangular flag and a support arm therefor extending from the lower corner thereof, comprising a rectangularly-shaped front panel of aluminum being substantially the same size as the flag and having a round hole therethrough, a

flange on the front edge of said hole around said hole, a reflector unit of glass with a radially extending flange means at the rear periphery thereof for engaging said first mentioned flange on the internal side thereof for retaining said reflector unit in said hole, flanges along three adjoining edges overlapping the rear side of said panel but spaced therefrom for embracing the respective edges of the flag, a flange extending outwardly from the fourth edge of said panel, and a notch means in one of said flanges adjacent said fourth edge corresponding in position to the flag support arm.

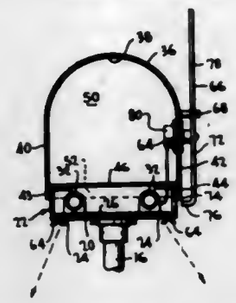
3,275,228
AUTOMATICALLY SIGNALING DELIVERY BOX
Anthony A. Golla, 14875 W. Froedtert Drive, Elm Grove, Wis.
Filed Oct. 2, 1964, Ser. No. 401,037
1 Claim. (Cl. 232—34)



In combination, a rural newspaper box comprising an elongated tubular receptacle closed at a rearward end and open at its forward end and adapted for slidably receiving and retaining therein a newspaper, said receptacle having a bottom wall provided adjacent the closed end of the receptacle with a delivery indicating signal opening, an elongated leaf spring located within the confines of said receptacle and having a forward end secured to said bottom wall and its body portion normally inclining upwardly and rearwardly toward said closed rear end and adapted to be cammed and pressed downwardly when a newspaper is inserted into the receptacle, the rear end portion of said spring having an angularly bent downwardly directed angular member aligned with and projectable and retractible relative to said opening, said angular member being provided with a reflective surface normally confined within the receptacle and projectable through and beyond the opening when a newspaper has been fully deposited in said receptacle, the lower end of said angular spring member being bent to provide a laterally directed exteriorly arranged terminal portion providing a limit stop, said limit stop, by reason of the inherent resiliency of said leaf spring, being normally engaged with said bottom wall and serving to govern travel of the signaling and reflective surface through said opening into said receptacle.

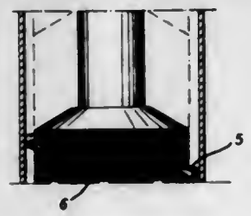
3,275,229
ILLUMINATED MAIL BOX
William G. Turner, 23 Hill St., Orono, Maine
Filed May 17, 1965, Ser. No. 456,165
4 Claims. (Cl. 232—34)

1. An illuminated mail box comprising a support frame, and a receptacle mounted on said support frame, means removably mounting said receptacle on said support frame, said support frame comprising a substantially sealed compartment through which light rays will penetrate, an electrically energized light source contained in said substantially sealed compartment, said receptacle comprising a housing having a door control panel controlling access to the interior thereof, and a signal flag pivotally mounted on said housing and having an upper flag portion positionable above the upper portion of said housing, said support frame comprising a collar member including a lower transparent closure panel defining a



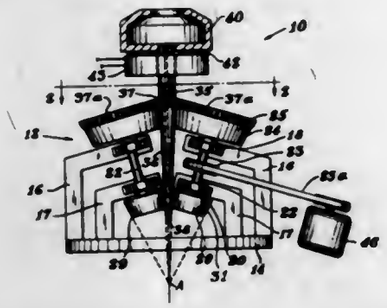
bottom of said compartment, said housing having a lower peripheral portion draping over the upper edges of said collar and including a bottom wall overlying and forming the upper limits of said substantially sealed compartment.

3,275,230
BOWL CENTRIFUGE
Georg Hiller, Vilsbiburg, Lower Bavaria, Germany, assignor to Flottweg-Motorenwerk Dr. Georg Bruckmayer, Vilsbiburg, Lower Bavaria, Germany
Filed July 27, 1964, Ser. No. 385,333
5 Claims. (Cl. 233—7)



1. A bowl centrifuge having a full outer jacket with at least a part thereof being of a conical shape, means for rotatably mounting said jacket, a central supporting member mounted within and rotatable relative to said jacket, a set of disks secured to said supporting member, spiral means removably secured directly to said set of disks and projecting from the outer periphery thereof, and means for rotating said jacket and said supporting member with said disks and said spiral means thereon at different speeds.

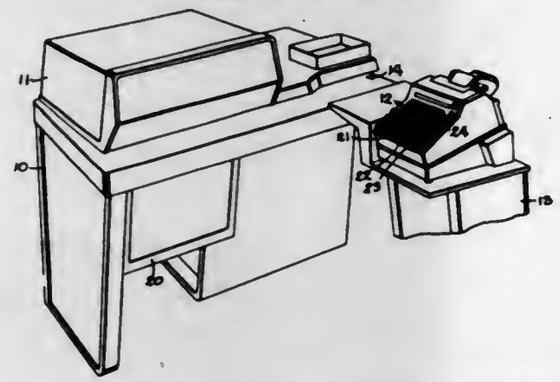
3,275,231
BEARING
Douglas S. Chisholm, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,266
4 Claims. (Cl. 233—24)



1. A bearing assembly comprising a member to be rotated, said member defining a section having a conical surface, said surface being projectable to a point A, at least three rotatably mounted conical segments positioned at about equiangular displacements from each

other about said conical portion, each of the conical segments having conical surfaces in the same conical projection which are projectable to the point A and in engagement with conical surface of the conical member to be rotated, rotatable bearing means in cooperative combination with the conical sections, and means to maintain the conical sections in fixed relationship to each other.

3,275,232
PROOF ENCODER AND PERFORATING SYSTEM THEREFOR
James L. Quinn, Chicago, Orville T. Knutson, Libertyville, and William H. Dreyer, Skokie, Ill., assignors to Cummins-Chicago Corp., Chicago, Ill., a corporation of Illinois
Filed Nov. 5, 1963, Ser. No. 321,608
27 Claims. (Cl. 234—1)

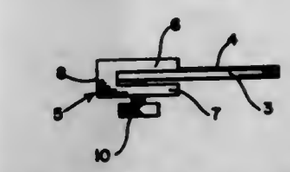


7. In a perforating system for entering information on checks or the like a portion of which have prequalifying information at the leading edge and a portion of which do not have any prequalifying information, the method which comprises transporting a check along a predetermined path of movement, detecting the presence of prequalifying information, relatively positioning the check in a coding station and entering coded information thereon, said check being positioned in the station in a first or second position depending upon the absence or presence of prequalifying information so that the information entered on the check at the station is entered adjacent the prequalifying information and in the lack thereof adjacent the leading edge of the check.

12. In a perforating system for entering information on checks or the like, the combination comprising a perforator having rotatable rings indexable to set positions, means for rotating the rings simultaneously from a home position, said rings having respective magnetic latches, a multiple column keyboard for entering information read from the face of the check, the columns being so coupled to the corresponding and respective magnetic latches that the rings are latched at positions corresponding to the information entered on the keyboard, means for transporting the check to a position in which a clear area on the check is alined with the perforator head, means automatically responsive to arrival of the check and the completion of the setting of the rings for actuating the perforator head, and means for thereafter ejecting the check and resetting said rings to home position in readiness for new instructions from the keyboard.

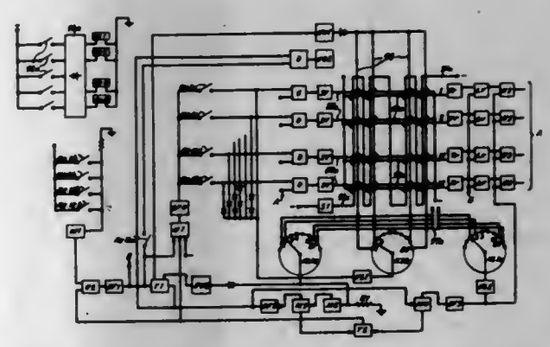
3,275,233
TAPE PERFORATOR WITH VARIABLE WIDTH TAPE GUIDE ATTACHMENT
Samuel R. Frankel, 412 N. State St., Shillington, Pa.
Filed Dec. 31, 1964, Ser. No. 422,685
6 Claims. (Cl. 234—1)

1. In a high speed tape perforator of the class described having a punch block containing a plurality of punch pins that selectively may be actuated to perforate a tape passing therethrough, the improvement comprising a tape guide shoe removably mounted adjacent said punch block



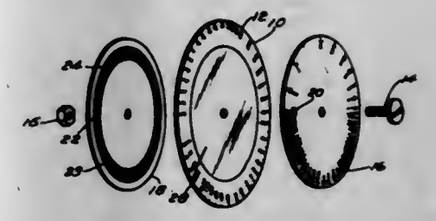
and adapted to engage one margin of said tape in guiding relationship whereby the position of said tape with respect to said punch pins can accurately be controlled.

3,275,234
RECORD CARD PUNCHING MACHINE
Hans Christian Felder, Bad Homburg vor der Hohe, Gerhard Schilling, Steinbach, Taunus, Karl Hermann Johannes Zennig, Frankfurt am Main-Rodelheim, and Klaus Juergen Boehnke, Kelkheim, Taunus, Germany, assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 233,023, Oct. 25, 1962. This application June 15, 1965, Ser. No. 464,249
Claims priority, application Germany, Nov. 4, 1961, R 31,400 R 31,401, R 31,402, R 31,403
27 Claims. (Cl. 234—58)



1. In a keyboard controlled machine for punching a record card column by column, a punching mechanism cyclically operable for perforating a record column, means for feeding records through said punching mechanism, a memory having a plurality of addressable locations for storing data entered from said keyboard, means for reading said memory in sequential locations to selectively control the punches of said punching mechanism, and output stepper means coupled to said reading means and said feeding means for driving said feeding means intermittently in steps to advance the card column by column to said punching mechanism in synchronism with the sequential operation of said reading means.

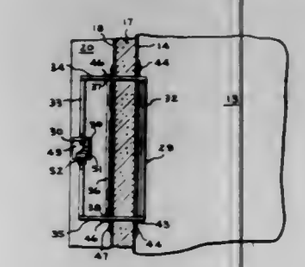
3,275,235
COMPARISON CALCULATOR
George Balch 73 Taber Ave., Providence, R.I.
Filed Sept. 20, 1965, Ser. No. 488,525
7 Claims. (Cl. 235—84)



1. A comparison computer comprising a pair of adjacent relatively movable members, each member having thereon graduations in a predetermined progression in

the same direction, a third member having graduations associated with the pair of members and with reference to which the pair of members may each move for adjusting their graduations which are in cooprative relationship with the graduations on the third member, means associated with said pair of members comprising indicia strips on one and indicators in the other in cooperative relationship with said strips, said means being so positioned with reference to said graduations on said pair of members as to visibly and concurrently indicate to the user the comparative results secured by the relative position of said members.

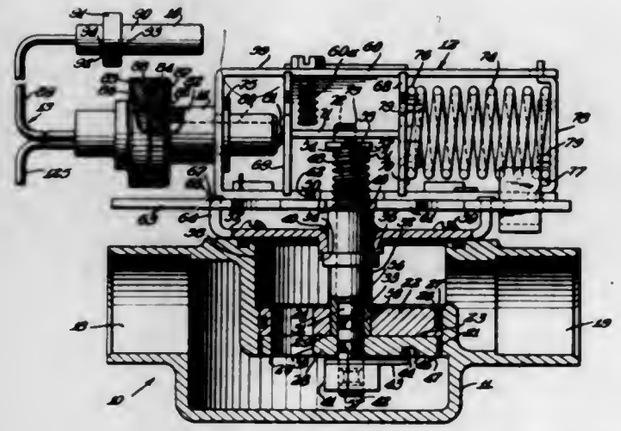
3,275,236
HYDRAULIC THERMOSTATIC SYSTEM WITH SLAVE PISTON ASSEMBLY
Paul R. Staples, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Dec. 7, 1964, Ser. No. 416,503
5 Claims. (Cl. 236—15)



1. A hydraulic thermostatic system for controlling the heating means of a domestic oven comprising a temperature sensor and a hydraulic temperature responder that are joined together by a fluid-filled capillary tube, the sensor comprising a rectangular frame with a sensing tube a low thermal mass forming one side, a driven tube forming the opposite side, and where the two remaining sides are rocker arms connecting the sensing tube with the driven tube, and a fulcrum rod adjacent the center of the frame and integral at each end with the adjacent rocker arm. and a transducer cooperating with the driven tube and connected to the capillary tube so as to convert variations in the length of the driven tube to variations in the fluid pressure in the capillary tube, the sensing tube being adapted to be positioned within an oven cavity while both the fulcrum rod and the driven tube are adapted to be shielded from the oven temperature and located in the same ambient conditions to render them ambient temperature compensated so that the net effect is that only the sensor tube length is monitored by the driven tube.

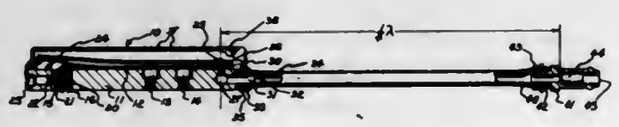
3,275,237
ROTARY SHEAR VALVE WITH REMOTE CONTROL
Lawrence A. Kolze, Bensenville, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed June 22, 1964, Ser. No. 376,811
5 Claims. (Cl. 236—51)

5. A fluid flow control valve comprising,
a valve body having an inlet, an outlet and a passage communicating said inlet and said outlet, a rotatable valve member and a valve seat in said passage for controlling fluid flow therethrough, an elongated valve stem rotatably mounted on said valve body,
said stem having a first portion extending into said passage and being fixedly connected to said valve member for corotation therewith and having a second portion extending outwardly of said valve body,
a radially extending crank arm fixedly connected to said second portion of said valve stem and having an axially extending pin member formed thereon in axial offset relation with respect to said valve stem,
a force transmitting assembly mounted on said valve body and comprising,
an assembly frame fixedly connected to said valve body,
a pin guide member slidably mounted for translatory movement on said frame and engaging said pin member for imparting rotatable movement to said valve member in response to translatory movement thereof,
biasing means connected to said frame and said guide member for urging said guide member in one direction, and



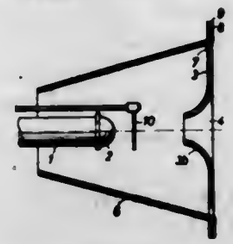
force transmitting means mounted on said frame for urging said guide member in an opposite direction,
temperature sensitive actuating means remote from said valve body,
a first fluid-filled conduit interconnecting said temperature sensitive actuating means and said force transmitting means for actuating said force transmitting means in response to temperature ambient said temperature sensitive means,
manually adjustable actuating means remote from said valve body, and
a second fluid-filled conduit connecting said manually adjustable actuating means and said force transmitting means in parallel with said first conduit for actuating said force transmitting means independent of said temperature sensitive actuating means and in response to manual adjustment thereof.

3,275,238
VIBRATION DAMPING PNEUMATIC CONTROL DEVICE
John D. Nilles, Roselle, Ill., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 25, 1964, Ser. No. 399,266
6 Claims. (Cl. 236—87)



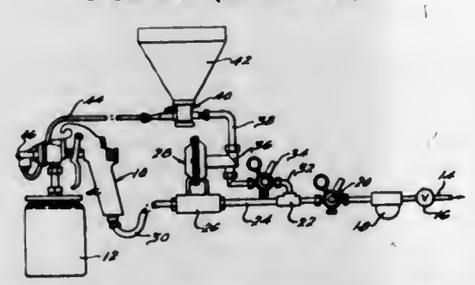
6. A pneumatic control device, comprising: condition responsive modulating means including valve means connected to a source of air; said condition responsive means and said valve means operating in response to a condition to be controlled by proportionally valving said air: said condition responsive means and said valve means having a natural resonant frequency of vibration; and tubular chamber means having a length of approximately one-quarter the wave length of said natural resonant frequency connected to said valve means and said source wherein vibrational waves generated by said valve means pass into said tubular chamber means and are reflected back to said valve means out of phase with said generated waves to damp out said vibrations.

3,275,239
APPARATUS FOR THE ELECTROSTATIC PRECIPITATION OF COATING MATERIAL
Kurt M. Oesterle, 88 Goldbacherstrasse, Kusnacht, Zurich, Switzerland
Filed Aug. 27, 1963, Ser. No. 304,860
10 Claims. (Cl. 239—15)



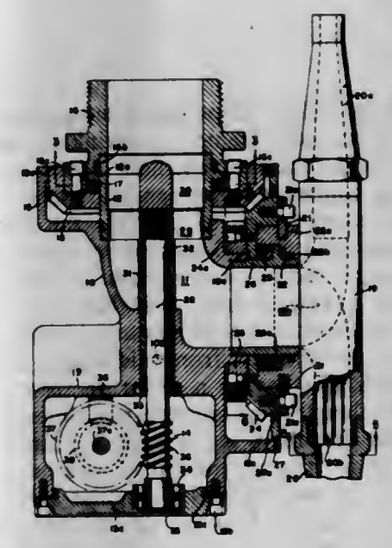
1. Apparatus for electrostatic precipitation of coating material onto a base, comprising a spraying device, means for generating an electrostatic field between the spraying device and the base, said spraying device including a jet spraying member, a rotatable edge spraying element positioned downstream with respect to the jet spraying member, said edge spraying element being provided with a receiving surface adapted to be impinged by the coating material discharged from the jet spraying member, said receiving surface having a central opening and being connected with a spray edge, and means for varying the ratio between the amount of coating material delivered by the jet spraying member and impinging on the said receiving surface, and the amount passing through said central opening of the edge spray element.

3,275,240
SPRAY APPARATUS
Robert L. Peaslee, Royal Oak, and Clifford C. Tennenhouse, Southfield, Mich., assignors to Wall Colmonoy Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 3, 1964, Ser. No. 335,502
3 Claims. (Cl. 239—61)



1. A spray apparatus for forming a composite spray of gas-propel ed liq:id globules and solid particles comprising a first nozzle, supply means for supplying a pressurized gas to said first nozzle, means for supplying a liquid to said first nozzle in a manner to effect atomization thereof and d:scharge from said first nozzle in the form of a gas-propelled spray of fine-sized liquid globules, a second nozzle, means for supplying a finely-particulated solid powder including gas-actuated means for fluidizing and d scharging said powder at a controlled rate to said second nozzle into said spray from said first nozzle effecting entra nment of said powder in said spray, a conduit connected to said gas-actuated means and to said supply means, an orifice in said supply means, sensing means for sensing the pressure drop across said orifice in response to the flow of gas therethrough to said first nozzle, first valve means in said conduit operatively associated with said sensing means and movable to an open position when a preselected pressure drop is exceeded enabling passage of gas to said gas-actuated means and movable to a closed position preventing passage of gas to said gas-actuated means when the pressure drop is below the preselected level, and second valve means for controlling the rate of flow of gas to said first nozzle.

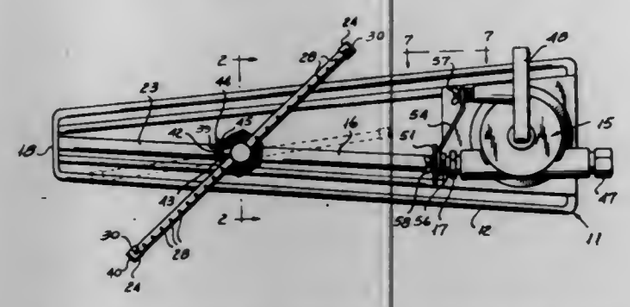
3,275,241
APPARATUS FOR CLEANING TANKS
Michel A. Saad, 2676 Newhall St., Apt. 31, Santa Clara, Calif.
Filed Oct. 18, 1965, Ser. No. 497,423
8 Claims. (Cl. 239—227)



1. Apparatus for washing the interior of a ship tank and the like, said apparatus being adapted to be suspended in the tank by a fluid supply conduit, comprising the combination of a housing having a curved main cavity, said main cavity having an inlet and an outlet, stationary coupling means having one end connected to a fluid supply conduit, means including a first thrust bearing means rotatably supporting said housing on said coupling member so that said coupling member is connected to said inlet of said rotatable housing, said coupling means having a bevel gear attached thereto, said bevel gear engaging said first thrust bearing means, cleaning fluid nozzle means including a nozzle head, means including a second thrust bearing means for rotatably supporting said nozzle means on said outlet of said housing, a second bevel gear associated with said nozzle head and meshing with said first mentioned bevel gear, said housing having means engaging the peripheral portions of said bevel gears providing bearing surfaces for said bevel gears, clutch means responsive to hydraulic pressure in said cavity, said clutch means coupling said nozzle head to said second bevel gear, said clutch means comprising a member attached to said second bevel gear engaging said nozzle head on the outside thereof, and means responsive to fluid flowing through said cavity rotating said nozzle head with respect to said housing and said housing with respect to said coupling means, said means responsive to fluid flow including said bevel gears and said clutch means, said bevel gears having different predetermined numbers of teeth so that the jets of cleaning fluid directed from said nozzles against the interior surfaces of said tank progressively impinge on different areas of said tank surfaces as said nozzle means is rotated with respect to said housing and said housing

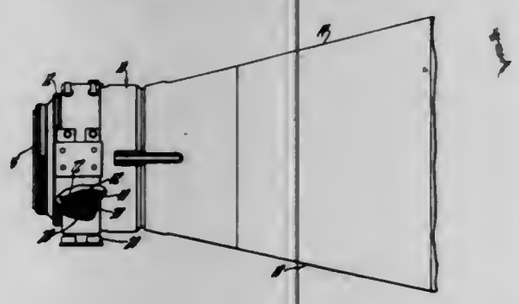
is rotated with respect to said coupling means so that the entire surface of said tank is covered with cleaning fluid during a cycle of operation.

3,275,242
LAWN SPRINKLER
Seth Waldo Thompson, 9 Gordon Road, Essex Fells, N.J.
Filed Jan. 9, 1964, Ser. No. 336,709
4 Claims. (Cl. 239—227)



1. A lawn sprinkler comprising a supporting frame, a water motor on said frame, a sprinkler supply pipe mounted on said frame to oscillate about a horizontal axis, a driving connection between said water motor and said sprinkler supply pipe to oscillate the latter, and a sprinkler comprising a head carried by said supply pipe and connected to receive water therefrom and to rotate thereon about a vertical axis, said head having hollow arms extending therefrom at angles to said axis of rotation of the head to receive water from said supply pipe through said head, each arm having a series of apertures spaced apart along its length and adapted to discharge water in directions such that there is no tendency for the head to turn, providing for the adjustment of said head with said hollow arms at a predetermined angular relation to the axis of head rotation and to the axis of said supply pipe oscillation, and means for causing rotation of said head and arms, when desired, comprising another aperture in at least one arm adjacent its outer end and directed at an angle to said plane of the axis of head rotation, and means on said arm for selectively opening and closing said other aperture.

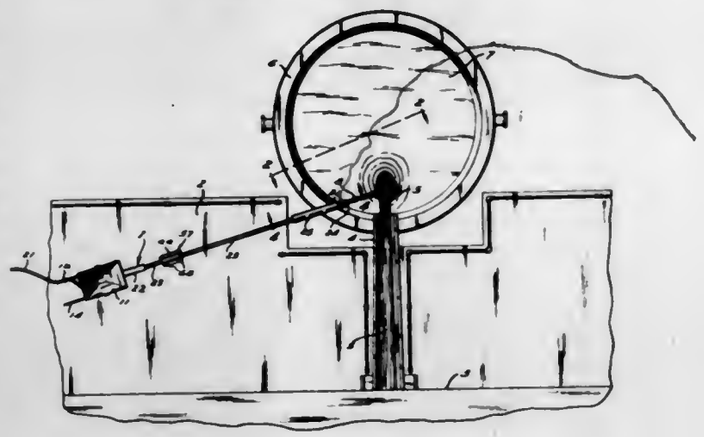
3,275,243
EXHAUST NOZZLE FLUID SEAL
Arthur W. Gaubatz, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 28, 1961, Ser. No. 164,212
5 Claims. (Cl. 239—265.35)



1. An expandable seal member for use between two spaced surfaces comprising a plurality of thin plates each having a width narrow in comparison to its length, said plates being stacked together face to face and positioned as a group between said surfaces with their opposite edges contacting said surfaces, said plates each being corrugated in a diagonal direction with respect to the length and width of each plate, the inclination of said corrugations permitting expansion of each of said plates simultaneously in directions along both their length and width, the spaces between said corrugations being filled with an elastomer binding said plates together.

3. A vectoring fluid jet propulsion nozzle, having vectoring and stationary portions and a fluid leakage passage therebetween, and an expandable heat dam and fluid seal ring in said passage between said portions to prevent the leakage of heat and fluid along said passage, said ring comprising a plurality of thin annular plates extending around one of said surfaces and across the space between said surfaces, sealingly contacting said surfaces, said plates being axially stacked one against the other, each of said plates being corrugated in a generally radial direction, the corrugation of each plate being inclined with respect to a radial line from the axis of said plate through the said corrugation, said inclination permitting the expansion of each of said plates simultaneously in both a radial and circumferential direction to seal said ring member against said surfaces.

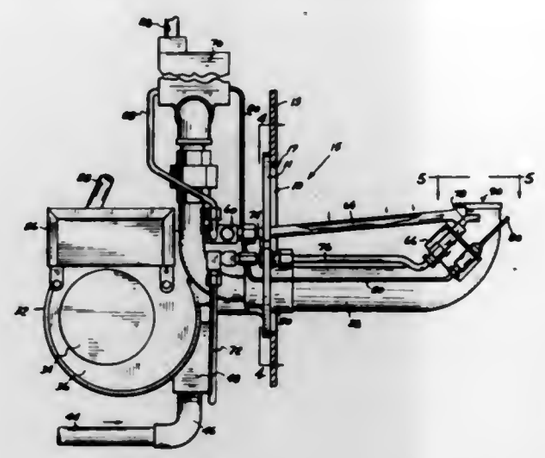
3,275,244
APPARATUS FOR INTRODUCING ADDITION AGENT INTO A MELT
John W. Brown, Jr., Lakewood, Ohio, and Arthur C. Buesing, Milwaukee, and Francis T. Kaiser, Port Washington, Wis., assignors to Brown Fintube Company, Elyria, Ohio, a corporation of Ohio
Original application Jan. 31, 1962, Ser. No. 170,204, now Patent No. 3,224,051, dated Dec. 21, 1965. Divided and this application Mar. 2, 1965, Ser. No. 436,462
5 Claims. (Cl. 239—345)



1. A gun for discharging a stream of particles of solid material, comprising a body member having an elongated passage; an orifice opening into said passage and adapted to communicate with a source of propellant fluid under pressure and to discharge propellant fluid into said passage; a particle feed conduit opening laterally into said passage and adapted to communicate with a supply of particles; and a return conduit one end of which opens into said feed conduit and the other end of which opens into said passage of said body member at a location downstream from said orifice and from the opening of said feed conduit into said passage.

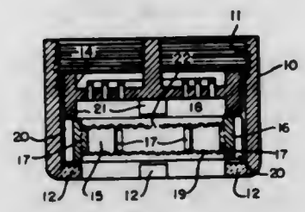
3,275,245
BURNER ASSEMBLY
Bennett J. Moore, Detroit, Mich., assignor to Magic Servant Products Company, Detroit, Mich., a corporation of Michigan
Filed Aug. 21, 1964, Ser. No. 391,140
20 Claims. (Cl. 239—399)

1. A burner assembly, comprising
(a) an air blower assembly,
(b) a gas delivery line,
(c) a mixing tube disposed within the combustion chamber of a furnace,
(d) a splitter member mounted within an opening in the wall of said combustion chamber to receive said air and gas respectively from said blower assembly and gas line externally of said combustion chamber,



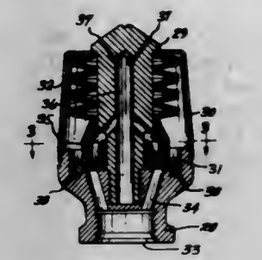
said splitter member delivering said gas and a preset proportion of said air to said mixing tube regardless of the volume of air delivered from said blower assembly, the remainder of said air being delivered to said combustion chamber externally of said mixing tube.

3,275,246
AERATORS WITH ENLARGED STREAM OUTLETS
Elie P. Aghnides, 46 W. 54th St., New York, N.Y.
Continuation of application Ser. No. 317,894, Oct. 22, 1963. This application Mar. 16, 1966, Ser. No. 534,915
6 Claims. (Cl. 239—428.5)



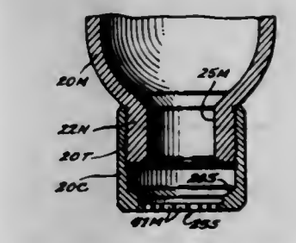
6. A mixing unit for a water aerator comprising a substantially cylindrical supporting member, a mesh screen, and means for retaining said screen within said supporting member in such manner that substantially the entire area of said screen is free for the flow of water therethrough, said retaining means comprising a plurality of spaced projections extending inwardly from the inner surface of said supporting member in a locus around the axis of said supporting member, spaced peripheral portions of said mesh screen being partially embedded in said projections, the intermediate peripheral portions of said screen located between said projections being free for the flow therethrough of water, the inner surface and extremities of said cylindrical supporting member being substantially flush with one another adjacent said intermediate peripheral screen portions thereby to avoid any overhang from said supporting member tending to restrict the flow of water through said intermediate peripheral screen portions, said projections being of thermoplastic material with a lower melting point than that of the mesh screen whereby the mesh screen may be partly embedded in or removed from said projections by application of induction heating.

3,275,247
CONTROLLABLE JET NOZZLE PIPE CLEANING DEVICE
Paul Hammelmann, 17 Zum Sundern, Oelde, Germany
Filed Jan. 11, 1965, Ser. No. 424,607
Claims priority, application Germany, Feb. 1, 1960, H 38,544, Patent 1,165,945; Mar. 11, 1960, H 38,886; Mar. 16, 1960, H 38,925
11 Claims. (Cl. 239—447)



1. Cleaning nozzle mechanism comprising a conduit for supplying fluid under pressure, a nozzle head mounted on said conduit and having first jet means and second jet means at spaced locations in said nozzle head and directed in generally opposite directions, respectively, and further having first and second valve elements spaced apart, and control means having first and second valve elements spaced apart and cooperable with said first and second nozzle head valve elements, respectively, by reciprocation of said control means with respect to said nozzle head between a first position in which engagement of said two first valve elements blocks communication between said conduit and said first jet means while said second jet means are in communication with said conduit and a second position in which engagement of said second two valve elements blocks communication between said conduit and said second jet means while said first jet means are in communication with said conduit, and said control means further including pressure-receiving surface means upon which pressure is exerted by fluid under pressure from said conduit for creating a force effecting relative reciprocation of said control means and said nozzle head.

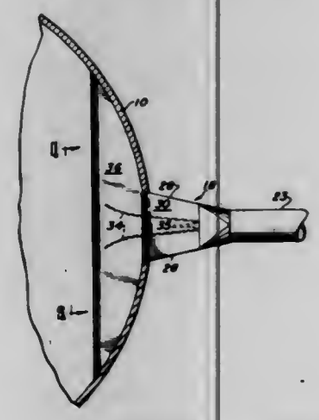
3,275,248
MODIFIED FULL CONE NOZZLE
Edward J. O'Brien, Glen Ellyn, and Robert P. Williams, Naperville, Ill., assignors to Spraying Systems Co., a corporation of Illinois
Filed Aug. 7, 1964, Ser. No. 388,137
2 Claims. (Cl. 239—487)



1. In a full cone spray nozzle of the character described, a nozzle body having an elongated generally cylindrical internal chamber therein, one end of which chamber constitutes an inlet end through which liquid may pass into said chamber, vane means disposed in said chamber adjacent to said inlet end for imparting swirling and turbulent motion to liquid advancing through said chamber, said chamber at its other end being gradually reduced in diameter and terminating in an end wall having a discharge orifice coaxial with said chamber, a cap having a skirt portion threaded longitudinally onto the nozzle body and a cross wall spanning said end wall, said cross wall having a central opening larger than and coaxial with said

discharge orifice, said central opening having an annular series of grooves formed about its periphery and parallel with the axis of said discharge orifice for engagement by outer portions of a spray issuing from the orifice for directing part of the swirling liquid in droplet form inwardly toward the center of the spray emerging from said orifice.

3,275,249
ENTRANCE NOZZLE FOR FLASHING SUPERHEATED LIQUID
John A. Karoly and Carrel C. Bryant, Chicago, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook (Hinddale P.O.) Ill., a corporation of Illinois
Filed Aug. 20, 1964, Ser. No. 390,951
6 Claims. (Cl. 239—523)

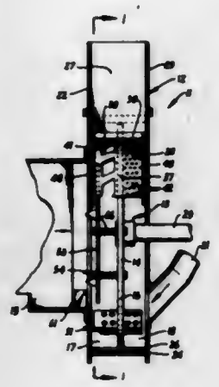


1. In a process vessel having an inlet line for introducing hot fluid to said process vessel operated under a lower pressure and temperature than said fluid, the improvement which comprises:
(1) a nozzle extending from said inlet line and communicating therewith opening to the interior of said vessel, said nozzle having vertical wall sections diverging in the direction of the flow and spaced horizontal wall sections substantially normal to said vertical wall sections thereby forming a rectangular opening in said vessel;
(2) a plurality of vanes extending longitudinally of said nozzle and having arcuate ends terminating within said vessel and having their leading edges tapered, said vanes diverging in the direction of the flow; and
(3) a plate member depending obliquely from the interior wall of said vessel above said vanes and adjacent the opening of said nozzle and having an arcuate terminus, said plate member extending beyond the terminus of said nozzle.

3,275,250
PROCESS FOR MAKING FINE PARTICLES OF NITROCELLULOSE
Mark Plunguian, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Oct. 14, 1963, Ser. No. 316,122
5 Claims. (Cl. 241—21)

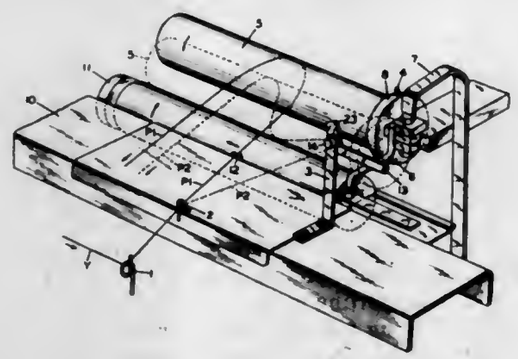
1. A two-stage process for reducing fibrous nitrocellulose to particles no greater than about 5 microns in at least two dimensions and no greater than about 15 microns in any dimension which process comprises subjecting a slurry of the said fibers in a nitrocellulose nonsolvent medium to high impact milling for a time sufficient to reduce the fibers to the form of irregularly shaped agglomerates of about 40 to 200 microns in diameter and thereafter subjecting the agglomerates in the same liquid medium to light dispersing action in the presence of finely divided sand or silica.

3,275,251
DUAL FEED MILL
Eugene D. Thompson, Rte. 7, Box 612, and Joseph E. Whitt, 3013 Shenandoah Way, both of Modesto, Calif.
Filed Feb. 3, 1964, Ser. No. 342,101
12 Claims. (Cl. 241—44)



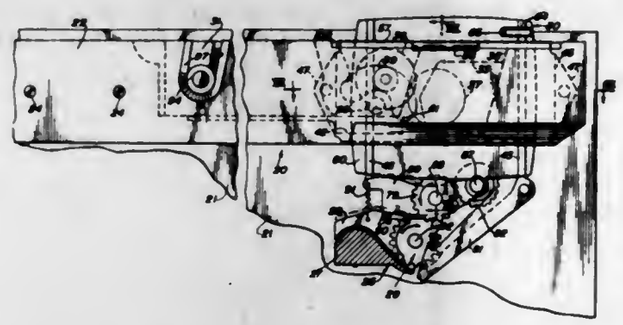
We claim:
1. A feed mill comprising a housing enclosing a chamber in which materials to be ground are held, a screen in the shape of a section of a circular cylindric surface serving as a wall of said chamber, a rotor mounted for rotation in said housing on an axis substantially in common with the axis of the cylindric surface of the screen and having cutting means acting in cooperation with the screen for pulverizing feed materials, a partioned member on the rotor dividing the chamber of the housing into two compartments, and duct means for supplying feed material into each of the two compartments to effect grinding of the feed materials.

3,275,252
TRANSFER TAIL WINDING
John C. Bolger, Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed June 12, 1964, Ser. No. 374,760
1 Claim. (Cl. 242—18)



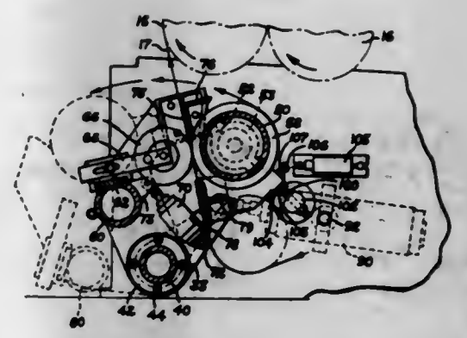
Method for winding a transfer tail and starting the main package on a winding machine carrying a surface driven tube, supported on a freely rotatable spindle and rotated together with said spindle by contact with a print roll which roll cooperates with an open traversing guide, and on which tube a continuously advancing yarn is to be wound; in which the successive steps are
(1) providing an empty tube upon the spindle;
(2) guiding the continuously advancing yarn in a path passing through a fixed point forward of and about opposite the center of the machine, thence through a guide in front of the head end of the tube and higher than the top of the traversing guide and print roll; thence between the tube and the print roll in a path clearing the traverse guide, around the back of the tube, and thence forward over the top of the tube to present a free strand of running yarn which is taken up at a point of temporary collection;
(3) while contacting the tube with the rotating print roll and thereby rotating the tube at surface speed about equal to the linear speed of advance of the yarn, carrying the free strand of running yarn from the top of the tube toward and across the head end of the tube and across the path of a yarn securing element which is being carried in a circular path by rotation of the tube and spindle; securing the free strand of running yarn by said element, and as soon as the strand of running yarn is secured by said element, severing the yarn between said element and said point of temporary collection;
(4) continuing the rotation of the print roll to drive the tube at surface speed equal to the linear yarn speed as the yarn advances from said guide near the head end of the tube, thereby winding the yarn, under the guidance of said guide, around the tube near the head end of the tube and at essentially the linear speed of advance of the yarn;
(5) moving the yarn guide to allow the yarn to slide off and become disengaged from the guide and maintaining sliding contact between the yarn and the guide thereby progressively shortening the path of the yarn between the first mentioned point at front and center of the machine and the point of first contact of the advancing yarn with the print roll, until the yarn drops onto the print roll and is carried without jerking, at the surface speed of the print roll, in a practically straight line path from the first mentioned point, forward from the center of the machine, to the print roll, which path intersects the path of traverse of the traversing guide, into which guide the yarn slides as the traversing guide meets this last yarn path, whereby the main package is wound on a section of the tube spaced from the first formed windings.

3,275,253
MOTION PICTURE PROJECTOR
Jaroslav Cherniavskyj, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 17, 1964, Ser. No. 338,429
22 Claims. (Cl. 242—55.11)



1. A film feeding construction for motion picture projectors comprising, a supporting structure, means on said supporting structure for supporting a film cartridge, a film reel arm carried by the supporting structure, said film reel arm having a reel spindle and gear means for driving the spindle, a driving gear carried by the supporting structure in position to mesh with a core gear of a cartridge, said gear means of the reel arm being disengageably disposed with respect to said driving gear.

3,275,254
SLITTER
Gary B. Du Bois, Fulton, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Mar. 16, 1964, Ser. No. 351,959
3 Claims. (Cl. 242—56.2)

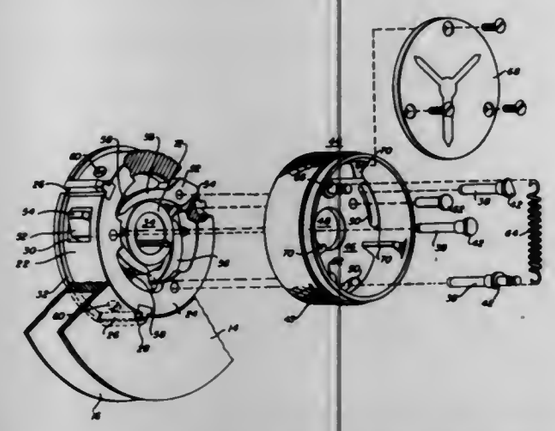


1. In a combined winder and slitter having spaced apart side frame members supporting a pair of drive drums for the peripheral driving of a paper roll wound thereon and a rider roll mounted for general vertical movement on said side members as said wound roll builds up the improvement comprising, a slitter assembly mounted between said side frame members including a pair of spaced apart arms, means pivotally mounting one each of said arms on each of said side members adjacent an inside surface thereof, a rear slitter shaft extending transversely between said arms and rotatably mounted thereon in spaced relation to said pivotal mounting means, rear slitter elements supported on said shaft, a front slitter support tube rotatably mounted on said arms in spaced relation to said pivotal mounting means and to said rear slitter shaft and extending between said arms, a plurality of slitting knives mounted on said front support tube for cooperating engagement with the rear slitter elements, first piston motor means supported on said arms and connected to rotate said front slitter support tube selectively to bring said slitter knives into and out of said cooperating engagement with said rear slitter elements, and second piston motor means connected between said side frame members and said arms for pivoting said arms on said side frame members carrying said slitter assembly between an outer position forward of said drive drums exposing said slitter knives and elements for adjustment and an inner position beneath said drive drums for slitting a web of paper being wound on said drums.

3,275,255
REEL MOUNT
Warren R. Pitts, Needham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 16, 1963, Ser. No. 308,999
6 Claims. (Cl. 242—68.3)

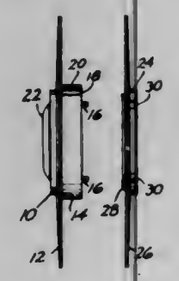
1. A hub for supporting a reel thereon and transmitting rotary power thereto, comprising an outer hub surface slidably adapted to engage a corresponding interior surface of said reel in keyed relationship, a back stop at one side of said hub adapted to abut said reel in its mounted position, a plurality of pivot pins mounted on said hub parallel to the axis of rotation, a handle axially extending from the other side of said hub proportioned to pass through said reel, elongated slots in said handle positioned to receive said pivot pins, said pivot pins and slots cooperating to retain said handle in an axial direction while permitting limited rotational movement thereof with respect to said hub, a cam pivotally mounted on each of said pivot pins including a contact portion, an opening in said outer hub surface

corresponding to each of said cams, mean positioned to one side of each of said pivot pins for resiliently urging the associated cam in one direction, cam follower means adapted to contact each of said cams at said one side of the associated pivot pin to urge said cam in the opposite direction when said handle is rotated in one sense with



respect to said hub, each of said cams being capable of pivotal movement in accordance with the sense of relative handle rotation to position said cam contact portion either in a position retracted within said outer hub surface, or in a protruding position in engagement with said interior reel surface when said reel is mounted.

3,275,256
SECTIONAL TAPE SPOOL CONSTRUCTION
H Albert Campbell, Jr., Portland, and Harold R. Burt, Beaverton, Oreg., assignors, by mesne assignments, to K.W.F. Industries, Inc., a corporation of Washington
Filed Jan. 17, 1964, Ser. No. 338,346
3 Claims. (Cl. 242—71.8)



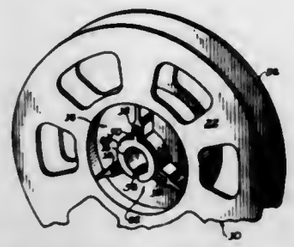
1. A spool component for mounting in a container comprising

a first spool section comprising a tape mounting cylinder, and a disc joined to one end of said cylinder radiating from the cylinder at said one end, said cylinder, progressing axially from one side of said disc, having a dimension substantially as wide as the tape to be received by the spool component, and

a second spool section comprising an annular disc disposed against the end of said cylinder opposite the cylinder's said one end, and an annular shoulder joined to said annular disc adjacent the inner circumference and on one side thereof, and snugly received within the inside of said cylinder, said shoulder having an inner circumferential margin which is irregularly contoured whereby a driving connection may be established with the spool component through said shoulder,

said first and second spool sections including co-operating means producing a mechanical interlock locking the two sections together for simultaneous rotation, said cooperating means comprising at least one opening in one of the spool sections adjacent the inner circumference of said annular disc and located radially outwardly of said inner circumferential margin of said shoulder, and at least one projection joined to the other spool section located radially inwardly of the outer circumference of the cylinder, which projection is received within said opening.

3,275,257
SPINDLE ADAPTER FOR SUPER 8 SUPPLY REEL
Jaroslav Cherniavskyj, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 1, 1965, Ser. No. 436,053
5 Claims. (Cl. 242—71.8)



1. An adapter for use with a rotatable spindle having a key thereon and a reel having a hub with a spindle opening therethrough, the spindle opening being of a diameter greater than the diameter of said spindle, said hub having a keyway opening into the spindle opening, the adapter comprising:

a substantially cylindrical body portion having a wall thickness of substantially the difference between the exterior diameter of the spindle and the interior diameter of the reel spindle opening;

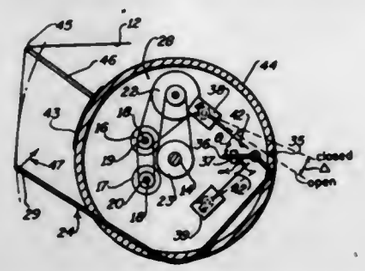
a restrainer member having at least one portion of greater diameter than said spindle opening formed about an end of said body portion;

key means extending radially outwardly from said body portion to cooperate with said hub keyway;

said body portion having a recess adapted to cooperate with said spindle key; and

releasable retaining means formed integrally in the end of said body portion opposite said retainer member whereby said adapter may be inserted into said reel spindle opening and fixed against axial and rotative movement relative to said reel hub and reel spindle.

3,275,258
TAPE REELING APPARATUS
Guillermo Perez, Bristol, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 24, 1963, Ser. No. 275,422
4 Claims. (Cl. 242—75.5)



1. Tape reeling apparatus comprising a cylindrical housing,

forward and reverse motor means mounted within said housing,

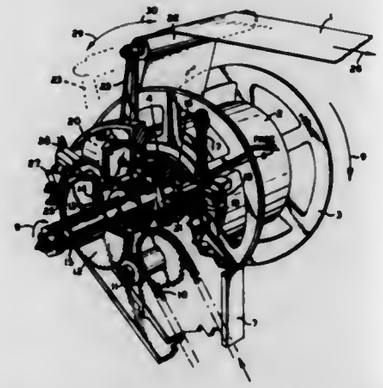
a reel drive shaft axially mounted in said housing and adapted to be driven by said motor means,

a control arm pivotally mounted in said housing having a tape guide bar extending into the path of travel of tape between a mounted tape reel and a tape processing station,

spring means rotatably biasing said control arm in a direction such that a tape loop is produced between said reel and processing unit,

and first and second microswitches associated respectively with said forward and reverse motor means mounted within said housing and operative from a normal to an active state upon movement of said control arm to predetermined arcuate limits, said microswitches being adapted in said active state to energize an associated one of said motor means, said energized motor means effecting according to which microswitch is operative the winding or unwinding of tape from said reel whereby said control arm is moved by said tape or by said spring means to a position between said arcuate limits of motion, said microswitches being operative from active to normal state upon movement of said control arm through a predetermined angle from said arcuate limits.

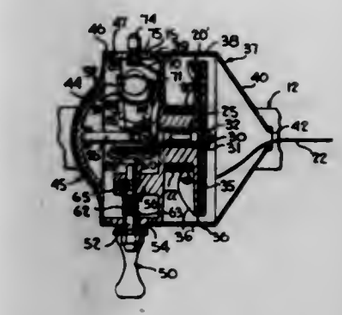
3,275,259
SUPPLY ROLL BRAKE
Goffredo Gamberini, 9/3° Via Mazzini, Bologna, Italy
Filed Apr. 15, 1964, Ser. No. 359,909
Claims priority, application Italy, May 6, 1963, 162/169
5 Claims. (Cl. 242—75.44)



1. Apparatus for supporting and rotating a spool of strip material during the drawing of said material from said spool comprising, a rotatable shaft, drive means for continually rotating said shaft in the direction said strip is unwound, rotatable clutch means frictionally engaging said shaft, said clutch means being directly rotatable with said shaft when said shaft is driven at a predetermined speed and being independently rotatable relative to said shaft when said clutch means is rotated at a speed greater than the speed of said shaft, said spool being mounted on said clutch means to rotate directly therewith whereby the drawing of said strip material is accomplished under traction between said clutch and shaft.

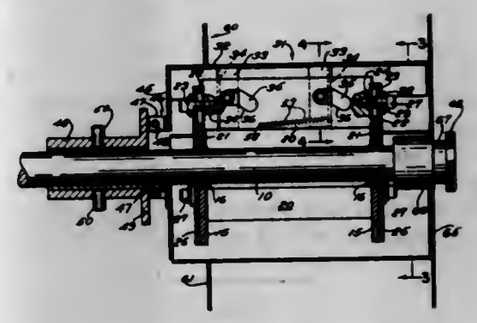
3,275,260
INDICATING MECHANISM FOR FISHING ROD REELS
Otis S. Woollen, Wapella, Ill.
Filed Nov. 14, 1963, Ser. No. 323,676
3 Claims. (Cl. 242—84.2)

1. Indicating mechanism for fishing rod reels comprising body means formed of electrically conductive material, said body means including line spool means for receiving a fishing line, a shaft rotatably supported by said body means, pick-up means operatively connected with said shaft and disposed adjacent said line spool means and adapted to engage a fishing line for retrieving a line after it has been paid out, operating means movably supported by said body means and means for operatively connecting said operating means with said shaft for producing rotation of the shaft and pick-up means, indicating means including an electrically illuminable means supported by an electrically connected with said body means, support means connected with said body means and disposed adjacent said line spool means, a source of electrical energy supported by said support means and having a pair of terminals, one of said terminals being directly connected with said electrically illuminable means, a contact arm operatively connected with the other of said terminals, said contact arm including an extending portion disposed adjacent a part of said shaft and normally



spaced therefrom, said shaft being provided with an outwardly extending portion for directly engaging an intermediate part of said extending portion of the contact arm at certain relative positions of said shaft with respect to said body means and being out of engagement with said extending portion of the contact arm at other relative positions of said shaft with respect to said body means, said shaft and said outwardly extending portion as well as said contact arm all being formed of electrically conductive material, said shaft being electrically connected with said body means and said electrically illuminable means, whereby said illuminable means is intermittently energized and illuminated upon rotation of said shaft with respect to the body means as caused by rotation of said pick-up means as the fishing line is paid out from said line spool means.

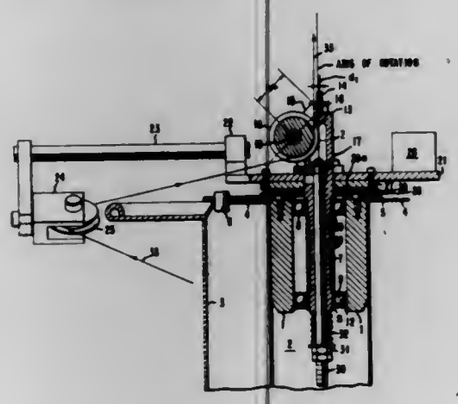
3,275,261
COLLAPSIBLE REEL
Harris F. Hanscom, Barrington, R.I., assignor to H. F. Hanscom & Company, Inc., a corporation of Rhode Island
Filed Mar. 23, 1964, Ser. No. 353,930
10 Claims. (Cl. 242—110.2)



9. A reel comprising a body rotatable about a longitudinal axis, a plurality of drum sectors for contacting the material to be reeled, means for mounting said sectors on the body for radial contraction to release the material reeled therein, a head comprising a plurality of sections

with one section mounted on each of a plurality of drum sectors to move with said sector to contracted position and means for axially adjusting each head section along a drum sector comprising a slot in one part and means passing through the other part and slot to clamp the head section in position.

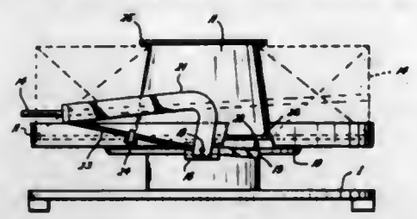
3,275,262
UNWINDING APPARATUS
Olonzo D. Merrill, Jr., Wayne, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 28, 1964, Ser. No. 348,212
5 Claims. (Cl. 242—128)



1. A dead spool pay-off apparatus for unwinding wire at high speeds and closely controlled tension levels which comprises:
(a) stationary support means for mating with the vertical bore of said spool,
(b) a rotatable hollow shaft supported by, and extending axially through, said support means and terminating thereabove in a shaft extension,
(c) a platform mounted for rotation with, and reciprocation on, said shaft extension, a rod extending axially through said shaft and having one of its ends attached to said platform, and a spring mounted on the other end of said rod and biasing it and said platform in a downward direction,
(d) a cantilever arm extending laterally from said platform, a swivelled yoke mounted on the outer extremity of the cantilever arm, and a grooved pulley rotatably mounted in said yoke,
(e) a lever positioned above said platform, means fastened to said platform for mounting said lever intermediate its ends, a fulcrum pin mounted at one end of said lever, and a second grooved pulley attached to the other end of the lever, said lever being pivotally journaled, for vertical movement, in said mounting means and adjacent the fulcrum pin, said pin having its tip resting on the top surface of said shaft extension, and said second pulley being operatively aligned with said first pulley and rotatable in a vertical plane, and
(f) braking means operatively associated with said platform and said support means, and responsive to the reciprocation of said platform.

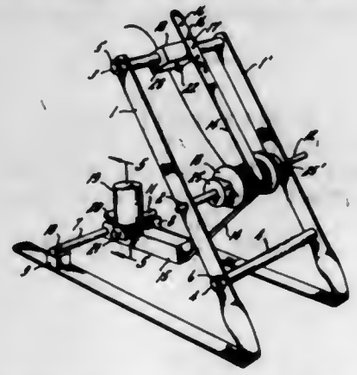
3,275,263
WIRE DISPENSING REEL
Lee D. Parkinson, 819 Fisher, Houston, Tex.
Filed July 27, 1964, Ser. No. 385,274
4 Claims. (Cl. 242—129)

1. In a wire dispensing reel assembly, a plurality of spindles comprising leg members, each of said spindles having guide means on the top and bottoms thereof to receive the legs of superimposed spindles, independently rotatable turntables adapted to be mounted on said



spindles, said spindles having lower rims for receiving rotatable turntables and stop means for receiving a superimposed spindle.

3,275,264
WIRE UNREELING AND TENSIONING DEVICE
Leonard R. Crow, 530 S. 4th St., Vincennes, Ind.
Filed Sept. 24, 1964, Ser. No. 398,927
9 Claims. (Cl. 242—129.8)



1. A wire unreeling device in the form of a coil holding and tensioning mechanism comprising two end brackets with feet; spacers therebetween the two end brackets and means of securing said spacers to said end brackets; a removable coil holding bar with means provided in said bar to hold it in engagement with said two end brackets; an adjustable spool tensioning device and an adjustable wire tensioning device.

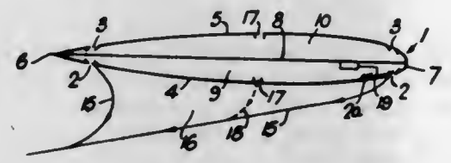
3,275,265
BOUNDARY LAYER CONTROL FLAPS AND APPARATUS THEREOF
Alberto Alvarez-Calderon, 1560 Castilleja St., Palo Alto, Calif.
Filed July 27, 1962, Ser. No. 212,975
5 Claims. (Cl. 244—42)



1. An aircraft wing having an upper surface, a lower surface, a middle portion and a generally spanwise edge inclined at a substantial angle to the normal direction of motion of said wing through the air; and a spanwise door mounted on said wing adjacent to said spanwise edge and having a first door edge generally parallel to said spanwise edge and pivotally connected to said wing at a pivotal axis adjacent to said spanwise edge, a door second edge generally parallel to said door first edge and supporting a boundary layer control tube, and a door surface between said door edges; said door being mounted for rotational movement about said pivotal axis and with respect to said wing from a retracted door position in which said door has its surface adapted to generally conform to the lower contour of said wing adjacent said spanwise edge and is smoothly faired to said lower surface of said wing, with said tube being located substantially between the elevation

of upper and lower wing surfaces and between said spanwise edge and middle portion of said wing, to an extended door position in which said door surface and tube are on the side of said spanwise edge of said wing opposite from said middle portion of said wing and said boundary layer control tube is remote from said upper and lower surfaces of said wing defining a thickened and generally spanwise edge portion for said wing.

3,275,266
FOILS FOR MOVEMENT IN A FLUID
Christopher Sydney Cockerell, Bassett, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Mar. 6, 1964, Ser. No. 349,834
Claims priority, application Great Britain, Oct. 20, 1959, 35,593/59
3 Claims. (Cl. 244—42)



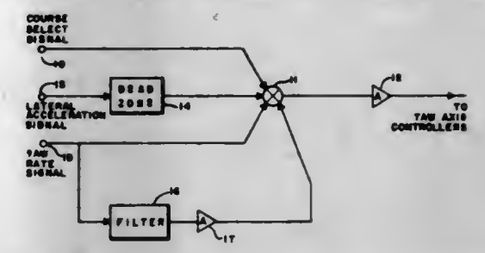
1. An aircraft control member having two oppositely disposed surfaces and a substantially continuous port formed in each surface, each of said ports including two portions extending normal to the direction of motion of the control member through the air, means for selectively supplying gas to the ports in said surfaces and causing said gas to issue from the ports in the form of gaseous curtains which, with the said surfaces, bound at least one space in contact with each of said surfaces, said ports being so constructed and arranged that said gaseous curtains are discharged therefrom at substantial angles to said surfaces and inwardly with respect to said spaces, and means for forming and maintaining a cushion of pressurised gas in each of said spaces during operation of the aircraft, said cushions producing aerodynamic forces on the member upon movement thereof through the air.

3,275,267
APPARATUS FOR CONTROLLING AIRCRAFT
James Martin, Southlands Manor, Southlands Road, Denham, near Uxbridge, Middlesex, England
Filed Nov. 30, 1964, Ser. No. 414,532
Claims priority, application Great Britain, Dec. 12, 1963, 49,196/63
3 Claims. (Cl. 244—75)



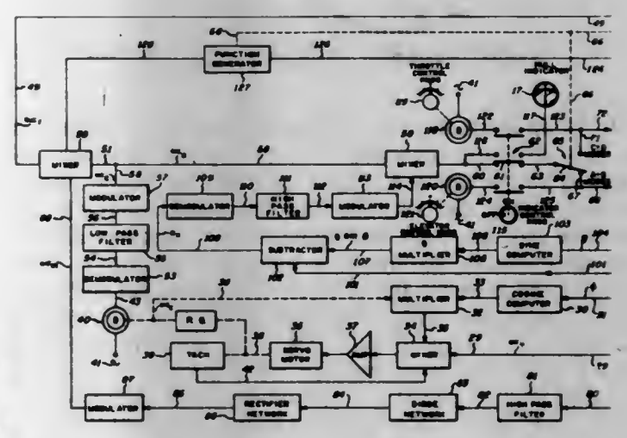
1. In a winged aircraft, in combination:
(a) a fuselage;
(b) a rocket motor;
(c) securing means securing said motor to said fuselage in a position spaced from the center of gravity of said aircraft in which the thrust line of said motor is substantially perpendicular to the longitudinal axis of said aircraft; and
(d) control means in said fuselage and operatively connected to said securing means for releasing said motor from said fuselage in a direction of said line of thrust.

3,275,268
AUTOMATIC CONTROL FOR AIRCRAFT
Samuel H. Auld, Jr., Woodland Hills, Calif., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,630
7 Claims. (Cl. 244—77)



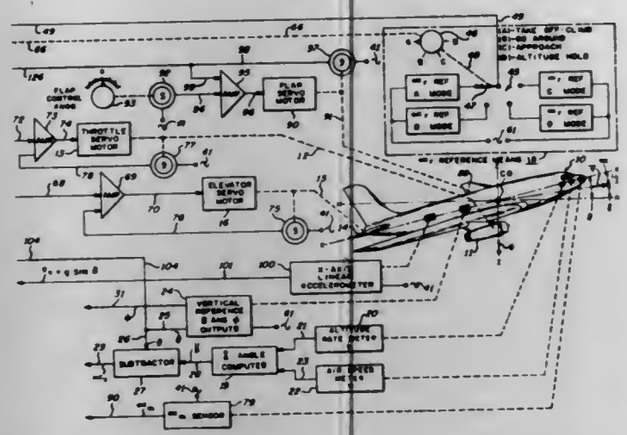
1. A control system for automatically controlling an aircraft about its yaw axis comprising:
automatic course select means to automatically emit a first electrical signal proportional to the error between a selected course heading and the actual heading of said aircraft,
means to emit a second electrical signal proportional to the rate of turn of said aircraft about the yaw axis,
a signal adding means,
first means connecting said signal adding means to said automatic course select signal emitting means for directly applying said course select error signal to said adding means,
second means connecting said rate of turn signal emitting means to said adding means for directly applying said rate of turn signal to said adding means,
filter means responsive to said second electrical signal to provide a third electrical signal which is an electrical integral of said second electrical signal,
third means connecting said filter means directly to said adding means for application of said third electrical signal to said adding means, and
yaw axis control means for the aircraft connected to said signal adding means and responsive to the combined signal thereat for controlling movements of the aircraft about said yaw axis.

3,275,269
DUAL PERIOD AIRCRAFT CONTROL SYSTEM
Peter G. Yiotis, Astoria, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 318,336
17 Claims. (Cl. 244—77)



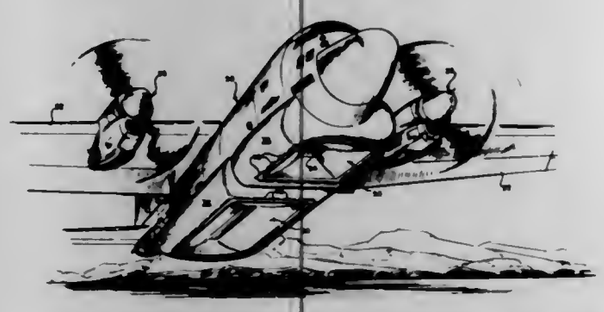
1. In a dual period control system for aircraft, means for monitoring the flight path and forward speed of the aircraft, an inertial computer providing an angle of attack output depending on the tilt attitude and forward speed of

the aircraft, means providing a reference angle of attack output for a particular aircraft condition of flight, a long period stabilizing loop including the aircraft, the monitoring means, the computer and the reference means in which the monitoring means is responsive to the difference between the outputs of the computer and reference means, means providing an output depending on the



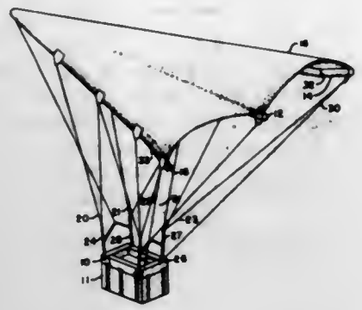
acceleration of the aircraft along its longitudinal axis, means for correcting the output of acceleration output means for the effect of gravity on the aircraft, and a short period stabilizing loop including the aircraft, the monitoring means, the acceleration output means and the correcting means in which the monitoring means is responsive to the corrected output of the acceleration output means.

3,275,270
AIRCRAFT WITH GROUND EFFECT TYPE LANDING GEAR
Thomas Desmond Earl, Niagara-on-the-Lake, Ontario, Canada, and Wilfred James Eggington, Clarence, N.Y., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Mar. 17, 1965, Ser. No. 440,437
16 Claims. (Cl. 244—110)



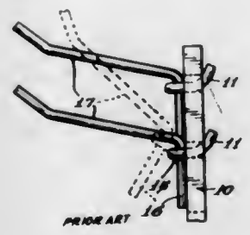
1. In an airplane, an undercarriage comprising an elastic cell structure attached to the airplane fuselage and adapted to be inflated into a balloon-like shape, means carried within the airplane for delivering relatively low pressure gas into said cell and thereby inflating said cell into an extended balloon-like form circumscribing a gas cushion space under the airplane fuselage, said cell being formed with gas outlet openings aligned peripherally of the bottom contour of said cell when inflated, elastically closed valve means associated with the outlet openings of said cell and means for delivering relatively high pressure gas to said valve means for actuating the latter to open condition whereby to permit gas to blast through said outlet openings and to feed said gas cushion space with pressured gas for generation of airplane supporting ground effect forces whenever the airplane is disposed in close proximity to a reaction surface.

3,275,271
FLEXIBLE WING AIRCRAFT
Joseph E. Forehand, Newport News, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 27, 1964, Ser. No. 414,484
1 Claim. (Cl. 244—138)



In an inflatable flexible wing glider a wing comprising a central keel and a pair of lateral spars all of inflatable tubular construction, and a flexible membrane secured to said keel and said spars, a load carrier, shroud lines suspending said load carrier from said keel and said spars, and control lines extending from said load carrier to corresponding ends of said spars for controlling the flight path of the glider by bending said spars, a diameter reducing wrapping around each of said spars to localize deformation of the spars when subjected to bending forces by said control lines and thereby provide uniform bending of the spars for each increment of length said control lines are taken in or let out.

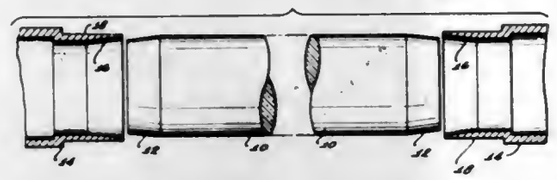
3,275,272
SWIVEL HOOK FOR APERTURED BOARD
Charles R. Kirk, 425 W. Harrison St., Wheaton, Ill.
Filed Oct. 11, 1965, Ser. No. 494,365
3 Claims. (Cl. 248—225)



1. A hook member for detachable engagement with a board formed with regularly spaced apertures, comprising a hanger arm component adapted to extend normally from the face of said board and a substantially U-shaped bracket member adapted to be anchored to said board through a pair of its apertures and means pivotally connecting said arm and said bracket whereby said bracket can be engaged to and disengaged from said board in an arcuate directional manner while maintaining said hanger arm disposed substantially normal to the plane of said board.

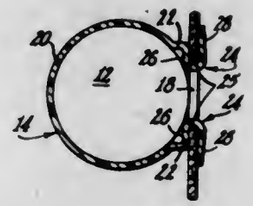
3,275,273
SUPPORT STRUCTURE FOR LASER RODS
Jon H. Myer, Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 1, 1965, Ser. No. 505,848
6 Claims. (Cl. 248—264)

1. In combination:
a laser rod having a tapered end;
a tubular support element of spring material, said support element having an end portion encircling the tapered end of the rod and having an interior tapered



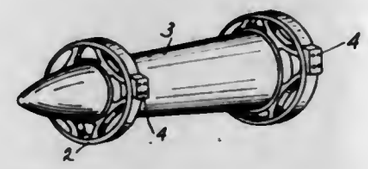
surface in face to face contact with the lateral surface of said tapered end and forming a fluid-tight seal thereon.

3,275,274
MERCHANDISE DISPLAY CARD AND CLIP THEREFOR
Charles F. Hutcheon, 192 Shepherd Lane, Roslyn Heights, N.Y.
Filed Oct. 5, 1965, Ser. No. 493,200
14 Claims. (Cl. 248—309)



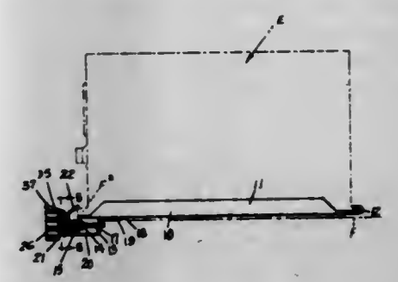
1. An improved resilient clip for holding an article on a slotted support member, said clip comprising:
(A) an article-holding member including a body portion sized and shaped to closely envelop at least a portion of an article, said body portion having first and second ends and a longitudinal axis;
(B) a gripping portion integral with each of said body portion ends; and
(C) at least one expandable gusset integral with said body portion intermediate the ends thereof and extending substantially parallel to the longitudinal axis of said body portion.

3,275,275
MOUNTING WITH ELASTOMERIC STRUTS
Robert C. Erhart, Erie, Pa., and Jack M. Weaver, Dayton, Ohio, assignors to Lord Corporation, a corporation of Pennsylvania
Filed Mar. 21, 1963, Ser. No. 266,898
1 Claim. (Cl. 248—358)



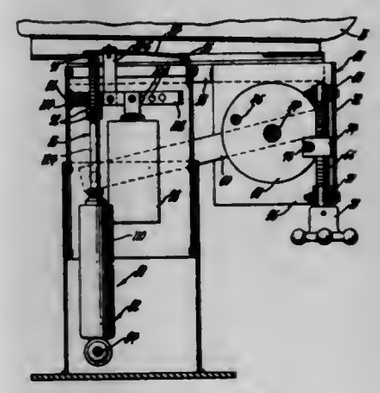
A mounting comprising inner and outer rings with the outer surface of the inner ring presented toward and radially spaced from the inner surface of the outer ring, the inner ring being adapted to be connected to a supported member and the outer ring being adapted to be connected to a support, and a plurality of elastomeric struts between the inner and outer rings, each strut having its inner end bonded to the outer surface of an inner ring and its outer end bonded to the inner surface of the outer ring with which it is associated, said struts forming in elevational view a polygon with the corners of the polygon joined to the outer ring and with the sides of the polygon joined to the inner ring midway between the corners, said struts being columns of length to thickness ratio such that the columns buckle under radial compression loads exceeding a predetermined threshold.

3,275,276
SELF-LOCKING CLAMP
Kenneth W. Johnson, Jamestown, Ohio, assignor, by mesne assignments, to Barry Wright Corporation, Watertown, Mass., a corporation of Massachusetts
Filed Mar. 3, 1965, Ser. No. 436,770
8 Claims. (Cl. 248—361)



1. A self-locking clamp comprising a fixed jaw member and a movable jaw member, a threaded member extending through said movable jaw and secured against linear movement relative thereto and threadedly engaging through means carried by said fixed jaw whereby rotative movement of said screw moves said movable jaw relative to said fixed jaw, a knob on the end of said screw which extends through said movable jaw, a toothed disc fixed to said movable jaw between said movable jaw and said knob and surrounding said screw, and a finger pivoted on said knob selectively movable into and out of engagement with the teeth of said disc to preclude rotation of said knob and said screw when engaged with said teeth.

3,275,277
VEHICLE SEAT
William A. Illar, Cleveland, and Alvin A. Rood, Willoughby, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 8, 1964, Ser. No. 402,497
4 Claims. (Cl. 248—399)



1. In combination with a vehicle floor, a seat, a base cylinder member fixed at one end to said vehicle floor, an upper cylinder member having one end thereof telescoping into said base cylinder member and the other end secured to said seat, a suspension assembly resiliently supporting said seat on said base cylinder member for oscillating movement relative to the latter, said suspension assembly comprising a spring interconnected between said cylinder members, a shock absorbing device interconnected between said cylinder members for damping said

oscillating movement, said shock absorbing device having means for modulating the damping effect thereof, said last-mentioned means including a moveable member which when depressed increases the damping effect of said shock absorbing device and when released decreases said damping effect during the compression and expansion stroke, an actuator pivotally supported on the upper cylinder member and operatively associated with said movable member for normally maintaining the latter in a depressed state, a mass pivotally connected to the upper cylinder member and operatively associated with said actuator, said mass being responsive to acceleration forces to provide relative vertical movement between said mass and said upper cylinder member so as to control the position of the actuator and the damping effect of the shock absorbing device during oscillating movement of the seat.

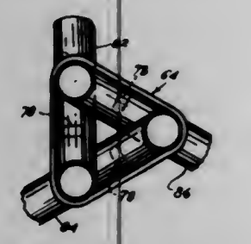
3,275,278

PATIO TRAY LEG RETAINER

Raymond S. Haydock, Morton Grove, Ill., assignor of one-half to Raymond Haydock, Jr., and one-half to Sandra L. Haydock, both of Chicago, Ill.

Original application Oct. 13, 1964, Ser. No. 403,467. Divided and this application Oct. 1, 1965, Ser. No. 491,968

1 Claim. (Cl. 248—431)



A plastic leg retainer, of resilient deformable material, said retainer being substantially triangular in plan, with rounded corners, inside and outside, said retainer being relatively thin in vertical cross section, and relatively wide, vertically, and each of its three sides, having on the inside, an inwardly projecting integral plastic pin, located midway between the top and bottom of each side, and midway between the ends of each side, each pin being surrounded at its juncture with the side, by a tapered portion, said leg retainer being for patio tray assemblies of the type having a tray top with sockets for receiving the upper ends of the legs, which cross each other midway between the floor and the tray top, in which the legs are secured together by a leg retainer of plastic of the shape and characteristics described above, each of the integral pins engaging in a hole in each leg, the band confining the legs, and supporting the tray top firmly when the legs are spread, and the legs being removable as a unit, and movable into parallel position for storage or shipment, and the plastic leg retainer being deformable to insert the pins in the holes in the legs, after which the leg retainer springs back into triangular form.

3,275,279

TELEPHONE DIRECTORY COVER AND HOLDER

William N. Caldwell, Hazlet, N.J., James W. Ericsson, Indianapolis, Ind., and Robert E. Prescott, Rumson, and William E. Whidden, Red Bank, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 24, 1965, Ser. No. 442,257

15 Claims. (Cl. 248—447)

1. In a telephone directory cover composed of a relatively flexible material and including a binding edge, two sides and opposed flanges for protectively enclosing exposed edges of a directory, the improvement comprising, a pair of continuous, flexible magnetic strips attached along the respective meeting edges of said opposed flanges



whereby on closure of said sides, said strips abut one another in a continuous, weatherproof seal regardless of minor misalignments of said opposed flanges.

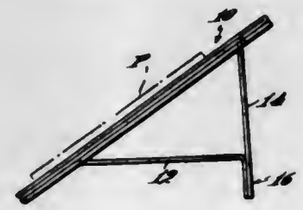
3,275,280

EASEL-TYPE MOUNT

Gordon E. Nichols, Middleboro, Mass., assignor to Winthrop-Atkins Co., Inc., Middleboro, Mass., a corporation of Massachusetts

Filed Oct. 20, 1964, Ser. No. 405,148

12 Claims. (Cl. 248—459)



1. A structure comprising at least two plies of stiff board joined face-to-face to provide a rigid panel, a first part extending rearwardly from one of the two plies, a second part extending rearwardly from the other of the two plies through an opening in said one ply, said parts intersecting rearwardly of the panel, a third part hinged to the distal end of the first part, and means securing the third part in parallel relation to a portion of corresponding area at the distal end of the second part, said third part forming with the portion of the second part, to which it is secured, a foot, located rearwardly of the intersection of the first and second parts, for supporting the panel, the proximal end of said second part being unconnected to the panel, and said foot providing means for rotating said second part from an operative position with its proximal end abutting the rear side of the panel, to an inoperative position situated entirely within said opening in said other ply forwardly of the one ply.

3,275,281

EASEL STRUCTURE

George H. Sampson, Middleboro, Mass., assignor to Winthrop-Atkins Co., Inc., Middleboro, Mass., a corporation of Massachusetts

Filed Jan. 12, 1965, Ser. No. 424,941

17 Claims. (Cl. 248—465)

1. A structure comprising a panel, a leg connected to the panel for movement to an angular position relative thereto, a foot hinged to the distal end of the leg, a brace integral with the foot, said brace having a distal end rotatable inwardly from the leg against the panel, by rotation of the foot about the axis of the hinge connecting the foot to the leg, to effect angular separation of the leg and panel, and means on the panel and at the distal end of the brace interengageable to hold the leg and panel angularly displaced from each other.



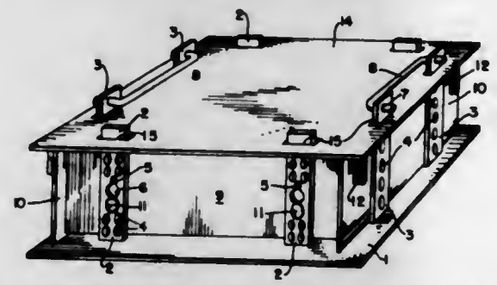
3,275,282

MULTIPARTITE MOLD FOR EXPANSIBLE MATERIAL

Ernst Otto Schulz, Neuhaus am Rennweg, Thuringia, Germany, assignor to Vereinigung Volkseigener Betriebe Glas Dresden, Dresden, Germany

Filed Sept. 25, 1963, Ser. No. 312,829

9 Claims. (Cl. 249—82)



1. A multipartite mold for producing a molded article from expansible material, comprising an assembly of a plurality of substantially flat side wall members, a base member and a cover member movably connected to each other and defining an enclosed mold cavity, said base member having lug means secured thereto external to said mold cavity for guiding and supporting said movably connected side wall members, adjacent ones of said side wall members, said base and said cover members being movable relative to each other from positions respectively in which said mold cavity has a minimal volume to positions respectively in which said mold cavity has a maximal volume, said mold cavity having its minimal volume in an upright position of said assembly and being chargeable with expansible material in said upright position, said side wall members being automatically movable by the expansion of said material to respective positions in which said mold cavity has a maximal volume, said cover member being removable from said assembly and said assembly being invertible from said upright position, said cover member having formed therein apertures into which said lug means extend, said apertures being of the size permitting free movement of said lug means therein, whereby a molded article may be released from said mold cavity when said cover member is removed and said assembly is inverted without disconnecting said base member and said side wall members.

3,275,283

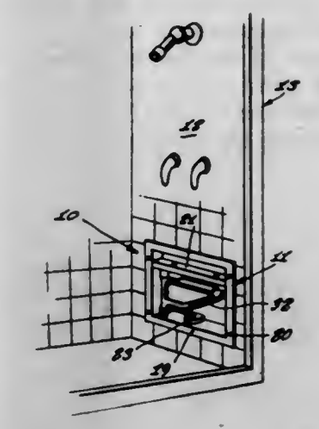
FOLDING FOOT REST

Lauren F. Rauch, Box 33, Jenera, Ohio

Filed Oct. 18, 1965, Ser. No. 496,865

4 Claims. (Cl. 248—205)

1. In a folding foot rest and seat the combination of a housing unit, a foot rest unit and a seat unit supported on said housing unit, said set unit being removable from said housing unit and said foot rest unit being pivotable between a storage position within said housing and a utility position outside of said housing.



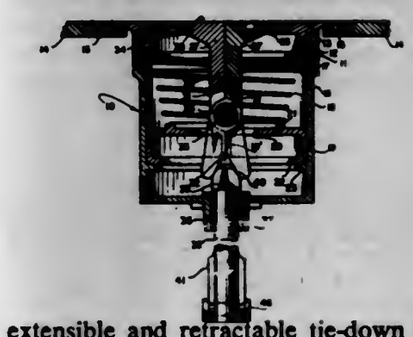
3,275,284

EXTENSIBLE AND RETRACTABLE TIE-DOWN FITTING

Thomas H. Gary, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Feb. 19, 1965, Ser. No. 433,946

14 Claims. (Cl. 248—361)



1. An extensible and retractable tie-down fitting comprising a connecting element mounted within an opening provided therefor in stationary structure with its outer face conforming in shape and area to said opening and normally disposed substantially in the plane of the exterior surface of said structure, resilient means operative on said element in distinct lineal and lateral directions to maintain said face in the normal position aforesaid, and overpowering means sequentially operative on said resilient means in opposition to said lineal and lateral directions.

ERRATUM

For Class 249—82 see:
Patent No. 3,275,282

3,275,285

THERMOELECTRIC VALVE

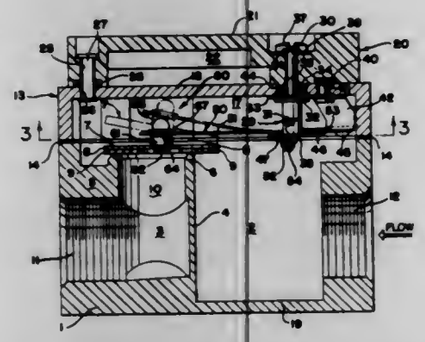
Rexford M. Morris, Mansfield, Ohio, assignor to Therm-O-Disc, Incorporated, Mansfield, Ohio, a corporation of Ohio

Filed Sept. 23, 1963, Ser. No. 310,704

7 Claims. (Cl. 251—11)

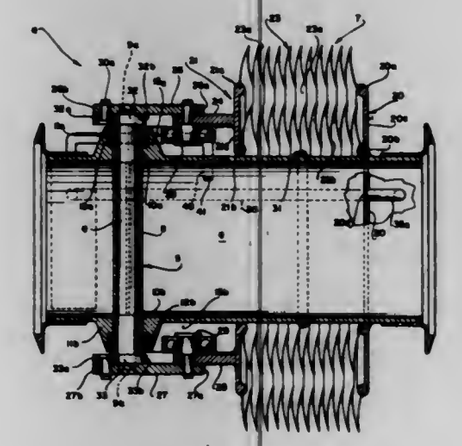
1. A thermoelectric gas valve assembly comprising a valve casing having inlet and outlet passages and valve means between said passages, said valve means comprising a valve seat having a narrow marginal surface located substantially in a horizontal plane and a valve member for resting on said marginal surface, said valve member being constrained on said seat under pressure of gas in the valve casing, a generally horizontal cantilever mounted arm

comprising two bimetallic members of substantially different lengths rigidly connected together at their adjacent ends, the shorter member being spaced horizontally from said valve seat, the outer end portion of said shorter member being rigidly mounted on said valve casing and the outer end portion of the longer member being located above said valve member, electrical heating means mounted on said shorter member and insulated from said longer member for heating the shorter bimetallic member and



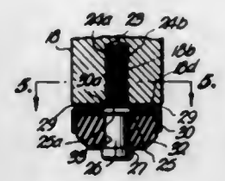
causing it to open the valve when an electric current is supplied thereto, the longer member bending in a direction opposite that of the shorter member in response to an increase in ambient temperature and an articulate connection between said end portion of the longer member and said valve member for causing the valve member to pivot about one side of the valve seat and having its center offset from the central axis of said seat.

3,275,286
FLOW CONTROL VALVE
James H. Wood, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 8, 1962, Ser. No. 228,917
10 Claims. (Cl. 251—30)



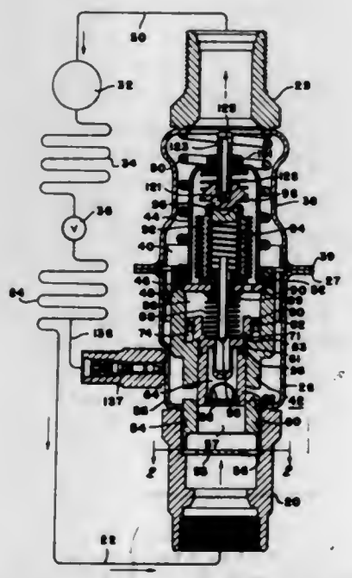
1. In combination: a duct; a valve element mounted in said duct for closing said duct; an annular bellows mounted in surrounding guided relation on said duct and having one end fixed with respect to said duct and the other end movable with respect thereto; actuating linkage directly connecting the movable end of said bellows to said valve element; and a fluid line means with control means therein connecting the interior of said bellows with the interior of said duct immediately upstream of said valve element and to exhaust for expanding and contracting said bellows to actuate said valve element between open and closed positions.

3,275,287
COMPONENTS FOR FAUCET VALVE WASHER REPLACEMENT
Joseph E. Bartlett, 215 S. Parker Ave., Highway 7, Olathe, Kans.
Filed Apr. 11, 1963, Ser. No. 272,345
2 Claims. (Cl. 251—88)



1. The combination with a valve stem having an end face provided centrally with a threaded axial recess, of a pin element having a shank portion for threaded insertion in said recess, said shank portion having a slot therein and providing parallel legs, said legs having oppositely deflected central zones deflected in direction substantially parallel to the plane of said slot, said centrol zones having circumferentially directed thread ridges adapted to engage with the threads in said recess, the largest dimension across said central zones being greater than the diameter of said recess and said shank constructed of resilient material, said pin element further provided with a head portion formed as a cylindrical surface and having axially spaced circumferential flanges of greater diameter than said surface at each end, a smooth gasket sleeved over said shank portion of said pin and positioned adjacent said face, and an annular washer sleeved over said head portion and supported on said surface and between said flanges for rotation with respect to said surface.

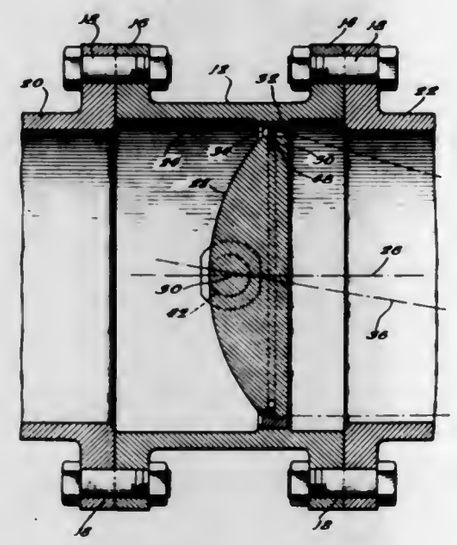
3,275,288
REFRIGERATING APPARATUS
John Weibel, Jr., Dayton, and Thomas C. Shuler, Jr., Trotwood, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 1, 1964, Ser. No. 393,630
1 Claim. (Cl. 251—127)



A flow control device for a combined gas and liquid fluid including a body having an inlet and an outlet, a movable piston valve member of a selected circular area substantially coaxially aligned with said inlet, said body

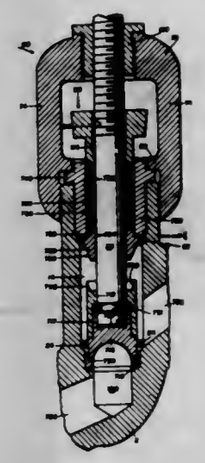
being provided with a stationary valve seat member cooperating with said movable piston valve member to control the flow of fluid through said inlet, a baffle located transversely relative to said inlet between said inlet and said movable valve member and having a central substantially imperforate flat circular disc portion of an area substantially the same as and concentric with the selected area of said piston valve member substantially coaxially aligned with said piston valve member for minimizing the effect of the momentum of the fluid upon the movable valve member, said baffle being provided with a plurality of outwardly extending narrow support arms supported by said body, said body having a shoulder abutting and supporting one side of said arms of said baffle, said seat member for said piston valve member abutting the opposite side of said arms for holding in place said baffle, said narrow support arms holding said central flat circular disc portion spaced a substantially uniform distance away from adjacent portions of said valve body substantially throughout the periphery of said flat circular disc portion sufficient to provide large enough openings between said support arms to prevent restriction of the area of flow as compared to the area of flow between the valve member and said seat member.

3,275,289
BUTTERFLY VALVE WITH FRUSTO-CONICAL METAL SEAT
Donald G. Fawkes, Chicago, Ill., assignor to Henry Pratt Company, a corporation of Illinois
Filed July 12, 1963, Ser. No. 294,569
8 Claims. (Cl. 251—306)



1. A butterfly valve, comprising: a valve housing having a fluid passage therethrough about a longitudinal center line; a closure disc rotatable in the housing about an axis normal to the center line between open and closed positions; and a valve seat in the housing having an inwardly facing annular surface for cooperatively contacting the periphery of the disc to close the valve when the disc is in closed position, said valve seat surface being spaced longitudinally of the center line from said disc axis and being generally centered about said center line, said seat surface having the shape of a part of a conical surface extending longitudinally of the center line away from the disc axis, the apex of the cone being located laterally of the center line so that the seat surface is asymmetrical about the center line and the closure disc may be wedged into the valve seat surface upon closing motion.

3,275,290
BACK SEAT CONSTRUCTION FOR VALVE
Chester A. Siver, 10 Fair Hill Lane, Suffield, Conn.
Original application Dec. 2, 1962, Ser. No. 244,092, now Patent No. 3,219,311, dated Nov. 23, 1965. Divided and this application Jan. 19, 1965, Ser. No. 426,493
9 Claims. (Cl. 251—330)

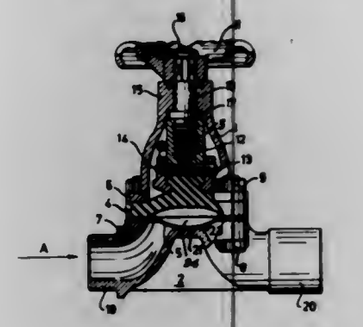


1. In a valve including a valve body having a valve chamber communicating with a through flow passage and an annular valve seat on the wall of said valve body in said flow passage; a bonnet covering the outer end of said valve chamber; and a valve stem reciprocable in said valve chamber relative to said bonnet and valve seat, the combination therewith of a valve sealing assembly for said valve including an annular back seat portion on said bonnet concentrically disposed about said valve stem and projecting toward said through flow passage and a metallic valve sealing member mounted on said valve stem for reciprocation therewith, said back seat portion being metallic and having a generally conical seating surface portion extending circumferentially about the outer surface thereof and tapering to a reduced diameter at the inner end thereof, said valve sealing member having a first seating surface portion at the end thereof adjacent said through flow passage dimensioned and configured to cooperate with said valve seat and provide a fluid-tight seal in cooperation therewith and an annular back seat sealing lip portion concentrically disposed about said valve stem and extending toward said bonnet, the inner periphery of said back seat sealing lip portion having a generally conical seating surface portion opening toward said bonnet and configured and dimensioned to cooperate with the generally conical seating surface portion of said back seat portion and provide a fluid-tight seal in cooperation therewith, said back seat sealing lip portion seating surface having an angle of taper relative to the axis of reciprocation of said valve stem normally slightly less than the corresponding angle of taper of said back seat portion seating surface portion and selected to provide limited deformation of said sealing lip portion to conform to the taper of said back seat portion seating surface portion within the elastic limits of the metal thereof, said sealing lip portion being transversely deflected by movement against said back seat portion into stressed substantially fluid-tight sealing engagement with said back seat portion seating surface portion, said valve chamber providing free access to the outer periphery of said sealing lip portion in the back seated position of said valve sealing member to enable passage of fluid freely thereabout, said sealing lip portion being transversely deflectable against said back seat portion during operation of the valve by fluid pressure acting against the outer periphery thereof to enhance the sealing engagement of said back seat portion and said sealing lip portion.

3,275,291
DIAPHRAGM CHECK VALVE

Pieter Meijers, The Hague, Netherlands, assignor to Gemeente 's-Gravenhage, The Hague, Netherlands

Filed June 30, 1964, Ser. No. 379,295
Claims priority, application Netherlands, July 8, 1963, 295,056
5 Claims. (Cl. 251—331)



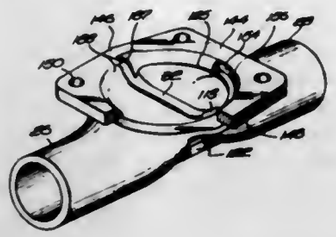
1. A valve comprising a first body portion having an opening in a surface thereof and an internal protuberance defining a seat extending across said opening and facing in the same direction as said surface, said first body portion further having inlet and outlet passages respectively extending to and from said opening at the opposite sides of said seat, an elastic membrane extending over said opening, a flexible diaphragm superimposed on said elastic membrane, a second body portion having a surface mating with said surface of the first body portion, means securing together said first and second body portions with the peripheries of said membrane and diaphragm clamped between the mating surfaces of said body portions, and control means carried by said second body portion and connected with said diaphragm to move the latter toward and away from said seat, said elastic membrane having an aperture therein at the side of said seat from which said outlet passage extends so that, in the event that fluid pressure in said outlet passage exceeds the fluid pressure in the inlet passage when said diaphragm is moved away from said seat, the excess pressure urges fluid to enter between said diaphragm and membrane to urge the latter into sealing engagement with said seat and thereby prevent back-flow through the valve.

3,275,292
DIAPHRAGM VALVE BODY FLANGE CONSTRUCTION

Henry W. Boteler, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware

Original application July 19, 1962, Ser. No. 210,984. Divided and this application Oct. 23, 1965, Ser. No. 502,938
8 Claims. (Cl. 251—331)

1. A diaphragm valve body comprising:
(A) a container member having:
(1) a passage which:
(a) extends through said container member,
(b) has an axis,
(2) a diaphragm opening which:
(a) is located in one side of said container member,
(b) has an axis substantially intersecting said passage axis at substantially right angles thereto,
(3) a flange which:
(a) surrounds said diaphragm opening,
(b) has a flat surface substantially perpendicular to said opening axis,
(c) has inner and outer edges,
(B) a diaphragm clamping plate having:
(1) a diaphragm opening which:
(a) extends through said plate,
(b) has side walls,

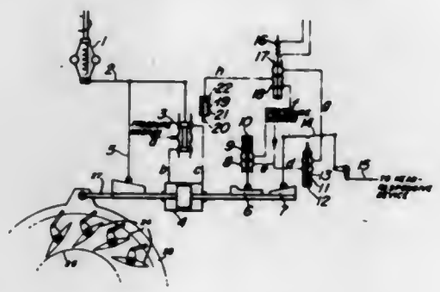


(2) a substantially flat annular surface which:
(a) surrounds said clamping plate opening,
(b) overlies only an outer annular portion of said flange surface,
(C) a weld between the plate opening side walls and the remaining inner annular portion of said flange surface.

3,275,293
CONTROL DEVICE FOR CONTROLLING THE CLOSING OPERATION OF WATER SHUT-OFF MEANS OF A WATER PUMP-TURBINE

Takashi Hosogai and Hideo Ebisawa, both of Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed July 6, 1964, Ser. No. 380,495
Claims priority, application Japan, July 9, 1963, 38/35,244
7 Claims. (Cl. 253—24)

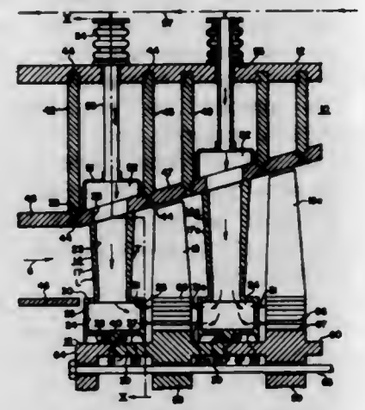


1. A control device for controlling the closing operation of water-shut-off means of a water pump-turbine device, comprising:
water shut-off means for said pump-turbine device,
first control means operatively connected with said water shut-off means to control the closing characteristics of said water shut-off means under pump operation of the pump-turbine device,
second control means operatively connected with said water shut-off means for controlling the closing characteristic thereof under turbine operation of said pump-turbine device,
selecting means operatively connected with said first and second control means for selectively rendering effective either said first or said second control means in accordance with the operating condition of the pump-turbine device,
and actuating means operatively connecting said first and second control means with said water shut-off means for actuating said water shut-off means by the one of said first and second control means selected by said selecting means.

3,275,294
ELASTIC FLUID APPARATUS

James M. Allen, Broomall, and Augustine J. Scalzo, Philadelphia, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 14, 1963, Ser. No. 323,737
8 Claims. (Cl. 253—39.1)



1. A bladed diaphragm structure for an axial flow elastic fluid utilizing machine, comprising
an annular row of radially extending blades,
said blades having a vane portion, a radially outermost tip portion and a radially innermost base portion,
an annular shroud struoture cooperatively associated with said tip portions for supporting said blades,
said base portions being similarly shaped and having complementary interlocking portions, and
an annular band in the form of a relatively thin strip rigidly connected to each of said base portions and maintaining said base portions in frictionally interlocking relation with each other, said band being of sufficient flexibility to permit radial expansion and bending of said blades in circumferential direction and to effect vibrational damping of said blades.

3,275,295
TURBINE BLADE WITH TAPERED ONE-PIECE EROSION SHIELD

John Caldwell, Rugby, and Robert Hunter Telfer, Whetstone, England, assignors to The English Electric Company Limited, London, England, a British company

Filed June 11, 1965, Ser. No. 463,271
Claims priority, application Great Britain, June 12, 1964, 24,547/64
2 Claims. (Cl. 253—77)

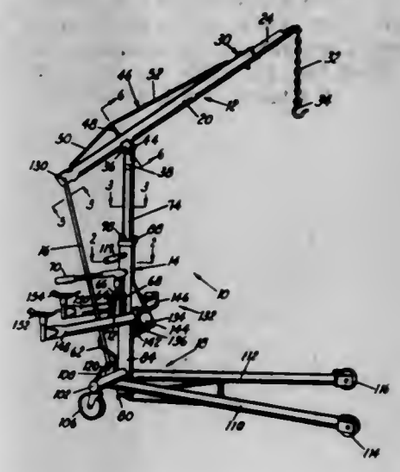


1. A turbine blade comprising a body portion having a flat face formed along the leading edge thereof and a shield, formed in one piece from a material substantially more resistant to erosion than said body portion, bonded to said flat face and extending the whole length of the body portion wherein said shield is tapered to zero thickness adjacent the blade root, the wider end of the shield being at the blade tip.

3,275,296
HOISTING TRUCK HAVING BOOM MEANS COMPRISING A TENSION FULCRUM BAR

Gerald Raymond Meyer, Centerville, Mich., assignor to himself and Richard I. Ward, Three Rivers, Mich., as joint tenants with right of survivorship

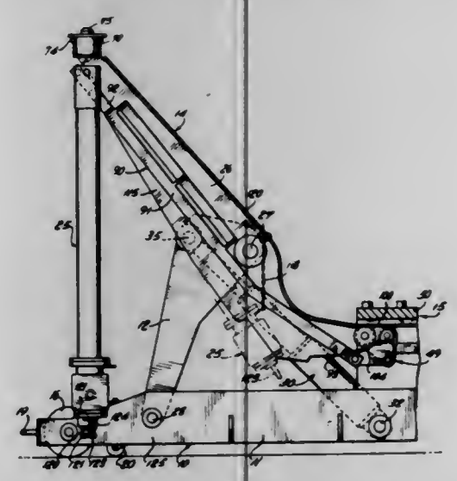
Filed Apr. 12, 1965, Ser. No. 447,223
5 Claims. (Cl. 254—8)



1. A portable hoist which comprises: (1) a generally horizontally disposed boom, comprising a main pipe having a fulcrum end and an open, load carrying end, said main pipe in the region of said fulcrum end being adapted to receive the top end portion of a fulcrum bar and pivotal connection means therefor, said main pipe between said ends having attached thereto a pair of downwardly extending mounting blocks, one on one side of said main pipe, the other on the other side of said main pipe with a round mounting sleeve disposed between said mounting blocks underneath said main pipe with means pivotally connecting said mounting sleeve to said mounting blocks, said main pipe further comprising a brace structure on the top side thereof; (2) a hydraulic jack comprising a vertically disposed hydraulic cylinder having a hydraulic fluid inlet in the region of the bottom end thereof and containing a piston between said inlet and the top end thereof, a vertically disposed lift rod connected to said piston and extending from the top side of said piston through the top end of said hydraulic cylinder to a cylindrical lift head above said cylinder, the axis of said cylindrical lift head being vertically disposed, said mounting sleeve being mounted on said lift head, and a vertically disposed cylindrical skirt attached to and extending downwardly from said lift head and surrounding the upper portion of said hydraulic cylinder, said hydraulic jack further comprising a hydraulic pump with hydraulic fluid release means and a hydraulic fluid outlet, and hydraulic fluid hose means having one end coupled to said outlet and the other end coupled to said hydraulic fluid inlet of said hydraulic cylinder; (3) frame means comprising a base supporting said hydraulic cylinder at its bottom end, upright columns on each side of said hydraulic cylinder with the bottom ends thereof being attached to said base, top plate means attached to the top ends of said upright columns, said top plate means having an opening therethrough for said cylindrical skirt, pairs of forwardly and laterally projecting horizontally disposed arms secured to the opposite outer sides of said upright columns, the other fastened to the other upright column, wheel means rotatably mounted on the outer ends of said arms, a cross bar member attached to the inner ends of said forwardly projecting arms

and disposed on the rear side of said upright columns, said cross bar member comprising bracket means for receiving the bottom end portion of a fulcrum bar; and (4) a fulcrum bar extending from said bracket means to the portion of said main pipe of said boom adapted to receive the top end portion of said fulcrum bar, means pivotally connecting the bottom end portion of said fulcrum bar to said bracket means and means pivotally connecting the top end portion of said fulcrum bar to said main pipe.

3,275,297
HOISTING TRUCK HAVING PISTON ACTUATED PARALLELOGRAM BARS
Erich Bloch, New York, N.Y., assignor to Aeronautical Machinery Corporation, a corporation of New Jersey
Filed Jan. 11, 1965, Ser. No. 424,682
9 Claims. (Cl. 254—10)



1. A lifting device comprising a single lifting lever arm having spaced interconnected side walls defining therebetween a hollow having an end for supporting and raising a load, means for imparting to said lever arm a movement in a direction to cause said load supporting and raising end to move in a vertical direction, a tube jack extending along said lever arm and nested in said hollow in inoperative lowermost position of said lifting device, and means for moving said tube jack from said inoperative position towards upright position as said end of the lever arm is raised and for lining up said tube jack in upright position underneath said end of the lever arm as said end of the lever arm reaches the upper part of its upward movement, said tube jack being adapted in upright position to pick up the load from said end of the lever arm in the uppermost position of said end of the lever arm and to lift it an additional amount permitted by the range of operation of said tube jack.

3,275,298
DEMOUNTABLE CONTAINERS PROVIDED WITH JACK LEGS FOR RAISING AND LOWERING THE SAME
Albert M. Hand, Etobicoke, Ontario, Canada, assignor, by mesne assignments, to Steadman Industries Limited, Cooksville, Ontario, Canada
Filed June 22, 1964, Ser. No. 376,726
10 Claims. (Cl. 254—45)

1. A jack for raising and lowering a heavy body through a plurality of elevations comprising:

a standard having a foot on which it is erectly disposable adjacent a body to be raised and lowered between upper and lower limits on said standard and to be propped at various levels between said limits;

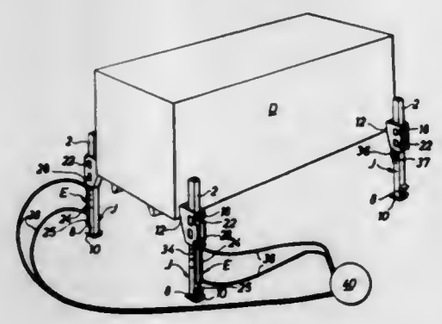
a support movable on said standard between said upper and lower limits having an extension releasably engageable with an element of said body co-acting with said extension to load the body on said support and render it co-movable therewith on said standard;

a stop releasably fixable on said standard for arresting descent of said support at selected levels, the load on said support being thereby transferred to said stop and through it onto said standard for propping the body on said standard;

an elevator having spaced terminals;

a reaction base stationed on said standard between said foot and said support, and

vertically spaced, aligned connections on said support and reaction base respectively engageable with said elevator terminals accommodating installation of said elevator on said standard between said support and said reaction base;



said elevator being expandable to spread said terminals apart and, when installed as aforesaid, to initially engage said terminals with said connections for positioning said elevator on said standard and thereafter to raise said support from a level at which it is arrested by said stop to a higher level thereby unloading the said stop and transferring the load therefrom to said reaction base and through said reaction base to said standard;

said elevator being thereafter also contractible for drawing said terminals together permitting regulated descent of said support on said standard until rearrested by said stop; the elevator being then further contractible for reloading said support on said stop permitting disengagement of said terminals from said connections and removal of said elevator from said standard;

said stop being releasable from said standard when unloaded as aforesaid and being refixable to the standard at a new level to rearrest said support and prop said load on the standard at said new level.

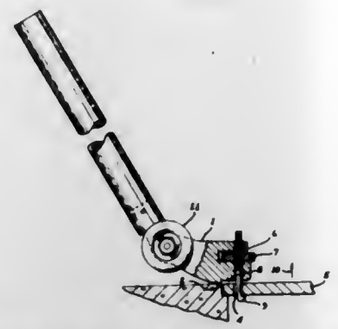
3,275,299
MANHOLE COVER HANDLING DEVICE
Allan D. Meshew, Tempe, Ariz., assignor, by direct and mesne assignments, to Aztec Manufacturing Company, a corporation of Arizona
Filed June 18, 1964, Ser. No. 376,144
8 Claims. (Cl. 254 —131)

1. A device for disengaging a manhole cover from its seated position, lifting the cover and trundling it to another location comprising:

(a) an elongate frame having a front end and a rear end and shaped to provide a ground-contacting fulcrum point therebetween;

(b) a cover latch assembly carried on the front end of the frame comprising a downwardly depending latch stud, having a forwardly facing cover latch on its lower end, said latch stud being adapted to be inserted through a hole in the edge area of the manhole cover and latch under the lower surface thereof;

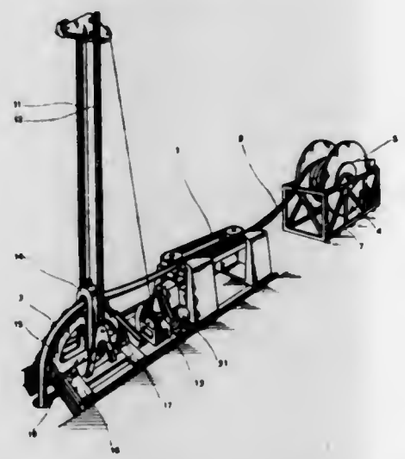
(c) a wheel assembly carried on the rear end of the frame and positioned such that when the cover latch is in the cover disengaging position the wheels are spaced from the ground; and



(d) an operating lever handle secured to said frame in general alignment with the axis of said wheels extending upwardly rearwardly from the frame,

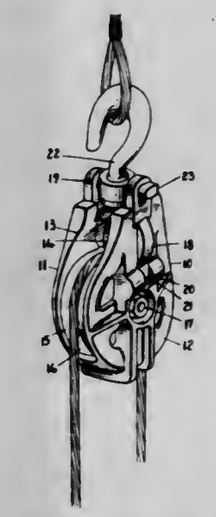
(e) whereby in a continuous movement as the operating lever is lowered, the cover is engaged between said latch and frame, is lfted as the frame is rotated about said fulcrum, and is brought to wheel trundling position with the wheels engaging the ground and the fulcrum raised therefrom.

3,275,300
WELL DRILLING APPARATUS
Jacques Delacour, Paris, and Jean Parola, Rueil-Malmaison, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, Seine & Oise, France
Filed June 1, 1964, Ser. No. 371,722
Claims priority, application France, July 29, 1960, 834,590
8 Claims. (Cl. 254—175.7)



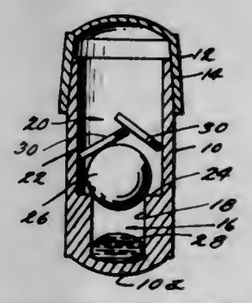
1. A surface apparatus for handling a drill string in drilling bore holes by means of a well boring machine suspended on a flexible tubing, and comprising in combination substantially vertical mast means positioned at substantially the head of a bore hole, an arcuate roller-carrying frame provided with grooved rollers, said frame being slidably mounted between said substantially vertical mast means for movement from an upper position to a lower position, means for so moving said frame, said flexible tubing extending over said frame and grooved rollers and carried thereby, means supporting said frame in said lower position to receive the flexible tubing vertically and tangentially from said bore hole and for delivering it horizontally and tangentially to a horizontal support, means on said support for laterally gripping said tubing on said support and moving it horizontally, said last named means comprising opposed horizontally operating endless chain means having a path therebetween for said tubing, means for driving said endless chain means and reel means to receive the tubing moved horizontally by said chain gripping and moving means.

3,275,301
SHEAVE PULLEY
John A. Read, R.R. 2, North Bay, Ontario, Canada
Filed Oct. 1, 1964, Ser. No. 400,722
2 Claims. (Cl. 254—194)



1. A sheave assembly consisting essentially in the combination of, a substantially U-shaped unitary body portion having a pair of spaced parallel side plates interconnected at the lower ends thereof by an integral bight section; a sheave mounted for rotation in said body portion between said side plates, said side plates and said bight section being recessed, at least in part, to receive the rims of the sheave flanges, said side plates extending upwardly from adjacent the axis of rotation of the sheave, each extended portion of each plate being bifurcated; gate means pivotally mounted at one end thereof at the bifurcation of each side plate subjacent the upper perimeter of the sheave, the other end of each gate means extending upwardly of the side plates and including apertures for cooperation with latching means connected to suspension means, the portions of said side plates and said gate means located above the sheave being concave on the inner surfaces thereof.

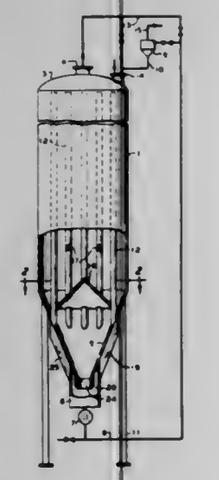
3,275,302
DEVICE FOR STORING AND MIXING DENTAL AMALGAMS
Thomas J. Horton, P.O. Box 168, Farmville, N.C.
Filed Mar. 15, 1965, Ser. No. 439,823
3 Claims. (Cl. 259—72)



1. A device for storing and mixing dental amalgams comprising a body member having an open end and a closed end, a first chamber of given cross-sectional dimen-

sion formed within and adjacent to the closed end of the body member, a second chamber formed within and communicating with the open end of the body member, the two chambers communicating with each other at a position intermediate said ends of the body member, the second chamber being of greater cross-sectional dimension than the first chamber at said intermediate communicating position, a member loose within said second chamber but of sufficient size to close off said first chamber from the second chamber when the body member is maintained open end up, and a cap member fitted over the open end of the body member, the arrangement being such that a predetermined amount of mercury may be stored in said first chamber and a predetermined amount of alloy stored in the second chamber with the loose member separating same, and upon shaking of the device the loose member will become dislodged to permit mixing of the mercury and alloy to form an amalgam, with the loose member aiding in subdividing and mixing said materials to form the amalgam.

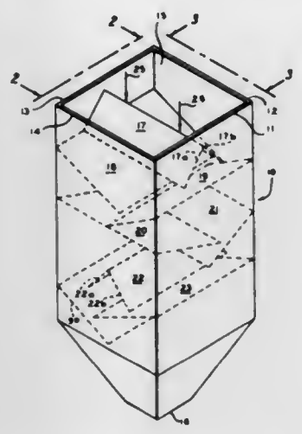
3,275,303
BLENDING
Robert R. Goins, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,423
6 Claims. (Cl. 259—95)



1. Solids blending apparatus comprising, in combination:
(a) a chamber having an inlet and outlet at substantially opposite ends thereof;
(b) a downwardly concave baffling means in a lower part of said chamber and spaced from the bottom of said chamber;
(c) at least one upright conduit positioned within said chamber to provide a passageway around said baffling means; and
(d) at least one pair of diametrically opposite openings having an upwardly convex baffle extending through same in each such conduit at a level above said conical baffling means.

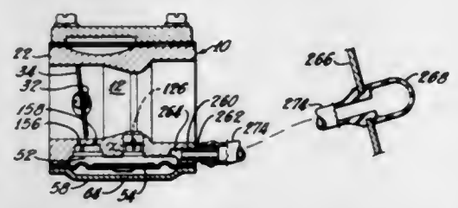
3,275,304
BLENDING APPARATUS
Leon P. Brundrett, Houston, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,472
2 Claims. (Cl. 259—180)

1. Apparatus for blending particulate, free flowing, granular material which comprises, in combination, a chamber having first, second, third and fourth wall forming members, said wall forming members being so adapted as to form an outlet from said chamber at one end thereof; inlet means to introduce the material to be blended to said chamber; first flow dividing means attached to said first and third wall forming members at a point approximate to said inlet means; first planar baffle means attached along one edge thereof to said first wall forming member and adapted to direct flow downwardly toward the interior of said chamber; second planar baffle means attached along one edge to said third wall forming member at a point below the lower edge of said first planar baffle means; third planar baffle means attached along one



edge thereof to said fourth wall forming member and so adapted as to direct flow downwardly toward the interior of said chamber; fourth planar baffle means attached along one edge thereof to said second wall forming member and so adapted as to receive flow from said third planar baffle member and to direct flow downwardly toward the interior of said chamber; and second flow dividing means attached to said second and fourth wall forming members so adapted as to divide the flow from said fourth planar baffle means while directing same downwardly toward the interior and outlet of said chamber.

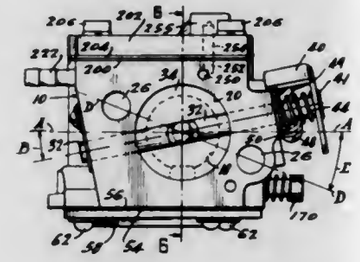
3,275,305
FUEL FEED AND CHARGE FORMING APPARATUS WITH PRIMING DEVICE
Warren D. Nutten, Erie, Mich., assignor to The Tillotson Manufacturing Company, Toledo, Ohio, a corporation of Ohio
Filed May 3, 1965, Ser. No. 452,826
5 Claims. (Cl. 261—34)



1. In combination, a carburetor having a mixing passage and an unvented fuel chamber, a throttle valve in the mixing passage, a flexible diaphragm forming a wall of the fuel chamber, a fuel inlet in the carburetor, an inlet valve for the inlet, motion transmitting means disposed between the inlet valve and the diaphragm whereby movement of the diaphragm controls the inlet valve to regulate flow of liquid fuel from a supply into the fuel chamber, passage means in communication with the fuel chamber for delivering fuel into the mixing passage, means including an auxiliary fuel storage member in communication with the fuel chamber manually actuable

by an operator for forcing auxiliary fuel into the fuel chamber to eject fuel in the fuel chamber into the mixing passage through said passage means, and means in said passage means to impede air flow from the mixing passage into the fuel chamber so that reduced pressure is established in said fuel chamber and said diaphragm is caused to open said fuel inlet valve.

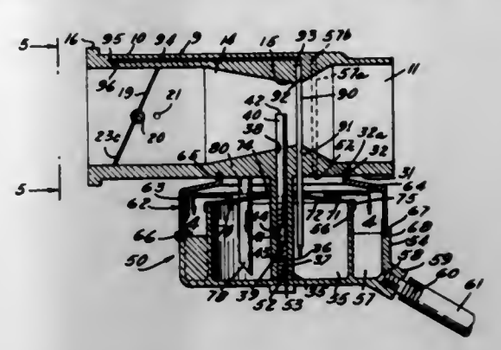
3,275,306
FUEL FEED AND CHARGE FORMING APPARATUS
Bernard C. Phillips, Toledo, Ohio, assignor to The Tillotson Manufacturing Company, Toledo, Ohio, a corporation of Ohio
Filed Mar. 18, 1963, Ser. No. 265,691
9 Claims. (Cl. 261—35)



5. In a fuel system for an internal combustion engine, a carburetor body having a mixing passage and an unvented fuel chamber arranged at one side of the mixing passage, a throttle valve and a choke valve having shafts passing through the mixing passage, a fuel metering diaphragm forming one wall of the fuel chamber, a fuel inlet for said chamber formed in the carburetor body, an inlet valve for said fuel inlet, a lever fulcrumed in the fuel chamber arranged to transmit movements of the metering diaphragm to the fuel inlet valve for controlling fuel flow into the fuel chamber, resilient means biasing the inlet valve toward closed position, orifice means opening into the mixing passage, fuel channel means in said body for conveying fuel from said fuel chamber to said orifice means, a plate secured to the body and disposed at the opposite side of the mixing passage from the metering diaphragm, adjacent regions of the carburetor body and plate being formed with recesses, a pumping diaphragm between the plate and carburetor body and extending across the recesses forming therewith a fuel compartment in the carburetor body and a pulse chamber in the plate, means to connect the pulse chamber with a source of varying fluid pressure for actuating the pumping diaphragm, said throttle valve and said choke valve shafts being substantially parallel to each other and arranged at an acute angle with respect to a plane through the mixing passage parallel to the metering diaphragm, and manually adjustable means for metering fuel flow from the fuel chamber to the orifice means, said metering diaphragm being actuated by aspiration in the mixing passage to regulate fuel flow past the inlet valve.

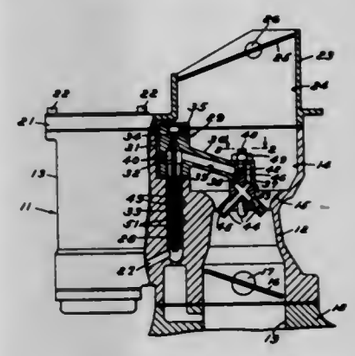
3,275,307
CHARGE FORMING DEVICE
Gerald C. Robechaud, Pacific Palisades, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Aug. 2, 1963, Ser. No. 299,530
11 Claims. (Cl. 261—36)

3. In a charge forming device:
(A) a body having a horizontal induction passage therethrough;
(B) means for supplying fuel to said induction passage, said means including a tubular fuel passage;
(C) means defining a fuel chamber having a top wall with an overflow opening therein coaxial with said tubular fuel passage, said tubular fuel passage extending through said overflow opening, the latter



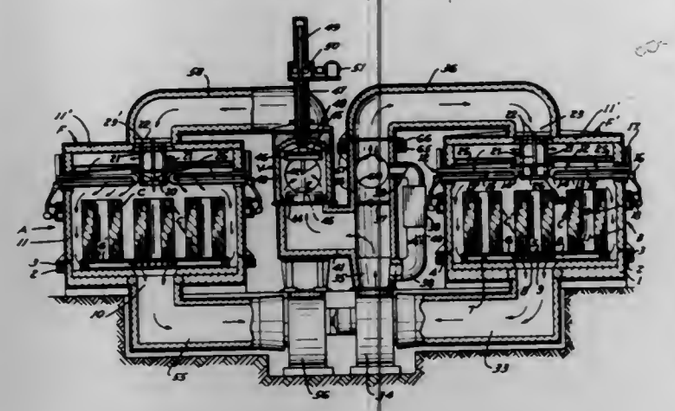
having a peripheral portion thereof about said tubular fuel passage for fuel overflow from said chamber; and
(D) fuel inlet means for said fuel chamber.

3,275,308
CHARGE FORMING DEVICE DISCHARGE NOZZLE
Michael J. Thomas, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 3, 1964, Ser. No. 342,182
5 Claims. (Cl. 261—78)



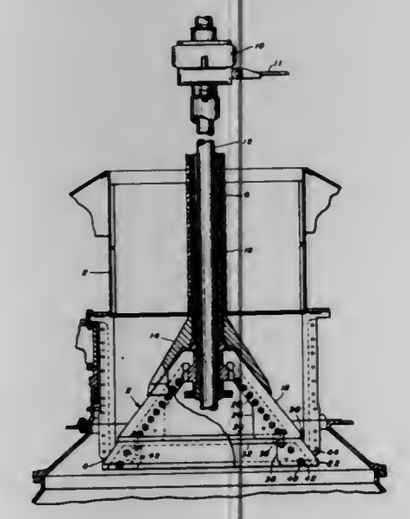
1. A charge forming device comprising an induction passage, a fuel source and a main fuel discharge for discharging fuel from said fuel source into said induction passage, said main fuel discharge including a discharge nozzle support extending into said induction passage and terminating along the longitudinal axis of said induction passage, a bore formed in said discharge nozzle support substantially along the longitudinal axis of said induction passage, a fuel channel extending through said discharge nozzle support and terminating at said bore, a fuel discharge nozzle having a stem portion extending coaxially of said bore and journaled therein, at least a section of said stem portion having a smaller external diameter than the internal diameter of said bore to provide an annual clearance therebetween, a plurality of discharge bars extending from said stem portion outwardly and downwardly into said induction passage, a discharge port extending through each of said discharge bars and communicating with said annular clearance, the upper end of said stem portion terminating adjacent an upper surface of said discharge nozzle support and being externally threaded, and a nut threaded upon said stem for retaining said discharge nozzle in an angularly adjusted position.

3,275,309
APPARATUS FOR HEATING METAL OBJECTS
Lee Wilson, Rocky River, and Paul R. Barenok, North Olmsted, Ohio, assignors to Lee Wilson Engineering Company, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 8, 1964, Ser. No. 358,156
10 Claims. (Cl. 266—5)



1. Apparatus for heating metal objects including a base, a charge support on said base, a furnace bell on said base forming an enclosed furnace chamber therewith, said furnace bell having a top opening, said base having a bottom opening and said charge support being adapted to support a charge in said furnace chamber, atmosphere circulating means connecting said bottom opening in said base and said top opening in said furnace bell, heating means supported in said furnace bell and extending transversely thereof, said heating means having a radiant heating surface area disposed for direct radiant heating of a charge on said charge support, and atmosphere diffusion means comprising a plurality of inwardly extending inclined vanes having their adjacent longitudinal edges spaced apart and being supported by said furnace bell above said heating means on the side thereof opposite said radiant heating surface area.

3,275,310
BLAST FURNACE BELL
Ralph T. Hanna, Yardley, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 4, 1963, Ser. No. 327,925
2 Claims. (Cl. 266—27)



1. In a blast furnace, the combination including a hopper having a peripheral conical seat at its lower end, a generally conical bell within said hopper and extending below the bottom thereof, and means for raising and lowering said bell; said bell comprising two upper sections having a generally conical outer surface, a generally vertical flange on each end of each upper section, the flanges on each section having holes therein aligned with the holes in the adjacent flange of the other section, means in said aligned holes detachably fastening the two sections together, two lower sections having a generally conical outer sealing surface adapted to engage said peripheral conical seat, a generally vertical flange on each end of each lower section; the flanges on each lower section having holes therein aligned with the holes in the adjacent flange of the other lower section, means in said last named aligned holes detachably fastening the lower sections together, each of said upper sections having an inwardly extending peripheral flange at the bottom thereof, each of said lower sections having an inwardly extending peripheral flange at the top thereof, said horizontal flanges having holes therein, the holes in the horizontal flanges of the upper sections being aligned with the holes in the horizontal flanges of the lower sections, and means in said last named aligned holes detachably fastening the upper and lower sections together.

3,275,311
SPRING DEVICE
Ramon Hubert Eberstadt y Sichel, Mexico City, Mexico (Ap. Postal 310, Queretaro, Queretaro, Mexico)
Filed Apr. 22, 1964, Ser. No. 361,774
5 Claims. (Cl. 267—1)

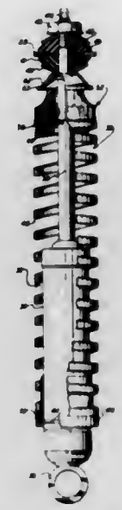


1. A spring device including at least one base element, a plurality of tongues, each having two ends and an arcuate intermediate portion, one of said ends of each resilient tongue being secured to said base element, and the other of said ends of each resilient tongue slidingly engaging one surface of said base element. said base element comprising a sheet, an opening being defined in said sheet for each resilient tongue, each tongue being pressed from said sheet to define its associated opening, one end of each tongue being integral with said base element and having its arcuate intermediate portion overlying its associated opening, and each tongue being elongated in order that its other end slidingly engages said sheet in spaced relationship to its associated opening.

3,275,312
SHOCK ABSORBER AND AUXILIARY SPRING UNIT
Philip V. Monnin, Novi, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 4, 1964, Ser. No. 372,451
1 Claim. (Cl. 267—8)

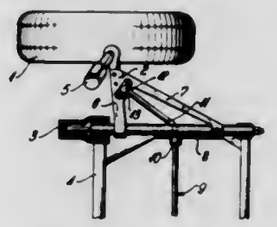
A vehicle suspension system having sprung and unsprung parts, a suspension spring interposed between said parts and constructed for resiliently supporting said sprung parts on said unsprung parts, a direct acting telescopic shock absorber interposed between said parts, said shock absorber having a body portion connected to one of said parts, said shock absorber also having a piston rod portion slidable with respect to said body portion and connected to the other of said parts, a spring seat secured to said body portion, a coil spring disposed concentrically about said body portion and having one end seated on said spring seat, a rubber retaining member connected to the other end of said coil spring, said rubber retaining member having a wall defining a central opening of greater internal diameter than the outside diameter of said piston rod portion, said piston rod portion being disposed within said opening, protruding portions extending radially inwardly from said wall and engaging said

piston rod portion, a stop member disposed near the end of said piston rod portion, said stop member having a generally concave surface spaced apart from said rubber retaining member when said shock absorber is in an extended rebound position, said rubber retaining member having an end with a convex surface constructed to engage said concave surface when said shock absorber is in a position between full jounce and full rebound, said



convex surface and said concave surface being of dissimilar curvature whereby when said rubber retaining member is moved into engagement with said stop member said rubber retaining member is distorted in a gradual progressive fashion, said rubber retaining member being compressed between the concave surface of said stop member and the end of said body portion when said shock absorber is in a full jounce position.

3,275,313
STABILIZER FOR VEHICLES
Hans Hoenick, Gerlingen, near Stuttgart, Germany, assignor to Firma Dr. Ing. h.c. F. Porsche KG, Stuttgart-Zuffenhausen, Germany
Filed Dec. 4, 1963, Ser. No. 328,028
Claims priority, application Germany, Dec. 13, 1962, P 30,762; Dec. 15, 1962, P 30,786
7 Claims. (Cl. 267—11)



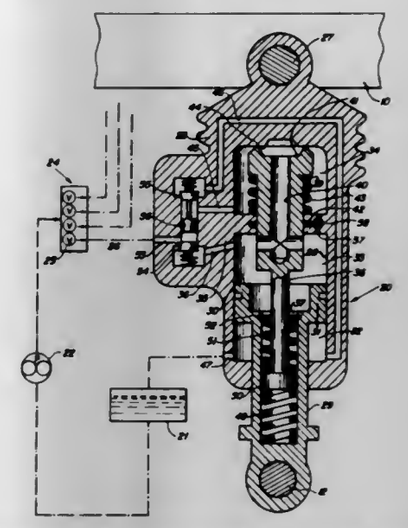
1. A stabilizer arrangement for vehicles, especially motor vehicles having a vehicle superstructure, comprising integral fork-like wheel guide members, each including first and second arms diverging in V-shape and pivotally connected at spaced points to the vehicle superstructure for suspending a respective wheel at the vehicle superstructure,

and stabilizer means for stabilizing the vehicle and operatively connecting oppositely disposed wheel guide members,

said stabilizer means being constructed as a torsion rod provided with crank arms, each extending entirely between the arms of the corresponding fork-like wheel guide member,

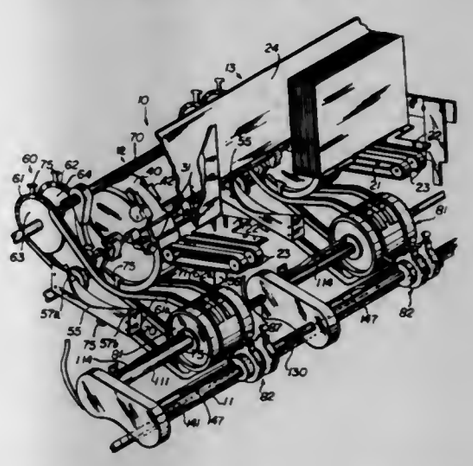
and means pivotally connecting each crank arm of the stabilizer means at the root of the arms of the corresponding fork-like wheel guide member.

3,275,314
FLUID CUSHION
Fritz Ostwald, Buchschlag, Germany, assignor to Alfred Teves, Maschinen und Armaturenfabrik K.G., Frankfurt am Main, Germany, a German company
Filed Sept. 1, 1964, Ser. No. 393,555
11 Claims. (Cl. 267—64)



1. A fluid cushion comprising a cylinder provided with an inlet and an outlet for a working fluid, valve means in said outlet, biasing means urging said valve means into a position of closure, a conduit system including forced-circulation means connected to said inlet and outlet for driving said fluid through said cylinder, said valve means including a body with a face exposed to said fluid for partly overcoming the force of said biasing means under pressure of said forced-circulation means whereby said outlet is held open for the passage of said fluid at a controlled rate, and piston means in said cylinder movable relatively thereto under the action of a load for exerting a supplemental valve-opening pressure on the fluid in said cylinder upon any increase in said load, said piston means being linked with said valve means by a resilient coupling including at least part of said biasing means, said resilient coupling counteracting the valve-opening pressure exerted upon said face by the fluid in said cylinder.

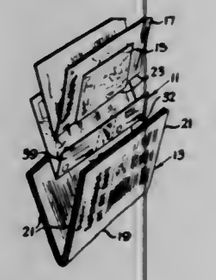
3,275,315
SIGNATURE HANDLING MECHANISM
Victor A. Zugel, Parma, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,647
11 Claims. (Cl. 270—54)



1. A signature handling mechanism comprising a magazine for supporting a supply of signatures on their folded edge and adapted to receive additional signatures upon

depletion of the signatures in the magazine, a signature transfer drum means operable to grip the folded edge of a signature and take the signature from the magazine and convey the signature around the periphery of the drum away from said magazine to a release point, support means having a support surface curved at least in part around a portion of said drum lying adjacent said release point for receiving and supporting a signature released therefrom, endless conveyor means having a run lying adjacent said release point and moving in a direction opposite the direction of rotation of said drum at said release point and associated with said support means for conveying a signature supported thereon to a signature opening station.

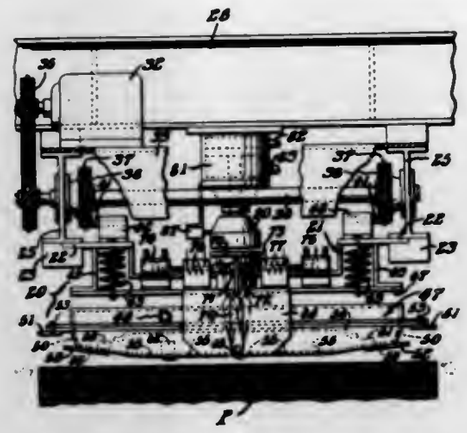
3,275,316
INSERT FOR NEWSPAPERS
Gerald V. Cleary, Jr., 463 Park Ave., Glencoe, Ill.
Filed Apr. 12, 1965, Ser. No. 449,684
14 Claims. (Cl. 270—57)



1. An assemblage of printed material comprising
A. an inner and an outer newspaper section each of which is folded along a major fold line and each of which includes lateral edges generally normal to said fold line,
(1) said sections being arranged within one another with at least one inner section being nested within the folds of an outer section and with the major fold lines of each the inner and the outer section being generally collinear,
B. and a single sheet insert adapted to carry an advertising message,
(1) said insert including a generally rectangular panel and a flap foldably attached to said panel along one edge thereof, one of said panel and flap having attached thereto a sample of a commercial commodity,
(a) said insert being disposed intermediate said inner and outer sections with the said one edge generally collinear with a major fold line of said outer section and with its panel and flap disposed on opposite sides of said inner section so as to cause the weight of said inner section to serve to retain said insert within said outer section without the use of fasteners,
(b) said panel and said flap on said insert each being dimensioned so as not to project outwardly past an edge of said assemblage.

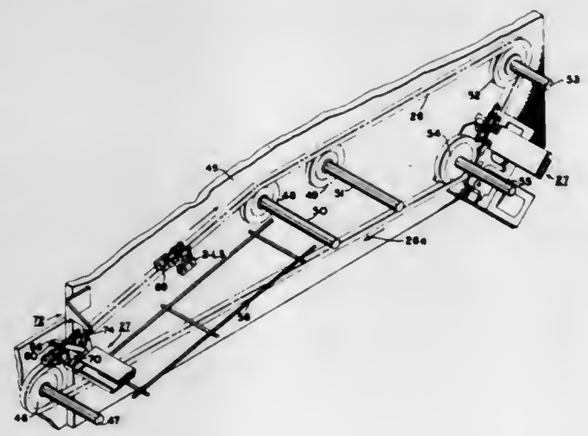
3,275,317
METHOD AND MECHANISM FOR TRANSFERRING FABRIC BLANKS
Frank H. Fromm, Jr., 4215 State Road, Drexel Hill, Pa.
Filed May 1, 1964, Ser. No. 364,080
14 Claims. (Cl. 271—26)

13. In a fully automatic method of transferring precut fabric blanks one at a time from a pile thereof at a supply station to another station spaced from said supply station, the steps comprising lowering a pick-up head into engagement with the topmost blank, the effective size of the pick-up head being such that marginal areas of said blank project outwardly from thereunder, inducing suction through the sides of said pick-up head overlooking said marginal blank areas whereby to draw the marginal areas of said topmost blank toward and operatively hold the marginal areas of said topmost blank



to said sides of the pick-up head, raising the pick-up head to lift said topmost blank from said pile of blanks, moving said pick-up head to said other station, cutting off the suction and thereby releasing the blank from said pick-up head for deposit at said other station, and returning said pick-up head to said supply station for removal of another blank from the pile thereof.

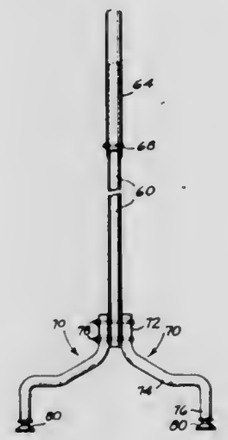
3,275,318
SHEET CONVEYING APPARATUS
Edward J. Lavander, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 30, 1964, Ser. No. 407,698
3 Claims. (Cl. 271—68)



1. Apparatus for use in a device having side frames and pulley means mounted in said side frames supporting an endless conveyor of the type having a sheet gripper mechanism adapted to cyclically carry sheet material from sheet feeding stations to sheet delivery stations including:
biasing means in the sheet gripper mechanism to hold the gripper mechanism in a closed position;
a gripper lever mounted on the sheet gripper mechanism to open the gripper mechanism against the action of the biasing means;

an actuating lever positioned at the delivery stations adjacent the path of movement of the gripper mechanism movable into interfitting relation with the gripper lever to affect operation of the gripper mechanism;
means to move the actuating lever into interfering relation with the gripper mechanism;
a locking device on the gripper mechanism to lock the gripper in an open position against the action of the biasing means; and,
a releasing bracket mounted on the side frame at the sheet feeding stations to release the locking device to allow the gripper mechanism to close thereby gripping the sheet material inserted in the gripper mechanism.

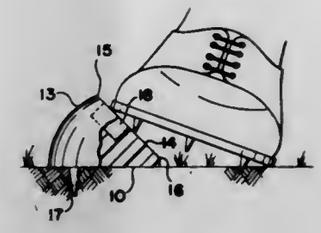
3,275,319
AMBULATORY AMUSEMENT AND EXERCISING DEVICE
Clarence A. Rost, 7720 SW. Cedar Lane, Portland, Oreg.,
Filed Aug. 7, 1964, Ser. No. 388,085
9 Claims. (Cl. 272—70.1)



1. An ambulatory amusement and exercising device comprising
(a) an elongated stem of sufficient strength to support a person when arranged in its vertical use position, the upper portion of the stem providing a hand grip,
(b) a cross piece,
(c) securing means for securing the cross piece to the lower portion of the stem,
(d) foot rest means on top of the cross piece, one on each side of the stem,
(e) and foot means on the bottom of the cross piece, one on each side of the stem,
(f) the foot rest means and foot means being disposed in a common transverse plane and the hand grip portion of the stem being disposed angularly forward with respect to said plane and with respect to an operator standing on the foot rest means wherein the one foot means on each side of the stem are the only engaging means between the device and the surfaces on which it is used.

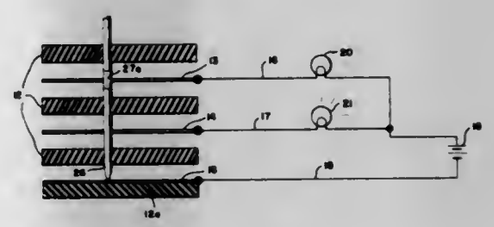
3,275,320
MAGNETICALLY LIFTABLE FOOT POSITIONING BLOCK FOR GOLFERS
John K. Hydock, R.D. 1, Byesville, Ohio
Filed Nov. 22, 1963, Ser. No. 325,551
3 Claims. (Cl. 273—32)

1. An anchor block for positioning the right foot of a golfer while swinging a golf club, said block having a flat base, spikes projecting downwardly from the base for penetrating into the ground, an inclined upper face on one side of the block for tilting the overlapping foot of a golfer standing thereon, and a magnet embedded in the



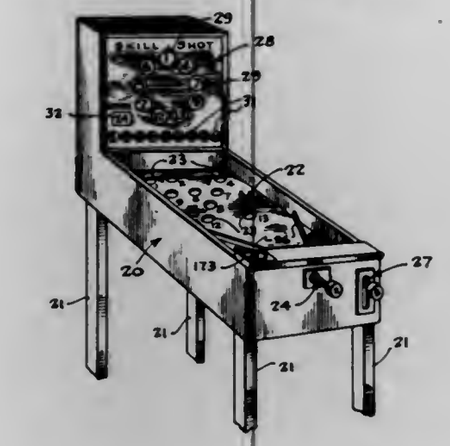
upper surface of said block and having its upper surface exposed, said magnet having sufficient attracting power to permit the block to be lifted by means of a golf club having its metallic head in contact with said magnet.

3,275,321
TARGET APPARATUS WITH DISCRIMINATING ELECTRICAL INDICATOR, AND PROJECTILES THEREFOR
Gerard M. Forest, 3802 Greenly St., Wheaton, Md.
Filed Jan. 30, 1964, Ser. No. 341,197
8 Claims. (Cl. 273—102.2)



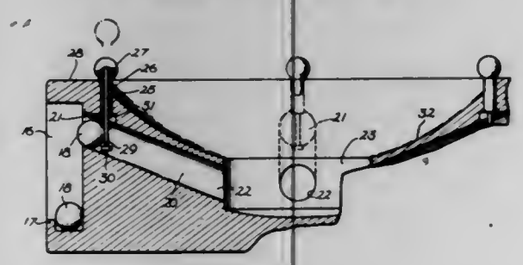
4. A target apparatus comprising: a plurality of target sections each comprised of a ground or return conductive layer, a plurality of charged conductive layers spaced from said ground or return conductive layer and from each other, layers of easily penetrable and insulating target material between said conductive layers; a power supply; said ground or return conductive layer being electrically coupled to one side of said power supply, each of said charged conductive layers being electrically coupled to the other side of said power supply; and a plurality of signal or indicator means corresponding to the plurality of charged conductive layers and being different from each other, a signal or indicator means being coupled in the electrical coupling between each charged conductive layer and said power supply, the rearmost layer being impenetrable by pointed projectiles, and the other layers being easily penetrable by such projectiles; whereby the various signal or indicator means will be energized when there is embedded in the target the pointed nose of one of a plurality of different types of projectiles corresponding to the plurality of charged conductive layers, the pointed nose being of conductive material, and said projectile nose having uninsulated portions thereon at points which will contact the ground or return layer and only one of the charged conductive layers and having insulation thereon at the points which will contact the other charged conductive layers when the projectile comes to rest in the target, the uninsulated portions which contact the charged conductive layers being at a different position on each different type of projectile.

3,275,322
AMUSEMENT DEVICE WITH CHANGEABLE SCORE CONTROL MECHANISM
Walter M. Burnside, 324 S. Orchard, Waukegan, Ill.
Filed Apr. 14, 1964, Ser. No. 359,748
8 Claims. (Cl. 273—119)



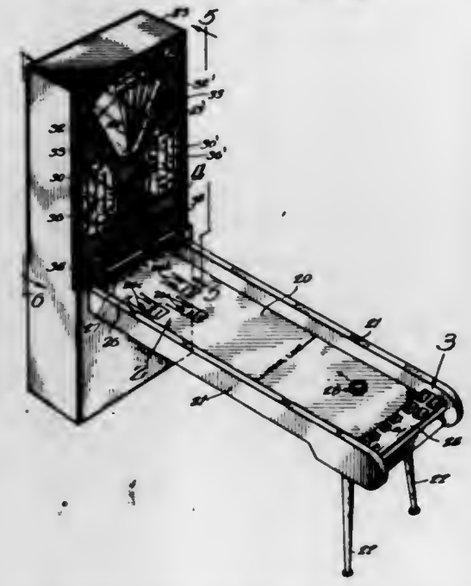
1. In an amusement device which includes a generally flat play field having a plurality of targets thereon and an object which can be propelled onto a play field to contact one of said targets, a plurality of target switches associated with each of said targets and wherein one of said target switches is adapted to be activated when one of said targets is contacted by one of said objects propelled on said play field, and a score register means operatively connected with said target switches and adapted to be activated when a target switch is closed and indicate a score value, the improvement comprising; means for selecting at least one winner target having a nominal score value, means for automatically selecting by chance a score value multiplying integer for increasing said nominal score value, and score counter means operatively associated with said score multiplier means and said target switch for actuating said score register means and indicating a score total which is a multiple of said score value.

3,275,323
GUESSING GAME DEVICE
Robert K. Achen, 6531 Greenbush Ave., Van Nuys, Calif.
Filed July 3, 1964, Ser. No. 380,162
6 Claims. (Cl. 273—120)



1. A game device comprising;
a body having a plurality of compartments for containing the objects to be used in the game;
each compartment being assigned to an individual player and the objects therein concealed from all the other players;
a common display surface associated with said body and observable by all the players;
and concealed passage means associated with each compartment for receiving an object selected by a player from the compartment while still concealing the object from all the other players; and
means for selectively releasing said selected object while still concealed for passage through said passage means onto said common display surface.

3,275,324
SURFACE PROJECTILE GAME HAVING ADDITIONAL TARGET SCORING MEANS
Walter M. Burnside, 324 S. Orchard, Waukegan, Ill.
Filed Sept. 8, 1964, Ser. No. 394,734
16 Claims. (Cl. 273—126)



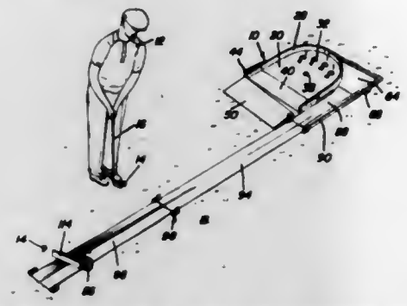
1. An amusement apparatus comprising
(a) a playing table having a plurality of target objective switches adapted to be actuated by a playing piece aimed thereat,
(b) a pair of adjacent vertical channels communicating with each other at their upper ends and each arranged to receive a plurality of balls in stacked relation,
(c) a ball projector disposed at the lower end of one of said channels and adapted to project a ball upwardly and into the other of said channels,
(d) a movable gate associated with the other of said channels and arranged when actuated to release any balls disposed therein, and
(e) means operatively connecting said ball projector and said movable gate to respective ones of said target switches whereby actuation of a switch by a playing piece will effect actuation of either of said ball projector or said movable gate, respectively.

11. In an amusement apparatus,
(a) a plurality of target objective switches radially and arcuately arranged and adapted to be actuated by a playing piece aimed thereto,
(b) a seat for supporting said playing piece and disposed in substantially close proximity to the radial center of said switches,
(c) a projector oscillatable about an axis substantially coincident with said center and adapted to project a playing piece from said seat against one of said target objective switches,
(d) means for actuating said projector, and
(e) means for varying the position of said seat in relation to said projector with each actuation of said projector whereby to vary the path of travel of a projected playing piece.

3,275,325
GOLF PUTTING TRAINER
Kenneth W. MacKenzie, Rte. 2, Box 412–C, Acampo, Calif.
Filed Apr. 8, 1964, Ser. No. 358,207
5 Claims. (Cl. 273—179)

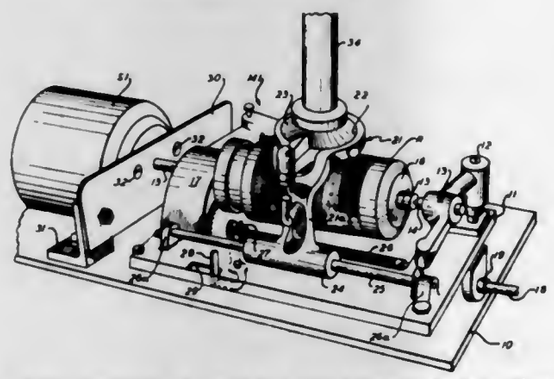
1. A golf putting training aid comprising an inclined ramp having an approach edge orientated adjacent the supporting surface whereby golf balls may be projected onto the ramp, an arcuate retaining wall extending upwardly from the ramp in spaced relation to the approach

edge thereof for retaining golf balls projected onto the ramp, said ramp having a plurality of openings therethrough through which a golf ball may pass, means supporting the ramp in inclined position, and means underlying the openings through the ramp for collecting golf balls passing therethrough and returning the golf balls in a lateral direction and alongside of the ramp for returning them to an area from which they are projected, said ramp being provided with a centrally disposed recess incapable of passing a golf ball but sufficient to retain the



golf ball if it rolls slowly thereover thereby providing a difficult target for the golf ball, obstacles provided on the ramp adjacent the openings for increasing the difficulty of passing the golf balls therethrough, the approach edge of said ramp being provided with an approach ramp spaced slightly therefrom and including an abutment edge spaced from the approach edge, said abutment edge being inclined away from the approach edge laterally thereof for returning golf balls laterally when they roll back down the ramp.

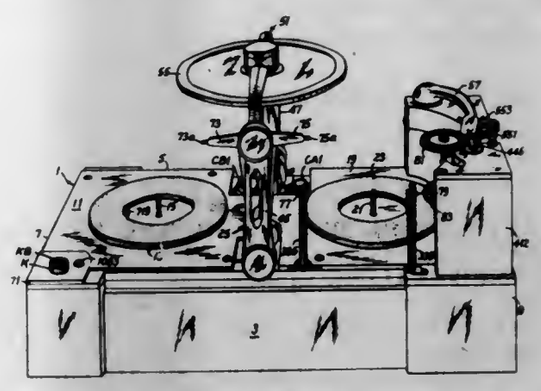
3,275,326
METHOD AND APPARATUS FOR MAKING PHONOGRAPHIC RE-RECORDINGS
Walter L. Welch, 919 Onondaga Ave., Syracuse 7, N.Y.
Filed Oct. 22, 1963, Ser. No. 318,009
8 Claims. (Cl. 274—3)



3. The method of making improved re-recordings of original recordings which comprises selecting duplicate records produced from the same master, reproducing said duplicate records simultaneously while maintaining the same in a synchronized out-of-phase relationship adapted to effect a substantial cancellation of signal noises, and recording on a new record medium the electrical sound-representing signals from said respective duplicate records.

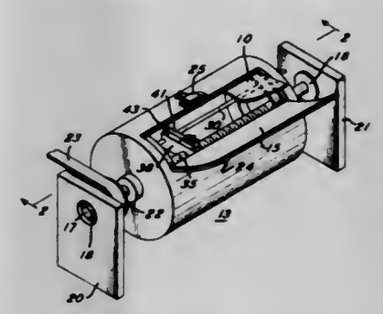
3,275,327
RECORD PLAYER
Arlie L. Brown, Cleveland, Ohio, Norbert F. Cook, Berkeley, Mo., Harry E. Hackney, Cleveland, Ohio, Edward J. Hulsey, Jennings, Carl H. Mueller, Pasadena Hills, and Jerome B. Wegmann, Florissant, Mo., and Wilfred C. Swanker, Bay Village, Ohio, assignors to McNeil Corporation, Akron, Ohio, a corporation of Ohio
Filed July 14, 1961, Ser. No. 124,159
50 Claims. (Cl. 274—10)

1. A record player comprising a turntable carrier, a turntable carried by the carrier for movement relative to the carrier between an inverted position and an upright position, said turntable having means for gripping a record, and means for moving said carrier to bring the turntable in inverted position over to a stack of records



to grip and pick up a record, then moving said carrier to bring the turntable over to a record playing position for playing the upper side of the record on the inverted turntable, and then turning the turntable to upright position for playing the other side of the record.

3,275,328
RECORDING AND PLAYING DEVICE AND METHOD FOR SOUND RECORD
Gyula J. Varga, 314 Locust Drive, Phoenixville, Pa. 19460
Filed Jan. 20, 1964, Ser. No. 338,656
8 Claims. (Cl. 274—20)



1. In combination
a hollow rotatable cylinder having an inner cylindrical surface for the interior reception of a flexible sound record,
said cylinder having a longitudinally pivotal side wall door providing part of said inner cylindrical surface and through which the record may be inserted and withdrawn,
said cylinder having inner annular end recesses for positioning and holding the record,
a member for rotating said cylinder,
a magnetic pick-up head for said sound record,
a longitudinal guide in said cylinder along which said head is movable,
a threaded shaft coaxial with said cylinder, and
a member connected to said head and engaged with said shaft for translating said head in either direction.

3,275,329
CASE FOR PRINTING TYPE
Heiman G. Lieberman, Evansville, Ind., and Jay Benjamin Lieberman, White Plains, N.Y. (6050 Kennedy Blvd. E., West New York, N.J. 07093); said Heiman G. Lieberman assignor to said Jay Benjamin Lieberman
Filed July 26, 1965, Ser. No. 474,612
3 Claims. (Cl. 276—44)

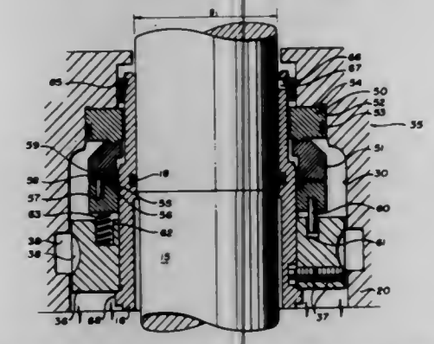
1. A portable case for printing type comprising a plastic body member having upturned edges, a plastic re-

movable integral innerliner having a plurality of variable size printing type-receiving cavities defined by pli-



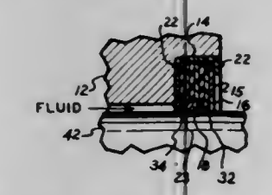
able partitions therebetween, and a plastic cover seletively sealing said printing type in said cavities.

3,275,330
HIGH PRESSURE SHAFT SEAL AND METHOD OF SEALING A ROTATING SHAFT USING PROPORTIONED SEALING RINGS
Edward N. Rein, Portland, Oreg., and Robert E. Dolman, Newark, Del., assignors to Guy F. Atkinson Company, Portland, Oreg., a corporation of Nevada
Filed July 16, 1962, Ser. No. 210,140
2 Claims. (Cl. 277—1)



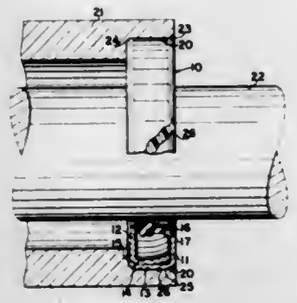
1. A method of sealing a rotating shaft penetrating a fixed housing against egress from said housing of fluid under high, variable pressure, said method comprising: providing a first ring secured and sealed to said housing and coaxial with said shaft; providing a second ring surrounding said shaft, supporting said second ring adjacent its inside edge on a resilient O ring, said second ring being movable axially thereof and having an annular surface confronting a meeting surface on said first ring; urging said surfaces into contact by the application of resilient mechanical force; subjecting selected portions of the surface of both said rings to the high, variable pressure of the fluid to be restrained against egress from said housing; and selecting the contours and proportions of at least said second ring so that in each radial cross-section of said second ring the resultant of all external forces acting on said second ring passes substantially radially inward and substantially through the centroid of the radial cross-section of said second ring.

3,275,331
SEAL AND METHOD OF MANUFACTURE
Alex A. Mastrobattista, Dunellen, N.J., and William J. Fordon, New York, N.Y., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 21, 1962, Ser. No. 246,549
11 Claims. (Cl. 277—1)



1. Cartridge-type sealing means for interposition between relatively movable parts comprising:
a casing adapted to fit between said parts and for fixed relation with one of said parts; and
a lamination of essentially thin annuli, each of the annuli having a radial width greater than its thickness, and being disposed radially intermediate of said casing and another of said parts,
at least one of said annuli being of inert synthetic resinous material having a low coefficient of friction and having a radial dimension compared to a corresponding radial dimension of said other of said parts to be in at least tangential line contact therewith, and
at least one of said annuli being of elastomeric material having a radial dimension substantially corresponding to said radial dimension of said resinous annulus being adapted to resiliently maintain said resinous annulus in contact with said other part, and being positioned to establish at least line contact with said other part as said resinous annulus wears.

3,275,332
OIL SEAL
Evalyn S. May, Redwood City, Calif., assignor to Federal-Mogul Corporation, a corporation of Michigan
Filed Mar. 2, 1964, Ser. No. 348,697
5 Claims. (Cl. 277—37)

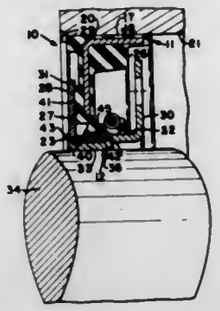


1. In oil seals for use in providing a substantially fluid-tight seal between a movable shaft member and a housing member having a bore through which said shaft extends and wherein said seal is provided with a cylindrical surface adapted to have a press fit with one of said members, the improvement comprising a thin layer, at least as thick as the average surface roughness of said bore, of cured chlorosulfonated polyethylene bonded to said cylindrical surface, said material responding to high shearing and pressure forces so that when such forces act during the assembly of the seal into the bore of a housing member they cause said material to move and fill imperfections in the bore wall and form a fluid-tight seal therewith as well as a strong joint between said oil seal and the bore wall, with any excess remaining coherent and balling rather than crumbling.

3,275,333
DUAL LIP UNITIZED SEAL
Arthur M. Scott, Redwood City, and Robert N. Haynie, Los Altos, Calif., assignors to Federal-Mogul Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 2, 1963, Ser. No. 299,546
10 Claims. (Cl. 277—39)

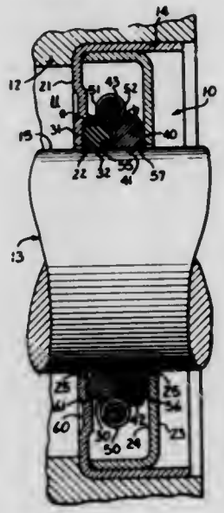
1. A unitized oil seal for use between two relatively rotating machine parts, including in combination:
first and second metal wear sleeve members nested and locked together,
said first member having a first radial flange and a first axial portion, said first axial portion being stepped to provide a first cylindrical portion nearer said first flange and a second cylindrical portion engaging one of said relatively rotating machine parts and more distant from said first flange and of different diameter than said first cylindrical portion and meeting that portion at a step, said first axial portion terminating in a locking rim,

said second member having a second radial flange and a second axial portion, which is cylindrical and nests with said second cylindrical portion and of substantially the same length, engaging said step, said locking rim directly engaging said second radial flange so that said first and second radial flanges are at the



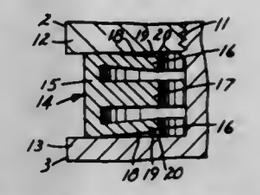
opposite ends of said first axial portion, so that the width of the oil seal is substantially the distance between said first and second radial flanges, and
a sealing member having lip means engaging said first cylindrical portion and means for non-rotatively engaging the other of said machine parts.

3,275,334
O-RING ROTARY SEAL CONSTRUCTION
Robert M. Voitik, Glenview, Ill., assignor to Continental Illinois National Bank and Trust Company of Chicago as trustee
Filed Dec. 18, 1963, Ser. No. 331,497
5 Claims. (Cl. 277—41)



1. In a cartridge-type seal for insertion in the annular space between a shaft and a frame opening defining first and second concentric cylindrical surfaces, the combination comprising an annular cartridge having a first wall and a second wall, said walls being fixedly mounted with respect to the first cylindrical surface and extending to within the vicinity of the second cylindrical surface to define an annular clearance space with respect to the latter, an O-ring presenting arcuate sealing surfaces in engagement with the first wall of the cartridge and the second cylindrical surface respectively, a retaining ring of plastic or the like arranged adjacent the O-ring for mounting on said second cylindrical surface, said O-ring and retaining ring having adjacent portions of approximately the same radial thickness profiled to define a shallow annular valley between them, a garter spring in said valley, said garter spring being prestressed to exert both the retaining ring and O-ring angled forces having radial components in the same direction as well as axial components in opposite directions, said retaining ring being in gripping engagement with the second cylindrical surface to preclude relative movement between the O-ring and retaining ring.

3,275,335
HIGH PRESSURE SEAL
Billie L. Johnson, Canoga Park, and James A. Boyd, Brea, Calif., assignors to Donaldson Company, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,884
1 Claim. (Cl. 277—180)

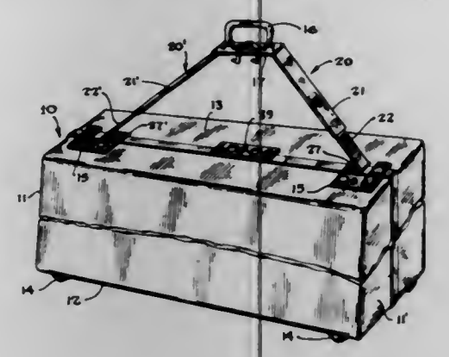


A one-piece annular pressure seal of hard resilient material adapted to be interposed between opposed flat annular surfaces of a pair of cooperating members, said seal comprising:
(a) an axially extending cylindrical portion having a predetermined axial dimension,
(b) a pair of annular end flanges of predetermined axial thickness projecting radially in a common direction from opposite ends of said cylindrical portion and being parallel to each other and having axially outer surfaces normally disposed in parallel planes transversely of the axis of said cylindrical portion,
(c) an annular reinforcing flange of substantially uniform axial thickness substantially greater than that of either end flange between radially inner and outer portions thereof disposed centrally between and in axially spaced parallel relation to said end flanges, all said flanges being of equal radial extent,
(d) and a pair of annular sealing lips one each projecting axially outwardly from the axially outer surface of a different one of said end flanges at the radial edge portion thereof radially spaced from said cylindrical portion,
(e) said sealing lips having axially outwardly facing flat annular sealing surfaces for sealing engagement with respective ones of the annular surfaces of said cooperating members and normally spaced apart a distance greater than the axial dimension of said cylindrical portion,
(f) the axial spacing between said reinforcing flange and each of said end flanges being greater than the axial dimension between each annular sealing surface and the axially outer surface of its respective end flange,
(g) the arrangement being such that, when said sealing surfaces are moved toward each other by pressure of said cooperating members thereagainst to the extent that said members bear against the ends of said cylindrical portion, deflection of said end flanges does not exceed the elastic limits of said end flanges, and said reinforcing flange and end flanges remain in axially spaced apart relationship.

3,275,336
EXTENDABLE ATTACHMENT FOR LUGGAGE
John W. Warner, Jr., 717 Keith Ave., Waukegan, Ill.
Filed Jan. 30, 1964, Ser. No. 341,312
10 Claims. (Cl. 280—43.24)

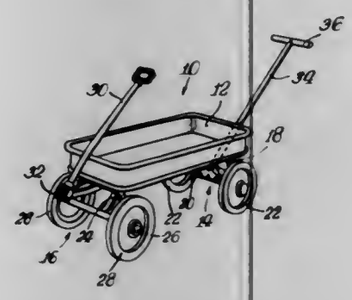
1. In a hand luggage having bearing means on a lower wall surface to facilitate moving said luggage along a supporting surface, an extension attachment secured to longitudinally spaced anchor means fixedly mounted on a wall of said luggage opposite said lower wall surface which comprises; spaced arm members with each of said arm

members being hingeably secured at one end to one of said anchor means, each said arm member having an extension section in telescopic slidable engagement therewith and having one end extendable beyond the said arm member to a predetermined limit, each said arm member and each of said extension section being normally



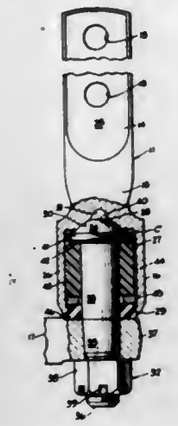
held in a plane substantially parallel with the plane of said wall and in close proximity thereto, and a hand grip means hingeably secured to the extension sections; whereby said hand grip means can be substantially elevated from a position of close proximity to said wall into a position substantially above the level of said wall when said arm members are hingeably moved away from said wall.

3,275,337
AUXILIARY HANDLE FOR COASTER WAGON
Gary K. Lau, 1407 Emerald Ave., Chicago Heights, Ill.
Filed Aug. 13, 1964, Ser. No. 389,305
1 Claim. (Cl. 280—87.1)



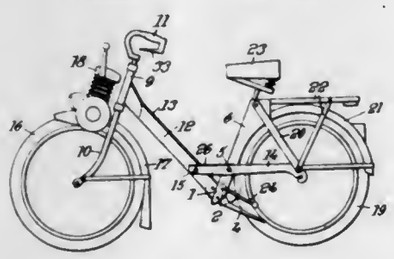
For use with a coaster wagon having a rear axle, a handle mounting block having a semi-circular recess formed in one end thereof disposable longitudinally in engagement with the rear axle of the coaster wagon, a first hinge element secured to one side of said mounting block, a second hinge element pivotally joined to said first hinge element, said second hinge element being positionable along said one edge of said mounting block and having a semi-circular recess formed therein disposable longitudinally in engagement with the rear axle of the coaster wagon, a third hinge element pivotally joined to said second hinge element, means for releasably securing said third hinge element to the other side of said mounting block with the rear axle of the coaster wagon being engaged between the semi-circular recesses of said mounting block and said second hinge elment, an auxiliary handle, and means pivotally mounting one end of said auxiliary handle to said mounting block whereby said auxiliary handle is permitted to extend rearwardly and angularly upwardly with the other end thereof being freely movable laterally while said auxiliary handle is being used to push the coaster wagon.

3,275,338
IDLER ARM BRACKET AND SOCKET ASSEMBLY
Edward J. Herbenar, Detroit, and Alvin W. Alexandrowicz, St. Clair Shores, Mich., assignors to TRW Inc., a corporation of Ohio
Filed Jan. 10, 1963, Ser. No. 250,607
17 Claims. (Cl. 280—95)



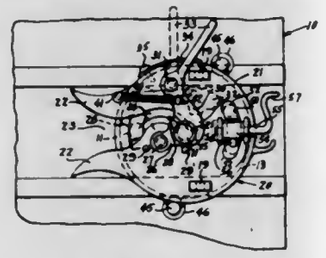
11. In a steering linkage assembly, an idler arm assembly, comprising,
- an integral bracket and socket member having a bracket portion at one end and a cylindrical socket portion at the other end axially offset from said bracket portion,
- said socket portion having a cylindrical wall defining a coaxial socket closed at its inner end and open at its outer end,
- a pivot assembly within said socket including a pivot pin having an inner headed end and a link-connecting end externally of said socket,
- a separate load-carrying bearing, of a thermoplastic resin, having a low coefficient of friction and good noise-damping properties positioned between said socket inner end and said headed pivot end,
- a thermoplastic resin bushing having a low flex modulus surrounding said pin within said socket, and means including an inturned annular flange on the outer end of said socket wall retaining said pivot assembly in said socket and said bushing under compressive load.

3,275,339
FRAMES OF BICYCLES, ESPECIALLY IN THOSE OF BICYCLES PROVIDED WITH AN AUXILIARY ENGINE
Bernard René Mennesson, Neuilly-sur-Seine, France, assignor to Societe d'Appareils de Controle et d'Equipement des Moteurs S.A.C.E.M., Neuilly-sur-Seine, France, a French society
Filed Dec. 22, 1964, Ser. No. 420,273
Claims priority, application France, Dec. 31, 1963, 959,118
7 Claims. (Cl. 280—281)



1. A frame for a bicycle comprising a slanted front strut carrying in its upper part a sleeve for journalling the steering parts of the bicycle, a saddle support slanted in a direction opposite to that of said front strut, a substantially horizontal rear fork rigidly secured, on the one hand, by its own front extremity to said front strut above the lower extremity thereof and, on the other hand, at the lower extremity of said saddle support, said bicycle frame further comprising a rigid sole slanted in the same direction as said saddle support for carrying the housing of the crank-gear, said rigid sole being rigidly secured by its upper end to both the lower extremity of said saddle support and the horizontal fork, and by its lower end to the lower extremity of said front strut, whereby said sole, a portion of said front strut starting from its lower extremity and a portion of said horizontal fork starting from its front extremity define a rigid triangle.

3,275,340
FIFTH WHEEL SAFETY DEVICE
Aurelio Sancioni, Rte. 1, Box 277, Corning, Calif.
Filed Dec. 3, 1964, Ser. No. 415,751
7 Claims. (Cl. 280—432)



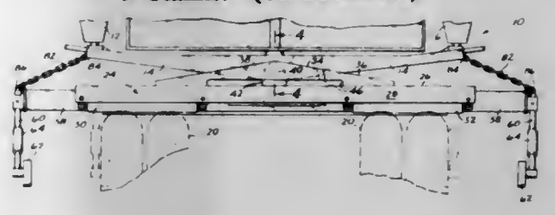
1. In combination with a tractor carrying a fifth wheel and a trailer having a depending king pin, a safety device comprising an elongated arcuate slot in said fifth wheel whereby the king pin engages against a portion of the side wall of the arcuate slot when a pulling force is exerted by the tractor, a pair of jaw members having complementary semi-circular jaw surfaces engaging around the king pin when closed, pivoted to the upper side of said fifth wheel on opposite sides of said slot, a handle member secured to one of said jaws and means for securing said handle to prevent release of said one jaw, the other jaw being held in locked position by said one jaw.

3,275,341
AGRICULTURAL IMPLEMENT TOOL BAR
Harold A. Ralston, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 21, 1964, Ser. No. 339,167
8 Claims. (Cl. 280—460)



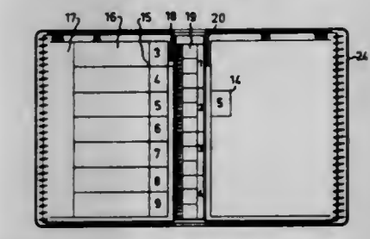
1. A carrier for a tool bar of the type comprising a long slender rod of angular cross section adapted to selectively support and propel a variety of ground working implements clamped in spaced relation therealong, said carrier including a
- girder having a bending and torsional resistance largely in excess of that of said rod, disposed substantially parallel thereto,
- clamp means spaced along the length of said girder, rigidly attached thereto, and rigidly attached to said rod to interconnect the rod and girder whereby implements may be conveniently clamped to said rod selectively at many points without interference from said means while said rod is strengthened against bending and twisting by said means spaced along said girder, and
- means on said girder including forwardly and downwardly extending plates for connection to a vehicle for supporting and propelling said carrier.

3,275,342
MECHANISM FOR ATTACHING TRAILING AND LEAD VEHICLES
Jack D. Layton, Salem, Oreg., assignor to Layton Manufacturing Co., Salem, Oreg., a corporation of Oregon
Filed June 15, 1964, Ser. No. 374,899
9 Claims. (Cl. 280—460)



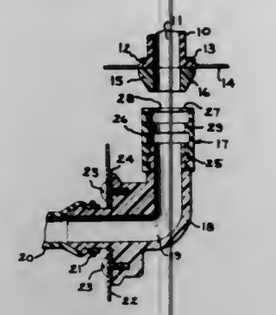
1. Mechanism for attaching trailing and lead vehicles comprising, and in combination with the frame of the trailing vehicle,
- an elongated arm mounting extending transversely of the forward end of the trailing vehicle,
- means connecting said mounting and the frame of the trailing vehicle permitting relative pivotal movement of the mounting about a substantially vertical axis and shifting of the arm mounting in a direction extending longitudinally thereof and laterally of the trailing vehicle,
- a pair of oppositely disposed arms extending forwardly of said mounting and movably supported on said mounting adjacent its opposite ends, respectively, for movement toward and away from each other,
- means linking each arm and the frame of the trailing vehicle affording limited play of the arm relative to said frame, and
- power-operated means mounted on said mounting for extending said arms from opposite ends of said mounting to the extent afforded by the linking means interconnecting the arms and frame.

3,275,343
CALENDAR DEVICE
Per Tore Holm, Granvagen 5, Skoghall, Sweden
Filed June 4, 1964, Ser. No. 372,603
Claims priority, application Sweden, June 5, 1963, 6,202/63
6 Claims. (Cl. 281—17)



1. A calendar system including a first calendar comprising at least one leaf, several markings on said leaf each corresponding to one of several equal parts of a definite time period and arranged along one side edge of said leaf, a second calendar comprising a multi-leaf calendar pad, means mounting said first and second calendars with one side edge of said multi-leaf pad extending along said one side edge of the leaf of said first calendar, a marking on each of the leaves of said second calendar said latter markings each corresponding to one of said equal parts of said definite time period and being distributed along said one side edge of said calendar pad opposite the respective ones of the markings of said first calendar.

3,275,344
MISALIGNMENT COMPENSATING COUPLING
Norman L. Kendt, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Feb. 19, 1965, Ser. No. 433,943
1 Claim. (Cl. 285—9)



A coupling to provide a substantially fluid-tight seal between two relatively movable fluid-conducting conduits which compensates for axial and lateral misalignment of the conduits comprising:

(a) a first coupling member having an axial bore secured to one of the two conduits and having a generally conical engaging surface;

(b) a second coupling member comprising a flexible elongated tubular portion secured to the other of the two conduits at one end and including:

(1) a substantially radially inwardly-extending annular flange of greater flexibility than said tubular portion at its other end defining an opening of substantially the same diameter as said bore and adapted to be engaged by said engaging surface as said first and second coupling members are brought together to form a coupling,

(2) one or more annular ribs on the inner surface of said tubular portion for increasing the resistance to deformation of the parts of the tubular portion immediately adjacent any one of said one or more annular ribs,

(3) said inwardly-extending annular flange and the parts of said tubular portion not immediately adjacent any one of said one or more annular ribs being readily deformable upon contact by said engaging surface to compensate for axial or lateral misalignment of the two conduits.

3,275,345
CONDUIT SYSTEM AND COUPLING MEANS THEREFOR, FOR CONVEYING CRYOGENIC FLUIDS
Stoddard S. Waldron, Woodland Hills, and Gustave A. Bleyle, Jr., Pacific Palisades, Calif., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 30, 1964, Ser. No. 355,834
9 Claims. (Cl. 285—47)

1. A termination for conduit means comprising an inner hollow conduit for conveying a liquefied gas and an outer hollow conduit surrounding said inner conduit and spaced therefrom for defining an evacuated space therebetween, said termination being adapted for coupling to another termination of identical configuration, said termination comprising:

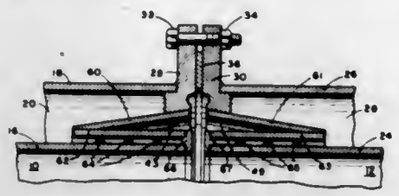
(a) respective one ends of each of said conduits positioned adjacent one another approximately in a common plane;

(b) flange means mounted on and extending outwardly from said outer conduit adjacent said one end thereof; and

(c) means sealing said ends together and including:

(i) at least one substantially rigid, hollow, frustoconical member sealed at one extremity to one of said ends and extending into said evacuated space,

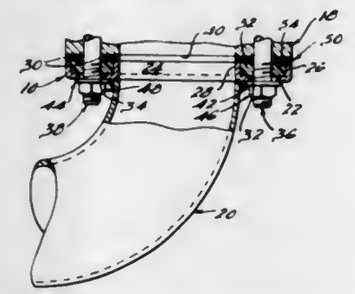
(ii) at least one substantially rigid, hollow, elongated substantially cylindrical member



sealed at one of its extremities to the other of said ends, and at the other of its extremities to the other extremity of said frustoconical member, and

(iii) at least one circumferential reinforcing ring mounted on and extending from said elongated member toward the conduit to which said extremity of said elongated member is sealed.

3,275,346
FLANGE
Paul V. Gregg, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,448
1 Claim. (Cl. 285—49)



A pipe flange for connecting the exhaust pipe to the exhaust manifold of an automotive engine,

said flange comprising a flat oval-shaped base section which defines a central exhaust gas opening and a pair of manifold stud-receiving apertures on the opposite sides of said opening,

said flange being formed with skirt section projecting perpendicularly away from said base section and extending around the outer periphery of said base section,

said flange being further formed with an extrusion section projecting perpendicularly away from said base section in the same direction as said skirt section and disposed around the periphery of the said central opening,

the outer ends of said skirt section and said extrusion section defining a gasket seating surface,

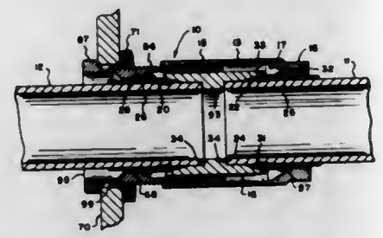
the cavity defined by said base section, extrusion section and said skirt section being at least partially filled with the plastic resin sound-deadening material,

said flange being welded to the exhaust pipe around the periphery of said central opening and on the opposite side of said base section from said skirt section and said extrusion section,

means including bolt means extending through said apertures for connecting said flange to said manifold, and

gasket means interposed between said seating surface and said manifold.

3,275,347
COUPLING FOR CONDUITS THROUGH BULKHEADS
William James Scott, Costa Mesa, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Original application July 25, 1958, Ser. No. 750,993, now Patent No. 3,135,537, dated June 2, 1964. Divided and this application Apr. 8, 1964, Ser. No. 358,174
The portion of the term of the patent subsequent to June 2, 1981, has been disclaimed
1 Claim. (Cl. 285—161)



A coupling for joining conduits of the flareless end type through a bulkhead comprising:

a cylindrical member having ends each with an internal beveled surface, and an internal integral annular flange portion, said ends each being adapted to receive the conduits to be joined to abut said flange portion;

a pair of sleeve members, said sleeve members each being adapted for positioning on one of the conduits to be joined and having an internal annular inwardly extending edge at one end in engagement with one of said beveled surfaces, and an external outwardly protruding annular shoulder intermediate its ends;

internal and external cylindrically shaped envelope members, said envelope members each being adapted for positioning on the conduits to be joined to surround said cylindrical member and one of said sleeve members and each having a wrenching surface at one of its ends and an internal shoulder adapted to engage an external outwardly protruding shoulder of the sleeve member it surrounds, said internal and external envelope members having mutually cooperating external and internal threads, respectively, for drawing said envelope members together when said wrenching surfaces are wrenched to contract said sleeve members between said beveled surfaces and the conduits to force said edges into the conduits and provide fluid tight coupling of the conduits;

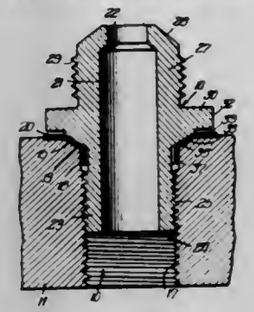
a flange on said internal envelope member and carrying said internal envelope wrenching surface;

and a jam nut in threaded engagement with the external threads of the internal envelope member for compressing the bulkhead between said flange and the jam nut,

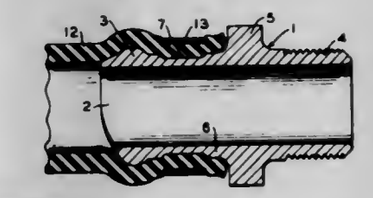
said jam nut extending around the internal shoulder of said internal envelope.

3,275,348
HIGH PRESSURE SEALED CONNECTIONS
William James Scott, Costa Mesa, Calif., assignor to VSI Corporation, a corporation of Illinois
Filed May 28, 1963, Ser. No. 283,733
1 Claim. (Cl. 285—212)

A high pressure sealed connection comprising, in combination, a bore formed in structure and having an internal thread spaced inwardly of the outer end thereof, a conical surface formed at the outer end of said bore, a spot face formed on the outer surface of said bore structure and intersecting the largest diameter end of said conical surface, a male fitting having an externally threaded end portion threadedly engaged in said bore, a conical surface complementary to said conical surface at the outer end of said bore formed on an enlarged diameter portion of said male fitting, a deformable metallic sealing member which is characterized by a conical portion which is seated between said complementary conical surfaces at the outer end of said bore and on said male fitting, by a cylindrical portion at the smallest diameter end of said conical portion which extends into said bore, and by an outwardly directed radial flange portion at the largest diameter end of said conical portion which is seated in said spot face, said conical portion of said sealing member being physically deformed between said complementary conical surfaces when said fitting is tightened in said bore whereby to provide a high pressure sealed joint at the outer end of said bore, and an outwardly directed wrench-engageable flange portion on said fitting which is spaced outwardly of said bore structure when said fitting is tightened in said bore whereby to permit a visual check of said seated sealing member.



3,275,349
HOSE CONNECTION DEVICE
Dale A. Chovan, Trafford, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 12, 1963, Ser. No. 330,150
1 Claim. (Cl. 285—252)



In combination:

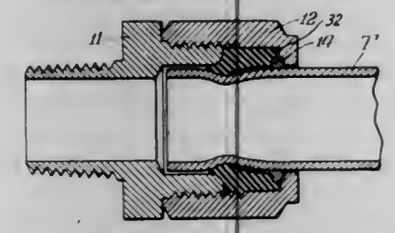
(a) an element having a cylindrical neck, a portion of which is of uniform diameter,

(b) a hose disposed in close frictional relation over said neck, said neck having adjacent the hose-receiving end thereof in circumferentially surrounding relation a rounded bead the periphery of which is of larger diameter than said uniform diameter, said uniform diameter portion having in the outer surface thereof in axially spaced relation to said bead an annular groove of substantial width in relation to length of the said uniform diameter portion, the bottom of said groove being of uniform diameter less than the diameter of said uniform diameter portion and the sides of the groove at the opposite extremities of the said bottom constituting oppositely facing shoulders joining the uniform diameter portion and the bottom of the groove, said shoulders being characterized by curved annular surfaces at the juncture with the uniform diameter portion, and

(c) an annular band of substantially the same width as that of said annular groove to clamp the hose to said neck portion, said band being axially positioned on said neck portion so as to coincide positionally with said annular groove and, when tightened in a clamping state, to compress the hose into said an-

nular groove to form an air-tight seal with the connection device resisting axial separation of the hose from the device.

3,275,350
FITTING
Joseph D. Kody, Arlington Heights, and Arthur M. Rabin, Des Plaines, Ill., assignors to Imperial-Eastman Corporation, a corporation of Illinois
Filed June 25, 1964, Ser. No. 377,883
2 Claims. (Cl. 285—341)



1. A fitting for resiliently connecting a tube, comprising:

a body member having an outer end portion and a flow passage opening coaxially through said end portion;

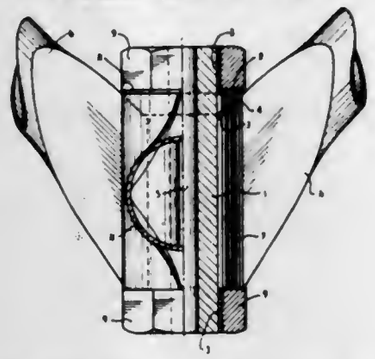
a nut member having an inner end, a bore opening through said inner end, and an outer portion defining an axially inwardly facing, axially outwardly narrowing frusto-conical bore shoulder;

means for connecting said inner end of the nut member to said outer end of the body member;

a resilient annular sleeve in said bore, said sleeve having an outer end abutting said shoulder, and an inner end abutting said body member end portion coaxially of said flow passage, said sleeve having a Shore A scale hardness of at least approximately 85; and

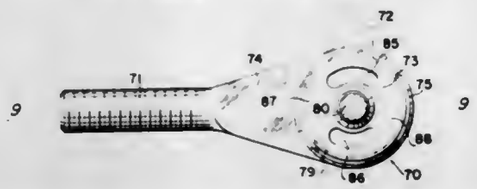
an annular gripper having an outer end defining a convex rounded axially outer bearing surface engaged by said frusto-conical shoulder of the nut member to urge the gripper axially inwardly as an incident of axially inward movement of the nut member relative to the body member, an axially inner radial shoulder engaging said outer end of the sleeve, and an inner portion comprising a thin tubular wall having a frusto-conical, axially inwardly narrowing, radially outer surface, an axially inner, constrictible tip portion defining an annular, radially inwardly extending projection having a radially inner cylindrical surface, an axially outer deflectable portion defining a radially inner cylindrical surface having a diameter larger than that of said cylindrical surface of the tip portion and a helical thread projecting radially inwardly from said cylindrical surface of said outer deflectable portion for biting into a tube extending coaxially in said nut member bore, said gripper, and said sleeve, said inner portion of the gripper being arranged in the made-up arrangement of the fitting to extend coaxially within and be transaxially resiliently supported by said outer end of the sleeve and said inner portion of the gripper being arranged to constrictively deform the inner portion of the sleeve and the tube and transaxially resiliently support the tube in said sleeve, said outer end of the sleeve being forced between said rounded outer bearing surface of the gripper and said frusto-conical shoulder of the nut member in the made-up arrangement of the fitting, said convex surface of the gripper engaging said frusto-conical shoulder of the nut member with annular line contact when the parts are first assembled and in substantially no load condition on said sleeve, said line contact moving progressively radially inwardly on the convex surface as full made-up condition is approached.

3,275,351
SEPARABLE JOINT
Arthur E. Fentiman, Stittsville, Ontario, Canada, assignor to Triodetic Structures Limited, Ottawa, Ontario, Canada
Filed Feb. 20, 1964, Ser. No. 346,291
1 Claim. (Cl. 287—54)



A separable joint comprising a unitary hub-like connector having a hub of a given diameter with circumferentially spaced longitudinally extending peripheral keyway slots, an integral coaxial externally threaded stud of a diameter less than said given diameter on each end thereof and an annular countersunk recess of conical cross-section in one end of said larger diameter portion concentric with the stud and at the junction thereof with said larger diameter portion, structural members with flat keyed ends engaging in said keyways, a washer having a taper complementary to the taper of said recess loosely nested in said recess and embracing the stud at said one end, and a pair of nuts one on each stud overlying opposite ends of said keyway slots and securing the ends of said structural members in said connector against accidental displacement, one face of each structural member having a slope which is the same as the taper of the recess, one nut directly engaging the tapered washer to force the latter into the recess and against the structural members and the other nut directly contacting the structural members, and the axial extent of said washer being greater than the depth of said recess, said washer being so constructed as to bottom on the axial inner wall of said recess, said double nut and washer combination providing adjustable clamping means including overstress prevention.

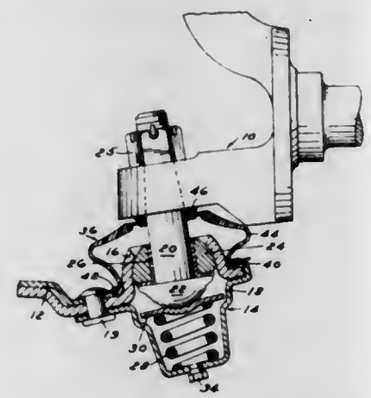
3,275,352
MECHANICAL LINKAGE JOINT
Vasalie L. Peickii, Hillsborough, Dan A. Christensen, Woodside, and John H. Bradfute, Santa Clara, Calif., assignors to Federal-Mogul Corporation, a corporation of Michigan
Original application Dec. 9, 1963, Ser. No. 330,518, now Patent No. 3,233,928, dated Feb. 8, 1966. Divided and this application Aug. 10, 1964, Ser. No. 401,746
12 Claims. (Cl. 287—85)



1. A steering joint comprising a pair of rod means lying in approximately parallel planes and at least one of which has a loop on one end, the loop having an axis, the other said rod means having an end portion extending into said loop along the axis of the loop and having means interlocking said end portion with said loop and preventing retraction from said loop, and an elastomeric connecting means within said loop and molded and bonded to both said loop and said end portion, said connection

including two substantially diametrically opposite loading portions spaced by apertures defining voids, the said rod having said loop extending along the diametric axis of said loading portions, whereby said rod means can rotate about said joint against relatively light force in the elastomer due to said voids, said rod means being restrained by said loading portions from translation of the two rod means relative to each other by considerably greater elastomeric force, whereby a longitudinal force along the axis of the said rod means having said loop, tends to produce tension in said elastomeric connecting means on one side of said end portion and compression in said connecting means on the other side of said end portion and translation of such steering joint, which in turn act to cause relative rotation of the other said rod means in a plane approximately parallel to that of the first named rod means with resultant rotation of said end portion relative to the axis of said loop, whereby torsion is set up in said elastomeric connecting means along the plane of said loop, the level of torsional force being a fraction of what would be present in a solid said elastomeric connecting means because of said voids.

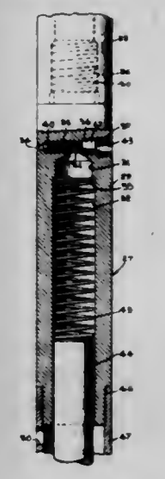
3,275,353
BALL AND SOCKET JOINT SEAL
William B. Turck, Dearborn, Mich., and Robert W. Bertouille, Fairport, N.Y., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,146
5 Claims. (Cl. 287—90)



4. A ball and socket type joint having a spherical socket with a stud member protruding from said socket, a flexible seal surrounding said stud and having an opening therein in engagement with said socket, a sheet metal ferrule of annular shape secured to said stud, said ferrule having spaced apart flat radial flanges, said seal including a flexible rubber body portion with an opening concentrically fitted about said ferrule and between said flanges, one of said flanges having a flat surface facing said rubber body portion, said rubber body portion having at least one upstanding compressible concentric ridge slidably engaging said flat surface of said one radial flange, and an annular reinforcing ring embedded in said rubber body portion and spaced from said concentric ridge.

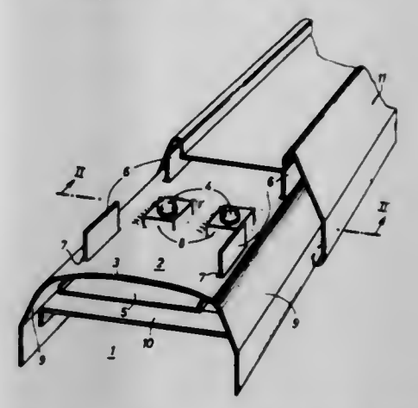
3,275,354
ROD COUPLER
Wayne N. Sutliff and Jim L. Downen, both of 2931 Pierce Road, Bakersfield, Calif.
Filed June 12, 1964, Ser. No. 374,683
3 Claims. (Cl. 287—103)

1. In a rod coupler, the combination of: a tubular coupling member; a pin coupling member; interlocking means on said members which slidably admits said pin member into said tubular member, when the two members are aligned, and prevents relative rotation between said members until said pin member has been inserted a predetermined distance into said tubular member, whereupon said relative rotation is permitted by said means and results in said means interlocking said members against separation axially; compressible torque producing means provided within said tubular member and engageable by said pin member during said relative axial movement between said members to compress said torque producing means, said means then functioning to produce relative rotation between said members thus causing said interlocking means to couple said members together, said torque producing means also resisting reverse relative rotation be-



tween said members after said members are thus interlocked, thereby retaining said members in coupled relation; liquid dashpot means including at least one port extending through the wall of said tubular coupling member and, the retarding action of which is applied to reinforce the resistance by said torque producing means to said reverse relative rotation between said members, said dashpot means drawing its operating liquid directly from that liquid in which said rod coupler is submerged; and means operatively disposed in said port to control the flow of said liquid therethrough.

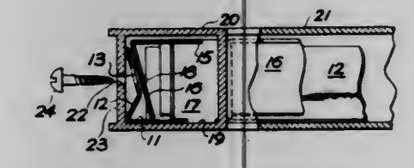
3,275,355
COUPLING PIECE FOR UNITING CHANNEL-SHAPED PARTS
Herbert Endler, Hamburg-Gross Borstel, and Heinrich Duensing Hamburg-Rissen, Germany, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 311,765
Claims priority, application Germany, Oct. 11, 1962, P 30,341
2 Claims. (Cl. 287—189.36)



1. A coupling for joining channel-shaped members having a reverse bend portion at each extreme tip thereof, said coupling comprising an elastically deformable support means of substantially the same shape and dimensions of said channel-shaped members adapted to nest loosely within said members, and supported in said reverse bend,

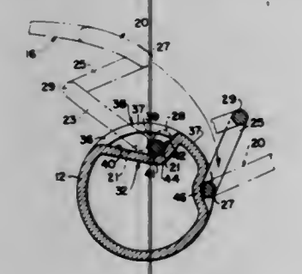
a thrust member connected with said support means, said thrust member having a plurality of projections extending beyond said support means for bearings on said channel tive to said support means for deforming said support members and means for moving said thrust member relameans into intimate frictional engagement with said channel members.

3,275,356
CORNER FASTENER FOR ALUMINUM EXTRUSIONS
James H. Heywood, 1411 Doncaster, Youngstown, Ohio
Filed Jan. 17, 1964, Ser. No. 338,455
8 Claims. (Cl. 287—189.36)



1. A corner construction comprising mitered hollow metal rails having opposed wall portions, a corner fastener for securing said mitered hollow metal rails to one another, said fastener comprising a pair of flat generally L-shaped body members each of which has longitudinally extending angularly disposed flanges on its outermost edges, the flanges on one of said L-shaped body members having apertures therein and the flanges on the other of said L-shaped body members having relatively small apertures therein positioned off center with respect to the center lines of said flanges, said L-shaped body members being arranged in oppositely disposed relation with said flanges in abutting relation and said apertures in adjacent offset relation to one another, and metal screws positioned through said metal rails and engaging one of the walls formed by said apertures in the flanges on one of said L-shaped body members and the walls of said apertures in said flanges on the other of said body members so as to move said flanges and said L-shaped body members relative to one another in the same plane and toward said respective wall portions of the rails whereby said flat L-shaped body members move apart and against said wall portions.

3,275,357
SEAT SPRING END CONNECTION TO FRAME
Paul C. Tabor, Clawson, Mich., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,516
12 Claims. (Cl. 287—189.36)



1. In an end connection between a preformed wire seat spring strip member and a hollow tubular seat frame member, means forming a spring end retainer connection in a wall of the seat frame member and cooperating means disposed on the seat frame member in angularly displaced relation toward the interior of the seat frame providing a load bearing seat for said spring member on said frame member.

3,275,358
GLASS-TO-METAL AND GLASS-TO-CERAMIC SEALS
Francis J. Shonebarger, Lancaster, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 14, 1963, Ser. No. 265,235
9 Claims. (Cl. 287—189.365)

1. A glass for sealing to tantalum and to other metals, alloys, and ceramics having thermal expansion characteristics such that the mean coefficients of thermal expansion over the temperature range of 20° C. to 500° C. do not differ from that of tantalum over the same temperature range by more than about 10×10^{-7} cm./cm./° C., which has a composition, by weight, of about 40% B_2O_3, about 25% Al_2O_3 and about 35% BaO.

8. A hermetic seal body comprising a metal wall having an opening therethrough, a sapphire window in said opening and a glass body filling the space between and fusion sealed to said wall and said window, said glass body being composed of about 40% B_2O_3, about 25% Al_2O_3 and about 35% BaO by weight and having a mean coefficient of thermal expansion of about 60×10^{-7} cm./cm./° C. in the temperature range of about 0° C. to 300° C.

3,275,359
GLASS COMPOSITION FOR HERMETIC SEALS
William A. Graff, Willoughby, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 14, 1963, Ser. No. 265,265
7 Claims. (Cl. 287—189.365)

1. A glass for sealing to tantalum and to other metals, alloys, and ceramics having thermal expansion characteristics such that the mean coefficients of thermal expansion over the temperature range of 20° C. to 500° C. does not differ from that of tantalum over the same temperature range by more than about 10×10^{-7} cm./cm./° C., which has a composition by weight of about 25% Al_2O_3, about 35% BaO, from about 35% to slightly less than 40% B_2O_3 and from a small but effective amount to about 5% CeO_2.

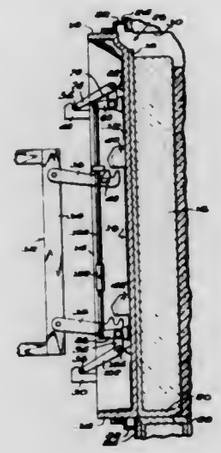
7. A hermetic seal body comprising two sintered alumina ceramic tubes fusion sealed together by glass, said glass being composed of about 35% B_2O_3, about 25% Al_2O_3, about 35% BaO and about 5% CeO_2 by weight and having a mean coefficient of thermal expansion of about 61.7×10^{-7} cm./cm./° C. in the temperature range of 0° C. to 300° C.

3,275,360
COKE OVEN DOOR LATCHING MECHANISM
Linwood G. Tucker, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,756
8 Claims. (Cl. 292—7)

1. Apparatus for latching and unlatching a coke oven door having a body portion, a peripheral flange projecting outwardly therefrom, a seal means extending around the periphery of said flange for abutting a sealing surface surrounding the opening for said door and sealing said coke oven chamber, said latching and unlatching apparatus comprising,

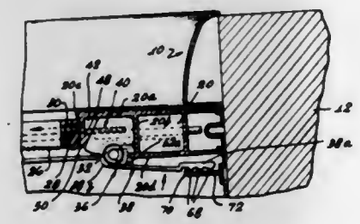
(a) a pair of upper retaining members affixed to and projecting from the coke oven structure and positioned on opposite sides of said door opening,
(b) a pair of lower retaining members affixed to and projecting from the coke oven structure and positioned on opposite sides of said door opening,
(c) upper lever means pivotally connected to said door and extending outwardly therefrom,
(d) lower lever means pivotally connected to said door and extending outwardly therefrom,
(e) door extractor receiver means secured to said door and extending outwardly therefrom,

(f) upper transverse engaging means secured to said upper lever means and arranged to be positioned in said upper retaining members to hold said door in sealing relation with said coke oven chamber,
(g) lower transverse engaging means secured to said lever and arranged to be positioned in said lower retaining means and operable to hold said door in sealing relation with said coke oven chamber,
(h) connecting means between said upper and lower lever means arranged to pivot both of said lever means so that upon engagement said transverse en-



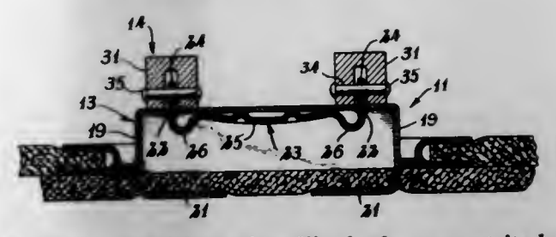
gaging means exert substantially the same engaging force on said retaining members,
(i) door extractor means having door extractor arms, and
(j) actuator means associated with said connecting means, said actuator means arranged to be engaged by a portion of the door extractor arms upon upward movement of a portion of said arms into said door extractor receiver members to move said connecting means upwardly and disengage said upper and lower transverse engaging means from said respective retaining members to unlatch said coke oven door.

3,275,361
LOCKING HANDLE FOR SASH
Harry M. Riegelman, Rolling Hills, Calif., assignor to Ador Corporation, Fullerton, Calif., a corporation of California
Filed Feb. 7, 1964, Ser. No. 343,398
11 Claims. (Cl. 292—129)



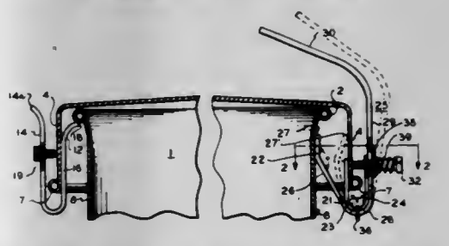
7. A combined handle and latch for a sliding sash, comprising:
a latch plate;
an integral sleeve at one end of said latch plate;
a combined handle grip and lock catch at the other end of said latch plate and integral therewith;
and a pair of oppositely wound coil springs in end-to-end abutment extending through said sleeve and pivotally securing said latch plate to said mounting block, the inner tail ends of said pair of coil springs being in abutment with said latch plate and applying a torque thereto.

3,275,362
CLASPS
Martin Jacobson, Providence, R.I., assignor to Rau Findings Company, Providence, R.I., a corporation of Rhode Island
Filed July 28, 1964, Ser. No. 385,616
9 Claims. (Cl. 292—204)



1. A clasp comprising a box-like body open at its bottom and having a front wall, said front wall having spaced apertures therein, a leaf spring seated against the inside face of said front wall, end portions on said spring disposed normal to the main body portion thereof and extending one through each aperture, a latch element arranged outside the front wall and hingedly connected to the said spring end portions, and means on said latch element to retain the latch element in a plurality of hinged positions under tension of said spring.

3,275,363
LID LATCH
Mortimer C. Bates and Charles H. King, both of Berkshire, N.Y. 13736
Filed Nov. 3, 1964, Ser. No. 408,537
9 Claims. (Cl. 292—228)



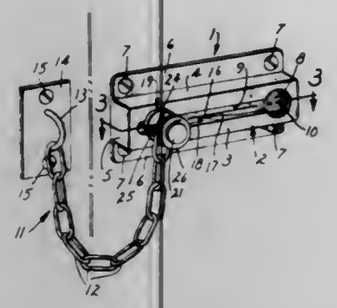
1. A latching device for releasably securing a lid having a circumferential depending flange to a container having an outwardly-extending rim, said device comprising, in combination: a U-shaped member fixedly attached to said flanges, said U-shaped member having two legs extending on opposite sides of said flange and a rounded portion passing around the edge of said flange and connecting said two legs of said member; a slidable member having an outer leg terminating in a handle portion, an inner leg having an end adapted to protrude beneath said rim, and a rounded portion intermediate said legs of said slidable member; fastening means for slidingly attaching said slidable member to said U-shaped member with said rounded portions of said two members slidably engaging each other; and spring means connected to bias said outer leg of said slidable member toward the outer leg of said U-shaped member, thereby urging said end of said inner leg of said slidable member beneath said rim to lock said lid on said container.

3,275,364
CHAIN-TYPE SAFETY DOOR LOCK
Bert A. Quinn, St. Paul, Minn., assignor to Ideal Brass Works, Incorporated, St. Paul, Minn., a corporation of Minnesota
Filed June 26, 1964, Ser. No. 378,309
3 Claims. (Cl. 292—264)

1. A chain-type safety door lock comprising:
(a) a locking plate member having an elongated slot and said slot being enlarged at one end portion thereof,

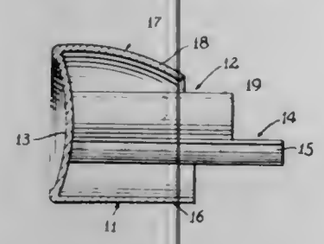
(b) said plate member defining a strike having a cam surface and an abutment surface, said strike being located generally adjacent said slot and being further arranged with the cam surface thereof sloping in a direction toward said enlarged slot end portion,

(c) a chain member having anchoring means at one end thereof and also having a coupler element at the other end thereof, and



(d) said coupler element being received in the enlarged end portion of said slot and slidable therealong and being outwardly biased whereby said coupled element rides over the cam surface of said strike and engages said abutment surface and is releasably retained thereby.

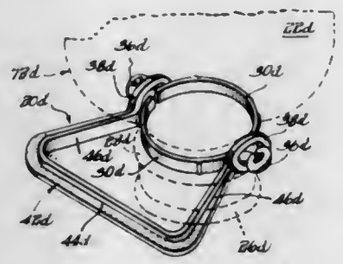
3,275,365
INTEGRAL HEAVY DUTY DOOR KNOB
William B. Wilson, Corona, Calif., assignor to Robert H. Miller and F. Louis Behrends, as joint tenants with right of survivorship, both of Peoria, Ill.
Original application Nov. 20, 1962, Ser. No. 238,973, now Patent No. 3,200,630, dated Aug. 17, 1965. Divided and this application July 14, 1965, Ser. No. 471,834
4 Claims. (Cl. 292—347)



1. An integral heavy duty door knob and internal tube assembly to provide an end wall and concentric tubular parts projecting rearwardly from the end wall, the outer tubular part being cylindrical adjacent the end wall and curving inwardly toward its inner end to provide a knob, and the inner tubular part providing an internal tube projecting rearwardly through and beyond the inner end of the knob, said inner tubular part having a longitudinal slot therein and provided at its inner end with an arcuate projection of the inner tubular part having spaced longitudinal edges providing a roll back for retracting a latch bolt.

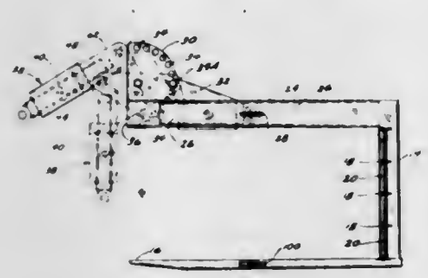
3,275,366
PLASTIC CARRIER FOR BOTTLES
Walter E. Hidding, 505 Banbury Road, Arlington Heights, Ill.
Filed Feb. 23, 1965, Ser. No. 440,659
16 Claims. (Cl. 294—31.2)

1. A carrier for containers and the like, said carrier comprising: a plurality of bands arranged in an endless series; a first cam follower on one of said bands; a second cam follower on an adjacent band; a coupling member having a cooperating complementary cam aperture receiving said first and second cam followers in rotatably slidable relationship therewith, said cam aperture having a first dimension which accommodates spacing apart of the cam followers whereby to enlarge the effective length of the endless series of bands for assembly of the carrier to a container, said cam aperture further having a second, smaller dimension which demands a closer spacing of said followers whereby to reduce the effective length of the endless series of bands for causing said bands to grip the container; handle means connected to said coupling member for use in carrying a container assembled with said carrier and for use in rotating said coupling member relative to said followers whereby to direct the spacing



thereof; and a formation interconnecting the ends of said followers away from said bands, including relatively thick sections, abutment elements outwardly of said relatively thick sections acting to confine said coupling member in position with respect to said followers, and a relatively thin medial section aligned with the space between said followers whereby to define a hinge for said relatively thick sections, converging of said relatively thick sections about said hinge facilitating passage of said abutment elements through said cam aperture for assembling said handle means to said bands.

3,275,367
LIFTING FORK FOR SHEET MATERIAL
Cecil W. Bopp, Waterloo, Iowa, assignor to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa
Filed Mar. 25, 1964, Ser. No. 354,613
12 Claims. (Cl. 294—67)



1. In a lifting fork apparatus,

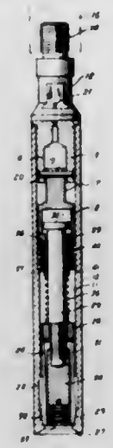
a fork means including a normally horizontal frame portion,

a supporting assembly pivotally secured to said frame portion, said supporting assembly including a balance frame slidably mounted thereon,

connecting means on said balance frame for connection to an overhead lifting means,

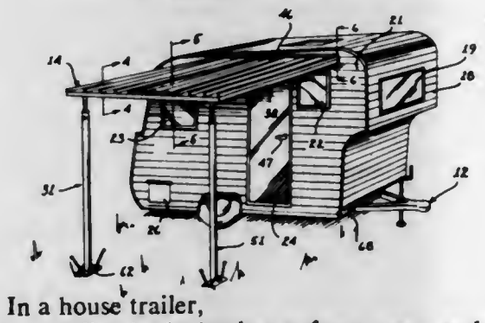
and releasably interlocking means connecting said supporting assembly and said frame portion whereby said supporting assembly can be selectively disposed in one of a plurality of angular positions with respect to said frame portion, said balance frame being slidably movable towards and away from the pivotal connection between said supporting assembly and said frame portion whereby said fork means will be self-balancing under both loaded and unloaded conditions.

3,275,368
RELEASABLE RETRIEVING TOOL
Rowe A. Plunk, P.O. Box 1167, Midland, Tex.
Filed May 27, 1964, Ser. No. 370,429
19 Claims. (Cl. 294—86.3)



1. A retrieving tool including a tubular body having a reduced portion at the lower end of its bore, a slip assembly reciprocable in the bore for movement into and out of supporting engagement with its reduced portion and having gripping elements engageable with the reduced bore portion for inward movement into gripping position, a spring in said bore for urging the slip assembly downwardly into engagement with said reduced bore portion and permitting upward movement of said assembly and outward movement of the gripping elements upon relative downward movement of the body, means in said bore above said spring and coacting therewith to hold said slip assembly engaged with said reduced bore portion and movable relative to said assembly into a position to support said assembly out of engagement with said reduced bore portion, and restraining means confined in the upper portion of said bore and releasably connected to said body for preventing movement of said coacting means into its supporting position until the restraining means is released by movement relative to said body.

3,275,369
HOUSE TRAILER WITH RETRACTABLE PATIO ROOF
Lee E. Ecke, 7200 Paseo San Andres, Tucson, Ariz.
Filed Aug. 17, 1964, Ser. No. 389,862
7 Claims. (Cl. 296—23)



1. In a house trailer,

(a) a trailer body having a front, rear and two side walls, with a trailer top above and connected to said walls,

(b) a generally planular roof member secured by horizontal spring means to a side of said body approximately at the line of said trailer top, said trailer side having a door therein,

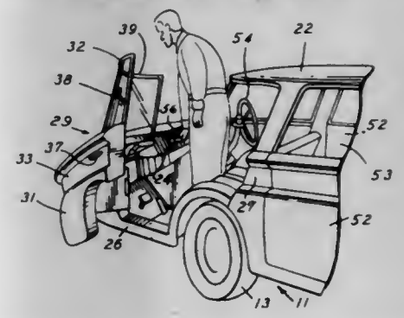
(c) means supporting said roof member to said trailer side for travelling,

(d) support means for an unhinged portion of said roof member to hold it in a generally horizontal position while attached to said trailer side,

(e) means forming a door like opening in said roof member framing said trailer door when the roof member is in supported position against said trailer side to provide access to the trailer, and

(f) a door hinged on the roof member and adapted to close said door like opening.

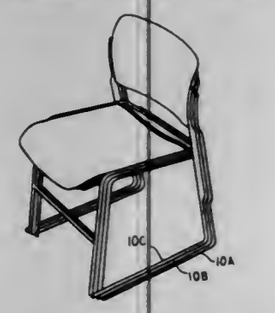
3,275,370
MOTOR VEHICLE
Raymond P. Smith, Huntington Woods, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,296
3 Claims. (Cl. 296—63)



1. In a motor vehicle comprising a vehicle body mounted on a vehicle chassis having front and rear wheels defining a short wheel base, at least one row of front seats located proximate to said front wheels and two rows of rear seats, said two rows of rear seats having seat backs foldable from an upright position to a horizontal position, said seat backs when in a horizontal position providing a low deck loading area rearwardly of said one row of front seats, a first body opening located in its entirety above and forward of said front wheels for access to said one row of front seats, said first body opening defined at least in part by a generally vertically extending front door pillar, a generally vertically extending windshield post at the longitudinal center axis of said vehicle, and a generally transversely extending inner cowl member, a second body opening for access to the two rows of rear seats, said second body opening being on one side of said vehicle body and defined at least in part by a vertically extending rear door pillar and a vertically extending door jamb member, a first closure structure for said first body opening mounted on said vehicle body forward of said front wheels for movement between closed and opened positions, said first closure structure comprising a lower door structure with a front fender panel extending longitudinally thereof, a laterally extending hood portion and outer cowl forming extension affixed to the upper edge of said lower door structure and extending laterally inwardly thereof, and an upper glass panel including a generally longitudinally extending side window integrally formed with one-half of a generally transversely extending windshield extending upwardly from said outer cowl forming extension, a control arm for said first closure structure having one end pivotally connected to said front door pillar and having its other end pivotally connected to said lower door structure intermediate its vertical edges, follower means attached to the generally transversely inwardly extending end of said outer cowl forming extension, and an arcuate guide rail slidably receiving said follower means, said guide rail extending generally transversely outwardly and forwardly from said windshield post and supported by said inner cowl member, said control arm and said guide rail coacting to control the movement of said first closure structure from its closed position to an intermediate opened position laterally outwardly, forwardly and slightly tiltable forwardly with respect to said first body opening, said first closure structure then being angularly

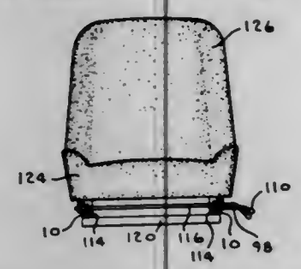
displaced with respect to said body opening and further tilted forwardly during further opening movement of said first closure structure from said intermediate opened position to its maximum opened position, and a second closure structure pivotally mounted on said rear door pillar for swinging movement about a vertically extending axis coincident with one edge of said rear door pillar to provide access to said two rows of rear seats.

3,275,371
COMPACTLY STACKABLE CHAIR
David L. Rowland, 49 W. 55th St., New York 19, N.Y.
Continuation of application Ser. No. 237,057, Nov. 13, 1962. This application May 14, 1965, Ser. No. 456,609
5 Claims. (Cl. 297—239)



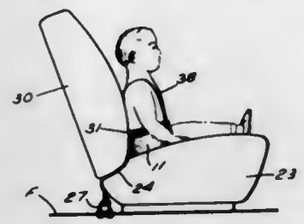
1. A lightweight, durable and compactly stackable chair comprising
- frame means providing substantially parallel front legs and substantially parallel side rails connected thereto,
- a pair of substantially parallel L-shaped side frame portions each comprising a bottom rail and a rear leg,
- interposed means connecting the front end of each said bottom rail to and spacing it from the bottom of the adjacent front leg,
- second interposed means connecting the rear legs to and spacing them from the side rails,
- seat and back means at least as thin as said frame means and L-shaped side frame portions and fastened to them,
- means for stiffening each said rear leg including an enlarged body portion in cross-sectional area, extending laterally of the body a substantial distance both above and below the spacing connection of said rear legs with said side rails, which is wider then the thickness of said rear leg.

3,275,372
SEAT STRUCTURE
Arthur O. Radke and William C. Oswald, Wauwatosa, and Joseph A. Champa, Milwaukee, Wis., assignors to Bostrom Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 9, 1964, Ser. No. 395,200
8 Claims. (Cl. 297—285)



1. A seat cushion comprising, a base member, a seat pan mounted for relative movement in respect to said base member, resilient foam means fixed to said base and to the top of said seat pan to affect said relative movement as well as to provide static cushioning to an occupant of the seat, and spring means in parallel with said resilient foam means and cooperating therewith to vibrationally isolate said seat pan from the vibrations experienced by said base member.

3,275,373
INFANT-HOLDING ATTACHMENT FOR AUTOMOBILE SEATS
Londa Y. Card, 860 SW. 31st Ave., Miami, Fla.
Filed Oct. 15, 1964, Ser. No. 404,012
1 Claim. (Cl. 297—389)

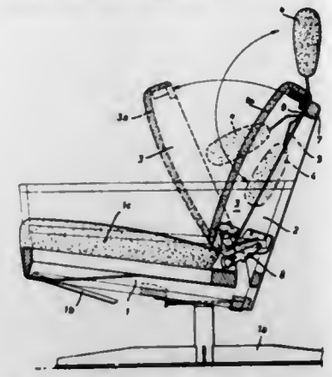


In an infant-holding attachment adapted for use in a vehicle for safely holding an infant in the seat of the vehicle,
- a flat bottom member arranged for disposition on the seat,
- a flexible fabric band affixed to the periphery of the bottom member and extending upwardly therefrom for completely encircling a lower portion of the infant's torso,
- means forming a pair of spaced openings in a front portion of said band extending upwardly from said bottom member through which, respectively, the infant's legs may extend,
- said band being vertically split at a rear portion thereof and having cooperating fastening means at said split to provide for selectively opening the rear portion of said band,
- a waist strap extending around said band above said openings and affixed to said band around to said split to provide a pair of loose ends at said split, buckle means on said loose ends for interconnecting the loose ends across said split, a pair of elongated adjustable shoulder straps secured respectively at the ends thereof to front and rear portions of said waist strap and arranged to extend over the infant's shoulders,
- a pair of connecting straps extending transversely to said shoulder straps and connected at opposite ends thereof to said shoulder straps,
  - said connecting straps including means operative to provide adjustably slidable movement of said connecting straps along the length of said shoulder straps,
- an elongated tension strap having a loop formed at one end thereof encircling the buckled loose ends of said waist strap,
- a buckle on the loop of said tension strap for selectively adjusting the length of said tension strap, and
- means at an opposite end of said tension strap for connection to a fixed member of the vehicle.

3,275,374
UPHOLSTERED FURNITURE COMPRISING A HEAD REST
Josef Holzner, Taufkirchen, and Alois Schefthaler, Post Taufkirchen, Germany, assignors to Himolla Polstermobelwerk Carl Hierl G.m.b.H., Taufkirchen, Germany
Filed Apr. 14, 1965, Ser. No. 448,204
Claims priority, application Germany, Dec. 21, 1964, H 54,661; Aug. 27, 1964, H 4,910
3 Claims. (Cl. 297—403)

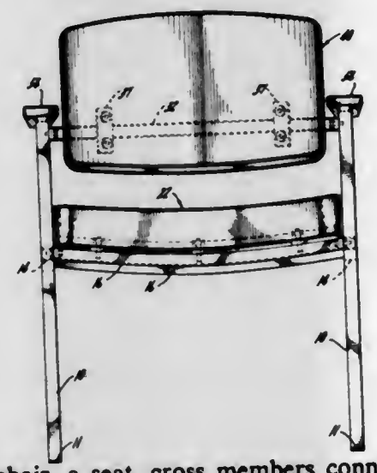
1. In the art of manufacturing upholstered furniture such as armchairs, television seats, sofas, settees, couches and the like improvement that comprises the provision

of a head rest which in its inoperative position is received in a cavity in the back rest and which is connected with the posterior back rest section by means of a guiding mechanism, said mechanism having as its principal element a structure of co-acting pivoting arms, forming a selectively adjustable mechanical system wherein the said



head rest is adapted for functional movement from the inoperative position to the operative position above the back rest after the anterior back rest section has been tilted frontwards, and wherein the posterior back rest section turns on a pivot-like shaft pin fitting provided on the seat unit enabling it to travel between at least two distinct locked angular positions.

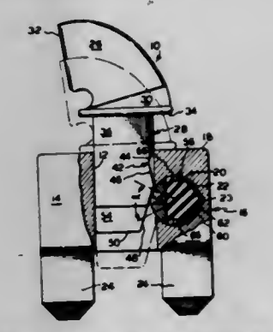
3,275,375
CHAIR
Donald L. Moore and Orville E. Snyder, both of Gallatin, Tenn., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed May 17, 1965, Ser. No. 456,281
7 Claims. (Cl. 297—445)



1. In a chair, a seat, cross members connected to the underside of said seat and joined at their ends to a pair of side rails, rear leg members connected to said side rails and projecting above said seat, a transversely extending back frame connected to said rear leg members adjacent the upper ends thereof, a pair of laterally spaced plates mounted on said back frame, a back rest connected to the front faces of said plates, and means for supporting said seat in an elevated position above the ground.

3,275,376
RETAINER FOR COAL CUTTER BITS
Robert F. Prox, Jr., West Terre Haute, Ind., assignor to Frank Prox Company, Inc., Terre Haute, Ind., a corporation of Indiana
Filed Apr. 17, 1964, Ser. No. 360,720
7 Claims. (Cl. 299—92)

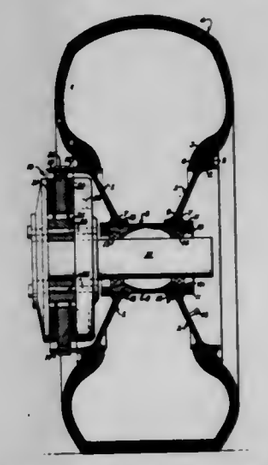
1. In combination; a socket member, first and second intersecting passageways each extending through said socket member, an interconnecting aperture formed by the intersecting of said passageways, a cutter bit, said cutter bit having a head section and a shank section, said shank section being slidably fitted through said first passageway in the socket member; detent means; said detent means being fixed against rotation in said second passageway to releasably secure said cutter bit shank in said first passageway; said detent means comprising an elongated estomeric cylinder, a cut-out section midway along said cylinder, non-yielding abutting means, said abutting means being fixed in said cut-out so as to form a contiguous surface with the elastomeric cylinder, said abutting means



being resiliently fixed adjacent the intersection of said first and second passageways when the detent means is fixed in the second passageway to releasably secure the cutter bit shank in the first passageway.

5. A resilient detent means consisting of; a elastomeric cylinder, an integral flange extending from the surface of said cylinder parallel to the axis thereof, a cut-out section midway along the length of the cylinder opposite said flange, a rigid abutment means, said abutment means being shaped identically to the cut-out in the cylinder, means fixing said abutment means in the cut-out in the cylinder so as to form a contiguous surface including the elastomeric material and the abutment means.

3,275,377
WHEEL FOR A TUBELESS TIRE
René Lucien, Neuilly-sur-Seine, France, assignor to Societe a Responsabilite Limitee: Recherches Etudes Production R.E.P., Paris, Seine, France
Filed July 29, 1964, Ser. No. 385,966
Claims priority, application France, July 30, 1963, 943,196, Patent 1,371,947
1 Claim. (Cl. 301—6)



A wheel for a tubeless tire mounted thereon comprising a hub, two half-wheels, and brake means, the two half-wheels being supported independently of each other and each comprising a portion in the form of a frusto-conical disc, the two frusto-conical discs being generally symmetrical with respect to the central plane of the tire and each comprising a large diameter circular base and a

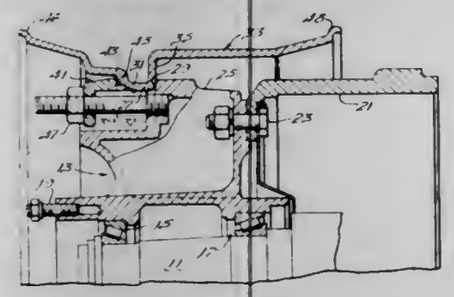
small diameter circular base, said large base comprising a tire bead-retaining shoulder portion and a tire bead-supporting portion of substantially the same width as the tire bead mounted thereon, the large base of one of said two discs comprising a generally cylindrical extension carrying rotating parts of the brake means and housing said brake means, said hub including tapered male end portions, the small bases of each said disc including elongated tapered female portions each mounted on the tapered portions of the hub and held in assembled relation by an axial nut and comprising airtight packings.

3,275,378

SPOKED VEHICLE WHEEL HAVING SELECTIVE SPACER MEANS FOR AXIALLY POSITIONING A TIRE RIM

Sylvester A. Malthaner, Rockford, Ill., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Aug. 3, 1964, Ser. No. 387,131
3 Claims. (Cl. 301—12)



1. An automotive wheel rim and spacer assembly for an automotive tire including a wheel supported upon an axle by a pair of axially spaced wheel bearings for rotation about a central axis, said wheel having a plurality of radially extending spokes, each of which is formed with an outwardly facing axially extending rim supporting surface and a shoulder extending substantially perpendicular to said rotational axis, an annular rim having an axially extending surface at an intermediate portion spaced inwardly of its edges and adapted to fit closely but slidably on said axial surfaces of said spokes and having a shoulder extending substantially perpendicular to said rotational axis positioned to face said shoulders on said spokes, a plurality of selected spacer means adapted to be positioned one between each said spoke shoulder and said shoulder on the rim, said spacer means each having a pair of shoulders extending substantially perpendicular to said rotational axis and adapted to seat against the shoulders on said rim and spokes, respectively, and provided with a dependent portion removably secured to a respective one of said spokes, clamping means having a portion adapted to seat on said spoke axial surfaces and provided with a tapered surface adapted to engage a tapered surface on said rim and bolt means securing said clamping means to each said spoke for clamping said rim on said wheel.

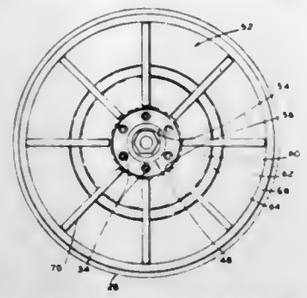
3,275,379

PROPULSION AID FOR MOTOR VEHICLES

Theodore N. Smith, 454 S. Massey St., Watertown, N.Y.

Filed Feb. 3, 1964, Ser. No. 342,313
1 Claim. (Cl. 301—41)

A propulsion and traction aid for the drive wheels of motor vehicles comprising an annular one piece disk having outer and inner annular planar portions joined by a conical offset portion, whereby the inner planar annular portion is offset axially inwardly of the outer annular portion, said outer annular portion having an inwardly extending conical rim flange, and said inner annular portion, having a central annular recess portion offset inwardly of the inner annular planar portion and adapted to nest in the annular demountable stud recess of a demountable wheel, said annular recess offset having an annular planar flange provided with a central axle aperture and a plurality of stud receiving apertures disposed on a circle around the central aperture, and said disk having radial paddlelike blocks disposed uniformly angularly around



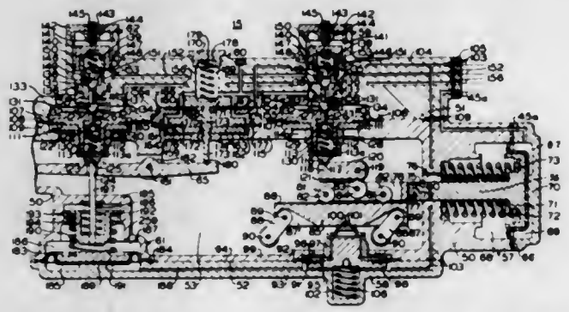
the disk and each block having an edge having an offset corresponding to the offset of said disk, and being affixed to the inner and outer planar annular portions and conical offset portion, whereby the traction disk provides annular clearance for a wheel tire, and is rigidified by the conical offset and spaced paddles affixed to the disk.

3,275,380

COMBINED DYNAMIC AND FLUID PRESSURE BRAKE SYSTEM FOR RAILWAY VEHICLES

Harry C. May, East McKeesport, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Oct. 23, 1965, Ser. No. 503,112
19 Claims. (Cl. 303—3)



11. For use in a combined electro-dynamic and fluid pressure brake system for a vehicle, a valve mechanism comprising:

(a) a casing having therein a first chamber,

(b) a lever pivotally mounted on said casing,

(c) a fluid motor subject to the pressure established in said first chamber for exerting a first moment on said lever tending to rock it in one direction,

(d) electro-responsive means carried by said casing energized according to the degree of dynamic braking effect and effective according to the degree of energization thereof to exert a corresponding second moment on said lever tending to rock it in an opposite direction to thereby counterbalance said first moment when said first and second moments are of equal magnitude,

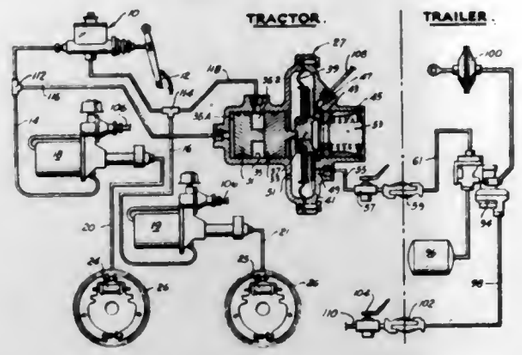
(e) self-lapping valve means operative by the rocking of said lever in said one direction out of a predetermined position in which it is positioned by said moments when of equal magnitude in response to a reduction in the magnitude of the moment exerted by said electro-responsive means to supply a control fluid pressure corresponding in degree to the unbalance of said moments, said self-lapping valve means including fluid pressure responsive means subject to the control fluid pressure established by said valve means to exert a counter moment on said lever for restoring it substantially to its predetermined balanced position.

3,275,381

FLUID PRESSURE SERVOMOTOR

Gunther Pfeifer, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed June 29, 1964, Ser. No. 378,600
1 Claim. (Cl. 303—7)



In a tractor-trailer brake system including a split master cylinder, a pair of fluid pressure servomotors independently connected to said master cylinder such that one portion of said master cylinder operates one servomotor and another portion of said master cylinder operates another one of said servomotors, the improvement of a control valve for operating a relay valve of the trailer brake system which control valve comprises:

a valve seat;

a valve poppet means normally in spaced relation from said valve seat;

a first piston means for moving said valve seat to contact said valve poppet means; and

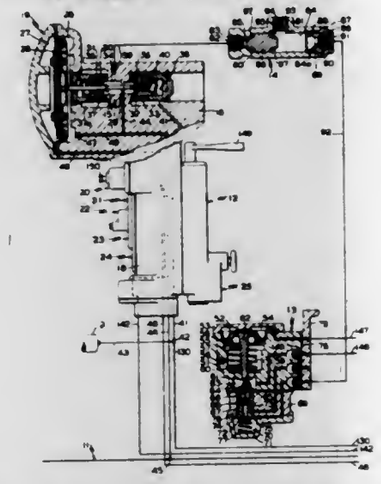
a second piston means operatively connected to said first piston means for moving said valve seat to contact said valve poppet means such that pressure on one or both of said first and second piston means will operate said control valve.

3,275,382

RAILWAY FLUID PRESSURE BRAKE SYSTEM WITH MEANS ASSURING MINIMUM BRAKE PIPE REDUCTION FOR BRAKE APPLICATION

Robert J. Worbois, Irwin, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Oct. 26, 1964, Ser. No. 406,379
10 Claims. (Cl. 303—15)



1. In a fluid pressure brake system for a locomotive, the combination of:

(a) a train brake pipe normally charged to a certain pressure,

(b) an equalizing reservoir normally charged to said certain pressure,

(c) a manually operated brake valve device comprising:

(i) a fluid pressure operated relay valve means subject opposingly to the pressure in said equalizing reservoir and said train brake pipe for effecting the supply of fluid under pressure to and the release of fluid under pressure from said brake pipe in accordance with a corresponding increase and decrease in the pressure in said equalizing reservoir,

(d) a minimum reduction reservoir,

(e) an electro-responsive valve device operable in response to energization to establish a communication between said equalizing reservoir and said minimum reduction reservoir through which fluid under pressure flows from said equalizing reservoir and said fluid pressure operated relay valve device to said minimum reduction reservoir to cause said relay valve device to operate to release fluid under pressure from said brake pipe to cause a brake application,

(f) a double check valve device,

(g) a first conduit connecting one end of said double check valve device to said fluid pressure operated relay valve means, through which conduit flows fluid under pressure released from said brake pipe by operation of said relay valve means,

(h) a second conduit connecting the opposite end of said double check valve device to said minimum reduction reservoir, and

(i) a fluid pressure operated cut-off valve device disposed in said second conduit and operable to cut off flow of fluid under pressure therethrough upon the pressure in said minimum reduction reservoir reaching a chosen value,

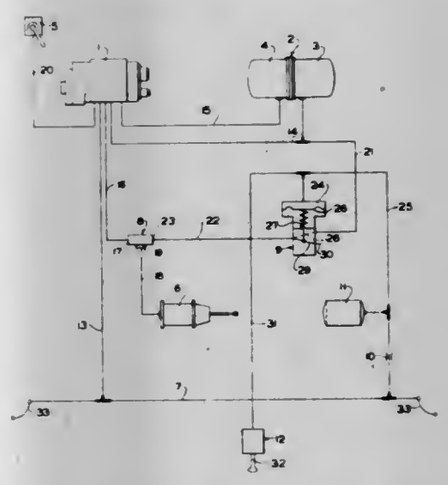
(j) said double check valve device being operable alternatively to release fluid under pressure from said first and second conduits accordingly as the pressure in one of said conduits predominates over that in the other until the pressure in said minimum reduction reservoir reaches said chosen value.

3,275,383

FLUID PRESSURE BRAKE SYSTEM

Clarence R. Baechtel, Pitcairn, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed June 19, 1964, Ser. No. 376,326
13 Claims. (Cl. 303—18)

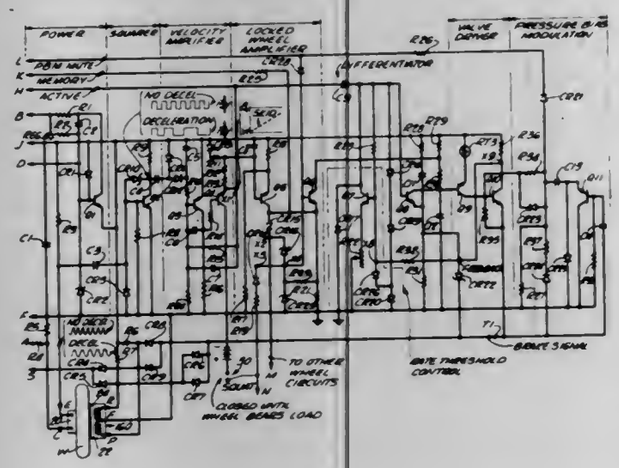


1. A railway vehicle brake system comprising, in combination:

(a) a brake pipe normally charged with fluid at a chosen pressure,

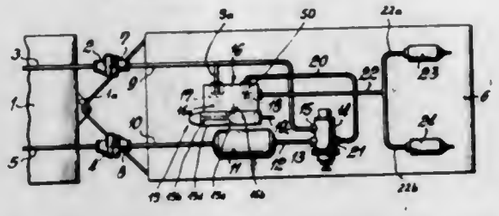
(b) a reservoir charged with fluid under pressure,
(c) a brake cylinder device effective when pressurized to effect a brake application and when depressurized to effect a release of the brake application,
(d) fluid pressure responsive control valve means operatively responsive to a reduction from the normal charged pressure in the brake pipe at a rate in excess of a certain rate to effect pressurization of the brake cylinder device from said reservoir and to restoration of the normally charged pressure in the brake pipe to effect depressurization of the brake cylinder device,
(e) fluid pressure responsive relay valve means having a control chamber chargeable with fluid under pressure from the brake pipe, said relay valve means being operative responsively to reduction of pressure in said chamber below a predetermined value to a fluid pressure supply position communicating fluid pressure from said reservoir to said brake cylinder device via said relay valve means to effect a brake application, and operative responsively to a charging pressure in said chamber exceeding said predetermined value to a cut-off position to effect release of fluid pressure from said brake cylinder device via an atmospheric vent in said relay valve means and thereby release of the brake application, and
(f) a valve device actuable for effecting reduction of the pressure in the control chamber of said relay valve means to below said predetermined value.

3,275,384
AUTOMATIC BRAKE CONTROL SYSTEM
Edgar A. Hirzel, Granada Hills, Calif., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Jan. 10, 1966, Ser. No. 519,768
5 Claims. (Cl. 303—21)



1. A vehicle brake control system for a vehicle having a plurality of load-bearing wheels each having a respective brake means associated therewith and electromagnetically actuated brake control means effective when energized to relax brake application, said system comprising:
first means, including, in combination with a first one of the wheels, transducer means associated with said first wheel effective to produce an electric signal which varies with variations of the rate of deceleration of said first wheel;
second means, connected to said first means and including valve driving circuit means connected to said brake control means, effective in response to production by said first means of a signal representing an increase in the rate of deceleration of the said first wheel above a desirable maximum rate to provide electric energizing current to the electromagnetically actuated brake control means to actuate the latter to cause relaxation of brake application to said first wheel;
third means, connected to said second means, effective incident to provision of electric energizing current to said brake control means by said second means to cause a momentary effective rapid reduction in electric energizing current provided to said brake control means by said second means, whereby the time period required to effect desired resumption of brake application to said first wheel is reduced and compensation is provided for inherent inertia in the brake means.

3,275,385
BRAKE SYSTEMS FOR AUTOMOTIVE VEHICLES
Oskar Vielmo, Stuttgart-Sonnenberg, and Kurt Müller, Schnait, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Aug. 16, 1965, Ser. No. 480,201
Claims priority, application Germany, Aug. 14, 1964, B 78,103
4 Claims. (Cl. 303—30)

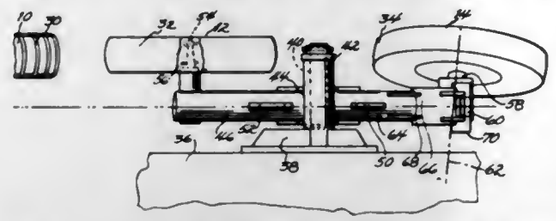


1. In a dual brake system for vehicles, particularly for trailers, a brake cylinder; a supply line and a service line each arranged to convey a compressed fluid; a control valve assembly including a housing having a first and a second inlet respectively connected with said service line and said supply line, an outlet, and first and second passages respectively connecting said outlet with said first and second inlets, said assembly further comprising a first valve for normally sealing said first inlet from said outlet, a second valve arranged to open in response to a predetermined minimum pressure at said second inlet to thus permit fluid to flow from said supply line to said outlet, and motion transmitting means for opening said first valve in response to closing of said second valve so that said outlet can receive fluid from said service line when the pressure in the supply line drops below said predetermined minimum pressure; a further line connecting said outlet with said cylinder; and a load responsive valve connected with said service line and including a normally closed supply valve provided in said further line, said load responsive valve also comprising means for opening said supply valve in response to admission of fluid into said service line and to the extent determined by the load upon the vehicle.

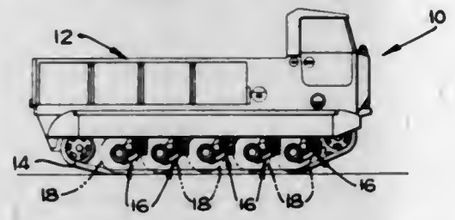
3,275,386
CRAWLER TRACTOR SUSPENSION
Eugen Bexten, Hamilton, Ontario, Canada, assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Aug. 4, 1964, Ser. No. 387,352
9 Claims. (Cl. 305—10)

3. In the front suspension of a track laying vehicle:
support means operatively connected to the vehicle at a side and having an outwardly directed opening;
a spindle disposed in a horizontal position transversely to the direction of running, and having means of securement in the opening in the support means;
said means of securement comprising spaced-apart eccentrics carried by the spindle and socketed to turn in oppositely outwardly facing ball seats integral with the support means; and

a set of engageable means on the outer end of each eccentric providing for forcible relative rotation between the eccentrics;
the interface of contact between each ball seat and the eccentric socketed therein affording freedom of turning movement of the eccentrics angularly between those planes, and angularly in such planes, which are rotated both away from and into coincidence with the planes of the respective seats in which the eccentrics turn.

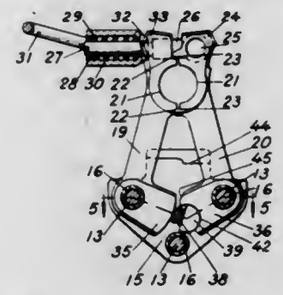


3,275,387
VEHICLE SUSPENSION SYSTEM
Albert R. Hedges, Cupertino, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,342
12 Claims. (Cl. 305—27)



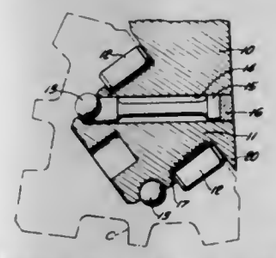
1. A vehicle suspension system, comprising a wheel support arm pivoted at one end to the body of the vehicle, a wheel supported by the free end portion of said wheel support arm, a drum type torsion spring having two resiliently interconnected force transmitting elements, means mounting said spring in substantially coaxial relation to the wheel and anchoring one of said elements to the free end of said support arm, torque reaction means pivoted to the other of said force transmitting elements and to the body of the vehicle, and means for radially adjusting the latter pivot point relative to the pivot point of said wheel support arm.

3,275,388
DRILL CENTRALIZERS
Birger Zettergren, Nacka, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Mar. 18, 1963, Ser. No. 265,829
Claims priority, application Sweden, Mar. 29, 1962, 3,512
9 Claims. (Cl. 308—3.9)



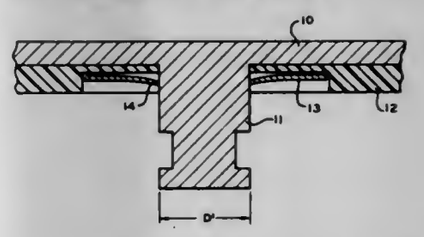
1. In drill steel centralizer apparatus of the character described for guiding the drill steel of a rock drilling machine and having a base for attachment to said machine and a pair of opposed guiding arms having pivotal connections to said base and being movable toward and away from each other from a guiding position adjacent each other to a non-guiding position away from each other, and a guiding surface disposed on each of said arms for mutual cooperation to form a guiding opening in said guiding position of said arms, the combination which comprises a second pair of arms rigidly disposed on said guiding arms and extending radially from said pivotal connections therefor on the ends thereof opposite said guiding surfaces, said second arms extending toward each other in opposed relationship, axially compressible resilient means disposed under compression between said second arms, pivot means on one of said second arms for connecting one end of said resilient means pivotally to said arm, means on the other of said second arms for connecting the other end of said resilient means slideably to said arm for guided axial movement of said resilient means with respect to said arm while being angularly rigid relative thereto, and means in said resilient means providing substantial lateral rigidity thereof whereby said resilient means has a snap-over point in an intermediate position of swing of said guiding arms, so that movement of one of said guiding arms past said snap-over point causes said resilient means to move the other said guiding arm for snapping said guiding arms into said guiding position at one side of said snap-over point and into said non-guiding position at the other side thereof and for holding said guiding arms in said selected positions thereof.

3,275,389
CARBURIZED DRILL BIT BEARING
William J. Neilson, Whittier, and John F. Fischer, Garden Grove, Calif., assignors to Smith Industries International, Inc., Compton, Calif., a corporation of California
Filed Dec. 9, 1963, Ser. No. 329,137
2 Claims. (Cl. 308—8.2)



1. A journal for a well drilling bit having a roller race and a ball race separated by a flange wherein the lower portion of the roller race is deep carburized and the upper portion of the roller race, the entire ball race, and the flange are thinly carburized.

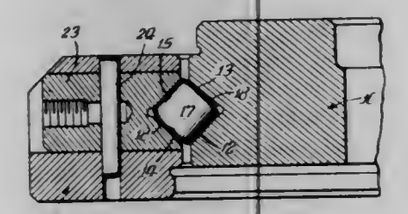
3,275,390
RETAINER RING AND WASHER FOR TRACTOR-TRAILER WITH FIFTH WHEEL
Bobby G. Franks, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 1, 1964, Ser. No. 393,584
3 Claims. (Cl. 308—136)



1. A retainer ring for holding a lubricating disc onto a kingpin used on a trailer fifth wheel assembly, said ring comprising an annular metal ring having an inner diameter smaller than that of said kingpin and at least two

radial slits extending from the inner circumference a portion of the radius from said inner circumference to outer circumference so that the inner circumference will be easily enlarged when said retaining ring is attached to said kingpin.

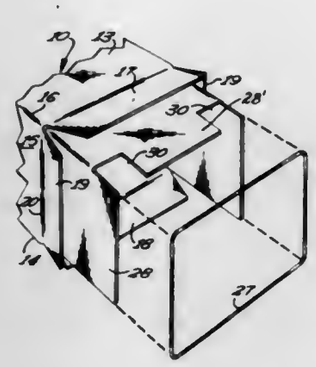
3,275,391
ROLLER BEARING
Robert L. Blais, Muskegon, Mich., assignor to The Kaydon Engineering Corporation, Muskegon, Mich., a corporation of Michigan
Filed Feb. 20, 1964, Ser. No. 346,254
5 Claims. (Cl. 308—174)



1. In a roller bearing, inner and outer races each of unitary construction and having a concentric groove of approximately V-shape in cross section providing two bearing surfaces substantially perpendicular to each other and flat axially of said race, said grooves defining a race way substantially square in cross section providing two pairs of flat inclined bearing surfaces with those of one pair inclined oppositely to those of the other pair, a plurality of cylindrical rollers of uniform diameter in said race way having substantially full length bearing contact with said bearing surfaces, the length of the respective rollers being less than the diameter thereof in extent such that the length of the respective rollers when the bearing is under load is less than the distance between the bearing surfaces of said race way adjacent and opposed to the ends of said rollers, and individual spacers mounted in said race way between said rollers and spacing them apart, each of said spacers having an arcuate recess in the sides thereof adjacent said spaced rollers, each arcuate recess having a radius greater than that of its adjacent roller whereby substantially line contact is effected between said spacers and said rollers.

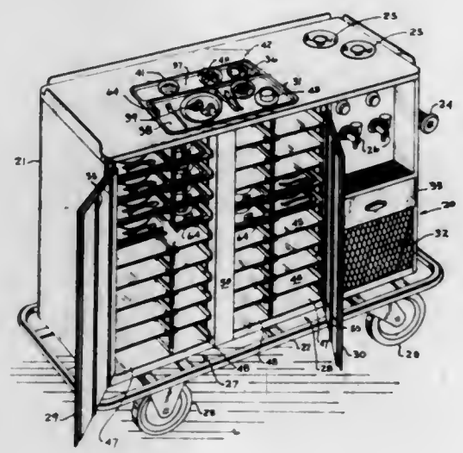
3,275,392
STORAGE FILE BOX
Benjamin Fiterman, Minneapolis, Minn., assignor to Fidelity File Box, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 16, 1964, Ser. No. 338,189
2 Claims. (Cl. 312—108)

1. A storage file box comprising in combination, a shell section and a drawer section, said shell section being collapsible and having a bottom panel, a top panel and a pair of side panels, said panels being defined by scored lines along which said panels are folded into assembled relation to form a main body portion of the shell section, top, bottom and side foldable rear end panels defined by scored lines, said rear end panels folded into over-lapping relation closing the rear end portion of said shell section, top, bottom and side front end panels defined by scored lines folded inwardly upon said main body panels in overlapping and spaced relation thereto, a liner having a top panel and side panels depending therefrom disposed within the interior of the body portion of the shell section in close working fit, said liner having open end portions and an open bottom portion, a metallic reinforcing ring dimensioned to be detachably mounted in the front end portion of the shell section substantially at the scored line of the foldable front end panels, said metallic ring sandwiched between the front end panels of the shell section and the main body panels and positioned at the scored line of the foldable front panels by the substantially abutting forward edge of the liner which is also sandwiched between the front end panels of the shell section and the main body panels of the shell section, and means whereby a plurality of assembled storage file boxes



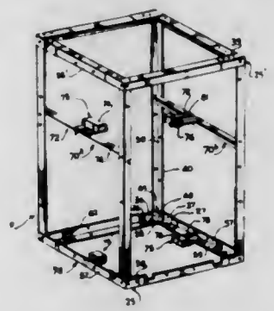
are secured one to other in stacked relation by a pair of laterally spaced nut and bolt assemblies extending through the bottom of the one shell section and the top body panel of an underlying shell section spaced rearwardly of the metallic reinforcing ring, the nut and bolt assemblies underlying the bottom front end panel of the upper stacked shell section and underlying the top front end panel of the lower stacked container.

3,275,393
HOT AND COLD FOOD SERVICE CART
Blair E. Stentz and William R. Conklin, Murfreesboro, Tenn., assignors, by mesne assignments, to United Service Equipment Co., Inc., Palmer, Mass., a corporation of Delaware
Filed Oct. 13, 1959, Ser. No. 846,159
16 Claims. (Cl. 312—214)



16. In a food service cart for transporting a plurality of individual meal trays in at least one compartment, each tray being separated into hot and cold food sections by a rib; the improvement comprising thermal barrier means aligned with the tray separating ribs for dividing the compartment into thermally different zones, said thermal barrier means comprising a downwardly extending web having a lower edge adapted to engage the upper surface of the tray separating rib of a lower tray when said lower tray is in place, and an upwardly extending web adapted to engage the lower surface of the tray separating rib of an upper tray when said upper tray is in place, the lower edge of the downwardly extending web of each barrier means and the upwardly extending web of the next lower barrier means being adapted to engage each other when no tray is positioned therebetween.

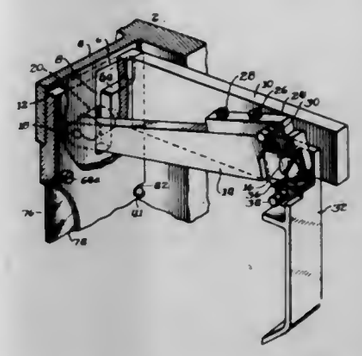
3,275,394
FURNITURE FRAME CONSTRUCTION
Heinz Massinger, 34—19 30th St., Astoria, N.Y.
Filed Aug. 3, 1964, Ser. No. 386,974
13 Claims. (Cl. 312—257)



1. In a cabinet, a rectangular frame structure, said frame structure comprising four vertical corner posts, a pair of corner assemblies at lower and upper ends of each post, horizontal cross members connecting each corner assembly with two other corner assemblies at adjacent corners of the frame structure, each of said corner assemblies including a pair of short angle bars having vertical walls abutted together at their ends in mutually perpendicular planes and having horizontal walls abutted together at their ends in mutually perpendicular coplanar disposition, and a right angle bridge plate engaged on the abutted horizontal walls to reinforce the corner assembly, each post and cross member being an angle bar with mutually perpendicular walls, the ends of the walls of the posts and of the cross members being formed with offset flanges engageable inside the short angle bars of the corner assemblies so that intermediate wall portions of the posts and cross members are flush with outer sides of the vertical and horizontal walls of the short angle bars for mounting wall panels thereon.

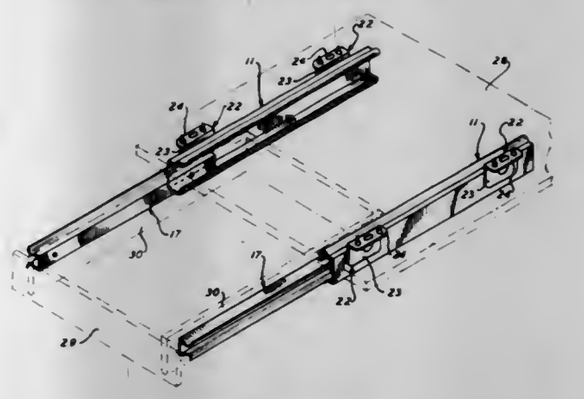
3,275,395
LOCKING MECHANISM
James F. Petelle, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 12, 1965, Ser. No. 424,962
14 Claims. (Cl. 312—320)

1. In a motion picture printer of the type in which lenses are contained in a drawer slidable within a mounting means, the combination comprising:
- a first plate comprising a portion of said drawer;
- a second plate comprising a portion of said mounting means and having a mating surface adjacent said first plate when said drawer is slid into said mounting means, the other surface of said second plate being a locking surface;
- a locking slot in said first plate;
- a locking arm having one end thereof pivotally mounted on a side of said drawer and the other end extending through said locking slot in said first plate;
- means for pivoting said locking arm about said pivot;
- a locking element mounted on said other end of said locking arm;
- a slot in said second plate for receiving said locking element so that said locking element passes therethrough when the drawer is slid into the mounting means the locking arm being of a length so that the locking element is adjacent said locking surface when the drawer is substantially inserted into the mounting means, said second plate being adapted



to accommodate the motion of said locking arm as it is pivoted about said pivot, whereby said locking element wedges said second plate against said first plate, said drawer thereby being locked to said mounting means; and
- means for holding said locking arm and locking element in said locked position.

3,275,396
UNIVERSAL DRAWER SLIDE
Frank Hillson, 48 Brentwood Drive, Verona, N.J., and Rubin Krivisky, 4 Sherman Drive, Spring Valley, N.Y.
Filed Aug. 4, 1964, Ser. No. 387,376
3 Claims. (Cl. 312—341)



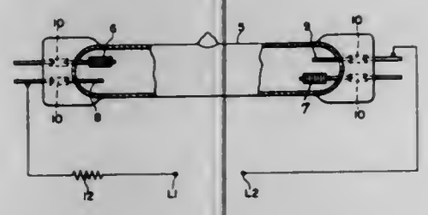
1. A universal drawer slide comprising:
(a) a channeled track and complementary rail, the track having a pair of longitudinal edges,
(b) at least one mounting member engaged to the track,
(c) a back member on the mounting member pivotally engaged to the track,
(d) a flange on the back member, and
(e) the plane of the flange extending above one of the edges of the channelled track when the said plane of the flange is parallel to the longitudinal axis of the track.

3,275,397
METHOD FOR PROCESSING DISCHARGE LAMPS
Walter V. Cushing, Verona, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 22, 1963, Ser. No. 303,771
5 Claims. (Cl. 316—25)

1. The method of initially reducing the starting voltage of a high pressure mercury vapor additive lamp to a de-

sired substantially constant value, which lamp has a radiation transmitting envelope and main operating electrodes and starting electrodes disposed within and proximate to each end of the envelope, which method comprises,

(a) initially seasoning said lamp by establishing an arc discharge between the main arc supporting electrodes of said lamp and maintaining the established discharge for a predetermined period of time,



(b) and thereafter discontinuing the discharge between the main electrodes and maintaining a discharge for a predetermined short period of time between the starting electrodes disposed at each end of said lamp to cause the starting electrodes to getter gaseous impurities within the lamp.

3,275,398

APPARATUS FOR HEAT TREATING LAMP FILAMENTS

Julien J. Mason, West Caldwell, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Apr. 28, 1960, Ser. No. 25,285. Divided and this application Dec. 4. 1962, Ser. No. 253,012

3 Claims. (Cl. 316—27)

1. Apparatus for heat treating the filament of an unflashed incandescent lamp having a predetermined rated voltage and resistance, which apparatus comprises; (1) a preheating circuit including a voltage source that exceeds the rated voltage of said unflashed lamp by a predetermined amount, conductor means for connecting said lamp to said voltage source, current-limiting means, and a first switch arranged to connect said current-limiting means in series with the filament of said unflashed lamp and one side of said voltage source; and (2) a second circuit including a ballast lamp, second conductor means, and a second switch for connecting said second circuit in parallel relationship with the current-limiting means in said preheating circuit; the impedance of said current-limiting means being such that the current flowing through said unflashed lamp, when said first switch is closed, is sufficient to heat the filament thereof to a predetermined temperature below its recrystallization and sag temperature and thus increase the resistance of said filament; said preheating circuit and said second circuit when connected comprising a flashing circuit the total impedance whereof is greater than that of said unflashed lamp.

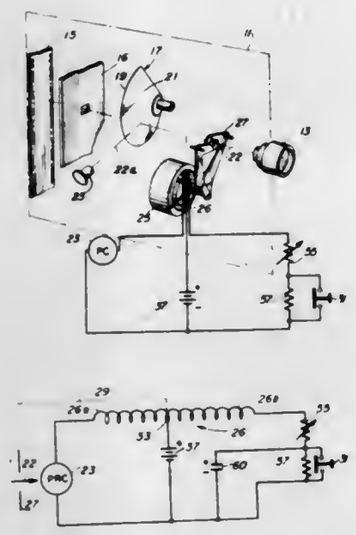
3,275,399

MOTION PICTURE CAMERA

William A. Johnson, Hoffman Estates, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Feb. 28, 1964, Ser. No. 348,083

1 Claim. (Cl. 352—141)



In a motion picture camera, in combination,

an optical objective passing light rays along a light path,

a shutter including a sector movable into and out of said light path,

a reflecting surface on said sector,

said shutter being selectively operable and adapted to be stopped with said sector in said light path,

a light sensitive element,

said element being positioned to receive light rays from said reflective surface when said sector is moved into said light path,

a normally balanced two loop exposure control circuit means,

a compensating means for said circuit means comprising a resistance means and a control means,

said compensating means being selectively insertable, by means of a switch actuated with actuation of the shutter, into one loop of said circuit when said shutter is operating,

said resistance means serving to reduce the amount of current flow in said one loop to balance with that through said light sensitive element of the other loop,

whereby the current through said element when said shutter is stopped and said element is receiving constant illumination from said reflecting surface will be reduced to an amount equal to the current through said element when the shutter is operating and said element is receiving intermittent illumination from said reflecting surface,

said control means including a capacitor for causing the exposure control circuit to return to normal after a predetermined period of time following effective insertion of the resistance means and the beginning of operation of the shutter when said element is receiving intermittent illumination from said reflecting surface of the shutter,

whereby to cause the amount of current flowing in said exposure control circuit to remain substantially constant during the period required for bringing the shutter to full speed following a period in which it is stopped.

CHEMICAL

3,275,400

DYEING POLYOLEFIN MATERIALS

Eckhard Bonitz and Manfred Daeuble, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Nov. 27, 1963, Ser. No. 326,362

Claims priority, application Germany, Nov. 30, 1962, B 69,815

7 Claims. (Cl. 8—4)

1. A process for dyeing a polyolefin shaped article with a water-insoluble dye which is soluble in organic solvents, which process comprises: applying simultaneously to said article from a liquid medium (a) the dye and (b) a linear organosilicon polymer consisting essentially of the recurring units of the formula



in which R_1 represents alkyl and R_2 represents a member selected from the group consisting of hydrogen, alkyl, hydroxyalkyl and hydroxyalkyl esterified with sulfuric acid.

3,275,401

PROCESS FOR PREPARING FAST DYEINGS OR PRINTS ON CELLULOSE MATERIALS

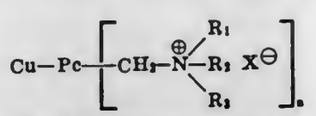
Otto Fuchs, Frankfurt am Main, Reinhold Deubel, Kelkheim, Taunus, Alfred Brechlin, Frankfurt am Main, Hans Bühner, Kelkheim, Taunus, Erich Feess, Frankfurt am Main, and Hans Zimmermann, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 9, 1963, Ser. No. 293,869

Claims priority, application Germany, July 14, 1962, F 37,312

4 Claims. (Cl. 8—54.2)

1. Process for preparing fast dyeings and prints on cellulose materials, which comprises applying on cellulose material a water-soluble phthalocyanine dyestuff of the formula



wherein R_1, R_2 and R_3 represent members of the group consisting of lower alkyl groups and hydroxy lower-alkyl groups, X stands for a member of the group consisting of chlorine and bromine, Pc stands for phthalocyanine and *n* has a value of 2 to 4 and fixing the dyestuff on the fiber with a reducing agent in the presence of an agent having an alkaline reaction at raised temperature.

3,275,402

FORMALDEHYDE MODIFICATION OF CELLULOSE CONDUCTED IN THE PRESENCE OF A STIFFENING AGENT AND A LEWIS ACID METALLIC SALT

George C. Daul and Thomas F. Drake, Mobile, and Marshall W. Duke, Daphne, Ala., assignors, by mesne assignments, to Courtaulds, Limited, London, England, a British company

No Drawing. Filed June 2, 1961, Ser. No. 114,313

15 Claims. (Cl. 8—115.6)

1. A method for improving the wet and dry crease recovery properties of cellulose fabrics which comprises impregnating said fabrics with formaldehyde, with at least 0.03 mol, per 100 g. of cellulose, of a metallic salt which is a Lewis acid in the solid state and which is water soluble to the extent of at least 0.03 mol/liter at 20° C. and pH 5, and a polymeric film forming stiffening material capable of reacting with mormaldehyde, said impregnation with formaldehyde and metallic salt being effected in the presence of water at a pH of at least 5, and curing the impregnated material to cross link the cellulose and to bond the film forming material to the cellulose.

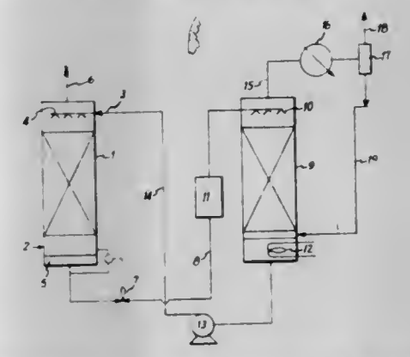
3,275,403

REMOVAL OF CARBON DIOXIDE AND HYDROGEN SULFIDE FROM GASEOUS MIXTURES

Bertrand J. Mayland, Jeffersontown, Ky., assignor to Girdler Corporation, Louisville, Ky., a corporation of Ohio

Filed Aug. 22, 1962, Ser. No. 218,645

7 Claims. (Cl. 23—3)



1. In a regenerative process for removing contaminants, including carbon dioxide as the principal contaminant and hydrogen sulfide as a substantial contaminant, from gaseous mixtures, wherein the contaminated gaseous mixtures are brought into intimate contact with a solution of potassium carbonate, said solution containing iron ions resulting in the production of a difficultly filtrable iron sulfide precipitate, the step of maintaining in the said solution from about .5% to about 2% of an amine chosen from the class consisting of monethanolamine, diethanolamine, triethanolamine and mixtures thereof, to cause said iron sulfide to precipitate at an increased rate and with a larger particle size, thereby making said precipitate readily filtrable, and filtering said precipitate from said solution.

3,275,404

PROCESS FOR SEPARATING RARE EARTH METAL VALUES

Ferdinand H. Firsching, Alton, Ill., assignor to Research Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 7, 1963, Ser. No. 314,506

5 Claims. (Cl. 23—22)

1. The method of separating a rare earth metal value from a solution containing additional rare earth metal values which comprises:

(a) adding to said solution at least two polyaminopolyacetic acid rare earth metal sequestering agents,

(b) thereafter adding an anion forming a relatively insoluble salt with the rare earth metal having the least chelate stability,

(c) further decreasing the solubility of the relatively insoluble salt by then adding a cationic replacing agent to the solution, and

(d) separating the thus formed precipate of the relatively insoluble salt.

5. The method of separating lanthanum and praseodymium which comprises adding to a solution containing lanthanum and praseodymium complexes with at least two polyaminopolyacetic acid sequestering agents, cadmium cation and iodate anion, and separating the thus formed precipitate of lanthanum iodate.

3,275,405

PROCESS FOR THE TREATMENT OF SOLIDS AT HIGH TEMPERATURES

Ezekail L. Clark, Pittsburgh, Pa., assignor to The North American Coal Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 16, 1962, Ser. No. 230,838
9 Claims. (Cl. 23—142)

1. A process for carrying out endothermic chemical decomposition reactions with a particulate, solid reactant which decomposes into solid and gaseous reaction products upon application of substantial quantities of heat in a controlled atmosphere which comprises:

suspending said particulate solid reactant in an upwardly moving gas stream within a closed reaction vessel,

said gas stream providing the controlled atmosphere and comprising gases which are reaction products of the solid reactant,

heating a mass of discrete inert heat transfer particles in a zone which is isolated from the controlled atmosphere,

supplying heat to the solid particulate reactant and the upwardly-moving gas stream by countercurrently passing the heated inert particles with respect to the gas stream and the solid particulate reactants trained therein,

the velocity of said gas stream being insufficient to fluidize the downwardly flowing inert heat transfer particles but sufficient to transport the solid reactant upwardly through the reaction vessel, recovering the reaction products in the gas stream in the upper zone of the reaction vessel, and separating the gaseous reaction products from the solid reaction products.

7. Process as claimed in claim 1, wherein said solid reactant is a metal sulfate, said gas is sulfur dioxide and said decomposition products are the corresponding metal oxide, sulfur trioxide, and sulfur dioxide.

8. Process as claimed in claim 7, wherein said metal sulfate is aluminum sulfate, said oxide is aluminum oxide and the reaction temperature is at least 1470° F.

3,275,406

CONVERSION OF SO_2 TO SO_3 WITH A CATALYST OF SELECTED POROSITY

Robert Krempff, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, Seine, France

No Drawing. Original application Aug. 16, 1962, Ser. No. 217,288, now Patent No. 3,216,953, dated Nov. 9, 1965. Divided and this application Nov. 5, 1964, Ser. No. 409,298
6 Claims. (Cl. 23—175)

5. A method of oxidizing SO_2 gas to SO_3 on a vanadium oxide, potassium oxide, silica catalyst which comprises commencing the reaction on said catalyst having a predominant amount of pores having radii between 3000 to 5000 A. at a temperature above 440° C., continuing the reaction on a similar catalyst having a predominant amount of pores having radii between 1000 to 3000 A., at a temperature between about 400 and 440° C., and substantially completing the reaction on a similar catalyst having a predominant amount of pores having radii between 50 and 500 A. at a temperature below 400° C.

3,275,407

METHOD OF RECOVERY OF AMMONIA AND SULFUR DIOXIDE

Herbert Furkert, Junkersdorf, near Cologne, and Rosina Schertz, Cologne-Lindenthal, Germany, assignors to Chemiebau Dr. A. Zieren G.m.b.H., Cologne-Braunsfeld, Germany, a corporation of Germany

No Drawing. Filed Aug. 28, 1962, Ser. No. 220,083
Claims priority, application Germany, Aug. 30, 1961, C 24,970/61
4 Claims. (Cl. 23—178)

3. A process for recovering of ammonia and sulfur in the form of sulfur dioxide from aqueous sulfuric acid solutions containing ammonium hydrogen sulfate and ammonium sulfate, comprising the steps of

burning a gas selected from the group consisting of coke oven gas, generator gas and natural gas with air,

treating said gas emerging from said burning step by passage through red hot coke,

feeding said gas emerging from said burning step in an airtight reaction chamber, containing a material selected from the group consisting of coke and charcoal,

feeding said aqueous sulfuric acid solution into said reaction chamber,

maintaining said reaction chamber at a temperature range of between 370° C. and 400° C., and

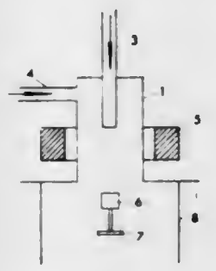
withdrawing from said reaction chamber ammonia, sulfur dioxide, carbon dioxide and water vapor.

3,275,408

METHODS FOR THE PRODUCTION OF VITREOUS SILICA

John Alexander Winterburn, Tynemouth, North Shields, Northumberland, England, assignor to The Thermal Syndicate Limited, Wallsend, Northumberland, England, a British company

Filed Jan. 6, 1964, Ser. No. 335,848
Claims priority, application Great Britain, Jan. 29, 1963, 3,543/63
16 Claims. (Cl. 23—182)



1. A method of producing a transparent body of vitreous, hydrogen-free silica, comprising the steps of forming an oxygen-containing, hydrogen-free gas stream having distributed therethrough a substance selected from the group consisting of silicon and oxidizable, vaporizable, hydrogen-free silicon compounds, said gas stream being at a sufficiently high temperature to vaporize said substance and to oxidize the same under formation of silica and to maintain the thus-formed silica at at least its fusing temperature; directing the thus-formed silica-containing gas stream against a refractory support so as to impinge thereon and to deposit said silica on the same in the form of a body of fused, hydrogen-free, transparent, vitreous silica.

3,275,409

PROCESS FOR THE PRODUCTION OF MAGNESIUM OXIDE FROM MAGNESIUM CHLORIDE HYDRATE

Manfred Schubert, Dresden, and Fritz Murawsky, Sondershausen, Germany, assignors to Zentrale Forschungsstelle für Die Kali-Industrie Beim VEB Kaliwerk "Gluckauf" Sondershausen, Sondershausen, Germany

Filed Dec. 29, 1961, Ser. No. 163,281
3 Claims. (Cl. 23—201)

1. A process for producing magnesium oxide from a magnesium chloride hydrate-containing starting material which comprises a two-stage operation, the first stage comprising the steps of introducing said material into a shaft type chamber in atomized state at a pressure ranging from 5 to 15 atm., passing combustion gases into said chamber at the same end with the magnesium chloride hydrate-containing material at the approximate temperature of 400 to 800° C., said gases carrying said atomized particles lengthwise along said chamber and causing evaporation of excess liquid therefrom, separating said dried magnesium chloride hydrate from said gases, conveying the magnesium chloride hydrate into a decomposition chamber, introducing simultaneously therewith combustion gases at a temperature whereby decomposition occurs in a few seconds, and separating substantially pure magnesium oxide from the HCl-containing gases, the temperature of the leaving gases being about 900–950° C.

3,275,410

METHOD OF RECOVERY OF MAGNESIAN VALUES

Earl Leatham, Wexford, Pa., Albert H. Pack, Ludington, Mich., and Ernest P. Weaver, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 22, 1963, Ser. No. 282,379
3 Claims. (Cl. 23—201)

1. Method of recovery of magnesian values from concentrated magnesium salt-containing aqueous solutions comprising, forming a slurry by mixing a measured amount of free lime containing material selected from the group consisting of slaked calcined limestone, slaked calcined dolomite, unslaked calcined limestone, and unslaked calcined dolomite, and an aqueous magnesium hydroxide containing suspension substantially free of magnesium ions, said aqueous suspension having over about 50 grams of magnesium hydroxide in suspension per liter calculated as MgO, mixing an additional quantity of said aqueous suspension with a concentrated magnesium ion containing solution, introducing the slurry and diluted magnesium ion containing solution into a reactor vessel having a common reaction zone, said zone being submerged in a body of still further aqueous suspension, the total quantity of aqueous suspension in addition to said magnesium ion containing solution being such that the total magnesium ion concentration calculated as magnesium chloride falls between about 0.1 and 1.0 gram per liter in said reaction zone, the amount of aqueous suspension mixed with said free lime containing material being such that the free lime containing material has a concentration falling between about 0.1 and 1.0 gram per liter calculated as CaO in said reaction zone, recirculating at least about 90% of the total volume of the aqueous suspension confining said reaction zone through said reaction zone each minute, withdrawing liquids and solids from said reaction vessel but only withdrawing a volume of said solids and liquids that is equal in volume to the free lime containing material and concentrated magnesium ion containing solution introduced into said reaction vessel.

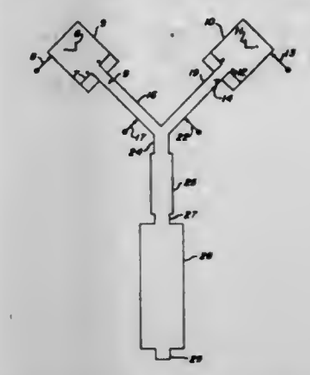
3,275,411

PLASMA PRODUCTION OF TITANIUM DIOXIDE

Mark Phillips Freeman, Darien, Conn., and Frederick Fussman, New York, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Apr. 8, 1963, Ser. No. 271,238
9 Claims. (Cl. 23—202)

1. A process which comprises heating an inert fluid in a flow-stabilized arc to a temperature of about 3,000° C. to 12,000° C. to form a plasma stream, combining therewith at least one of the reactants $TiCl_4$ and an oxygen-containing gas, mixing the reactants to form a heated reaction mixture of plasma, $TiCl_4$ and the oxygen-containing gas, passing the resultant reaction mixture into a reaction zone wherein the temperature is between about 800° C. and 3,000° C., maintaining the reaction mixture in said zone for a period of about 0.001 to one second to thereby produce particulate titanium dioxide in which the particles are spheroidal and in which a large proportion of the particles have an average particle size diameter of at least 0.13 micron.

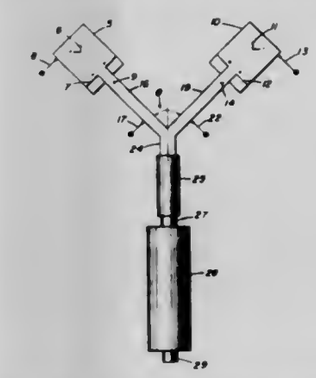


3,275,412

PRODUCTION OF OXIDES BY PLASMA PROCESS

Joseph Francis Skrivan, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Feb. 4, 1965, Ser. No. 430,262
8 Claims. (Cl. 23—202)



1. In the process of continuously preparing finely divided refractory oxides by contacting an oxygen-containing stream with at least one stream of at least one member selected from the group consisting of vaporous metal and metalloid salts, the improvement which comprises admixing at least one of said reactant streams with a stream of gaseous fluid heated by means of a plasma generator to a temperature in the range of 3,000°–12,000° C., contacting said reactant streams flowing at an angle with respect to each other of between about 50° and 160°, passing the resulting mixture of reactants to a reaction zone for a period of about .001 to 1 second, and then collecting the resultant oxide product.

3,275,413

PROCESS FOR PREPARING PYROSULFURYL FLUORIDE AND PYROSULFURYL CHLOROFLUORIDE

Richard F. Schwarer, West Haven, Santad Kongpricha, Hamden, and William C. Preusse, Orange, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

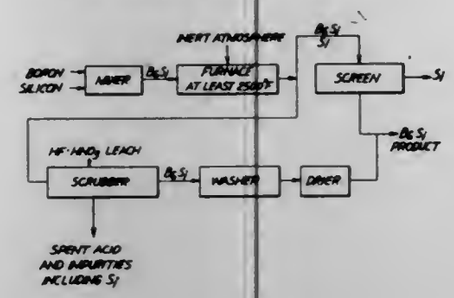
No Drawing. Filed Jan. 25, 1963, Ser. No. 253,998
4 Claims. (Cl. 23—203)

1. A process for preparing pyrosulfuryl fluoride and pyrosulfuryl chlorofluoride which comprises reacting cyanuric chloride with at least a stoichiometric amount of fluorosulfonic acid at a temperature range of about 120° C. to about 200° C. and distilling pyrosulfuryl fluoride and pyrosulfuryl chlorofluoride from the reaction mixture.

3,275,414
METHOD OF PREPARING HEXABORON SILICIDE (B_6Si)

Ervin Colton, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Dec. 30, 1959, Ser. No. 862,933
8 Claims. (Cl. 23—204)

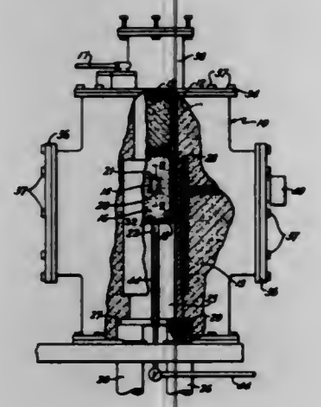


1. The method of making hexaboron silicide comprising: mixing elemental boron and silicon having a respective ratio of at least two to one, but below six to one and having a brownish hue; heating said charge in an inert atmosphere to a temperature of at least 2500° F. but below the fusion temperature of the charge; maintaining said charge at said temperature in said atmosphere until said brownish hue disappears therefrom; cooling said charge; and removing said molecular excess of silicon from said charge.

3,275,415
APPARATUS FOR AND PREPARATION OF SILICON CARBIDE SINGLE CRYSTALS

Hung Chi Chang, Pittsburgh, and Leonard J. Kroko, Pitcairn, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 27, 1964, Ser. No. 348,900
8 Claims. (Cl. 23—208)



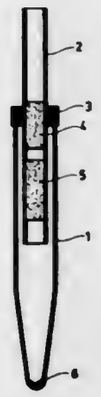
1. A furnace for growing single crystals of silicon carbide comprising a vessel, an empty hollow graphite cylinder with closed ends having porous walls disposed within said vessel, the vessel constructed to contain at least one material of the group consisting of silicon carbide and a mixture including silicon and carbon, the said material surrounding said graphite cylinder, silicon members disposed at preselected areas along the inside surface of the walls of said cylinder to form preferred nucleation sites for crystals of silicon carbide, and heating means disposed about said vessel to heat it and the contained material to a temperature sufficient to cause evolution of silicon carbide vapors, from the said material and passage thereof through the porous walls of the graphite cylinder wherein by the vapors of silicon carbide can concentrate at the selected areas of the graphite cylinder into the hollow thereof.

2. A method for producing silicon carbide single crystals which comprises rapidly heating to the sublimation temperature of silicon carbide a mass of a material selected from at least one of the group consisting of silicon carbide and a mixture of silicon and carbon, there being a brief temperature dwell at about 1400° C. when the silicon and carbon mixture is employed, continuing the heating until a temperature of about 1800° C. is reached and degassing the mass at such last temperature, thereafter heating the mass to a temperature of from about 2000° C. to about 2500° C. whereby vapors of silicon carbide are produced, the said material surrounding an empty hollow graphite cylinder that is pervious to silicon carbide vapor, diffusing said vapor into the hollow of said graphite cylinder, maintaining the inside wall surface of said cylinder at a temperature below the temperature in said heated mass, whereby a supersaturated vapor of silicon carbide is produced at said surface and a relatively small number of single crystals of silicon carbide are nucleated thereon, then reducing the temperature of said mass of silicon and carbon whereby the degree of supersaturation of the vapor diffused into said cavity at said surface is lowered below the nucleation pressure and said nucleated crystals grow, and recovering the resulting relatively large crystals.

3,275,416
PROCESS AND DEVICE FOR SEPARATING BARBITURIC ACID DERIVATIVES FROM BIOLOGICAL SAMPLES, AND FOR ANALYZING SAME

Stig G. B. Zaar and Bo G. Wallenius, Uppsala, and Endel Lausing, Karlstad, Sweden, assignors to Aktiebolaget Pharmica, a company of Sweden

Filed Dec. 10, 1962, Ser. No. 250,973
3 Claims. (Cl. 23—230)



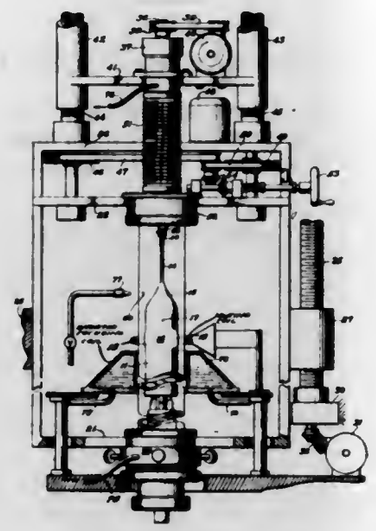
2. A method for separating barbituric acid derivatives from constituents present in a sample of a biological liquid for analytical purposes comprising:

(a) placing the sample on a first porous carrier,
(b) thereafter contacting the porous carrier and deposited sample with chloroform which selectively dissolves the barbituric acid derivative from the sample,
(c) passing said chloroform solution of the barbituric acid derivative into contact with a second porous carrier,
(d) said second porous carrier containing a mercuric salt that reacts with the barbituric acid derivative and forms a complex therewith, and
(e) thereafter contacting said complex of mercury and barbituric acid derivative with dithizone.

3,275,417
PRODUCTION OF DISLOCATION-FREE SILICON SINGLE CRYSTALS

Patrick H. Hunt, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 15, 1963, Ser. No. 316,347
4 Claims. (Cl. 23—273)



1. A system for crucible-free float zone forming of a rod of semiconductor material which comprises:

(a) means including a single-turn R.F. induction coil positioned in a horizontal plane,
(b) a hollow quartz tube extending through said coil,
(c) a conductive ring encircling said tube immediately below said coil and adapted for flow of liquid coolant therethrough as a body which is a truncated cone, the conical surface of which radiates outwardly from said R.F. induction coil,
(d) first supporting means for said rod at the bottom of said tube,
(e) second supporting means for a single crystal seed of semiconductor material in the upper end of said tube,
(f) means for rotating said second supporting means,
(g) means for moving said second supporting means relative to said first supporting means along the axis of said tube,
(h) means for moving said first supporting means relative to said coil, and
(i) means for flowing a predetermined gas through said tube.

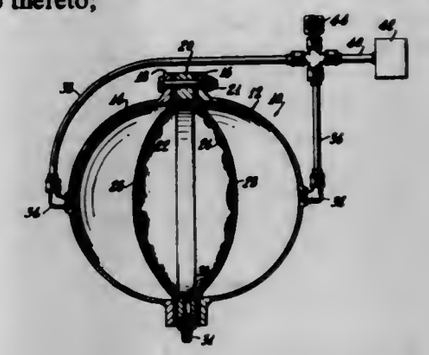
3,275,418
APPARATUS FOR CONTAINING A NON-RIGID OR FLUID MATERIAL

Thomas F. Nee, Oakdale, N.Y., assignor to Avien, Inc., Woodside, N.Y.

Filed Oct. 13, 1960, Ser. No. 62,363
2 Claims. (Cl. 23—281)

1. A variable volume storage device for storage of chemically unstable fluid material in the minimal volume condition at a preselected pressure, said device comprising:

a relatively narrow spacing ring provided with a port;
a pair of gas-porous flexible bladder members fastened at their peripheries to each side of said spacing ring in confronting relationship and adapted to retain fluid in a storage area defined by said bladders and said spacing ring;
a pair of gas-porous resilient backing members, each of said backing members rigidly retained proximate to said ring at their peripheries in close abutting relationship to one of said bladder members, respectively, on the outward face thereof, and biasing said bladder members towards said minimal volume condition, said backing members having the same cross sectional thickness for all volumetric conditions of the storage area defined by said bladders and said spacing ring;
a pair of symmetrically shaped rigid vessels, each of said vessels rigidly retained proximate to the periphery of one of said backing members in sealing relationship thereto;

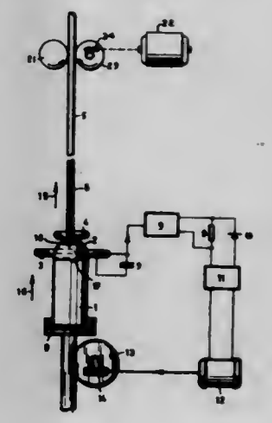


a pressure source provided with an outlet line;
a pair of fuel lines operatively connected to said outlet line;
each of said fuel lines operatively connected to one of said rigid vessels respectively, and adapted to provide equal pressures to each of said rigid vessels; and
a discharge outlet disposed proximate to the juncture of said fluid pressure lines and said outlet line, whereby said gaseous decomposition products are adapted to pass through said bladder members and said backing members and to be withdrawn through said discharge outlet.

3,275,419
METHOD AND APPARATUS FOR PRODUCING ELONGATED STRIP-SHAPED CRYSTALLINE SEMICONDUCTOR BODIES

Werner K. Spielmann, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Mar. 9, 1962, Ser. No. 178,746
Claims priority, application Germany, Mar. 9, 1961, S 72,899
4 Claims. (Cl. 23—301)



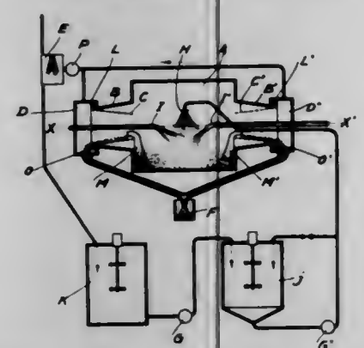
1. The method of pulling an elongated dendritic crystal strip of semiconductor material out of a melt electrically heated by an inductance coil surrounding the melt,

which comprises supporting a rod of the semiconductor material in vertical position and leaving an end portion thereof exposed at the location of the heating coil, energizing the coil by electric current and maintaining thereby a molten zone above the melting temperature in a region adjacent to the still solid portion of the rod simultaneously supercooling to promote dendritic growth, a region of the molten zone farthest removed from the solid portion of the rod, immersing the end of a seed crystal of the same material into the supercooled region of the melt and thereafter pulling the seed with the growing crystalline product away from the molten zone at substantially the rate of crystalline growth, sensing the variations of the coil current due to changes in shape and volume of the molten zone occurring during crystal pulling, and advancing the rod in the pulling direction in dependence upon the departure of the sensed current variation from a given datum value to regulate the coil current for constancy, whereby the liquid-to-solid boundary of the rod and the supercooled region are maintained in a fixed relation to said coil location.

3,275,420
UNITARY ROTARY GRANULATOR AND METHOD FOR DRYING LIQUIFORM SUBSTANCES

Georges Tchouriline-Kissileff, Lille (Nord), France, assignor to Etablissements Kuhlmann, Paris, France, a corporation of France

Filed Dec. 12, 1962, Ser. No. 244,152
Claims priority, application France, Dec. 13, 1961, 881,800
6 Claims. (Cl. 23—313)



1. A method of forming spherical porous granules from particles of matter associated with a liquid in the form of a slurry or solution comprising atomizing the said slurry or solution at the center of an oven toward a bed of granules being formed, heating the atomized slurry or solution as it comes into contact with the said bed of granules whereby the liquid is evaporated and solid particles are formed and coalesce, rotating said oven whereby spherical granules are formed from said coalesced particles and the spherical granules move laterally away from the center of the oven toward the ends thereof as they grow larger and removing the spherical, porous granules at the said ends of the oven.

3,275,421
RECOVERY OF ACTINIDES FROM HALITE DEBRIS

David G. Karraker and William C. Perkins, Aiken, S.C., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Apr. 16, 1965, Ser. No. 448,900
8 Claims. (Cl. 23—319)

8. A process for the recovery of actinide values from a relatively large quantity of halite debris containing a small amount of actinide values resulting from a nuclear detonation in a halite stratum which comprises reducing said halite debris to a relatively finely divided state, contacting said finely divided debris with a sufficient quantity of water to dissolve substantially all of said halite and to provide an insoluble residue containing said actinide values together with insoluble sulfates, silicates, and other impurities, treating said residue with an aqueous solution of ammonium carbonate in sufficient quantity to metathesize said insoluble sulfates, contacting the metathesized residue with boiling nitric acid to dissolve said residue, and thereafter separating said actinide values from said solution.

3,275,422
CONTINUOUS-GAS-PHASE VOLATILITY PROCESS

George I. Cathers, Knoxville, and James C. Mailen, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

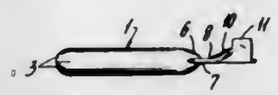
No Drawing. Filed Aug. 14, 1964, Ser. No. 390,278
11 Claims. (Cl. 23—325)

6. An improved method for recovering uranium and plutonium values from a fused salt mixture containing same wherein said salt mixture is heated to a molten state, dispersed into salt droplets, an contacted with fluorine gas to convert said uranium and plutonium values to the volatile hexafluoride state and thereby volatilize same comprising the steps of countercurrently contacting said droplets with gaseous fluorine at a temperature at least as great as the liquidus temperature of said salt mixture to thereby convert said fuel values to the volatile hexafluoride state and thereafter recovering said volatilized hexafluoride product.

3,275,423
GROUNDING PIN

Ferdinand Klumpp, Jr., Union, N.J., assignor to Heyman Manufacturing Company, Kenilworth, N.J., a corporation of New Jersey

Filed Dec. 27, 1963, Ser. No. 333,946
9 Claims. (Cl. 29—183)



4. A round hollow electrical contact pin comprising a closed end portion, a portion of said pin away from said end portion enclosing the hollow of said pin including a pair of folded metal shoulders forming a line, a back portion extending beyond said line, and said back portion including means adapted to be crimped to wire.

3,275,424
CLAD POROUS METAL ARTICLES

Henry A. Kuchek, Auburn, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Original application Oct. 9, 1961, Ser. No. 143,621, now Patent No. 3,138,856, dated June 30, 1964. Divided and this application Nov. 8, 1963, Ser. No. 322,441
4 Claims. (Cl. 29—183.5)

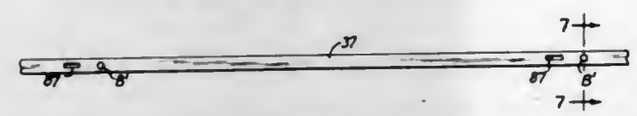


1. An article of unitary construction comprising a porous metal core disposed within a non-porous metal sleeve, said sleeve and said core being bonded together, the pores of said core being interconnected, and said sleeve and said core each being formed of an extrudable metal.

3,275,425
CONTACT MEMBER STOCK COMPRISING A STRIP OF ELECTRICALLY CONDUCTIVE METAL AND BONDED THERETO A SEQUENCE OF SPACED MALLEABLE METAL BALLS ADAPTED TO BE FLATTENED

Arthur James Thomson, Oakland, R.I., and Gerard R. Achin, North Attleboro, and Frank Rynhart, Taunton, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Original application Sept. 1, 1961, Ser. No. 135,636, now Patent No. 3,194,940, dated July 13, 1965. Divided and this application Jan. 15, 1964, Ser. No. 337,949
10 Claims. (Cl. 29—183.5)



1. The elongate intermediate electrical product for making electrical terminal contact elements by division therefrom, comprising a strip of substantially electrically conductive metal stock, and a sequence of spaced malleable metal balls which are both substantially spherical and electrically conductive, said balls being substantially tangentially electrically welded to the strip.

3,275,426
WEAR RESISTANT COATING COMPOSITION ON A VALVE FOR INTERNAL COMBUSTION ENGINE

Edward P. Rowady, Battle Creek, Mich., assignor to Eaton Yale & Towne Inc., a corporation of Ohio

No Drawing. Original application Apr. 17, 1963, Ser. No. 273,551. Divided and this application Mar. 22, 1965, Ser. No. 459,489
3 Claims. (Cl. 29—183.5)

1. An article of manufacture comprising a valve for an internal combustion engine, said valve having an integral coating on the tip portion thereof having a composition consisting essentially of, in weight percent, of 0.5–0.7 carbon, 0.2–0.6 manganese, 7–10 chromium, 2.7–3.5 silicon, 1–4 boron, 0.4 maximum nickel, 0.15 maximum aluminum, 0.03 maximum phosphorous and 0.03 maximum sulfur, balance substantially iron.

3,275,427
MIDDLE DISTILLATE FUEL COMPOSITION

Darrell W. Brownawell, Scotch Plains, and William C. Hollyday, Jr., Plainfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,113
10 Claims. (Cl. 44—62)

1. A middle distillate fuel boiling in the range of from 300 to 750° F. containing a minor amount sufficient to lower the pour point of said fuel of a copolymer of ethylene and a vinyl fatty acid ester having from about 3 to 5 carbon atoms in the ester, said copolymer being further characterized by containing from 15 to 25% of said vinyl fatty acid ester; and a minor amount sufficient to enhance the filterability of said fuel of a polymer of a lauryl acrylic acid ester having a molecular weight of from 760 to 10,000.

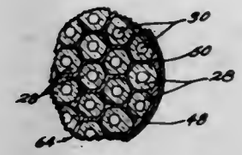
3,275,428
METHOD OF MAKING HONEYCOMB STRUCTURE

Walter P. Siegmund, Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed May 21, 1963, Ser. No. 281,884
8 Claims. (Cl. 65—4)

1. The method of making a honeycomb structure comprising the steps of:

arranging a multiplicity of tubules, each having an inner layer of a first glass material defining a central opening through the tubule and an outer cladding layer of a second fusible glass material, in side-by-side contacting relation to each other to form a bundle,



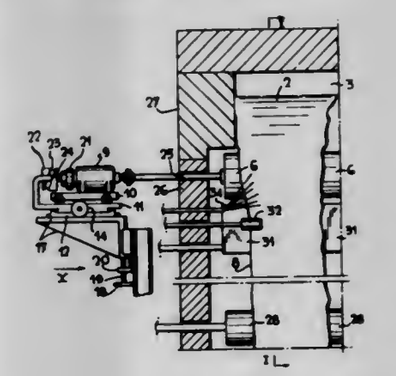
fusing said tubule claddings together to form a multitubular structure,

and removing said inner layers of glass to form a honeycomb embodying only said second glass.

3,275,429
GLASS PROCESSING APPARATUS INCLUDING A RECIPROCATING ROLLER

Gustave Javaux, 6 Rue Simonis, Saint-Gilles, Brussels, Belgium

Filed Sept. 29, 1965, Ser. No. 491,157
1 Claim. (Cl. 65—185)



Apparatus for down-drawing a sheet of glass comprising a source of molten glass, means defining a path of downward flow of the molten glass from said source, a horizontal rotating roller disposed under said means to receive the downward flow at the upper portion of said rotating roller, said roller being disposed relative to the said source so that the molten glass adheres to said roller upon contact therewith and forms a downwardly depending and tapering bulb thereon, means for rotating said roller at a speed such that some of the molten glass from the bulb is drawn upwardly by the rotating roller from the bulb to make a complete cycle with the roller and such that the local amounts of glass withdrawn from the bulb are proportional to the local size of the bulb therefore tending to even the bulb, means for axially reciprocating said rotating roller, and means for drawing downwards a sheet of glass from said bulb formed on the lower part of the roller.

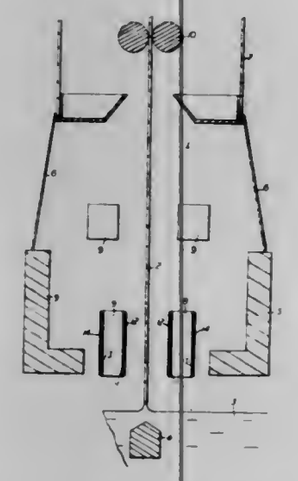
3,275,430
RADIANT TYPE COOLER IN APPARATUS FOR PRODUCING GLASS IN RIBBON FORM

John Reginald Beattie, Maghull, near Liverpool, England, assignor to Pilkington Brothers Limited, Lancashire, England, a corporation of Great Britain

Filed Mar. 29, 1963, Ser. No. 268,875
Claims priority, application Great Britain, Mar. 30, 1962, 12,413/62
5 Claims. (Cl. 65—204)

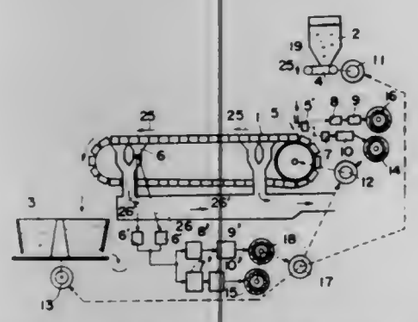
1. In an apparatus for producing flat glass in ribbon form in which the glass as it is produced from molten glass is advanced lengthwise as a ribbon along a cooling

path, a cooler disposed opposite said path in position to cool the advancing glass ribbon comprising a metal box through which a cooling medium may be circulated having an obverse metal face turned toward said path so as to face a face of the advancing ribbon, said cooler face having on at least a substantial part thereof a sintered particulate covering of refractory material selected from the group consisting of chromium sequi-oxide (Cr_2O_3)



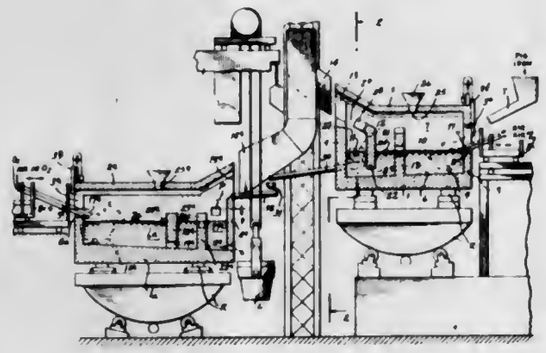
and silicon carbide (SiC) and having greater heat absorptivity than that of the metal of said cooler face over a range of radiation wavelength of 1 micron up to 10 microns, said covering having a thickness of about four to five thousandths of an inch, said particulate covering being uniformly applied over said part of said cooler face, and having the property of absorbing radiation emitted by the glass ribbon in a substantially uniform manner over said part of the cooler face.

3,275,431
SINTERING APPARATUS WITH AUTOMATIC CONTROL
Yasuhiro Sawada, Kitakyushu, Japan, assignor to Yawata Iron & Steel Co., Ltd., Tokyo, Japan
Filed July 9, 1963, Ser. No. 293,737
10 Claims. (Cl. 75—5)



3. A method of controlling the operation of apparatus in which detectable variable conditions indicate the correctness of the operation of the apparatus, and the operation of the apparatus is accomplished by manipulated inputs to the apparatus, said method comprising detecting at least one of the variable conditions, and when said variable condition varies from a desired optimum, applying to at least one of the manipulated inputs to the apparatus at least one rectangular wave type control pulse to cause the value of the manipulated input to vary in the shape of a rectangular wave, continuing to apply rectangular wave type control pulses until the detected variable condition returns to the desired optimum and when the detected variable condition has deviated from the desired optimum for a predetermined length of time, applying to said manipulated input a step type of control to cause the value of the manipulated input to change without returning to its value previous to the step type of control.

3,275,432
OXYGEN STEEL MAKING
George Alexandrovsky, 10 Bradley St., Yonkers, N.Y.
Filed Feb. 23, 1965, Ser. No. 439,497
10 Claims. (Cl. 75—60)

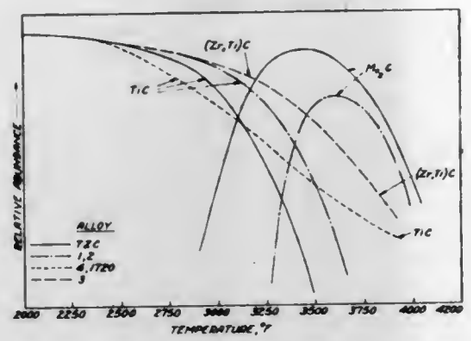


1. An oxygen steel making two-step process including forming molten pig iron into a first elongated pool, feeding additional molten pig iron to and from the opposite ends of said first pool while blowing air into said first pool under conditions burning mainly only the silicon from said iron without adding substantial amounts of nitrogen to the iron feeding from said first pool, forming the molten pig iron from said first pool into a second elongated pool in at least one non-rotary container, forming a refining slag on the top of said second pool, and introducing substantially pure oxygen at an angle smaller than 90° into the space above said second pool while causing relative motion between the pool and the location where the oxygen is introduced, to cause carbon monoxide to form at varying locations in the pool and rise through said slag.

3,275,433
STEEL TREATING AGENT CONSISTING OF Ba-Ca-Al-Fe-Mn-Si
Donald C. Hilty, Sanborn, and Walter Crafts, Niagara Falls, N.Y., and Stuart Solomon, Summit, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 2, 1963, Ser. No. 327,378
7 Claims. (Cl. 75—134)

1. An aluminum-containing alloy addition agent consisting essentially of about 7% to 21% barium; about 10% to about 21% calcium, the aggregate of barium and calcium being from about 17% to about 40%; about 8% to about 35% aluminum, up to 25% in the aggregate of iron and manganese, balance silicon.

3,275,434
MOLYBDENUM-BASE ALLOY
Winston H. Chang, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 13, 1964, Ser. No. 359,080
5 Claims. (Cl. 75—176)



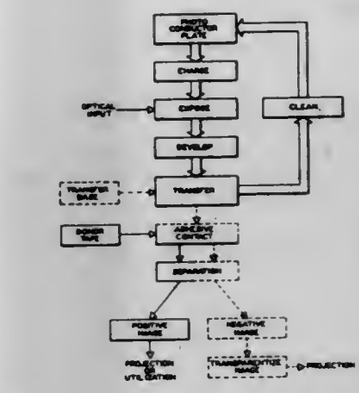
1. An improved molybdenum-base alloy consisting essentially of about, by weight, 1.25–2% titanium, 0.4–0.7% zirconium, 0.05–0.2% carbon, the atomic ratio of titanium plus zirconium to carbon being from about 2:1 to about 6:1, with the balance molybdenum.

3,275,435
METHOD OF PRODUCTION OF A DISPENSER CATHODE
Robert H. Bristow, Burnt Hills, and John H. Affleck III, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Nov. 1, 1963, Ser. No. 320,725
7 Claims. (Cl. 75—201)

1. A method of producing a dispenser cathode which comprises in combination
(a) providing a refractory metal in particulate form,
(b) adding a material to said refractory metal to coat said refractory metal with an additive metal which is in the range of about 0.3 to 1.0 weight percent of said refractory metal, and not substantially more than will alloy with said refractory metal,
(c) said additive metal including a metal taken from the class consisting of those metals of Group VIII of the Periodic Table of Elements,
(d) adding at least about 8.0 weight percent of a barium compound to said refractory metal,
(e) adding less than about 1.0 weight percent of $CaCO_3$ to said refractory metal,
(f) compressing said mixture at about 10 tons per square inch pressure and
(g) firing said mixture in a reducing atmosphere at about 1300° C. to provide a sintered integral high strength dispenser cathode.

3,275,436
METHOD OF IMAGE REPRODUCTION UTILIZING A UNIFORM RELEASABLE SURFACE FILM
Edward F. Mayer, Novelty, Ohio, assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed July 24, 1962, Ser. No. 212,083
16 Claims. (Cl. 96—1)

13. The process of forming image reproductions comprising in sequence the steps of:
(a) xerographically forming a resist transferable image of an original on a support surface;
(b) applying an adhesive surface of a first support base against the image on said support surface;
(c) removing said first support base from said last recited relation with the image adhering and transferred thereto;
(d) presenting said first support base supporting the resist image with the adhesive surface into contact against a second support base containing a uniform releasable opaque surface layer separable selectively by area subjected to adhesive attraction; and,
(e) separating said support bases from each other whereby said opaque layer from said second support



base adhesively adheres and is transferred to said first support base in the surface areas devoid of the resist image thereon.

3,275,437
IMAGE TRANSFER PROCESS AND ELEMENTS THEREFOR
Abraham Bernard Cohen, Springfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 24, 1963, Ser. No. 253,759
20 Claims. (Cl. 96—29)

1. A dry process for image transfer which comprises
A. placing into interfacial contact the surfaces of an image-receptive element and an addition polymerizable solid layer consisting of
(1) underexposed areas in said solid layer comprising
(x) at least one non-gaseous ethlenically unsaturated compound containing at least one terminal ethylenic group, having a boiling point above 100° C. at normal atmospheric pressure and being capable of forming a high polymer by photoinitiated addition polymerization, and
(y) a diffusible colorant that diffuses at a temperature below that at which said layer becomes tacky and adherent to bond paper; and
(2) complementary adjoining coplanar exposed image areas comprising an addition polymer of the aforesaid compound and said colorant, and
B. heating at least one of the elements while they are in surface contact to a temperature sufficient for the colorant to diffuse through the underexposed areas of the layer but below that at which the layer becomes tacky and adherent to said image-receptive element whereby the colorant in the underexposed image areas diffuses and transfers to said element.

3,275,438
PREPARATION OF MAGNETIC RECORDS INCLUDING THE USE OF PHOTOGRAPHIC TECHNIQUES
Simon Levin, 123 W. 44th St., New York, N.Y.
No Drawing. Continuation of application Ser. No. 186,851, Apr. 12, 1962. Division of application Ser. No. 833,999, Aug. 17, 1959. This application Feb. 16, 1965, Ser. No. 433,195
10 Claims. (Cl. 96—35)

4. The method of producing a magnetic record which comprises providing at least one salt of a metal selected from the group consisting of the ferromagnetic elements

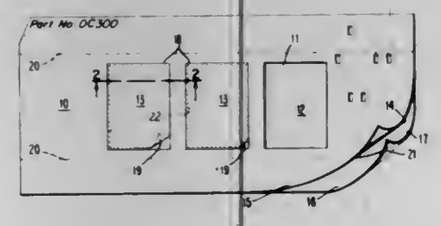
in suspension in a radiant energy sensitive polymeric carrier medium, differentially exposing said carrier to rays of radiant energy representing information to be stored in said carrier, removing the unexposed areas of said carrier whereby a raised pattern of said information is formed in said carrier and reducing said salt remaining in said raised pattern to a magnetizable state.

3,275,439

METHOD OF UPDATING A RECORD MEMBER

Alvin H. Battison, Vestal, and Herman C. Scheer, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 2, 1962, Ser. No. 206,757
2 Claims. (Cl. 96—41)



1. The method of updating a record member, composed of an opaque card having a plurality of removable portions laminated to a transparent, photographic film having unexposed silver halide emulsion thereon and coated on the nonlaminated surfaces with an opaque removable material, comprising the steps of:

removing a first one of said card portions and the opaque material aligned therewith;

exposing said unexposed film under said removed portion and material to record data thereon;

developing said exposed film to produce a transparent photographic negative of said data; and

repeating said removing, exposing, and developing steps in the stated sequence for the unexposed film at the second of said portions when said recorded data is to be subsequently modified.

3,275,440

PROCESS FOR DEVELOPING PHOTOSENSITIZED ANODIZED ALUMINUM PLATES

Robert A. Kempe, Hudson, and Kazimierz R. Szczepaniak, Cleveland, Ohio, assignors to Metalphoto Corporation, Cleveland, Ohio

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,606
4 Claims. (Cl. 96—66)

1. In the manufacture of an aluminum photographic plate in a method which includes anodizing the surface of a clean aluminum plate to provide a porous, durable and transparent layer of aluminum oxide thereon, and thereafter impregnating said porous oxide layer with a photosensitive composition and then imagewise exposing the resulting photosensitive article, the improvement which comprises developing a visible image on the exposed photosensitized plate by immersing the same in a developer solution having a composition consisting essentially of:

Metol	grams	2–6.5
Sodium sulfite, desiccated	do	40–65
Hydroquinone	do	6–7
Alkali metal carbonate, monohydrate	do	30–40
Lower alcohol, up to	ml	150
Anionic wetting agent	ml	0.3–0.5
Fog inhibitor	ml	3.0–8.0

and sufficient water to make 1 liter of solution and after removing the plate from the developer, fixing the image.

3,275,441

PRINTING PLATE AND METHOD OF MAKING SAME

Bernard Cohn, Elmsford, N.Y., assignor to Technilith Inc., Mount Vernon, N.Y., a corporation of New York

Filed Mar. 7, 1963, Ser. No. 263,479
8 Claims. (Cl. 96—75)

8. A presensitized lithographic printing plate comprising an aluminum substrate having a surface initially treated with an acidic molybdate solution and thereafter with an aqueous reducing agent selected from the group consisting of thiosulfate and ferrous salts, and a layer of a photosensitive polymeric diazo compound overlying said surface, said compound being a condensation polymer of diazodiphenylaminesulfate and paraformaldehyde.

3,275,442

METHOD OF IRREVERSIBLY DARKENING A BIS (p-AMINOPHENYL) VINYL CARBONIUM POLYMETHINE LEUCO DYE

Hans Kosenkranius, Cincinnati, Ohio, assignor to Polacoat Incorporated, Blue Ash, Ohio

No Drawing. Filed Nov. 14, 1961, Ser. No. 152,150
3 Claims. (Cl. 96—90)

1. The method of irreversibly increasing the optical density of a pellucid photosensitive composition consistessentially of a normally phototropic bis(p-aminophenyl) vinyl carbonium polymethine dye in its leuco form, a halogen-containing substance generating halogen-free radicals on exposure to actinic radiation of a wavelength less than about 500 millimicrons, and a polar hydroxylic solvent for said dye and halogen-containing substance, which process comprises exposing said photosensitive composition to actinic radiation.

3,275,443

ANTI-FOGGING AGENTS FOR AN N-VINYL, ORGANIC HALOGEN, DYE FORMER SYSTEM

Eugene Wainer, Shaker Heights, Ohio, assignor to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,950
10 Claims. (Cl. 96—90)

1. A normally colorless light-sensitive composition consisting essentially of at least one of each of the following constituents:

(1) An N-vinyl compound

(2) An organic halogen compound which decomposes to yield free radicals when subjected to a suitable dose of radiant energy

and

(3) An anti-fogging agent selected from the group represented by a formula selected from the group consisting of

$$R_xM,\ R_xMR'_z \text{ and } R_yMMR'_z$$

wherein R represents a radical selected from the group consisting of aryl and alkaryl, and R′ represents a radical selected from the group consisting of alkyl, aryl, alkaryl and aralkyl and R and R′ may each represent more than one kind of radical in any one compound, and wherein M represents an element selected from the group consisting of Ge, Sn, Pb, P, As, Sb and Bi and wherein x, y and z are integers from 1 to 4 such that the total number of R and R′ satisfies the valence of M.

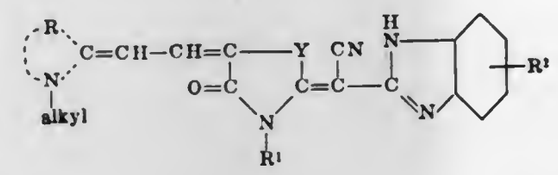
3,275,444

PHOTOGRAPHIC SENSITIZING DYES AND EMULSIONS

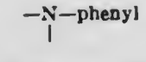
Friedrich Bauriedel, Dreieichenhain, Werner Franke, Wiesbaden, and Hilde Lang, Neu Isenburg, Germany, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 10, 1964, Ser. No. 417,510
Claims priority, application Germany, July 2, 1964, A 46,481
5 Claims. (Cl. 96—105)

1. A photographic silver halide emulsion containing sensitizing amounts of a ternuclear dye of the formula



wherein R constitutes the atoms necessary to complete with the intracyclic N and C atoms a cyclic nucleus selected from the group consisting of benzothiazole, benzoselenazole, benzimidazole and thiazoline nuclei, R^1 is a member selected from the group consisting of alkyl and carboxylalkyl, R^2 is a member selected from the group consisting of H, alkyl, chlorine, bromine and alkoxy, and Y is a member selected from the group consisting of —S— and

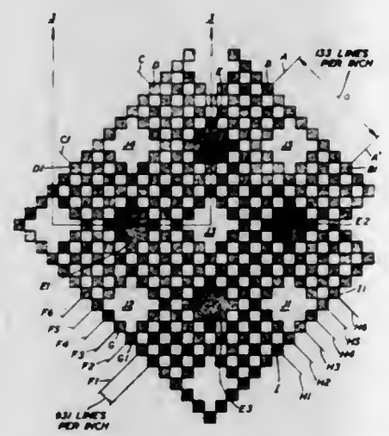


3,275,445

PHOTOGRAPHIC HALF-TONE CONTACT SCREENS

Herbert Middlemiss, Nottingham, England, assignor of one-half to W. H. Howson Limited

Filed July 15, 1963, Ser. No. 295,101
Claims priority, application Great Britain, July 17, 1962, 27,340/62
14 Claims. (Cl. 96—116)



1. A photographic half-tone contact screen comprising a member having a pattern of linearly arranged spaced first dots each of a predetermined area, each first dot being in the form of a central core having a midpoint of maximum density which is surrounded by a pattern of minor dots each of a smaller area than said predetermined area, said minor dots lessening in density with displacement from the central core, and the minor dots being spaced apart in a regular pattern to provide areas of minimum density between themselves.

3,275,446

EATING-INDUCING COMPOSITIONS FOR SILKWORMS

Yasuji Hamamura, Keizo Hayashiya, and Kenichi Naito, Kyoto, Japan, assignors, by direct and mesne assignments, of one-half to Yasuji Hamamura, Kyoto, Japan, and one-half to Takeda Chemical Industries Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 8, 1963, Ser. No. 322,497
Claims priority, application Japan, Mar. 6, 1961, 36/7,616, 36/7,617, 36/7,618; Sept. 22, 1961, 36/34,349; Oct. 20, 1961, 36/37,901; Dec. 1, 1961, 36/46,972
11 Claims. (Cl. 99—2)

1. A composition for inducing silkworms to eat comprising β-sitosterol, cellulose powder, a sugar, an inorganic phosphate and a flavonoid.

3,275,447

PROCESS FOR THE PREPARATION OF HIGHLY CONCENTRATED DRY HOPS BY FREEZING

Adam Müller, Coburg, Germany, assignor to Dr. A. Muller Chemisches Laboratorium, Coburg, Germany, a corporation of Germany

No Drawing. Filed Aug. 2, 1963, Ser. No. 299,488
Claims priority, application Germany, Aug. 8, 1962, C 27,665
13 Claims. (Cl. 99—50.5)

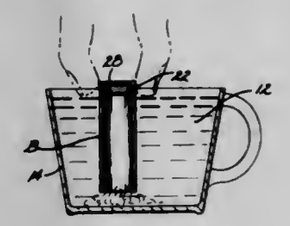
1. A process for the preparation of a hops concentrate containing substantially all the lupulin in the hops comprising freezing the hops to a temperature of at least −10° C. wherein the lupulin forms distinct particles, comminuting the frozen hops with eddy streams of inert gas to a particle size of 200 to 6000 microns whereby the lupulin particles are freed from the hops, separating the comminuted hops into a coarse fraction containing no lupulin and a fine fraction containing substantially all the lupulin in the hops and recovering the fine fraction as the hops concentrate.

3,275,448

COMESTIBLES CONTAINER WITH WATER SOLUBLE PRODUCT THEREIN

Gerhart R. Sommer, Los Angeles, Calif., assignor of one-half to Marshall H. Sevin, Beverly Hills, Calif.

Filed Aug. 26, 1963, Ser. No. 304,481
3 Claims. (Cl. 99—77.1)



1. A container for water-soluble comestibles comprising:

a hollow non-water soluble body having an open lower end, said body receiving said comestible;

a first comestible disposed within said body between the lower end thereof and the intermediate portion thereof;

a second comestible disposed within said body above said first comestible;

a water-soluble element interposed between said first and second comestibles to normally retain said second comestible in place within said body;

and a water-soluble cover on the lower end of said body to normally retain said comestibles within said body,

said cover dissolving when the lower end of said body is placed in water whereafter the upper portion of said body may be grasped and said body may be used as a stirring means.

3,275,449
METHOD OF AGGLOMERATING SOLID PARTICULATE MATERIAL

Edward L. Fritzberg, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed June 26, 1962, Ser. No. 205,224
21 Claims. (Cl. 99—80)

1. A method of agglomerating comprising forming a mixture of solid particulate material to be agglomerated and frozen particulated liquid in an amount capable of bringing the final moisture content to between about 5 and 50% by weight of the mixture, and melting the frozen particles in the mixture and converting same to liquid form whereby the liquid forms adhesive surfaces on the solid particles and the adhesive particles are bonded together in the form of agglomerates.

3,275,450
D-GALACTONO-GAMMA LACTONE CONTAINING PREMIX FOR LEAVENED BAKED FOOD PRODUCTS

Arthur G. Holstein, 1219 Glen Rock Ave., Lake Bluff, Ill.

Filed Jan. 2, 1964, Ser. No. 335,056
5 Claims. (Cl. 99—94)

1. A premix with multiple leavening action for use in the preparation of a leavened baked food product from the group consisting of angel food cake, pizza crust, delayed angel food cake and delayed pizza pie crust, said premix comprising:

a compound effective to produce carbon dioxide when acidulated;

at least one rapid acting acidulant effective to react promptly with a minor proportion of said compound when the same are mixed in an aqueous mixture at room temperature and being in amount from about 1 to about 2 parts by weight of the total premix;

and a quantity of D-galactono-gamma-lactone sufficient to react in leavening action with substantially the remainder of said compound during baking to provide a baking-activated leavening action said lactone being in amount from about 3 to about 5 parts by weight of the total premix.

3,275,451
ALPHA - GLUCOHEPTONO - GAMMA - LACTONE CONTAINING PREMIX FOR LEAVENED BAKED FOOD PRODUCTS

Arthur G. Holstein, 1219 Glen Rock Ave., Lake Bluff, Ill.

Filed Jan. 2, 1964, Ser. No. 335,057
5 Claims. (Cl. 99—94)

1. A premix with multiple leavening action for use in the preparation of a leavened baked food product from the group consisting of angel food cake, pizza crust, delayed angel food cake and delayed pizza pie crust, said premix comprising:

a compound effective to produce carbon dioxide when acidulated;

at least one rapid acting acidulant effective to react promptly with a minor proportion of said compound when the same are mixed in an aqueous mixture at normal mixing temperature and being in amount from about 1 to about 2 parts by weight of the total premix;

and a quantity of alpha-glucoheptono-gamma-lactone sufficient to react in leavening action with substantially the remainder of said compound during baking to provide a baking-activated leavening action, said lactone being in amount of about 3 to about 5 parts by weight of the total premix.

3,275,452
PREPARATION OF MEAT PRODUCTS

William M. Allen, Columbus, Ohio, assignor, by mesne assignments, to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan

No Drawing. Filed Apr. 17, 1963, Ser. No. 273,574
9 Claims. (Cl. 99—109)

1. In a process for the manufacture of comminuted meat products, comprising a comminuted meat mixture containing some liquid stuffed into a semipermeable membrane casing gathered together at spaced positions to divide said meat mixture into at least one discrete sausage form, the step of immersing said meat mixture in a non-toxic cooking liquid containing solutes of a greater molecular concentration than the liquid in said membrane at a temperature and for a period of time sufficient to coagulate said meat mixture.

3,275,453
MILK-CURDLING ENZYME ELABORATED BY *ENDOTHIA PARASITICA*

Joseph L. Sardinas, Gales Ferry, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,532
3 Claims. (Cl. 99—116)

1. A mildly proteolytic, milk-curdling enzyme which in crystalline form is a polypeptide yielding on hydrolysis the amino acids cysteic, aspartic, threonine, serine, proline, glutamic, glycine, alanine, valine, isoleucine, leucine, phenylalanine, histidine, arginine, cystine and tyrosine, and which is further characterized (a) by being water soluble; (b) by being non-dialyzable; (c) by having its milk-clotting ability destroyed by heating to about 60° C. for five minutes; (d) by having maximum stability at a pH of about 4.5; (e) by being precipitable from an aqueous solution thereof by ammonium sulfate; (f) by having an ionic electric point of about 5.5; and (g) by migrating a distance of about 2.5 cm. toward the anode when subjected to horizontal electrophoresis in 0.025 M sodium acetate at pH 4.5 at a constant 250 volts and 8 milliamps for five hours.

3. In a process for making cheese including the step of preparing curds from milk, the improvement which comprises substituting for at least part of the rennin in said step the milk-clotting enzyme elaborated by a strain of *Endothia parasitica*.

3,275,454
METHOD OF PRESERVING COMESTIBLES

Alexander Winterberg, 16 Kfar Giladi St., Tel Aviv, Israel

No Drawing. Filed Aug. 17, 1961, Ser. No. 131,995
Claims priority, application Israel, Sept. 2, 1960, 14,335
7 Claims. (Cl. 99—171)

1. A method of preserving a comestible, comprising, applying to the comestible a liquid coating having adhesive properties and containing an antimycotic agent normally having a tendency to evaporate over a period of time, while said coating is still wet wrapping thereover a sheet of an impermeable material, and allowing said coating to dry so as to produce a wrapped comestible in which the coating containing the antimycotic agent adheres both to the comestible and to the impermeable sheet and fills the wrinkles and folds of the latter.

3,275,455
METHOD OF CLOTHING EDIBLE FRESHLY-SKINNED MEAT CARCASSES

Beverly E. Williams, La Grange Park, Ill., assignor to Hodges Research and Development Company, New York, N.Y., a corporation of California

No Drawing. Filed May 4, 1965, Ser. No. 453,182
9 Claims. (Cl. 99—174)

1. The improvement in the treatment of edible, freshly skinned meat carcasses which comprises covering the skinned surface of the carcass with a cloth at least a substantial portion of which comprises high-wet-modulus rayon fibers having on the average the following properties:

(a) a smooth, non-crenulated surface,

(b) a breaking tenacity, conditioned, between about 3.00 and about 6.00 g./den.,

(c) a breaking elongation, conditioned, between about 11 and about 20%,

(d) a modulus, conditioned, initial, between about 40 and about 70 g./den.,

(e) an average stiffness, conditioned, initial, between about 20 and about 40 g./den.,

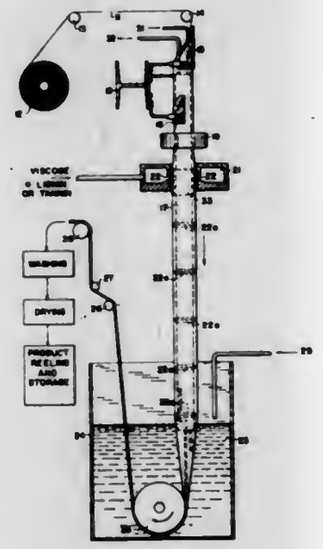
(f) a water swelling, cross-sectional, between about 35% and 65%, and

(g) a water retention, immersed and extracted, between about 60 and 100%, said cloth having a vapor transmission rate between about 35 and about 55 grams of moisture per 100 square inches per 24 hours from an atmosphere of 85 to 90% relative humidity at 99° F. to a dry atmosphere.

3,275,456
NATURAL GUT-COLORED FIBROUS MEAT CASING

Seymour Oppenheimer, Chicago, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 27, 1964, Ser. No. 340,329
6 Claims. (Cl. 99—176)

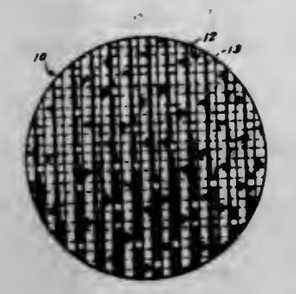


1. A method of preparing a fibrous cellulosic meat casing having a color approximating that of a smoked natural gut casing which comprises forming a tube from a tissue paper of natural cellulosic fibers, preparing a colored viscose solution by addition to viscose of an alkaline solution containing lignin, tannin or soluble derivatives thereof in the proportion of 0.5–5.0 parts by weight per 100 parts cellulose in the viscose, impregnating the paper tube with said colored viscose, regenerating cellulose in the viscose impregnated tube, and washing and drying the product casing.

3,275,457
FROZEN FOOD PRODUCT AND PACKAGE

Alfred Vischer, Jr., 909 S. Cumberland Ave., Park Ridge, Ill.

Filed Apr. 17, 1962, Ser. No. 188,096
7 Claims. (Cl. 99—192)



2. An article of manufacture, comprising

a thin wafer or frozen liquid food,

a plurality of rectilinear grooves arranged in parallel, side-by-side relationship on at least one face of said wafer,

said wafer having a plurality of apertures extending from one face thereof to the other.

3,275,458
DEHYDRATED MASHED POTATO AND PROCESS FOR MAKING SAME

Miles J. Willard, Jr., Idaho Falls, Idaho, assignor to Rogers Brothers Company, Idaho Falls, Idaho, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 120,482, June 29, 1961. This application Nov. 13, 1964, Ser. No. 411,087
23 Claims. (Cl. 99—207)

1. A process for making dehydrated mashed potatoes which comprises admixing dehydrated cooked mashed potato flakes with cooked mashed potato and a minor amount of a fatty acid monoglyceride distributing agent, said dehydrated flakes being employed in an amount sufficient to reduce the moisture content of the mixture to about 30 to 50%, permitting said mixture to rest with a minimum of agitation for at least about 20 minutes, remixing, and then drying said mixture.

23. A dehydrated, substantially granular, cooked mashed potato product, which can be readily reconstituted by the addition of liquid, comprising a mixture of the following components: (1) small potato flakes, (2) discrete potato cells, (3) clumps of potato cells, and (4) aggregates of potato cells attached to small flakes, said potato product having a minimum bulk density of about 28 lbs./cu. ft. to about 48 lbs./cu. ft. and a particle size of between approximately ¼" to about —80 mesh, said components of said dehydrated potato product each being present in an effective amount sufficient to enable the potato product to be reconstitutable with an aqueous liquid at all temperatures from cold to boiling.

3,275,459
METHOD OF MAKING MEAT CURING SALT COMPOSITIONS

Arthur E. Poarch, Mill Valley, Calif., and Michael W. Kossoy, Decatur, Ill., assignors to Western Dairy Products, Inc., San Francisco, Calif., a corporation of California

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,234
6 Claims. (Cl. 99—222)

1. A method for making a curing salt composition for the curing of meat and meat products comprising fully dissolving in a predetermined amount of water an amount of salt selected from the group of salts consisting of the nitrite and nitrate salts of sodium and potassium, homo-

geneously mixing the resulting solution with substantially uniformly sized sodium chloride particles, said resulting solution being present in an amount sufficient to fully wet the sodium chloride but insufficient to fully dissolve said sodium chloride, thereby forming a homogeneous paste, raising the temperature of the mixture to its eutectic reaction isotherm, and cooling said mixture to a temperature below said eutectic reaction isotherm.

3,275,460
MOLD DRESSINGS FOR USE IN FOUNDRY PRACTICE

Jean Louis Jeanneret, Berea, Ohio, assignor to Foseco International Limited, Birmingham, England

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,291
17 Claims. (Cl. 106—38.22)

5. A method of dressing a mold for metal casting which comprises applying to the inner surface of the mold a composition consisting essentially of a suspension of about 40 to 80% by weight of finely divided refractory material in an aqueous medium which includes, as a suspension agent, about 0.05 to about 1.5% by weight of a highly refined guar gum characterized by a Brookfield viscosity in a 1% by weight aqueous solution at 74° F. with a No. 4 spindle at 6 r.p.m. of about 22,500 centipoises and at 60 r.p.m. of about 4,800 centipoises.

3,275,461
REFRACTORY

Ben Davies and Peter Harry Havranek, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,356
15 Claims. (Cl. 106—58)

1. That method of obtaining high temperature strength in ceramically bonded magnesite refractories without sacrifice of hydration resistance, consisting essentially of fabricating a refractory-brickmaking size graded batch of dead burned dense magnesite particles, said magnesite particles characterized by including at least some of each of the constituents CaO, SiO_2, B_2O_3, the remainder being R_2O_3 materials, there being,

(a) up to about 1% SiO_2 and,
(b) up to about 3% CaO, by weight,
(c) the CaO:SiO_2 weight ratio being in the range 2:1 to less than 3:1,
(d) $(C+S)^2/100$ being the maximum B_2O_3 percentage content, wherein C is the weight percentage of CaO and S is the weight percentage of SiO_2,
(e) at least about 95 to 99%, by weight, of said particles being MgO plus CaO,

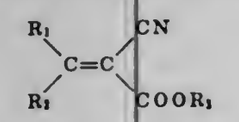
forming said batch into shapes, firing said shapes to obtain ceramically-bonded, dense, hydration resistant, magnesia refractory shapes.

3,275,462
CELLULOSE ACETATE TEXTILE TREATED WITH α-CYANO-β,β-DIALKYL ACRYLATE

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 5, 1963, Ser. No. 270,802
19 Claims. (Cl. 106—196)

1. A method for improving the stability of cellulose acetate of an acetyl value of at least about 2.5 which comprises incorporating therewith from about 0.1% to about 5% by weight based on the weight of the cellulose acetate of a compound having the formula:



wherein R_1 and R_2 are alkyl of from 1 to about 12 carbon atoms and R_3 is a radical selected from the group consisting of alkyl of 1 to about 50 carbon atoms, alkenyl of 3 to about 50 carbon atoms, and the hydroxy, halo, alkoxy, cyano, carbalkoxy, aryloxy and aryl derivatives thereof.

3,275,463
COATING COMPOSITIONS COMPRISING SUBSTITUTED GUANIDINE DRYING ACCELERATORS

Robert A. Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 18, 1962, Ser. No. 224,506
5 Claims. (Cl. 106—287)

1. A coating composition comprising a 2-vinyl cyclic acetal compound polymerizable in air, a siccative metal salt and from 0.001% to 5.0% of at least one N^2-carbamoyl-N^1,N^1,N^3,N^3-tetrasubstituted guanidine selected from the class represented by the following structures:

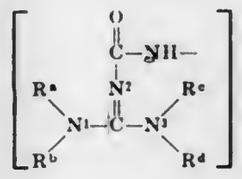


and

in which:

x is an integer from 1 to 6;
y is an integer from 0 to $6-x$;

G is an (N^1,N^1,N^3,N^3-tetrasubstituted guanidine-N^2) carboxamido radical having the following structure:



wherein:

R^a, R^b, R^c and R^d are selected from the class consisting of (1) monovalent hydrocarbyl, (2) substituted hydrocarbyl radicals free of groups reactive with isocyanate and free of aromatic unsaturation, and (3) when R^a combined with R^b, and R^c combined with R^d, they are divalent alkylene, alkenylene and oxyalkylene radicals;
R is a monovalent organic radical having 1 to 12 carbon atoms and free of isocyanate reactive groups;
R^1 is a polyvalent organic radical having a valence equal to $x+y$ and free of isocyanate reactive groups;
B is hydrogen or an isocyanate radical.

3,275,464
YELLOW PIGMENT AND METHOD OF PREPARATION

Erich Tanke, Bensheim-Auerbach, Germany, assignor to Vereinigte Ultramarinfabriken Aktiengesellschaft vormals Leverkus, Zeltner & Consorten, Cologne, Germany

No Drawing. Filed July 15, 1963, Ser. No. 295,237
Claims priority, application Germany, July 17, 1962, V 22,795
4 Claims. (Cl. 106—288)

1. A method for preparing an inorganic yellow pigment comprising heating 100 parts of kaolin with about 4 to 20 parts of a compound containing a member of the group consisting of SCN and SeCN and selected from the class consisting of thiourea, ammonium rhodanide, alkali metal rhodanides, alkaline earth metal rhodanides, and the corresponding selenium compounds, for a period of about 3 to 7 hours at a temperature of about 180 to 210° C.

3,275,465
DESIGN OUTLINE TRANSFER SHEET

Harry Charles Rathke and Norman M. Briggs, Chicago, Ill., assignors to The Meyercord Co., Chicago, Ill., a corporation of Illinois

Filed Apr. 24, 1962, Ser. No. 189,818
4 Claims. (Cl. 117—3.1)

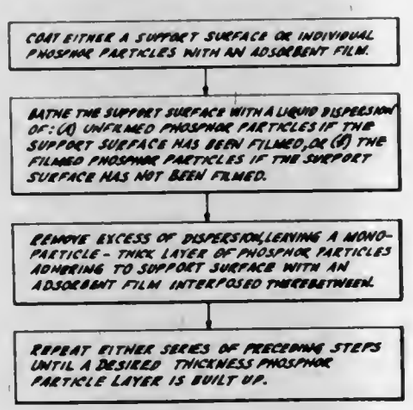


1. A design outline transfer sheet which comprises essentially; a backing member consisting of a thin flexible sheet relatively non-absorbant to oils having relatively smooth surfaces and being sufficiently strong to be secured to a plane surface by an edge thereof and adapted to be pressed into intimate contact with said plane surface without tearing, said sheet having a tacky non-drying paste-like marking composition applied to one of said smooth surfaces in outline form as a decorative design, said marking composition comprising a major proportion of a petroleum jelly as a base mixed with a minor proportion of a waxy solid dispersed throughout said petroleum jelly as an extender and a finely divided powdered oil-absorbant material as an absorbent for said petroleum jelly and having dispersed therethrough as a coloring agent a metal containing pigment which passes a standard sulphur-chlorinate pigment stability test and is free of organic dyes, a portion of said non-drying paste-like marking composition being transferable to said plane surface by the application of pressure to the surface of said sheet opposite said smooth surface having the marking composition thereon, and said backing member being removable from said plane surface as a unit for application of said design to another plane surface.

3,275,466
METHOD OF ADHERING PARTICLES TO A SUPPORT SURFACE

Ray D. Kell, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 3, 1965, Ser. No. 457,241
22 Claims. (Cl. 117—33.5)



1. The method of making a structure comprising the elements of: (a) a support surface and (b) colloidal solid particles, said methods comprising the steps of:

(1) coating one only of said elements with a protective colloid particle-adsorptive material, whereby at least a portion of said material is adsorbed to said one of said elements,
(2) then washing said one of said elements in a solvent for said material to remove unadsorbed material from said one of said elements,
(3) then dispersing said solid particles in a quantity of a liquid which is devoid of said material and in which said particles are insoluble,
(4) and bathing said support surface with said dispersion to adsorptively adhere said particles to said support surface.

3,275,467
COATED GRAPHITE AND METHOD OF COATING

Ervin Colton, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

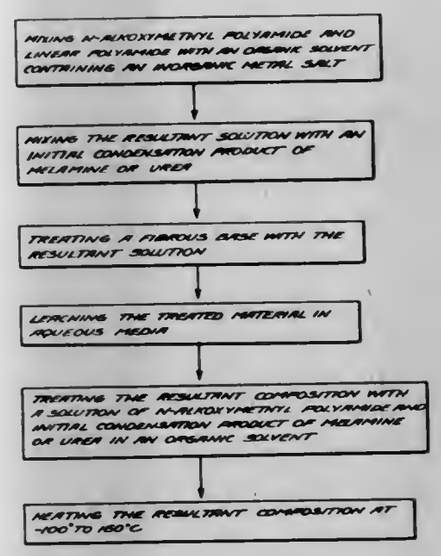
Filed Apr. 26, 1963, Ser. No. 275,979
4 Claims. (Cl. 117—46)

1. The method of rendering graphite articles abrasion and oxidation resistant the steps comprising, depositing a silicide coating selected from the group consisting of hexaboron silicide and tetraboron silicide onto the said graphite article by flame spraying means, said silicide coating having a thickness of from about 3 to about 10 mils, heating the silicide coating at a temperature of from about 1000 to 1500° C. for a period of about one-fourth to one hour in a nitrogen-free inert atmosphere, and again heating the said coated graphite article at a temperature in excess of 700° C. for a period of about one-fourth to one hour in an atmosphere containing oxygen.

3,275,468
METHOD FOR THE PRODUCTION OF ARTIFICIAL LEATHER

Tomoo Aoki, Sennan-gun, Japan, assignor to Toyo Cloth Company, Limited, Sennan-gun, Japan, and Toyo Rayon Company, Limited, Chuo-ku, Japan

Filed Sept. 4, 1962, Ser. No. 221,374
6 Claims. (Cl. 117—63)



1. Method of preparing artificial leather comprising mixing at least one species of N-alkoxymethyl polyamides and one species of synthetic linear polyamides with a solution in a solvent of an inorganic metal salt selected from the group consisting of lithium chloride, calcium chloride, magnesium chloride and zinc chloride to form a solution substantially of 5 to 40 mol percent alkoxymethylation, said N-alkoxymethyl polyamide being prepared by alkoxymethylating a member selected from the

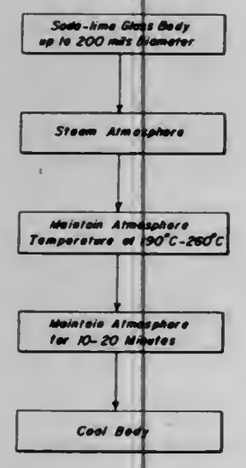
group consisting of synthetic linear polyamides and polythioamides with an alkoxymethyl group having less than 12 carbon atoms in the alkoxy group, said solvent being selected from the group consisting of aliphatic alcohols having less than 6 carbon atoms and ethylene chlorohydrine, treating a fibrous base with the resultant solution, and leaching in aqueous media the treated material to dissolve off the metal salt.

3,275,469
SEPARABLE BOND ASSEMBLY
Fred Streit, Fords, N.J., assignor, by mesne assignments, to Peelbond Products, Inc., South Hackensack, N.J., a corporation of New Jersey
Filed Apr. 12, 1961, Ser. No. 102,413
3 Claims. (Cl. 117—76)

1. A strippable laminate assembly comprising a fibrous web, a first substantially continuous layer of a hydrophobic synthetic organic thermoplastic resinous material having a substantially non-volatile wetting agent dispersed therein superimposed upon a surface of said web, the fibers of said web along said web surface being imbedded in said first layer, and a second layer of an aqueous adhesive superimposed upon and penetrating the opposite face of said first layer for only a part of the depth of said first layer.



3,275,470
GLASS BODIES AND METHODS OF TREATMENT THEREOF
Richard J. Charles, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 18, 1963, Ser. No. 259,793
3 Claims. (Cl. 117—106)

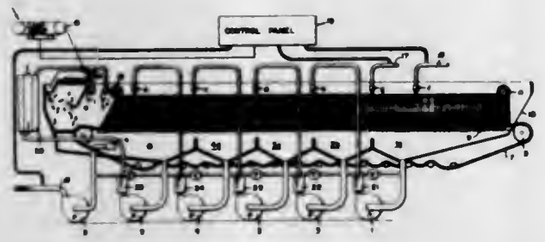


1. A method for substantially increasing the strength of a solid soda-lime glass body having an initial diameter of up to 200 mils in thickness which consists in providing an atmosphere containing 80 percent to 100 percent saturated steam, maintaining said atmosphere in a temperature range of about 190° to 260° C., subjecting said body to said atmosphere for a period of about 10 to 20 minutes whereby a corrosion product layer is formed on the surface of said body, and cooling said body.

3,275,471
METHOD OF PREPARING AN OXIDATION RESISTANT ARTICLE
Carl E. Lowell, East Cleveland, and Roland P. Goton, Lakewood, Ohio, assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Original application Oct. 12, 1959, Ser. No. 845,664. Divided and this application July 3, 1961, Ser. No. 128,620
3 Claims. (Cl. 117—169)

1. The method of rendering a nuclear reactor component containing graphite substantially resistant to oxidation which comprises dipping said component into a slurry consisting of substantially equal proportions of finely-divided silicon and finely-divided silicon carbide, an amount of suspending medium substantially equal to the total amount of silicon plus silicon carbide in said slurry, and an amount of a suspension aid sufficient to maintain said silicon and said silicon carbide suspended in said suspending medium, said silicon and said silicon carbide being in a particle size less than the desired coating thickness; removing said component, having a coating thereon, from said slurry; and firing said component at about 1415° C. to 1500° C. for between 5 and 25 seconds, thereby producing a coating of silicon having silicon carbide dispersed therein.

3,275,472
CONTINUOUS PROCESS FOR THE EXTRACTION OF SUGAR AND APPARATUS THEREFOR
Mohamed H. Tantawi, Abdel M. M. A. Rahman, and Saad F. Guindi, all of Cairo, United Arab Republic, assignors to Societe des Sucreries et de Distillerie d'Egypte, Cairo, United Arab Republic
Filed Apr. 21, 1964, Ser. No. 363,057
Claims priority, application United Arab Republic, Sept. 30, 1961, 1,200/61
7 Claims. (Cl. 127—5)



6. An apparatus for the extraction of sugar and bagasse from sugar cane for use in carrying out the diffusion by counter-current diffusion, which comprises a metallic elongated horizontal trough having two metallic vertical longitudinal side walls to which a fixed metallic horizontal perforated bottom is attached at the lower edges, said trough being supported on a fixed supporting steel structure, means for delivering the sugar cane to the charging end of the trough, at least one pair of twin endless travelling chains moving horizontally side by side at the same speed on the surface of the horizontal stationary perforated screen, entraining slowly an even bed of sugar cane and its bagasse, said twin endless chains having spaced metallic horizontal slats attached to the lateral sides of the chains transversally to its travel, a plurality of distributors arranged over the said bed of sugar cane and bagasse and being so spaced that sugar solutions which are distributed therefrom are sprayed on said travelling bed, metallic receiving tanks beneath the perforated screen, side by side, for receiving the solutions draining from the bed of sugar cane and bagasse, said tanks being piped independently to circulating pumps allowing each of the draining sugar solutions to be conducted to the respective distributor, said tanks together with the metallic trough forming one horizontal continuous section being supported on the fixed supporting steel structure.

3,275,473
BATTERY GRID
Robert E. Barnett and James M. Dines, both of Joplin, Mo., assignors to The Eagle-Picher Company, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 3, 1964, Ser. No. 335,498
3 Claims. (Cl. 136—64)

1. A grid for use in electrolytic cells, said grid having a generally rectangular main portion and a tab portion extending from one edge of said rectangular main portion, said grid being formed of a fine wire mesh screen, said tab and an adjacent edge portion of said screen extending from 1/10 to 1/4 of the height of said screen being reinforced by metal applied to said screen by dipping said screen in a molten bath of said metal, said metal filling the interstices of said tab and adjacent edge portion, the interstices of the remainder of said screen being open.

3,275,474
OXYGEN POWER ELECTRODES
René Buvet, Cachan, France, assignor to Electricite de France-Service National, Paris, France, a national French organization
No Drawing. Filed Sept. 5, 1961, Ser. No. 135,794
Claims priority, application France, Mar. 9, 1961, 855,101, Patent 1,291,005
2 Claims. (Cl. 136—86)

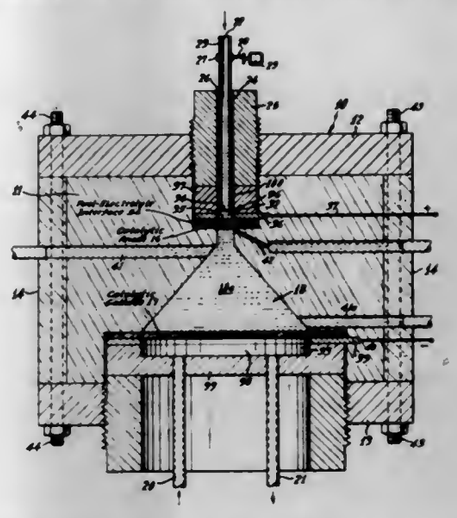
1. A method of operating an electrolyte oxidation-reduction device to increase the density of the current produced by the device comprising:

treating an electrolytic solution prior to injection into said device to increase the solubility of oxygen there therein over normal solubility by dissolving oxygen under pressure in the electrolyte, forming an oxygen-enriched liquid electrolyte solution free of oxygen bubbles; and

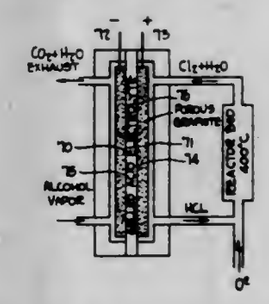
injecting said enriched solution into said device and in continuous circulation through a catalytic electrode having a porosity of greater than 50 percent so that an oxidation-reduction reaction of increased efficiency takes place over a substantial thickness of the said electrode.

3,275,475
FUEL CELL AND METHOD OF SHIFTING THE FUEL ELECTROLYTE INTERFACE
Johann G. E. Cohn, West Orange, N.J., and Peter A. Danna, Brooklyn, N.Y., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed Sept. 13, 1962, Ser. No. 223,872
3 Claims. (Cl. 136—86)

2. A fuel cell comprising a container, a porous catalytic anode in the container, a porous catalytic cathode in the container spaced from the anode, an acid electrolyte contacting the anode and cathode, means for maintaining an organic liquid fuel in contact with the anode, means for passing an oxidizer in contact with the cathode, and means for frequently changing the pressure of the fuel relative to the electrolyte thereby frequently shifting a fuel-electrolyte interface in the porous catalytic anode to reach newly-active catalyst sites in the anode, whereby anodic polarization is materially reduced, and wherein the pressure changing means comprises an inner fuel feed tube disposed within an outer tubular passage of the container and closely spaced therefrom, the outlet end of the inner tube being closely spaced from a face of the porous catalytic anode, and means for rapidly oscillating the inner tube within the outer tubular passage.



3,275,476
ELECTROCHEMICAL REACTION APPARATUS
Robert A. Rightmire, Twinsburg, and Philip S. Fay, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 20, 1961, Ser. No. 139,428
2 Claims. (Cl. 136—86)



1. A process for the production of electrical energy from an electrochemical reaction at temperatures ranging from about room temperature to about 200° C. in an electrochemical reaction system characterized by a relatively reducible subsystem and a relatively oxidizable subsystem, each including an electrochemically reactant material adapted to coact electrochemically through an aqueous ion-transfer medium, each of said subsystem including an electrode adapted to be coupled to an external electron conducting circuit, and an aqueous ion-transfer medium disposed between said electrodes and forming an interface therewith, said process comprising the steps of:

(a) adding sulphuric acid activator to the ion-transfer medium to a concentration equivalent to 6 molar acid;

(b) supplying an alcohol fuel containing from 1 to 4 carbon atoms to the relatively oxidizable subsystem;

(c) supplying elemental halogen antifuel to said relatively reducible subsystem;

(d) maintaining each of said subsystems in the liquid phase;

(e) removing the reaction by-product from said relatively oxidizable subsystem;

(f) removing hydrogen halide reaction by-product from said relatively reducible subsystem in the liquid phase oxidizing said hydrogen halide by-product externally

of said reaction system in the gas phase over a vanadium pentoxide catalyst to convert it to water and gaseous halogen antifuel; and

(g) recycling the reconstituted halogen to said relatively reducible subsystem.

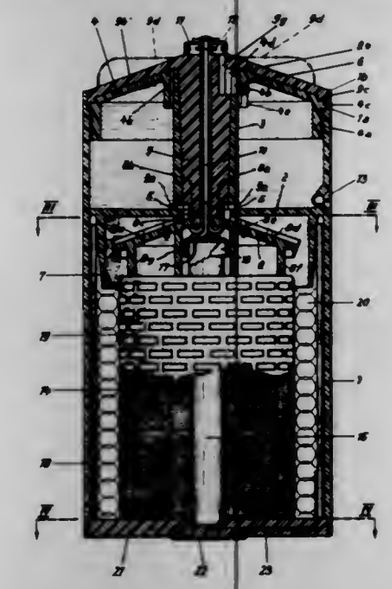
3,275,477

ROD SHAPED BATTERY WITH SYNTHETIC MATERIAL CASING

Ludwig Schmid-Wildy, Irschenberg uber Miesbach, Upper Bavaria, Germany

Filed Jan. 7, 1964, Ser. No. 336,262
Claims priority, application Germany, Jan. 8, 1963, Sch 32,571
4 Claims. (Cl. 136—90)

1. In combination, a closed cylindrical housing of synthetic material, having an integral partition extending transversely of the housing and dividing said housing into an upper tank chamber and a lower chamber, said partition having passages for the flow of electrolyte from said upper tank chamber to said lower chamber, air inlets for said tank chamber, valve means for opening and closing said passages and said air inlets, said valve means comprising a cylinder extending centrally and upwardly of said partition to the top of said housing, a closing plug rotatable in said cylinder, said cylinder having bottom openings communicating with said passages for electrolyte in said partition, the top portion of said cylinder having an air inlet opening, said closing plug having bottom recesses alignable with said bottom openings and said passages, said closing plug having a top recess for entry of air, alignable with said air inlet opening, a carbon briquette mounted in said lower chamber, a zinc



cylinder extending about said briquette and spaced therefrom, first contact means secured to said carbon briquette and extending outwardly through the top of said housing and second contact means secured to said zinc cylinder and extending outwardly of the bottom of said housing.

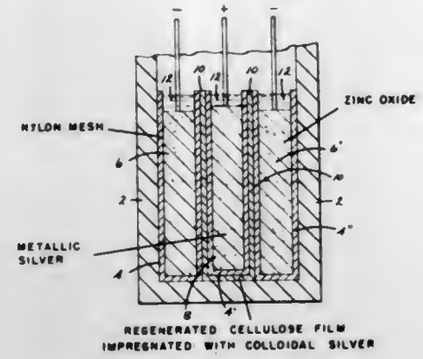
3,275,478

METHOD OF MAKING A BATTERY SEPARATOR CONTAINING COLLOIDAL METAL

Charles M. Rosser, Wallingford, and Richard A. Glinski, Clifton Heights, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Original application Feb. 21, 1963, Ser. No. 261,940. Divided and this application Mar. 18, 1965, Ser. No. 440,837
6 Claims. (Cl. 136—148)

1. A method of preparing a semi-permeable battery separator which comprises immersing a film of regenerated cellulose in a dilute aqueous solution of a water-soluble salt of a metal selected from the group consisting of silver and gold for at least about 0.1 minute, then immersing said film in a dilute aqueous alkaline bath



and exposing it to actinic rays for a sufficient length of time to deposit at least about 0.5% based on the weight of the film, of the metal of said water-soluble salt in colloidal form within the pores of said film, and washing and drying the film.

3,275,479

PYROMETRIC LANCE APPARATUS

Edward J. Binkowski, Philadelphia, Pa., assignor to Pyrotemp Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 15, 1963, Ser. No. 251,562
6 Claims. (Cl. 136—233)



4. An expendable plug-in temperature sensing unit for use in a pyrometric lance apparatus comprising a body tube; a stepped contact plug capping the distal end of said body tube including a first central longitudinally distally projecting cored step which is circular in cross section, a first core plug within the core of said first step, a second offset cored step which projects distally less than said first step, and a second core plug within the core of said second step; a thermocouple mounted at the proximal end of said body tube; polarized lead wires connecting to said thermocouple and extending through said body tube and along the sides of said steps and down into their respective cores wherein they are secured by one of said core plugs, said wires being in transverse

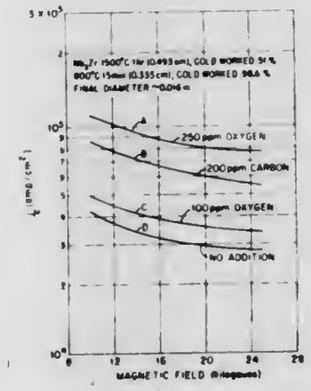
radial alignment, and a tubular shield within said body tube encompassing one of said lead wires.

3,275,480

METHOD FOR INCREASING THE CRITICAL CURRENT DENSITY OF HARD SUPERCONDUCTING ALLOYS AND THE IMPROVED PRODUCTS THEREOF

Jesse O. Betterton, Jr., Oak Ridge, Tenn., George D. Kneip, Jr., Concord, Mass., and Dewey S. Easton and James O. Scarbrough, Lenoir City, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed June 22, 1965, Ser. No. 475,303
17 Claims. (Cl. 148—2)



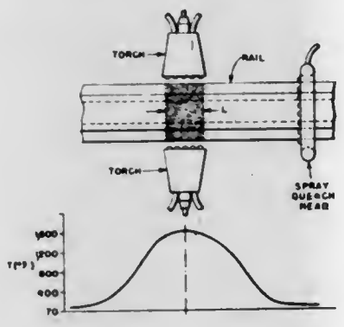
7. A method of increasing the critical current density of a hard superconducting alloy which comprises mixing said alloy in the liquid state with an additive selected from the group oxygen, carbon, nitrogen, boron, and hydrogen, homogenizing the resultant mixture at a temperature below the melting point of said alloy to effect uniform distribution of said additive, cooling the resultant homogenized alloy to induce formation of a finely divided precipitated phase containing said additive and thereafter reducing said alloy to a desired gauge size.

3,275,481

METHOD OF FLAME HARDENING WELDED STRUCTURES

Clyde M. Adams, Jr., Lexington, Mass., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Feb. 21, 1964, Ser. No. 346,550
8 Claims. (Cl. 148—127)



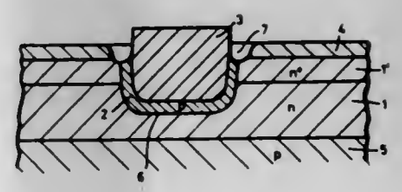
7. A method of rehardening conventional rails in which steel sections weighing between approximately 132 and 175 pounds per yard have been joined by welding whereby a soft region has been produced in the vicinity of each welded joint, comprising the steps of heating said region by gas-flame torch means producing a heat input rate capable of raising the steel temperature to approximately 1600° F. within five to six minutes; then moving said source along the rail toward one side of said region at a rate of approximately two inches per minute until an advancing thermal front is established wherein the temperature drops sharply from approximately 1600° F. to below approximately 900° F. within a very short distance along the rail length; then reversing the direction of travel of said torch means toward the other side of said region; moving a quenching fluid spray over said rail at a distance behind the torch means; continuing the movement of said torch means toward said other side of said region at approximately two inches per minute until a second said thermal front is similarly established at said other side; continuing the movement of said quenching fluid spray across said region and said second thermal front; and tempering the rail by passing said torch means across same at a speed of 6 to 8 inches per minute.

3,275,482

SEMICONDUCTOR P-N JUNCTION DEVICE AND METHOD OF ITS MANUFACTURE

Winfried Meer, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Sept. 23, 1964, Ser. No. 398,636
Claims priority, application Germany, Sept. 25, 1963, S 87,500
18 Claims. (Cl. 148—177)



8. The method of producing a semiconductor p-n junction device, which comprises depositing a barrier-free metal coating upon the surface of a semiconductor body having one conductance type at said coating, placing a metal pellet containing dopant for producing the other conductance type in said body upon the body, the pellet contacting the coating at least at the pellet margin, heating the body and pellet to alloying temperature and thereby alloying the pellet through said coating with said body to produce an alloy-doped recrystallization zone of the other conductance type between said pellet and said body whereby a p-n junction is formed and a groove around said pellet is formed in said coating in which groove said p-n junction emerges at the surface.

3,275,483

REACTION PRODUCTS OF NITRILE CONTAINING DECABORANES AND OLEFINIC RUBBER

Murray S. Cohen, Morristown, Marvin M. Fein, Westfield, Joseph Green, Dover, and George J. Donovan, Morristown, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Oct. 21, 1960, Ser. No. 64,217
17 Claims. (Cl. 149—22)

1. A method for the production of an organoboron compound useful as a fuel which comprises reacting a borane selected from the group consisting of bis(nitrile) decaboranes and bis(nitrile)alkyldecaboranes with a material consisting essentially of an olefinic rubber, the bis(nitrile)decaboranes being the reaction products of decaborane with a cyano alkane having from 1 to 12 carbon atoms, and the bis(nitrile)alkyldecaboranes being the reaction products of a lower alkyl decaborane with a cyano alkane having from 1 to 6 carbon atoms.

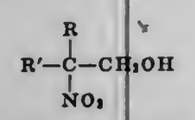
3,275,484
PERCUSSION SENSITIVE PYROTECHNIC OR PYROPHORIC ALLOY-TYPE PRIMING MIXTURE
Donald S. Foote, Greens Farms, and Richard A. Sahlin, Fairfield, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
No Drawing. Filed June 1, 1964, Ser. No. 371,813
8 Claims. (Cl. 149—38)

1. A percussion sensitive ammunition priming mixture which comprises as its essential ingredients in an initimate mechanical mixture from about 25% to about 60% of an active pyrophoric alloy and from about 40% to about 70% of an active inorganic oxidizing agent selected from the group of active inorganic oxidizing agents consisting of barium nitrate, lead dioxide, potassium perchlorate, red lead oxide, potassium chlorate and lead nitrate.

6. A percussion sensitive ammunition priming composition as defined in claim 1 in which substantially 31% of a powdered pyrophoric alloy of misch metal and magnesium is in admixture with substantially 45% of powdered barium nitrate, substantially 20% of powdered lead dioxide, and substantially 4% of a sensitivity modifying agent.

3,275,485
AMMONIUM NITRATE SLURRY SENSITIZED WITH NITRO SUBSTITUTED ALKANOLS
Richard S. Egly, West Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Filed July 30, 1964, Ser. No. 386,421
4 Claims. (Cl. 149—47)

1. Ammonium nitrate slurry compositions suitable for use in the explosive art consisting essentially of ammonium nitrate, about 2 to 10% by weight water, and about 10 to 50% by weight of a nitro compound having the formula



where R is selected from the group consisting of hydrogen, lower alkyl and lower hydroxyalkyl and R′ is selected from the group consisting of lower alkyl and lower hydroxyalkyl.

3,275,486
METHOD OF REMOVING INSULATING MATERIAL FROM ELECTRICAL CONDUCTORS
Duane A. Schroeder, East Dundee, Ill., assignor to Methode Electronics, Inc., Chicago, Ill., a corporation of Illinois
Filed July 19, 1963, Ser. No. 296,224
3 Claims. (Cl. 156—3)

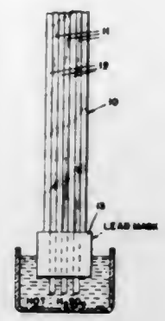
1. The process of removing polyester insulating material from copper conductive elements of a flexible wiring unit leaving a clean, sharp end margin on the remaining polyester material which comprises:

(A) masking an area of a flexible wiring unit formed by copper conductive elements encapsulated in polyester insulating material adjacent the intended points of electrical contact with lead foil having one of its faces coated with a pressure sensitive adhesive by placing the adhesive surface of the masking foil against the polyester and pressing the foil into intimate contact with the surface of said unit.

(B) flooding the area of polyester to be removed with sulfuric acid having a concentration of between about 1.53 to 1.84° Bé. at a temperature of between 135° F. and the boiling point of the acid,

(C) removing the unit from contact with said acid before deleterious attack on the lead and copper begins,

(D) neutralizing any adherent acid and drying the unit, and



(E) removing the lead mask to provide a flexible wiring unit having clean exposed conductive elements adapted for electrical connection.

3,275,487
METHOD AND AUTOMATIC APPARATUS FOR PRODUCING PILE SURFACED PLASTIC SHEETING
Jerome H. Lemelson, 8B Garfield Apartments, Metuchen, N.J.
Filed Jan. 7, 1963, Ser. No. 249,921
9 Claims. (Cl. 156—72)



1. A method of manufacturing a sheet of flexible plastic material with a pile-like surface structure comprising the steps of:

(a) providing a sheet of flexible thermoplastic material,

(b) rendering at least a portion of said sheet including a major surface thereof in a molten condition,

(c) continuously feeding said sheet in a predetermined path,

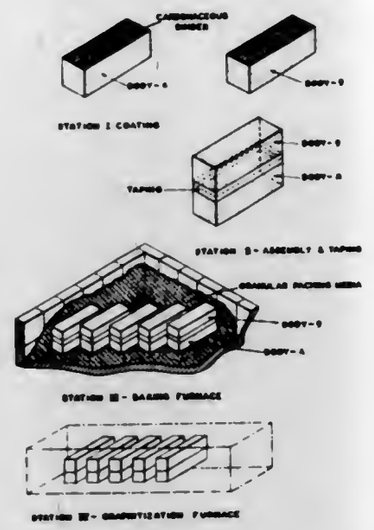
(d) feeding a plurality of filaments of textile material against the molten portion of said sheet,

(e) embedding at least part of each filament within the molten portion of the sheet and,

(f) solidifying the molten sheet material to retain the embedded portions of said filaments therein and provide a composite flexible sheet simulating a haired or furred material.

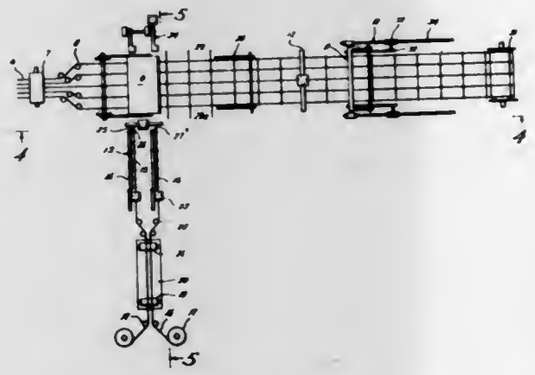
9. Automatic production apparatus comprising in combination with a textile loom for continuously forming a web of textile material from textile material feeding said loom, including means for guiding said web in a predetermined path, a plastic sheet extrusion die, means for extruding molten plastic material from said die as a continuous sheet, means for feeding said sheet of plastic at substantially the speed at which said textile web feeds from said loom, means for continuously contacting said sheet of plastic onto said textile web and means for continuously feeding a plurality of filament elements into the plastic material while it is in a molten state to secure said filaments thereto upon solidification of said plastic material.

3,275,488
FABRICATION OF CARBON AND GRAPHITE BODIES
Bruce L. Bailey, Lewiston, Berch Y. Karagoz, Buffalo, and Paul Peller, Niagara Falls, N.Y., assignors to Great Lakes Carbon Corporation, a corporation of Delaware
Filed Aug. 5, 1960, Ser. No. 47,628
10 Claims. (Cl. 156—89)



1. A method of fabricating carbonaceous bodies which comprises: (A) shaping carbonaceous mixtures into desired dimensioned "green" bodies by molding or extrusion; (B) coating a surface of at least one of said bodies which are to be joined with a carbonaceous bonding agent; (C) joining the two bodies together with the bonding agent at their interface; (D) surrounding the joint formed by the two pieces being joined with a support tape to prevent escape of binder; and (E) heating the pieces in a baking furnace in such a manner that the composite of the joined pieces is brought uniformly to a baked condition after surrounding said composite with a packing material.

3,275,489
METHOD AND APPARATUS FOR PRODUCING UNWOVEN FABRIC
Harry Talv, Nashville, Tenn., assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 1, 1962, Ser. No. 170,605
3 Claims. (Cl. 156—181)



1. The method for producing a nonwoven reinforcing fabric comprising the steps of:

(a) intermittently and alternately advancing and stopping a band consisting of a single layer of a plurality of fibrous warp strands while continually in substantially equal tension, said strands arranged and maintained in generally parallel, side-by-side relationship, said strands having a thermosetting resin on the surface thereof,

(b) disposing individually across the tops of said warp strands single, substantially straight weft parallel strands derived from a substantially continuous source thereof, said weft strands disposed in transverse relationship with respect to each and every said warp strand traversed,

(c) bringing said weft strands, as disposed in step (b), in substantial contact with each said warp strand at the points of juncture of said weft strands with said warp,

said weft strands in step (b) repeatedly and sequentially receiving each of said weft strands, respectively, each time said warp is stopped, and

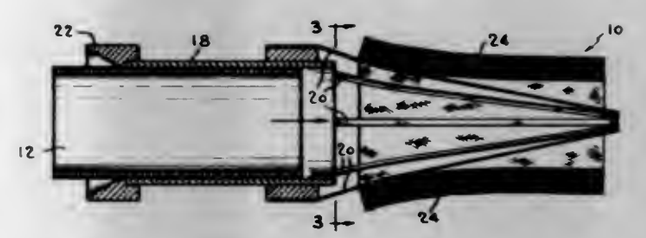
(d) while maintaining each said weft strand respectively in a state of stationary tension during and at the point in space of the initial contacting thereof with said warp strands in step (c), and while said warp strands are stationary, fixing said weft strands to each of said warp strands in a substantially permanent union at their respective junctures, by applying heat to said junctures,

(e) each said weft strand, respectively, maintained at substantially the same degree of tension during fixing thereof to said warp strands,

(f) severing said fixed weft strand at a point between said warp strands and said source of weft while said weft is in its position in space as set forth in step (d),

following completion of step (f) above, advancing said warp strands a predetermined distance, and repeating the cycle initiated in step (b) above, to provide a nonwoven fabric having a single layer of warp and a single layer of weft, wherein the tension in each of said warp strands is substantially equal, and the tension in each of said weft strands is substantially equal, when said warp strands are positioned in parallel, side-by-side relationship at the maximum separation permitted by any of said weft strands.

3,275,490
METHOD OF MAKING A PAINT ROLLER COVER
Kenneth R. Stoddart, Fond du Lac, Wis., assignor to Bestt Rollr Inc., Fond du Lac, Wis., a corporation of Wisconsin
Filed Mar. 5, 1963, Ser. No. 262,896
3 Claims. (Cl. 156—294)



1. A method of making a paint roller cover comprising the steps of; coating the grooved outside surface of a core with adhesive, passing the core through a cylinder which engages the core and removes excess adhesive while leaving the adhesive in the grooved portions substantially undisturbed, engaging the inside surface of a tubular pad by a plurality of rods which extend longitudinally in respect to said tubular pad and are arranged at one end of said pad in substantially circular relationhsip, advancing said core after it has passed through said cylinder into said one end thereby positioning said rods between said core and pad, simultaneously stripping said core and pad off said rods after said core has been fully inserted in said pad, and permitting the adhesive to dry thereby bonding said pad to said grooved outside surface.

3,275,491
LAMINATING WITH WET ADHESIVE WEBS

Donald Verne Redfern, Seattle, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

No Drawing. Continuation of application Ser. No. 37,513, June 20, 1960. This application Jan. 8, 1965, Ser. No. 424,213

7 Claims. (Cl. 156—313)

1. The process of laminating comprising

uniformly applying an aqueous, alkaline, phenol-formaldehyde resinous adhesive composition on both surfaces of an absorbent paper web

said adhesive composition being applied as a liquid including resin solids having a formaldehyde to phenol molar ratio between about 1.5 to 1 and 3 to 1

said adhesive composition being applied to said web at the rate of at least about 3 pounds of resin solids per 1,000 square feet of paper web;

immediately without substantial reduction of moisture from said liquid adhesive composition interposing said resin bearing paper web between the opposed surfaces of two laminae to be joined, and

thereafter subjecting said laminae and said interposed web to heat and pressure to consolidate and bond the same.

3,275,492
OPAL GLASS WITH A LOW COEFFICIENT OF THERMAL EXPANSION

Jean Leon Herbert, Saint Pierre-les-Nemours, Seine-et-Marne, France, assignor to Société des Verreries Industrielles Réunies du Loing, Paris, France

No Drawing. Filed Jan. 29, 1962, Ser. No. 169,661

Claims priority, application France, Feb. 3, 1961, 851,644

6 Claims. (Cl. 161—1)

1. An opacifiable borosilicate glass composition having a coefficient of expansion on the order of 25 to 50×10^{-7} consisting essentially on a mol percent basis of:

(a) 10–27% (equivalent to about 12–30 weight percent of B_2O_3

(b) 66–81% (equivalent to about 62–76 weight percent) of SiO_2

(c) 3–24% of an opacifying agent (RO) selected from the group consisting of ZnO, MgO, CaO, BaO, NiO, MnO, CoO, CuO and mixtures thereof,

(d) 1–7% alkali metal oxides (R_2O) selected from the group consisting of Li_2O, K_2O and Na_2O, and wherein there is an R_2O/RO mol ratio of 0.1 to 1.0 when K_2O and Na_2O are present and a mol ratio of 0.07 to 1.5 when Li_2O is present.

3,275,493
GLASS BODY HAVING SURFACE CRYSTALLINE LAYER THEREON AND METHOD OF MAKING IT

John F. MacDowell, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Aug. 8, 1962, Ser. No. 215,661

6 Claims. (Cl. 161—1)

1. A method of manufacturing a surface-crystallized glass body having a sound crystalline surface layer of cordierite crystals thereon comprising the steps of melting a glass-forming batch composition consisting essentially, by weight, of 40–57% SiO_2, 10–22% MgO, 30–40% Al_2O_3, 0.5–6% total of at least one modifying oxide selected from the group consisting of As_2O_3 and Sb_2O_3, and 0–6% total of at least one supplemental oxide selected from the group consisting of K_2O, Rb_2O, Cs_2O, PbO, CaO, Bi_2O_3, and Ta_2O_5, simultaneously cooling the melt below the transformation point of said melt and forming a glass shape therefrom, exposing said shape to a temperature of at least about 860° C., but not more than about 950° C., maintaining thereat for a time sufficient to attain surface crystallization, and thereafter cooling said shape to room temperature.

4. A glass body having a sound crystalline surface layer of cordierite crystals thereon, said crystals resulting from crystallization in situ from a glass body formed from a batch composition consisting essentially, by weight, of 40–57% SiO_2, 10–22% MgO, and 30–40% Al_2O_3, 0.5 to 6% total of at least one modifying oxide selected from the group consisting of As_2O_3 and Sb_2O_3, and 0–6% total of at least one supplemental oxide selected from the group consisting of K_2O, Rb_2O, Cs_2O, PbO, CaO, Bi_2O_3, and Ta_2O_5, said glass body consisting essentially of the uncrystallized portion of the glass remaining after crystallization of said crystals.

3,275,494
EMBOSSED ARTICLE FOR 3-DIMENSIONAL PRINTING COMPRISING A HOT MELT COATING

Marion O. Brunson and James E. Huffaker, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 21, 1962, Ser. No. 197,173

7 Claims. (Cl. 161—33)

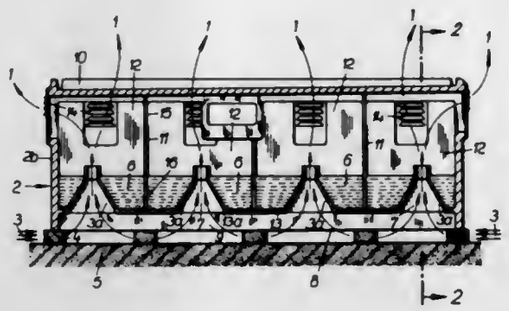
1. An embossed flexible sheet having a 3 dimensional appearance comprising a fibrous substrate which carries printing thereon upon which is securely adhered a flexible, tough, transparent, abrasion-resistant layer of a coating composition comprising a blend of 20–60% by weight of a copolymer of ethylene and ethyl acrylate having a melt index of 15 to 100 and containing an ethyl acrylate concentration of between 5 and 30%, and 40–80% polyethylene having a molecular weight of 4,000 to 12,000 and a density of 0.90 to 0.972 and having on the surface of the sheet an embossed lenticulated pattern.

3,275,495
MACHINE STAND AND COOLING MEANS THEREFOR

Edmund Lang, Babenhausen, Hesse, Germany, assignor to Elb-Schliff Edmund Lang, Babenhausen, Hesse, Germany

Filed Jan. 31, 1964, Ser. No. 341,649

1 Claim. (Cl. 165—47)



A stand for a machine and the like, comprising a substantially block-shaped member having a top wall forming a mounting for a machine and a bottom wall spaced above the ground and exposed to the surrounding air, at least one partition dividing the interior of said stand into separate chambers, each chamber forming a reservoir for a control liquid and each being vented adjacent the upper portion thereof, and a chimney insert extending upwardly from the bottom of each of said chambers through the liquid and above the level thereof and defining a cooling air flow path from the bottom of said machine upwardly in heat exchange relationship with the liquid surrounding said chimney insert and out through said vent.

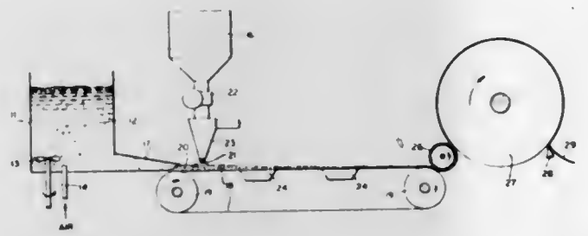
3,275,496
METHOD OF PRODUCING NON-WOVEN FABRIC

Kurt Sponsel, Mauerstrasse 51, Dusseldorf-Nord, Germany

Filed Sept. 28, 1964, Ser. No. 399,660

Claims priority, application Germany, Oct. 2, 1963, S 87,701

7 Claims. (Cl. 162—101)



1. The method of producing a non-woven fabric which comprises treating fibers to render them cationically charged, dispersing the charged fibers onto a layer of an anionically charged aqueous synthetic bonding material foam, removing water from the resulting mixture of fibers and foam and drying the bonded fibers.

3,275,497
METHOD OF MOLDING A COMBUSTION ELEMENT OF CERAMIC FIBERS ON A POROUS SUPPORT

Gerhart Weiss, Flushing, and Kurt W. Cornely, Syosset, N.Y., assignors to American Thermocatalytic Corp., Mineola, N.Y., a corporation of New York

Original application Jan. 17, 1962, Ser. No. 166,811, now Patent No. 3,179,156, dated Apr. 20, 1965. Divided and this application Sept. 23, 1964, Ser. No. 403,687

3 Claims. (Cl. 162—103)

1. Method of molding a combustion element comprising mixing discrete, amorphous, inorganic, ceramic fibers in a liquid bath containing a refractory metal compound which upon heating converts to the oxide of said metal, adding to the bath containing said fibers granules of a filler which is adapted to separate from said fibers on heating without leaving substantial residue, the filler:fiber ratio being from 2:1 to 24:1, immersing a porous support in said bath, passing bath through said support in a manner so as to deposit on one side of said support material from said bath of greater size than the size of the pores thereof, and heating the support and deposited material sufficiently to convert said refractory metal compound to the oxide of said metal, to evaporate residual bath liquid therefrom and to remove said filler.

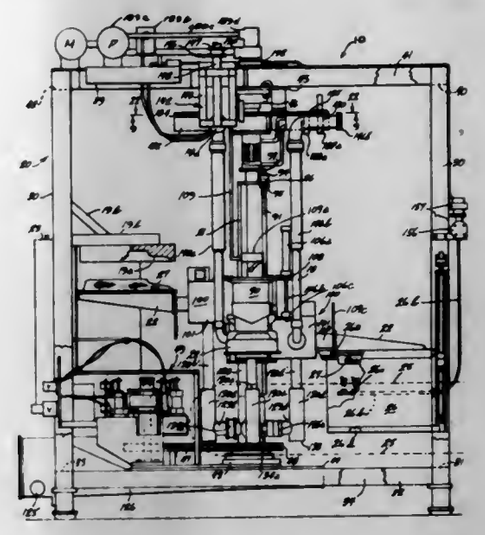
3,275,498
PULP MOLDING MACHINE

Donald J. Roth, St. Paul, Minn., Jean E. Zeller, Muskegon, Mich., and Harold V. Kindseth, Minneapolis, Minn., assignors to Bemis Bro. Bag Co., Minneapolis, Minn., a corporation of Missouri

Filed July 12, 1963, Ser. No. 301,929

15 Claims. (Cl. 162—253)

8. In a machine for molding articles by vacuum deposition of fiberous pulp onto a foraminous mold, the combination of a rotatable turret, a drive means for rotating said turret to a plurality of circumferentially spaced operating stations, a pulp container, a mold support means mounted for vertical movement upon said turret, a drive means for moving said mold support means vertically with respect to said turret, a foraminous mold mounted upon



said mold support and a motor mounted upon said support means and operatively connected to said foraminous mold for imparting rotation thereto.

3,275,499
STABILIZED ORGANIC SULPHUR-CONTAINING PHOSPHOROUS INSECTICIDES

Henry Kassler, Dan-y-Graig, Groes, Margam, Glamorgan, England, and Neville Garton Cutler, 22 Hool Fawr, North Cornelly, near Pyle, Glamorgan, England

No Drawing. Filed Mar. 13, 1963, Ser. No. 264,773

5 Claims. (Cl. 167—22)

1. An insecticidal composition having relatively low malodorous characteristics comprising O,O-dimethyl-S-(1,2-dicarbethoxyethyl) phospborodithioate and for each 100 parts by weight thereof, 0.5 part by weight of copper naphthenate and 1 part by weight of methyl ethyl ketone peroxide.

3,275,500
STABILIZED FUNGICIDAL COMPOSITIONS

Franco Pinamonti and Sergio Maccone, Milan, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,555

Claims priority, application Italy, Oct. 30, 1962, 21,323/62

6 Claims. (Cl. 167—22)

5. Stabilized fungicidal composition comprising manganese ethylene-bis-dithiocarbamate and at least 1% of phenylenediamine.

3,275,501
FUNGITOXIC AGENTS

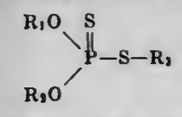
Gerhard Schrader, Wuppertal-Cronenberg, and Paul-Ernst Frohberger, Burscheid, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed June 3, 1964, Ser. No. 372,391

Claims priority, application Germany, June 4, 1963, F 39,907

6 Claims. (Cl. 167—22)

1. A method for controlling phytopathogenic fungi which comprises applying to said fungi a fungicidally effective amount of a compound of the formula



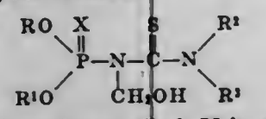
wherein R_1, R_2 and R_3 stand for lower alkyl having up to 4 carbon atoms.

3,275,502
PESTICIDAL PHOSPHORYLATED THIOUREA

Glenn R. Price and Edward N. Walsh, Chicago Heights, Ill., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 10, 1964, Ser. No. 374,180
10 Claims. (Cl. 167—22)

5. A method of controlling pests which comprises contacting said pests with a pesticidal amount of at least one compound having the formula:



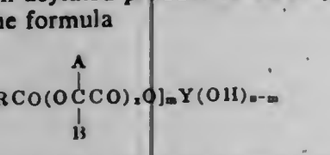
wherein R and R^1 are lower-alkyl, X is selected from the group consisting of sulfur and oxygen, R^2 is a hydroxyalkyl, and R^3 is selected from the group consisting of lower-alkyl and hydroxyalkyl.

3,275,503
METHOD FOR THE PROTECTION OF LOCI SUSCEPTIBLE TO THE GROWTH OF UNDESIRED MICROORGANISMS

Lawrence F. Marnett and Ralph J. Tenney, Kansas City, Mo., and Jerome B. Thompson, Cumberland, Md., assignors to C. J. Patterson Company, Kansas City, Mo.

No Drawing. Filed Aug. 26, 1964, Ser. No. 392,297
12 Claims. (Cl. 167—22)

1. A method for the protection of loci susceptible to the growth of undesired microorganisms against such growth which comprises subjecting such loci to an effective amount of an acylated product of an α-hydroxy carboxylic acid of the formula



wherein RCO is an acyl radical of a fatty acid of from 8 to 12 carbon atoms, each of A and B are selected from the group consisting of hydrogen and methyl, Y is a cation, x as an average is a number between about 0.3 and 6, n is an integer equal to the valence of the cation Y and m is a number from 1 to n.

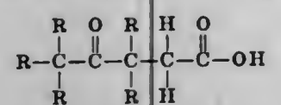
3,275,504
METHOD FOR CONTROLLING MICROBIOLOGICAL ORGANISMS WITH COMPOSITIONS COMPRISING HALOGENATED LEVULINIC ACID AND DERIVATIVES

Robert J. Herschler, Camas, Wash., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,356
9 Claims. (Cl. 167—22)

1. The method of controlling microbiological organisms which comprises applying to the situs of such organisms an effective concentration of at least one levulinic acid compound selected from the group consisting of

(a) halogenated levulinic acid having the formula:



wherein R is selected from the group consisting of hydrogen, chlorine and bromine and wherein at least one occurrence and up to four occurrences of R is selected from the group consisting of bromine and chlorine;

(b) the alkali metal salt, alkaline earth metal salt, heavy metal salt, primary lower alkylamine salt and secondary lower alkylamine salt thereof;

(c) the alkyl ester containing from one to ten carbon atoms and phenyl ester thereof;

(d) the N methyl, N,N dimethyl, N ethyl and N,N diethyl amide and phenyl amide thereof.

3,275,505
PROCESS FOR PREPARING A BIOCIDAL COMPOSITION COMPRISING HALOGENATED LEVULINIC ACID

Robert J. Herschler, Camas, Wash., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,357
6 Claims. (Cl. 167—22)

1. A process for preparing a biocidal composition having a broad spectrum of activity for controlling microorganisms comprising, hydrolyzing an hexose-yielding material by contacting said material with a water solution of an acid catalyst, separating the insoluble solids from the liquor thus formed, separating the catalyst from said liquor, stripping the readily volatile constituents from said liquor and removing a portion of the water from said liquor without removing a major portion of the high boiling soluble constituents, to isolate a concentrated product containing, predominately, levulinic acid and a minor amount of lactones and other low-volatile, soluble compounds, and halogenating said product with a halogen from the group consisting of bromine and chlorine to produce the biocidal composition.

3,275,506
MICROBIOCIDAL COMPOSITIONS

Karoly Szabo, Yonkers, and Silvio L. Giolito, Whitestone, N.Y., and Thomas B. Williamson, Santa Clara, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application June 8, 1961, Ser. No. 116,278. Divided and this application May 14, 1965, Ser. No. 462,469
5 Claims. (Cl. 167—22)

1. The method of inhibiting the growth of bacteria and fungi which comprises applying thereto a small but effective amount of chlorinated lower alkylalkanethiolsulfonate of the following formula:

$$R_1—SO_2—S—R$$

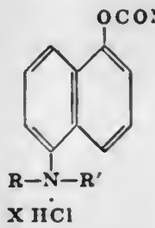
wherein R represents monochlorinated lower alkyl of from 2 to 4 carbon atoms and R_1 represents lower alkyl of from 1 to 2 carbon atoms.

3,275,507
AMINONAPHTHYL AND ALKYLAMINONAPHTHYL N-METHYLCARBAMATES AND INSECTICIDAL COMPOSITIONS THEREOF

John R. Kilsheimer, South Charleston, W. Va., and Herbert H. Moorefield, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Dec. 30, 1960, Ser. No. 79,522, now Patent No. 3,236,877, dated June 9, 1964. Divided and this application Oct. 7, 1965, Ser. No. 508,615
15 Claims. (Cl. 167—32)

6. The process for killing insects which comprises applying an insecticidal amount of a compound having the structural formula:



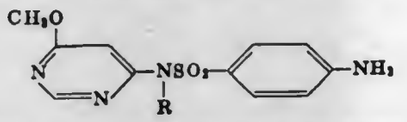
wherein X is an integer having a value of from 0 to 1, R and R′ are selected from the group consisting of hydrogen, lower alkyl and lower alkaryl radicals and R and R′ may be the same or different, to a locus to be protected.

3,275,508
METHOD FOR TREATMENT OF TOXOPLASMOSIS IN ANIMALS

Kiyoshi Tsunoda, Kodaira-shi, and Noriyuki Okuda, Tokyo-to, Japan, assignors to Daiichi Seiyaku Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

No Drawing. Filed July 6, 1964, Ser. No. 380,634
Claims priority, application Japan, July 16, 1963, 38/38,578
8 Claims. (Cl. 167—53)

1. A method for the treatment of toxoplasmosis in animals which comprises dosing an infected animal with at least one of the compounds of the formula:

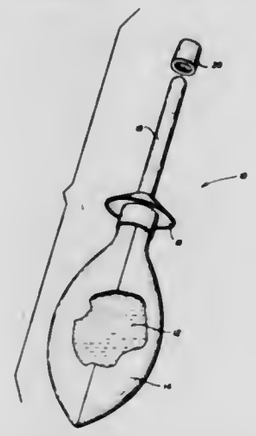


wherein R is a member selected from the group consisting of hydrogen, alkali metal, and alkaline earth metal.

3,275,509
METHOD FOR TREATING INTESTINAL DISORDERS WITH A SILICONE COMPOSITION ENEMA

Robert L. Rowan and Yetta Rowan, both of 141 E. 33rd St., New York, N.Y.

Filed Apr. 24, 1963, Ser. No. 275,369
4 Claims. (Cl. 167—56)



1. A method of treating intestinal disorders of the lower intestinal tract, which comprises the step of introducing a nontoxic organopolysiloxane liquid into the lower intestinal tract, via the rectum, thereby coating the walls of said lower intestinal tract with said liquid, said organopolysiloxane liquid having a viscosity within the range of 350 to 1000 centistokes.

3,275,510
TOPICAL ANTITUSSIVE PREPARATIONS

Louis Magid, Clifton, Paul Edward Sleezer, Mountain Lakes, and Paul Lowell Stefko, Clifton, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 8, 1962, Ser. No. 164,970
15 Claims. (Cl. 167—58)

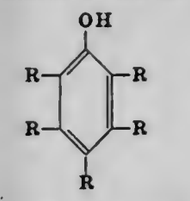
1. A process for reducing the incidence of coughs which comprises applying topically, to a subject requiring antitussive therapy, a preparation comprising a mixture of (1) an orally active antitussive agent selected from the group consisting of codeine, dihydrocodeinone, l-α-2-methyl-8-methoxy-6,7-methylenedioxy-1-(6,7-dimethoxy-3-phthalidyl)-1,2,3,4-tetrahydroisoquinoline, α-(dimethylaminoethyl)-o-chlorobenzhydrol, d-3-methoxy-N-methylmorphinan and medicinally acceptable acid addition salts thereof and (2) a lipophilic carrier.

3,275,511
COMBINED ANTIBIOTIC AND MYCOCIDE

Charles G. Shaw, deceased, late of Omemee, Ontario, Canada, by Walter Brackley Shaw, Marion Shaw, and Christina Isobell Connell, administrators, all of Omemee, Ontario, Canada, assignors, by mesne assignments, to Walter Brackley Shaw, Omemee, Ontario, Canada

Original application Aug. 23, 1957, Ser. No. 680,022. Divided and this application Mar. 22, 1966, Ser. No. 536,952
14 Claims. (Cl. 167—58)

1. A method of medical treatment comprising topically applying to tissue a complex of an antibiotic selected from the group consisting of Streptomycin, di-hydro Streptomycin, Neomycin, tetracycline, oxytetracycline, chlortetracycline, and a basic salt of penicillin complexed with a halogenated phenol having the formula:



wherein R is selected from the group consisting of hydrogen, halogen and hydroxy and wherein at least one R radical is always halogen.

3,275,512
PROCESS FOR TREATING INFLAMMATION WITH BIPHENYLCARBAMATES

Alan J. Lemin, Richland Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 166,358, Jan. 15, 1962. This application Nov. 27, 1962, Ser. No. 240,417
2 Claims. (Cl. 167—65)

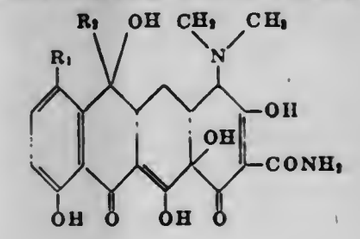
1. A process for the treatment of inflammation comprising the administration of 4-phenylphenyl methylcarbamate in association with a pharmaceutical carrier to and animal subject having inflammation of from about 3 mg. to about 45 mg. of 4-phenylphenyl methylcarbamate per kilogram of body weight of said subject.

3,275,513
STABLE CALCIUM TETRACYCLINE COMPOSITIONS

Robert Arnold Nash, Spring Valley, and Joseph Francis Weidenheimer, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 29, 1963, Ser. No. 283,973
12 Claims. (Cl. 167—65)

1. A preconstituted clear, physically and chemically stable, essentially neutral solution consisting of a tetracycline antibiotic represented by the general formula:



wherein R_1 is selected from the group consisting of hydrogen and chlorine and R_2 is selected from the group consisting of hydrogen and methyl, comprising from about 5 to about 125 mg. per ml. of the tetracycline antibiotic, substantially two molar equivalents of a physiologically acceptable soluble calcium salt per mole of antibiotic, about 15 to 25 percent w./v. of urea, in a physiologically acceptable polyhydric alcohol vehicle, at a substantially neutral p.H.

3,275,514

PROCESS FOR INTRODUCTION OF METALS INTO THE MAMMALIAN SYSTEM

Paul D. Saltman, 416 S. Michigan Ave., Pasadena, Calif., and Philip J. Charley, 1365 Ardenes Drive, Glendale, Calif.

Filed Apr. 12, 1960, Ser. No. 21,684
6 Claims. (Cl. 167—68)

1. A method for introducing a metal into the mammalian body, which comprises the administration of a complex consisting essentially of a reducing sugar and iron, said complex being prepared by reacting in aqueous solution said sugar and iron ions, the molor ratio of said sugar to said iron ions in the solution being at least 2:1, said complex being soluble and stable in aqueous media.

5. A method for introducing a metal into the mammalian body, which comprises the administration of a complex consisting essentially of a reducing sugar and calcium, said complex being prepared by reaction in aqueous solution said sugar and a soluble acid salt of calcium, the molar ratio of said sugar to said calcium in the solution being at least 2:1, said complex being soluble and stable in aqueous media.

3,275,515

PURIFICATION OF FAT MOBILIZING SUBSTANCES

Jan Willem de Vries, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

Filed Sept. 3, 1963, Ser. No. 306,130
Claims priority, application Netherlands, Sept. 21, 1962, 283,518
2 Claims. (Cl. 167—74)

1. In the method for the preparation of injectable pituitary extract fractions having fat mobilizing activity and which are substantially free from pressor activity, and including the steps of extracting pituitary glands in an aqueous medium, separating inactive solid material from the resulting extract by pH adjustment, and precipitating a crude pituitary concentate containing active fat mobilizing substances by means of ethanol, the improvement which comprises chromatographing said concentrate over a diethylaminoethyl ether derivative or cross-linked dextran gel, and separating the fat mobilizing substances present from substances having pressor activity by fractionated elution with a buffer selected from the group consisting of sodium acetate-acetic acid, ammonium acetate-acetic acid, pyridine-acetic acid, trimethylamine-acetic acid, and triethylamine-acetic acid, and recovering the fractions having fat mobilizing properties with no substantial pressor activity.

3,275,516

PITUITARY GLAND EXTRACT AND PROCESS FOR ITS MANUFACTURE

Samuel H. Eppstein, Charleston Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,938
2 Claims. (Cl. 167—74)

2. A process of preparing a manufacture from porcine pituitary glands comprising:

(1) mixing about equal volumes of a lower alkanol containing 1 to 3 carbon atoms, inclusive. and an aqueous solution of porcine pituitary gland crop sac principle at a pH of about 7 and a temperature below about 7° to precipitate said principle,

(2) dialyzing said precipitated principle against water at a temperature of from about 0° to about 20° C.,

(3) drying the dialyzed principle at a temperature below about 30° C.,

(4) preparing an aqueous solution of the dry principle and applying said solution to a column of cross-linked dextran gel having a water regain value of from about 7.5 to about 10 gms. per gm. of dry weight,

(5) eluting the column with an aqueous sodium bicarbonate solution, combining fractional eluates having pigeon crop sac activity and absorption of ultraviolet light of wave length about 280 mμ, removing salts therefrom, and concentrating the salt-free eluates to a dry powder,

(6) preparing a solution of the dry powder in an aqueous tris (hydroxymethyl)aminomethane buffer of ionic strength 0.1 and pH 8.2 and applying said solution to a column of diethylaminoethylcellulose,

(7) eluting the column with tris(hydroxymethyl)aminomethane buffer of pH 8.2 to establish a continuous linear gradient to ionic strength 0.5 and collecting fractional eluates therefrom,

(8) combining fractional eluates having pigeon crop sac activity and absorption of ultraviolet light of wave length about 280 mμ, removing salts and volatile material therefrom, and freeze-drying the salt-free eluates.

3,275,517

ANTI-TUMOR N-NITROSOMORPHOLINE

Jean Bradley Harrison, Niagara Falls, N.Y., and Howard E. Hoffman, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 7, 1964, Ser. No. 402,320
1 Claim. (Cl. 167—78)

A method of inhibiting tumor growth in an animal comprising administering to said animal from about 0.1 to about 75 milligrams of N-nitrosomorpholine per kilogram of body weight of the recipient.

3,275,518

TABLET COATING

Clarence J. Endicott, Winthrop Harbor, and William T. Martin, Waukegan, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Apr. 18, 1963, Ser. No. 273,817
4 Claims. (Cl. 167—82)

1. A method of coating tablets suitable for oral administration which comprises applying to a tablet a therapeutically acceptable coating composition which readily disintegrates in simulated gastric and intestinal fluids consisting essentially of

(a) a film-forming material selected from the group consisting of poly(methylstyrene), methylstyrene-acrylonitrile copolymers, vinyl butyral, poly(vinylchloride), pentaerythritol and alkyd esters of rosin, pentaerythritol esters of modified rosins and terpene-based alkyd resins, and

(b) a compound selected from the group consisting of glyceryl monostearate, diglycol stearate and a poly(ethylene glycol) having a melting point of at least 45° C.

3,275,519

PERORAL PELLET AND THE METHOD OF MAKING SAME

Jacob A. Glassman, 1680 Meridian Ave., Miami Beach, Fla.

Filed Oct. 1, 1965, Ser. No. 492,227
14 Claims. (Cl. 167—82)

1. The method of making a therapeutic pellet having an inner therapeutic portion and an outer therapeutic portion, and a layer of gelatin arranged between said portions comprising the successive treating of said gelatin layer with formalin and absolute alcohol to render it resistant to the acid environment of the stomach.

3,275,520

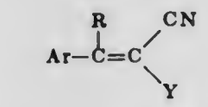
METHODS FOR PROTECTING THE SKIN AGAINST ACTINIC RADIATIONS

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., and Marvin R. Leibowitz, Edison, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 29, 1962, Ser. No. 198,448
10 Claims. (Cl. 167—90)

1. In a method for protecting skin against actinic radiations, the improvement which comprises applying to the skin a composition comprising

(I) a compound having the formula



wherein

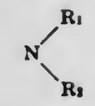
(1) R is a radical selected from the group consisting of hydrogen, alkyl, aryl, alkenyl and hetero;

(2) Y is selected from the group consisting of CN and



wherein:

X is selected from the group consisting of OR_3 and



R_1, R_2 and R_3 are independently any R radical; and

(3) Ar is a radical selected from the group consisting of aromatic carbocyclic nuclei and heterocyclic nuclei having at least one pair of conjugated double bonds, and

(II) a dermatologically acceptable carrier;

(III) said compound I being devoid of nitro groups and aromatic nuclear substituted amino groups.

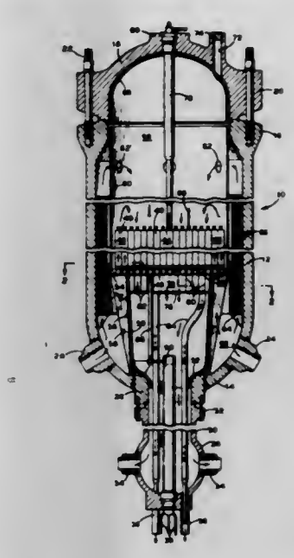
3,275,521

FAST BREEDER REACTOR ARRANGEMENT

Donald C. Schluderberg and Gordon R. Winders, Lynchburg, Va., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Nov. 15, 1963, Ser. No. 324,008
16 Claims. (Cl. 176—18)

1. A nuclear reactor comprising a pressure vessel having a plurality of fuel elements arranged as a core therein to undergo a fission-type chain reaction and having an operating neutron spectrum energy level substantially above the thermal neutron level, a plurality of elements containing fertile material arranged as a blanket surrounding said core, and means for passing a coolant fluid serially upward through the blanket elements laterally surrounding said core and then downwardly through said core elements.

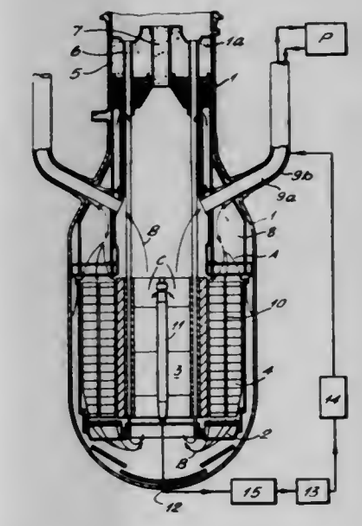


3,275,522

HIGH TEMPERATURE GAS COOLED REACTORS WITH INTERNAL FISSION BY-PRODUCT TRAPPING MEANS

Denis Victor Kinsey, Weymouth, Dorset, and Leon Jean Valette, Poole, Dorset, England, and Johan Lothe, Oslo, Norway, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 26, 1963, Ser. No. 268,038
Claims priority, application Great Britain, Mar. 28, 1962, 11,842/62
5 Claims. (Cl. 176—37)

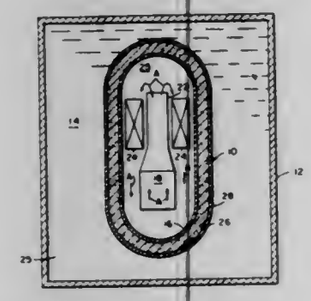


1. A graphite fuel bearing component for a high temperature gas cooled nuclear reactor having a fuel bearing region, means defining therein a channel for gaseous coolant, said channel having an inlet portion, an intermediate portion extending adjacent the fuel bearing region, and an outlet portion, said component being susceptible to corrosion by impurities in said gas stream, trapping means supported in said inlet portion, said trapping means comprising a porous body of graphite having at least one material incorporated therein to make said body reactive with respect to said impurities.

3,275,523
NUCLEAR REACTOR WET THERMAL INSULATION

Thomas MacKenzie Campbell, Jr., and Wallace Markert, Jr., Alliance, Ohio, assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 30, 1965, Ser. No. 452,419
3 Claims. (Cl. 176—44)



1. A wet containment for a nuclear fission reactor comprising:

(a) a nuclear reactor enclosed in a vessel immersed within a containment vessel filled with liquid coolant;

(b) a jacket surounding and spaced from said reactor vessel;

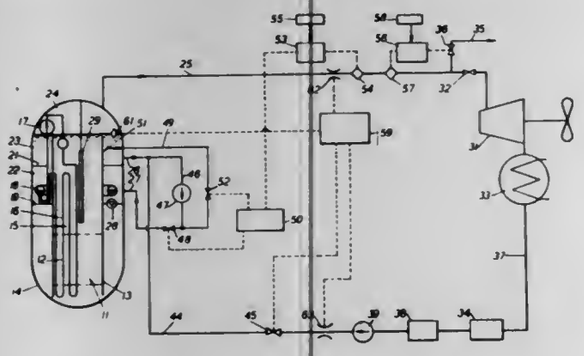
(c) a fine particulate of non-reactive, relatively poor thermally conductive material filling the space between said reactor vessel and said jacket, said particulate being saturated with said liquid coolant;

(d) and baffle means situated within said space and spaced from both of said reactor vessel and jacket to prevent the circulation of liquid coolant with said space between said pressure vessel and said jacket.

3,275,524
BOILING COOLANT REACTOR WITH IMPROVED RECIRCULATION AND BY-PASS CONTROL ARRANGEMENT

Ronald Peter Williams, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Dec. 26, 1963, Ser. No. 333,400
Claims priority, application Great Britain Jan. 8, 1963, 830/63
5 Claims. (Cl. 176—56)

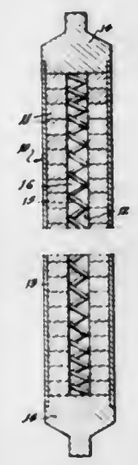


1. In a boiling coolant nuclear reactor having a nuclear core with a coolant inlet, a chamber to receive boiling coolant from the core, and a recirculation line including a circulator and connecting the boiling coolant chamber to the core coolant inlet for forced recirculation of liquid coolant from the chamber back to the core, the improvement, for varying the recirculation, comprising a by-pass line directly connecting the recirculation line at a point downstream of the circulator to the boiling coolant chamber for passing recirculating coolant from the recirculation line to the boiling coolant chamber, and means to vary controllably the flow rate in the by-pass line.

3,275,525
NUCLEAR FUEL ELEMENT INCORPORATING HELICAL FISSIONABLE WIRE

Clarence H. Bloomster and Joseph J. Hauth, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed July 20, 1965, Ser. No. 473,538
6 Claims. (Cl. 176—73)



1. A nuclear-fuel element comprising a long mass of ceramic fuel containing a relatively low amount of a material fissionable by neutrons of thermal energy and a varying helical wire of a metallic fuel containing a relatively high amount of a material fissionable by neutrons of thermal energy extending axially of the mass, wherein the varying helical wire is a helical wire of pitch varying from a maximum at a mid region to a minimum at the ends of the wire.

2. A nuclear-fuel element comprising a long mass of ceramic fuel containing a relatively low amount of a material fissionable by neutrons of thermal energy and a varying helical wire of metallic fuel containing a relatively high amount of a material fissionable by neutrons of thermal energy extending axially of the mass, wherein the varying helical wire is a helical wire of a diameter of helix varying from a minimum at a mid region in the length of the wire to a maximum at the ends of the wire.

3,275,526
METHOD FOR PRODUCING OROTIDINE

Teruo Shiro, Shimpachi Konishi, and Shinji Okumura, Kanagawa-ken, and Masahiro Takahashi, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Nov. 19, 1963, Ser. No. 324,823
Claims priority, application Japan, Nov. 20, 1962, 37/50,859
4 Claims. (Cl. 195—28)

1. A method of producing orotidine which comprises aerobically culturing at least one auxotroph of *Bacillus subtilis* which requires a nutrient including at least one of the group consisting of uracil, uridine and uridylic acid for growth, in an aqueous culture medium including a source of assimilable carbon, a source of assimilable nitrogen, inorganic salts, an organic growth promoting agent, and 5 mg./dl. to 15 mg./dl. of said nutrient required by said auxotroph at a temperature substantially between 27° C. and 37° C. and at a pH value of between 5.0 and 8.0 until orotidine is accumulated in said medium, and recovering said orotidine.

3,275,527
METHOD OF DETERMINATION OF THE CONTENT OF MICROORGANISMS IN AIR

Karl Heinrich Maier and Knut Voggel, Gottingen, Germany, assignors to Fa. Membranfilter-Gesellschaft G.m.b.H., Gottingen, Germany, a corporation of Germany

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,423
8 Claims. (Cl. 195—103.5)

1. In a process for the determination of the microorganism content of air by means of air-permeable membranes, the steps of passing air containing microorganisms through a microporous air-premeable membrane having a base consisting essentially of a water-soluble substance selected from the group consisting of gelatine, polyvinyl alcohol and methyl cellulose and each membrane having pores with an average diameter of about 2 microns, a pore density of about 10^7 pores per $cm.^2$, the entire volume of the pores ranging from 80–85% of the volume of the membrane and the air permeability of the membrane ranging from 10 to 400 liters per 100 $cm.^2$ per minute under a 500 mm. column of water, to accumulate microorganisms on the membrane, and forming cultures from the microorganisms accumulated on the membrane.

3,275,528
METHOD AND APPARATUS FOR CONTROLLING CULTURE GROWTH

Herman Ainis, Denver, Colo., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California

Filed Mar. 30, 1961, Ser. No. 99,463
2 Claims. (Cl. 195—104)

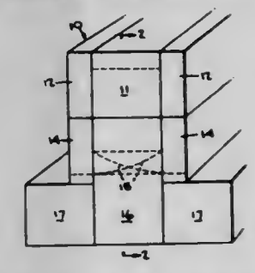
1. An apparatus for controlling culture growth comprising a housing including a gas chamber, a first fluid chamber positioned adjacent to said gas chamber, a second fluid chamber positioned adjacent to said first fluid chamber, means for circulating gas in and through said gas chamber, means for circulating fluid in and through said first fluid chamber, means for circulating fluid through said second fluid chamber, a first porous means positioned in said first fluid chamber and separating said gas chamber from said first fluid chamber, said first porous means having a pore size sufficient to pass molecules having a size on the order of that of insulin but insufficient to pass cells, and a second porous means positioned in said second fluid chamber and separating said second fluid chamber from said first fluid chamber, said porous means having a pore size sufficient to pass molecules having a size on the order of urea, but insufficient to pass molecules having a size on the order of insulin.

2. A method of controlling tissue growth in an apparatus having a gas chamber, a first fluid chamber and a second fluid chamber, said first fluid chamber being provided with a porous means separating said gas chamber from said first fluid chamber and having a pore size sufficient to pass molecules having a size on the order of insulin, but insufficient to pass cells, said second fluid chamber being provided with a porous means separating said first fluid chamber from said second fluid chamber and having a pore size sufficient to pass molecules having a size on the order of urea, but insufficient to pass molecules having a size on the order of insulin, comprising the steps of placing explanted cells in said first fluid chamber, subjecting said cells to a gaseous atmosphere compatible therewith, slowly passing a nutrient medium through said first fluid chamber and bathing said cells with said medium, slowly passing a like medium through said second fluid chamber whereby by-products having a size sufficiently small to pass through said second porous means are removed from said first fluid chamber, and collecting medium passed through said first fluid chamber whereby cell by-products having a size too large to pass through said second porous means are obtained.

3,275,529
FALLING FILM STILL HAVING CONVEX FILM FEEDING SPILLWAYS

Edward Charles Kehoe and Elwood C. Walker, North Caldwell, N.J., assignors, by mesne assignments, to Saline Water Conversion Corporation, a corporation of New York

Filed Dec. 28, 1962, Ser. No. 248,140
7 Claims. (Cl. 202—172)

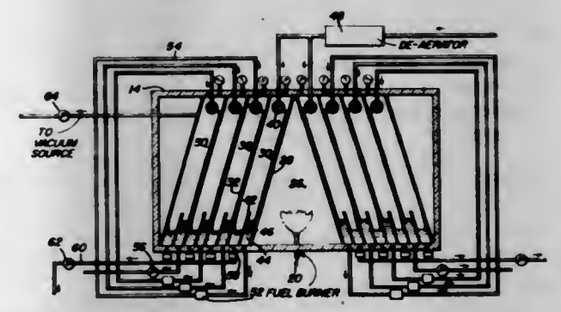


1. In a system of the class described, a housing, vapor diffusion means in said housing including opposed film plates forming a vertical channel therebetween, gently curved convex surfaces defining spillways at the upper end thereof merging flush with the plates, means supplying liquid to be vaporized to said housing to a level relatively to said spillways for delivery therealong and to said plates in thin film disposition, means at the lower end of said channel merging flush with said plates and diverging relatively to one another to lead the films on said plates to collection means offset from said channel, vapor collection means positioned below said channel and between said film collection means, condenser means, and means conducting the vapor from said collection means to said condenser.

3,275,530
MULTI-STAGE WATER DISTILLING APPARATUS

John N. Akers, Box 148, Columbia Theological Seminary, Decatur, Ga.

Filed Oct. 31, 1963, Ser. No. 320,407
2 Claims. (Cl. 202—174)



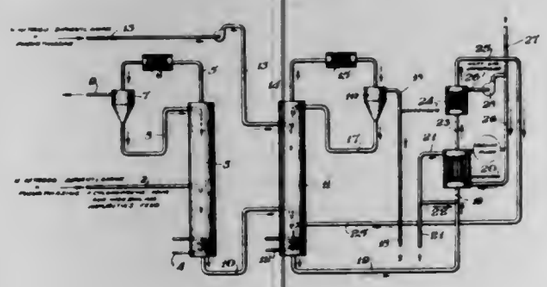
1. Apparatus for the distillation and recovery of potable distillate from saline water with comprises, a plurality of pressure sealed chambers disposed adjacent one another and in heat exchange relationship with each other, each of said chambers comprising an inverted V-shaped central heating chamber having a group of closely spaced parallel plates which are vertically inclined and arranged on opposite sides of a vertical axis extending centrally through said heating chamber, the groups of plates being oppositely inclined and wherein each plate is extended to the top and bottom walls of the chamber forming a plurality of evaporator-condenser compartments, a fuel burner disposed in the bottom of said central heating chamber, said heating chamber comprising a pair of oppositely inclined inner plates which form the side walls of said central chamber and which plates are directly heated by said burner, said plates of each compartment providing a heated evaporative plate surface facing towards said burner with a co-acting side surface on the next adjacent plate forming a condensing surface for con-

densate within each compartment, a de-aerator connected to an inlet conduit for conducting saline water into said evaporator-condenser compartments, said de-aerator being connected to a branched-pair of conduits for introducing saline water concurrently into the top of the compartments which include said oppositely inclined inner plates, nozzle means disposed on the discharge ends of each of said pair of conduits for effecting film-flow of saline water downwardly over the sloping surface of said inner plates while the same are heated by said burner, each of said compartments comprising a partition extending from the bottom of the compartment for a short length and dividing said compartment into two sub-compartments, one of said sub-compartments forming a collection trough for said saline water and the other a trough for collecting said condensate, means comprising a saline-conveying conduit connected to each of said saline collection troughs for introducing saline water progressively from one compartment into the top of the next succeeding evaporator-condenser compartment of the respective groups for supplying saline water thereto and film-flowing the same downwardly over the plates in succession, adjustable flow control valves connected to each of said saline-conveying conduits, pump means connected to the end compartment of each of said groups for conveying away unevaporated saline water, means comprising a condensate-withdrawing conduit for withdrawing condensate from each of said condensate collecting troughs, adjustable flow control valves connected to each of said condensate-withdrawing conduits, said adjustable flow valves in said saline-conveying conduits and said condensate-withdrawing conduits being connected in parallel and respectively adjusted so that a constant level of condensate and saline water respectively is maintained in said evaporator-condenser compartments, and vacuum pump means connected to the end compartment of one of said groups for maintaining subsatmospheric pressures in said compartments.

3,275,531
PURIFICATION OF CHLOROPRENE BY PLURAL STAGE DISTILLATION AND THE ADDITION OF POLYMERIZATION INHIBITORS

Kurt Sennewald and Wilhelm Vogt, Knapsack, near Cologne, and Hans Weiden, Rodenkirchen, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Sept. 25, 1963, Ser. No. 311,553
Claims priority, application Germany, July 28, 1960, K 41,309
4 Claims. (Cl. 203—8)

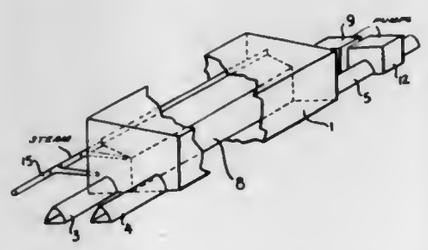


1. In the process for isolating and purifying crude chloroprene obtained by reacting monovinylacetylene with hydrogen chloride, deacidified by a water wash and containing monovinylacetylene and higher impurities such as dichlorobutene, dimeric chloroprene and methylvinyl ketone, which comprises separating in distillation stages chloroprene from said impurities and said monovinylacetylene, all separating stages being carried out in the presence of substances prohibiting polymerization, the improvement which consists essentially of withdrawing all monovinylacetylene at a temperature of 5° C. and 765 mm. Hg at the head of a first distilling stage, conducting the first stage's sump product consisting of chloroprene and higher boiling point impurities to a second distillation stage, distilling off pure chloroprene at a temperature of 60° C. and 765 mm. Hg at the head of said second stage, the temperatures and chloroprene partial pressures in the stills of the first and second distillation stages being between about 60–70° C. and between about 760 and 850 mm. Hg, respectively, conducting the second stage's sump product consisting of the higher boiling point impurities and residual chloroprene to a third distillation stage wherein the residual chloroprene is distilled off under reduced pressure below about 650 mm. Hg and reconducted into said second stage, all stages being carried out in the presence of a substance inhibiting the α-polymerization and being selected from the group consisting of hydroquinone, pyrocatechol and phenothiazine, and in the presence of N-nitrosodiphenylamine inhibiting the ω-polymerization.

3,275,532
METHOD OF RECOVERING WATER FROM SEA WATER

Ralph E. Harper, 2564 Ross Road, Silver Spring, Md.

Filed Apr. 9, 1962, Ser. No. 186,208
1 Claim. (Cl. 203—11)



A method of recovering pure water from sea water which comprises the steps of introducing a quantity of sea water into a gas-tight vessel, heating said sea water to cause water to evaporate and form water vapor in the space thereabove, introducing a quantity of pure water into the vessel adjacent said quantity of sea water but separated therefrom, said pure water and said sea water having a common water vapor space thereabove, introducing an additional quantity of pure water to raise the level of said pure water and to compress the water vapor in said space causing the vapor to condense as distillate which is collected in said pure water, thereafter withdrawing the resultant pure water and lowering its level, and simultaneously introducing sea water into the vessel at the same rate as the rate of withdrawal of said distillate to maintain the pressure in the vessel substantially constant and to assist in the withdrawal step, and reducing the level of the sea water to lower the pressure and to encourage evaporation of the sea water.

3,275,533
METHOD AND APPARATUS FOR AUTOMATIC TITRATION

Attila D. Boronkay, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Nov. 19, 1962, Ser. No. 238,585
9 Claims. (Cl. 204—1)

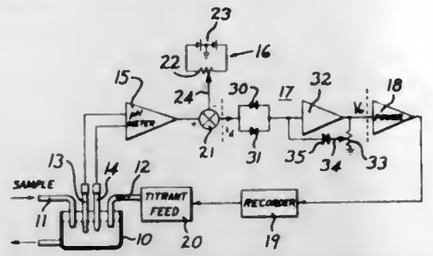
8. A method of continuous titration, including the steps of:

supplying a titration reagent;

mixing said reagent with a sample stream to form a sample-reagent mixture;

sensing the ion concentration of said mixture;

generating an electrical signal indicative of said concentration;



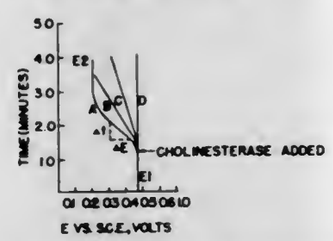
converting said signal into a control signal varying as the integral of an exponential thereof; and

utilizing said control signal to control the supply of titration reagent.

3,275,534
BIOELECTRIC METHOD FOR THE DETECTION OF ANTICHOLINESTER-ASES

Paul L. Cannon, Jr., Harrisburg, Pa., and David N. Kramer, Stevenson, Md., assignors to the United States of America as represented by the Secretary of the Army

Filed Mar. 19, 1963, Ser. No. 266,461
10 Claims. (Cl. 204—1)



1. A method of quantitatively detecting the presence of organophosphorus compounds which comprises:

(a) applying a low direct current across a negative and a positive electrode immersed in a stirred buffered aqueous solution of said compound and a lower alkanoyl thiocholine ester having a reference electrode therein,

(b) recording the potential between said positive electrode and said reference electrode,

(c) adding cholinesterase to said solution,

(d) recording the ratio of the change in potential between said positive electrode and said reference electrode with respect to the change in time from the addition of said cholinesterase, said ratio being inversely proportional to the concentration of said compound in said buffered solution.

3,275,535
METHOD OF PREPARING URANIUM FOR NICKEL PLATING

Jerry R. Lundquist and Robert W. Stromatt, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 22, 1966, Ser. No. 538,157
3 Claims. (Cl. 204—1.5)

1. A method of preparing uranium for electro-plating which comprises anodizing the uranium in an aqueous solution which is 5 to 7 M H_2SO_4 and 0.25 to 0.40 M HCl.

3,275,536
METHOD OF FORMING A BROWN COATING ON STEEL ARTICLES

John A. McCarthy, Monroeville, Pa., assignor to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed Nov. 6, 1962, Ser. No. 235,854
5 Claims. (Cl. 204—56)

1. A method of forming an adherent brown coating on steel articles comprising subjecting the articles to electrolysis as anode in a solution consisting essentially of water, from 300 to 900 grams of alkali-metal hydroxide per liter and from 10 to 250 grams per liter of a reagent selected from the group consisting of citric, gluconic, malic, mandelic, glycolic and tartaric acids and alkali-metals salts thereof, while maintaining said solution at a temperature of from 115 to 145° C.

3,275,537
PROCESS OF ANODIZING ALUMINUM

Jean Petin, Paris, France, assignor to Etablissements J. J. Carnaud & Forges de Basse-Indre, Paris, France, a corporation of the French Republic

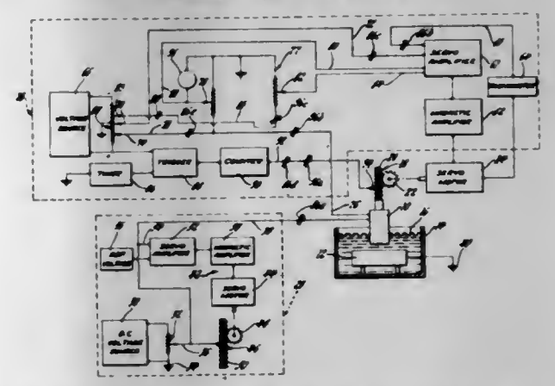
No Drawing. Filed Apr. 24, 1963, Ser. No. 275,201
Claims priority, application France, May 25, 1962, 898,751
3 Claims. (Cl. 204—58)

1. A method of anodizing aluminum comprising the step of employing the aluminum to be treated as the anode in a bath consisting essentially of an aqueous solution of a bisulfate of an alkali metal, of an organic acid selected from the group consisting of citric acid and tartaric acid, and of zinc sulfate.

3,275,538
ELECTROCHEMICAL MACHINING METHOD AND APPARATUS

Robert H. Haupt, Roseville, Mich., and Glenn E. Wanttaja, Hales Corners, Wis., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 20, 1960, Ser. No. 57,165
17 Claims. (Cl. 204—143)

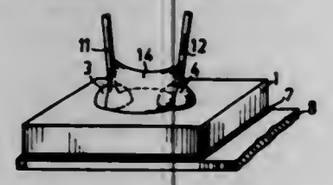


2. In electrochemical machining apparatus, the combination of conductive tool and workpiece electrodes spaced apart so as to provide a conductive medium filled gap therebetween, and a source of electrical energy applied across the gap so as to cause stock to be removed from the workpiece electrode, the source including means developing an error signal corresponding to variations in gap voltage relative to a predetermined reference and means operated by the error signal for varying the output of the source so as to cause the gap voltage to correspond to the predetermined reference regardless of gap spacing.

8. In the method of periodically adjusting the spacing of a conductive tool electrode and a conductive workpiece relative to each other during the electrochemical machining process of removing stock from the workpiece, the repetitive steps including positioning the workpiece and the electrode relative to each other so as to form a predetermined gap therebetween, applying electrical energy across the gap, moving the electrode and the workpiece towards each other so as to effect stock removal from the workpiece, interrupting the application of the electrical energy across the gap so as to stop the stock removal process after a predetermined interval, applying a voltage across the gap, moving the electrode and the workpiece relative to each other in a gap space reducing direction while sensing the gap voltage, stopping

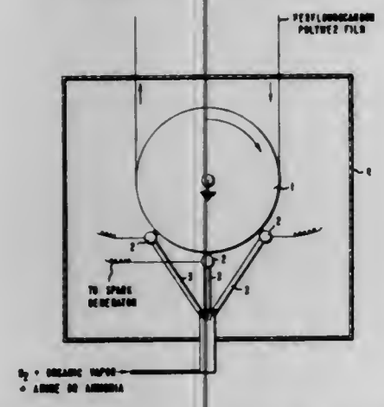
the relative movement of the electrode and the workpiece in the gap space reducing direction when the gap voltage is of a certain value, separating the electrode and the workpiece until the predetermined gap is re-established therebetween, and recommencing the stock removal process.

3,275,539
METHOD OF MANUFACTURING SEMICONDUCTOR DEVICES
Joseph Bernardus Marie Spaapen, Mollenhutseweg, Nijmegen, and Adrianus Cornelis Johannes Verhoeven, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,571
5 Claims. (Cl. 204—143)



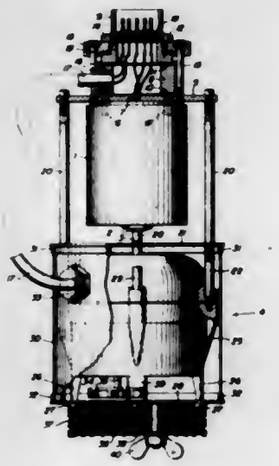
1. In the manufacture of a semi-conductor device comprising a semi-conductive body having two closely-spaced adjacent electrode portions on the same surface of the body, the method of selectively removing surface portions of the body leaving intact the surface portions intervening between the electrodes, comprising the steps of connecting a current-supply lead to each of the electrodes, depositing between the current-supply leads and on at least one of the current-supply leads at a point spaced from the body a drop of flowable masking agent such that it adheres to and flows along the said at least one lead, directed by said lead, toward the body, said current-supply leads being so closely spaced that, by virtue of surface tension forces, the drop accumulates between the leads to deposit on and cover substantially only that portion of the surface of the body extending between the leads, and thereafter subjecting exposed surface portions of the body to a body-material-removing etching treatment while the masking agent remains in position protecting the body surface portions between the electrodes from contact with the etchant.

3,275,540
SURFACE TREATMENT OF SHAPED ORGANIC POLYMERIC STRUCTURES
Richard T. McBride, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 1, 1963, Ser. No. 313,080
5 Claims. (Cl. 204—165)



1. A process for rendering surfaces of shaped structures of organic polymeric materials strongly adherent to other materials which comprises subjecting the surface of an organic polymeric shaped structure to the action of an electrical discharge at substantially atmospheric pressure between spaced positive and negative electrodes maintained at a voltage differential in excess of about 1000 volts, said electrical discharge having an energy level below 15 electron volts, in an atmosphere of a mixture of vapors comprising essentially the vapor of a compound selected from the group consisting of ammonia and amines wherein the amino group is the sole functional group and the vapor of an organic compound other than an amine wherein the amino group is the sole functional group of the compound, said compound having a vapor pressure of at least 0.25 mm. of mercury at 60° C., whereby to render said surface strongly adherable to other materials.

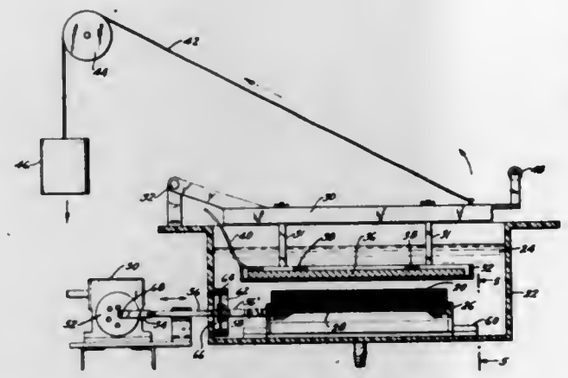
3,275,541
POLAROGRAPHIC CELL WITH MEMBRANE CLEANING MEANS
Roger K. Strong, Doylestown, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,430
1 Claim. (Cl. 204—195)



A polarographic cell structure comprising a polarographic cell having a pair of internal electrodes immersed in an electrolyte and a selectively permeable membrane separating said electrodes and said electrolyte from a liquid to be tested, a submersible pump means adapted for operation while submerged in the liquid to be tested, said pump means being attached to said cell including a motor means, a fluid impeller driven by said motor means, a pump enclosure housing said motor means and said impeller and having a fluid inlet and outlet, said outlet being positioned in spaced relation from but closely adjacent to the outside surface of the membrane, the outlet being positioned also in substantial axial alignment with said membrane to direct a stream of pumped test liquid against an outside surface of said membrane, and fluid tight connecting means operative to provide electric connections from associated equipment to said cell and said pump means.

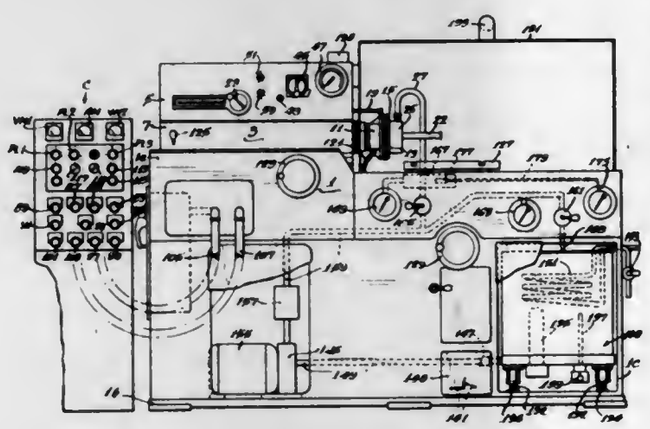
3,275,542
APPARATUS FOR ELECTROPLATING LEADS OF SMALL ELECTRONIC COMPONENTS
Philip L. Couture, Worcester, Mass., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Oct. 26, 1962, Ser. No. 233,301
2 Claims. (Cl. 204—222)

1. Apparatus for electroplating the leads of small electronic components, said apparatus comprising a tank for an electrolyte, a reciprocable carrier in said tank, stationary ways for slidably supporting and guiding said carrier for horizontal reciprocation, a relatively flat open-topped conductive basket made of metal mesh detachably received by said carrier and dimensioned to receive a very large number of said components, said ways and said carrier being made of a smooth corrosion-resistant plastics material and said carrier having one or more conductive strips engaging the basket for electrical contact, a pivoted anode carrier over said tank, an anode carried



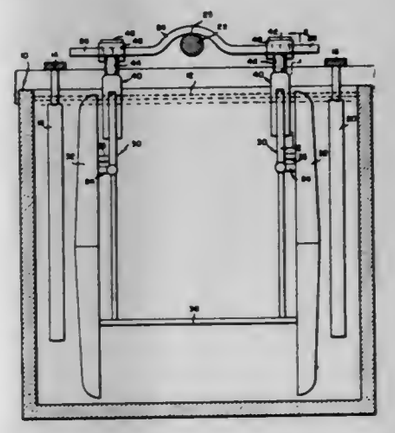
by said carrier and immersed in the electrolyte over the basket, counterbalance means to facilitate raising or lowering of the carrier to remove the anode and to expose the basket for ready removal and replacement, current supply leads extending to said anode and to the conductive strips of the carrier for electrical connection through the basket to the components therein, and motive means to reciprocate the carrier and basket.

3,275,543
ELECTROLYTIC CAVITY SINKING APPARATUS
Lynn A. Williams, Winnetka, Ill., assignor to Anocut Engineering Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 2, 1960, Ser. No. 73,154
2 Claims. (Cl. 204—224)



1. Apparatus for electrolytically forming a cavity in an electrically conductive and electrochemically erodible workpiece, comprising in combination, means mounting the workpiece, a hollow electrode, means mounting said electrode, means for relatively moving said workpiece mounting means and said electrode mounting means toward each other at a constant rate, an electrolyte supply tank, conduit means connecting said electrolyte tank to said electrode, an electrolyte pump in said conduit means for the delivery of electrolyte under pressure to the gap between the workpiece and said electrode, valve means in said conduit means for controlling the pressure of the electrolyte, separate heating and cooling means in said electrolyte tank for maintaining the temperature of the electrolyte at a desired level above the ambient temperature, and means connected to the workpiece and said electrode for passing a low voltage direct current between the workpiece and said electrode in a sense to make the workpiece anodic.

3,275,544
QUICK CHANGE PLATING BATH FIXTURE
John C. Gade, Warren, Ohio, assignor to Rockwell-Standard Corporation, a corporation of Delaware
Filed Apr. 13, 1962, Ser. No. 187,291
2 Claims. (Cl. 204—297)



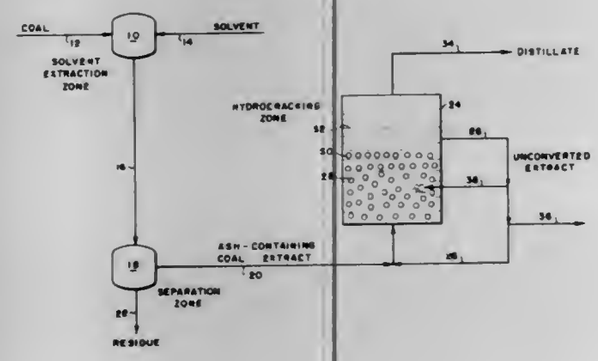
1. In an electrolytic apparatus of the type characterized by a plating tank having at least two laterally spaced parallel electrical conductor bars extending along the top of the tank with electrodes depending from said conductor bars into the electrolyte in said tank and an intermediate current carrying bar, a laterally extending current carrying cross bar slidably connected to said intermediate current carrying bar and extending toward said conductor bars, brackets slidably mounted on the opposite ends of said cross bar for displacement in the direction of the electrodes, each said bracket having a downwardly tapered non-circular open through socket provided with a restricted side opening, a hanger unit readily removably mounted on said bracket comprising a shank of such lateral dimensions as to fit laterally through said socket side opening, an enlarged tapered non-circular head of the same shape as the socket seated within said socket with a non-rotatable wedge fit and means below said shank rigidly mounting a work holding rack suspended in the electrolyte in suitable spaced relation to an electrode.

3,275,545
HYDROFINING OF MICROCRYSTALLINE WAX
Patrick P. McCall, New Monmouth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Apr. 16, 1963, Ser. No. 273,434
6 Claims. (Cl. 208—27)

1. A method of refining a raw microcrystalline wax so that is has at least a 12 TR color characteristic which comprises combining the said raw microcrystalline wax with a stream of hydrofined microcrystalline wax in such proportions that the concentration of 2 and 3 condensed ring aromatics in the combined wax is a maximum of

about 4% by weight, catalytically hydrofining the said combined wax feed containing a maximum of about 4% of 2 and 3 condensed ring aromatics, dividing the hydrofined wax in two portions, recycling one portion of said hydrofined microwax into a stream of the said raw microwax in such proportion that the said combined stream contains a maximum of about 4% by weight of 2 to 3 condensed ring aromatics, and recovering the said remaining portion of hydrofined microwax as product.

3,275,546
METHOD OF ATTRITING SOLIDS IN A HYDROCRACKING PROCESS
William B. Retallick, Canonsburg, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 28, 1962, Ser. No. 247,963
1 Claim. (Cl. 208—108)



The process for catalytically hydrocracking ash-containing coal extract which comprises

(a) establishing and maintaining a bed of catalyst in a catalytic hydrocracking zone,

(b) introducing ash-containing coal extract in a liquid state into the hydrocracking zone,

(c) maintaining the flow of liquid through the bed of catalyst under hydrocracking conditions at a velocity between 0.01 and 1 foot per second to maintain the catalyst as a liquid-phase, dense fluidized bed, whereby a portion of the ash-containing extract is converted to distillate products and at least a portion of the ash in the extract is deposited upon the catalyst, and

(d) recycling at least a portion of the unconverted coal extract in the liquid state into a local region of the liquid-phase, dense fluidized bed at a velocity between 5 and 50 feet per second, whereby a zone of relatively high turbulence is created in a portion of the bed wherein the ash-laden catalyst is attrited and thereby reactivated.

3,275,547
METHOD OF TREATING SEWAGE
Wilhelm Bucksteeg, Moorenstrasse 35, and Hans Thiele, Weserstrasse 75, both of Essen, Germany
Filed July 20, 1964, Ser. No. 383,748
1 Claim. (Cl. 210—5)

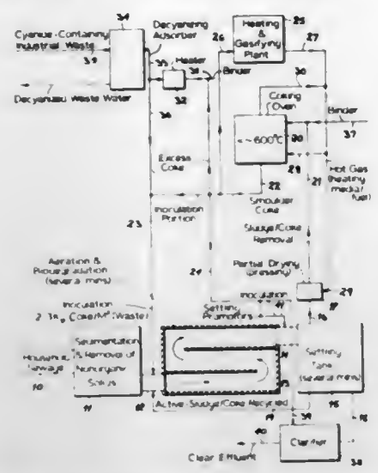
A method of treating raw sewage consisting at least in part of decomposable organic household waste, comprising the steps of:

(a) settling a sewage sludge from said raw sewage;

(b) cokefying said sludge by removing water therefrom and heating it in the absence of air at a temperature upwards of about 600° C. to produce an at least partially carbonized sludge smolder coke;

(c) agitating further quantities of said raw sewage prior to the settling of sludge therefrom;

(d) returning only a fraction of the smolder coke produced in step (b) to the raw sewage;



(e) thereafter settling sludge containing said coke from the agitated raw sewage for cokefication thereof.

3,275,548
REMOVAL OF DISSOLVED SUBSTANCES FROM AQUEOUS DISPERSIONS
Harold A. Walters, Beaverton, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 14, 1963, Ser. No. 302,009
5 Claims. (Cl. 210—24)

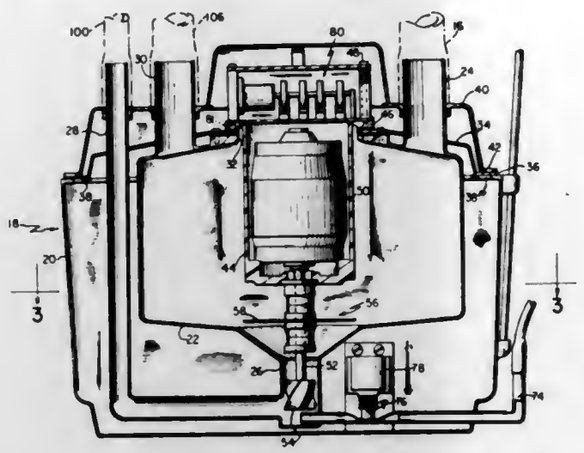
1. A method of separating dispersed organic material having a molecular dimension of less than about 300 Angstroms from an aqueous dispersion comprising contacting the aqueous dispersion with a finely divided adsorbent comprising a plurailty of synthetic resinous sphere-like particles, the synthetic resinous particles having a plurality of pores communicating with the surface thereof and the pores having diameters ranging up to about 300 Angstroms the synthetic resinous particles being prepared by the copolymerization of 5 mole percent divinylbenzene with 95 mole percent styrene in the presence of a solvent equal to twice the total volume of the divinylbenzene and styrene, the solvent being a mixture of 50 parts of toluene and 50 parts of octane, to form a rigid cross-linked solid and subsequently separating the resinous particles from the aqueous dispersion.

3,275,549
DESICCANT REGENERATION
Clarence R. Crabb, Lake Jackson, and Leighton S. McDonald, Angleton, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 31, 1963, Ser. No. 299,106
4 Claims. (Cl. 210—30)

1. A method for the removal of sorbed water from a cation-exchange resin which comprises contacting said resin with a halogenated hydrocarbon capable of forming an azeotrope with water, said azeotrope having a boiling point of from about 50° to 165° C., and maintaining said halogenated hydrocarbon-resin mixture at a temperature sufficiently high to effect distillation of said azeotrope.

3,275,550
METHOD AND APPARATUS FOR TREATING TOILET WASTE
Benjamin K. Daubenspeck, Stratford, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,555
14 Claims. (Cl. 210—60)

11. A method of treating waste deposited in marine toilets and the like comprising the steps of pumping a mixture of waste and water from the toilet to a chamber having a discharge pipe connected thereto, introducing a predetermined quantity of waste treating material to the chamber, pumping any material in said discharge pipe back into said chamber, agitating the contents of said



chamber, allowing the contents of said chamber to remain in a quiescent state for a period of time sufficient to permit said waste treating material to substantially reduce the bacteria count of said waste, and thereafter discharging the mixture into said discharge pipe.

3,275,551
DRILLING MUDS
Max R. Annis, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Dec. 27, 1962, Ser. No. 247,594
10 Claims. (Cl. 252—8.5)

6. A drilling mud containing an oil in water emulsion and sufficient amounts of a colloidal complex containing molybdenum, to inhibit sticking of drill pipe and drill collars, said colloidal complex being prepared by extracting an acidic aqueous solution of a molybdenum compound selected from the group consisting of molybdic acid, ammonium salts of molybdic acid, and metal salts of molybdic acid with a volatile oil-soluble solvent selected from the group consisting of ethers that are extractable from water and ketones having in the range of 4 to 10 carbon atoms, said acidic solution having been acidified with a mineral acid to an acidity within the range of 2 N to 12 N, dispersing the resultant oil-soluble solvent extract in an oil-soluble basic metal-containing dispersant having sufficient alkalinity to neutralize the free acidity of said extract, treating said dispersion with hydrogen sulfide and then removing the oil-soluble solvent from the dispersion.

3.275,552
WELL TREATING COMPOSITION AND METHOD
Curtis R. Kern and Herbert L. Rice, Houston, Tex., assignors, by mesne assignments, to Milchem Incorporated, a corporation of Delaware
No Drawing. Filed Apr. 23, 1963, Ser. No. 274,957
2 Claims. (Cl. 252—8.55)

1. A method of preparing a solid, water-soluble surface-active composition for use in wells, comprising the steps of melting crystalline sorbitol in the presence of molal quantities of (1) an amine consisting of a member selected from the group characterized by the generalized formulas

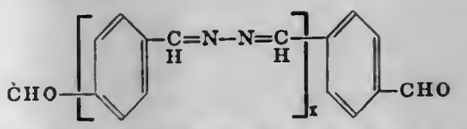
$$R_1N(R_2)(R_3) \text{ and } R_1CONHC_mH_{2m}N(R_2)(R_3)$$

wherein R_1 is an alkyl group containing from 10 to 20 carbon atoms, R_2 and R_3 are alkyl groups containing from 1 to 7 carbon atoms and m is an integer from 2 to 4,

and (2) a compound selected from the group consisting of sodium chloroacetate and sodium chloropropionate, conducting the reaction between said amine and said compound in the presence of the molten sorbitol at a temperature increasing from about 210° F. to about 350° F., and thereafter cooling the resulting reaction mixture to form a solid composition.

3,275,553
GREASE COMPOSITION
Joseph J. McGrath, Monroeville, and Chester S. Tempalski, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Oct. 1, 1964, Ser. No. 400,908
6 Claims. (Cl. 252—28)

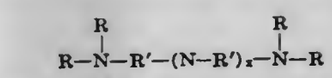
3. A lubricating composition comprising a dispersion in a major amount of a liquid polyorgano siloxane having diphenylmethylsilyl end groups of about 10 to about 25 percent by weight of a polyazine having the following structural formula



where x is an integer having a value of 4 to 16, said polyazine prior to being incorporated into the liquid polyorgano siloxane having been heated to a temperature of about 450° to about 600° F. for a time sufficient to reduce the weight of the polyazine by about 40 to about 60 percent and about 0.5 to about 5 percent by weight of finely-divided silica.

3,275,554
POLYOLEFIN SUBSTITUTED POLYAMINES AND LUBRICANTS CONTAINING THEM
Adriaan Hendrik Wagenaar, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 17, 1964, Ser. No. 352,677
Claims priority, application Netherlands, Aug. 2, 1963, 296,139
6 Claims. (Cl. 252—50)

1. A lubricating oil composition comprising a major amount of lubricating oil and a minor amount, sufficient to impart detergency of an oil-soluble polyolefin-substituted polyalkylene polyamine having the structural formula



where R is selected from the group consisting of hydrogen and polyolefin having a molecular weight of from about 700 to about 100,000, at least one R being polyolefin, R′ is an alkylene radical having from 1 to 8 carbon atoms and x is 0–5.

3,275,555
SYNTHETIC LUBRICANT CONTAINING OXETANE POLYMERS
Francis Henry Waight, Eastham, Wirral, Alexander C. B. MacPhail, Little Sutton, Wirral, and Derek Southern, Heswall, Wirral, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 3, 1963, Ser. No. 277,733
Claims priority, application Great Britain, May 11, 1962, 18,206/62
16 Claims. (Cl. 252—54.6)

1. A synthetic lubricating composition comprising a major amount of a dibasic ester of an aliphatic dicarboxylic acid and a branched chain aliphatic alcohol and from 0.5 to 10% of a polymeric halogen-containing oxetane having from 2 to 20 oxetane units each of which contains at least one halogen which is on carbons other than the carbons adjacent to the oxygen atom of each unit.

3,275,556
DEVELOPER COMPOSITION FOR ELECTRO-PHOTOGRAPHIC IMAGES

Graham C. Whitbread, Norton Summit, South Australia, Australia, assignor to Research Laboratories of Australia Limited, South Australia, Australia

No Drawing. Filed Oct. 18, 1963, Ser. No. 317.133
Claims priority, application Australia, Oct. 25, 1962, 23,601/62
4 Claims. (Cl. 252—62.1)

3. A toner for the overprinting of colour images by electrostatic means consisting essentially of a conjugated drying oil and a pigment suspended in an insulating hydrocarbon carrier liquid having a volume resistivity of at least 10^{10} ohm centimeter and a dielectric constant less than three, said conjugated drying oil being selected from the group consisting of dehydrated castor oil, tung oil, oiticica oil, and menhaden oil, approximately 0.1 to 2.0 grams of said drying oil and pigment being present in 100 milliliters of the carrier liquid.

3,275,557
METHOD OF MAKING MERCURY-DOPED GERMANIUM SEMICONDUCTOR CRYSTALS

Ray C. Hughes, Ardsley, N.Y., assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 13, 1963, Ser. No. 323,298
6 Claims. (Cl. 252—62.3)

1. A method of growing mercury-doped germanium semi-conductor crystals, comprising the step of crystallizing the germanium from a melt in a sealed system containing a weighed charge of mercury as the active dopant while maintaining the minimum temperature prevailing within any point of the system at a value at which the total mercury charge is fully vaporized establishing within the sealed system over the melt an unsaturated vapor of mercury whose pressure is determined by the said minimum temperature to dissolve in the melt an accurately controlled quantity of mercury.

3,275,558
DOUBLY DOPED TITANIUM DIOXIDE MASER ELEMENT

Edward S. Sabisky, Trenton, and Hendrik J. Gerritsen, Princeton, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed June 20, 1963, Ser. No. 289,332
8 Claims. (Cl. 252—62.5)

1. A composition of matter consisting essentially of titanium dioxide containing between 0.001 to 0.5 mol percent of one member of the group consisting of Er^{3+} and Co^{2+} and between 0.001 to 0.5 mol percent of at least one member of the group consisting of Cr^{3+}, Fe^{3+}, Ni^{2+} and Mn^{3+}.

3,275,559
HYDRAULIC FLUID

Clemence J. Henry, Newburgh, Paul R. Thomas, Beacon, and Peter Ferrence, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 14, 1963, Ser. No. 251,008
7 Claims. (Cl. 252—75)

1. A hydraulic transmission fluid adapted for automatic transmissions consisting essentially of at least 86 weight percent of a mineral lubricating oil, 0.05 to 0.15 weight percent of a reaction product prepared by reacting about 6 parts by weight of an N-C_{12-18} alkyl alkylene diamine and about 4 parts by weight of a liquid saturated C_{16-20} fatty acid at a temperature from room temperature up to about 140° F. and 0.10 to 0.25 weight percent of a liquid saturated C_{16-20} fatty acid, said hydraulic fluid having improved anti-squawking properties.

6. A hydraulic transmission fluid adapted for automatic transmissions consisting essentially of at least 86 weight percent of a mineral lubricating oil, 0.10 weight percent of reaction product prepared by reacting about 6 parts by weight of an N-tallow trimethylene diamine and about 4 parts by weight of a liquid saturated C_{18} fatty acid at room temperature, 0.15 weight percent of a liquid saturated C_{18} fatty acid, 0.5 to 6.0 weight percent of an oil concentrate containing 30–40 weight percent of a polymer of mixed alkyl esters of methacrylic acid having a molecular weight of at least 50,000, 4.0 to 7.0 weight percent of a 50 weight percent oil concentrate of a basic barium salt of an olefin-P_2S_5 reaction product, 0.5 to 2.0 weight percent of an oil concentrate containing 62 weight percent of a basic barium nonylphenolate, 0.2 to 1.0 weight percent of [4,4'methylene bis(2,6-ditertiarybutylphenol)] and 0.02 to 0.10 weight percent of a 50 weight percent oil concentrative of a zinc diamyl dithiocarbamate, said hydraulic fluid having improved anti-squawking properties.

3,275,560
METAL CLEANING PASTE

Rene D. Wasserman, Stamford, Conn., and Joseph F. Quaas, Island Park, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York

No Drawing. Filed May 23, 1962, Ser. No. 196,886
5 Claims. (Cl. 252—101)

1. A metal cleaning paste consisting essentially of a minor amount of from 1—20% by weight of fine particles of inert oxide material dispersed within a major amount of from 80–90% by weight of an active acid cleaning solution, from 1–99% by weight of said inert oxide material consisting essentially of a mixture of approximately equal amounts by weight of each of silica and aluminum oxide of one micron particle size and smaller, the balance of said inert oxide material being approximately 200 mesh and finer particle size above said one micron particle size to give body to said paste, and said active acid cleaning solution comprising the following constituents in the indicated ranges of percentages by weight of said solution:

Acid constituent:	Proportional range in percent by weight
HCl, concentrated	55–65
HNO_3, concentrated	10–20
H_2SO_4, concentrated	10–20
H_2O	5–20

3,275,561
LUBRICIOUS DETERGENT COMPOSITIONS

David J. Pye, Walnut Creek, and Donald K. Peterson, Los Angeles, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 3, 1957, Ser. No. 687,866
2 Claims. (Cl. 252—110)

1. A lubricious powered hand soap composition which consists essentially of from 50 to 80 parts by weight of borax, from 15 to 30 parts by weight of a ground soap consisting of the sodium salts of long-chain fatty acids and from about 0.5 to 4 parts by weight of acrylamide polymer, said polymer being water-soluble and selected from the group consisting of the homopolymer of acrylamide, copolymers of acrylamide with up to about 15 percent by weight of a member of the group consisting of methacrylamide, the lower alkyl esters of acrylic and methacrylic acids, vinyl chloride and vinyl alkyl ethers and copolymers of acrylamide with up to about 50 mole percent of a member of the group consisting of acrylic and methacrylic acids and the alkali metal salts thereof and said polymer being characterized by a viscosity of at least about 4 centipoises for a 0.5 percent by weight solution thereof in aqueous 4 percent by weight sodium chloride solution adjusted to a pH of 5 to 6 and a temperature of 25° C.

3,275,562
NON-CHROMATED ALUMINUM DESMUTTING COMPOSITIONS

Harold Vernon Smith, Philadelphia, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Nov. 12, 1963, Ser. No. 322,927
7 Claims. (Cl. 252—147)

1. Acidic aqueous solution for desmutting aluminum and aluminum alloys consisting essentially of water and hydrogen, ferric and fluoride ions, in which the hydrogen ion concentration lies within the range of 0.18 to 1.4 grams per liter, in which the ferric ion concentration lies within the range of 2 to 17 grams per liter, in which the fluoride ion concentration lies within the range of 0.4 to 3.3 grams per liter, in which solution the ratio of the hydrogen ion concentration to the ferric ion concentration lies within the range of 0.03 and 0.36 and in which solution the ratio of the fluoride ion concentration to ferric ion concentration does not exceed the values given by curve AB of the drawing for the corresponding ratios of hydrogen ion concentration to ferric ion concentration, the said solution also being substantially free of chloride ion, said hydrogen ion being provided by at least one compound selected from the group consisting of sulfuric acid, hydrofluoric acid, sulfamic acid, nitric acid, alkali metal acid sulfate, and ammonium acid sulfate, said ferric ion being provided by at least one compound selected from the group consisting of ferric sulfate, ferric fluoride, ferric formate, ferric nitrate and ferric fluosilicate, said fluoride ion being provided by at least one compound selected from the group consisting of ferric fluoride, ferric fluosilicate, alkali metal fluorides, alkali metal fluosilicates, alkali metal fluoborates, aluminum fluoride, ammonium fluoride, alkali metal acid fluorides, ammonium acid fluoride and hydrofluoric acid.

3,275,563
OFFSET ERASING FLUID

George M. Ort, Chicago, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,476
3 Claims. (Cl. 252—171)

1. A method for removing ink-receptive imaging material applied to the imaged areas of an offset master without altering the ink-repelling characteristics of areas contacted by said fluid in the vicinity of said imaged areas, comprising applying an erasing fluid to said imaged areas in which the fluid consists essentially of from 50–70 volume percent of a chlorinated hydrocarbon solvent and from 30–50 volume percent of a solution of a hydrated salt selected from the group consisting of stannic chloride and ferric chloride and in which the salt is present in an amount within the range of 0.02 to 0.2 grams per ml. in a lower aliphatic alcohol.

3,275,564
PROCESS OF FABRICATION OF SINTERED COMPOUNDS BASED ON URANIUM AND PLUTONIUM

Roger Pascard, Issy-les-Moulineaux, France, assignor to Commissariat a l'Energie Atomique, Paris, France

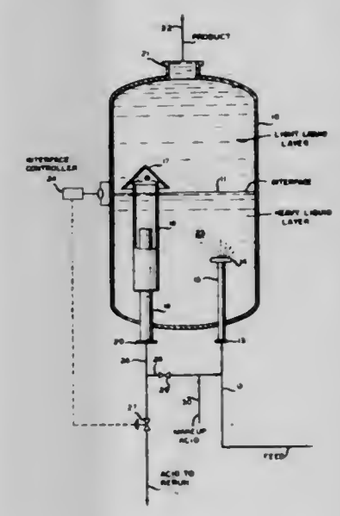
No Drawing. Filed June 11, 1963, Ser. No. 286,958
Claims priority, application France, June 20, 1962, 901,290
9 Claims. (Cl. 252—301.1)

1. A process for the production of a sintered uranium-plutonium product comprising the steps of grinding to a powder, fragile particles of a uranium-plutonium alloy, the plutonium content of which is from 15 to 80%, and compounding said uranium-plutonium powder by compressing and sintering the ground powder in the presence of compounding metallic and nonmetallic materials selected from the group consisting of molybdenum, niobium, tantalum, zirconium, carbon, silicon, nitrogen and hydrogen sulphide.

3,275,565
IMMISCIBLE LIQUID CONTACTING AND SEPARATION APPARATUS

Howard R. Sailors, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 23, 1963, Ser. No. 282,644
1 Claim. (Cl. 252—360)



Liquid contacting and separation apparatus for mixing and separating two immiscible liquids comprising:

a vessel adapted to be filled with said immiscible liquids;

liquid interface control means positioned to sense an interface at a preselected level in said vessel, said level being located in the central region of said vessel;

first conduit means positioned within said vessel and extending vertically from a region below said preselected level to a region above said preselected level, the lower end of said first conduit means being in open communication with the lower region of said vessel and the upper end being in open communication with the region above said level;

deflector means positioned above and in spaced relationship with the upper open end of said first conduit means, said deflector means covering the opening of said first conduit means so as to prevent liquid from flowing directly downwardly into said upper open end of said first conduit means from the upper region of said vessel;

second conduit means extending from a region exterior of said vessel into said vessel and terminating in a liquid dispersing means at a region intermediate the lower and upper ends of said first conduit means to permit introduction of liquid into said vessel;

third conduit means positioned inside and extending from the interior and lower open end of said first conduit means and communicating at its upper end with a region intermediate the lower and upper ends of said first conduit means, said third conduit means extending outwardly and to a region exterior of said vessel to remove liquid from said vessel;

fourth conduit means communicating with the top of said vessel above said preselected level to remove liquid from said vessel;

a valve in said third conduit means; and

means responsive to said liquid interface level control means to adjust said valve so as to maintain the liquid interface within said vessel at said preselected level.

3,275,566
CORROSION-INHIBITED PHOSPHATE SOLUTIONS
Robert P. Langguth, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 16, 1965, Ser. No. 487,926
10 Claims. (Cl. 252—389)

1. A liquid aqueous ammonium phosphate solution having a pH above about 7.2 and in contact with a material selected from the group consisting of copper and copper alloys; said solution consisting essentially of at least about 0.5 weight percent of an ammonium phosphate salt dissolved therein selected from the group consisting of monoammonium orthophosphate, diammonium orthophosphate and mixtures thereof and from about 0.01 to about 10 weight percent of a water soluble inorganic thiosulfate compound dissolved therein.

3,275,567
METHOD OF PREPARING A SULFIDED PLATINUM ON CARBON CATALYST
Carl D. Keith, Summit, and Daniel L. Bair, Roselle Park, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed June 27, 1963, Ser. No. 290,931
3 Claims. (Cl. 252—439)

1. A method for preparing a sulfided platinum on carbon catalyst which comprises admixing particulate carbon with an aqueous solution of a compound of platinum with platinum in the two-valent state, treating the resultant slurry with an alkaline material to effect hydrolysis and deposition of the platinum as a platinum oxide on the carbon support, reducing the supported platinum oxide to metallic platinum in an aqueous slurry, treating the metallic platinum on carbon in an aqueous slurry with a sulfiding agent to convert the platinum on carbon to a sulfide of platinum, and separating the carbon particles having the sulfide of platinum thereon.

3,275,568
LOWER VALENT TITANIUM-ALUMINUM HALIDES
Robert Holroyd Stanley, Hartburn, Stockton-on-Tees, and Derek Howden, Nunthorpe, England, assignors to British Titan Products Company Limited, Billingham, England, a corporation of the United Kingdom
No Drawing. Filed Nov. 13, 1962, Ser. No. 237,346
Claims priority, application Great Britain, Nov. 13, 1961, 40,569/61
10 Claims. (Cl. 252—442)

1. In the reaction in a liquid reaction medium of a titanium tetrahalide and aluminum metal to produce a lower valent titanium-aluminium halide composition, the improvement comprising introducing at least 1 mole of free halogen per 100 moles of tetrahalide into said reaction medium and initiating said reaction in the reactive presence of free halogen.

3,275,569
LOWER VALENT TITANIUM-ALUMINIUM HALIDES
Robert Holroyd Stanley, Stockton-on-Tees, and Derek Howden, Nunthorpe, England, assignors to British Titan Products Company Limited, Durham, England, a company of the United Kingdom
No Drawing. Filed Jan. 18, 1963, Ser. No. 252,313
Claims priority, application Great Britain, Jan. 23, 1962, 2,448/62
12 Claims. (Cl. 252—442)

1. In the reaction in a liquid reaction medium of a titanium tetrahalide and aluminum metal to produce a lower valent titanium-aluminium halide composition, the improvement comprising initiating said reaction in the reactive presence of a hydrogen halide.

3,275,570
LOWER VALENT TITANIUM-ALUMINUM HALIDES
Harry Julius Emeleus, Cambridge, and Derek Howden, Nunthorpe, England, assignors to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom
No Drawing. Filed July 8, 1963, Ser. No. 293,258
Claims priority, application Great Britain, July 13, 1962, 27,034/62
16 Claims. (Cl. 252—442)

1. In the reaction in a liquid reaction medium of a titanium tetrahalide and aluminium metal to produce a lower valent titanium-aluminium halide composition, the improvement comprising initiating said reaction in the reactive presence of an interhalogen compound having the formula AB_x wherein A and B are different halogen atoms other than fluorine and x is an integer from 1 to 3.

3,275,571
CRYSTALLINE ZEOLITE COMPOSITION AND METHOD OF PREPARATION THEREOF
William Judson Mattox, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 11, 1962, Ser. No. 222,923
14 Claims. (Cl. 252—451)

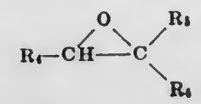
1. In a process for forming a crystalline alumino-silicate zeolite imbedded in a siliceous matrix, said crystalline alumino-silicate zeolite having been prepared by the interaction of compounds capable of providing alumina, silica, and metal oxides, whereby crystalline alumino-silicate zeolite crystals are allowed to crystallize out of mother liquor solution, the improvement which comprises adding a solution of colloidal silica to an admixture of mother liquor and alumino-silicate zeolite crystals under conditions sufficient to form a gel, the amount of said colloidal silica being sufficient to produce a final product comprising 5 to 90 wt. percent of said crystalline alumino-silicate zeolite imbedded in a silica gel matrix, and thereafter recovering said product.

3,275,572
REFRACTORY COMPOSITION AND ELECTRICAL RESISTANCE MADE THEREFROM
Samuel Ruben, 53 Seacord Road, New Rochelle, N.Y.
No Drawing. Filed Oct. 11, 1961, Ser. No. 144,292
10 Claims. (Cl. 252—518)

4. An electrically conducting oxidation-resistant pressed and sintered refractory composition resistant to oxidation at high temperatures characterized by a stable electrical resistance and by a temperature coefficient of resistance which is adjustable between positive and negative values by adjusting the proportion of its constituents, said composition consisting essentially of 2% to 25% by weight of vanadium pentoxide, 1% to 20% by weight of stannous oxide, and the balance molybdenum disilicide, and said composition being the reaction product of heating the mixture of the compacted constituent powders to a temperature between about 1000° C. and about 1200° C. for a period sufficient to cause exothermic reaction of the said constituent powders but insufficient to cause loss of stannous oxide due to volatilization.

3,275,573
POLYMERIC EPOXIDES
Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed June 30, 1964, Ser. No. 379,390
6 Claims. (Cl. 260—2)

1. A solid essentially wholly amorphous copolymer of an epoxide containing at least one aliphatic halogen group and at least one other epoxide selected from the group consisting of styrene oxide, cyclohexene oxide and phenyl glycidyl ether, said copolymer having a reduced specific viscosity of at least about 0.5 as measured on a 0.1% solution of the copolymer in α-chloronaphthalene at 100° C, said epoxide containing at least one aliphatic halogen group having the formula



where at least one of R_4 and R_5 is hydrogen and the other is selected from the group consisting of hydrogen, alkyl and haloalkyl groups, and R_6 is selected from the group consisting of haloalkyl and haloalkoxyalkyl groups.

3,275,574
COORDINATION POLYMERS INVOLVING DOUBLY BRIDGED TRIVALENT OCTAHEDRAL METALS
Anthony J. Saraceno, Flourtown, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed July 15, 1964, Ser. No. 382,924
18 Claims. (Cl. 260—2)

1. A polymer having an inorganic backbone consisting of a doubly bridged, trivalent, octahedral metal coordinated with two unidentate ligands wherein each of said bridging groups is the anion of an acid $R_2M'(O)OH$ where R is alkyl, aryl, alkyloxy or aryloxy, M′ is an element selected from group VB having an atomic number greater than 7, and wherein one of said unidentate ligands is a negative monovalent ion and the second unidentate ligand is a neutral molecule selected from the group consisting of water and ammonia.

14. The process of reacting a divalent metal salt having a coordination number of six in its trivalent state with an acid anion of structure $R_2M'(O)O^-$ where R is a member of the group consisting of hydrocarbon alkyl and aryl containing from one to ten carbon atoms, and M′ is an element selected from group VB having an atomic number greater than seven and thereafter oxidizing the metal in the product to the trivalent oxidation state, said oxidation occurring in the presence of a neutral ligand selected from the group consisting of water and ammonia and a univalent ligand.

3,275,575
CATION EXCHANGE MEMBRANE FROM A SULFATED POLYVINYL ALCOHOL
Merlyn W. Fogle, Toledo, Ohio, assignor to Eltra Corporation, a corporation of Ohio
No Drawing. Filed Apr. 17, 1962, Ser. No. 188,247
6 Claims. (Cl. 260—2.2)

2. A cation exchange membrane comprising a mixture of polyvinyl alcohol, diglycidyl ether of glycerin and fluoroboric acid, formed as a membrane and heat cured, and thereafter sulfated in a mixture of glacial acetic acid and chlorosulfonic acid.

3. A cation exchange membrane comprising a mixture of polyvinyl alcohol in water, diglycidyl ether of glycerin and diethylene triamine, forming the mixture as a membrane and heat curing, and thereafter sulfating the membrane in a mixture of glacial acetic acid and chlorosulfonic acid.

3,275,576
CATION-EXCHANGERS FROM CROSS-LINKED POLYHYDROXY MATERIALS
Per G. M. Flodin, Perstorp, Johan A. O. Johansson, Uppsala, and Stig Å. I. Carlsson, Molnlycke, Sweden, assignors to Aktiebolaget Pharmacia, Uppsala, Sweden, a Swedish company
No Drawing. Filed Nov. 23, 1965, Ser. No. 509,415
Claims priority, application Sweden, June 12, 1959, 5,620/59
2 Claims. (Cl. 260—2.2)

1. As a novel compound, a copolymerizate of:
(a) a member selected from the group consisting of dextran, sucrose, starch, sorbitol, dextrin; polyvinyl alcohol and hydroxyethyl cellulose,
(b) a bi-functional organic substance selected from the group consisting of epichlorohydrin, bis-epoxypropyl-ether and ethylene glycol-bis-epoxy propyl ether which is capable of linking together the aforesaid members by the formation of ether linkages;
(c) said copolymerizate originally containing from 10 to 35 percent of hydroxyl groups, based on the weight of the dry substance, and having from 6 to 50 percent of their hydroxyl groups originally present in the formation substituted by a member selected from the group consisting of radicals of the type R_1Y, wherein
(d) R_1 is an alkylene containing from one to two, inclusive, carbon atoms, and
(e) Y is selected from the group consisting of carboxyl and sulfo; and said novel compound,
(f) being insoluble in water but capable of swelling therein;
(g) having a water regain within the range of 1–50 grams per gram of the dry compound, and
(h) having an ion-exchange capacity within the range of from 2 to 6 milliequivalents per gram of the dry compound.

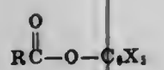
3,275,577
PREPARING FOAMS OF POLYPROPYLENE-BUTENE-1 COPOLYMERS
Donald F. Hoeg, Mount Prospect, Ill., and Samuel Liebman, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,833
4 Claims. (Cl. 260—2.5)

1. A method for preparing foams of propylene-butene-1 copolymers which comprises polymerizing a mixture comprising from about 55 to about 75 mole percent propylene and from about 45 to about 25 mole percent butene-1 in the presence of a catalyst mixture comprising a halide of a transition metal of the fourth to sixth groups of the periodic table and a lower alkyl-metallic compound of a metal of the second to third column of the periodic table at a temperature of from about 50 to about 85° C. until from about 15 to about 75% by weight of said propylene-butene-1 is copolymerized, and removing the unpolymerized propylene and butene-1 from the polymerization mixture by evaporation through release of pressure to form a stable foamed propylene-butene-1 copolymer.

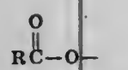
3,275,578
FLAME RESISTANT URETHANE POLYMER COMPOSITIONS OF IMPROVED DIMENSIONAL STABILITY CONTAINING A PENTAHALOPHENYL ESTER AND AN ANTIMONY COMPOUND
Joseph J. Pedjac, Mount Pleasant, and Charles T. Pumpelly, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 12, 1963, Ser. No. 329,942
6 Claims. (Cl. 260—2.5)

4. A self-extinguishing foam having improved dimensional stability comprising a normally flammable polyurethane resin in intimate admixture with from about

2 to about 5 percent, based on the weight of the foam, of an antimony compound selected from the group consisting of the oxide, chloride, bromide, iodide, oxychloride and sulfide; and an amount of a pentahalophenyl ester having the formula



wherein



is the radical of an alkanoic acid having from one to four carbon atoms and X is chlorine or bromine sufficient to provide about 1.5 to about 10 percent halogen in the foam.

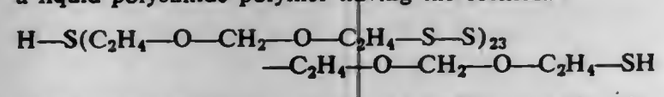
3,275,579
POLYSULFIDE POLYMER SEALING COMPOSITION

Robert F. Stierli, Lexington, and John Becker, Winchester, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Jan. 22, 1964, Ser. No. 339,355
6 Claims. (Cl. 260—6)

1. A composition which is devoid of water comprising a liquid polysulfide polymer containing recurring disulfide linkages (—S—S—) and is a polyfunctional mercaptan, zinc oxide particles coated with a water-soluble adhesive, said adhesive being present in an amount of about 0.5 to 2.0 percent by weight of the zinc oxide, and an amine-carrying molecular sieve containing 2 to 10 percent amine by weight of the zinc oxide wherein the amine is an accelerator for the zinc oxide.

5. A composition which is devoid of water comprising a liquid polysulfide polymer having the formula



a molecular weight of approximately 4000, and a viscosity of 350–450 poises at 80° F.; zinc oxide particles coated with water-soluble glue, said glue being present in an amount of 1.0 to 2.0 percent by weight of the zinc oxide; and 84 parts by weight of a triethylene tetramine-carrying molecular sieve containing 15 percent by weight of amine.

3,275,580
SHAPED ARTICLES CONTAINING CELLULOSE CRYSTALLITE AGGREGATES HAVING AN AVERAGE LEVEL-OFF D.P.

Orlando A. Battista, Drexel Hill, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,211
6 Claims. (Cl. 260—17.4)

1. A shaped article of a mixture of filament and film-forming synthetic thermoplastic resin and less than 50% by weight of the mixture of cellulose crystallite aggregates having an average level-off D.P. of from 15 to 375.

3,275,581
COPOLYMERIZATES INCLUDING METHYL GLUCOSIDE ALLYL ETHERS AND PROCESS OF PREPARING SAME

Richard G. Schweiger, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Aug. 27, 1963, Ser. No. 304,957
26 Claims. (Cl. 260—17.4)

1. The copolymer of allyl methyl α-D-glucoside and acrylamide.

8. The product obtainable from the copolymer of claim 1 by saponification thereof with an alkali metal hydroxide.

15. The process of producing a polymer which comprises reacting an allyl ether of methyl α-D-glucoside with acrylamide in the presence of a polymerization catalyst, said reaction being carried out at a sufficient temperature and for a sufficient period of time to allow copolymerization to take place.

3,275,582
CARBOHYDRATE DERIVED POLYMERS OF ACRYLONITRILE

William A. P. Black, Polmont, Falkirk, Eric T. Dewar, Dalkeith, and David Rutherford, Edinburgh, Scotland, assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Oct. 11, 1963, Ser. No. 315,700
2 Claims. (Cl. 260—17.4)

1. The copolymer obtained by stirring at 35° C. about 4.11 parts by weight of acrylonitrile and 1 part by weight of 3-O-allyl-1,2:5,6-di-O-isopropylidene-α-D-glucofuranose in the presence of water, an anionic emulsifier, and a 3:1 ratio of potassium persulfate initiator and sodium bisulfite activator, adding additional initiator-activator mixture at the end of 1 hour of reaction, and then continuing the emulsion copolymerization for 24 hours, said copolymer consisting of about 98 mole percent of acrylonitrile and about 2 mole percent of 3-O-allyl-diisopropylideneglucofuranose, a 0.1 percent solution of said copolymer in dimethylformamide at 25° C. having an intrinsic viscosity of 4.2 dl./gm.

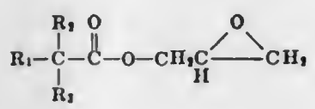
2. The deacetonated copolymer obtained by treating a tetrahydrothiophene-1,1-dioxide solution of the copolymer of claim 1 with HCl until the optical rotation of the solution becomes constant.

3,275,583
ALKYD RESINS PREPARED FROM EPOXY ESTERS OF MONOCARBOXYLIC ACIDS AND PROCESS FOR THE PRODUCTION OF SAME

Nantko Kloos, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 16, 1960, Ser. No. 29,165
Claims priority, application Netherlands, May 19, 1959, 239,308
6 Claims. (Cl. 260—22)

4. A stable alkyd resin which is the reaction product of (1) epoxy esters of monocarboxylic acids having the formula



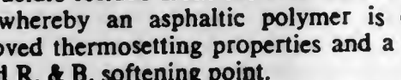
in which R_1 and R_2 are alkyl groups, R_3 is a member of the class consisting of hydrogen and alkyl groups and the groups R_1, R_2 and R_3 contain a total of from 3 to 18 carbon atoms, and (2) a member of the class consisting of phthalic acid, terephthalic acid and phthalic anhydride and wherein the equivalent weight of the epoxy ester components is from about 1 to about 1.3 times the equivalent weight of the carboxylic acid components.

3,275,584
POLYVINYL CHLORIDE PLASTICIZED WITH THE ADDITION PRODUCTS OF ALPHA,BETA-UNSATURATED DICARBOXYLIC ESTERS WITH EPOXIDIZED FATTY ESTERS

William M. Kraft, Verona, and Richard Green, Livingston, N.J., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Mar. 22, 1962, Ser. No. 181,821
20 Claims. (Cl. 260—23)

14. A resinous composition comprising polyvinyl chloride plasticized with an epoxidized polycarboxylate that is the product of the addition of approximately 1 mole to 2 moles of an unsaturated ester having the formula



wherein each R represents a member individually selected from the group consisting of alkyl groups containing from 1 to 18 carbon atoms and aryl groups and X represents a member selected from the group consisting of hydrogen, methyl, halogen, phenyl, and halophenyl per mole of an ester of epoxidized fatty acids, said epoxidized fatty acids containing from 10 to 22 carbon atoms and from 1 to 3 epoxy groups, said addition being effected by heating said esters at a temperature in the range of 60° to 180° C. in the presence of a free radical promoter.

15. A resinous composition as set forth in claim 14 wherein the epoxidized ester is epoxidized soybean oil having an oxirane oxygen content of approximately 5% to 8%.

3,275,585
ASPHALT-CONTAINING COMPOSITIONS AND METHOD FOR THEIR PREPARATION

Lester A. H. Baum, Cherry Hill, N.J., and Paul F. Bruins, Douglaston, and Leonard Henschel, Flushing, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 15, 1964, Ser. No. 375,315
11 Claims. (Cl. 260—28)

2. An improved asphaltic composition obtained by reacting a major proportion of a petroleum asphalt with a minor proportion of an aldehyde, in the presence of a catalyst selected from the group consisting of toluene sulfonic acid, paratoluene sulfonic acid and the acidic residue from the sulfuric acid refining of tall oil, at a temperature from about 150° F. to about 600° F.

8. A composition comprising about 4–10%, by weight of a material selected from the group consisting of furfural and furfural polymers and about 90–96%, by weight, of a petroleum asphalt, in the form of a thermosetting polymer obtained by subjecting the commingled material to a treatment at a temperature of 185–400° F. for a period of 1–6 hours, in the presence of a catalyst in the amount of 1–6%, by weight, and selected from the group consisting of toluene sulfonic acid, paratoluene sulfonic acid and the acidic residue from the sulfuric acid refining of tall oil, whereby an asphaltic polymer is obtained having improved thermosetting properties and a substantially elevated R. & B. softening point.

9. The composition of claim 8 further characterized in that said composition following the aforementioned treatment is commingled with a catalyst selected from the group consisting of phosphoric acid and boron fluoride etherate in the amount of up to 5%, by weight, of the final mixture and is treated for an additional treatment time of ¼ to 2 hours at a temperature of 300° F. to 400° F. whereby the product is further raised in softening point and solvent resistance.

3,275,586
ASPHALTIC PRODUCTS

Robert G. Wurstner, Richmond Heights, and Richard W. Jahnke, Mentor-on-the-Lake, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,728
4 Claims. (Cl. 260—28.5)

1. A process for making an improved asphaltic composition which comprises reacting at a temperature within the range of from about 50° C. to about 250° C., a mixture of:

(A) 100 parts of a petroleum residuum having a penetration value within the range of from about 150 to about 300,

(B) from about 2 to about 10 parts of a lower olefin polymer obtained from an olefin having from 2 to about 6 carbon atoms, the polymer having a molecular weight of at least about 1000, and

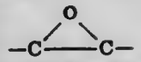
(C) from about 1 to 6 parts of a phosphorus halide.

3,275,587
ADHESIVE COMPOSITION COMPRISING AN EPOXY RESIN, AN AMINE CARBAMATE AND WATER

Ernest E. Weller, Sayreville, and James Plaganis, New Brunswick, N.J., assignors to Tile Council of America, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 25, 1962, Ser. No. 226,156
17 Claims. (Cl. 260—29.2)

1. A unitary, one-part bonding composition which comprises in intimate admixture (a) an epoxy resin having the reactive epoxy group,



and (b) as the epoxy resin hardener, a carbamate which is a member selected from the group consisting of polyamide carbamates, wherein said polyamide carbamates are formed from polyamides having amine values of at least 80, and poly-amido-amine carbamates, wherein said carbamate on the addition of water at about ambient temperature decomposes to release said poly-amido-amine and polyamide and carbon dioxide which released polyamido-amine and polyamide is capable of entering into a cross linking reaction with the epoxy resin, and in admixture with said composition a sufficient amount of water to carry out said cross-linking reaction.

3,275,588
ETHYLENIMINE-POLYALKYLENEPOLYAMINE-POLYEPIHALOHYDRIN TERPOLYMER FLOCCULANTS

David C. Garms, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 16, 1965, Ser. No. 464,560
4 Claims. (Cl. 260—29.2)

1. A resinous terpolymer which comprises the reaction product of:

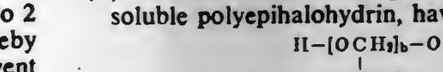
(1) from about 20 to 40 parts by weight of ethylenimine,

(2) from about 8 to 13 parts by weight of a water-soluble polyalkylenepolyamine having a molecular weight from about 400 to 1200 and the general formula



wherein n is 2, 3, or 4, and a is an integer of from about 6 to about 28, and

(3) from about 2.5 to 3.5 parts by weight of a water-soluble polyepihalohydrin, having the formula



wherein X is chlorine or bromine and b is an integer from about 2 to 10, said polyepihalohydrin, having a molecular weight of from about 250 to 1000,

in from about 45 to 70 parts by weight of water and at a temperature of from about 50° to 125° C.

3,275,589
TERPOLYMER OF VINYL ACETATE, DIALKYL ESTER AND ALKYL ACRYLATE

Robert R. Alexander, Framingham, and Anthony J. Urjil, Byfield, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Feb. 14, 1963, Ser. No. 258,629
12 Claims. (Cl. 260—29.6)

1. A permanently tacky terpolymer consisting of (a) 30 to 40 parts by weight of vinyl acetate, (b) 20 to 35

parts by weight of a monoalkyl ester of an α,β-ethylenically unsaturated monocarboxylic acid having 3 to 5 carbon atoms wherein the alkyl moiety contains 7 to 12 carbon atoms and (c) 30 to 40 parts by weight of a dialkyl ester of an α,β-ethylenically unsaturated dicarboxylic acid having 3 to 5 carbon atoms wherein each alkyl moiety contains 7 to 12 carbon atoms.

3,275,590

DISPERSING CARBON BLACK IN TEREPHTHALATE POLYESTERS BY SAND GRINDING

Lee W. Thomas, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 21, 1962, Ser. No. 174,699
4 Claims. (Cl. 260—40)

1. In the process of polymerizing monomer to form a fiber-forming synthetic linear condensation polyester and extruding the polyester into a shaped structure, the improvement for incorporating finely-divided, carbon black pigment, of interrupting said polymerizing at a prepolymer form of said polyester having an intrinsic viscosity of 0.05 to 0.3 measured in Fomal solvent at 25° C., sand grinding a melt of said prepolymer and up to 10 parts by weight of the carbon black per 100 parts by weight of prepolymer at a temperature of at least 160° C. with 20–40 mesh sand in a bulk volume ratio of sand to prepolymer within the range of 0.8:1 to 1.2:1, continuing sand grinding with high-speed agitation to produce a carbon black dispersion of less than 1 micron size in the molten prepolymer, separating the sand from the prepolymer and preparing a pigmented polyester having an intrinsic viscosity greater than 0.3 from the prepolymer.

3,275,591

PIGMENTATION OF POLYPROPYLENE FILAMENTS AND FIBERS

Arthur R. Tomlinson, Garden City, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 15, 1961, Ser. No. 110,211
1 Claim. (Cl. 260—41)



A process for making pigmentated polypropylene filaments including the steps of dry blending a mass of powdered polypropylene with one or more pigments to provide a generally uniform mixture thereof, delivering said mixture in-between a pair of discs which are maintained in spaced apart relationship by a series of spaced pins and which are rotated relative to a series of spaced fixed pins, rotating said discs together at a speed of up to 3500 revolutions per minute to centrifugally discharge said dry-blended mixture from in-between said discs and against both series of pins to disintegrate pigment agglomerates and to disperse the same throughout the mass of polypropylene, blending the pigmented mass of polypropylene with additional uncolored polypropylene to adjust the pigment concentration and shaping the resulting pigmented mixture into filaments.

3,275,592

CYANURATE AND ISOCYANURATE STABILIZED HALOGEN-CONTAINING OLEFIN POLYMER COMPOSITIONS

Hendrikus J. Oswald, Morristown, and Edith Turi, Livingston, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,977
4 Claims. (Cl. 260—45.8)

1. A composition which comprises a chlorinated polyethylene and in effective stabilizing amount a member selected from the group consisting of triallylcyanurate; tribenzylcyanurate; 2,4,6-(p-ethylphenyl)cyanurate; triallylisocyanurate; and tris(2-hydroxyethyl)isocyanurate.

3,275,593

PRODUCTION OF THERMALLY STABLE POLYOXYMETHYLENES BY BOILING IN WATER

Wilhelm Querfurth, Oberursel, Taunus, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed May 10, 1963, Ser. No. 279,628
Claims priority, application Germany, May 19, 1962, D 38,959
6 Claims. (Cl. 260—45.9)

1. A process for improving the heat stability of polyoxymethylenes produced by homopolymerization of water-free formaldehyde in an inert solvent in the presence of a redox system catalyst which comprises heating such polyoxymethylene in boiling water until substantially no formaldehyde can be detected in such water.

3. The process of claim 1 in which said boiling water contains 0.5 to 2.5% by weight of a tertiary amine with reference to the polyoxymethylene boiled in such water.

3,275,594

STABILIZED POLYAMIDES CONTAINING (A) A COPPER COMPOUND AND (B) A NITROGEN CONTAINING ANTIOXIDANT

William Bradford Bond, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,589
5 Claims. (Cl. 260—45.75)

1. A polyamide stabilized by the addition of from 0.1-1.0% by weight of an organic antioxidant selected from the group consisting of

a mixture of about 35% by weight of N,N′-diphenyl-p-phenylene diamine and 65% by weight of the reaction product of acetone and diphenylamine,

N,N′-dinapthyl-p-phenylenediamine, and

N-phenyl-N′-p-toluenesulfonyl-p-phenylenediamine,

and from 0.005–0.1% by weight of a soluble copper compound, said polyamide being selected from the group consisting of polyhexamethylene adipamide, polyhexamethylene isophthalamide, polyhexamethylene sebacamide, polyoctamethylene oxamide, poly-2-methyl hexamethylene terephthalamide, poly-m-phenylene adipamide, poly-m-phenylene suberamide, poly-m-xylylene adipamide, polyhexamethylene 5-t-butylisophthalamide, polyhexamethylene-2,5-dimethyl terephthalamide, poly-4,4′-dicyclohexylmethane azelamide, poly-4,4′-dicyclohexylmethane sebacamide and copolymers and melt blends thereof.

3,275,595

POLYOLEFINS OF IMPROVED LIGHT STABILITY AND DRY RECEPTIVITY CONTAINING CHROMIUM PHENOLATES

David S. Breslow, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 7, 1963, Ser. No. 263,403
4 Claims. (Cl. 260—45.75)

1. A polyolefin selected from the group consisting of polyethylene and stereoregular polymer of a mono-α-olefin having at least 3 carbon atoms containing about 0.01 to about 5%, based on the weight of the polyolefin, of a chromium phenolate selected from the group consisting of the chromium phenolates of bis(p-alkylphenol) sulfoxides and bis(p-alkylphenol) sulfones in which at least one phenolic hydrogen has been replaced by the trivalent chromium ion and about 0.01 to about 5% by weight of the polyolefin of a phenolic compound selected from the group consisting of polyalkylphenols, alkylidene bis(alkylphenol)s, bis(alkylphenol) sulfides, 2(2′-hydroxyphenyl)-2,4,4 - polyalkylchromans, 4(2′ - hydroxyphenyl)-2,2,4-polyalkylchromans, and adducts of an alkylphenol and a cyclic terpene.

3,275,596

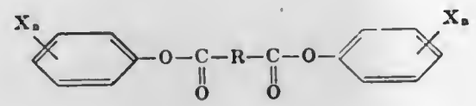
FIRE RESISTANT POLYOLEFINS CONTAINING AN ARSENIC, ANTIMONY, OR BISMUTH COMPOUND AND A HALOGENATED DIAROMATIC ESTER OF A DICARBOXYLIC ACID

Helmut Klug and Karl Kuchinka, Augsburg, Heinrich Peters, Wiesbaden, Dietrich Schleede, Frankfurt am Main, and Jakob Winter, Hofheim, Germany, assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed June 7, 1963, Ser. No. 286,161
Claims priority, application Germany, June 9, 1962, F 37,031; June 13, 1962, F 37,048
8 Claims. (Cl. 260—45.75)

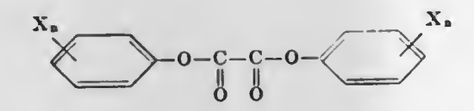
1. A polyolefin composition of reduced flammability comprising (1) a polymer of a mono-alpha-olefin, (2) a compound selected from the group consisting of oxygen and sulfur compounds of arsenic, antimony, and bismuth, and (3) an aromatic ester of a dicarboxylic acid having a formula selected from the group consisting of

(a)



and

(b)



wherein R in Formula *a* is a radical selected from the group consisting of hydrocarbon, chlorohydrocarbon, and oxyhydrocarbon radicals having from 1 to 10 carbon atoms, X in both Formulae *a* and *b* represents a halogen selected from the group consisting of chlorine and bromine, and *n* in both Formulae *a* and *b* is an integer from 2 to 5, compound (2) being present in the amount of 2 to 30 parts by weight per 100 parts of polyolefin and compound (3) being present in the amount of 3 to 30 parts by weight per 100 parts of polyolefin.

3,275,597

STABILIZED POLYOLEFIN CONTAINING A MIXED ESTER OF A POLYFUNCTIONAL ALCOHOL WITH A PHENOL CARBOXYLIC ACID AND AN ALIPHATIC CARBOXYLIC ACID

Otto Mauz and Eberhard Prinz, Frankfurt am Main, Germany, assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 16, 1963, Ser. No. 309,322
Claims priority, application Germany, Sept. 27, 1962, F 37,894
11 Claims. (Cl. 260—45.85)

1. A solid polymer of a monolefin containing as a stabilizer from 0.05 to 5% by weight of a mixed ester of a polyfunctional alcohol having 2 to 6 hydroxyl groups with at least 2 different carboxylic acids, 1 of said acids being a phenol monocarboxylic acid selected from the group consisting of gallic acid, bis-(4-hydroxyphenyl) alkanoic acids, and alkyl salicylic acids, and the other being an aliphatic monocarboxylic acid.

3,275,598

POLYMERIZATION OF OXIRANE MONOEPOXIDES IN THE PRESENCE OF AN ORGANOMETALLIC COMPOUND AND AN ALCOHOL

Kenneth T. Garty, Somerville, and Thomas B. Gibb, Jr., Murray Hill, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 1, 1959, Ser. No. 824,191
15 Claims. (Cl. 260—47)

1. Method for the production of a polymer of an epoxide compound which comprises contacting a monomeric oxirane monoepoxide, which is free of ester, acid, amino and aldehyde groups, with at least about 0.01 percent by weight, based on the weight of said oxirane monoepoxide, of an organometallic compound having the formula:

$$R_1—Me—R_2$$

wherein R_1 and R_2 are hydrocarbon radicals having from 1 to 10 carbon atoms and being free of olefinic and acetylenic unsaturation and Me is a metal of Group II of the Periodic Table, and with from about 1.25 to about 1.75 moles of a saturated, aliphatic, monohydric primary alcohol, which is free of ester, acid, amino and aldehyde groups, per mole of said organometallic compound, whereby said oxirane monoepoxide polymerizes to form a polymer.

3,275,599

RESINOUS COMPOSITION AND PROCESS FOR PREPARING THE SAME

John C. Petropoulos, Norwalk, Conn., and Ignazio S. Megna, Bronx, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed June 28, 1961, Ser. No. 120,168
2 Claims. (Cl. 260—47)

1. A heat reaction product of a compound containing at least one epoxide group and the glassy monoanhydride of 1,2,3,4-cyclopentanetetracarboxylic acid composition which softens at a temperature between about 50° C. and 70° C., wherein the oxygen of said epoxide group is attached to vicinal carbon atoms wherein the amount of the epoxy compound used may be varied between about 30% and 150% of the theoretical amount calculated to react fully with the said acid-monoanhydride composition.

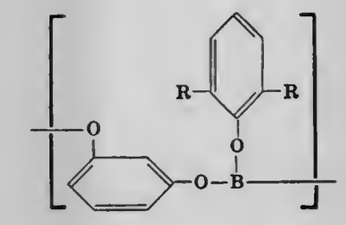
3,275,600

POLYMERIC ORGANOBORON COMPOUNDS

Joseph G. Bower, Orange, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Jan. 15, 1962, Ser. No. 166,423
5 Claims. (Cl. 260—47)

1. Polymeric organoboron compounds having the recurring structural unit



where R is a tertiary alkyl radical of from 4 to 10 carbon atoms.

3,275,601

MANUFACTURE OF POLYCARBONATES USING TERTIARY AMINES, QUATERNARY AMINES AND SALTS THEREOF AS CATALYSTS

Hermann Schnell, Krefeld-Urdingen, and Ludwig Bottenbruch and Heinrich Krimm, both of Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Original application Jan. 4, 1956, Ser. No. 557,256. Divided and this application July 28, 1965, Ser. No. 475,576
Claims priority, application Germany, Mar. 26, 1955, F 17,167
15 Claims. (Cl. 260—47)

1. In the process for the manufacture of polycarbonates by reacting an organic dihydroxy compound which is a di(monohydroxy-monocyclic aryl) aliphatic hydrocarbon in which each said monohydroxy-monocyclic aryl substituent is attached to the same carbon atom of said aliphatic hydrocarbon moiety with a carbonic acid derivative selected from the group consisting of phosgene and chlorocarbonic acid esters of said organic dihydroxy compounds in aqueous alkaline solution, the improvement comprising increasing the speed of the reaction by employing as a catalyst in said reaction from about 0.05 to about 5% by weight, based on the weight of said dihydroxy compound, of a member selected from the group consisting of tertiary amines, quaternary amines and salts thereof at temperatures from about 0° C. to about 100° C.

3,275,602

APPARATUS AND METHOD FOR THE SEMICONTINUOUS OR CONTINUOUS POLYMERIZATION OF SOLID TRIOXANE

Eduard Weiss, Kelkheim, Taunus, and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany

Filed July 11, 1961, Ser. No. 123,222
Claims priority, application Germany, July 16, 1960, F 31,676
9 Claims. (Cl. 260—67)

7. A continuous method for polymerizing solid trioxane in the presence of a solid ionic polymerization catalyst therefor which comprises removing moisture and oxygen from said solid trioxane in an inert atmosphere, continuously admixing the now-purified solid trioxane with said solid ionic catalyst, initiating polymerization of the mixture of solid trioxane and solid catalyst by passing a continuous stream of said mixture through a heating zone, and then removing the heat of polymerization from the resulting polymer by passing said continuous stream through a cooling zone.

3,275,603

POLYMERIZATION OF FORMALDEHYDE

Harry Yakimik, Jr., Garfield, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Apr. 25, 1963, Ser. No. 275,513
9 Claims. (Cl. 260—67)

1. In a process for producing a high molecular weight polymer of formaldehyde, in which substantially anhydrous monomeric formaldehyde is polymerized by bringing the monomer into contact with a formaldehyde polymerization initiator in a liquid organic reaction medium at a temperature in the range from about —100° C. to about 80° C., the improvement which comprises conducting the polymerization in the presence of from about 0.001 to about 20 percent by weight, based on the weight of the monomer introduced into the reaction medium, of at least one chain transfer agent selected from the group consisting of saturated aliphatic dicarboxylic acids containing from 2 to 10 carbon atoms, and the lower alkyl esters of said dicarboxylic acids, thereby controlling the molecular weight distribution and improving the yield of the formaldehyde polymer.

3,275,604

MOLDABLE OXYMETHYLENE COPOLYMERS AND METHOD OF PREPARING SAME

Raymond Joseph Kray, Berkeley Heights, and Robert William Stevenson, Edison, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1963, Ser. No. 296,377
23 Claims. (Cl. 260—67)

1. A normally solid, moldable copolymer comprising:
(a) at least 60 mol percent of recurring oxymethylene groups and
(b) oxyethylene groups positioned in the polymeric chain, said oxyethylene groups having a —CH_2OR group pendant therefrom and directly attached to a carbon atom of said oxyethylene group, wherein said R group is a monovalent hydrocarbon radical.

3,275,605

AMINE-MODIFIED UREA-FORMALDEHYDE RESINS AND PROCESS OF MANUFACTURE THEREOF

John W. Eastes, Brevard, N.C., and Robert W. Faessinger, Media, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 24, 1964, Ser. No. 413,626
4 Claims. (Cl. 260—70)

3. In the process of making cationic, polyfunctional amine-modified, urea-formaldehyde resins by the acid condensation in an aqueous medium of a reaction mixture of urea, formaldehyde and a polyfunctional aliphatic amine having at least two amino groups, which reaction mixture is susceptible of condensation to the gelling point, the improvement which comprises introducing into the reaction mixture immediately prior to the point of solidification thereof a viscosity lowering additive selected from the group consisting of formaldehyde, paraldehyde, methyl alcohol, ethyl alcohol, normal propyl alcohol, isopropyl alcohol, tertiary butyl alcohol, ethylene glycol, diethylene glycol, triethylene glycol, glycerine, furfuryl alcohol, dimethyl sulfoxide and dimethyl formamide in an amount approximating 5% by weight of the total solids content of said reaction mixture, said amount being sufficient to permit the condensation reaction to be continued without gelation of the reaction mixture, and thereafter sequentially raising and lowering the viscosity of the reaction mixture by further condensation thereof and additive introductions therein.

3,275,606

COMPOSITIONS CONTAINING ADDUCTS OF HEXAHALOCYCLOPENTADIENE

Francis M. Kujawa, Tonawanda, N.Y., and Michael Worsley, Edmonton, Alberta, Canada, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,795
13 Claims. (Cl. 260—75)

1. A resinous reaction product, having an acid number of less than 20, of components comprising a monomeric 1,2-epoxide and a resinous polyester having an acid number in the range from 20 to about 90 and selected from the group consisting of (1) the resinous polyester of components comprising (a) an adduct of hexahalocyclopentadiene and a polycarboxylic compound containing aliphatic carbon-to-carbon unsaturation and (b) a polyhydric alcohol containing at least three hydroxyl groups, (2) the resinous polyester of components comprising (a) an adduct of hexahalocyclopentadiene and a polyhydric alcohol containing aliphatic carbon-to-carbon unsaturation, (b) a polyhydric alcohol containing at least three hydroxyl groups and (c) a dicarboxylic compound, (3) the resinous polyester of components comprising (a) an adduct of hexahalocyclopentadiene and a polyhydric alcohol containing aliphatic carbon-to-carbon unsaturation and (b) a polycarboxylic compound containing at least three carboxyl groups, and (4) mixtures thereof, wherein the halo-substituent is selected from the group consisting of fluorine, chlorine, bromine, and mixtures thereof, and wherein the carboxylic compounds are selected from the group consisting of a carboxylic acid, a carboxylic acid anhydride, and mixtures thereof; said resinous reaction product of said acid number of less than 20, by virtue of its monoepoxide component, having a viscosity as measured in Gardner seconds at 120 degrees centigrade that is lower than the viscosity as measured in Gardner seconds at 120 degrees centigrade of the corresponding resinous polyester that is unmodified by a monoepoxide component, but which has the same carboxylic and polyhydric alcohol components employed in the same ratio and has the same acid number of less than 20.

3,275,607

CURING THIOCARBONYL FLUORIDE/ALLYL CHLOROFORMATE COPOLYMERS WITH POLYVALENT METAL OXIDES

James N. Coker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 31, 1962, Ser. No. 234,547
12 Claims. (Cl. 260—77.5)

1. A composition of matter comprising an intimate mixture of (1) a thiocarbonyl fluoride/allyl chloroformate copolymer containing 0.1–10 mole percent of allyl chloroformate and (2) 1–40% by weight based on the weight of the copolymer of at least one member of the group consisting of the oxides of metals selected from Groups I-B, II-A, and II-B of the Periodic Table, tin and lead.

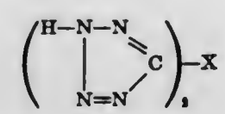
3,275,608

POLYMERS CONSISTING OF 1,3,4-OXADIAZOLE RINGS LINKED BY PERFLUOROALKYLENE AND OPTIONALLY, ARYLENE RADICALS

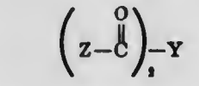
Franklin L. Montgomery, Wilmington, Del., and David C. Remy, Madison, Wis., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 6, 1962, Ser. No. 214,860
5 Claims. (Cl. 260—78.4)

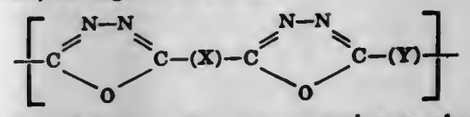
1. A process which comprises contacting and reacting in the presence of an inert solvent, 0.875 to 1.125 molar proportions of a bis-tetrazole of the formula



with a molar proportion of a diacyl halide of the formula



wherein Z=halogen, X and Y are independently selected from the group consisting of —$(CF_2)_n$—, in which n=3–14, and arylene, and with the proviso that in the reactants at least 30 mole percent of the total number of X's and Y's are —$(CF_2)_n$—, and obtaining as a result thereof a polymer consisting essentially of units, joined head-to-tail, having the structure



wherein X and Y have the same meaning as above.

3,275,609

BIS(TRIFLUOROMETHYL)THIOKETENE, ITS DIMER AND ITS HOMOPOLYMER

Maynard S. Raasch, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 7, 1963, Ser. No. 249,606
9 Claims. (Cl. 260—79.7)

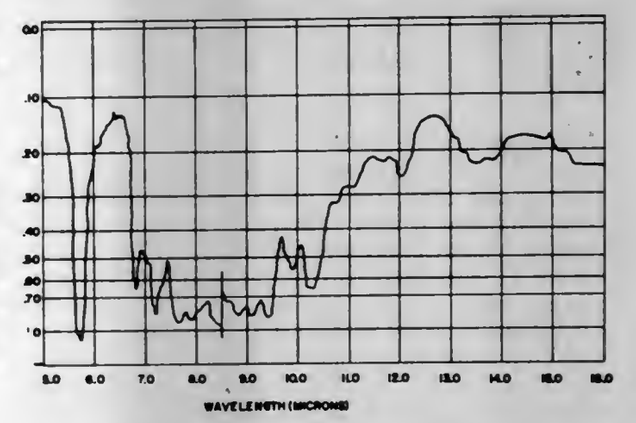
1. Bis(trifluoromethyl)thioketene.
3. A homopolymer of bis(trifluoromethyl)thioketene.

3,275,610

MICROBIAL SYNTHESIS OF POLYMERS

Vernon F. Coty, Trenton, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Filed Mar. 24, 1964, Ser. No. 354,231
16 Claims. (Cl. 260—80)



1. Method of producing a thermoplastic polymer by microbial synthesis which comprises dissolving in an aqueous mineral nutrient a carbon compound selected from the class consisting of a four-carbon aliphatic carboxylic acid and a lower alkyl ester derivative thereof, said acid being selected from the group consisting of an unsaturated acid, an unsaturated acid substituted by an oxygen-containing organic radical, a saturated acid, and a saturated acid substituted by an oxygen-containing organic radical, inoculating the aqueous nutrient with a microorganism selected from the following species of Nocardia, Azotobacter, Bacillus, Micrococcus, Rhizobium, Rhodospirillum: *N. salmonicolor, N. asteroides, N. opaca, N. corallina, N, rubra, A. chroococcum, A. agilis, A. indicus, B. megaterium, B. mycoides, B. subtilis, B. cereus, B. anthracis, M. halodenitrificans, M. denitrificans, Rh. leguminosarum, Rh. phaseoli, Rh. trifoli, Rh. lupini, Rh. japonicum, R. rubrum,* and *R. fulvum,* said carbon compound being the sole source of carbon, incubating the resulting mixture, forming said polymer intracellularly of the microorganism, harvesting the cells, rupturing the cell walls and recovering the resulting debris, solvent extracting polymer from the debris in the form of a clear solution of the polymer, and recovering polymer from said solution in a yield of at least about 5% by weight of the dried cells, said polymer being a polymer of said carbon compound and being characterized by the presence of a plurality of hydroxyl and carboxyl groups at least some of which are linked to form ester groups, and said polymer forming flexible films.

3,275,611

PROCESS FOR POLYMERIZING UNSATURATED MONOMERS WITH A CATALYST COMPRISING AN ORGANOBORON COMPOUND, A PEROXYGEN COMPOUND AND AN AMINE

Edward H. Mottus and Joseph E. Fields, Ballwin, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 15, 1965, Ser. No. 425,958

22 Claims. (Cl. 260—80.5)

1. In a process for polymerizing with organoboron having an organo group attached by carbon directly to the boron and peroxygen compound catalysts olefinically unsaturated monomers which undergo addition polymerization with said catalysts and which when the monomers are basic have ionization constants less than 10^{-5}, the improvement comprising carrying out the polymerization in the presence of an amine complexing agent for the boron compound, said complexing agent having an ionization constant in the range of 10^{-5} to 10^{-11}

3,275,612

BIAXIALLY ORIENTED FILM OF ACRYLONITRILE POLYMERS AND PROCESS

Max Fredrick Bechtold, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Original application June 2, 1958, Ser. No. 739,181. Divided and this application May 22, 1962, Ser. No. 198,409

2 Claims. (Cl. 260—88.7)

1. A film of a polymer selected from the group consisting of polyacrylonitrile and copolymers of acrylonitrile and at least one other vinyl monomer copolymerizable therewith said copolymers containing at least 75% by weight of acrylonitrile, said polymer having an inherent viscosity of at least 1.2 at 30° C., in dimethyl sulfoxide at a concentration of 0.1% by weight; said film exhibiting an oriented structure in X-ray diffraction patterns resulting from impinging X-rays onto any edge of the film, said film having orientation angles no greater than 80° when said orientation angles are measured in both of two mutually perpendicular directions in the plane of the film using an X-ray beam impinging onto an edge of the film.

3,275,613

PROCESS FOR PREPARING ALPHA-OLEFIN POLYMERS WHICH ARE SUBSTANTIALLY FREE OF RESIDUAL CATALYST

Donald D. Emrick, Maple Heights, Robert J. Sating, Lakewood, and Roman Zorska, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 6, 1963, Ser. No. 256,554

6 Claims. (Cl. 260—93.7)

1. A process for preparing a solid alpha-olefin polymer which is substantially free of harmful residual catalyst which comprises:

(A) polymerizing in an enclosed zone in a liquid hydrocarbon medium a gaseous alpha-olefin of the formula $R—CH=CH_2$ wherein R is a member of the group consisting of hydrogen and an alkyl group having from 1 to 12 carbon atoms at an alpha-olefin partial pressure of about 10 to 135 p.s.i.g. and at a temperature of from 38 to 90° C. with stirring and efficient cooling for a period of about 5 to 20 minutes in the presence of a four component catalyst consisting essentially of the reaction product of (1) a halide of a metal selected from the group consisting of Group IV(b), Group Vb and Group VI(b) metals, (2) an organoaluminum monohalide, (3) an organoaluminum hydrocarbon, and (4) an organic phosphine, the organic radicals of the foregoing catalyst components having from one to twelve carbon atoms, to form a crumbly, dark solid mixture of polypropylene and catalyst, and

(B) under substantially static conditions polymerizing under autogenous pressure liquid alpha-olefin of the formula $R—CH=CH_2$ where R is a member of the group consisting of hydrogen and an alkyl group having from 1 to 12 carbon atoms onto the dark colored solid catalyst-poly alpha-olefin mixture at from about 50 to 90° C. for a period ranging from 1 to 24 hours to form ultimately a two-phase solid mass the minor phase of which is the crumbly, dark colored solid poly alpha-olefin-catalyst mixture and the major phase of which is a hard, light colored polymer low in residual catalyst contamination, and

(C) mechanically separating the light colored hard polymer which is low in residual catalyst contamination from the dark colored catalyst-polymer mixture and drying said hard polymer.

3,275,614

PROCESS OF PRODUCING CIS - 1,4 - POLYBUTADIENE WITH A CATALYST CONTAINING AN ORGANIC IODINE COMPOUND

Gottfried Pampus and Nikolaus Schön, Leverkusen, and Josef Witte, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 25, 1962, Ser. No. 212,471

Claims priority, application Germany, Aug. 8, 1961, F 34,636

3 Claims. (Cl. 260—94.3)

1. A process for the manufacture of an improved rubbery polybutadiene containing 70–95% of 1,4-cis linkages comprising polymerizing 1,3-butadiene in the presence of a catalyst prepared by combining (a) an organo-lithium compound selected from the group consisting of a lithium-aluminium-tetraalkyl and a lithium-aluminium-alkyl hydride, (b) a halide of titanium selected from the group consisting of titanium tetrachloride and titanium tetrabromide, and (c) an organic iodine compound selected from the group consisting of a C_1 to C_{10} alkyl iodide, an aryl iodide and a cycloalkyl iodide, the mol ratio of the lithium compound to the organic iodine compound ranging from about 1:1 to about 5:1, the titanium halide being present in an amount from about 0.015 to 1.5 parts by weight per 100 parts by weight of 1,3-butadiene, and carrying out the polymerization of said 1,3-butadiene in an inert hydrocarbon diluent at a temperature between about −40° and about +80° C., and recovering the polymer from solution.

3,275,615

PROCESS FOR PRODUCING POLYETHYLENE IN THE PRESENCE OF TERTIARY BUTYL HYDROPEROXIDE AND n-BUTYLAMINE

Robert R. Krulisch, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,802

2 Claims. (Cl. 260—94.9)

1. A process for producing polyethylene which comprises polymerizing ethylene at a temperature of from about 150° C. to about 250° C. and at pressure of from about 5000 p.s.i. to about 100,000 p.s.i. with a tertiary butyl hydroperoxide catalyst which has been activated with n-butylamine, the molar ratio of n-butylamine to tertiary butyl hydroperoxide being from about 0.01:1 to about 100:1, and the tertiary butyl hydroperoxide being employed in an amount of from about 1 p.p.m. to about 75 p.p.m., based upon the total amount of ethylene employed.

3,275,616

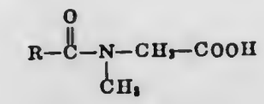
MODIFIED POLYOLEFINS

John E. Hammond, Rochester, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 19, 1963, Ser. No. 274,352

9 Claims. (Cl. 260—94.9)

1. A polyolefin film-forming composition comprising a polyolefin having incorporated therein at least .001 percent by weight of an N-acyl sarcosine additive represented by the formula:



wherein R is a member selected from the group consisting of alkane and alkylene hydrocarbon radicals containing from about 8 to about 30 carbon atoms.

3,275,617

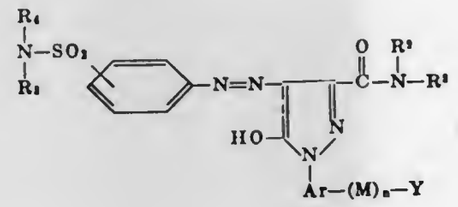
1 - (4' - HYDROQUINONYLALKYLPHENYL) - 3 - N - (HYDROXYLALKYL) - CARBAMYL - 4 - [(N,N-DIALKYLSULFONAMIDO) - PHENYLAZO] - 5 - PYRAZOLONES

Milton Green, Newton Center, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Mar. 27, 1963, Ser. No. 268,451

7 Claims. (Cl. 260—163)

1. A compound of the formula:



wherein each of R_4 and R_5 are lower alkyl radicals, each of R^2 and R^3 is a radical selected from the group consisting of hydrogen, lower hydroxyalkyl and lower alkyl radicals and R^2 and R^3 taken together may be a pentamethylene radical completing, with the nitrogen atom attached thereto, a piperidine ring, Ar is an aryl radical, selected from the group consisting of phenyl and naphthyl radicals, M is a lower alkylene radical, *n* is an integer from 0 to 1, inclusive, and Y is para-dihydroxyphenyl radical.

3,275,618

PROCESSES FOR PREPARING ALKYLENE DIISOCYANATES AND INTERMEDIATES THEREFOR

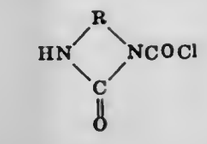
James N. Tilley, Hamden, Henri Ulrich, Northford, and Adnan A. Sayigh, North Haven, Conn., assignors, by mesne assignments, to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 7, 1962, Ser. No. 200,617

22 Claims. (Cl. 260—239)

1. A process for making lower alkylene diisocyanate in which the two isocyanate groups thereof are separated by not more than four carbon atoms and which has not more than twelve carbon atoms to the alkylene diisocyanate molecule, which comprises reacting phosgene with N,N'-alkylene-bridged urea having a total of eleven carbon atoms to the molecule to form the corresponding N,N'-alkylene-bridged allophanyl chloride and heating such N,N'-allophanyl chloride to cause evolution of hydrogen chloride therefrom to form said alkylene diisocyanate.

9. A compound having the formula:



(I)

wherein R consists of a divalent hydrocarbon radical of not more than 10 carbon atoms having a saturated chain of from 1 to not more than 4 carbon atoms between the valences.

19. A process for making N,N'-alkylene-bridged allophanyl chloride characterized by the group,



and with from one to four carbon atoms in the alkylene bridge directly connecting the nitrogen atoms of such group, which comprises reacting with phosgene the corresponding N,N'-alkylene-bridged cyclic urea characterized by the group, —NHCOHN— in the heterocyclic ring thereof and with an alkylene bridge of from one to four carbon atoms directly connecting the nitrogen atoms thereof, said N,N'-alkylene-bridged urea said reaction being carried out in the presence of an inert solvent-diluent and at a temperature not substantially higher than 80° C.

3,275,619

PROCESS FOR THE PREPARATION OF L-α-AMINO-ε-CAPROLACTAM AND INTERMEDIATE THEREFOR

Carl Max Brenner, Riehen, near Basel, and Hans Rudolf Rickenbacher, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 31, 1958, Ser. No. 784,054

Claims priority, application Switzerland, Mar. 15, 1957, 43,891/57

5 Claims. (Cl. 260—239.3)

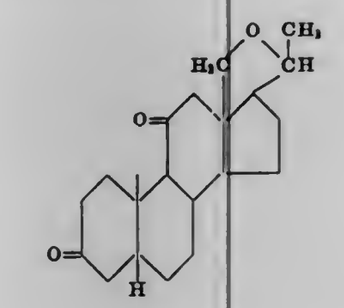
1. A process for the production of L-α-amino-ε-caprolactam from DL-α-amino-ε-caprolactam which consists essentially of reacting DL-α-amino-ε-caprolactam with substantially an equimolar amount of L-2-pyrrolidone-5-carboxylic acid in solution in an alkanol having at most two carbon atoms thereby producing and precipitating difficultly soluble L-α-amino-ε-caprolactam L-2-pyrrolidone-5-carboxylate while simultaneously producing D-α-amino-ε-caprolactam which remains in solution, separating the resultant difficultly soluble L-α-amino-ε-caprolactam L-2-pyrrolidone-5-carboxylate, converting said difficultly soluble L-α-amino-ε-caprolactam L-2-pyrrolidone-5-carboxylate into L-2-pyrrolidone-5-carboxylic acid and L-α-amino-ε-caprolactam hydrochloride by reacting a suspension of the L-α-amino-ε-caprolactam L-2-pyrrolidone-5-carboxylate with a solution of hydrogen chloride in dioxan, filtering off the L-α-amino-ε-caprolactam hydrochloride and then reacting the said hydrochloride in water solution with an equivalent of alkali metal hydroxide, evaporating the resultant solution and distilling free L-α-amino-ε-caprolactam from the so-obtained residue at reduced pressure and at a temperature of less than 120° C., and racemizing the aforesaid D-α-amino-ε-caprolactam by heating the same with an alkali metal alcoholate to a temperature of 150–165° C., and re-using the so-produced DL-α-amino-ε-caprolactam as starting material for the production of L-α-amino-ε-caprolactam by the herein-recited sequence of steps.

3,275,620
NOVEL 18,20β-DIOXYGENATED-5β-PREGNANES

Georges Muller, Nogent-sur-Marne, France, assignor, by mesne assignments, to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed June 27, 1960, Ser. No. 38,723
Claims priority, application France, June 29, 1959, 798,790
1 Claim. (Cl. 260—239.55)

A compound having the formula

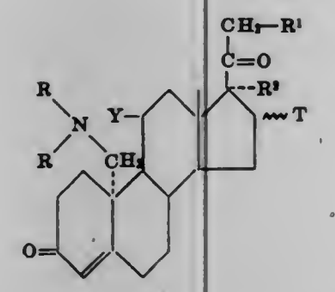


3,275,621
19-AMINO-Δ⁴-PREGNENES AND -10α-PREGNENES AND PROCESS FOR THEIR PREPARATION

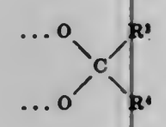
Albert Bowers, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,362
38 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen and lower alkyl; R^1 and R^2 are members of the group consisting of hydrogen, hydroxyl and a hydrocarbon carboxylic acyloxy group of less than 12 carbon atoms and R^2 is hydroxyl when R^1 is other than hydrogen; T is selected from the group consisting of hydrogen, α-methyl, β-methyl, α-hydroxyl and α-hydrocarbon carboxylic acyloxy of less than 12 carbon atoms; R^2 and T together form the group



at the 16α, 17α-positions, wherein R^3 and R^4 each is a lower hydrocarbon residue of up to 8 carbon atoms; Y is a member of the group consisting of hydrogen and β-hydroxyl and where R^1 is hydrogen, Y is hydrogen.

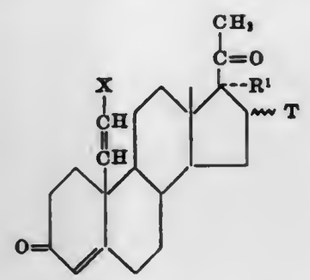
5. 19-amino-16α,17α-isopropylidenedioxy - Δ⁴ - 10α-pregnene-3,20-dione.

3,275,622
19-ALKYLIDENE-Δ⁴-3,20-KETO PREGNANES

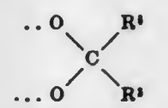
Albert Bowers, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,386
40 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein R^1 is selected from the group consisting of hydrogen, hydroxyl and a hydrocarbon carboxylic acyloxy group of less than 12 carbon atoms; T is a member of the group consisting of hydrogen, α-hydroxy, α-hydrocarbon carboxylic acyloxy of less than 12 carbon atoms, α-methyl and β-methyl; T and R^1 together are the group



wherein R^4 and R^5 each is a lower alkyl group; and X is a member of the group consisting of hydrogen and a lower alkyl group.

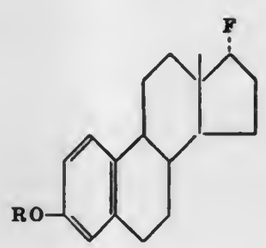
7. 19 - ethylidene - 16α,17α - isopropylidenedioxy-Δ⁴-pregnene-3,20-dione.

3,275,623
3,17-DISUBSTITUTED-1,3,5(10)-ESTRATRIENE DERIVATIVES

Lawrence H. Knox, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed May 1, 1964, Ser. No. 364,292
Claims priority, application Mexico, July 27, 1962, 68,398
20 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein R is selected from the group consisting of lower alkyl, lower aryl, lower aralkyl, tetrahydropyranyl and lower acyl of less than 12 carbon atoms.

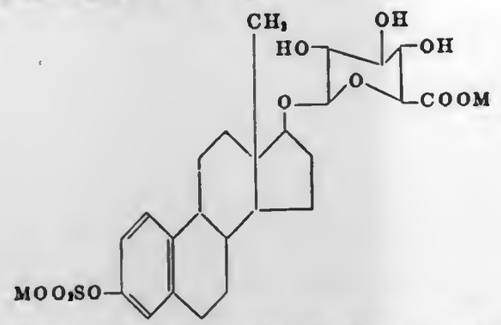
8. 3 - tetrahydropyranyloxy - 17α-fluoro-Δ[1,3,5(10)]-estratriene.

3,275,624
ESTRA-1,3,5(10)-TRIENES HAVING SOLUBILIZING GROUPS

Edward Warren Cantrall and Seymour Bernstein, both of New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 16, 1965, Ser. No. 487,913
4 Claims. (Cl. 260—239.55)

1. A steroid of the formula:



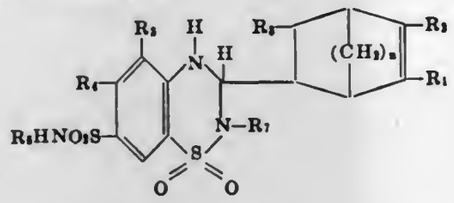
wherein M is selected from the group consisting of sodium, potassium and ammonium.

3,275,625
DERIVATIVES OF 7-SULFAMYL-3,4-DIHYDRO-1,2,4 - BENZOTHIADIAZINE-1,1-DIOXIDE AND PROCESS FOR THEIR PREPARATION

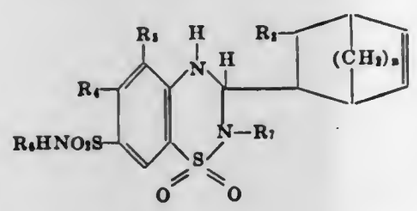
Erich Müller and Klaus Hasspacher, Biberach an der Riss, Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed Jan. 23, 1961, Ser. No. 83,951
4 Claims. (Cl. 260—243)

1. A compound of a structural formula selected from the group consisting of



and



wherein

R_1 and R_2 are selected from the group consisting of hydrogen and bromine,
R_3 is selected from the group consisting of hydrogen and methyl,
R_4 is selected from the group consisting of chlorine and trifluoromethyl,
R_5 is selected from the group consisting of hydrogen, methyl and chlorine,
R_6 and R_7 are selected from the group consisting of hydrogen and methyl, and
n is an integer from 1 to 2, inclusive.

3,275,626
PENICILLIN CONVERSION VIA SULFOXIDE

Robert B. Morin and Billy G. Jackson, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed July 31, 1962, Ser. No. 213,588
8 Claims. (Cl. 260—243)

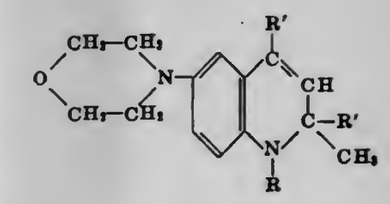
4. A method for converting the thiazolidine ring of a penicillin into the thiazine ring of the cephalosporins which comprises heating a penicillin sulfoxide ester in an inert liquid and in the presence of a strong acid at a temperature between about 125 and about 150° C. for a time sufficient to cause substantial conversion thereof, and recovering the resulting cephalosporin compound.

3,275,627
6-MORPHOLINO-2,2,4 TRILOWERALKYL-1,2 DIHYDROQUINOLINES

Ning Jo Chu, McMasterville, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed Dec. 12, 1962, Ser. No. 243,999
Claims priority, application Great Britain, Jan. 2, 1962, 164/62
2 Claims. (Cl. 260—247.5)

1. A crystalline compound of the formula:



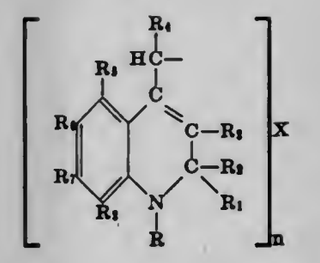
wherein R is selected from the group consisting of hydrogen and lower alkyl radicals and R' is a lower alkyl radical.

3,275,628
4-SUBSTITUTED-ALIPHATIC-2,2-DIALIPHATIC-1,2-DIHYDROQUINOLINES

Joseph Patrick Brown, Llangollen, Wales, assignor to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,663
Claims priority, application Great Britain, Oct. 30, 1962, 40,891/62
19 Claims. (Cl. 260—247.5)

1. A compound selected from the group consisting of a compound having the formula



where n is an integer at least one but less than three, X is selected from a group consisting of hydroxy, lower alkoxy, cyano, thiocyano, mercapto, lower alkylthio, aryloxy, arylthio, thiazolylthio, lower alkylenedioxy, lower alkylenedithio, dithiocarbamyl, lower alkylene bis dithiocarbamyl, isothiouronium, amino, lower alkylamino, cycylohexylamino, benzylamino, arylamino, pyridylamino, di(lower alkyl)amino, piperidino, morpholino, lower alkyl imino, lower alkylene diamino, arylene diamino, piperazinyl, acetyl lower alkoxycarbonylmethyl and bis(lower alkoxycarbonylmethyl), R is selected from a group consisting of hydrogen, carboxylic acid acyl of not more than 12 carbon atoms, lower alkyl sulfonyl and aryl sulfonyl, R_1 and R_2 are lower alkyl, R_3 is selected from a group consisting of hydrogen and halogen, R_4 is selected from a group consisting of hydrogen and lower alkyl, R_5, R_6, R_7 and R_8 are selected from a group consisting of hydrogen, halogen, lower alkoxy, hydroxy, amino, nitro, lower alkyl and aryl, acid addition salts and quaternary ammonium salts thereof, wherein aryl of the aforesaid radicals refers

to phenyl and phenyl substituted by halogen, alkoxy, or tertiary amino.

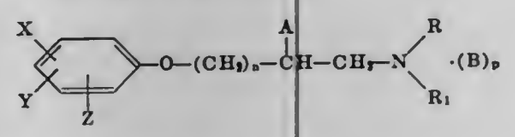
3,275,629

SUBSTITUTED ARYLOXYALKYLENE AMINES

Manuel M. Baizer, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 20, 1963, Ser. No. 266,494
7 Claims. (Cl. 260—247.7)

1. A compound of the formula:



wherein X, Y, and Z are selected from the group consisting of hydrogen, halogen, nitro, and lower alkyl radicals; where A is a halogen radical; where R and R_1 are selected from the group consisting of alkyl, alkenyl, aryl, alkaryl, aralkyl having up to 8 carbon atoms, and when joined together, a heterocyclic selected from the group consisting of morpholino and piperidino; where B is a hydrohalide; where *n* is an integer from 1 to 4; and where *p* is an integer from 0 to 1.

2. 1-(4-morpholino)-2-chloro-3-phenoxy propane.

3,275,630

PROCESS FOR PREPARING A CHLORO-CYANURATE COMPLEX

William F. Symes, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,616
9 Claims. (Cl. 260—248)

1. A process for preparing crystalline [(mono-trichloro,) tetra-(monopotassium dichloro,)] penta-isocyanurate which comprises the steps of bringing together and reacting in a reaction zone an aqueous solution of monopotassium dichloroisocyanurate and an aqueous solution of an acid incapable of undergoing an oxidation reduction reaction with said penta-isocyanurate and said monopotassium dichloroisocyanurate in an amount sufficient to maintain a pH in the range of from about 4.6 to about 5.0 and isolating [(mono-trichloro,) tetra-(monopotassium dichloro,)] penta-isocyanurate.

3,275,631

PROCESS FOR THE PRODUCTION OF CYANURIC ACID

Hiroshi Yanagizawa, Marugame-shi, Japan, assignor to Shikoku Kasei Kogyo Company Limited, Marugame-shi, Kagawa-ken, Japan

No Drawing. Filed Aug. 5, 1964, Ser. No. 387,770
Claims priority, application Japan, Sept. 27, 1963, 38/51,571
7 Claims. (Cl. 260—248)

3. A process of producing cyanuric acid comprising steps of subjecting a starting material selected from the group consisting of urea, biuret, and mixtures of the two to a heat treatment on the surface of at least a molten metal having a melting point not exceeding 350° C. and maintained at a temperature not exceeding 400° C., said metal being selected from the group consisting of tin, bismuth, lead, and alloys, said alloys including at least two components of tin and lead, grinding a solid intermediate product obtained by said heat treatment so as to obtain powder having free fluidity, and subsequently heating said powder by means of a jacketed heater.

3,275,632

MELAMINE PRODUCTION IMPROVEMENT

Ernst Doehlemann, Tacherting, Franz Kaess, Traunstein, Leo Reitter, Neuschalchen, and Kurt Scheinost, Tacherting, Germany, assignors to Süddeutsche Kalkstickstoff-Werke Aktiengesellschaft, Trostberg, Germany

No Drawing. Filed July 19, 1963, Ser. No. 296,389
Claims priority, application Germany, July 20, 1962, S 80,520
5 Claims. (Cl. 260—249.7)

1. In the process for the continuous preparation of melamine which comprises heating urea under substantially atmospheric pressure in a current of ammonia in a fluidized bed of a non-adsorbing non-porous inert material to form ammonium cyanate and passing said ammonium cyanate vapor at a temperature of 260 to 450° C. over a stationary bed of a material containing as catalyst an ion of the group consisting of phosphate, borate, arsenate, and sulfate, the improvement which consists of conducting said process in a reaction zone which presents essentially surfaces of copper to the molten and gaseous phases therein.

3,275,633

4-HYDROXY-5-FLUOROPYRIMIDINE AND A PROCESS FOR PRODUCING IT AND OTHER COMPOUNDS

Zdeněk Buděšínský, Václav Jelínek, and Jaroslav Přikryl, all of Prague, Czechoslovakia, assignors to Spofa, Sdruzeni podniku pro zdravotnickou vyrobu, Prague, Czechoslovakia

No Drawing. Filed Jan. 17, 1963, Ser. No. 252,049
Claims priority, application Czechoslovakia, Jan. 23, 1962, 449/62
6 Claims. (Cl. 260—251)

1. The compound 4-hydroxy-5-fluoropyrimidine with melting point 209–210° C.

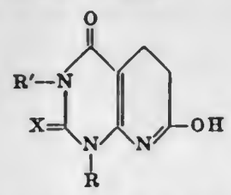
3,275,634

7-HYDROXY-2,4-DIOXO-1,2,3,4,5,6-HEXAHYDRO-PYRIDO[2,3-d]PYRIMIDINES

Viktor Papesch, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,748
5 Claims. (Cl. 260—256.4)

1. A compound of the formula



wherein R is selected from the group consisting of lower alkyl and lower alkenyl; R' is lower alkyl; X is selected from the group consisting of O and S.

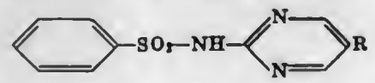
3,275,635

CERTAIN 2-BENZENESULFONAMIDE-5-ALKYL (OR ALKOXY) PYRIMIDINE COMPOUNDS

Hans Priewe, Berlin-Steglitz, and Klaus Gutsche, Berlin-Grunewald, Germany, assignors to Schering, A.G., Berlin, Germany

No Drawing. Filed Oct. 12, 1961, Ser. No. 144,530
Claims priority, application Germany, Oct. 18, 1960, Sch 28,634; Feb. 22, 1961, Sch 29,273; Feb. 23, 1961, Sch 29,280
7 Claims. (Cl. 260—256.5)

1. A sulfonamide compound of the formula



wherein R is a member consisting of lower alkyl and lower alkoxy-lower alkoxy.

2. A salt of a sulfonamide compound according to claim 1 with a physiologically tolerated base.

3,275,636

AMINE HEXAFLUOTITANATES

Edwin C. Knowles, Poughkeepsie, N.Y., Edward L. Kay, Akron, Ohio, and Frederic C. McCoy, Beacon, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 19, 1961, Ser. No. 160,642
8 Claims. (Cl. 260—270)

1. The acid addition compound having the formula:

$$[(C_2H_5)_3NH]_2TiF_6$$

2. The acid addition compound selected from the group consisting of compounds represented by the formula

(A) $(R''R'RN^+H)HTi^-F_6$

and

(B) $(R''R'RN^{++}H)_2Ti{=}F_6$

and the pyridine salt of hexafluotitanate where R is selected from the group consisting of alkyl groups and hydroxy-substituted alkyl groups having from 1 to 30 carbon atoms and a phenyl group, R' and R'' are selected from the group consisting of hydrogen and an alkyl group containing from 1 to about 24 carbon atoms.

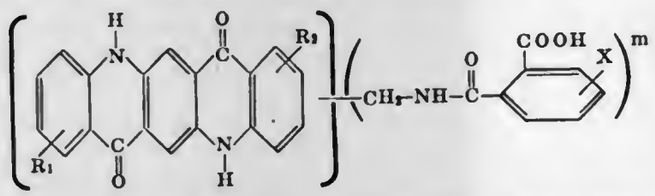
3,275,637

MODIFIED QUINACRIDONES

William A. West, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

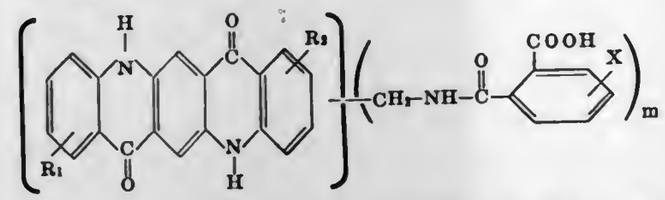
No Drawing. Filed Nov. 18, 1965, Ser. No. 509,260
14 Claims. (Cl. 260—279)

1. A quinacridone compound having the formula:



wherein the ortho-carboxybenzamidomethyl groups are substituted for aromatic hydrogen on the terminal rings, *m* is an integer from 1 to 4 inclusive, X is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl and methoxy, and R_1 and R_2 are selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl and methoxy.

4. A pigment composition of improved tinctorial and rheological properties consisting essentially of an intimate mixture of a quinacridone pigment and about 0.5% to 25% by weight based on the total weigth of the pigment composition of at least one of the quinacridone compounds having the formula:



wherein the ortho-carboxybenzamidomethyl groups are substituted for aromatic hydrogen on the terminal rings, *m* is an integer from 1 to 4 inclusive, X is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl and methoxy, and R_1 and R_2 are selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl and methoxy.

3,275,638

6-HYDROXYMORPHINAN DERIVATIVES AND PRODUCTION THEREOF

Yoshiro Sawa, Hyogo Prefecture, and Naoki Tsuzi and Haruhiko Tada, Osaka Prefecture, Japan, assignors to Shionogi & Co., Ltd., Fukushima-ku, Osaka, Japan

No Drawing. Filed Apr. 4, 1963, Ser. No. 270,558
Claims priority, application Japan, Apr. 9, 1962, 37/14,250
1 Claim. (Cl. 260—285)

(—)-3,6α-dihydroxy-N-methylmorphinan (cis).

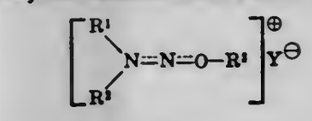
3,275,639

O-ALKYL-NITROSIMMONIUM SALTS AND PROCESS FOR THEIR PRODUCTION

Siegfried Huenig, Hochberg, near Wurzburg, Lothar Geldern, Hamburg-Harburg, and Eberhard Luecke, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 28, 1963, Ser. No. 291,284
Claims priority, application Germany, July 5, 1962, B 67,924
16 Claims. (Cl. 260—293)

1. An O-alkylnitrosimmonium salt of the formula



wherein:

R^1 when taken alone represents a radical selected from the group consisting of alkyl of 1 to 12 carbon atoms, cycloalkyl of 5 to 6 carbon atoms, benzyl, phenylethyl, phenyl, naphthyl, and said benzyl, phenylethyl, phenyl and naphthyl substituted by a member selected from the group consisting of lower alkyl, halogen, lower alkoxy and nitro;

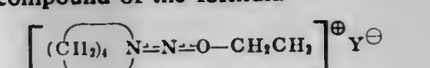
R^2 when taken alone represents a radical selected from the group consisting of alkyl of 1 to 12 carbon atoms, said alkyl substituted by halogen, said alkyl substituted by lower alkoxy and cycloalkyl of 5 to 6 carbon atoms;

R^1 and R^2 when taken together with the nitrogen atom represent a saturated heterocyclus of 5 to 6 ring members;

R^3 represents alkyl of 1 to 12 carbon atoms; and

$Y^\ominus$ is the anion of a strong mineral acid.

8. The compound of the formula



wherein $Y^\ominus$ is the anion of a strong mineral acid.

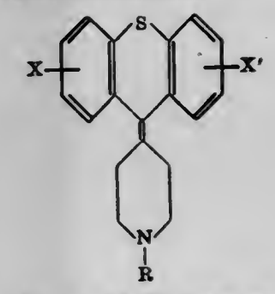
3,275,640

SUBSTITUTED 1-HYDROCARBYL-4-(10-THIAXANTHYLIDENE) PIPERIDINES

Edward L. Engelhardt, Gwynedd Valley, and Howard C. Zell, Ambler, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 29, 1961, Ser. No. 141,607
6 Claims. (Cl. 260—293.4)

1. A compound of the formula



wherein X and X' can be the same or different and are selected from the group consisting of hydrogen, halogen,

lower-alkyl, perfluoro lower-alkyl, lower-alkoxy and phenyl, and R is selected from the group consisting of lower-alkyl and lower-alkenyl; and the non-toxic salts of said compound.

3,275,641
4-ACYLOXY-4-ARYL-1-(ARYLAMINOALKYL) PIPERIDINES AND THEIR PREPARATION

Philip M. Carabateas, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,606
3 Claims. (Cl. 260—294)

2. 4 - phenyl - 1 - (2 - N - phenyltrifluoroacetamidoethyl)-4-propionoxypiperidine.

3. 4 - phenyl - 1 - (2 - N - phenyltrifluoroacetamidoethyl)-4-piperidinol.

3,275,642
3-PYRIDINE CARBINOL NITRATE AND ITS PREPARATION

Robert H. Broh-Kahn, Hastings on Hudson, and Alexander Galat, Yonkers, N.Y., assignors to Bard Pharmaceutical Inc., Westchester County, N.Y., a corporation of New York

No Drawing. Filed Apr. 26, 1962, Ser. No. 190,233
7 Claims. (Cl. 260—297)

1. A compound selected from the group consisting of the nitrate ester of 3-pyridine carbinol and its water-soluble pharmaceutically acceptable salts.

3,275,643
ALLANTOIN-PANTOTHENATE COMPOUNDS

Irwin I. Lubowe, 667 Madison Ave., New York, N.Y.

No Drawing. Filed July 19, 1963, Ser. No. 296,396
6 Claims. (Cl. 260—299)

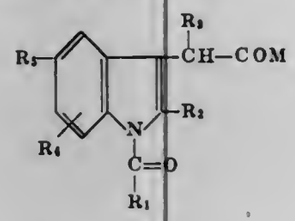
1. Allantoin pantothenate.
2. Allantoin aluminum pantothenate.
3. Allantoin calcium pantothenate.

3,275,644
CERTAIN 1-AZOLYLINDOL-3-YLALIPHATIC ACIDS

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 4, 1963, Ser. No. 321,328
20 Claims. (Cl. 260—302)

1. A compound of the formula:



in which

R_1 is selected from the group consisting of oxazole, thiazole, imidazole, isoxazole, isothiazole, pyrazole, oxadiazole, thiadiazole and oxazole, thiazole, imidazole, isoxazole, isothiazole, pyrazole, oxadiazole, and thiadiazole substituted radicals in which said substituent is selected from the group consisting of halogen, lower alkyl, lower alkylthio, lower alkenylthio, halogeno-lower allylthio, di(lower alkyl)amino lower alkylthio, lower alkoxy, trifluoromethyl, benzyl, phenyl, hydroxy, lower allyl, lower alkoxy, lower alkyl, nitrophenyl, halogenophenyl, anilino, sulfamyl, lower alkanoyl, pyridyl carboxy, carboxamido, cyano, carb-lower alkoxy, cyanomethyl, mercapto, nitro, amino, di(lower alkyl)amino, lower alkyl amino, lower alkanoylamino, hydroxy, amino lower allyl, benzyloxy, halogeno lower alkanoyl, and di(lower alkyl)amino, lower alkyl;

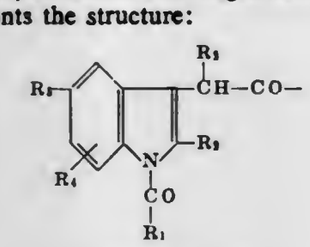
R_2 is selected from the group consisting of hydrogen, lower alkenyl and lower alkyl;

R_3 is selected from the group consisting of hydrogen and lower alkyl;

R_4 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, fluorine and trifluoromethyl;

R_5 is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower alkoxy, nitro, amino, lower alkylamino, di(lower alkyl)amino, lower alkanoylamino, lower alkanoyl, lower alkylamino, bis-(hydroxy lower alkyl)amino, 1-pyrrolidino, 4-methyl-1-piperazinyl, 4-morpholinyl, cyano, amino lower alkyl, di(lower alkyl)amino, lower alkyl, trifluoromethyl, halogen, di(lower alkyl)sulfamyl, benzylthio, lower alkylbenzylthio, lower alkoxybenzylthio, halogenobenzylthio, benzyloxy, lower alkyl benzyloxy, lower alkoxybenzyloxy, halogenobenzyloxy, lower alkenyl, lower alkenyloxy, 1-azacyclopropyl, cyclopropyl(lower alkoxy)methyloxy, and cyclobutyl(lower alkoxy)methyloxy; and

M is selected from the group consisting of OH, NH_2, benzyloxy, lower alkoxy, OZ where Z is selected from the group consisting of an alkaline metal, an alkaline earth metal, aluminum and magnesium and OY where Y represents the structure:

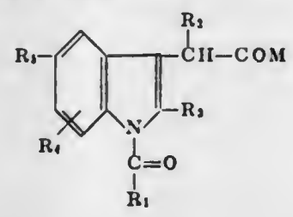


3,275,645
N-(1-ACYL-3-INDOLYL)-ACIDS

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,686
20 Claims. (Cl. 260—304)

1. A compound of the formula:



in which

R_1 is selected from the group consisting of benzisoxazole, benzimidazole, benzofuran, benzothiazole, benzotriazole, benzoxazole, benzothiophene, indole, indazole and an isindazole radical and a substituted benzisoxazole, benzimidazole, benzofuran, benzothiazole, benzotriazole, benzoxazole, benzothiophene, indole, indazole and an isindazole radical in which said substituent is selected from the group consisting of halogen, lower alkyl, lower alkylthio, lower alkoxy, lower alkanoyl, cyano, carb-lower alkoxy, benzylthio, mercapto, nitro, amino, di(lower alkyl)amino, lower alkanoylamino, hydroxy, benzyloxy, di(lower alkanoyl)amino, benzamido, benzenesulfonamido, phenyl, lower alkoxyphenyl, benzoyl, naphthoyl, di(lower alkoxy)phenyl, di(lower alkyl)amino, lower alkyl, amino lower alkyl, lower alkyl amino, nitrophenyl, lower alkanoylamino, phenyl, dihydroxybenzoyl, thenoyl, benzyl, di(lower alkoxy) lower alkyl, lower alkoxy lower alkyl, phenylamino lower alkyl, morpholino lower alkyl, lower alkenyl, halogenobenzyloxy, and lower alkyl benzyloxy;

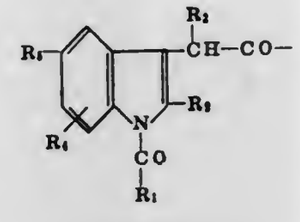
R_2 is selected from the group consisting of hydrogen, lower alkenyl and lower alkyl;

R_3 is selected from the group consisting of hydrogen and lower alkyl;

R_4 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, fluorine and trifluoromethyl;

R_5 is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower alkoxy, nitro, amino, lower alkylamino, di(lower alkyl)amino, lower alkanoylamino, lower alkanoyl, lower alkylamino, bis(hydroxy lower alkyl)amino, 1-pyrrolidino, 4-methyl-1-piperazinyl, 4-morpholinyl, cyano, amino lower alkyl, di(lower alkyl)amino, lower alkyl, trifluoromethyl, halogen, di(lower alkyl)sulfamyl, benzylthio, lower alkylbenzylthio, lower alkoxybenzylthio, halogenobenzylthio, benzyloxy, lower alkylbenzyloxy, lower alkoxybenzyloxy, halogenobenzyloxy, lower alkenyl, lower alkenyloxy, 1-azacyclopropyl, cyclopropyl(lower alkoxy)methyloxy, and cyclobutyl(lower alkoxy)methyloxy; and

M is selected from the group consisting of OH, NH_2, benzyloxy, lower alkoxy, OZ where Z is selected from the group consisting of alkaline metal, alkaline earth metal, aluminum and magnesium and OY where Y represents the structure:



3,275,646
PREPARATION OF THIADIAZOLES

Peter Kirby, 80 Fauchons Lane, Maidstone, England; John Roberts, 247 Lansdale Drive, Gillingham, England; and John H. Davies, 43 Herne Bay Road, Whitstable, England

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,318
Claims priority, application Great Britain, Dec. 8, 1964, 49,895/64
8 Claims. (Cl. 260—304)

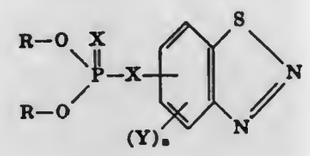
1. A process for the preparation of a hydroxy-1,2,3-benzothiadiazole which comprises diazotisation of the appropriate aminobenzothiazole and acid hydrolysis of the diazotised reaction mixture to form the desired hydroxy-1,2,3-benzothiadiazole.

3,275,647
PHOSPHORUS ESTERS OF HYDROXY-1,2,3-BENZOTHIADIAZOLES

Johannes Th. Hackmann, Enschede, Netherlands, and Peter Kirby, Maidstone, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 6, 1965, Ser. No. 512,019
Claims priority, application Great Britain, Dec. 8, 1964, 49,894/64
8 Claims. (Cl. 260—304)

1. A phosphorus ester of the formula:



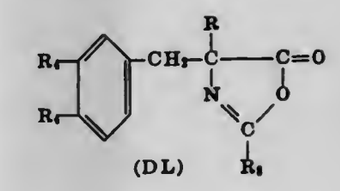
wherein each R represents alkyl of from 1 to 4 carbon atoms, *n* is zero or one, Y represents middle halogen and each X represents oxygen or sulfur.

3,275,648
AZLACTONES AND PREPARATION OF SAME

Harry L. Slates, Florham Park, and Norman L. Wendler, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 31, 1963, Ser. No. 334,691
5 Claims. (Cl. 260—307)

1. A racemic compound of the formula:



(DL)

in which

R is a lower alkyl

R_2 is a lower alkyl

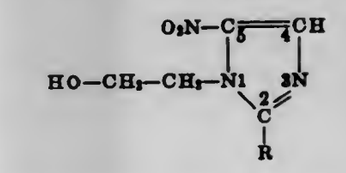
R_4 is selected from the group consisting of lower alkoxy and lower alkanoyloxy.

3,275,649
PROCESS FOR THE PREPARATION OF 1-(2-HYDROXYETHYL) IMIDAZOLE DERIVATIVES

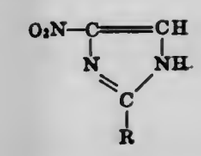
Ctirad Podesva and Kitty Vagi, Montreal, Quebec, Canada, assignors to Rhone-Poulenc S.A., a corporation of France

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,547
Claims priority, application Canada, Dec. 20, 1962, 865,113
6 Claims. (Cl. 260—309)

1. A process for the preparation of a 1-(2-hydroxyethyl)-4-nitroimidazole of the formula:



wherein R represents a member of the class consisting of hydrogen, alkyl of up to five carbon atoms, aryl, aralkyl and cycloalkyl, which consists in contacting ethylene oxide with a nitroimidazole of the formula:



wherein R is as just defined, in solution in enough of at least one unsubstituted saturated aliphatic carboxylic acid of up to 4 carbon atoms to dissolve all the nitroimidazole starting material at the reaction temperature, and recovering the 1-(2-hydroxyethyl)-5-nitroimidazole product from the reaction mixture.

3,275,650
7 - NITROSO-7,14-DIAZADISPIRO - [5.1.5.2] - PENTADECANE-15-THIONE AND LOWER ALKYL DERIVATIVES THEREOF

Wendell S. Cook, Fulton, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 11, 1964, Ser. No. 388,943
2 Claims. (Cl. 260—309.7)

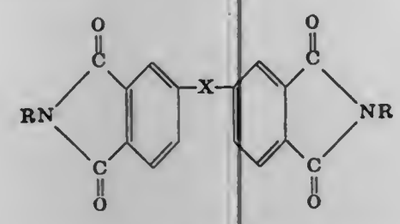
1. 7 - nitroso-7,14-diazadispiro-[5.1.5.2]-pentadecane-15-thione and lower alkyl derivatives thereof substituted on methylene groups which are connected to two other methylene groups.

3,275,651
NITROGEN-CONTAINING DIARYL COMPOUNDS

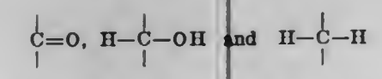
Alan F. Ellis and Johann G. D. Schulz, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,563
22 Claims. (Cl. 260—326)

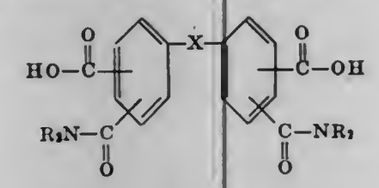
1. Diimides of the structural formula,



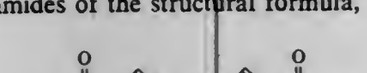
wherein R is selected from the group consisting of hydrogen, alkyl groups and aryl groups and X is selected from the groups consisting of



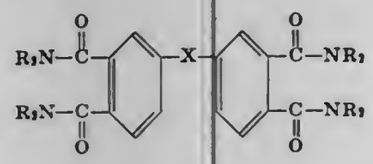
2. Diamic acids of the structural formula,



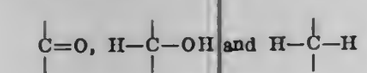
wherein the substituents on the ring are in the 3 and 4 position relative to X, R is selected from the group consisting of hydrogen, alkyl groups and aryl groups and X is selected from the group consisting of



3. Tetraamides of the structural formula,



wherein R is selected from the group consisting of hydrogen, alkyl groups and aryl groups and X is selected from the group consisting of



3,275,652
NOVEL 2-CARBOXAMIDO-N-IMIDOMETHYL-6-DEMETHYL-6-DEOXYTETRACYCLINES

Michael Joseph Martell, Jr., 62 Amory Ave., Pearl River, N.Y., and Andrew Stephen Tomcufcik, 48 Dearborn Drive, Old Tappan, N.J.

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,713
11 Claims. (Cl. 260—326)

2. 2 - carboxamido - N - acetamidomethyl - 6 - deoxytetracycline.

7. 2 - carboxamido - N - succinimidomethyl - 5 - hydroxy-6-deoxytetracycline.

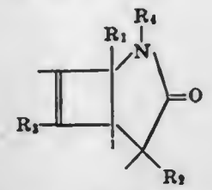
10. 2 - carboxamido - N - (4 - methylphthalimidomethyl)-6-deoxytetracycline.

3,275,653
2-AZABICYCLO[3,2,0]HEPT-6-EN-3-ONES AND PROCESS FOR THEIR PRODUCTION

Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application May 9, 1963, Ser. No. 279,294. Divided and this application Dec. 3, 1965, Ser. No. 525,788
7 Claims. (Cl. 260—326.5)

1. A compound of the formula:



wherein R_1 and R_2 are alkyl of 1 to 4 carbon atoms, inclusive, wherein R_3 is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive, and wherein R_4 is selected from the group consisting of hydrogen, alkyl of 1 to 6 carbon atoms, inclusive, alkenyl of 3 to 6 carbon atoms, inclusive, alkynyl of 3 to 6 carbon atoms, inclusive, cycloalkyl of 5 to 10 carbon atoms, inclusive, and aralkyl of 7 to 11 carbon atoms, inclusive.

3,275,654
1-ISOPROPYLAMINO-2-HYDROXY-3-PHENOXY-PROPANES AND SALTS THEREOF

Max Wilhelm, Allschwil, Hans Ulrich Daeniker, Reinach, Basel-Land, Karl Schenker, Binningen, and Paul Schmidt, Therwil, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 20, 1965, Ser. No. 481,410
Claims priority, application Switzerland, Sept. 10, 1964, 11,799/64; July 9, 1965, 9,628/65
6 Claims. (Cl. 260—326.14)

5. An acid addition salt of 1-isopropylamino-2-hydroxy-3-(ortho-methoxymethyl-phenoxy)-propane.

3,275,655
2,3-EPITHIOPROPYL 1-ETHYNYLCYCLOHEXYL ETHER

Roger F. Monroe, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,630
1 Claim. (Cl. 260—327)

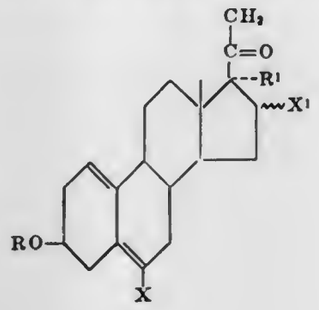
2,3-epithiopropyl 1-ethynylcyclohexyl ether.

3,275,656
$\Delta^{1(10),5}$-19-NOR PREGNADIENES AND PROCESS THEREFOR

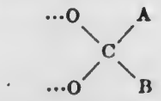
Albert Bowers and Otto Halpern, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed July 9, 1963, Ser. No. 293,831
Claims priority, application Mexico, Mar. 14, 1963, 71,257
20 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein X is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkinyl; R is selected from the group consisting of hydrogen and an acyl radical of less than 12 carbon atoms; R^1 is selected from the group consisting of hydrogen, hydroxy and acyloxy of less than 12 carbon atoms; X^1 is selected from the group consisting of hydrogen, α-methyl, β-methyl, α-hydroxy and α-acyloxy of less than 12 carbon atoms and R^1 and X^1 together represent the grouping



wherein A is selected from the group consisting of hydrogen and lower alkyl and B is selected from the group consisting of lower alkyl, aryl and aralkyl of up to 8 carbon atoms.

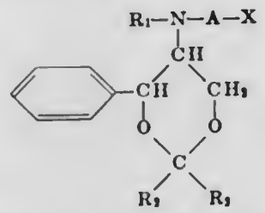
10. 6-methyl-16α,17α-isopropylidenedioxy-$\Delta^{1(10),5}$-19-nor-pregnadien-3β-ol-20-one.

3,275,657
BASIC 1,3-DIOXANES AND THEIR SALTS

Werner Winter and Kurt Stach, Mannheim, and Wolfgang Schaumann, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., a corporation of Delaware

No Drawing. Filed Sept. 13, 1963, Ser. No. 308,633
Claims priority, application Germany, Sept. 29, 1962, B 69,027
5 Claims. (Cl. 260—340.7)

1. A compound of the class consisting of the free base and its acid addition salts, said free base having the formula



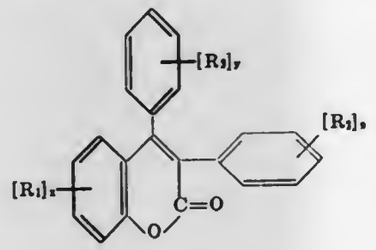
wherein R_1 represents a member selected from the group consisting of hydrogen and methyl, A represents an alkylene radical having from 1–3 carbon atoms, X represents benzohydryl and R_2 and R_3 each represents a member selected from the group consisting of hydrogen, methyl and phenyl and when taken together with the 2–C atom of the dioxane ring a cycloalkyl group of 5–7 carbon atoms, with the proviso that only one of R_2 and R_3 is phenyl and R_1 is methyl when R_2 and R_3 represent dissimilar members selected from the group consisting of methyl and phenyl.

3,275,658
TERTIARY-AMINOALKOXY-SUBSTITUTED 3,4-DIPHENYLCOUMARINS

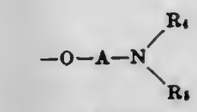
Daniel Lednicer, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 23, 1963, Ser. No. 282,568
9 Claims. (Cl. 260—343.2)

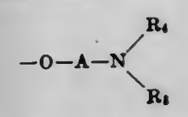
1. A compound selected from the class consisting of (a) a compound having the formula:



wherein R_1, R_2, and R_3 are each selected from the class consisting of lower-alkyl, lower-alkenyl, trifluoromethyl, lower-alkoxy, lower-alkenyloxy, lower-alkylenedioxy, hydroxy, halogen, lower-alkylmercapto, and



wherein A is an alkylene group containing from 2 to 6 carbon atoms, inclusive, R_4 and R_5 are selected from the class consisting of lower-alkyl and lower-alkyl linked together to form, with the attached nitrogen atom, a 5 to 7 ring atom saturated heterocyclic radical, and x, y, and z are each integers from 0 to 4, inclusive, provided that at least one of the groups R_1, R_2, and R_3 represents



(b) an acid addition salt of the compound of the above formula with a pharmacologically acceptable acid; and

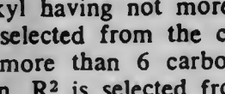
(c) a quaternary ammonium salt of the compound of the above formula wherein the anion of the quaternary salt is that of a pharmacologically acceptable acid.

3,275,659
TRIORGANOTIN OXIMES AND THEIR PREPARATION

Gustav Weissenberger, Zurich, Switzerland, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,797
Claims priority, application Switzerland, Apr. 28, 1961, 5,058/61
13 Claims. (Cl. 260—347.7)

1. A process for preparing triorganotin oximes of the general formula $R^1R^2C{=}N{-}O{-}SnR^3R^4R^5$ wherein R^3, R^4 and R^5 are alkyl having not more than 18 carbon atoms, and R^1 is selected from the class consisting of alkyl having not more than 6 carbon atoms, phenyl, furyl and hydrogen, R^2 is selected from the class consisting of R^1 and



and R^1 and R^2 when taken together with the carbon atom to which they are attached are

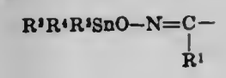


groups, comprising heating to reaction temperature an oxime of the formula $R^1R^2C{=}N{—}OH$ wherein R^1 and R^2 are as defined hereinabove, with a tin compound selected from the class consisting of a triorganotin oxide of the formula $(R^3R^4R^5Sn)_2O$ wherein R^3, R^4 and R^5 are as described hereinabove, and continuously removing the water of reaction.

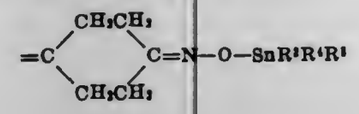
8. A triorganotin oxime of the formula

$$R^1R^2C{=}N{—}O{—}SnR^3R^4R^5$$

wherein R^3, R^4 and R^5 are alkyl having not more than 18 carbon atoms, and R^1 is selected from the class consisting of alkyl having not more than 6 carbon atoms, phenyl, furyl and hydrogen, R^2 is selected from the class consisting of R^1 and



and R^1 and R^2 when taken together with the carbon atom to which they are attached are



groups.

3,275,660

SUBSTITUTED 2,7-DIOXASPIRO(4.4)NONANES

Burton Kendall Wasson, 103 Broadview Ave., Valois, Quebec, Canada, and John Mulvin Parker, 480 Three Valley Crescent, London, Ontario, Canada

No Drawing. Filed Dec. 2, 1965, Ser. No. 511,212
7 Claims. (Cl. 260—347.7)

1. A compound of the formula:



and non-toxic acid addition salts thereof wherein R is a member of the group consisting of (1) Y-phenyl(lower alkyl)amino where Y is a member of the group consisting of bromo, methyl, ethyl, methoxy and ethoxy, and (2) bicyclo(2:2:1)-5-hepten-2-yl(lower alkyl)amino.

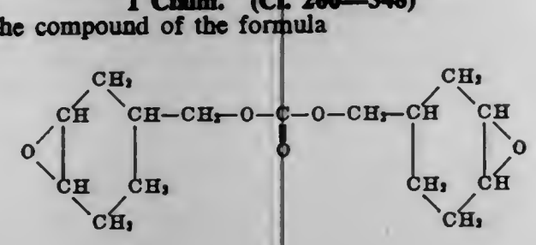
3,275,661

EPOXY COMPOUNDS

Gustav Widmer, Basel, Hans Batzer, Arlesheim, and Erwin Nikles, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss firm

No Drawing. Filed Mar. 1, 1960, Ser. No. 11,964
Claims priority, application Switzerland, Mar. 5, 1959, 70,384; Sept. 10, 1959, 78,067
1 Claim. (Cl. 260—348)

The compound of the formula



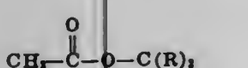
3,275,662

PROCESS FOR THE LIQUID PHASE DIRECT OXIDATION OF OLEFINS TO OLEFIN OXIDES

Virgil W. Gash, Ballwin, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,095
13 Claims. (Cl. 260—348.5)

1. Process for the preparation of olefin oxides which comprises oxidizing epoxidizable olefinically unsaturated compounds with molecular oxygen in a solvent selected from the group consisting of acetic acid esters having the formula



and mixtures thereof, wherein each R is selected from the group consisting of hydrogen, straight chain alkyl and haloalkyl groups having from 1 to 3 carbon atoms and straight chain alkyl and haloalkyl groups having from 1 to 3 carbon atoms having as substituents on other than the terminal carbon atom thereof at least one member selected from the group consisting of alkyl and haloalkyl groups having from 1 to 3 carbon atoms, provided that no more than one methylene group is attached to the alpha-carbon atom.

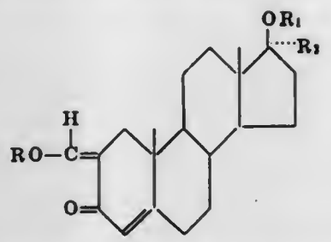
3,275,663

2-HYDROXYMETHYLENE TESTOSTERONE DERIVATIVES

Howard J. Ringold and George Rosenkranz, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Jan. 21, 1960, Ser. No. 3,748
Claims priority, application Mexico, Aug. 30, 1957, 48,697
16 Claims. (Cl. 260—397.4)

1. A compound of the following formula:



wherein R is selected from the group consisting of lower alkyl, benzyl and hydrocarbon carboxylic acyl of less than 12 carbon atoms; R_1 is selected from the group consisting of hydrogen and hydrocarbon carboxylic acyl of less than 12 carbon atoms; R_2 is lower alkyl.

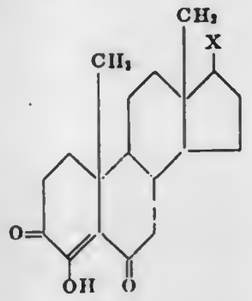
3,275,664

4-HYDROXY-3,6-DIKETO STEROIDS AND ENOL ETHERS CORRESPONDING

Harold Levy, Shrewsbury, Mass., and Alex D. Tait, Cardross, Scotland, assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 21, 1964, Ser. No. 405,605
9 Claims. (Cl. 260—397.4)

1. A member selected from the group consisting of compounds of the formula



and the corresponding 3-(lower alkyl) enol ethers, wherein X is a member of the class consisting of hydroxyl, acetoxy, and acetyl radicals.

3,275,665

PROCESS FOR THE PREPARATION OF $\Delta^{9(11)}$-STEROID COMPOUNDS

Peter Ziegler, Toronto, Ontario, and John C. Grivas, Weston, Ontario, Canada, assignors to Canada Packers Limited, Toronto, Ontario, Canada

No Drawing. Filed Jan. 23, 1964, Ser. No. 339,611
19 Claims. (Cl. 260—397.5)

1. A process which comprises reacting a 12-oxygenated-$\Delta^{9(11)}$-steroid compound in which any C–20 carbon atom present is bonded only to carbon and hydrogen atoms with an alkali metal aluminum hydride-aluminum halide reducing agent to remove the 12-oxygen function.

12. A process for preparing 3α,24-dihydroxy-$\Delta^{9(11)}$-cholene comprising reducing 3α-hydroxy-$\Delta^{9(11)}$-12-keto-cholenic acid with sodium borohydride to provide the 12-hydroxy derivative thereof and reacting said 12-hydroxy derivative with an excess of $AlCl_3$–$LiAlH_4$ to remove said 12-hydroxy group with simultaneous reduction of the 24-carboxyl group.

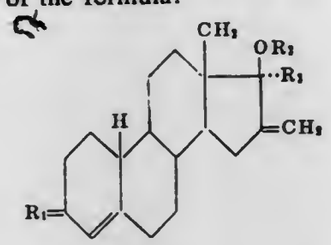
3,275,666

16-METHYLENE STEROIDS OF THE ESTRENE SERIES

Cornelis Maurits Siegmann, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 5, 1964, Ser. No. 349,744
Claims priority, application Netherlands, Mar. 13, 1963, 290,170
4 Claims. (Cl. 260—397.5)

1. Steroids of the formula:



wherein

R_1 is selected from the group consisting of H_2 and O,
R_2 is selected from the group consisting of hydrogen and acyl derived from an organic hydrocarbon carboxylic acid having 1–18 carbon atoms,
R_3 is selected from the group consisting of hydrogen, a saturated and an unsaturated aliphatic hydrocarbon with 1–4 carbon atoms.

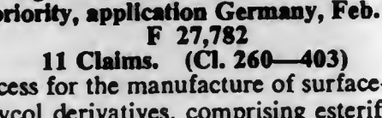
3,275,667

PROCESS FOR THE MANUFACTURE OF PHOSPHATE ESTER DERIVATIVES OF POLYALKYLENE GLYCOLS

Johann Bohunek, Burgkirchen, Upper Bavaria, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 21, 1963, Ser. No. 252,619
Claims priority, application Germany, Feb. 24, 1959, F 27,782
11 Claims. (Cl. 260—403)

1. A process for the manufacture of surface-active polyalkylene-glycol derivatives, comprising esterifying a compound of the formula



wherein n stands for the integers 3 or 4, u stands for an integer from 1 to 10, v and w represent integers from 0 to 10, x, y and z represent values from 1 to 200, m_1, m_2 and m_3 represent values from 0 to 200, the sum of the values of the correlated integers x and m_1, y and m_2, and z and m_3 not exceeding in each case values ranging from 1 to 200, Z_1, Z_2 and Z_3 represent a member selected from the group consisting of oxygen, sulfur, —COO—, —$CONR_1$—, —$SONR_1$—, —SO— and —SO_2—, wherein R_1 stands for a member selected from the group consisting of a lower alkylene radical and a radical of the formula

$$—(C_nH_{2n}O)_{m_1}(C_2H_4O)_x—C_2H_4OH$$

wherein m_1, n and x have the meaning given above and R stands for a radical selected from the group consisting of phenyl, hydrogen, naphthyl, substituted phenyl or naphthyl wherein the substituents are chloro, nitro or alkyl having up to 12 carbon atoms, phenyl or naphthyl linked by lower alkylene, —CO—, —SO— or —SO_2—, alkyl having up to 30 carbon atoms, phenyl substituted alkyl having up to 30 carbon atoms in the alkyl, naphthyl substituted alkyl having up to 30 carbon atoms in the alkyl, alkyl containing up to 30 carbon atoms having oxygen in its chain, hydrocarbylcycloaliphatic having from 5 to 22 carbon atoms, phenyl substituted hydrocarbylcycloaliphatic having from 5 to 22 carbon atoms, alkyl substituted hydrocarbylcycloaliphatic having from 5 to 34 carbon atoms or a radical of the formula

$$—(C_nH_{2n}O)_{m_1}(C_2H_4O)_x—C_2H_4OH$$

wherein m_1, n and x have the meaning defined above, by heating to 190 to 280° C. for 5 minutes to 25 hours with a member selected from the group consisting of orthophosphoric acid, phosphorus oxy chloride, phosphorus pentoxide, metaphosphoric acid, pyrophosphoric acid, and a polyphosphorus acid formed by further dehydration from ortho-phosphoric acid, and continuously and simultaneously removing volatile by-products liberated during the reaction to form a product having the acid number within the range of 0 to 4.

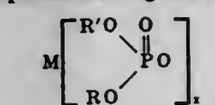
3,275,668

ORGANOMETALLIC ORTHOPHOSPHATES

Anthony J. Revukas, Cranford, N.J., assignor to Cities Service Oil Company, a corporation of Delaware

No Drawing. Filed July 31, 1961, Ser. No. 127,840
8 Claims. (Cl. 260—429.3)

2. A liquid compound having the formula:



wherein M is a metal selected from the group consisting of titanium and zirconium, X is a number equal to the valence of the metal M and each of R and R′ is a branched chain alkyl having up to about 30 carbon atoms.

5. Zirconium tetra (bis(2-ethylhexyl) orthophosphate).

7. Zirconium tri (bis(2-ethylhexyl) orthophosphate).

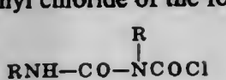
3,275,669

PREPARATION OF ORGANIC ISOCYANATES FROM N,N′-DISUBSTITUTED ALLOPHANYL CHLORIDES

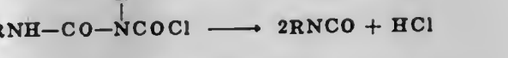
Henri Ulrich, Northford, James N. Tilley, Hamden, and Adnan A. Sayigh, North Haven, Conn., assignors, by mesne assignments, to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,647
10 Claims. (Cl. 260—453)

1. A process for making isocyanates of the formula RNCO wherein R is a hydrocarbon radical of not more than 18 carbon atoms which is attached to the NCO group by aliphatic carbon which comprises heating a disubstituted allophanyl chloride of the formula



wherein R is as given above in an inert solvent to cause decomposition according to the formula



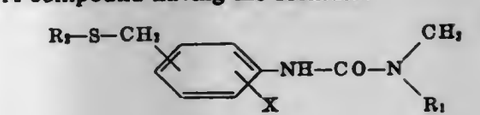
3,275,670

NOVEL UREA DERIVATIVES

Gustav Steinbrunn, Schwegenheim, Pfalz, Adolf Fischer, Mutterstadt, Pfalz, and Erich Flickinger, Frankweiler, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,882
Claims priority, application Germany, Dec. 3, 1963, B 74,507; July 4, 1964, B 77,541
4 Claims. (Cl. 260—453)

1. A compound having the formula:



in where R_1 denotes a member selected from the group consisting of methyl, methoxy and sec-but-3-ynyl, R_2 denotes a member selected from the group consisting of an alkyl radical having up to four carbon atoms, an alkyl radical having up to four carbon atoms which bears a hydroxyl group as a substituent, an alkenyl radical having three to four carbon atoms and bearing two to three chlorine atoms as substituents, and the trichlorobenzyl radical X denotes a member selected from the group consisting of hydrogen and chlorine.

3,275,671

STABILIZATION OF ORGANIC ISOCYANATES WITH MONOALKENYL-THIOUREAS

David T. Manning, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,811
5 Claims. (Cl. 260—453)

1. An isocyanate solution comprising an amount of thiourea sufficient to retard discoloration of the isocyanate, said thiourea possessing one nitrogen atom bearing two hydrogen atoms and the other nitrogen bearing one directly bonded alkenyl radical.

3,275,672

PROCESS FOR PREPARING SULFONIC ACID ESTERS

Rudolf Kühne, Helmut Diery, and Bernhard Kiefer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 9, 1963, Ser. No. 293,865
Claims priority, application Germany, July 12, 1962, F 37,299
10 Claims. (Cl. 260—456)

1. A process for preparing a vinyl sulfonic acid ester which comprises reacting carbyl sulfate, methyl carbyl sulfate, bromomethyl carbyl sulfate or chloromethyl carbyl sulfate with a monohydroxy alkanol of up to 12 carbon atoms at a pH-value greater than 9.

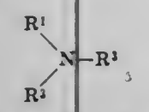
3,275,673

EXTRACTION METHOD FOR RECOVERING AMINE OXIDE SALTS FROM AQUEOUS SOLUTIONS

David O. Barlow, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 15, 1963, Ser. No. 280,709
5 Claims. (Cl. 260—459)

1. The method of recovering an amine oxide in the form of a salt thereof from an aqueous solution of said amine oxide, which amine oxide is the oxide of a tertiary amine of the formula



wherein each of R^1 and R^2 is from the group consisting of methyl and ethyl radicals and R_3 is an alkyl radical having from 8 to 20 carbon atoms, said method comprising reacting an aqueous solution of said amine oxide with an acid to form an aqueous solution of a salt of said amine oxide and said acid, extracting said salt from the latter solution with a water-immiscible, polar organic solvent which is a solvent for said salt and is inert thereto and has an atmospheric boiling point not higher than 100° C., then removing said solvent from the resulting extract; said acid being from the group consisting of (a) the aromatic and alkylsubstituted aromatic sulfonic acids in which the alkyl substituent groups contain from 1 to 20 carbon atoms, (b) the aliphatic sulfonic acids containing from 10 to 20 carbon atoms, and (c) the fatty alcohol half-esters of sulfuric acid containing from 10 to 20 carbon atoms; and said organic solvent being from the group consisting of methylene chloride, chloroform, methyl acetate, ethyl acetate, isopropyl acetate, methyl propionate, ethyl propionate, diethyl ether, dipropyl ether, ethyl propyl ether, ethyl butyl ether and methyl butyl ether.

3,275,674

PROCESS FOR THE MANUFACTURE OF CARBONIC ACID ESTERS

Ludwig Bottenbruch, Krefeld-Bockum, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 1, 1960, Ser. No. 46,360
Claims priority, application Germany, Dec. 4, 1956, F 21,284
7 Claims. (Cl. 260—463)

1. In a process for the manufacture of monomeric carbonic acid esters by reacting organic hydroxy compounds with a carbonic acid derivative selected from the group consisting of phosgene and chlorocarbonic acid esters of organic hydroxy compounds in an aqueous alkaline solution, the improvement comprising increasing the speed of the reaction by employing as a catalyst in said reaction about 0.005–1% by weight, based on the weight of said hydroxy compounds, of a tertiary amine selected from the group consisting of trimethylamine, triethylamine, tripropylamine, tributylamine, N,N - dimethylcyclohexylamine, N,N-diethylcyclohexylamine, N,N-dimethylaniline, N,N-diethylaniline, pyridine, picoline, methylpyridine and quinoline at temperatures from about 0° C. to about 100° C., said organic hydroxy compounds being selected from the group consisting of saturated and unsaturated unsubstituted alcohols, saturated and unsaturated phenyl-substituted alcohols, unsubstituted partially esterified and partially etherified polyhydric alcohols containing a free hydroxyl group, unsubstituted monohydric phenols and naphthols, unsubstituted polyhydric phenols, monohydric phenols and naphthols which are substituted by a member selected from the group consisting of alkyl, cycloalkyl, halogen and nitro substituents, and unsubstituted partially esterified and etherified polyhydric phenols containing a free hydroxyl group, whereby said monomeric carbonic acid ester is obtained in improved yield and with a higher purity.

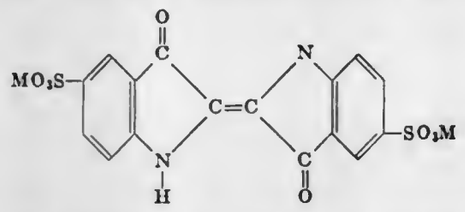
3,275,675

PROCESS FOR MAKING CYCLOBUTANE-1,2-DICYANIDES

James D. Idol, Jr., Shaker Heights, Janice L. Greene, Warrensville Heights, and Nancy R. Gray, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,076
3 Claims. (Cl. 260—464)

1. The process of forming a cyclobutane-1,2-dicyanide which comprises heating for from ¼ to about 7 hours at least one nitrile selected from the group consisting of acrylonitrile and methacrylonitrile to a temperature of from 175 to 350° C. in the substantial absence of molecular oxygen and in the presence of from 0.01 to about 1.0% by weight of indigo carmine dye having the structure



wherein M is selected from the group consisting of hydrogen and an alkali metal.

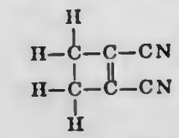
3,275,676

PROCESS FOR PREPARING CYCLOBUTENE-1,2-DICYANIDE

Janice L. Greene, Warrensville Heights, Norman W. Standish, Shaker Heights, and Nancy R. Gray, Cleveland Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,313
3 Claims. (Cl. 260—464)

1. The method which comprises reacting cyclobutane-1,2-dichloro-1,2-dicyanide with a material selected from the group consisting of a zinc-copper couple and Raney nickel in a solvent and recovering as the product cyclobutene-1,2-dicyanide having the following formula



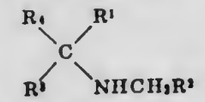
3,275,677

ALPHA-CYANOMETHYLAMINONITRILE AND ALPHA-CARBOXAMIDOMETHYLAMINONITRILE COMPOUNDS

Duff Shederic Allen, Jr., Dobbs Ferry, and Edward Rudolph Ruso, Nanuet, N.Y., and Sidney A. Frankel, Edison, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 20, 1963, Ser. No. 303,410
13 Claims. (Cl. 260—465)

1. A compound of the formula:



wherein R^1 and R^2 are cyano, R^3 is lower alkyl and R^4 is selected from the group consisting of phenyl, halophenyl, dihalophenyl, lower alkylphenyl, di(lower)alkylphenyl, lower alkoxyphenyl and trifluoromethylphenyl and acid addition salts thereof.

3,275,678

MIXED ESTERS OF POLYCARBOXYLIC ACIDS (25% AROMATIC DICARBOXYLIC) WITH ETHYLENE OXIDE ADDUCT

Carl Bernstein, Deerfield, and Kermit Longley, Park Forest, Ill., assignors to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 13, 1962, Ser. No. 223,545
5 Claims. (Cl. 260—475)

1. An ester comprising a reaction product of (a) polycarboxylic acid component of which aromatic dicarboxylic acid constitutes at least 25% by weight, with (b) an ethylene oxide adduct of an aliphatic polyhydric alcohol, said aliphatic polyhydric alcohol containing from 3 to 6 hydroxyl groups, said adduct containing, for each mol of said aliphatic polyhydric alcohol, such a number of mols of ethylene oxide whereby said adduct contains from 10 to 20 milli-equivalents, per gram, of hydroxyl groups, said ester having an hydroxyl number between about 280 and about 550.

3,275,679

BIS(ISOCYANOTOALKYL OR PHENYL) TRANS-9,10-DIHYDROANTHRACENE 9,10-ENDO α,β-SUCCINATES

Thomas K. Brotherton and John W. Lynn, Charleston, and Robert J. Knopf, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 25, 1963, Ser. No. 256,495
3 Claims. (Cl. 260—475)

1. Bis(2-isocyanatoethyl) trans - 9,10 - dihydroanthracene19,10-endo-α,β-succinate.

3,275,680

PRODUCTION OF ORGANIC ACETATES IN PRESENCE OF A NOBLE METAL CATALYST AND OXYGEN

Hermann Holzrichter, Walter Krönig, and Bruno Frenz, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 23, 1963, Ser. No. 253,279
Claims priority, application Germany, Feb. 3, 1962, F 35,917; Oct. 11, 1962, F 38,011
15 Claims. (Cl. 260—497)

1. A process for the production of vinyl acetate which comprises reacting ethylene with oxygen and acetic acid in the presence of at least a catalytic amount of a noble metal at a temperature within the range from about 50–250° C., and recovering the vinyl acetate thus produced.

11. A process for the production of vinyl acetate which comprises passing a stream of reactants essentially consisting of oxygen, aqueous acetic acid and ethylene in contact with a noble metal catalyst at a temperature between about 50 and 250° C. and recovering the vinyl acetate thus produced.

3,275,681

CATALYTIC SYSTEM FOR THE ADDITION OF BISULFITES TO OLEFINS

William S. Emerson, Lexington, Richard N. Macnair, Cambridge, and Chi-Hua Wang, Lexington, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed May 20, 1963, Ser. No. 281,797
2 Claims. (Cl. 260—513)

1. A method of adding the bisulfite ion to an olefin, consisting essentially of the step of reacting an inorganic alkali-metal bisulfite dissolved in an aqueous liquid with an olefin of the formula $R—CH=CH_2$, wherein R is alkyl, dissolved in a water-miscible organic liquid; said reacting being in the presence of a catalytic system insoluble in water and soluble in said organic liquid, said catalytic system consisting essentially of an organic peroxide of the formula R'O—OR'', wherein R' and R'' are selected from the group consisting of hydrogen, acyl, alkyl, and aryl-alkyl, and a water-insoluble organometallic compound of a transition metal M which is a β-diketone chelate of said metal or a dicyclopentadienyl of said metal, whereby said catalytic system gives rise to a reaction generally expressed as

$$M^{++}+R'O—OR''\rightarrow M^{+++}+\cdot OR'+OR''^{-}$$

3,275,682

PRODUCTION OF SURFACE-ACTIVE ETHER SULFONATES

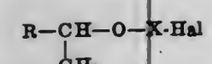
Pieter M. Bakker and Hendrik Buesink, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 23, 1963, Ser. No. 282,569
Claims priority, application Netherlands, May 29, 1962, 279,025
7 Claims. (Cl. 260—513)

1. A process for producing surface-active higher alkyl ethers of hydroxyalkane sulfonates from a hydrocarbon fraction containing olefins which are predominantly secondary olefins having at least 8 but not more than about 20 carbon atoms per molecule and consisting of secondary alpha-olefin of the formula $R—CH=CH_2$ where R represents alkyl of 6 to 18 carbon atoms together with secondary olefin having the double bond removed from the end of the chain, which comprises

(1) reacting said hydrocarbon fraction with an alkylene halohydrin of the formula HO—X-Hal where X represents alkylene of 2 to 4 carbon atoms, and Hal is halogen of the group consisting of chlorine, bromine, and iodine in the presence of an acid catalyst to effect substantial conversion of secondary

alpha-olefin to predominantly haloalkyl ether of the formula



wherein R repersents alkyl of 6 to about 18 carbon atoms, X is alkylene of 2 to 4 carbon atoms, and Hal is halogen of the group consisting of chlorine, bromine, and iodine and stopping the reaction while substantial internal olefin remains unconverted in the mixture, and

(2) reacting the resulting haloalkyl ether predominating in ether as above defined with a water soluble sulfite to effect replacement of the halogen by a sulfonate group and formation of said surface active product.

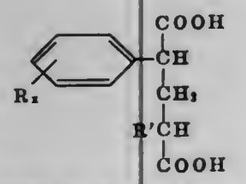
3,275,683

PROCESS FOR PRODUCING 2-PHENYLGLUTARIC ACID AND DERIVATIVES THEREOF

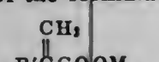
Henry E. Fritz, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,690
3 Claims. (Cl. 260—515)

1. The process for producing a 2-phenylglutaric acid of the formula:



wherein R is a member selected from the group consisting of alkyl of from 1 to 10 carbon atoms, alkoxy of from 1 to 10 carbon atoms, aryl of from 6 to 10 carbon atoms and aryloxy of from 6 to 10 carbon atoms; R′ is a member selected from the group consisting of hydrogen, alkyl of from 1 to 10 carbon atoms and aryl of from 6 to 10 carbon atoms; and x is an integer having a value of from 0 to 5; which comprises reacting at 150° C. to 350° C. a mixture of an alkali metal phenylacetate, an alkali metal acrylate of the formula:



wherein M is an alkali metal atom, and a catalytic amount of an alkali metal hydroxide.

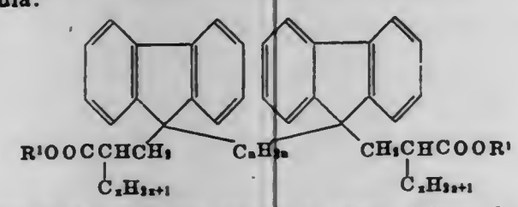
3,275,684

BIS[9-(SUBSTITUTED ALKYL)-FLUOREN-9-YL] ALKANES

Henry E. Fritz, South Charleston, and David W. Peck, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Sept. 10, 1962, Ser. No. 222,694, now Patent No. 3,205,257, dated Sept. 7, 1965. Divided and this application Mar. 8, 1965, Ser. No. 438,033
6 Claims. (Cl. 260—515)

1. A bis[9-(carboxyalkyl)fluoren-9-yl]alkane of the formula:



wherein n is an integer having a value of from 2 to 10; x is an integer having a value of from 0 to 1; and R^1 is a member selected from the group consisting of hydrogen, an alkali metal and an alkyl radical of from 1 to 10 carbon atoms.

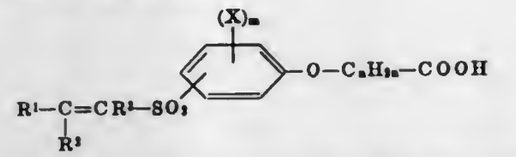
3,275,685

[(1-ALKENYLSULFONYL)PHENOXY] ALKANOIC ACIDS

Everett M. Schultz, Ambler, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 29, 1965, Ser. No. 452,020
18 Claims. (Cl. 260—521)

1. A member selected from the group consisting of a compound of the formula:



wherein R^1, R^2 and R^3 are similar and dissimilar substituents selected from the group consisting of hydrogen and alkyl; the X radicals represent similar and dissimilar substituents selected from the group consisting of hydrogen, halogen, alkyl, alkoxy and, when substituted on adjacent carbon atoms of the benzene nucleus, two X radicals may be combined to form a hydrocarbylene chain containing four carbon atoms between its points of attachment; m is an integer having a value of 1–4 and n is an integer having a value of 1–4; and the nontoxic, pharmacologically acceptable acid salts, the lower alkyl ester, and the amide, monoalkylamide, dialkylamide and piperidide derivatives thereof.

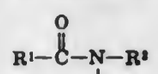
3,275,686

PROCESS FOR THE PREPARATION OF ALKALI METAL SALTS OF ACETYLENIC ACIDS

Abraham N. Kurtz, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 18, 1965, Ser. No. 456,801
15 Claims. (Cl. 260—533)

1. In the process for producing an alkali metal salt of an acetylenic acid by the reaction of an alkali metal acetylide of the formula RC≡CM, wherein M is an alkali metal atom and R is a member selected from the group consisting of a hydrogen atom and an organic hydrocarbon radical of from 1 to 7 carbon atoms selected from the group consisting of an alkyl radical, an alkenyl radical, an aryl radical, an aryl-substituted aryl radical and an alkyl-substituted aryl radical with carbon dioxide in a normally liquid, inert, organic diluent, the improvement of conducting said reaction in the presence of a reaction promoting amount of an amide of the formula:



wherein R^1, when taken alone, is a member selected from the group consisting of a hydrogen atom and an alkyl radical having from 1 to 4 carbon atoms; each R^2 and R^3, when taken alone, is an alkyl radical having from 1 to 4 carbon atoms; and R^1 and R^2, when taken together with the amide radical, form a heterocyclic ring having from 5 to 7 ring atoms, said R^1 and R^2 forming a divalent alkylene radical having from 3 to 5 carbon atoms.

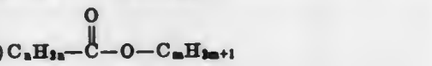
3,275,687

ESTER HYDROLYSIS WITH CATION EXCHANGE RESINS

Robert I. Leib, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 18, 1963, Ser. No. 309,868
11 Claims. (Cl. 260—535)

1. A process for the preparation of monohydroxy substituted monocarboxylic acid which comprises hydrolyzing a compound having the formula,



where m and n are integers from 1 to 4, in the presence of a cation exchange resin catalyst and a cation promoter selected from the group consisting of the metals in Groups IV*b* and V*b* of the periodic table.

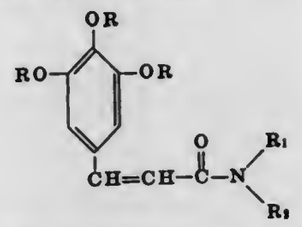
3,275,688

3,4,5-TRI(LOWER)ALKOXYCINNAMAMIDES

Corris Mabelle Hofmann, Ho-Ho-Kus, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Oct. 5, 1960, Ser. No. 60,544. Divided and this application Oct. 4, 1963, Ser. No. 313,783
6 Claims. (Cl. 260—559)

1. A compound of the formula:



wherein R is lower alkyl and R_1 and R_2 are each selected from the group consisting of hydrogen and lower alkyl.

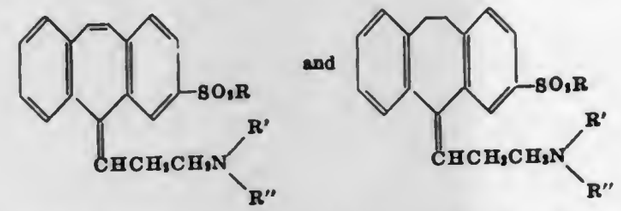
3,275,689

3 - ALKYLSULFONYL - 5 - (TERTIARYAMINOPROPYLIDENE)- AND 5-HYDROXY - 5 - (TERTIARYAMINOPROPYL) - 5H - DIBENZO[a,d]CYCLOHEPTENES

Edward L. Engelhardt, Gwynedd Valley, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 8, 1963, Ser. No. 322,498
5 Claims. (Cl. 260—570.8)

1. A compound selected from the group consisting of compounds having the structural formulae



and non-toxic, pharmaceutically acceptable acid addition salts thereof; wherein R is a lower alkyl radical and R′ and R″ are selected from the group consisting of lower alkyl radicals and lower alkyl radicals linked together through an atom selected from the group consisting of carbon, nitrogen and oxygen to form a heterocyclic ring selected from the group consisting of 1-piperidyl, 1-pyrrolidyl, 4-morpholinyl and 1-lower alkyl-4-piperazinyl.

3,275,690

PROCESS FOR THE PRODUCTION OF AROMATIC AMINES WHICH ARE ALKYLATED ON THE NUCLEUS

Rudolf Stroh and Hans Haberland, Leverkusen-Bayerwerk, and Willi Haba, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 1, 1962, Ser. No. 234,865
Claims priority, application Germany, Jan. 22, 1955, F 16,634; July 14, 1955, F 17,936, F 17,937; Aug. 13, 1955, F 18,193; Aug. 24, 1955, F 18,261
24 Claims. (Cl. 260—576)

1. Process for production of nuclearly alkylated aromatic amines, which comprises reacting an olefin selected from the group consisting of aliphatic olefinic hydrocarbon and cycloolefinic hydrocarbon with an aromatic amine selected from the group consisting of primary and secondary aromatic amines at a temperature of about 150–400° C. in the presence of a Friedel-Crafts catalyst.

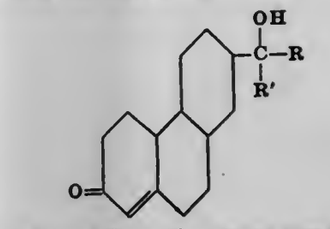
3,275,691

DODECAHYDROPHENANTHRENE DERIVATIVES

Moses Wolf Goldberg and Lester Mischa Jampolsky, Upper Montclair, and Richard Wightman Kierstead, North Caldwell, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 11, 1962, Ser. No. 186,651
7 Claims. (Cl. 260—586)

1. A compound having the formula



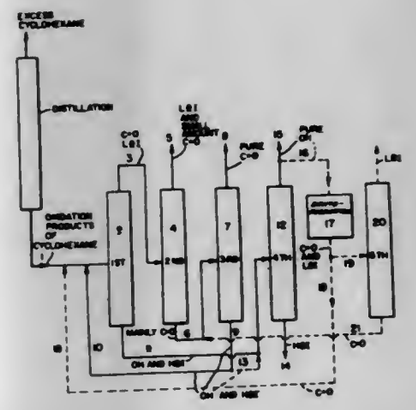
wherein R is selected from the group consisting of hydrogen and lower alkyl and R′ is selected from the group consisting of hydrogen, lower alkyl, vinyl and ethynyl.

3,275,692

RECOVERY OF PURE CYCLOHEXANONE AND CYCLOHEXANOL

Guenter Poehler, Hans Joachim Waldmann, and Hubert Corr, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Oct. 21, 1964, Ser. No. 405,387
Claims priority, application Germany, Dec. 16, 1959, B 55,935
5 Claims. (Cl. 260—586)



1. A process for the recovery of pure cyclohexanone and cyclohexanol from oxidation products which have been obtained by oxidation of cyclohexane with a gas selected from the group consisting of oxygen and oxygen-containing gases which comprises distilling off the excess cyclohexane, feeding the resultant composition to a first rectification zone and therein separating said oxidation products into cyclohexanone, minor amounts of cyclohexanol, and impurities having a lower boiling point than cyclohexanone as a first rectification zone overhead and into cyclohexanol and impurities which have a higher boiling point than cyclohexanol as a first rectification zone bottoms at a pressure of 10 to 100 mm. Hg absolute, subjecting said first rectification zone overhead to a rectification in a second rectification zone at a pressure of 300 mm. Hg absolute to 5 atmospheres to separate said first rectification zone overhead into a second rectification

zone overhead consisting mainly of said impurities having a lower boiling point than cyclohexanone and a second rectification zone bottoms consisting mainly of cyclohexanone with minor amounts of cyclohexanol therein, subjecting the second rectification zone bottoms to a rectification at 1 mm. Hg absolute to 5 atmospheres in a third rectification zone to separate said second rectification zone bottoms into pure cyclohexanone as the third rectification zone overhead and said minor amounts of cyclohexanol as the third rectification zone bottoms, and subjecting the first rectification zone bottoms to a rectification in a fourth rectification zone to separate said first rectification zone bottoms into pure cyclohexanol as the fourth rectification zone overhead and said impurities which have a higher boiling point than cyclohexanol as the fourth rectification zone bottoms.

3,275,693

PROCESS FOR PREPARING ORGANIC SULFIDES

Pierre A. Bapsères and Michel Biensan, Pau, France, assignors to Societe Nationale des Petroles d'Aquitaine, Paris, France

No Drawing. Filed Jan. 25, 1963, Ser. No. 253,973
Claims priority, application France, Feb. 5, 1962, 886,954
6 Claims. (Cl. 260—608)

1. A process for the preparation of an organic disulfide selected from the group consisting of dimethyl-, diethyl-, dipropyl-, dibutyl-, di-isobutyl-, diphenyl-, and dicyclohexyl-disulfide, which comprises reacting sulfur, a mercaptan selected from the group consisting of methyl-, ethyl-, propyl-, butyl-, isobutyl-, phenyl- and cyclohexyl-mercaptan and an alkali metal hydroxide in an aqueous solution, in the proportion of 0.5 gram equivalent of said alkali metal hydroxide and 0.5 gram atom of sulfur per mole of said mercaptan.

6. A cyclic process for the production of dimethyl-disulfide, which comprises:

(a) reacting sulfur, methylmercaptan and sodium hydroxide in an aqueous solution, in the proportion of 0.5 gram atom of sulfur and 0.5 gram equivalent of sodium hydroxide per mole of methylmercaptan, at temperatures within the range of from 5° to 30° C. and under pressures of from 1 to 10 atmospheres;

(b) separating the resulting organic liquid layer containing dimethyl-disulfide from said aqueous solution;

(c) adding sodium hydroxide to the residual aqueous solution containing sodium hydrosulfide to convert the same to sodium sulfide;

(d) crystallizing sodium sulfide from said aqueous solution and separating the residual mother liquor therefrom;

(e) dissolving sulfur in said mother liquor and recycling the resulting sulfur-containing aqueous solution to step (a) for further reaction.

3,275,694

PROCESS FOR THE PREPARATION OF AROMATIC MERCAPTO COMPOUNDS

Willi Hahn, Cologne-Stammheim, and Karl Goliasch, Leverkusen-Schlebusch, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 15, 1963, Ser. No. 295,180
Claims priority, application Germany, Aug. 1, 1962, F 37,482
9 Claims. (Cl. 260—609)

1. Process for the production of an aromatic mercapto compound, which comprises reacting a member selected from the group consisting of mono- and poly-hydroxy compounds, the hydroxy groups of which may be at least in part etherified with a member selected from the group consisting of aliphatic and aromatic substituents and which carry at least one hydrogen atom in a position ortho- or para- to a hydroxy group, further characterized in that they carry no substituent on the aromatic nucleus having a marked ability to attract electrons, with sulphur chlorides and hydrogen sulphide at a temperature of −50 to +200° C., recovering the polysulphide thereby formed and reducing said polysulphide to the mercaptan.

3,275,695

RECOVERY OF BORIC ACID FOR REUSE IN THE OXIDATION OF HYDROCARBONS

Richard L. Marcell, Bergenfield, N.J., assignor to Halcon International Inc., a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,858
4 Claims. (Cl. 260—631)



1. The process which comprises filtering solid ortho-boric acid crystals containing free water from an aqueous borate ester hydrolysis mixture, admixing said crystals in liquid saturated C_4 to C_8 hydrocarbon, dehydrating said ortho-boric acid to meta-boric acid at temperatures in the range of 75 to 300° C., the dehydration of said ortho-boric acid being carried out by stripping free water from the dispersion of ortho-boric acid in saturated C_4 to C_8 hydrocarbon by contact with a gaseous mixture of said saturated C_4 to C_8 hydrocarbon and water, passing the resulting dispersion to a second stage wherein ortho-boric acid is dehydrated to meta-boric acid by contact with a gaseous mixture of saturated C_4 to C_8 hydrocarbon and water and a gaseous mixture of said saturated C_4 to C_8 hydrocarbon and dehydration water is separated, said gaseous mixture from second stage being the said gaseous mixture used to strip free water in said first stage, and passing the resulting dispersion of meta-boric acid in saturated C_4 to C_8 hydrocarbon as feed to a molecular oxygen oxidation.

3,275,696

PROCESS FOR THE PRODUCTION OF CITRONELLOL

Emanuel Goldstein, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed July 27, 1964, Ser. No. 385,502
1 Claim. (Cl. 260—631.5)

A process for the production of citronellol without substantial formation of dimethyloctanol from a mixture of geraniol and citronellol which comprises subjecting said mixture to reaction with hydrogen in the presence of from about 1% to about 25% by weight of Raney cobalt catalyst resulting from the alkali digestion of aluminum-cobalt alloy, said reaction being at a temperature of from about 25° C. to about 200° C. and a pressure of from about 50 to about 550 pounds per square inch to selectively hydrogenate only the double bond in the 2-position of the geraniol to the substantial exclusion of the double bond in the 6-position of the geraniol, the citronellol in admixture with the geraniol, and the citronellol formed by the reaction, and recovering the citronellol.

3,275,697

PRODUCTION OF TETRACHLOROBENZENES

John W. Churchill and Theodore M. Jenney, Kenmore, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Jan. 4, 1954, Ser. No. 402,174
13 Claims. (Cl. 260—650)

1. A flexible process for the production of 1,2,4,-trichlorobenzene and 1,2,4,5-tetrachlorobenzene selectively which comprises selectively chlorinating a mixture consisting essentially of 1,2,3-trichlorobenzene and 1,2,4-trichlorobenzene at a temperature of about 50 to 250° C. to produce a mixture comprising 1,2,4-trichlorobenzene and isomers of tetrachlorobenzene, fractionally distilling the mixture to separate overhead a fraction substantially enriched in 1,2,4-trichlorobenzene and a fraction consisting essentially of a mixture of 1,2,3,4,-tetrachlorobenzene and 1,2,4,5-tetrachlorobenzene, cooling the mixture of 1,2,3,4-tetrachlorobenzene and 1,2,3,4,5-tetrachlorobenzene to a temperature below about 50° C. and separating solid substantially pure 1,2,4,5-tetrachlorobenezene.

3,275,698

DEHYDRATION OF ALCOHOLS

Clyde E. Parish, Houston, Tex., assignor to Signal Oil and Gas Company, Los Angeles, Calif.

No Drawing. Filed Jan. 21, 1963, Ser. No. 252,564
11 Claims. (Cl. 260—666)

1. An improved method of dehydrating alcohol, which method comprises contacting alcohol selected from the group consisting of paraffinic alcohol, cycloparaffinic alcohol and mixtures thereof in a reaction zone with a catalyzing concentration of a mixture of a major proportion of selected polyglycol ether and a minor proportion of selected mineral acid at a dehydration reaction temperature above the boiling point of the dehydration product of said alcohol but below the boiling point of said alcohol, maintaining said contact for a time sufficient to substantially dehydrate said alcohol to the corresponding unsaturated hydrocarbon product, and recovering said product.

3,275,699

RECOVERY PROCESS FOR A CYCLOHEXADIENE

David G. Walker and William R. Edwards, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,330
7 Claims. (Cl. 260—666)

1. In the methylation of a methyl-substituted benzene using an aluminum halide as the methylation catalyst wherein a hydrocarbon insoluble phase forms below the hydrocarbon phase, the improvement of:

separating said hydrocarbon insoluble phase from said hydrocarbon phase;

mixing said hydrocarbon insoluble phase with a metal halide wherein said metal of said metal halide is selected from the group consisting of sodium, potassium, calcium and magnesium at a temperature within the range of about 0° to about 50° C. in an aromatic solvent whereby a binary addition compound, a hydrogen halide and 1-methylene-2,3,4,4,5,6-hexamethylcyclohexadiene are formed; and

recovering said 1-methylene-2,3,4,4,5,6-hexamethylcyclohexadiene, said halides being selected from the group consisting of chlorine and bromine.

3,275,700

PREPARATION OF ALKYLADAMANTANES HAVING AN ETHYL SUBSTITUENT

Edward J. Janoski, Havertown, Pa., and Robert E. Moore, Wilmington, Del., assignors to Sun Oil Company, Philadelphia, Pa.

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,401
18 Claims. (Cl. 260—666)

1. Method of preparing alkyladamantanes of the C_{12}–C_{15} range which has an ethyl substituent on the adamantane nucleus which comprises contacting a perhydroaromatic hydrocarbon having three rings and from 12 to 15 carbon atoms at a temperature in the range of 50–200° C. with an HF–BF_3 catalyst, continuing such contact until at least a substantial proportion of the perhydroaromatic has been converted to hydrocarbon product having adamantane structure, whereby alkyladamantane having an ethyl substituent is formed, and stopping such contact before said alkyladamantane has mainly isomerized to polymethyladamantane.

3,275,701

SUBSTITUTED BENZENES

Ernst T. Theimer, Rumson, and Seymour Lemberg, Elizabeth, N.J., assignors to International Flavors & Fragrances, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,327
15 Claims. (Cl. 260—668)

15. A process for the preparation of 1,1-dimethyl-6-tert-butyl indane which comprises the steps of

(1) reacting a compound selected from the group consisting of alkali metal phenyls with p-tert-butyl toluene to produce an alkali metal α-p-tert-butyl benzyl;

(2) reacting the thus produced compound with a compound selected from the group consisting of methallyl chloride, bromide and iodide to produce 2-methyl-4-(p-tert-butyl-phenyl)-but-1-ene; and

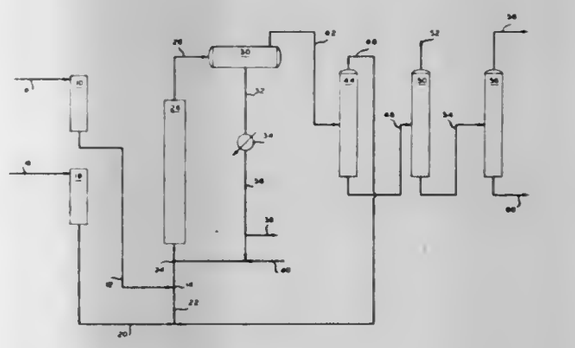
(3) reacting the thus produced compound with a cyclizing agent.

3,275,702

ALKYLATION

Tom Hutson, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 16, 1963, Ser. No. 302,537
4 Claims. (Cl. 260—671)



1. A process for the preferential alkylation of an aromatic hydrocarbon with an olefinic hydrocarbon in order to achieve predominantly 2-aryl alkanes which comprises introducing said aromatic hydrocarbon and said olefinic hydrocarbon into an alkylation zone at a ratio of about 10:1 to 25:1 in contact with an HF acid catalyst, said catalyst containing from 2 to 4 weight percent based on total catalyst employed, a modifier selected from the group consisting of hydrogen and water, maintaining the resulting

alkylation reaction mixture in said alkylation zone for a time in the range of 0.1 to 4.5 minutes and at a temperature within the range of 40 to 100° F. and thereafter recovering the resulting preferentially formed alkylate as a product of the process.

3,275,703

PROCESS FOR ALKYLATION OF AROMATIC HYDROCARBONS

Alan K. Roebuck, Schererville, Ind., and Bernard L. Evering, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Jan. 24, 1964, Ser. No. 339,859
13 Claims. (Cl. 260—671)

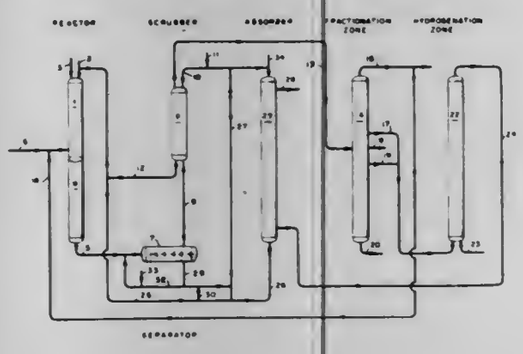
1. An alkylation process which comprises contacting under alkylation conditions an aromatic compound having a mono-nuclear aromatic ring, said ring having an open para-position, and a tertiary alkylating compound in the presence of a catalyst system comprising an aluminum halide-ether complex in which there is dissolved an excess of said aluminum halide and at least about one mol, per mol of said excess of said aluminum halide, of a catalyst modifier selected from the class consisting of a sodium halide, a cuprous halide, a silver halide, and mixtures thereof, wherein said catalyst system consists essentially of a single halide selected from the class consisting of chlorides, bromides and iodides, whereby said mono-nuclear aromatic ring is preferentially alkylated in the para-position.

3,275,704

IODINE RECOVERY FROM ORGANIC IODIDES

George Stewart Mill, Pasadena, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed July 16, 1964, Ser. No. 383,087
3 Claims. (Cl. 260—673)



1. In a process for the iodinative dehydrogenation of a first hydrocarbon to at least a second hydrocarbon having a higher carbon-to-hydrogen ratio, wherein the first hydrocarbon and a reactive iodine species are reacted at a temperature in excess of 200° C. in an environment of a metallic base and corresponding metal iodide, whereby a second hydrocarbon and hydrogen iodide are produced, the improvement comprising the recovery of the iodine from resulting organic iodide formed in the reaction zone by

(1) fractionally distilling separated organic product stream containing organic iodide and second hydrocarbon;

(2) catalytically hydrogenating separated fractional cuts containing organic iodides and substantially free from second hydrocarbon under pressure to convert the organic iodides to hydrocarbons and hydrogen iodide;

(3) passing the resulting hydrogenated stream through aqueous lithium hydroxide/lithium iodide solution under pressure and at an elevated temperature to absorb the hydrogen iodide; and

(4) returning the resulting aqueous stream to the iodinative dehydrogenation operation.

3,275,705

DEHYDROGENATION CATALYST

E. O. Box, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 14, 1965, Ser. No. 463,853
9 Claims. (Cl. 260—683.3)

1. A process for the dehydrogenation of a gaseous hydrocarbon selected from the group consisting of propane and ethane and mixtures thereof which comprises contacting the gaseous hydrocarbon at an elevated temperature selected from the range of 1100 to 1500° F. with a cuprous sulfide catalyst.

3,275,706

PROPYLENE DIMERIZATION PROCESS

Paul R. Stapp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,318
6 Claims. (Cl. 260—683.15)

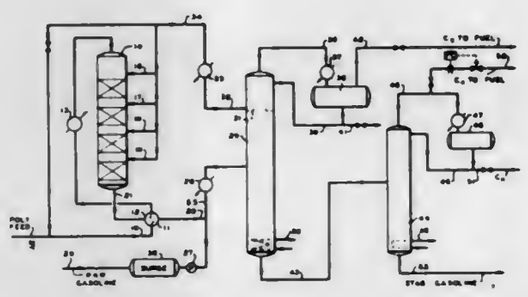
1. A propylene dimerization process which comprises contacting propylene with a catalyst comprising potassium supported on a hydride selected from the group consisting of calcium hydride, sodium borohydride, potassium borohydride, lithium aluminum hydride, and sodium aluminum hydride.

3,275,707

POLYMERIZATION OF OLEFINS

Robert D. Bauer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 3, 1964, Ser. No. 335,472
6 Claims. (Cl. 260—683.15)



1. A combination polymerization and hydrocarbon stream stabilization process, comprising: introducing an olefin-containing hydrocarbon feed stock comprising C_2 to C_6 olefins into a polymerization zone; in said polymerization zone, contacting said feedstock with a polymerization catalyst active for catalyzing polymerization of said olefins to polymers boiling within the gasoline range and which is subject to being deactivated upon contact with free oxygen; introducing a coolant and diluent stream comprising a saturated hydrocarbon into said polymerization zone; withdrawing reaction mixture from said polymerization zone; combining said reaction mixture with a stream of unstabilized mixed hydrocarbons containing free oxygen and saturated hydrocarbons; introducing said combined stream into a fractionation zone at a point intermediate the ends thereof; withdrawing an essentially oxygen-free side stream comprising said saturated hydrocarbon from an upper portion of said fractionation zone; and passing at least a portion of said side stream into said polymerization zone as said coolant stream.

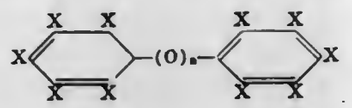
3,275,708

PHENOLIC ADDUCTS OF DIPHENYLOXIDES OR BIPHENYLS, WITH EPOXY RESINS

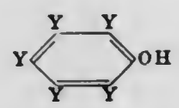
Harold R. Bylsma, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 2, 1961, Ser. No. 142,037
8 Claims. (Cl. 260—830)

1. The resinous composition consisting essentially of the reaction product of (A) a phenolic adduct of (1) a chloromethylated aromatic compound having the formula:



wherein n is 0 to 1, wherein at least one X is CH_2Cl and the other X values are selected from the group consisting of H, CH_2Cl, Cl, Br, R and OR wherein R is alkyl of 1 to 4 carbon atoms and (2) an hydroxylated aromatic compound having the formula:



wherein Y is selected from the group consisting of H, Cl, Br, alkyl, aryl, aralkyl, and a hydroxyaryl, said alkyl containing from 1 to 10 carbon atoms and (B) an epoxy resin in a molar ratio of (B) to (A) of between about 0.5 and about 1.5 in the presence of a catalytic amount of a tertiary amine.

3,275,709

AIR-DRYING POLYESTER RESINS PREPARED FROM TETRAHYDROPHTHALIC ANHYDRIDE AND TRICARBOXYLIC ACIDS

George S. Wooster, Hamburg, and S. Edmund Berger, Tonawanda, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 27, 1962, Ser. No. 190,788
4 Claims. (Cl. 260—861)

3. A polymerizable unsaturated polyester which comprises the esterification product of: (a) tetrahydrophthalic acid anhydride; (b) fumaric acid; (c) diethylene glycol, and; (d) malic acid, said tetrahydrophthalic acid anhydride providing from about 40 to about 55 equivalents per 100 equivalents of the carboxylic groups present, said malic acid providing about 10 equivalents per 100 equivalents of the carboxylic groups present.

4. A polymerizable unsaturated polyester which comprises the esterification product of: (a) tetrahydrophthalic acid anhydride; (b) fumaric acid; (c) diethylene glycol, and; (d) tris (2-carboxyethyl)isocyanurate, said tetrahydrophthalic acid anhydride providing from about 40 to about 55 equivalents per 100 equivalents of the carboxylic groups present, said tris (2-carboxyethyl)isocyanurate providing about 10 equivalents per 100 equivalents of the carboxylic groups present.

3,275,710

AIR-DRYING LINEAR POLYESTER RESINS

George S. Wooster, Hamburg, and Aloysius J. Kane, Buffalo, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 30, 1962, Ser. No. 213,137
10 Claims. (Cl. 260—863)

1. An unsaturated linear polyester which comprises the esterification product of (a) about 10 to 75 equivalents per 100 equivalents of total carboxylic acids present of tetrahydrophthalic acid, (b) an alpha-beta unsaturated dicarboxylic component selected from the group consisting of fumaric acid and maleic acid, and (c) a polyol composition which contains at least 80 percent 1,5-pentane diol; there being about 102 to 110 equivalents of polyol per 100 equivalents of carboxylic acids present.

3,275,711

AIR-DRYING LINEAR POLYESTER RESINS

George S. Wooster, Hamburg, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 30, 1962, Ser. No. 213,157
10 Claims. (Cl. 260—863)

1. An unsaturated linear polyester which comprises the esterification product of (a) about 10 to 50 equivalents per 100 equivalents of total carboxylic acids present of tetrahydrophthalic acid, (b) an alpha-beta unsaturated dicarboxylic component selected from the group consisting of fumaric acid and maleic acid, and (c) a glycol component consisting essentially of diethylene glycol; there being about 102 to 110 equivalents of glycol per 100 equivalents of carboxylic acids present.

3,275,712

PRODUCTION OF IMPACT-RESISTANT THERMOPLASTIC MOLDING MATERIALS

Hans Peter Siebel, Limburgerhof, Pfalz, and Hans-Werner Otto, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,993
Claims priority, application Germany, Dec. 19, 1962, B 70,056
6 Claims. (Cl. 260—876)

3. An impact resistant thermoplastic molding material comprising a uniform mixture of

(a) a copolymer II prepared by polymerizing (1) an elastomeric copolymer I of

(A) 50 to 85% by weight of an acrylic ester having from four to eight carbon atoms in the alcohol component,

(B) 5 to 20% by weight of acrylonitrile, and

(C) 10 to 40% by weight of a vinyl alkyl ether having one to four carbon atoms in the alkyl group, the sum of the percentages being 100, in an aqueous dispersion with (2) styrene and acrylonitrile in the weight ratio 60:40 to 90:10 in an amount of 90 to 10% by weight with reference to the copolymer I; and

(b) a copolymer III of styrene and acrylonitrile in the weight ratio 60:40 to 90:10, in such proportions of components (a) and (b) that the elastomeric copolymer I constitutes 10 to 35% by weight of the resultant uniform mixture.

3,275,713

POLYMERIZABLE PLASTISOLS OF VINYL CHLORIDE POLYMERS AND MONOCHLOROSTYRENES

Louis C. Rubens and Demetrius Urchick, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 16, 1962, Ser. No. 210,205
21 Claims. (Cl. 260—884)

1. A composition of a viscosity-stable dispersion of a vinyl chloride polymer consisting essentially of an intimate mixture of

(a) from about 35 to about 70 weight percent, based on the weight of the composition, of a polymer of a monoethylenically unsaturated monomeric material containing at least about 85 weight percent of vinyl chloride; and,

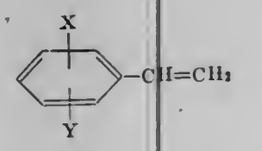
(b) from about 65 to about 30 weight percent, based on the weight of the composition, of a monochlorostyrene.

3,275,714
METHOD AND CATALYSTS FOR CONVERTING VINYL CHLORIDE POLYMER-MONOMER COMPOSITIONS TO POLYMERIC PRODUCTS

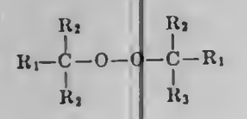
Clifford F. Thompson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,741
16 Claims. (Cl. 260—884)

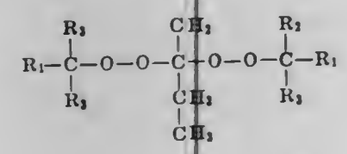
1. In a method of curing a composition comprising an intimate mixture of from 30 to 70 percent by weight of a vinyl chloride polymer containing at least 85 percent by weight of chemically combined vinyl chloride in the polymer molecules and from 70 to 30 percent by weight of a polymerizable liquid consisting of at least a predominant amount of at least one monovinyl aromatic compound having the general formula:



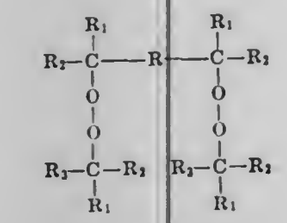
wherein X and Y are independently selected from the group consisting of hydrogen, halogen and alkyl radicals containing from 1 to 4 carbon atoms, and not more than a minor proportion of another ethylenically unsaturated liquid vinylidene compound copolymerizable with said monovinyl aromatic compound, the improvement which consists in carrying out the polymerization of the polymerizable liquid in said composition by heating the mixture at elevated temperatures sufficient to substantially solvate the vinyl chloride polymer with the polymerizable liquid in admixture with from about 1 to 10 percent by weight of a stannous salt selected from the group consisting of a stannous naphthenate and stannous salts of aliphatic monocarboxylic acids containing from 6 to 18 carbon atoms in the molecule, based on the weight of said polymerizable liquid, and a small but effectively synergist proportion of at least one organic peroxide selected from the group consisting of (a) organic peroxides having the general formula



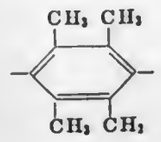
wherein R_1, R_2 and R_3 are independently selected from the group consisting of hydrogen, alkyl and aryl radicals, (b) organic peroxides having the general formula



wherein R_1, R_2 and R_3 have the meaning given above, and (c) organic peroxides having the general formula



wherein R is a divalent hydrogen radical of the formula $—CH_2·CH_2—$, —CH=CH—, —CH≡C—, and



and R_1, R_2 and R_3 have the meaning given above.

3,275,715
PROCESS FOR INCORPORATING ADDITIVES INTO POLYOLEFINS

John M. O'Leary, Jr., Wilmington, Del., assignor, by mesne assignments, to Container Corporation of America, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 4, 1962, Ser. No. 242,102
8 Claims. (Cl. 260—889)

1. A process for uniformly incorporating a non-gaseous additive into a polyolefin selected from the group consisting of polyethylene and polypropylene which comprises agitating for not more than two hours the powdered polyolefin at a temperature of between 125° F. and 150° F. with a solution of the additive in a solvent which is both a solvent for the additive and which penetrates the polyolefin powder granules and causes them to swell, and with the concentration of said solvent being below that concentration which appreciably dissolves the powdered polyolefin and effects coalescence thereof, namely within the range of ½ to 1 liter of the solution of the solvent and additive per 100 pounds of the polyolefin.

3,275,716
VINYLIDENE CHLORIDE POLYMER COMPOSITIONS AND FILMS THEREFROM

Glenn C. Wiggins, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 17, 1962, Ser. No. 210,563
16 Claims. (Cl. 260—899)

1. A composition comprising, in intimate blended relationship, from about 95 to about 97 weight percent, based on the weight of the composition, of a vinylidene chloride polymer containing from about 70 to about 95 weight percent of vinylidene chloride copolymerized with from about 30 to about 5 weight percent of another monoethylenically unsaturated monomer copolymerizable with vinylidene chloride, and from about 5 to about 3 weight percent based on the weight of the composition, of a vinyl chloride polymer containing from about 80 to about 95 weight percent of vinyl chloride copolymerized with from about 20 to about 5 weight percent of another monoethylenically unsaturated monomeric material copolymerizable with vinyl chloride.

3,275,717
STABILIZER FOR TRIMETHYLPHOSPHATE

Harry S. Butler, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,183
6 Claims. (Cl. 260—963)

1. A mixture comprising trimethylphosphate present in the form of at least a concentrated solution thereof and further comprising minute quantities of water sufficient to form phosphoric acids, containing an amount of a tertiary alkyl amine less than the theoretical amount which would be necessary to neutralize said acids.

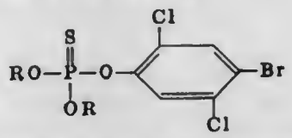
5. Stabilized neat trimethylphosphate containing 0.2 to 1.0 weight percent tri-n-butylamine, said amine being present in less than the theoretical amount which would be necessary to neutralize any acids present.

3,275,718
O,O-DIALKYL-O-(2,5-DICHLORO-4-BROMO-PHENYL)-THIOPHOSPHATES

Richard Sehring and Karl Zeile, Ingelheim (Rhine), Germany, assignors to C. H. Boehringer Sohn, Ingelheim (Rhine), Germany, a limited partnership of Germany

No Drawing. Original application Nov. 6, 1964, Ser. No. 409,552, now Patent No. 3,227,610, dated Jan. 4, 1966. Divided and this application Oct. 22, 1965, Ser. No. 502,302
Claims priority, application Germany, Nov. 30, 1961, B 64,999
3 Claims. (Cl. 260—964)

1. A compound of the formula

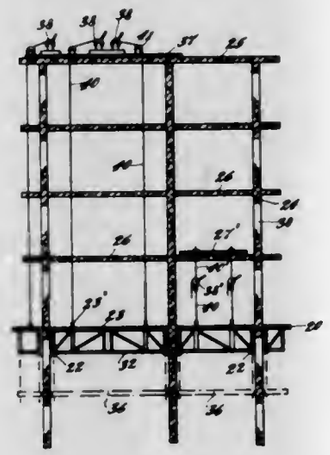


wherein R is selected from the group consisting of methyl and ethyl.

3,275,719
METHOD OF BUILDING IN SITU CONSTRUCTION USING SEQUENTIAL MOLDING TECHNIQUES

Brian H. Dudson, Philadelphia, Pa. (Box 5722, Wellesley St., Auckland, Auckland, New Zealand)

Filed Aug. 7, 1963, Ser. No. 300,476
2 Claims. (Cl. 264—33)

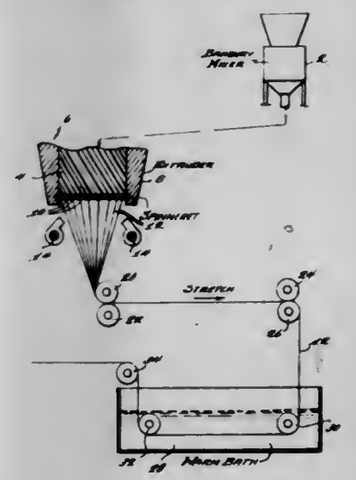


1. A method of making a concrete building, which comprises setting up at the building site a construction platform comprising vertical forms for side walls of the building and horizontal forms for floors, building side walls of concrete contained within the vertical forms, leaving openings at spaced intervals extending through the walls as they are formed, placing support platforms through these openings in the walls, supporting the construction platform and raising it after the concrete has cured from beneath the platform by jacking means resting on and applying load to said platforms, pouring the side walls continuously until the desired top is reached, then pouring a floor using the horizontal forms, lowering said construction platform after the concrete cures and supporting it with the same jacking means by again applying load to the support platforms to the level of the next succeeding floor desired, pouring said floor and successive ones downwardly by lowering the platform each time, until the lowermost floor is reached, wherein the lifting and lowering of the construction platform is accomplished by a series of jacking means, which comprises supporting the building platform by a first jacking means applying load to a support platform, moving said building platform with the jacking means to a desired level, subsequently shifting support of the building platform to a second jacking means applying load to another support platform for support and movement of the building platform to the next desired level, and repositioning said first jacking means on yet another support platform for acceptance of successive support and movement of the building platform after movement by the second jacking means.

3,275,720
METHOD OF EXTRUDING FOAMED FIBERS HAVING OUTER SKINS INTEGRAL THEREWITH

Ernest O. Ohsol, Wilmington, Del., assignor, by mesne assignments, to Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Powder Company, New Castle, Del., a corporation of Delaware

Filed Apr. 30, 1963, Ser. No. 276,708
9 Claims. (Cl. 264—48)



1. A process of preparing a fiber of a thermoplastic resin foam comprising extruding a fiber of a foamable thermoplastic resin, quenching the surface only of said fiber below the foaming temperature while permitting fiber to expand to a density of between 14 and 45 lbs./cu. ft. whereby there is produced a fiber having a foamed resin core and an impervious outer skin integral with said core, the cooling being sufficient that 50 to 95% of the diameter of said fiber is the foamed core and the balance is said skin and drawing said fiber to orient it longitudinally.

3,275,721
METHOD OF CASTING AND FIRING A LAYERED CERAMIC ARTICLE

Pierre Leroy, Saint-Germain-en-Laye, and Roger Simon, Boutheon, France, assignors to Compagnie des Ateliers et Forges de la Loire (St. Chamond-Firminy-St. Etienne-Jacob-Holtzer), Paris, France

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,446
Claims priority, application France, Apr. 18, 1962, 894,916, Patent 1,344,240
6 Claims. (Cl. 264—60)

1. A process for the production of a refractory structure which comprises preparing a porous homogeneous admixture (A) by homogeneously admixing (1) an aggregate of refractory material of a particle size ranging from about 0.3 mm. to about 2.0 mm. and having a sintering temperature of at least about 1150° C., (2) refractory ceramic binder which maintains the particles of the mix in coherent state below said temperature, and (3) an oxidizable metal powder uniformly distributed throughout said mix, preparing a non-porous admixture (B) by homogeneously admixing (1) an aggregate refractory material, at least 20% by weight of said material being less than about 0.2 mm. with the remainder of said refractory material having a particle size of 0.2 mm. to about 1 mm., and (2) a refractory ceramic binder which maintains the particles of the mix in coherent

state, casting admixture A into a shaped porous structure, and, substantially simultaneously, casting admixture B to provide rigid wall surrounding A on between three to five sides and, providing at least one orifice in one of the rigid walls opposite to the side of A which is not covered by B, subjecting the shaped article to heating below said sintering temperature but sufficient to set said binder, and then firing the structure in a firing zone at said sintering temperature while blowing a stream of oxidizing gas from a source remote from said zone through said orifice and thence into the interior of the porous structure, whereby said metal powder throughout the porous structure is oxidized, thereby creating a multiplicity of point heat-sources throughout the porous structure and ensuring that particles of sinterable aggregate throughout said porous structure are effectively sintered.

3,275,722

PRODUCTION OF DENSE BODIES OF SILICON CARBIDE

Paul Popper, Westlands, Newcastle-under-Lyme, England, assignor to Power Jets (Research & Development) Limited, London, England, a British company

No Drawing. Filed July 8, 1959, Ser. No. 825,666
1 Claim. (Cl. 264—65)

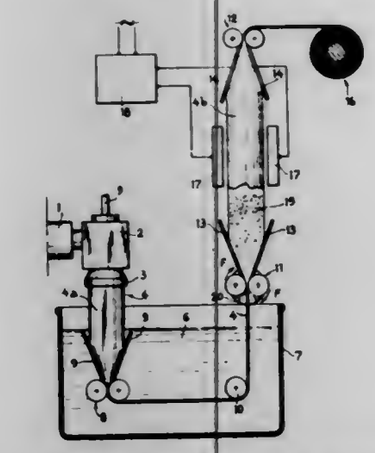
A process for producing a dense self-bonded body of silicon carbide which includes forming a body of densely packed granular silicon carbide and powdered carbon from a homogeneous mixture of granular silicon carbide, powdered carbon and a temporary binder, and heating the body in vacuo to 1500° C. in the presence of a vapour consisting essentially of silicon to eliminate the binder and to reaction-sinter the silicon carbide, carbon and silicon whereby the body is converted substantially exclusively into self-bonded silicon carbide.

3,275,723

PROCESS AND APPARATUS FOR MANUFACTURING TUBULAR FILMS OF SYNTHETIC THERMOPLASTIC MATERIALS

Vittorio E. Cappuccio, Milan, Italy, assignor to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy

Filed June 9, 1964, Ser. No. 373,767
Claims priority, application Italy, June 20, 1963, 13,073/63
9 Claims. (Cl. 264—70)



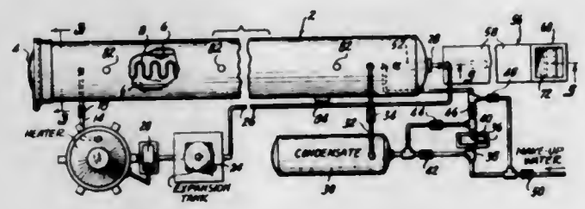
1. In a process of manufacturing a tubular film of a synthetic thermoplastic material, comprising extruding a film tubing of said material in a heat-softened condition into a quenching liquid bath and pulling said film through said bath in collapsed condition, the improvement comprising pulling the quenched film tubing outside the bath in an upward substantially vertical direction, forming and maintaining a spatially stationary bubble of said tubing extending in said direction, while extruding and pulling the tubing, and applying to said bubble a vibratory field directed substantially transversely to said direction to thereby dislodge any droplets of liquid from the inner surface of the bubble and collect them in a bottom section of the latter.

3,275,724

METHOD OF AUTOCLAVING CONCRETE BLOCKS

John B. Klingel, Titusville, Pa., assignor to Struthers Scientific and International Corporation, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 300,129, Aug. 2, 1962, which is a division of application Ser. No. 37,343, June 20, 1960. This application Apr. 2, 1965, Ser. No. 445,181
7 Claims. (Cl. 264—82)



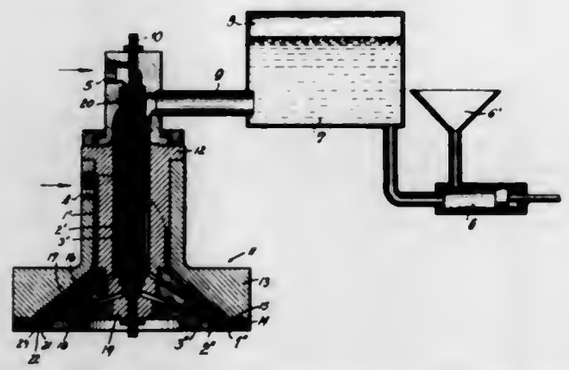
1. A method of autoclaving articles adapted to undergo chemical transformation upon subjection thereof to high temperatures and pressures, comprising the steps of:
(1) supporting said articles out of contact with liquid water within a closed chamber provided therein with a reservoir of water;
(2) heating by indirect heat within the chamber and thereby vaporizing at least a portion of said water for the development of steam pressure within said chamber and for the effecting of chemical transformation of said articles;
(3) relieving said steam pressure within said chamber; and
(4) maintaining any unvaporized portion of said water against substantial loss of heat.

3,275,725

METHOD OF MAKING LAMINATED TUBING

Kastulus Utz, Freising, Upper Bavaria, Germany, assignor, by mesne assignments, to Multifol Patentverwertungs-A.G., Chur, Switzerland

Filed Sept. 19, 1962, Ser. No. 224,764
1 Claim. (Cl. 264—95)



A method of producing thin-walled laminated tubing which comprises:
(a) simultaneously extruding at least a first and second substantially tubular formation of expandable, thermoplastic, synthetic resin composition while at an extrusion temperature at which said compositions are in a condition of plasticity,

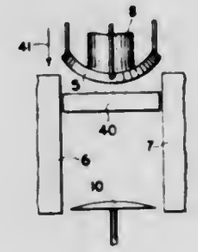
(1) said first formation defining a cylindrical space and being spacedly surrounded by said second formation,
(2) said first and second formations defining a substantially annular space therebetween;
(b) feeding molten metal into said annular space;
(1) the solidification temperature of said metal being lower than the solidification temperatures of said compositions and lower than said extrusion temperature;
(c) admitting a fluid expanding medium to said cylindrical space under pressure until the outer face of said first formation adheres to said metal, and said metal adheres to the inner face of said second formation, whereby a tubing having three laminae is formed; and
(d) allowing said tubing to solidify.

3,275,726

METHOD OF AND APPARATUS FOR BLOW MOLDING LARGE HOLLOW BODIES

Martin Rudolph, 42 Schwanenstr., Velbert, Germany

Filed Feb. 18, 1963, Ser. No. 259,103
Claims priority, application Germany, Feb. 24, 1962, R 32,167; May 16, 1962, R 32,712
12 Claims. (Cl. 264—98)



1. A method of producing large-capacity receptacles from an extrudable plastically deformable material, comprising the steps of extruding a tube of said material generally downwardly; closing the free lower extremity of said tube while imparting thereto a downward convexity by sealing said lower extremity along a downwardly convex arcuate seam; supporting the closed extremity of said tube upon an upwardly convex platform while continuing the extrusion thereof to limit thinning of the tube walls; introducing an expansion fluid under relatively low pressure into the closed tube simultaneously with the extrusion thereof; and subsequently enclosing said tube within a generally cylindrical mold cavity with said platform defining the bottom of said cavity while blow molding said tube with an expansion fluid under relatively high pressure to impart thereto the configuration of said cavity.

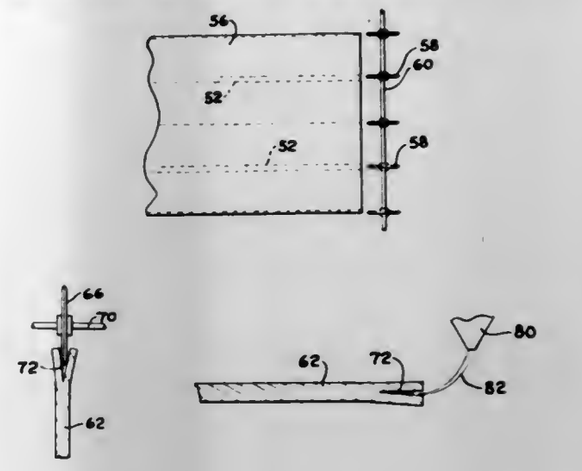
3,275,727

METHOD OF FORMING SLOTTED PANELS

Charles L. Irvin, Neshanic, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 16, 1963, Ser. No. 251,888
18 Claims. (Cl. 264—146)

1. A method of forming slotted composition panels, comprising the steps of:
(a) forming a composition sheet to partial thickness,
(b) applying at least one stripe of parting agent to the partially built-up composition sheet,
(c) completing the formation of said sheet to final thickness,
(d) severing the sheet along the stripe to form panel units, each with a parting line along one edge thereof,
(e) separating the faces of the panel units along the parting lines thereof to form slots, and



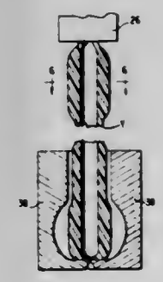
(f) depositing material into the slots to maintain the faces separated.

3,275,728

PARISON SEVERING METHOD

Lawrence A. Martino, New Britain, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Dec. 4, 1962, Ser. No. 242,126
7 Claims. (Cl. 264—150)



1. A method of severing a tubular formation of plastic material being extruded through an extrusion outlet, said method comprising:
applying an initial pressure to a mass of plastic material to initiate its flow through a cavity communicating with an extrusion outlet;
selectively reducing the pressure at which material is extruded through said outlet so as to reduce the wall thickness of a selected portion of an extruding formation whereby a prior extruded portion of said formation may be disengaged by tearing; and
exerting a force on said formation of plastic material so as to tear the portion extruded prior to said pressure reduction from the portion extruded subsequent thereto.

3,275,729

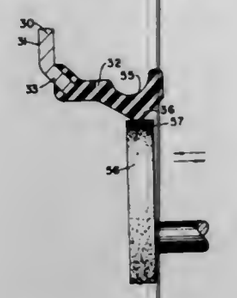
METHOD OF MAKING ELASTOMERIC SEAL

Henry Kingsley Pohlman, Atherton, Calif., assignor to Federal-Mogul Corporation, a corporation of Michigan

Original application Sept. 24, 1962, Ser. No. 225,586. Divided and this application Feb. 8, 1965, Ser. No. 440,978
6 Claims. (Cl. 264—162)

1. A method of making a shaft seal comprising molding a lip from synthetic elastomer to provide a sharp lip edge

bounded by oppositely inclined frusto-conical faces, and abrasively conditioning the sealing lip by grinding off



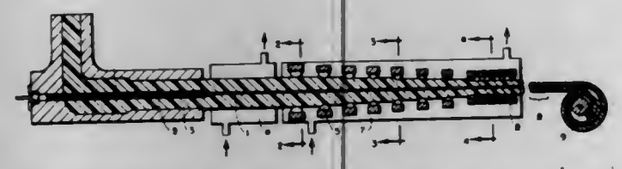
said lip edge while said elastomer is in an elastic state, thereby improving the sealing performance of said shaft seal.

3,275,730

METHOD AND APPARATUS FOR ORIENTING AN EXTRUDED POLYMERIC WIRE COATING

George B. Feild, New Castle, Del., assignor to Hercules Incorporated, a corporation of Delaware

Filed Dec. 24, 1962, Ser. No. 246,739
11 Claims. (Cl. 264—174)



1. The method of continuously applying an oriented polymeric coating to a wire which comprises drawing the said wire through an axially bored wire coating die and extruding a sheath of a molten orientable thermoplastic polymer around and in contact with the wire, adjusting the temperature of the polymer to a range within which the polymer is solid but soft enough to permit the wire to be drawn through the said polymer and thereafter passing the coated wire through a series of radial ball bearings of gradually diminishing internal diameter to effect orientation of the polymer.

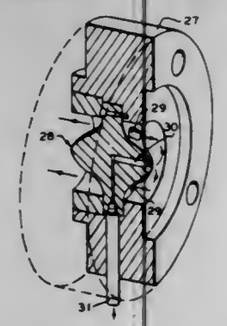
8. The process of claim 1 wherein the coated wire is passed through a series of polishing bearings of the same internal diameter immediately following the series of radial ball bearings of gradually decreasing diameter.

3,275,731

MATERIAL BLENDING

Edward J. Kosinsky, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 25, 1963, Ser. No. 253,925
5 Claims. (Cl. 264—176)



1. The method of adding a first material to a thermoplastic material, which method comprises passing the thermoplastic material in a molten condition through an elongated confined zone in a first direction axially of said confined zone, and introducing the first material into said confined zone at a point on the axis thereof, said first material being introduced in a direction axially of said confined zone and opposite said first direction so that said first material is mixed with said thermoplastic material and thereafter flows with said second material through said confined zone past said point.

3,275,732

PROCESS FOR PREPARING THICK AND THIN NOVELTY YARNS

Roderick Bruce Macleod and Paul Paliyenko, Shelby, N.C., assignors to Fiber Industries, Inc., a corporation of Delaware

No Drawing. Filed July 5, 1963, Ser. No. 293,182
8 Claims. (Cl. 264—290)

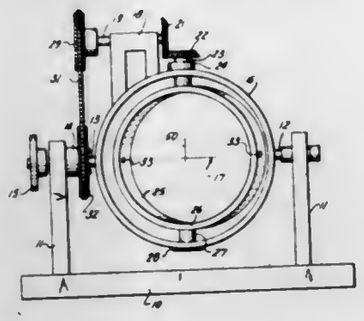
1. A process for producing polymethylene terephthalate yarn having randomly spaced thick and thin sections which comprises drawing undrawn polymethylene terephthalate yarn having a birefringence from about 0.0005 to about 0.009 from about 2.8 to about 3.5 times its original length, at a temperature of said undrawn yarn in the range from about 30° C. to the second order transition temperature of said undrawn yarn, at drawing speeds in the range from about 1100 to about 1600 feet per minute.

3,275,733

PROCESS FOR THE PRODUCTION OF HOLLOW ARTICLES OF POLYMERIZED LACTAMS

Elmer C. Schule, Parsippany-Troy Hills, and Herbert J. Pike, Jr., Basking Ridge, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Jan. 2, 1963, Ser. No. 248,996
4 Claims. (Cl. 264—310)



1. A process for the production of hollow articles of polymerized lactams, which process comprises producing in a hot mold cavity a liquid polymerizable charge having a temperature at least 40° C. lower than the temperature of the mold, which charge contains (1) a metal lactam catalyst, in which the lactam has the formula:



wherein *n* is an integer from 2 to 12 and the metal is from the group consisting of alkali metals and alkaline earth metals; (2) a symmetrical triazine having a replaceable substituent on at least one of the ring carbon atoms of the triazine; and (3) a lactam having the said formula; maintaining anhydrous conditions in the mold cavity, rotating the mold about a pair of axes angularly disposed with respect to each other at angular velocities at which the resulting centrifugal forces are below the force of gravity, while heating the mold cavity to a temperature within the range of 130° C. to 215° C., to repeatedly wash the walls of the mold cavity with said polymerization charge to build up successive layers of the lactam polymer on the said walls and produce a cast article of polylactam polymer conforming to the shape of the walls of the mold cavity; and removing said article from the mold.

3,275,734

METHOD OF CASTING SHEET-LIKE ARTICLES

Ronald R. Rabenold, Allison Park, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 22, 1961, Ser. No. 133,230
1 Claim. (Cl. 264—316)

The method of forming a sheet-like casting of a heat-polymerizable, resin-forming liquid comprising a monomer having a $CH_2{=}C<$ group and a polyester of an alpha,beta-ethylenically unsaturated dicarboxylic acid which in curing is subject to exothermal rise of temperature and to a substantial degree of shrinkage, said method comprising the steps of:

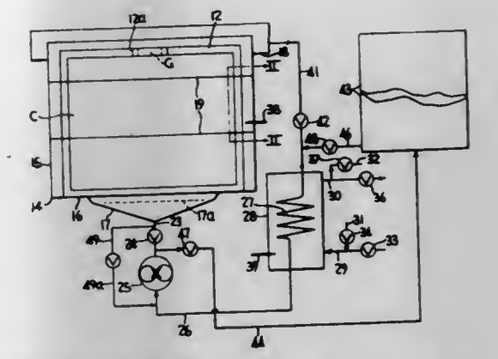
(A) providing a pair of plate-like elements of a material resistant to the resin-forming liquid and being spaced to give desired thickness to the casting,

(B) sealing the space between the edges of the plate-like elements with flexible, water resistant, heat resistant, pressure-sensitive tape whereby to form a casting cell wherein the plate-like elements are allowed freely to approach each other to follow the shrinkage of the heat-polymerizable material as it polymerizes,

(C) disposing the casting cell substantially in vertical position and filling the space between the plate-like elements with the resin-forming liquid,

(D) introducing heat transfer liquid about the cell while the latter is in said vertical position at a rate substantially corresponding to the rise of the resin-forming liquid in the cell, to attain a substantial balance of hydrostatic pressure between the inner and outer faces of the plate-like elements while the space between the latter elements is being filled,

(E) maintaining the heat transfer liquid in circulation in contact with the surfaces of the plate-like elements



of the cell while maintaining the temperature of the heat transfer liquid at a value for obtaining the desired polymerization temperature in the polymerizable liquid, and

(F) allowing the plate-like elements substantially freely to follow the shrinkage of the material in the cell as it polymerizes.

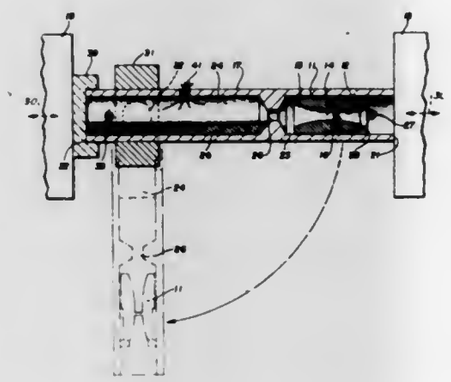
ELECTRICAL

3,275,735

APPARATUS FOR FORMING HIGH TEMPERATURE RESISTANT MEMBER

Ralph L. Abos, Los Angeles, Calif., assignor to Polycarbide Corporation, a corporation of California

Original application Oct. 3, 1960, Ser. No. 59,893. Divided and this application Dec. 4, 1961, Ser. No. 159,475
6 Claims. (Cl. 13—25)



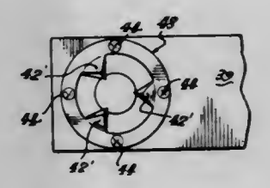
1. An apparatus of the character described comprising a graphite crucible formed with an interior chamber having a discharge opening disposed above the bottom of said chamber in a first position of said crucible and disposed at the lower end of said chamber in a second position of said crucible, pivotal supporting means connected eccentrically to said crucible to provide an automatic pendulent movement from said first position to said second position, and electrodes moveable into engagement with said crucible in said first position and supporting said crucible therein for the heating of material in said chamber and being retractable to release said crucible for movement to said second position for discharge of molten material therefrom.

3,275,736

APPARATUS FOR INTERCONNECTING ELEMENTS

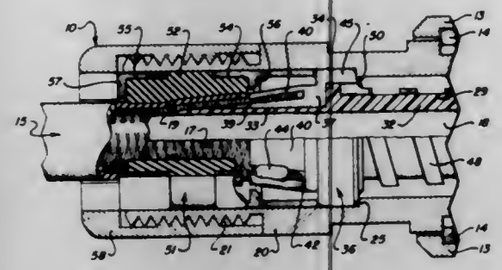
William Hotine, Idyllwild, and Guy F. Maxwell, Glendora, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware

Filed Apr. 12, 1965, Ser. No. 447,362
9 Claims. (Cl. 174—84)



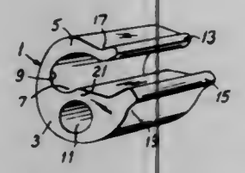
1. A device for electrically and mechanically interconnecting components comprising a conductor member having at least one opening therein and at least one replaceable connector unit removably secured over an opening of said conductor member, said connector unit being provided with an aperture in alignment with said conductor member opening and at least one finger-like element extending into said aperture, said finger-like element being provided with a pointed end extending at an angle with respect to the plane of said conductor member, said replaceable connector unit being electrically and mechanically secured to said conductor member, whereby the finger-like element is adapted to mechanically retain an associated component within said aperture and prevent the removal of the associated component from within the connector unit and the opening of the conductor member due to the pointed end of said finger-like element embedding into such associated component, and whereby the replaceable connector unit may be removed from said conductor member and replaced should said finger-like element be damaged during removal of the associated component from within said aperture of said connector unit.

3,275,737
COAXIAL CABLE TERMINATING MEANS
James M. Caller, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 15, 1964, Ser. No. 360,153
3 Claims. (Cl. 174—89)



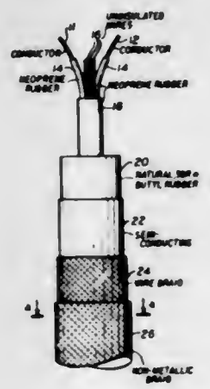
1. In an electrical connector, a coaxial cable having an inner conductor, an outer conductor encircling the inner conductor and spaced therefrom by dielectric means, a retaining and connecting member for said outer conductor including a pair of circumferentially disposed and radially spaced apart inner and outer skirt portions connected by an end wall portion with said portions together forming a slot, an end section of said outer conductor seated in said slot between the skirt portions, the outer skirt portion being inwardly deflected and clamping said end section of the outer conductor between said skirt portions, deformable sealing means in close proximity to an outer periphery of said inner skirt portion, a tubular insulator circumferentially disposed between said outer conductor and said dielectric means at a location radially inwardly of said inner skirt portion and said end section of the outer conductor, and housing means enclosing said retaining member and said sealing means and constricting the latter to firm engagement with said outer conductor.

3,275,738
CABLE CONNECTOR WITH CRIMPING DIE LOCATING GROOVES
Gordon L. Flynn, Trussville, and Benjamin E. Kidd III, and Vernon E. Peek, Birmingham, Ala., assignors to Anderson Electric Corporation, Leeds, Ala., a corporation of Alabama
Filed Apr. 30, 1964, Ser. No. 363,932
9 Claims. (Cl. 174—94)



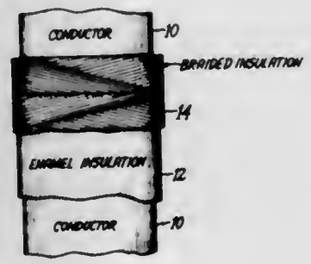
1. A connector for interconnecting a pair of cables comprising a main body portion and a jaw portion extending from one edge of the body portion and forming a relatively deep channel opening laterally of the connector, said main body and jaw portions being integrally formed of a malleable metal in a generally C-shaped configuration in transverse cross section, said channel extending in an axial direction throughout the length of said connector for receiving one of said cables, a bore in said body portion extending parallel to said channel throughout the length of said connector for receiving the other of said cables, said connector having a pair of die-receiving grooves in its periphery located on opposite sides of the lateral opening of said channel and extending in an axial direction throughout the length of the connector for orienting two dies of a four-die crimping tool, said grooves being generally located on two corners of a square all the corners of which are substantially located on the periphery of the connector in a plane substantially perpendicular to the axis of the connector, and a wall between said channel and said bore which is of such a thickness that it is readily deformable under the pressure of said dies necessary to effect crimp connection.

3,275,739
X-RAY AND DIATHERMY CABLE
George S. Eager, Jr., Upper Montclair, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Aug. 31, 1964, Ser. No. 393,821
11 Claims. (Cl. 174—107)



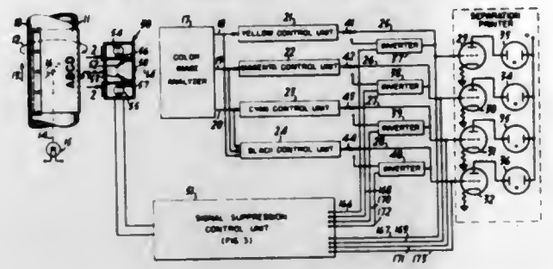
1. A flexible cable for X-ray and diathermy and similar equipment including two or more flexible, metal, electrical conductors; neoprene rubber surrounding one or more of these conductors serving as an insulation, and a secondary neoprene layer serving the function of a semi-conducting covering; a layer of high-grade electrical insulation which is a rubber insulation based on material from the group consisting of natural, SBR and butyl rubber covering the circumferential extent of the neoprene rubber; a semi-conducting layer over said high-grade electrical insulation; and a protecting covering over the semi-conducting layer.

3,275,740
HIGH TEMPERATURE INSULATION FOR ELECTRICAL CONDUCTORS
Willard F. M. Gray, Hancock, Mass., assignor to General Electric Company, a corporation of New York
Filed July 9, 1962, Ser. No. 208,470
5 Claims. (Cl. 174—121)



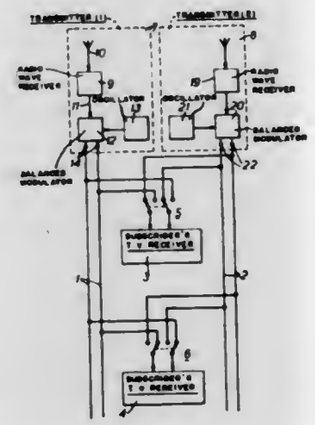
1. An electrical conductor having an insulating coating providing a low dissipation factor and high electrical strength consisting of a base coating of enamel material on said conductor with a porous coating of high temperature resistant filamentary material covering said base coating, the pores of said porous coating measuring not more than 3 mils in at least one dimension.

3,275,741
KNOCKOUT MASK DETECTOR IN SCANNER APPARATUS
Roy H. Hughes, Church Crookham, and Ronald F. Channing, London, England, assignors to Time Incorporated, New York, N.Y., a corporation of New York
Filed May 15, 1963, Ser. No. 280,544
13 Claims. (Cl. 178—5.2)



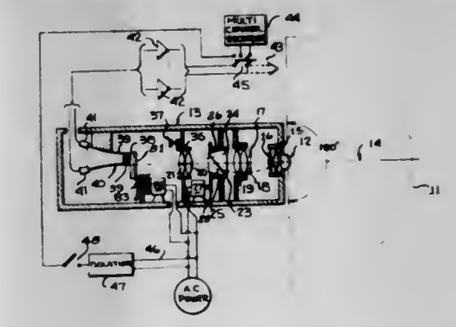
1. In image reproducing apparatus including scanning means for scanning an original brightness image point by point to produce a beam of light containing image brightness information and reproducing means responsive to the beam of light to produce signals representing a corresponding brightness image point by point and including printer means responsive to the signals to generate corresponding brightness image point by point and including means for detecting an extreme brightness condition in the beam of light, and control means responsive to the detecting means for causing the printer means to produce an extreme brightness condition in the corresponding area of the reproduced image, said control means including signal suppression means responsive to detection of an extreme brightness condition by the detector means to suppress signals representing brightness variations and thereby prevent the printer means from reproducing variations in brightness.

3,275,742
WIRED BROADCASTING SYSTEMS AND APPARATUS THEREFOR
Kenneth Charles Quinton, Hinchley Wood, Esher, Surrey, and Daniel Henry Smart, Coulsdon, Surrey, England, assignors to Communications Patents Limited
Filed May 22, 1963, Ser. No. 282,333
Claims priority, application Great Britain, May 30, 1962, 20,749/62
5 Claims. (Cl. 178—5.2)



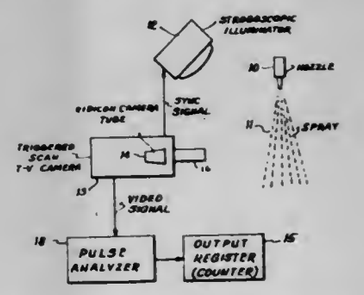
1. In a wired broadcasting system pertaining to color television, which includes a transmitting apparatus serving to energize a conductive network of the system by producing and applying to said network a modulated carrier wave brightness information component and a suppressed carrier wave color information component, the frequencies of said carrier waves differing from each other by an odd multiple of half the line scanning frequency, said system further including frequency control means for establishing the frequency of the carrier wave of the brightness information component at a whole multiple of the line scanning frequency, the beating of these carrier waves and their harmonics thereby occurring at frequencies which differ from the fundamental frequencies of said carrier waves by an odd multiple of half the line scanning frequency of the television signals to reduce the visible effect of such beating in a picture produced with the aid of said components.

3,275,743
WIDE ANGLE TELEVISION SYSTEM UTILIZING OPTICAL FIBERS
John E. Conant, Arlington, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Dec. 17, 1963, Ser. No. 331,248
12 Claims. (Cl. 178—5.2)



1. A wide angle television system, comprising a camera pickup device having an optical axis; said camera pickup device including, along said optical axis: lens means for forming a real image of a scene, encompassed in a wide angle field of view, to be televised by said system; means for rotating said image about said axis; an array of optical waveguide elements disposed in light-receiving relationship with said image-rotating means, each having its light-receiving end disposed at a different point along a radial line normal to and extending from said axis to a point adjacent the periphery of the rotating image, whereby to simultaneously transmit light rays constituting contiguous elements of a lineal portion of said rotating image, a sequence of such lineal portions for a complete rotation of the image constituting the total image during a given interval of time; and photodetector means for converting light rays transmitted by each optical waveguide element to a respective electrical signal proportional to light ray intensity, to generate parallel signals containing the video information in a lineal portion of the total image.

3,275,744
APPARATUS FOR SPRAY ANALYSIS
Verne E. Dietrich, Naperville, Ill., assignor to Spraying Systems Co., Bellwood, Ill., a corporation of Illinois
Filed Oct. 1, 1962, Ser. No. 227,190
5 Claims. (Cl. 178—6)



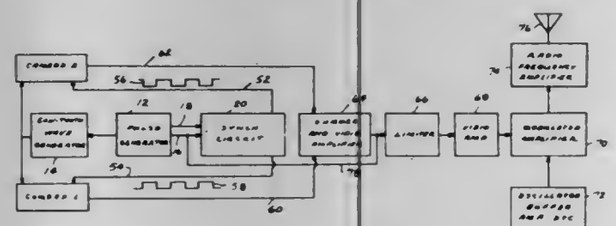
1. Apparatus for spray analysis comprising a television camera having a camera tube and a scanning system therefor, said camera being positioned to view at least a por-

tion of the spray to be analyzed, a stroboscopic light source operative when triggered to emit a short-duration light flash momentarily illuminating said spray portion, means interconnecting said scanning system and said light source operative to synchronize the triggering of said source and the initiation of a scanning cycle in said camera, means for triggering said light source and initiating a scanning cycle in synchronism therewith, whereby an image representing the spray pattern at the instant of said flash is recorded by said camera tube and then converted to a video signal by said camera, and means fed by the camera for analyzing said video signal and thereby recovering information concerning said spray pattern.

3,275,745
THREE-DIMENSIONAL TELEVISION SYSTEM

Robert E. Var, 216 Emerald Ave., New Brighton, Minn.

Filed Dec. 23, 1963, Ser. No. 332,342
6 Claims. (Cl. 178—6.5)



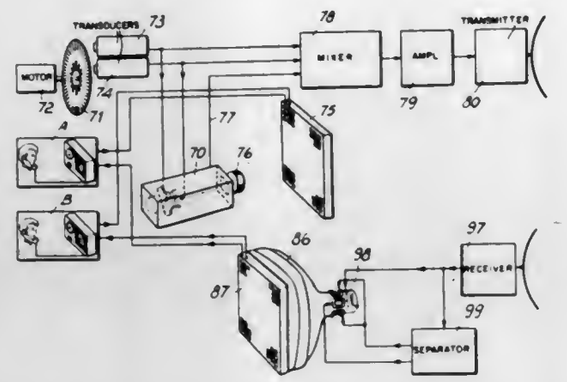
2. A three-dimensional television transmission system comprising in combination a right and a left television camera, a circuit means wired to each of said cameras, each of said cameras being adapted to produce an A and B transmission field, said circuit means being adapted to distinguish between the A and B transmission fields produced by each camera and means for blanking out the signal from each camera in alternate sequence corresponding to the presentation of the respective transmission fields whereby one camera transmits only field A and the other only field B and a picture tube with a first polarizing means for polarizing the light in different planes from portions of the picture displayed on the tube and a second polarizing means for polarizing light in a different plane for each eye of the viewer.

3,275,746
SIMULTANEOUS MULTIPLE TWO-WAY MULTIPLEX COMMUNICATIONS SYSTEMS

Aurelio Beltraml, Via Circo 4, Milan, Italy

Filed Feb. 19, 1963, Ser. No. 259,561
Claims priority, application Italy, Dec. 11, 1962, 29,815
1 Claim. (Cl. 178—6.8)

In a simultaneous multiple two-way multiplex communication system for the transmission of intelligence, a system comprising a plurality of subscriber stations including transmitting and receiving equipments, an exchange for each group of subscribers with the capacity for transmitting and receiving signals from the remaining exchanges, said exchanges further comprising a transmitting honeycomb device with which each exchange subscriber is connected, a vertical and a horizontal stripe on each said transmitting honeycomb device, said honeycomb device comprising a plurality of cells arranged in rows and columns, a gas lamp in each said cell, a camera tube for scanning said honeycomb device and for producing line and frame frequency signals from said stripes, an amplifier connected to said camera tube, a transmitter connected to said amplifier for propagating signals to each of the other exchanges, a receiver for receiving signals from each of said other exchanges, a receiving cathode ray tube device, a receiving honeycomb device affixed to said receiving tube and connected to the several subscriber equipments, said receiving honeycomb device

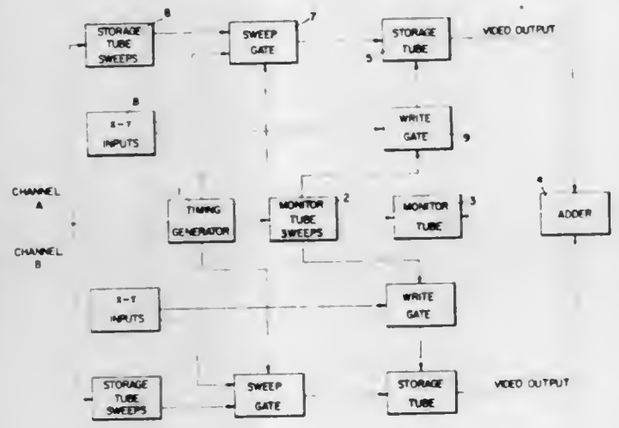


including a plurality of cells, a phototransistor in each said cell, and amplifiers connected between each said receiving honeycomb cells and said subscriber equipment.

3,275,747
ELECTRONIC PLOTTER UTILIZING STORAGE TUBES

Roger Leland Hall, Francestown, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed May 21, 1963, Ser. No. 281,993
7 Claims. (Cl. 178—6.8)

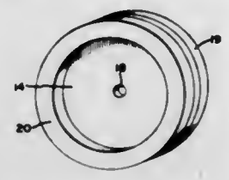


1. An electronic display system comprising:
a monitor tube of the type employing an electron beam to write information on a display surface to thereby serve as a display tube;
means for causing the electron beam of the display tube to cyclically scan the display surface in a predetermined pattern;
a storage tube of the type having a storage surface adapted to be scanned by an electron beam;
means for cyclically causing the electron beam to scan the storage surface in the predetermined pattern to provide readout signals indicative of information recorded on the storage surface;
means for applying the readout signals of the storage tube to the display tube to cause the information to be displayed;
timing means for causing the electron beams of the storage and display tubes to scan the predetermined pattern in synchronism;
and means for causing new information to be written on the storage tube only during the retrace period of the display tube.

3,275,748
ELECTRON BEAM-DEFINING DEVICE AND METHOD FOR PRODUCING THE SAME

Marvin E. Knoll, Central Square, and William H. Nicklas, North Syracuse, N.Y., assignors to General Electric Company, a corporation of New York

Filed Dec. 23, 1963, Ser. No. 332,348
3 Claims. (Cl. 178—7.87)

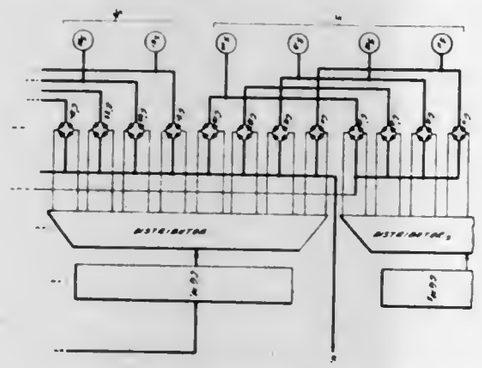


1. A light valve apparatus for positioning between a light source and a screen for the projection of an image on the screen, said apparatus comprising:
(a) an evacuated envelope,
(b) a light-modulating fluid positioned in said envelope and arranged to control the passage of light from the source to the screen,
(c) cathode means positioned in said envelope and arranged to emit a beam of electrons impingent upon said light-modulating fluid to form a diffraction grating thereon for selectively controlling the passage of light from the source to the screen in accordance with the image being projected,
(d) electron beam-defining means including a membrane having an aperture to pass one portion of said beam of electrons, the portion of said membrane about said aperture being adapted in operation to intercept and be heated by a second portion of said beam, said heating in normal operation being sufficient to produce buckling of said membrane if said membrane is untensioned, and
(e) means to maintain said membrane in radial tension about said aperture sufficient to prevent buckling of said membrane when said membrane is heated during normal operation of said apparatus.

3,275,749
TWO-STAGE MULTIPLEX SWITCHING SYSTEM EMPLOYING INTERLACED CONNECTIONS BETWEEN HIGHWAYS AND EXTERNAL CIRCUIT GROUPS

Toshihiro Kunihiro and Nobuhiko Shimasaki, Shiba, Minatoku, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Oct. 8, 1965, Ser. No. 494,221
Claims priority, application Japan, Oct. 14, 1961, 36/37,202
6 Claims. (Cl. 179—15)

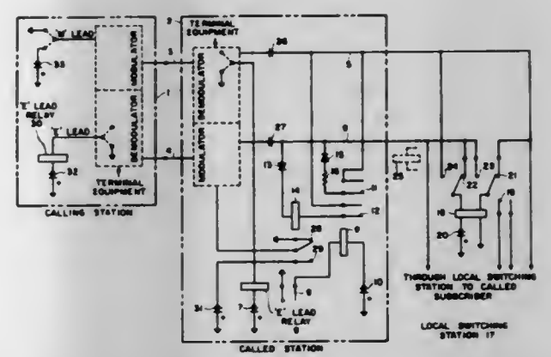


1. In a time-division multiplex switching network comprising a plurality of subscriber groups and a plurality of highway lines equal in number to said plurality of subscriber groups, a plurality of first multiplex switching means for connecting the subscribers of each subscriber group to a first end of their associated highways on a time sharing basis; a plurality of second multiplex switching means for interconnecting the highways of the different subscriber groups at a location removed from the first ends of said highways in accordance with the selection of a called subscriber by a calling subscriber; said second multiplex switching means being operative on a time sharing basis; means for connecting pairs of said subscriber groups to a common highway through selected ones of said first multiplex switch means wherein a different highway is connected to each pair of subscriber groups and no more than one highway is directly associated with any one pair of subscriber groups said second multiplex switching means comprising a plurality of means for selectively connecting said highways on a time-division basis; each of said plurality of means connected between no more than two of said plurality of highways.

3,275,750
SIGNAL CONVERSION CIRCUIT FOR "E" AND "M" TELEPHONE LEADS

Edward Herbert Lanham, 1114 Field St., Ottawa, Ontario, Canada

Filed Aug. 2, 1965, Ser. No. 477,670
1 Claim. (Cl. 179—16)



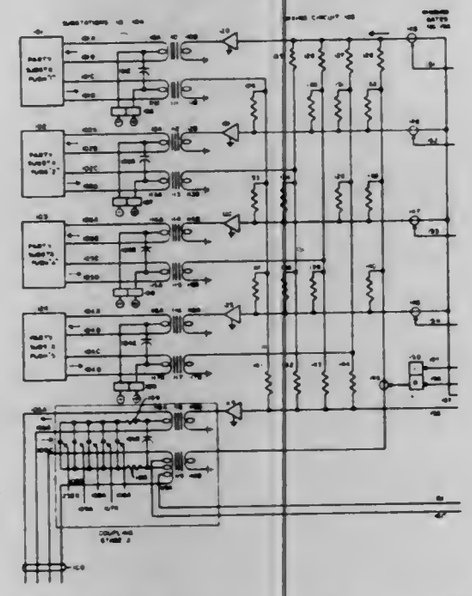
In an "E" and "M" telephone supervisory signalling system wherein pulses are applied to an "E" lead at a called station from an interrupted ground corresponding to dial pulses originating at a calling station, and wherein switching equipment at said called station is normally arranged to cause current to flow in one direction in a pair of wires so that a called subscriber's station can be selected in response to interrupted current flow in said one direction corresponding to said pulses, and wherein said switching equipment is arranged to cause current flow in the opposite direction to said one direction in said pair of wires in response to the answering of a call at said called subscriber's station; a conversion circuit at said called station to convert the pulses applied to the "E" lead into said interrupted current flow in said one direction, and to convert said current flow in said opposite direction into a battery supervisory signal applied to the "M" lead at said called station comprising:
(a) first switching means arranged to be alternately operated and released in response to the pulses applied to said "E" lead;
(b) first circuit means connected across said pair of wires arranged to be energized and de-energized in response to the operation and release respectively of the switching means, said first circuit means being further arranged, when energized and de-energized, to permit current to flow, and to prevent current from flowing, respectively, in said one direction in said pair of wires, thereby providing said interrupted current flow;

(c) second circuit means connected across said pair of wires arranged to be energized and de-energized in response to the operation and release respectively of the switching means, said second circuit means being further arranged, when energized and de-energized, to permit current to flow, and to prevent current from flowing, respectively, in said opposite direction in said pair of wires;

(d) and second switching means responsive to current flowing in said opposite direction in said pair of wires to connect a battery supervisory signal to said "M" lead;

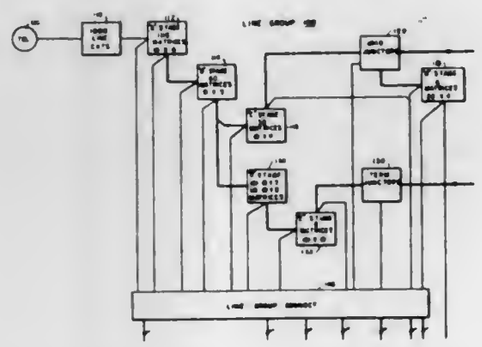
wherein said first switching means comprises a first relay arranged to be alternately energized and de-energized by the pulses applied to said "E" lead; the first circuit means comprises a first diode, a resistor and a make contact of said first relay serially connected together across said pair of wires, the first diode being poled so that current is allowed to flow only in said one direction; the second circuit means comprises a second diode, the energization circuit of a second relay and a further make contact of said first relay serially connected together across said pair of wires, the second diode being poled so that current is allowed to flow only in said opposite direction; and said second switching means comprises transfer contacts of said second relay arranged, when said second relay means is energized, to disconnect ground from, and to apply battery to, said "M" lead.

3,275,751
PARTY LINE ADAPTER FOR FOUR-CONDUCTOR SWITCHING SYSTEM
Carl B. Nennerfelt, Galion, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Filed Jan. 17, 1963, Ser. No. 252,105
17 Claims. (Cl. 179—17)



1. In a telephone system having a plurality of four-wire subscriber lines, each of which includes a pair of incoming conductors and a pair of outgoing conductors, a plurality of subscriber substations, each of which has a four-wire circuit, a line adapter circuit for connecting each of said plurality of subscriber substations to a subscriber four-wire line including a mixing circuit having impedance matching means connecting one pair of wires of each of said plurality of substations to the incoming conductors of said subscriber line, and a second set of impedance matching means for connecting a second pair of wires of each of said plurality of substations to the outgoing conductors of said subscriber line, and a third set of impedance matching means connecting the pair of output wires of each substation to the input circuits of each other substation, whereby side tones are substantially minimized in the connection of the plurality of subscriber substations to said single subscriber line.

3,275,752
COMMUNICATION SWITCHING SYSTEM
Maurice H. Esperseth, Mount Prospect, Frank B. Sikorski, Des Plaines, Kore K. Spellnes, Glen Ellyn, and William R. Wedmore, Lombard, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Nov. 28, 1962, Ser. No. 240,497
6 Claims. (Cl. 179—18)

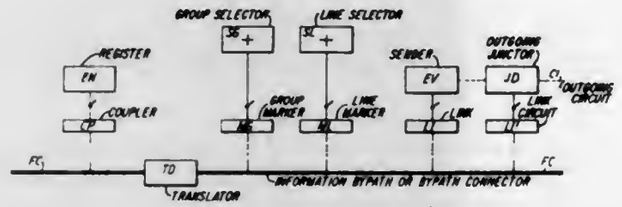


1. In a communication switching system, a first set of terminals, a second set of terminals, at least three switching stages arranged in tandem for selectively electricaliy connecting terminals of the first set with terminals of the second set, each of said stages comprising a plurality of relays arranged in a plurality of coordinate matrices, each relay having an operate winding and a unidirectional device connected in series, at the coordinate points of each of said matrices;

the first two of said switching stages being arranged in groups, each group comprising a plurality of said coordinate matrices in the first stage and a plurality of coordinate matrices in the second stage arranged with first-to-second stage links extending from outlets of the first-stage matrices to inlets of the second-stage matrices with each outlet of any first-stage matrix connected to an inlet of a different second-stage matrix; the third of said switching stages being arranged in groups of matrices with second-to-third stage links interconnecting outlets of the first-second stage groups to the inlets of the third-stage groups with each outlet of any first-second stage group connected to an inlet of a different third-stage group; to thereby form one and only one path including one coordinate point relay of each stage between any terminal of said first set and any terminal of said second set;

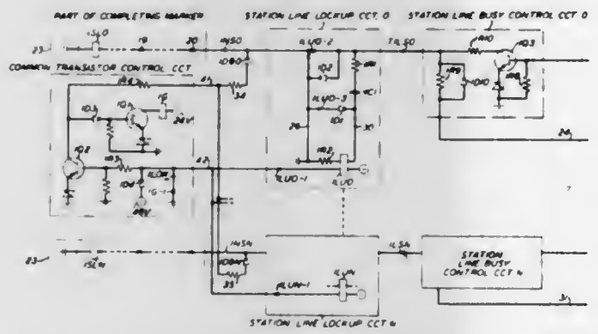
means to idle test said links, means to select a terminal of the first set and a terminal of the second set at the ends of a path having the first-second stage link and the second-third link idle, means to apply a first marking potential to said selected terminal of the first set and a second marking potential to said selected terminal of the second set which produces a potential difference in the forward direction of said devices between the two selected terminals through a series path including the operate winding and unidirectional device of one coordinate point relay of each of said stages, which causes said relays in the path between the selected terminals to operate and thereby establish a communication path; the only potentials applied to said series path to establish a connection being the potentials applied to said selected terminals.

3,275,753
ELECTRONIC TRANSLATOR
Henri Benmussa, Meudon, and Maurice Jean Clerc, Nanterre, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,783
Claims priority, application France, Jan. 31, 1962, 886,518, Patent 1,325,636
8 Claims. (Cl. 179—18)



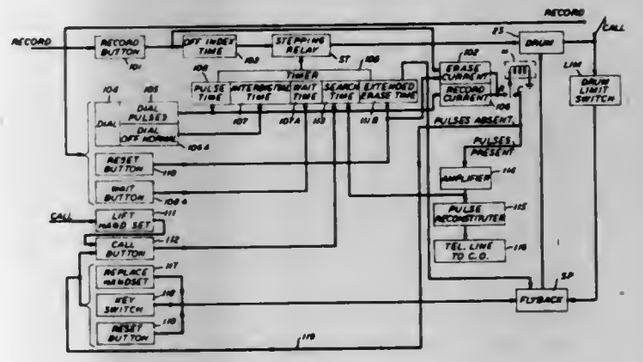
1. An electronic translator for use in a telephone system for translating directory number data into locational data comprising input decoding means for converting coded signals indicative of a desired line directory number into corresponding decimal signals, analyzing means for translating said line directory number decimal signals into locational decimal signals indicative of the location of the desired line, comparator means for selectively blocking and passing said locational decimal signals, and output coding means for coding said passed locational decimal signals into coded locational signals.

3,275,754
CALL DISTRIBUTING CIRCUIT
Jesse O. Howell and Donald A. MacLeod, Oakland, Calif., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed June 12, 1963, Ser. No. 287,320
10 Claims. (Cl. 179—18)



1. In a telephone system, a plurality of lines arranged in a group, cross-point switching means for effecting connections to said lines, marker means for controlling said switching means, artificial busy circuit means for each of said lines, said last-mentioned means including a relay having a primary and a secondary winding, a capacitor, means for normally charging said capacitor excluding said relay windings, means responsive to establishment of a connection through said switching means by said marker means to a line for discharging said capacitor through said primary winding, locking means responsive to energization of said relay for locking said relay operated, means for discharging said capacitor on origination of a call by the line at a rate such as to prevent operation of said relay and to a value insufficient to energize said relay on direct application of ground to said capacitor, and means for releasing all of said locking means on energization of all said relays of said lines in said group.

3,275,755
MAGNETIC REPERTORY DIALER WITH PULSE RECONSTITUTOR
Norris R. Hall, James H. Ham, Jr., Willard E. Hostetler, Kenneth O. Hutchinson, and Lawrence A. Strommen, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 5, 1963, Ser. No. 321,617
14 Claims. (Cl. 179—90)

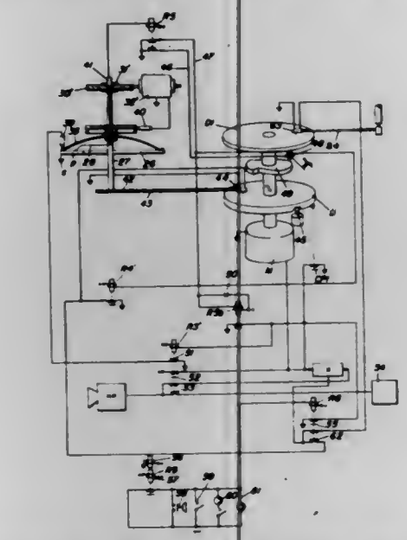


1. Apparatus for the regeneration of electrical pulses comprising, in combination, first means for generating pulses, means for storing said last named pulses, means for extracting said pulses from said storing means at a first pulse repetition rate, second means for generating pulses at a second pulse repetition rate and at a fixed duty cycle, said second rate being slower than said first rate, and means responsive to the first of a group of pulses removed from said storing means by said extracting means for initiating the operation of said second means, said initiating means being further responsive to each succesive pulse in said group of pulses which falls within a preselected range of pulse repetition rates for continuing the operation of said second means on a free running basis irrespective of the relative rate of said group of pulses within said range and irrespective of the duty cycle of the pulses in said group.

3,275,756
CONTROL SYSTEM INCORPORATING A SERIES OF ELECTRIC CIRCUITS AND PROVIDING THE READING ALOUD OF AN INFORMATION CARRYING RECORD
Roger Daniel Vauquelin, 15 rue d'Armenonville, Neuilly-sur-Seine, France, and Michel Roubertie, 6 bis Boulevard de Gaulle, Sarcelles, Seine, France
Filed Mar. 26, 1962, Ser. No. 182,596
6 Claims. (Cl. 179—100.1)

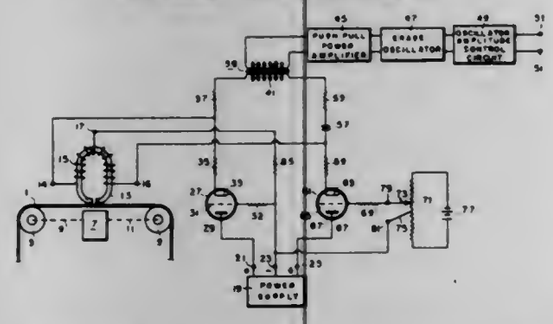
1. Apparatus for controlling a series of electric contacts included in a series of electric circuits, the closing of one of said contacts corresponding each to an abnormal condition, and providing the reading aloud of an information carrying record corresponding to the abnormal condition of the controlled closed contact, said apparatus comprising, a series of contact pieces connected each with one of said electric circuits, a scanning system for said series of electric contacts and including a contact arm said contact arm being adapted to engage in succession said contact pieces, a reading electric circuit connected with said contact arm, connecting means interconnecting the said controlled circuits and disconnecting them upon closing of one of said circuits, means controlled by said connecting means to start the scanning system upon closing of one of said circuits, a record comprising a plu-

rality of sections, each section giving out information relating to different conditions associated with the controlled electric contacts, means for reading said record, means for controlling the relative position of the reading means with reference to the record according to the posi-



tion of the arm of the scanning system, and means fed by the reading electric circuit and controlling the section of the record read by the reading means according to the electric condition of the contact piece engaged by the contact arm.

3,275,757
CARRIER-ERASE MAGNETIC TAPE RECORDING
John H. Sasseen, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,369
4 Claims. (Cl. 179—100.2)



1. Apparatus for providing an electromagnetically reproducible recording of an electrical control signal on a magnetic tape on which is previously recorded a constant amplitude, sinusoidal signal having a period at least four times the period of said control signal, said apparatus comprising:

an electromagnetic recording head including a winding having a center tap and first and second end connections;

magnetic tape transport means for moving said magnetic tape in magnetic recording relationship past said recording head;

an isolating transformer having a primary winding and a secondary winding;

first circuit means for coupling said secondary winding across said first and second end connections;

resistor means connected to said center tap;

second circuit means connected between said first end connection and said center tap through said resistor means for passing a constant amplitude direct current through one-half of said recording head winding;

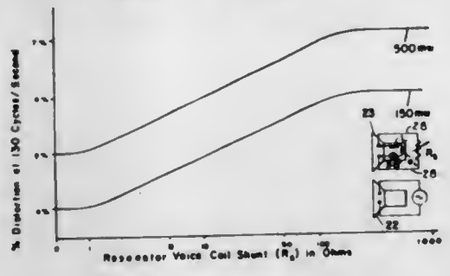
third circuit means connected between said second end connection and said center tap through said resistor means for passing a direct current through the other half of said recording head winding;

means coupled to said third circuit means for adjusting the amplitude of the direct current through the other half of said recording head winding whereby the flux level produced by current flow through said first and second circuit means and said winding is of a predetermined value;

fourth circuit means coupled to said primary winding for supplying to said primary winding a signal having a frequency not less than ten times the frequency of the pre-recorded signal on the tape carried past said recording head; and

fifth circuit means connected to said fourth circuit means and having input terminal means for varying the amplitude of the output signal of said fourth circuit means in accordance with variations in amplitude of an electrical control signal applied to said input terminal means.

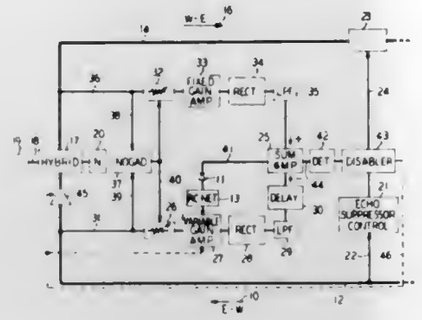
3,275,758
SOUND REPRODUCING APPARATUS
Samuel Bryan, Silver Spring, Md., and Walter B. Udell, Philadelphia, Pa., assignors, by mesne assignments, to Walter B. Udell, Philadelphia, Pa.
Filed Sept. 27, 1962, Ser. No. 226,703
14 Claims. (Cl. 179—116)



6. In a system for radiating sound energy, first vibratory means for propagating sound energy and means for coupling the same to an actuating source, second vibratory means, an enclosure having apertured wall portions to which both of said vibratory means are mounted so that one surface of each of said vibratory means is contacted by the atmosphere outside of said enclosure and the vibratory means are acoustically coupled to one another within the enclosure by means of the air volume contained within the enclosure, each of said vibratory means being characterized by a free air vibratory resonance frequency substantially lower than the resonance frequency range of said vibratory means mounted in the enclosure, and velocity responsive damping means electromechanically coupled to said second vibratory means for damping the amplitude excursions of said first vibratory means by selectively absorbing the sound energy therefrom, said velocity responsive damping means including means for selectively varying within limits the relative phase relation between the motions of said first and second vibratory means.

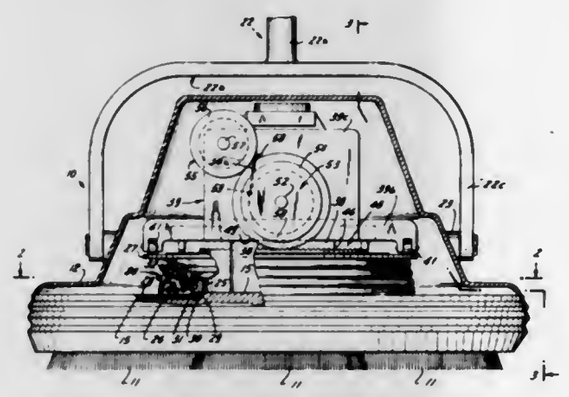
3,275,759
BREAK-IN ARRANGEMENT WITH COMPENSATION FOR VARIATIONS IN THE TRANS-HYBRID LOSS FOR ECHO SUPPRESSORS
Paul T. Brady, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 15, 1963, Ser. No. 273,199
6 Claims. (Cl. 179—170.6)

1. In a transmission system including at least two terminals interconnected by transmitting and receiving paths, an echo suppressor connected to said paths at each terminal for inserting attenuation in the transmitting path when signals are received in the receiving path from the other of said terminals, an amplifier connected to each of said paths for producing an amplified replica of the signals thereon, means for comparing the levels of said amplified



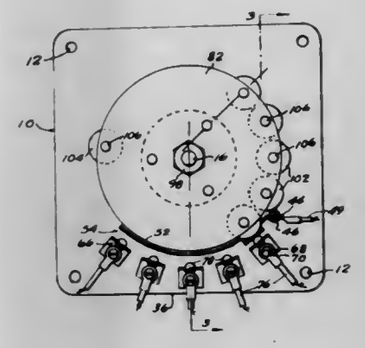
signal replicas and detecting both the magnitude and the sense of their difference, means operative when the difference is of one sense for varying the gain of at least one of said amplifiers in the direction to equalize said compared signals, and means operative when the difference is of the other sense for disabling said echo suppressor.

3,275,760
CORDWINDER
Paul Emile Gaudry, Laval des Rapides, Quebec, Canada, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed July 11, 1963, Ser. No. 294,389
15 Claims. (Cl. 191—12.2)



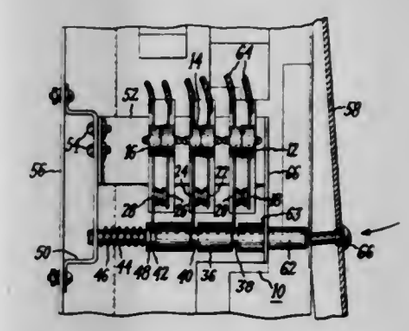
1. In a cordwinder, a frame, a cordwinding spool mounted on the frame for rotation about a first axis, the spool including axially spaced flanges, a cord connected to the spool to be wound thereon between the adjacent inner faces of the flanges, a driving drum mounted on the frame for rotation adjacent to the outer face of one of the flanges about a second axis transverse to the first axis, means including gearing for rotating the driving drum when the cord is unwound from the spool, the gearing comprising a first gear adjacent to the outer face of the one flange and rotatable with the spool and a second gear adjacent to the driving drum and rotatable therewith, a spring storage drum mounted on the frame to one side of and in radial alignment with the driving drum for rotation about a third axis parallel to the second axis, and a spring prestressed to coil tightly around the storage drum and having its outer end secured to the driving drum to be wound thereon when the spool is rotated by the unwinding of the cord from the spool and the gearing effects rotation of the driving drum.

3,275,761
ROTARY SEQUENCE SWITCH WITH RADIAL CAMMED PIVOTAL CONTACT STRUCTURE
Charles Yakim, 612½ Soles St., McKeesport, Pa.
Filed July 9, 1965, Ser. No. 470,717
4 Claims. (Cl. 200—11)



3. A rotor sequential switch comprising a dielectric base plate, a plurality of equally spaced relatively rigid conductive contact bars fixed to and extending laterally from the base plate, said contact bars being arranged in an arc, a similar plurality of resilient and flexible conductive contactor blades fixed on and extending laterally from the base plate and spaced radially inwardly from and individually aligned with the contact bars, said contactor blades being electrically connected together and said contact bars being unconnected together, an electric motor driven rotor spaced radially inwardly from and concentric with said contactor blades, said rotor comprising disc means whose peripheral boundary is spaced radially inwardly from the contactor blades, an arc of cam wheels journalled on and extending beyond the boundary of the disc means, said cam wheels being the same in number and spacing as the contactor blades, said cam wheels extending radially outwardly from the rotor to engage and flex the contactor blades into engagement with the contact bars as the rotor is rotated.

3,275,762
AUTOMATIC CIRCUIT CLOSER WITH SPRING BIASED NORMALLY CLOSED CONTACT STRUCTURE
William R. Isaacs, Dover, N.H., and Kenneth R. Stowe, South Berwick, Maine, assignors to General Electric Company, a corporation of New York
Filed June 28, 1965, Ser. No. 467,669
1 Claim. (Cl. 200—16)



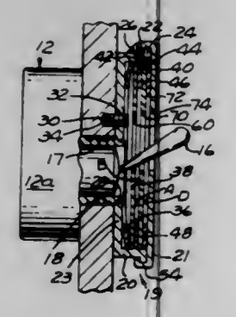
An automatic circuit closer for mounting in the casing of an electrical device to be actuated by the cover of the casing comprising, in combination:

(a) a mounting member for mounting the circuit closer in the casing of an electrical device,

(b) a plurality of switches,
(1) said plurality of switches mounted on said mounting member,
(2) each of said plurality of switches having a fixed contact and a movable contact,
(c) an operator, said operator movably mounted in said mounting member,
(1) means connecting said operator to said movable contacts of said plurality of switches,
(d) spring means mounted on said operator between said mounting member and a shoulder on said operator,
(1) said spring means acting to hold said operator in a position in which said plurality of switches are closed,

said operator being mounted in said mounting member such that the cover of a casing in which said mounting member is mounted will engage said operator to open said switches when the cover is placed on the casing.

3,275,763
COMBINATION LOCK APPARATUS HAVING LOCK ELEMENTS WITH ALIGNABLE OPENINGS
Paul J. Ethington, 1418 Washington Blvd., Birmingham, Mich.
Filed Sept. 26, 1963, Ser. No. 311,859
15 Claims. (Cl. 200—43)



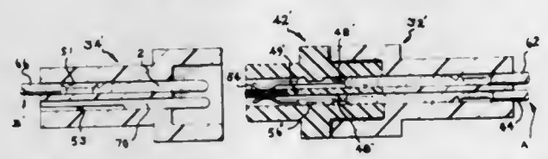
3. In a combination lock assembly, a housing having a rotatable cover, a plurality of substantially circular coacting lock elements disposed within said housing, each of said elements being rotatably supported at its periphery on said housing and having an elongated opening therein extending through the axis of said element, actuating means on said cover operable in response to rotation of said cover to move one of said elements which is in turn operable to move another one of said elements, said cover means being operable in response to rotation thereof in first one direction and then in the opposite direction to position said elements such that the openings therein are substantially aligned.

3,275,764
ELECTRIC LIMIT SWITCH HAVING A DIAGONALLY DIVIDED HOUSING, A DETACHABLE ACTUATOR, AND MECHANISMS FOR CAUSING SELECTED OPERATION OF A PUSH BUTTON SNAP SWITCH
Rudolf H. Kiessling, Milwaukee, Wis., and Carl A. Schaefer, Asheville, N.C., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed June 5, 1964, Ser. No. 372,854
16 Claims. (Cl. 200—47)

8. An electric limit switch comprising; a hollow housing providing an internal cavity, a separately enclosed snap switch mounted within the cavity having an operator extending toward an end of the housing, a slider having a portion movable within the cavity and arranged when moved to actuate the switch operator, a pair of plungers carried by the end and each independently movable of the slider and arranged when moved to move the slider, and means including a movable external operator, said means being securable in any one of a plurality of angular positions on the end of the housing and arranged to move the plungers individually and selectively in response to the direction of movement of the external operator.

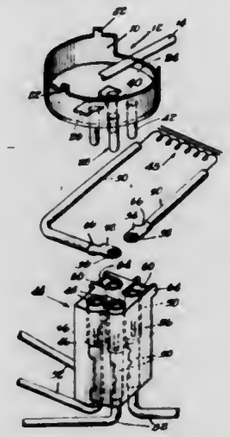


3,275,765
ELECTRICAL CONNECTING AND SWITCH DEVICE
Gilbert Douglas Ferdon and Homer Ernst Henschen, Carlisle, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 10, 1964, Ser. No. 337,005
2 Claims. (Cl. 200—51.1)



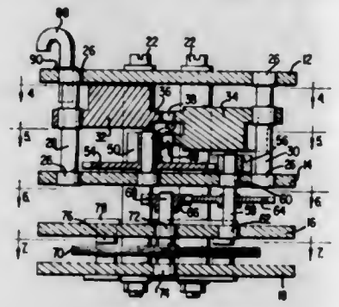
1. A multi-contact electrical connecting device comprising: a pair of connector housings and a connecting housing, said connector housings each having a hood surrounding, and extending beyond, one end thereof, said connecting housing having opposite ends conforming to the internal configuration of said hoods whereby, said connector housings can be coupled to, and decoupled from, said connecting housing, a plurality of contact terminal cavities extending through each of said connector housings, contact terminals in at least some of said terminal cavities, said terminals each having a contact portion of channel-shaped cross-section disposed within the confines of said hoods, said connecting housing having contact spring cavities extending between said opposite ends, contact leaf springs disposed within said contact spring cavities, the ends of said leaf springs being engageable with said contact portions of said contact terminals upon coupling of said connector housings to said opposite ends of said connecting housing thereby to form conducting paths between individual conductors secured to said contact terminals, shunt means in said connecting housing extending from a first one of said contact spring cavities to a second one of said contact spring cavities, said shunt means normally being in engagement with the contact leaf springs in said first and second contact spring cavities whereby, a continuous conducting shunt path is established between two conductors secured to contact terminals in one of said connector housings when said one connector housing is coupled to said connecting housing, and shunt circuit interrupting means in a corresponding contact terminal cavity in the other one of said other connector housings, said shunt circuit interrupting means being engageable with said shunt means for deactivating said shunt means when said other connector housing is coupled to said connecting housing thereby to break said conducting shunt path and to establish a conducting path between two corresponding contact terminals in said connector housings.

3,275,766
SWITCH CONNECTOR
John H. Krehbiel, Brookfield, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois
Filed Sept. 15, 1964, Ser. No. 396,631
3 Claims. (Cl. 200—51)



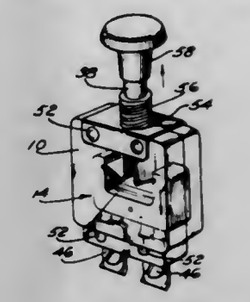
1. A switch connector, comprising a housing having longitudinal and transverse dimensions, a transverse wall in said housing, a switch in said housing disposed longitudinally on one side of said wall and including a moveable switch operator, a plurality of connecting pins fixed to said housing and extending from said transverse wall longitudinally in the opposite direction from said switch and also extending through said transverse wall toward said switch, a complementary separable electric connector having a housing with a plurality of female electric connectors respectively detachably receiving said pins, said connector housing having a pair of recesses each opening longitudinally of said female connectors and laterally thereof, a pair of wires each having an apertured terminal thereon, each of said apertured terminals being received on one of said pins and disposed in one of said connector housing recesses, said connector housing and said transverse wall of said first-mentioned housing cooperating to insulate said terminals electrically.

3,275,767
VELOCIMETER INCORPORATING A DRAG DISC WITH CONDUCTIVE LAMINATIONS
John M. Bergey, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Aug. 4, 1964, Ser. No. 387,370
14 Claims. (Cl. 200—61.45)



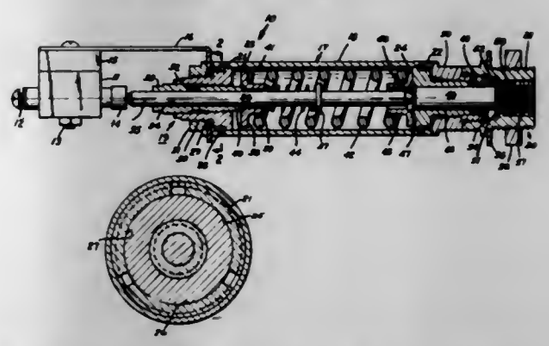
1. A velocimeter comprising an eccentrically mounted mass subject to rotation under the influence of acceleration forces, means coupled to said mass for actuation by movement thereof, a rotatable element having a plurality of conductive laminations coupled to and driven by said mass, and means for passing a magnetic field through said laminated element.

3,275,768
SNAP-ACTION ELECTRIC SWITCH
Kent J. Batcheller, 30 Brush Hill Road, Newton, Mass.
Filed Apr. 13, 1964, Ser. No. 359,123
1 Claim. (Cl. 200—76)



A snap-action electric switch comprising a hollow body consisting of two members of insulating material fastened together, a push rod extending slidably through the top of said body, two terminal members extending through and fixed in the bottom of said body, a planar contact blade in said body movable in its own plane down into contact with said terminal members and up out of contact with said terminal members, and means responsive to a downward movement of said push rod to raise said contact blade out of contact with said terminal members and responsive to an upward movement of said push rod to move said contact blade down into contact with said terminal members, said means comprising a spring toggle mechanism operatively connecting said push rod and said contact blade, said contact blade being mounted for limited rocking movement in its own plane for balanced engagement with the two said terminal members.

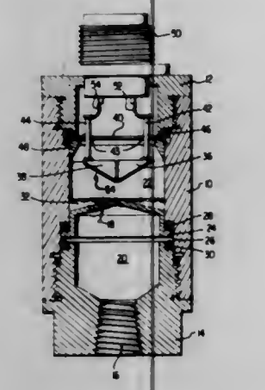
3,275,769
PRESSURE SWITCH HAVING HEAD PORTIONS HELD BY GROOVE MEANS
Paul J. Weaver, Pasadena, Calif., assignor to Armand C. Anderson, Alhambra, Calif.
Filed Dec. 17, 1963, Ser. No. 331,176
4 Claims. (Cl. 200—82)



1. A pressure switch adapted to change its switching condition in response to a predetermined fluid pressure, comprising: a switch comprising a contact movable to change the switching condition of the switch; and an actuator connected to the switch comprising a body tube having an axis and a first end an a second end, a first and a second head in the respective ends of the body tube, a first and a second axial bore passing through the respective first and second heads, the first bore being adjacent to the switch, and the second head being adapted to connect the second bore to a source of pressure to which the actuator is responsive, a first and a second piston, said

second piston slidably fitted in the second bore, the second piston making a fluid sealing fit in the second bore, one end of the second piston being exposed to said fluid pressure at the second end, force spring means interposed between the body and the second piston in opposition to said fluid pressure; means for adjusting the initial loading of the force spring means comprising a tubular screw threaded into said first bore, said first piston slidably fitted in said tubular screw, the force spring means being backed up by the tubular screw, a protrusion on said second piston, a pair of axially spaced apart surfaces on said actuator adapted to be engaged by the protrusion to limit the axial movement of the second piston, a pair of axially spaced apart internal undercut grooves in the body tube, a shoulder on each head, and a segment in each of said grooves which segment projects into the body tube to radially overlap the respective shoulder and thereby prevent expulsion of the heads from the tube.

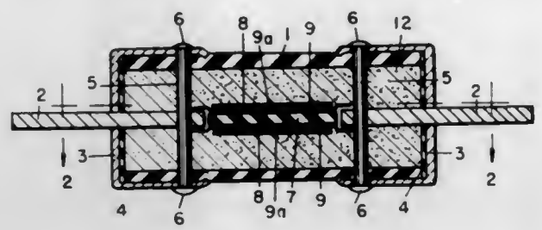
3,275,770
EXPLOSION PRESSURE RESPONSIVE SWITCH
Lauren G. Kilmer and Richard K. Shearman, Tulsa, Okla., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,450
6 Claims. (Cl. 200—82)



1. A switch comprising a hollow body, plate means sealing the top of the hollow of said body, the hollow of said body having a sidewall, a split cone electrode means including two electrically-conductive elements supported in the hollow of said body beneath said plate, said elements being spaced a small distance apart, means for sealing the bottom of said hollow including a piston arranged at the bottom of said hollow body, said piston having limited axial movement in the hollow of said body, a small body of mercury normally resting on said piston means beneath said plate, and deflector means adjacent said electrode means for deflecting mercury which strikes the same substantially axially of said body in the direction toward said electrode means, whereby when a sudden force is applied at the bottom of said hollow body said piston means is suddenly raised to throw said mercury upward where it is deflected to pass between said two elements and momentarily complete a circuit through said electrode means.

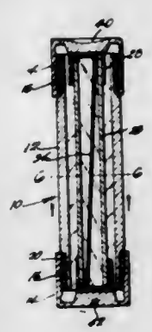
3,275,771
ELECTRIC FUSE HAVING MAGNETIC ARC-QUENCHING ACTION
Erwin Salzer, Waban, Mass., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed Apr. 30, 1965, Ser. No. 452,051
12 Claims. (Cl. 200—120)

1. An electric fuse comprising in combination:
(a) a substantially tubular housing of insulating material;
(b) a pair of terminal elements arranged at the axially outer ends of said housing;
(c) an elongated flat plate of an organic insulating material evolving gases under the heat of electric arcs metal clad on both surfaces thereof and forming a pair of narrowly spaced parallel current paths each defining a plurality of registering points of reduced cross-section arranged inside said housing;



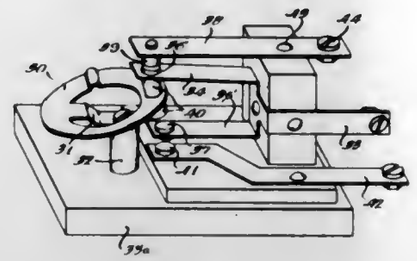
(d) means for conductively connecting the ends of said member to said pair of terminal elements; and
(e) a pulverulent arc-quenching filler inside said housing limited to space radially outward from said plate and said metal cladding thereof.

3,275,772
CLEAR BARREL CARTRIDGE FUSE
Robert E. Neff, Orlando, Fla., assignor to Devices Inc., Orlando, Fla., a corporation of Florida
Filed Dec. 23, 1964, Ser. No. 420,491
5 Claims. (Cl. 200—129)



1. A clear barrel cartridge fuse comprising a hollow cylindrical body constructed of transparent plastic material, a metal cap disposed at each end and fused to the cylindrical body at each end, an inner cylindrical body transversely disposed within the hollow cylindrical body along its length and constructed of transparent plastic material, said inner cylindrical body having a fuse body disposed along the length of the inner cylindrical body and positioned therein, said fuse body forming a portion of an electrical circuit formed between the said metal caps, said metal caps having an inner threaded portion engaged to the ends of the hollow cylindrical body by an annular sleeve, said metal caps having an inner cap surface defined by an annular recess, said inner threaded portion of the metal caps terminating with the annular recess, said annular formed inner cap surface engagingly mating with the end of the metal ends of said inner cylindrical body, said annular metal sleeve being of reduced size and having uniform outside diameter throughout substantially identical with the uniform outside diameter of the hollow cylindrical body, said sleeve threadedly engaging the outer portion of the ends of the hollow cylindrical body for fixedly disposing the outer ends of the inner cylindrical body securely to a threaded annular inner surface of the adjacent metal caps thereof.

3,275,773
OVER-CENTER SNAP SWITCH
Philip D. Grover, Two Rivers, Wis., assignor to Grover Products Corporation, a corporation of Illinois
Filed Apr. 9, 1964, Ser. No. 358,570
4 Claims. (Cl. 200—138)



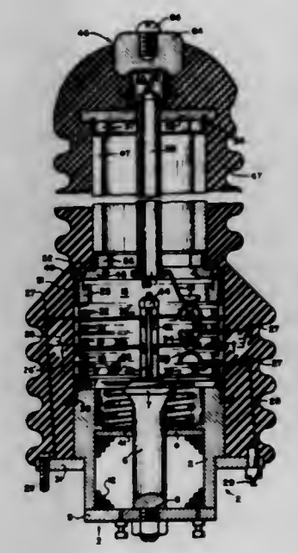
1. A thermal responsive snap switch comprising, a heat conducting base, an annular body of bimetal, a wave in said body inducing an initial stress and concave configuration therein, an unstressed compensating member extending inwardly from the periphery of the body defining a mounting for said annular body, a heat conducting member extending from the base on which the compensating member is mounted, a stationary contact and a movable contact, heating of the body causing over-center movement of the body to change the relation of said contacts, a leaf carrying said movable contact and engageable by said annular body.

3,275,774
THERMAL PROTECTIVE ARRANGEMENT FOR INDUCTIVE DEVICES
Imrich M. Miller, Paterson, N.J., assignor to Universal Manufacturing Corporation, Paterson, N.J., a corporation of New Jersey
Filed July 19, 1963, Ser. No. 296,235
5 Claims. (Cl. 200—142)



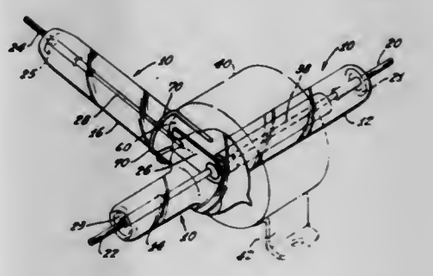
1. A thermal protective arrangement comprising in combination: an inductive device including a winding for carrying electric current formed by a number of superposed layers of wire, a holder having at least a portion thereof buried between two adjacent layers of said winding, a thermal sensitive electrical fuse element operative at a predetermined critical temperature located within said holder and having its thermal sensitive portion completely surrounded by the layers of said winding and in heat sensing relationship therewith for sensing the operating temperature of the winding, said holder having a portion in direct contact with said windings and lying adjacent the thermal sensitive portion of said fuse element to convey heat from said windings to said fuse element at least partially by conduction, said holder also being formed with an open section substantially along its length to permit convection of the winding heat to said fuse element, and means electrically connecting said winding in series with said fuse element for modifying the winding when the fuse senses said critical temperature.

3,275,775
HERMETICALLY SEALED RELAY HAVING HIGH AND LOW VOLTAGE CONTACT ASSEMBLIES IN A COMMON CHAMBER
Jack S. Hawkins, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,960
7 Claims. (Cl. 200—144)



7. A high voltage grounding relay comprising an hermetically sealed hollow envelope including a high voltage insulator section, a contact section and an actuator section axially aligned and disposed end-to-end in hermetically sealed relation, a high voltage contact assembly comprising an elongated tubular conductor extending coaxially through the high voltage insulator section and supported thereon, a fixed high voltage contact supported on the inner end of the elongated tubular conductor, a movable high voltage contact supported on the envelope contact section and movable into and out of engagement with the fixed high voltage contact, and actuator means within the actuator section including a central stem engaging the movable high voltage contact and operable to effect make and break operation thereof.

3,275,776
HIGH VACUUM MINIATURIZED RELAY
Victor E. De Lucia, 2051 Pontius Ave., Los Angeles, Calif.
Filed Sept. 2, 1964, Ser. No. 394,012
3 Claims. (Cl. 200—144)



1. A vacuum relay including: an evacuated envelope; a first electrical contact rod extending into said envelope; a tubular member of magnetizable material coaxially mounted on said electrical contact rod and extending along at least a portion of the axial length of said contact

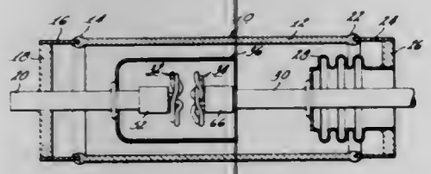
rod, said tubular member having an inner surface spaced radially from said contact rod; an armature of magnetizable material mounted in said envelope in position to extend transversely of the longitudinal axis of said contact rod adjacent the inner end of said contact rod; movable electrical contact means mounted on said armature selectively to engage the inner end of said contact rod; a core member of magnetizable material removably mounted externally of said envelope in coaxial relationship with said tubular member; an electric energizing coil mounted in said core member for establishing a magnetic flux in said envelope; an arcuate-shaped shoe member mounted on said core member and partially surrounding a portion of said envelope to support said core member on said envelope; and a removable clip means retained by said shoe member for holding said envelope in said core member.

3,275,777

MULTIPOINT CONTACTS EMPLOYING THE ARC ROTATING PRINCIPLE

Herbert M. Pflanz, Nuenen, Netherlands, and Zygmunt A. Wachta, Boston, Mass., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Nov. 25, 1964, Ser. No. 413,820
10 Claims. (Cl. 200—144)



1. In an electric circuit interrupter, in combination, a pair of cooperating contacts relatively movable into and out of engagement with each other, at least one contact of said pair of contacts comprising a plurality of electrically conductive rods, each rod comprising a straight shank portion, a first curved portion connected to said shank portion and curved back upon itself in a first plane, and a second curved portion connected to said first curved portion with the second curved portion lying in a plane normal to and intersecting said first plane of said straight shank portion and the first curved portion, each rod in said one contact being adapted to make point contact with the other contact of said pair of contacts when said pair of contacts are in engagement with each other.

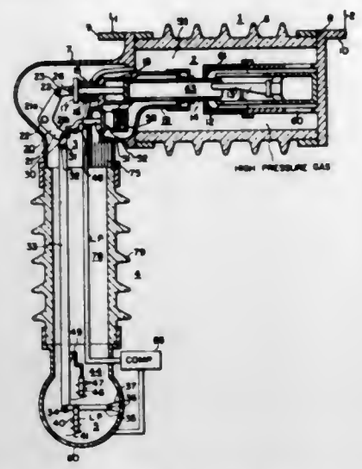
3,275,778

COMPRESSED-GAS CIRCUIT INTERRUPTER WITH PRESSURIZED ARCING CHAMBER AND DOWNSTREAM BLAST VALVE

Shoji Morioka, Hyogo-ken, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan, a company of Japan

Filed July 31, 1963, Ser. No. 298,845
Claims priority, application Japan, Aug. 18, 1962, 37/35,770
8 Claims. (Cl. 200—148)

1. In a compressed-gas circuit interrupter, in combination, means defining an arcing chamber containing gas under high pressure, separable contact means including a movable venting tubular contact disposed therein and separable to establish an arc, means defining a downstream blast-valve for venting the arcing chamber through said movable venting tubular contact, unrestricted passage means connecting the interior of said pressurized arcing chamber through said movable venting tubular contact with said downstream blast-valve, and means synchronizing opening of the downstream blast-valve with separation of the separable contact structure whereby an immediate flow of high pressure gas through the movable venting tubular contact occurs prior to contact part.

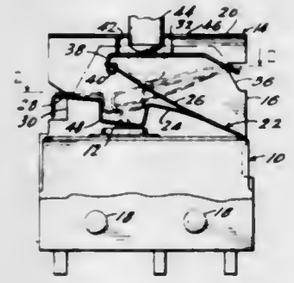


3,275,779

SNAP ACTION DEVICE

John O. Roeser, Morton Grove, Ill., assignor to Master Specialties Company, Gardena, Calif., a corporation of California

Filed June 3, 1965, Ser. No. 460,893
3 Claims. (Cl. 200—153)



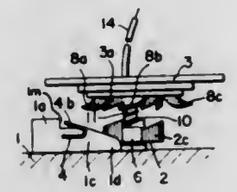
3. In a switch structure and the like, including a housing and a pair of spaced-apart switch actuating buttons each of which is spring biased outwardly to a normal position and each of hwich must be forced inwardly to a second actuated position, the improvement comprising, a leaf spring member having three generally parallel legs comprising a center compression spring leg and two outer tension legs, one end of said center leg being integrally connected to one end of said outer legs and the other end of said center leg being unconnected to the other end of said outer legs, said other end of said outer legs being in pivotal abutment with said housing, said outer legs having a downwardly bent U-shaped portion positioned over said pair of spaced-apart switch actuating buttons for engagement therewith, an actuating member one end of which pivotally abuts said housing at a location adjacent said one end of said legs of said leaf spring member and with the other end of said actuating member being free to move from an outer position abutting said housing to an inner position adjacent said buttons, said free end of said center leg being retained under compression by pivotal abutment with said actuating member and being shaped to cause said outer legs to abut and hold said buttons in their inner positions when said actuating member is in said outer position and to cause said leaf spring member to snap to an outer position allowing said buttons to move to their outer positions when said actuating member is moved to its inner position, and abutment means engaged by said leaf spring member when said one end of said legs are in said outer and inner positions, said outer and inner positions of said leaf spring member being outwardly and inwardly respectively of the unbent positions of said outer legs of said leaf spring member when engaging said buttons in their outer and inner positions respectively.

3,275,780

APPARATUS FOR AUTOMATIC LOCKING AND RELEASING CORD REELS AND AUTOMATIC CONNECTING AND DISCONNECTING OF THE CORD ON THE REEL

Kunio Baba, Tokyo, Japan, assignor of fifty percent, to Dearman Co., Ltd., Tokyo, Japan, a company of Japan

Filed May 27, 1965, Ser. No. 461,606
8 Claims. (Cl. 200—153)



1. A spring-wound cord reel for an electric cord having at least one electric conductor therein, comprising a reel member having a hub, winding spring means in said hub for rotating said reel in the winding direction when a cord on the reel has been unwound by rotating the reel member in the unwinding direction, and automatic electric connecting and disconnecting means comprising a plurality of projecting elements at least as great in number as the number of conductors in the cord and mounted on an end face of said reel, each projecting element having in inclined portion thereon inclined to the end face of the reel, said inclined portions each extending from the projecting element in the winding direction of the reel, and a portion on the end of the inclined portion farthest from the end face of the reel which is perpendicular to the end face of the reel, a contact on the outer end of each projecting element, the respective contacts being adapted to be connected to the conductors in the electric cord, a relatively rotatable electric conductor and lock means freely rotatably mounted on said hub and mounted on said hub for relative movement in the direction of the axis of said hub toward and away from said hub, spring means engaged with said electric conductor and lock means urging it toward said hub, a stationary abutment means adjacent and opposed to the face of said hub which has the projecting elements thereon for engaging said electric conductor and lock means when said electric conductor and lock means is engaged with one of said perpendicular portions on the end of one of said projecting elements, said inclined portions on said projecting elements wedging said electric conductor and lock means toward said stationary abutment means when said electric conductor and lock means is rotating relative to said hub, and further contacts on said stationary abutment means in positions to be contacted by said electric conductor and lock means when said electric conductor and lock means abuts said stationary abutment means.

3,275,781

VIBRATORY TYPE OF SYNCHRONOUS CONVERTER

Thomas T. Highley, Jr., and Morris Joseph, Philadelphia, Charles W. Ross, Hatboro, and Albert J. Williams, Jr., Philadelphia, Pa., assignors to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

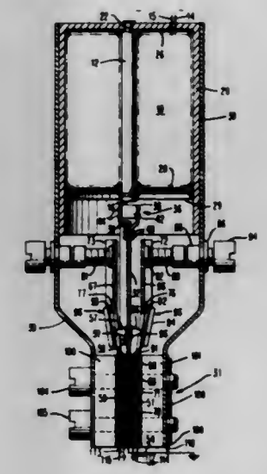
Filed July 22, 1964, Ser. No. 384,351
20 Claims. (Cl. 200—166)

12. A device for opening and closing electrical circuits comprising,

a stationary contact having a contacting surface,

a movable contact having a contacting surface adjacent to one end thereof, said other end being fixed to allow movement of the contacting surface of said movable contact into and out of contact with the contacting surface of said stationary contact, a portion of said movable contact adjacent to said fixed end being flexible in character,

means operable to exert a varying force on said movable contact at a point between said fixed end and said contacting surface and in a direction tending to cause the contacting surface of said movable contact to move about an instantaneous center which is in



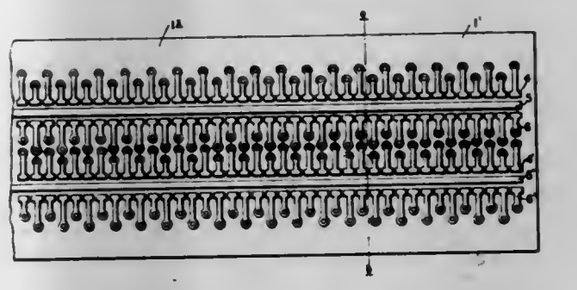
an average plane of that resilient portion lying between said fixed end and said point of force application and spaced from the contacting surface of said movable contact so that said center is on that side of the contacting surface of said movable contact opposite from the contacting surface of said stationary contact whereby said movement has a tangential component of the motion of the contacting surface of said movable contact about said center which is in the same direction as motion of said contacting surface of said movable contact along said contacting surface of said fixed contact as said force is changed to alter the relationship of said surfaces.

3,275,782

SELECTOR SWITCH COMPONENTS

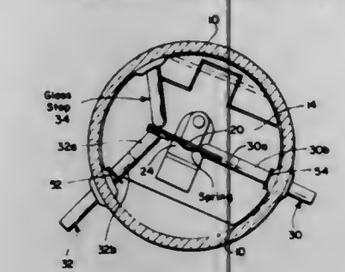
Robert E. Hartsock, 2025 Deep Canyon Road, La Habra, Calif.

Original application Dec. 6, 1960, Ser. No. 74,097, now Patent No. 3,196,223, dated July 20, 1965. Divided and this application Nov. 10, 1964, Ser. No. 410,144
2 Claims. (Cl. 200—166)



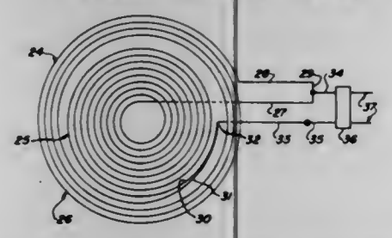
1. As an article of manufacture, a rigid support of insulating material having thereon a common conducting strip and a row of fixed contacts on each side of said strip, said rows extending parallel with said strip and said fixed contacts being uniformly spaced from said strip and from each other.

3,275,783
VACUUM RELAY HAVING IMPROVED CONTACT ELECTRODES
Victor E. De Lucia, 927 Euclid Ave., Santa Monica, Calif.
Filed May 17, 1965, Ser. No. 456,318
7 Claims. (Cl. 200—166)



5. In a vacuum relay which includes an envelope, a magnetic member mounted in said envelope, and an armature movably mounted on said magnetic member, the combination of: a first electrically conductive pin extending through the envelope into the interior of the envelope, at least the inner extremity of said pin composed of copper infiltrated tungsten; a second electrically conductive pin extending through said envelope into the interior of said envelope; a movable contact mounted on said armature in electrical contact with said second pin and in position to make selective contact with said first pin upon movement of said armature; and a copper infiltrated button mounted on said movable contact in position selectively to engage the extremity of said first pin.

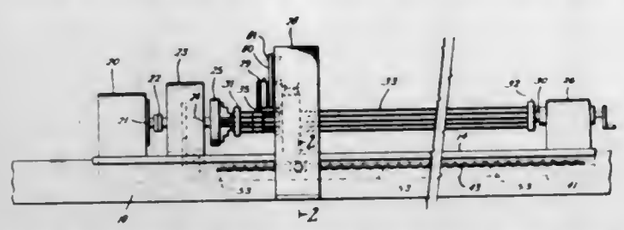
3,275,784
INDUCTION HEATING COIL
John Merrett, Gerrards Cross, England, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed July 12, 1963, Ser. No. 294,628
Claims priority, application Great Britain, Aug. 9, 1962, 30,614/62
4 Claims. (Cl. 219—10.79)



1. A coupling coil for inducing eddy currents in surfaces such as the bottom walls of pots of different sizes to heat the pots, said coil comprising at least two coil sections one within the other to cover different areas of the surface of the pot being heated and wound spirally in opposite directions, means connecting the inner end of the inner coil section and the outer end of the outer coil section to one terminal of the source of current, and means connecting the outer end of the inner coil section and the inner end of the outer coil section to the other terminal of the source of current, whereby said coil sections are connected in parallel to a source of current.

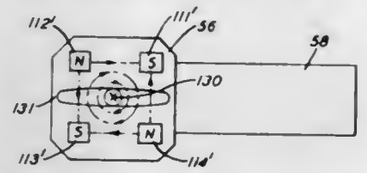
3,275,785
METHOD AND APPARATUS FOR MANUFACTURING WELL SCREENS
Hill D. Wilson, 6122 Longmont, Houston, Tex.
Filed Oct. 17, 1963, Ser. No. 316,882
5 Claims. (Cl. 219—56)

1. Apparatus for manufacturing well screens, comprising mandrel means comprising an axial shaft having spaced flanges thereon for supporting a plurality of circumferentially spaced parallel longitudinal metal ribs about a common axis, said ribs extending between said flanges spaced outwardly of said shaft, means for rotating said ribs about said axis, means for moving said ribs longitudinally during said rotation thereof, fixed means for winding metal wire means helically about said ribs while said ribs are moving longitudinally and rotating, longitudinally fixed anvil means coaxial with axis and rotatable with said ribs in contact with the inner side of



each rib, welding head means contacting said wire at each contact thereof with a rib during said winding thereof, and means for supplying electric current between said head means and anvil and through said wire and rib at each point of contact therebetween, said shaft being splined, said anvil having a portion engaged with said splines and slidingly contacting the inner sides of said ribs and having a portion extending exteriorly of said ribs and being electrically grounded.

3,275,786
HIGH SPEED BUTT WELDING METHOD AND APPARATUS
Everett H. Cushman, South Plainfield, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 15, 1965, Ser. No. 425,811
13 Claims. (Cl. 219—60)

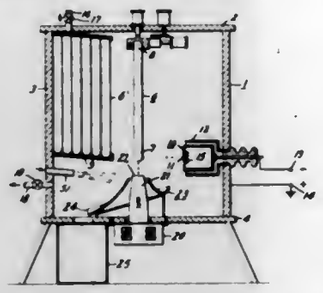


1. The method of electric arc fusion welding of a substantially straight seam in non-magnetic material, using a substantially non-consuming arc electrode relatively progressively moved along the seam to be welded, which method comprises the steps of
(a) applying magnetic forces in the arc zone to shape the arc flame into a form elongated along a given long axis and constricted in the direction perpendicular to said axis,
(b) shielding the arc zone from the ambient atmosphere with inert shielding gas to which has been added 5 to 30 percent of hydrogen,
(c) applying the thus shaped and shielded arc to the seam with the arc flame aligned with its long axis along the line of the seam, and
(d) applying electric power to the arc at a rate suitable to secure complete penetration of the weld through the work.

3,275,787
PROCESS AND APPARATUS FOR PRODUCING PARTICLES BY ELECTRON MELTING AND ULTRASONIC AGITATION
Sterling P. Newberry, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,532
20 Claims. (Cl. 219—69)

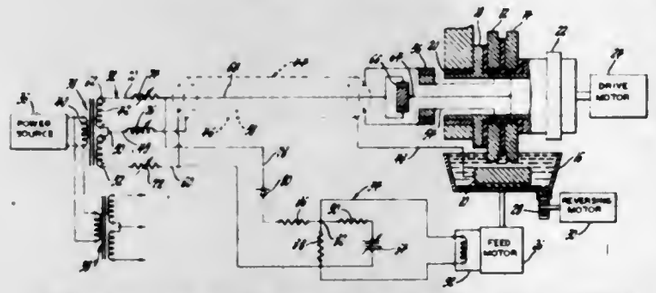
1. A process for producing uniformly small spherical particles of controlled size in the range of 10 to 100 microns diameter comprising the steps of

directing an electron beam at a body of material contained within a housing wherein the material is characterized by the property of existing in liquid state at pressures below atmospheric,
heating a selected portion of the material to a desired temperature by subjecting that portion to sufficient electron beam irradiation to produce a thin molten surface thereon of one to several particle diameters of the material, and



agitating the thin molten surface of the material at ultrasonic frequency and a controlled amplitude of vibration of magnitude greater than several particle diameters whereby uniformly small spherical particles of controlled size in the range of 10 to 100 microns diameter are emitted therefrom having a size being determined only by the acceleration of the agitated molten surface of material and surface tension and density characteristics of the particular material being processed.

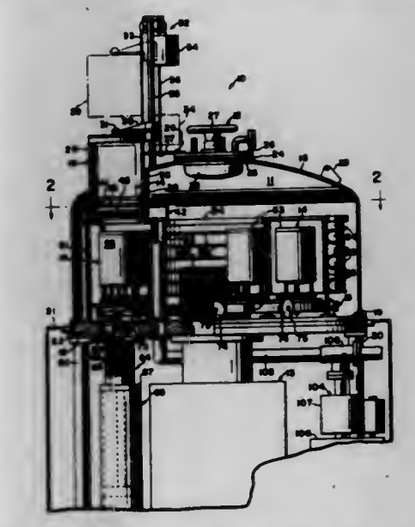
3,275,788
ELECTRICAL DISCHARGE MACHINING APPARATUS
Millard A. Ferguson, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 21, 1963, Ser. No. 325,394
14 Claims. (Cl. 219—69)



1. In electrical stock removal apparatus, the combination of a conductive workpiece, a pair of conductive cutting tools each spaced from the workpiece so as to form a machining gap therebetween, and means simultaneously supplying voltages across the gaps of opposite polarity for rendering the gaps conductive so that electrical stock removal discharges occur thereacross, the supplying means including means operative when one of the gaps is nonconductive to increase the voltage across the nonconductive gap thereby facilitating the rendering of the nonconductive gap conductive.

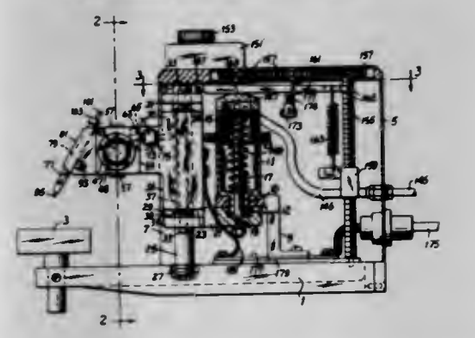
3,275,789
VACUUM BRAZING SYSTEM
William A. Lloyd, San Jose, and Renn Zaphiropoulos, Los Altos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Sept. 9, 1963, Ser. No. 307,734
6 Claims. (Cl. 219—72)

1. A vacuum brazing system comprising: an evacuable chamber having an entrance-exit port; means for evacuating said chamber in communication with said chamber; a plurality of spaced stations within said chamber; means for receiving articles to be brazed; a movable table serving to carry said article receiving means; a vacuum lock device comprising a moveable entrance-exit chamber having an open end for receiving said article receiving means therein; said entrance-exit chamber adapted to be mounted in gas tight communication to said evacuable chamber with said open end aligned with said entrance-exit port; said entrance-exit chamber forming, when so mounted a continuous vacuum wall with said evacuated chamber;



door means for receiving thereon said article receiving means for isolating said entrance-exit chamber from said evacuated chamber and forming when closed a gas tight barrier therebetween; said door means mounted to transport said article receiving means between said entrance-exit chamber and said moveable table; and means for evacuating said entrance-exit chamber in gas tight communication therewith; means for moving said table whereby the article receiving means are sequentially indexed to each of said stations; and said stations including a brazing station, and at least one cooling station.

3,275,790
WELDING APPARATUS
John D. Helms, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 14, 1963, Ser. No. 303,213
6 Claims. (Cl. 219—78)



1. A step-welding mechanism comprising a first guide, a carrier slidable on the first guide, a pair of guide means on the carrier parallel to the first guide, a pair of electrodes, arms oppositely slidable on said guide means and rotatable thereon, each arm carrying an electrode, a compensating lever pivoted to said carrier between said arms, the ends of said lever being pivoted to the arms respectively to effect opposite relative movements therebetween on the carrier, an adjusting screw connected transversely to the carrier for rotary but non-axial movements therewith, said screw having threads

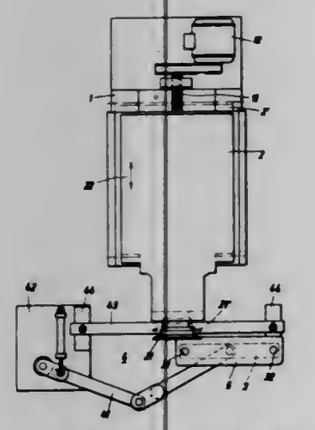
of opposite pitches, nuts on said threads, said nuts having connections with said arms adapted to prevent rotation of the nuts relative to the arms but permitting opposite sliding motions of the arms with respect to the screw, and means for turning the screw to move the arms through the nuts.

3,275,791
METHOD FOR WELDING AT LEAST ONE MEMBER TO A SUPPORT SUCH AS A TIME-PIECE DIAL AND DIALS OBTAINED THROUGH SAID METHOD
Andre Vogt, La Chaux-de-Fonds, Switzerland
Filed July 3, 1963, Ser. No. 292,637
Claims priority, application Switzerland, May 19, 1959, 73,406/59; Feb. 23, 1960, 2,013/60
14 Claims. (Cl. 219—103)



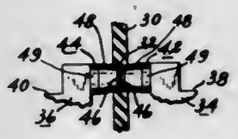
4. A method for welding a shaped time symbol on a small finished watch dial by means of elastic means, comprising the steps of providing a watch dial, securing temporarily a plurality of conductive symbols on a common annulus in the relative positions said symbols are to occupy on said dial, said annulus having resilient portions urging said symbols toward said dial, laying the symbols on said dial at the location they are to occupy on said dial, urging the annulus and symbols toward the dial, applying a welding current across the symbols and the dial to melt a part of the symbols adjacent the dial and thereby allow the elastic means to shift the symbols further toward the dial to compensate for the shrinking produced by said melting, and removing the elastic means.

3,275,792
SEAM WELDING MACHINE
Eugen Hirsiger, Zurich, Switzerland, assignor to H. A. Schlatter AG, Zollikon, Zurich, Switzerland
Filed Feb. 10, 1964, Ser. No. 343,777
Claims priority, application Switzerland, Mar. 2, 1963, 2,695/63
5 Claims. (Cl. 219—82)



1. A seam welding machine comprising:
a work holder;
guide means for guiding said work holder along a first predetermined path corresponding to the seam to be welded;
two electrode rollers having parallel axes;
a structure supporting said electrode rollers; and
mounting means mounting said guide means with said work holder and said electrode rollers with said supporting structure to be movable relative to each other along a second path parallel to the axes of said electrode rollers between an operative position in which the electrode rollers engage a workpiece on the work holder and a loading or unloading position in which said work holder and said electrode rollers are withdrawn from each other.

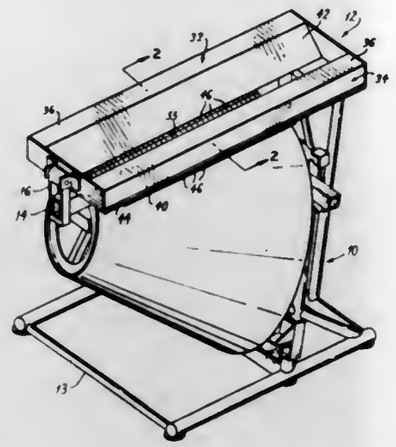
3,275,793
METHOD FOR ASSEMBLING CELL COMPONENTS IN STORAGE BATTERIES
Richard Frischkorn, West Lafayette, and Max E. Humes, Muncie, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,529
2 Claims. (Cl. 219—94)



1. In a method for making a fluid tight, low resistance electrical connection through the dividing wall between two independent cell compartments of an electric storage battery, the steps comprising; providing a hole through the dividing wall between two independent cell compartments, providing opposed connector elements having tapered shanks and non-mating end portions wherein the diameter of said shanks permits limited entry of the shanks into said hole, entering said tapered shanks into said hole from opposite sides of said dividing wall so that the non-mating end portions thereof contact one another, applying force simultaneously from opposed directions to said shanks for causing said non-mating ends to contact one another, passing a welding current through the junction of the opposite ends of said shanks sufficient to cause resistance welding of said shanks one to another for forming a unitary electrical connection therebetween and substantially simultaneously causing said tapered shanks to seal against the walls of said hole and to distort within the hole for filling same and to deform at opposite sides of the wall for forming an additional seal thereagainst by maintaining said force application, eliminating said welding current and maintaining said force application at opposite ends of said shanks until the welded connection therebetween has cooled sufficiently to maintain the fluid tight seal with said wall.

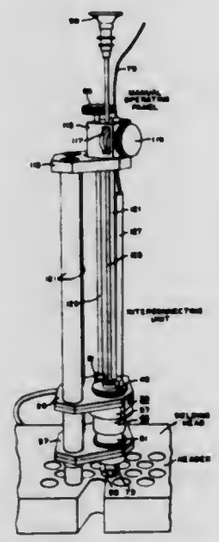
3,275,794
APPARATUS FOR WELDING SHEET MATERIAL
William Dubusker, Creve Coeur, Frank S. Pogorzelski, Bellefontaine Neighbors, and Clem W. Fridrich, St. Ann, Mo., assignors to McDonnell Aircraft Corporation, St. Louis County, Mo., a corporation of Maryland
Continuation of application Ser. No. 153,624, Nov. 20, 1961. This application Nov. 6, 1963, Ser. No. 322,565
3 Claims. (Cl. 219—125)

1. Apparatus for fusion welding adjacent edges of thin weldable sheet material comprising a support member, heat condutive means disposed upon said support member and formed with an elongated recess separating surfaces for receiving the edges of sheet material to be welded, a plurality of clamping fingers cooperable with said receiving surfaces for the sheet material, each of said fingers having an end portion engageable upon the sheet material placed upon said receiving surfaces of said heat conductive means, fixed structure spaced from said heat conductive means and extending on each side thereof, a plurality of spaced threaded elements carried by said fixed structure in rows on opposite sides of said heat conductive means, each clamping finger pivotally engaging one of said threaded elements intermediate its end portions such that each finger is pivotally supported between its said end portions on a threaded element, opposed means to positively actuate said fingers including first in-



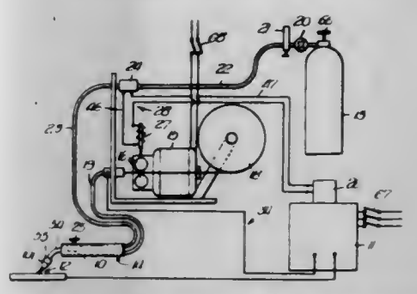
flatable members engaged upon said fingers between the threaded elements and said first mentioned end portions and second inflatable members engaged upon said fingers between said threaded elements and the opposite end portions, means for individually adjusting the position of each finger on its associated threaded element, and fusion welding means adjacent said fixed structure having an electrode projecting into welding position at the sheet material edges.

3,275,795
WELDING APPARATUS
Alexander Bosna, West Chester, Lewis D. Sorg, Finleyville, and William F. Schmidt, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 25, 1963, Ser. No. 311,374
10 Claims. (Cl. 219—125)



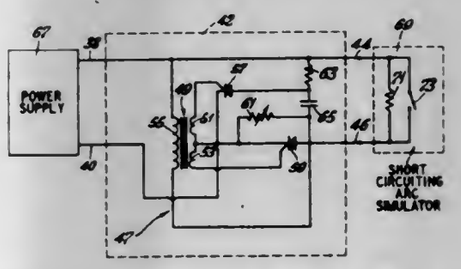
1. Apparatus for producing a weld in a relatively inaccessible region comprising a conductor of light extending into said region in light-receiving and conducting relationship with said region, means for illuminating said region mounted on the end of said conductor adjacent said region, an arc-welding means connected to said conductor, and means connected to said arc-welding means for moving said arc-welding means into welding relationship with different points of said region each of which is visible through said conductor.

3,275,796
ARC WELDING CONTROL SYSTEM
Arthur A. Bernard, Beecher, and Richard A. Bernard, Flossmoor, Ill., assignors to Beecher Products Company, Beecher, Ill., a corporation of Illinois
Filed Nov. 19, 1965, Ser. No. 508,689
16 Claims. (Cl. 219—130)



1. In gas-shielded arc welding apparatus which includes a welding gun for manually or mechanically directing the welding operation along the course of welding, apparatus for feeding consumable electrode from a remote source through a conduit to and through the welding gun to the welding arc, a welding current circuit for energizing said electrode with welding current from a remote welding current source, and a gas transmission line for conducting shielding gas under pressure from a remote source to and through the welding gun to the welding arc, the combination therewith to provide a control system for operating the arc welding apparatus comprising: a manually operated gas valve incorporated with said welding gun and connected in said gas transmission line for feeding shielding gas when open and stopping the flow of shielding gas when closed; and a remote gas-pressure-operated electrical switch having a pressure connection with said gas transmission line at a location along said gas transmission line and being electrically connected for energizing and de-energizing said electrode feeding apparatus and said welding current circuit, said gas-pressure-operated electrical switch being responsive to the pressure level at said location along said gas transmission line when said gas valve is open to energize said electrode feeding apparatus and said welding current circuit, said gas-pressure-operated electrical switch being responsive to the pressure level at said location along said gas transmission line when said gas valve is closed to de-energize said electrode feeding apparatus and said welding current circuit.

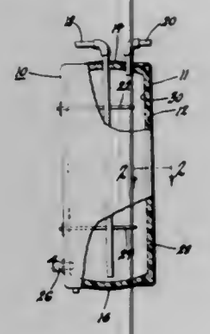
3,275,797
WORK-IN-CIRCUIT METAL ARC WELDING
August F. Manz, Newark, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed May 13, 1964, Ser. No. 366,949
3 Claims. (Cl. 219—137)



1. Short-circuiting type metal transfer arc welding which comprises energizing a short-circuiting type metal transfer arc between a consumable metal electrode and

work to be welded while feeding such electrode toward the work, with welding power derived from a source having a volt-ampere characteristic such that the maximum value of current at each short circuit transfer is less than the arc current between such transfers, whereby objectionable spatter is minimized.

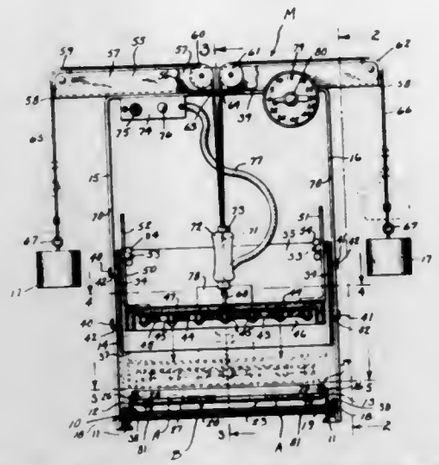
3,275,798
DOMESTIC ELECTRIC APPLIANCE
John C. Martin, Kettering, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 30, 1963, Ser. No. 305,584
7 Claims. (Cl. 219—312)



1. A water heater tank structure having good structural strength and good corrosion resistant and insulating qualities consisting of a relatively thin, flexible, preformed metal sheet, said sheet forming wall surfaces normally movable relative to each other and capable of forming a strong bond with polyurethanes, and a heat insulating material consisting of a substantially rigid closed cell closely cross linked polyurethane foam of improved strength having the cells thereof containing essentially only a permanently retained fluorohalogenated saturated aliphatic hydrocarbon substantially insoluble in the foam, the walls of said cells having an improved seal for permanently retaining said fluorohalogenated hydrocarbon, said metal sheet and polyurethane foam forming a strong coextensive permanent bond in situ throughout their areas of contact to form a unitary structure wherein said foam provides substantial rigidifying support for said sheet, and said polyurethane foam on the side thereof opposite said areas of contact with said metal sheet forming a barrier to prevent the penetration of water in said tank into corroding contact with said metal sheet.

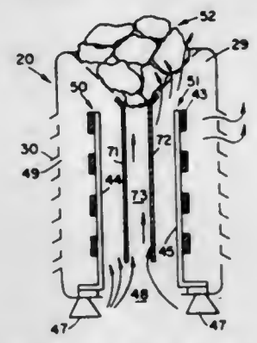
3,275,799
HEAT SHRINKING APPARATUS
Henry E. Meltzer, 1745 Fleet St., Racine, Wis.
Filed Oct. 17, 1963, Ser. No. 316,920
6 Claims. (Cl. 219—342)

1. A heat shrinking apparatus for shrinking materials about the articles to be treated comprising, a substantially flat rectangularly shaped base, a removable article holding tray of a size and configuration to fit on said base, a cage carried by said base vertically adjustable to a lower operative position and an upper inoperative position, said cage including vertically extending front, rear and side walls of a size and configuration in its closed operative position to completely surround said tray and to rest on said base adjacent the peripheral edges thereof, a substantially horizontally disposed pan forming a partition within said walls of said cage, means for adjustably securing said pan within said walls for varying the height of the pan in relation to the lower end termination of said walls, heating elements carried by said pan, means connecting said heating elements to a source of electrical current, means for facilitating the moving of said cage to its closed operative position over said tray and base and to its open inoperative position away from said tray and base including a pair of spaced vertically extending side rails carried by said base, a cross-beam connecting the upper end terminations of said side rails, a handle and cables secured to the upper surface of the pan, pulleys carried by said cross-beam and extending beyond the



outer surface of the respective side rails, said cables being trained over said pulleys, counterweights on the end termination of each cable, the combined weight of the cage and pan being substantially the same as the combined weight of the counterweights, and said handle and cables being secured to said pan at the transverse center thereof but offset from the longitudinal center thereof.

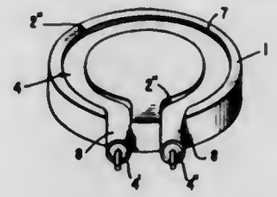
3,275,800
ELECTRIC HEATER FOR USE IN A SAUNA BATH
Lauri Juhani Kuoppamaki and Eero Olavi Kuoppamaki, both of 2527 Jackson St., Arlington, Calif.
Filed June 28, 1963, Ser. No. 291,490
1 Claim. (Cl. 219—367)



An electric heater for use in a sauna bath comprised of a plurality of resistive heating elements deposed in a horizontal attitude and arranged in first and second columns; an enclosure surrounding said heating elements and having four faces, of which a first face and a second face are substantially parallel to said first and second vertical columns of resistive heating elements, respectively, and contain a multiplicity of louvers forming air outlets whereby all radiant energy passing out of said enclosure is directed in a downwardly direction said enclosure having an opening at the bottom as an air inlet and means in the enclosure forming an open top chamber adapted to receive a plurality of rocks, the rock receiving chamber means having a perforated bottom wall and a vertical partition comprised of first and second panels which are substantially parallel to said first and second vertical faces of the enclosure respectively defining therebetween first and second cavities respectively wherein said first vertical column of resistive heating elements is located within said first cavity and said second vertical column of heating elements

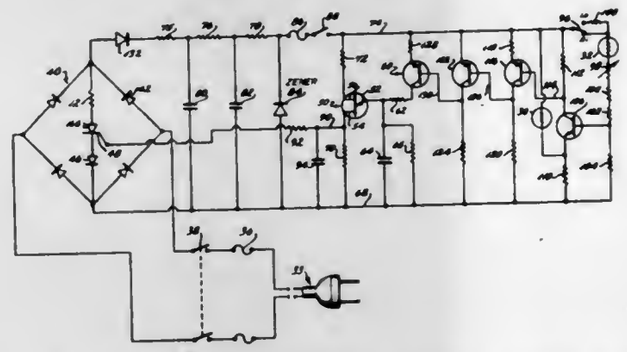
is located within said second cavity and said first and second panels defining therebetween a third cavity devoid of heating elements in fluid communication with said opening in the bottom of said enclosure and said perforations in the bottom wall of the rock receiving chamber so as to provide an air circulation channel to mitigate overheating of the first and second vertical columns of resistive heating elements.

3,275,801
ELECTRICAL HEAT EXCHANGER
Walter A. Churchill, 4 Hillcrest Road, Danvers, Mass.
Original application June 17, 1964, Ser. No. 375,793, now Patent No. 3,168,775, dated Feb. 9, 1965. Divided and this application Dec. 9, 1964, Ser. No. 417,120
2 Claims. (Cl. 219—457)



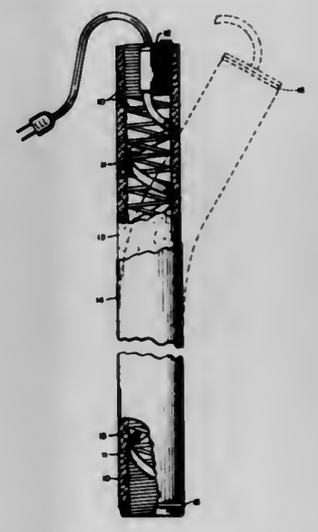
1. A heat exchanger comprising a metallic base plate comprising an outer circular peripheral portion, said base plate having a circular groove therein including two terminal portions adjacent each other, two mutually adjacent parallel grooves in said base plate extending inwardly from said outer circular peripheral portion and into said two terminal portions, an elongated electrical heater disposed in said circular groove and extending from said circular groove into said two mutually adjacent parallel grooves, said circular groove and said parallel grooves each comprising parallel walls, said walls as seen in cross-section being defined by rectilinear parallel lines, said circular groove and said two mutually adjacent parallel grooves further comprising oppositely disposed curved wall portions intersecting said parallel walls and forming shoulders therewith, said electrical heater being in continuous and intimate contact with said wall portions and with the bottoms of said circular groove and of said parallel grooves, said shoulders in said circular groove and in said two adjacent parallel grooves being effective to prevent accidental dislodgment of said electrical heater from each of said grooves.

3,275,802
PULSED HEATING SYSTEM
Edward J. Vandivere and Lawson M. Phyfe, Santa Fe, N. Mex., assignors to Reynolds Electrical & Engineering Co., Inc., Santa Fe, N. Mex.
Filed Nov. 8, 1963, Ser. No. 322,318
11 Claims. (Cl. 219—499)



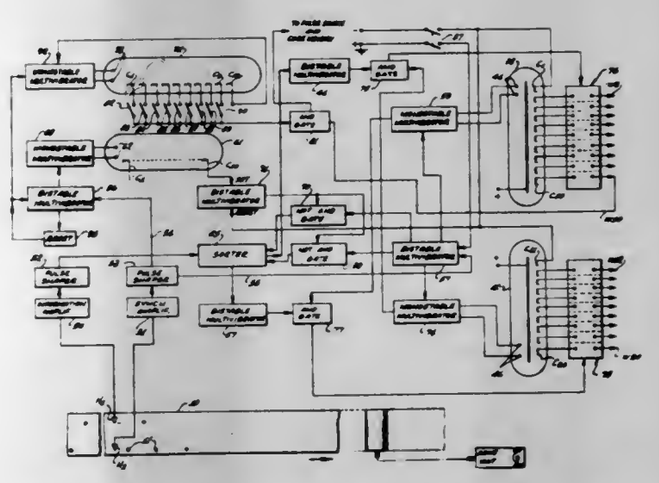
2. A heating system comprising a heater, a direct current pulsating source feeding said heater, a first means sensitive to the temperature of said heater to control the repetition rate of the pulses applied to the heater, and other means of less sensitivity than the first means, sensitive to ambient temperatures uninfluenced by said heater to additionally control the average temperature of the heater.

3,275,803
PIPE HEATING APPARATUS
Cecil W. True, 825 S. Maple, Watertown, S. Dak.
Filed Feb. 6, 1964, Ser. No. 343,008
4 Claims. (Cl. 219—535)



1. Apparatus for preventing liquid carrying pipes from freezing including
supporting means in the form of helically wound wire for encircling a pipe,
electric heating means directly carried by the supporting means for heating the pipe,
a layer of thermal insulation covering the heating means, and
flexible means for encasing the insulation layer.

3,275,804
COMPUTING APPARATUS
Theodore R. Folsom, La Jolla, and Richard A. Cramer, Solana Beach, Calif., assignors to The Regents of the University of California
Filed Oct. 24, 1960, Ser. No. 64,566
5 Claims. (Cl. 235—61.6)



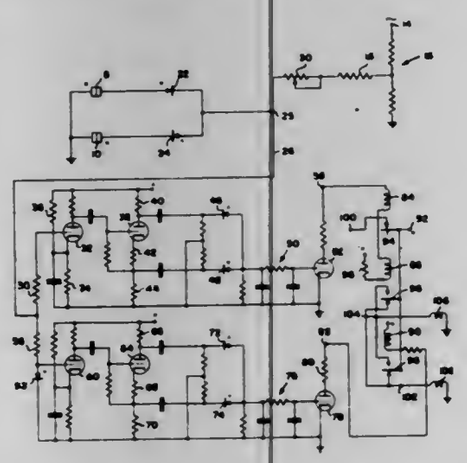
1. In a data transfer system, the combination of: dual track tape means to carry a recording of synchronizing pulses and information pulses, wherein a single synchonizing pulse precedes the first information pulse past a pre-

determined point; pickup devices for the respective tracks; amplifier and pulse shaping networks coupled to each pickup device; a pair of multi-cathode glow tubes; gating devices coupled to cathodes of said glow tubes; a third multi-cathode glow tube; a set-reset multivibrator coupled to the last of the cathodes of said third tube; gate means connected between said set-reset multivibrator and the amplifier and pulse shaper network for the information pulses; a connection from the last cathode of one of said pair of glow tubes to said set-reset multivibrator; means coupled to the amplifier and pulse shaper network for the synchronizing pulses for controlling the state of conduction of said third tube; and respective means coupled to said gate means to establish gating pulses to be passed by the operable gating device.

3,275,805
DATA TRANSMISSION SYSTEM

Fred M. Mayes and Jack Weir Jones, Richardson, Tex., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Original application Sept. 21, 1956, Ser. No. 611,291, now Patent No. 3,034,217, dated May 15, 1962. Divided and this application Mar. 5, 1962, Ser. No. 177,554
7 Claims. (Cl. 235—61.11)



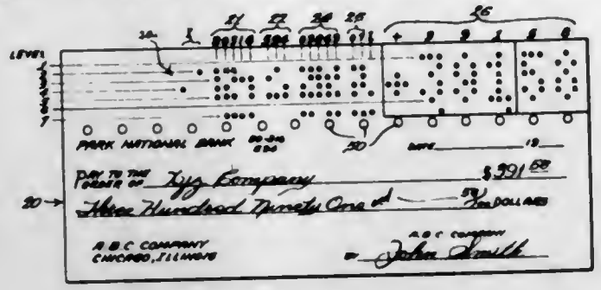
1. A data transmission system comprising a first transducer means responsive to information on a first channel, a second transducer means responsive to information on a second channel, first circuit means connecting one side of said first transducer means to a terminal and the other side to ground, second circuit means connecting said second transducer means in parallel with said first transducer means, means providing an alternating potential to said terminal, first rectifying means connected in series with said first transducer means for permitting the passage through said first circuit means of only the positive portion of said alternating potential, second rectifying means connected in series with said second transducer means for permitting the passage through said second circuit means of only negative portions of said alternating potential, and means for detecting the signal at said terminal.

3,275,806
BUSINESS RECORD BEARING CODED INDICIA

James L. Quinn, Chicago, and John E. Jones, Wilmette, Ill., assignors to Cummins-Chicago Corp., Chicago, Ill., a corporation of Illinois

Original application Oct. 20, 1958, Ser. No. 768,436, now Patent No. 3,033,449, dated May 8, 1962. Divided and this application Mar. 2, 1962, Ser. No. 176,953
4 Claims. (Cl. 235—61.12)

2. A record medium having indicia thereon to present characters according to two binary position codes, the first code being a plural-line, rectangular field code with indicia selectively applied at different stations to make each character visibly legible, the second code being a single-line code with indicia selectively applied at stations within a single line to make each character visibly illegible, each group of characters in the first and second

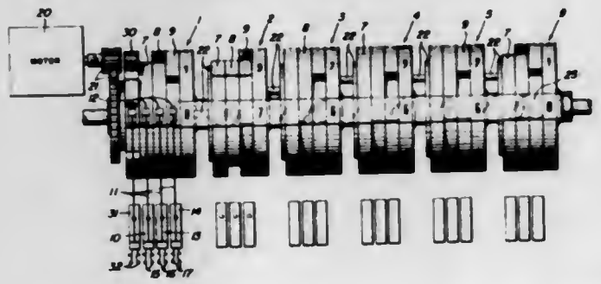


codes being respectively preceded by an identifying prefix character in the second or first code, each different character being represented by indicia located at the same horizontal levels in both said plural-line code and said single-line code.

3,275,807
ELECTRICAL APPARATUS

Samuel D. Harper, Valley Forge, Pa., assignor to Honeywell Inc., a corporation of Delaware

Filed Mar. 15, 1963, Ser. No. 265,458
1 Claim. (Cl. 235—92)



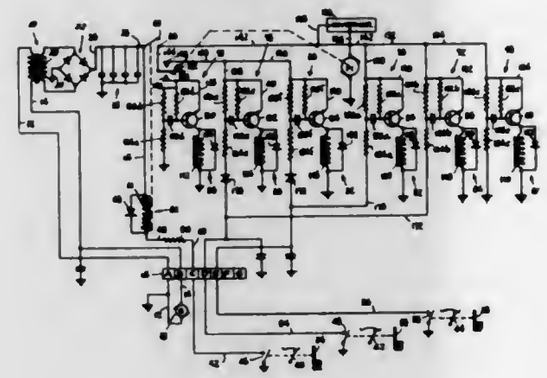
A binary-coded counter comprising a plurality of substantially cylindrical drums which are coaxially and independently rotatably supported, each of said drums having a plurality of circumferential tracks along the peripheral surface thereof, a plurality of visually identifiable representations equally spaced along one of said circumferential tracks on said peripheral surface of each said drum, said plurality of circumferential tracks including a plurality of parallel cam-surface tracks arranged adjacent to said track of visually identifiable representations, each of said cam tracks dividing the periphery of each of said drums into a plurality of separate disc-like sections having a plurality of equal size segments comprising a succession of alternately raised and depressed surfaces, each of said cam tracks having a different number of raised surfaces whereby the equal size segments in each section are of different size relative to the segments in adjacent sections, said raised and depressed surfaces of said cam track being operative to produce a unique indication of each visually identifiable representation on a respective one of said drums, driving means for causing a first one of said plurality of drums to revolve around the axis thereof at a predetermined rate, intermittent driving means arranged to selectively drive the remaining drums in succession to advance a drum by only one visual representation upon a complete revolution of an associated preceding drum, switch means responsive to said raised and depressed surfaces of said cam tracks for each drum to produce a switch contact closure pattern representative of said unique indication produced by said raised and depressed surfaces, at least one of said drums including a separate cam surface track, and further switch means arranged to cooperate with said separate track, said cam

surface of said separate track providing a synchronizing function by actuating said further switch means only during a time when said plurality of cam tracks on said drum have completed a switch actuation operation of said first-mentioned switch means associated with said plurality of cam tracks whereby spurious contact closure patterns are not produced during operation of said first-mentioned switch means.

3,275,808
CORRELATING TIME AND EVENT RECORDER

Knud J. Knudsen, Middlebury, Conn., assignor to Lewis Engineering Company, Naugatuck, Conn., a corporation of Connecticut

Filed Aug. 27, 1962, Ser. No. 219,558
15 Claims. (Cl. 235—92)



2. A timing and event recorder comprising in combination:

(a) a pair of electrically-operated counters capable of independent advance,

(b) means including a power-operated timing switch adapted to repeatedly open and close, for periodically advancing one of said counters to indicate elapsed time,

(c) means including an automatically controlled switch, for simultaneously rendering operative said first-named means and also the other of said counters,

(d) and reversibly - operative condition - responsive means for reversibly actuating said automatically controlled switch,

(e) a second pair of electrically-operated counters capable of independent advance, one of said second pair of counters being arranged for periodic advance by said means which includes the timing switch, to indicate elapsed time,

(f) means under the control of said automatically controlled switch and including a second automatically controlled switch, for simultaneously rendering operative said second pair of counters, and

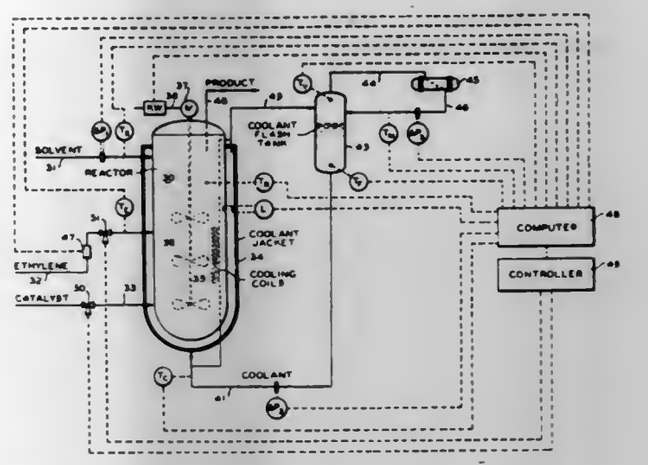
(g) a second reversibly-operative condition-responsive means for reversibly actuating said second automatically controlled switch.

3,275,809
MEASUREMENT AND CONTROL OF POLYMERIZATION REACTIONS

Ernest D. Tolin and Dale A. Fluegel, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Original application Dec. 4, 1957, Ser. No. 700,612, now Patent No. 3,105,896, dated Oct. 1, 1963. Divided and this application Mar. 4, 1963, Ser. No. 262,783
5 Claims. (Cl. 235—151.12)

1. In a polymerization process wherein the material to be polymerized and a catalyst are directed to a polymerization zone and the resulting products are removed from the zone, a control system comprising means to measure the heat supplied to said zone, means to measure the heat removed from said zone, means to measure the difference between the heat supplied and the heat removed, means responsive to said means to measure the

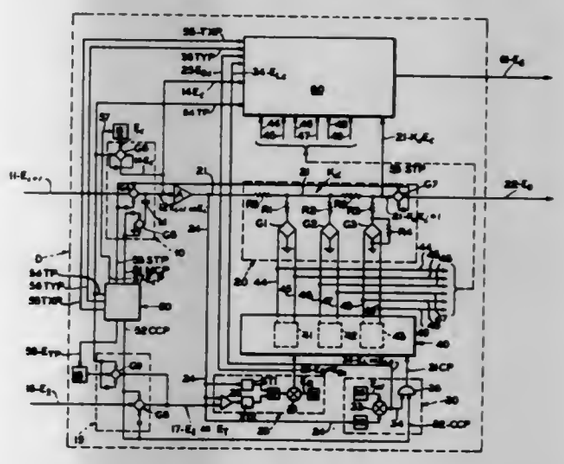


difference to control the operation of the process to tend to produce polymer at a uniform rate, means to measure the rate of temperature change of said zone, and means responsive to said means to measure the rate of temperature change to adjust said means to control.

3,275,810
SELF-TESTING MEANS FOR COMPUTER CONTROL SIGNAL ATTENUATING DEVICES

Kurt Moses, Dumont, N.J., and Ernest Hartog, New York, N.Y., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Nov. 7, 1962, Ser. No. 236,065
16 Claims. (Cl. 235—151.31)



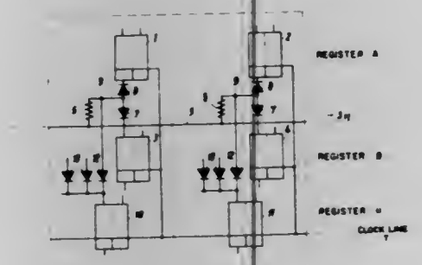
1. A device of the kind described comprising programming means, a source of signals controlled by the programming means, an attenuating network with operating modes, computer means connected to the network for controlling the network operating mode according to a digital count, said network being connected to the source and providing an attenuated signal according to the digital count, a matrix having gated transmission lines with attenuation means connected to the computer means for controlling the transmission lines to provide an attenuated signal according to the digital count, and means con-

nected to the transmission lines and to the network for comparing the attenuated signals from the network and from the matrix.

3,275,811
BINARY REGISTER CONTROL UNIT

Wolfgang Händler, Volklingen-Geislautern, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany

Filed Sept. 10, 1962, Ser. No. 222,466
Claims priority, application Germany, Sept. 13, 1961, T 20,752
8 Claims. (Cl. 235—156)

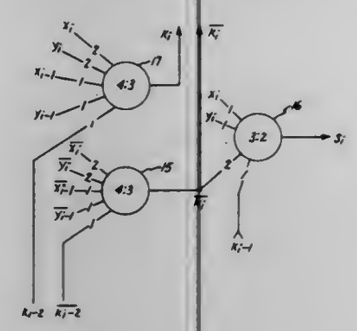


1. An arithmetic unit of a digital computer having several arithmetic registers which are connected with each other for carrying out microoperations, comprising at least one connection filter, each including a connection register and a logical connection network for controlling the carrying out of microoperations in the respectively coordinated binary positions in accordance with the contents of the connection register.

3,275,812
THRESHOLD GATE ADDER FOR MINIMIZING CARRY PROPAGATION

Clarence L. Coates, Jr., Scotia, and Philip M. Lewis II, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed July 29, 1963, Ser. No. 298,240
13 Claims. (Cl. 235—173)



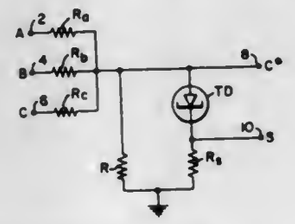
1. An adder comprising a plurality of stages for generating the sum of two numbers from the lowest order level digit to the highest order level digit respectively, the ith one of said stages summing a pair of digits x_1 and y_1 to produce a sum s_1 and including a carry producing threshold means receiving a plurality of input signals and producing a carry output signal k_1, means coupling the ouput of said i^{th} stage, carry producing threshold means to the input of the $(i+1)^{th}$ stage, said i^{th} stage carry producing threshold means having a threshold value in the gap $U:L=2^m:2^m-1$, wherein U is the smallest total value of input signals for which the threshold is exceeded, L is the largest total value of input signals for which the threshold is not exceeded, and m is the order of the ith stage within a predetermined grouping of said stages, said carry producing threshold means implementing inputs from the ith and lower order stages according to the expression,

$$\sum_{k=0}^{m-1} 2^{m-k-1}(x_{i-k}+y_{i-k})+k_{i-m}$$

3,275,813
FULL BINARY ADDER USING ONE TUNNEL DIODE

Auseklis Brastins, Swissvale, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 22, 1962, Ser. No. 232,058
2 Claims. (Cl. 235—176)

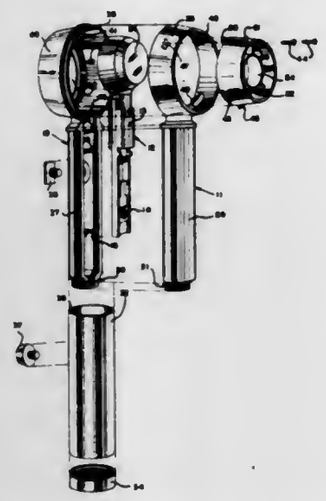


1. A full binary adder comprising:
a series circuit including a tunnel diode and a resistor;
means for applying input signals to said series circuit;
resistance means connected in parallel with said series circuit;
output means connected to said resistor for sensing the current in said series circuit; and
output means connected across said series circuit for sensing the voltage across said series circuit.

3,275,814
EXAMINATION LIGHT

Ronald K. Meyer, 25 Janes St., Mill Valley, Calif.

Filed Aug. 8, 1963, Ser. No. 300,875
8 Claims. (Cl. 240—2.18)

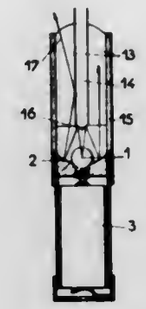


1. In a lighting device the improvement comprising: a two-part longitudinally split sleeve, each of said parts having an integrally formed circular lamp housing at one end, the other end of said split sleeve defining a continuous helical thread when the two parts thereof are placed in mated relationship; a sleeve member for receiving said split sleeve therein; and a threaded cap matable with the threaded ends of said split sleeve.

3,275,815
PROTECTIVE DEVICE SUCH AS UMBRELLA, SUNSHADE OR THE LIKE

Anne-Marie Golaz, née Petroff, Le Barroux, France, and Gérard Anatole François Marie Joseph Cordonnier, 3 Rue de la Marne, Ville d'Avray, France

Filed Sept. 30, 1963, Ser. No. 312,746
Claims priority, application France, Oct. 1, 1962, 910,863, Patent 1,354,814
6 Claims. (Cl. 240—6.42)

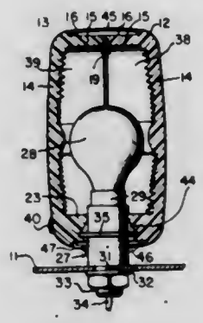


1. A protective device such as an umbrella, sunshade and the like, comprising a hollow handle assembly including a staff having a handle at its lower end and supporting an openable dome shaped shade formed of translucent fabric at its upper end, said staff having a bore whose wall surface is a reflector, means for passage of light out of said staff located in an upper portion of the staff, a light source including a lamp disposed coaxially in said hollow handle, a reflector assembly surrounding the lamp and directing light upwardly through said bore and a conical reflecting element located in said staff adjacent said means for passage of light out of the staff and directing light outwardly and upwardly against the underside of substantially the entire fabric dome when opened whereby the fabric diffuses part of the light downwardly and the remaining part is diffused through the fabric to render the protective device visible from a distance without the lamp being directly visible in a bright and dazzling manner.

3,275,816
LAMP ASSEMBLY FOR MOTOR VEHICLES

Ronald N. Brunger, Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey

Filed Feb. 25, 1964, Ser. No. 347,137
16 Claims. (Cl. 240—8.22)

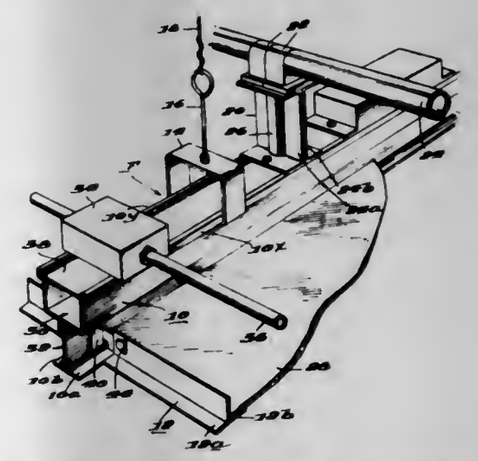


1. An automotive vehicle signal lamp construction comprising, in combination, generally plate-like light reflector means; a pair of substantially identical lenses arranged back-to-back, each lens being in abutting engagement with a peripheral edge portion of the said light reflector means, said light reflector means dividing the interior space defined by said lenses into two compartments; and a single lamp supporting member having a generally cylindrical shape carried by integrally formed portions of said lenses with the longitudinal axis thereof lying substantially in the plane of said light reflector means and having a socket disposed within both of said compartments adapted to receive a lamp bulb.

3,275,817
FRAMEWORK STRUCTURES FOR SUSPENDED CEILING AND LIGHTING SYSTEMS

Robert A. D. Schwartz, 81 Kemberlin Heights Drive, Oakland, Calif., and Stephen W. Lindheim, 1146 Keeler St., Berkeley, Calif.

Application May 25, 1960, Ser. No. 31,619, now Patent No. 3,146,956, which is a division of application Ser. No. 625,065, Nov. 29, 1956, now Patent No. 2,956,150. Divided and this application Aug. 26, 1964, Ser. No. 392,215
6 Claims. (Cl. 240—9)

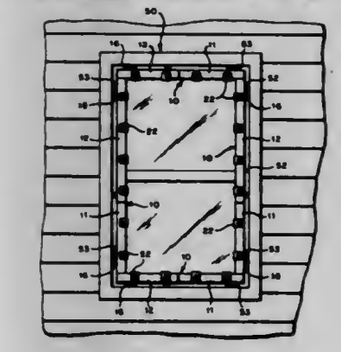


1. A ceiling framework member for an integrated ceiling and lighting system comprising an upper elongated portion of upright channel section defining an open-top electrical wiring raceway for enclosing wiring running to electrical lighting means in part supported from said member and a lower elongated portion of inverted T-bar section depending therefrom and including a planar vertical leg and a pair of coplanar horizontal flanges integral with and projecting outwardly and in opposite directions from the lower edge of said leg and providing ceiling-panel supporting means, the width of the channel section being substantially equal to the total width of said flanges.

3,275,818
DISPLAY MEANS

Robert G. Campbell, 4165 Greeby St., Philadelphia, Pa.

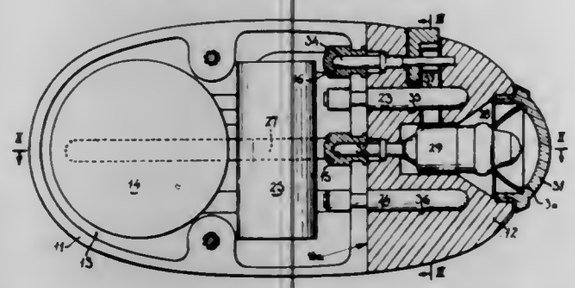
Filed Aug. 26, 1964, Ser. No. 392,133
4 Claims. (Cl. 240—10)



1. A display means comprising a plurality of pairs of nested modular elements, adapted to be mounted on a mounting surface at least partially vertical, each said pair being disposed in a fixed relationship to other said pairs but unattached to any other said pair, each said pair com-

prising two modular elements, each said element comprising an elongated rigid member having a longitudinal right angled bend therein, said bend forming a first leg and a second leg, each said leg having an inner surface facing said right angle and an outer surface facing away from said right angle, a single magnet on said outer face of said first leg close to one end of said element, a fastening aperture through said first leg close to the other end of said element, said elements of each said pair being nested together with the inner leg surfaces of one said element against the outer leg surfaces of said other element and said first leg of one element over said first leg of said other element, said fastening apertures in each said element being registered with each other, fastening means through said registered fastening apertures, each of said magnets on a said pair facing in the same direction and one of said fastening apertures in a said pair being a longitudinally elongated slot, said mounting surface including magnetic material, said first legs of all said elements in all said pairs being against said mounting surface so that the said magnets contact said magnetic material, and said second legs are of said elements of said pairs are provided with removeable, adjustable holding means thereon to hold a display.

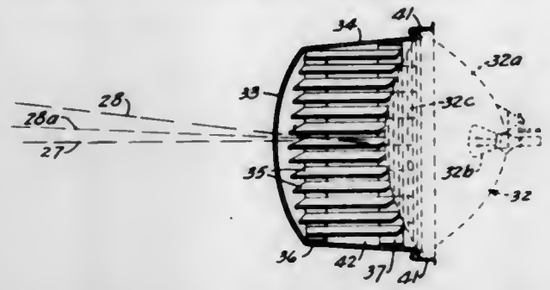
3,275,819
POCKET ELECTRIC APPARATUS WITH CHARGEABLE BATTERY
Joseph J. Laurent, Rue Cap Dangelle, Lourdes, France
Filed July 5, 1957, Ser. No. 670,145
Claims priority, application France, July 11, 1956, 718,402
14 Claims. (Cl. 240—10.65)



1. A pocket electric apparatus with chargeable battery for operating an electrically controlled device such as a lamp, a razor or a fan, comprising a housing consisting of two interfitting elements, each of said elements having a separating surface, a recharging device for said chargeable battery comprising a rectifier and an electric circuit permanently interconnecting said chargeable battery and recharging device, said chargeable battery, recharging device and circuit being located in a first of said elements, the device intended to be controlled by the electric current produced by said chargeable battery being located in a second of said elements, electric means with a switch for feeding said last mentioned device by said current, distinct terminals for feeding said recharging device and electric means, said terminals comprising plug-means and hole means extending from and located in the respective separating surfaces of the respective elements to afford thereby that the recharge of said accumulator and the feeding of the said device shall be effected exclusively by electric connections situated on said surfaces.

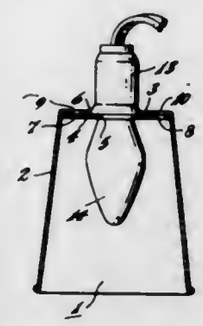
3,275,820
ILLUMINATING SYSTEM
Joseph M. Szarkowski, Box 124, Buchanan, N. Dak.
Filed Dec. 26, 1963, Ser. No. 333,585
4 Claims. (Cl. 240—46.31)

2. In combination, a sealed beam lamp having an outwardly curved circular prismatic lens with aiming pads thereon, a lamp retaining ring adapted to engage the outer edge of said lamp and support said lamp on a vehicle, an annular housing mounted in front of said lamp, a transparent lens closing the front of said housing, a series of parallel downwardly and forwardly inclined translucent louvers in said housing permitting light transmission therebetween, said louvers being oriented generally horizontally and spanning substantially the entire vertical expanse of said housing, a louver retaining ring affixed



to each of the louvers and maintaining the louvers in said housing in operative position within said housing, said housing having means affixing the rear edges of said housing in secure relation with said lamp retaining ring and maintaining a prefixed relation to the lamp, said housing having indentations formed on the inner surface thereof adjacent the rear edge for receiving and seating said aiming pads whereby to locate the housing and louvers in relation to the lamp.

3,275,821
SHADES
Walter J. Lebb, 521 Maple St., Audubon, N.J.
Filed July 31, 1964, Ser. No. 386,581
1 Claim. (Cl. 240—47)

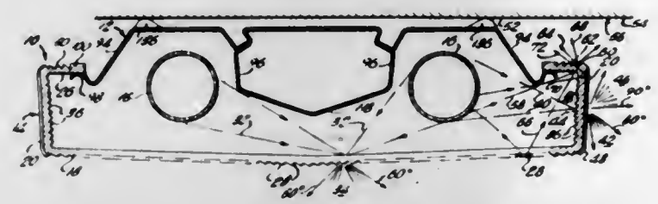


A shade comprising a translucent plastic cup, an insulating member secured to the inside bottom of the cup, said insulating member having a central opening receiving a light bulb, said bottom of the cup having a central opening of greater diameter receiving a lamp socket, said member and bottom having aligned holes for heat ventilation, whereby when the cup is applied to a light socket and a light bulb secured in position, the cup is clamped to the socket and insulated therefrom.

3,275,822
FLUORESCENT LUMINAIRE
Vearl S. Wince, Newark, Ohio, and Carl X. Meyer, St. Louis, Mo., assignors of one-half to Holophane Company, Inc., New York, N.Y., a corporation of Delaware, and one-half to Emerson Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Feb. 19, 1964, Ser. No. 345,894
4 Claims. (Cl. 240—51.11)

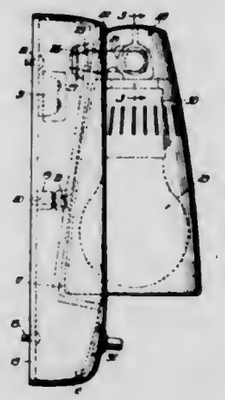
4. A luminaire, comprising a chassis, a refractor connected to said chassis, linear fluorescent lamp means connected to said chassis for providing a source of light, said refractor including a bottom section, two parallel

spaced side sections extending the length of said bottom section and connected thereto, a ledge integrally connected to the top of each side section and extending inwardly, substantially parallel to said bottom section, linear prism means on the outer face of said ledge for directing light transmitted therethrough above the luminaire, said bottom section including a plurality of light cut-off means for screening out light emitted by said lamp means from a predetermined glare zone, said side section including horizontally extending prism means on the inner face of each side section for directing light emitted by said lamp means in direction outside of a



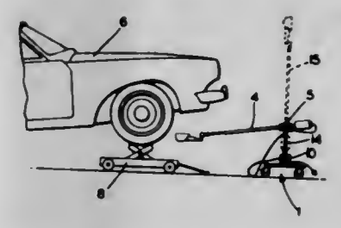
predetermined glare zone and vertically extending prism means on the outer face of said side sections for controlling light transmitted therethrough in longitudinal directions, two parallel spaced end sections extending the width of said bottom sections and connected thereto, said end sections including prism means positioned on the outer face of the end sections for directing a portion of the light emitted by said lamp means in a predetermined downward direction and for directing another portion of light in an upward direction and for laterally diffusing the light transmitted through said prism means.

3,275,823
ADJUSTABLE BERTH LIGHT
Edward C. Zimmerman, Evanston, and Peter Aleksa, Chicago, Ill., assignors to Patent License Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 13, 1964, Ser. No. 359,077
9 Claims. (Cl. 240—73)



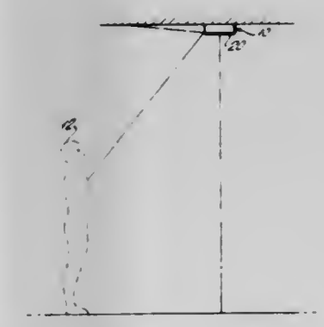
5. An adjustable lamp fixture comprising a base having a shallow recess, a lamp shade adapted to be received in said recess, swivel means adjustably mounting said lamp shade on said base, said swivel means including a mounting axle having a first end portion joined to said base, first and second mounting members held within an upper portion of said lamp shade, an aligned elongated slot in said lamp shade and said mounting members, said mounting axle passing through said elongated slot and terminating in a second end portion within said mounting members, and transversely extending bearing means joining said second end portion of said mounting axle to said mounting members and said lamp shade, said transversely extending bearing means permitting movement of said lamp shade about a first axis in said mounting axle and simultaneous movement about a second axis transversely intersecting said second end portion disposed within said lamp shade whereby swivel movement of said lamp shade relative to said base will occur within said lamp shade.

3,275,824
PORTABLE LAMP
William A. Hinds, 126 Cherry St., New Philadelphia, Ohio
Filed Dec. 3, 1963, Ser. No. 327,632
3 Claims. (Cl. 240—81)



3. A portable lamp including a weighted base mounted on castors, an upright standard with one end secured on the base, an arm on the upper arm of the standard, means pivotally mounting the arm on the standard, the arm having portions on opposite sides of said mounting means, a lamp at the end of one arm portion, a counterbalance on the other arm portion, the mounting means including first T means detachably mounted on the upper end of the standard which T means has a horizontal bore and a vertical bore engaged with the standard, said mounting means also including a shaft rotatably mounted in the horizontal bore of the first T means, a second T secured to one end of the shaft and having a bore extending at right angles to the shaft, the arm extending through the bore of the second T and being rotatable therein, and said mounting means also including rings on the arm engaging the second T at the ends of the second T bore for preventing longitudinal movement of the arm in the second T.

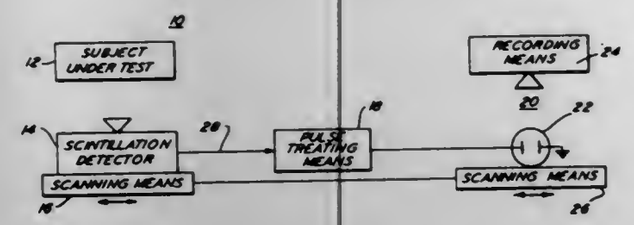
3,275,825
REFRACTOR
Dale E. Welty, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 20, 1964, Ser. No. 346,218
5 Claims. (Cl. 240—106)



1. For use in a luminaire including at least one linear light source, a refractor comprising at least one substantially vertical side panel, said side panel having a series of substantially identical horizontal prisms lying parallel to said light source at the surface of said side panel nearest said light source, said prisms each comprising an upper and a lower light receiving surface asymmetrically disposed on either side of a horizontal plane

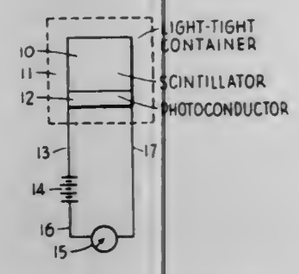
through the apex of said prism, said upper surface constituting means for re-directing incident light thereon at angles lower than a predetermined range of angles from nadir, and said lower surface constituting means for redirecting incident light thereon at angles greater than said range of angles, the area defined within said range of angles defining a glare free zone of light.

3,275,826
SIGNAL PROCESSING MEANS FOR DETECTED PULSE SIGNALS
Harry Leiter, 107 Henley Road, Lower Merion Township, Montgomery County, Pa.
Filed Aug. 23, 1963, Ser. No. 304,050
19 Claims. (Cl. 250—71.5)



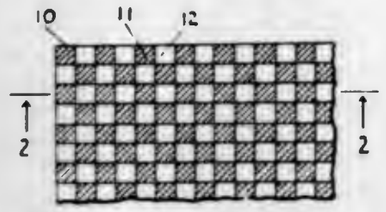
7. A signal processing means comprising input means for receiving randomly occurring pulse signals, a signal output line, a first signal gating means for conditionally transmitting signals from said input means, a second signal gating means conditionally transmitting signals transmitted by said first gating means to said signal output line, a first signal generating means having an input lead receiving signals from said input means and being responsive to said signals by delivering signals of predetermined duration for conditioning said first gating means, to transmit signals to said second gating means, and second signal generating means having an input lead receiving signals from said input means and being responsive to said signals by delivering signals of predetermined duration for conditioning said second gating means to inhibit transmission of signals to said output line.

3,275,827
DETECTOR UTILIZING A SCINTILLATOR AND PHOTOCONDUCTIVE MATERIAL
Edward L. Lind, Chagrin Falls, Ohio, assignor to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 16, 1963, Ser. No. 330,888
5 Claims. (Cl. 250—71.5)



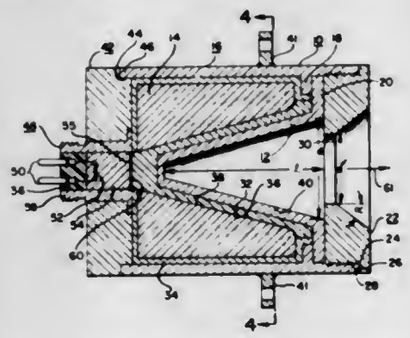
1. A radiation detector comprising in combination a scintillation crystal, a photoconductive body positioned adjacent said crystal and illuminable thereby, and means, including a source of E.M.F. connected in circuit with said photoconductive body for indicating conductance changes therein responsive to changes in illumination thereof, said photoconductive body comprising a plurality of needles of cadmium sulfide connected in parallel with each other and in series with said source of E.M.F. and said body for indicating conductance changes.

3,275,828
RADIOGRAPHIC INTENSIFYING MEANS
Georg S. Mittelstaedt, 274 73rd St., Brooklyn, N.Y.
Filed Apr. 2, 1962, Ser. No. 184,532
3 Claims. (Cl. 250—80)



1. Radiographic intensifying screen comprising a support and a mixture of only red and blue fluorescent dots laid down on said support substantially side by side in single thickness.

3,275,829
CAVITY RADIATOR WITH A PYROTECHNIC CHARGE THAT REMAINS INTACT DURING AND AFTER COMBUSTION
James W. McClune, Torrance, and William F. Green, Van Nuys, Calif., assignors to Special Devices, Inc., San Fernando, Calif., a corporation of California
Filed Aug. 15, 1960, Ser. No. 49,575
42 Claims. (Cl. 250—85)



1. In a cavity radiator the improvement comprising, in combination: a pyrotechnic charge remaining substantially intact during and after combustion, means for igniting said pyrotechnic charge, an opaque cavity electromagnetic radiation emission source surface means in heat transfer relationship to said pyrotechnic charge for emitting electromagnetic radiation, and shielding means having walls defining an aperture oriented with respect to said cavity electromagnetic radiation emission source surface means for transmitting said electromagnetic radiation through said aperture.

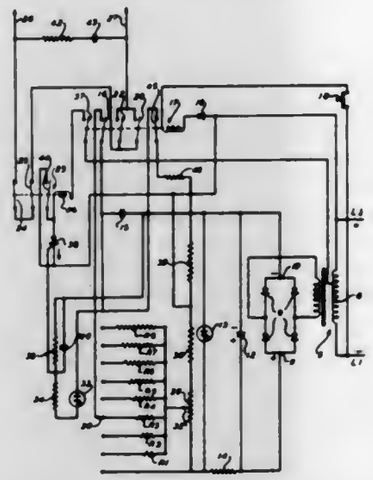
3,275,830
IMPULSE TIMER FOR X-RAY TUBE SYSTEMS OPERABLE FOR A PRESELECTED NUMBER OF HALF-WAVES OF ALTERNATING CURRENT CYCLE
Louis L. Weisglass, New York, N.Y., assignor to X-Ray Mfg. Corporation of America, Great Neck, N.Y., a corporation of New York
Filed Dec. 24, 1963, Ser. No. 333,110
3 Claims. (Cl. 250—95)

1. An impulse timer particularly for the energization of self-rectified X-ray tube systems and operable to cause energization of said X-ray tube for a definite preselected number of full half-waves of the alternating current cycle comprising:

(a) a circuit for producing a constant unidirectional voltage supply comprising a transformer for charging a condenser through a full-wave rectifying arrangement to a definite direct current potential and including a gas stabilizer tube to provide constant voltage and a potential divider to control the supply voltage for a timing circuit;

(b) a time measuring circuit including a calibration condenser chargeable by said constant unidirectional voltage supply circuit, an adjustable resistor for selecting the charging voltage of said calibration condenser, and a bank of resistors selectively connectable by an operator to said calibration condenser for selecting the total charging period thereof;

(c) means operable to initiate termination of the timing cycle comprising a discharge circuit for the calibration condenser of said time measuring circuit including a glow lamp having a definite voltage breakdown characteristic and rendered conductive by discharge of said calibration condenser following lapse of its total charging period and a resistor of preselected value to cause the discharge to continue for a period materially in excess of one half-wave of the alternating current cycle, and said discharge circuit being connected to a silicon control rectifier to render the latter conductive by discharge of said caiibration condenser during the period said resistor of preselected value receives current;

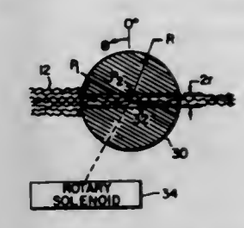


(d) a relay actuated by rectified current upon closure of its energizing circuit by an operator to cause closure of the X-ray tube energizing circuit only at the peak of a half-wave of the alternating current cycle when said self-rectifying X-ray tube is nonconducting and regardless of the instant of energization of said relay, and said relay being also operable to render said constant unidirectional voltage supply effective to charge the calibration condenser of said timing circuit;

(e) and X-ray exposure terminating means conditioned for operation by said last mentioned operator-controlled means and including said silicon control rectifier and operable when the latter becomes conductive by discharge of said calibration condenser after the lapse of its preselected charging time to cause deenergization of the X-ray tube following its excitation by a definite preselected number of half-waves of the alternating current cycle.

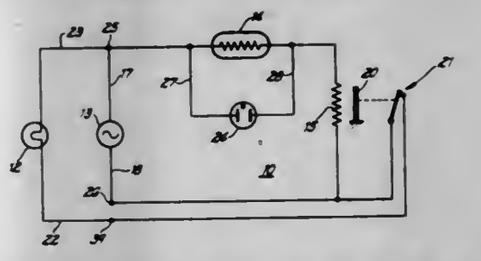
3,275,831
RADIATION BEAM SHUTTER COLLIMATOR
Philip T. Martin, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed May 16, 1963, Ser. No. 280,975
11 Claims. (Cl. 250—105)

1. A structure for collimating a beam of radiation directed from a source of radiation toward a detector, said structure comprising a cylindrical member mounted for rotation about a longitudinal axis transversely situated with respect to said radiation beam, said member having a reverse-tapered radiation aperture provided therethrough with the axis thereof positioned perpendicular to said axis of rotation, the cross-sectional area of said aperture being smaller at the center of said member at the intersection of said longitudinal axes than at the surface of said member, and means for rotating said



cylindrical member by $\pi/2$ radians from a first position with the axis of said aperture coincident with said radiation beam to a second position wherein said axis of said aperture is perpendicular to said beam.

3,275,832
LIGHT SENSITIVE BIMETALLIC CONTROL SWITCH
Paul J. Curtin, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 7, 1963, Ser. No. 314,269
5 Claims. (Cl. 250—206)

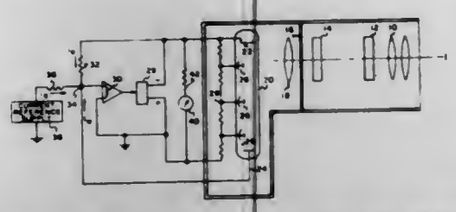


1. In a photo-control device having a pair of input terminals, a photo-sensitive resistor and an elongate heater resistor connected in series, said photo-sensitive resistor being characterized by an impedance that decreases with increasing levels of illumination, an elongate bimetallic element fixed at one end and having a generally U-shaped portion, said bimetallic element also having a bight portion adjacent one end of said U-shaped portion and disposed in close proximity to said heater resistor, a snap acting switch having a fixed contact and a contact arm mounted for movement into and out of engagement with said fixed contact, resilient means coupling the free end of said bimetallic element and said contact arm whereby flexure of said bimetallic element in one direction will cause said resilient means to snap said contact arm away from said fixed contact and return movement of said bimetallic element toward its original position being operative to snap said contact arm into a closed position relative to said fixed contact.

3,275,833
CONSTANT CURRENT SYSTEM FOR PHOTOELECTRIC MULTIPLIER TUBE
Guy R. Moffitt, Jr., Norwalk, and Morris Weiss, Stamford, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Dec. 6, 1962, Ser. No. 242,720
2 Claims. (Cl. 250—207)

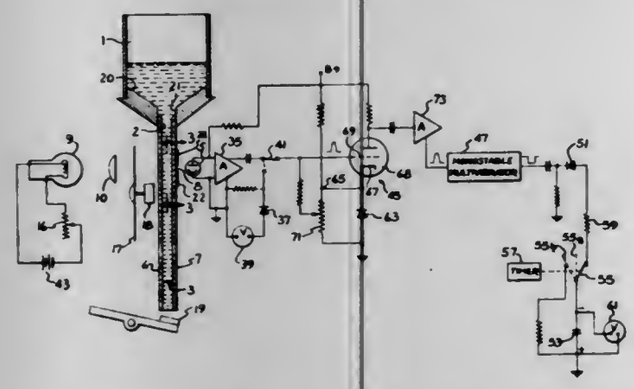
1. A radiometer for measuring high temperatures comprising in combination a photomultiplier tube having a photo-emissive cathode, a plurality of dynodes, and an anode electrode, optical means for collecting and applying radiation from an object whose temperature is to be measured on said photo-emissive cathode, a current summing junction, means for connecting said anode electrode to said current summing junction for applying anode

current thereto, a fixed current reference source substantially equal and opposite in sign with respect to a preselected operating anode current connected to said current summing junction, means for connecting said photoemissive cathode to said current summing junction, magnetic amplifier means connected to said current summing junction for converting current difference signals into a



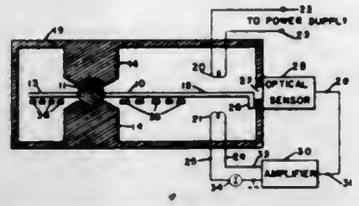
high voltage supply, means for connecting said high voltage supply to said dynode electrodes whereby said anode current remains substantially constant by automatically varying the dynode voltage in response to radiation changes, and a meter connected across said high voltage supply which is calibrated to indicate temperature in response to changes in said high voltage.

3,275,834
APPARATUS FOR ANALYZING THE SIZE AND NUMBER OF PARTICLES IN SUSPENSION
Daniel S. Stevens, 12099 County Line Road, Chicago, Ill.
Filed Apr. 1, 1963, Ser. No. 269,635
6 Claims. (Cl. 250—218)



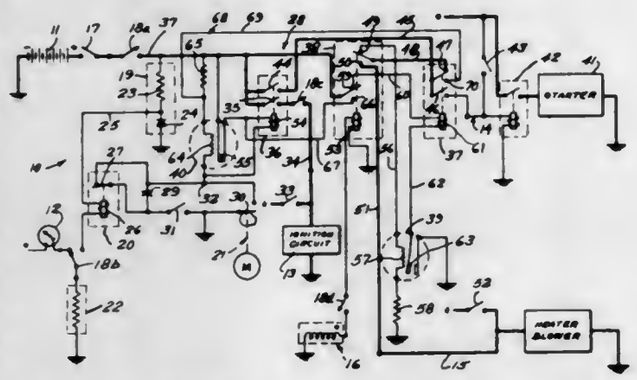
1. Apparatus for determining the average size of particles and the number of particles per unit volume in a suspension of such particles, said apparatus comprising means forming a passageway adapted to provide a flow of said suspended particles therethrough, means forming an aperture adjacent to the passageway, means providing a beam of energy directed through said passageway and aperture, the aperture being of such size that the beam of energy passing therethrough and through the passageway traverses a volume of the passageway that is of sufficient size to permit the passage of clusters of particles at random orientations which pulse said beam of energy such that the pulses are proportional to the volume of the particles flowing through the passageway, means converting the pulses into electrical pulses, pulse magnitude selector means receiving said electrical pulses and transmitting only those pulse portions above a preselected magnitude, the pulses above said preselected magnitude resulting from relatively large particles and clusters of particles and with pulses from individual small particles being below said preselected magnitude, means for producing a constant energy output pulse responsive to a pulse portion but irrespective of the magnitude thereof, and means for integrating said constant energy pulses with respect to a selected time period to determine the average rate of arrival of said constant energy pulses over said time period.

3,275,835
PHOTOSENSITIVE ACCELEROMETER UTILIZING RADIATION PRESSURE
Stanley R. Morrison, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,209
11 Claims. (Cl. 250—231)



1. An accelerometer comprising:
a housing;
a support positioned within said housing;
an inertial member mounted on said support for at least one degree of free motion, said member having a preferred normal position relative to said housing;
means for applying a rebalance force on said member to return said member to said preferred normal position when, due to external forces on the housing, said member is displaced away from said preferred position, said means including,
at least one source of radiation adapted to apply pressure on said member along the line of free motion of said member,
a pickoff means mounted on said housing for detecting the motion of said member away from said preferred position, and
energizing means connected to said source of radiation, said energizing means being adapted to receive a signal from said pickoff means and to regulate the amount of radiation from said source in such a way as to maintain said member in said preferred normal position; and
radiation sensing means adapted to measure the amount of radiation originating from said source, said measurement of radiation being indicative of the acceleration of said housing due to external forces.

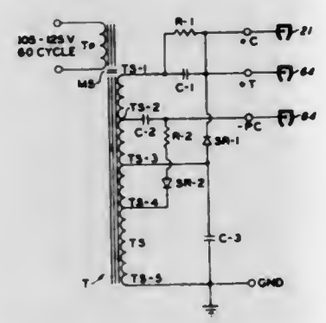
3,275,836
AUTOMATIC ENGINE STARTER
John Vancha, Chicago, Ill., assignor of one-half percent to Frederick A. Michaels, Chicago, Ill.
Filed Mar. 26, 1964, Ser. No. 354,902
6 Claims. (Cl. 290—38)



1. In an automatic starting control system for an internal combustion engine having a battery and a starting circuit powered thereby, the combination comprising:
(a) a thermal sensing element having an electrical resistance responsive to temperature, and adapted to sense engine temperature;
(b) a current-sensitive relay having a coil connected in series with said thermal sensing element, and a set of contacts;

(c) a constant voltage circuit adapted to be powered by the battery, and connected in series with said coil and said thermal sensing element; and
(d) a relay circuit under the control of said contacts and adapted to be connected to the engine starting circuit for controlling application of power thereto.

3,275,837
XEROGRAPHIC CHARGING APPARATUS
Joseph J. Codichini and Rolf W. Eichler, Fairport, and Thomas F. Hayne, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 4, 1963, Ser. No. 249,442
3 Claims. (Cl. 307—2)

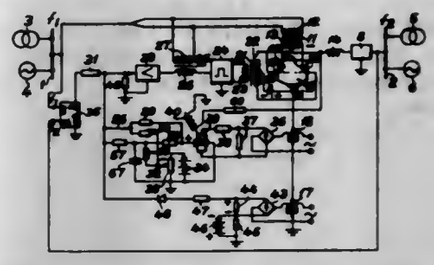


1. A high voltage power supply circuit to provide a positive biased A.C. voltage between a first output terminal and a third output terminal and a negative biased D.C. voltage betwen a second output terminal and said third output terminal, said power supply circuit including
a stabilized transformer having primary input terminals adapted to be connected to a source of A.C. potential, and a secondary having multiple taps;
a first capacitor connected from a first tap of said secondary to said first output terminal,
a first rectifier having its anode connected to a third tap of said secondary and its cathode connected between said first capacitor and said first output terminal,
a second capacitor connected between a second tap of said secondary and said second output terminal,
a second rectifier having its cathode connected to a fourth tap of said secondary and its anode connected between said second capacitor and said second output terminal, and
said third output terminal being connected to a fifth tap of said secodary, whereby the positive peak voltage applied to said first output terminal is greater than the negative peak voltage applied to said first outlet terminal and whereby said negative peak voltage applied to said second output terminal is greater than the positive voltage applied to said second output terminal,

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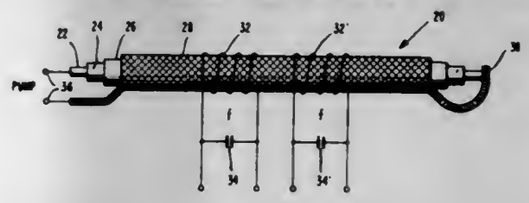
3,275,838
EQUIPMENT FOR REGULATING TRANSMITTED POWER BETWEEN TWO ASYNCHRONOUSLY CONNECTED ELECTRIC ALTERNATING CURRENT GRIDS
Knut Almström, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Apr. 2, 1963, Ser. No. 270,075
Claims priority, application Sweden, Apr. 3, 1962, 3,673/62
4 Claims. (Cl. 307—82)

1. Device for regulating the transmitted power between two electric alternating current grids, which grids each contain loading objects and power generators which determine the frequency of the grid, and which grids are connected together via a link which permits the frequencies of the grids to be varied independently of each other which link contains one converter connected to one of the grids and one connected to the other, characterized in that at least one of the converters is equipped with a regulator which influences the transmitting power of the converter



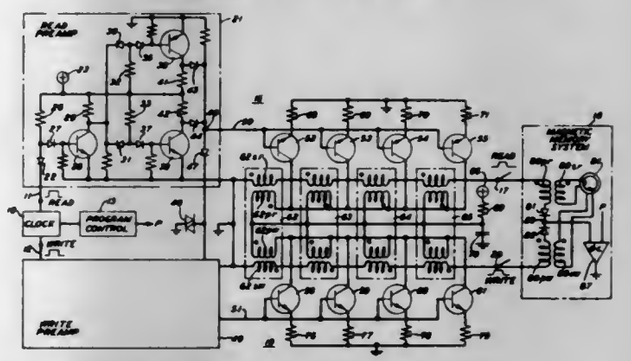
and therewith that of the link, which regulator is under the influence of a signal which is a time operand of the relative difference in frequency between the two grids, the regulator being also under the influence of another signal which is a time operand of the deviation of the transmitted power from certain previously defined power.

3,275,839
PARAMETRIC DEVICE
William J. Bartik, Jenkintown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 17, 1962, Ser. No. 210,360
9 Claims. (Cl. 307—88)



1. A parametric device comprising:
(a) an inner conductor plated with a thin magnetic film in the order of one micron;
(b) an insulator covering said plated inner conductor;
(c) and an external braided conductor co-axially surrounding said insulator.

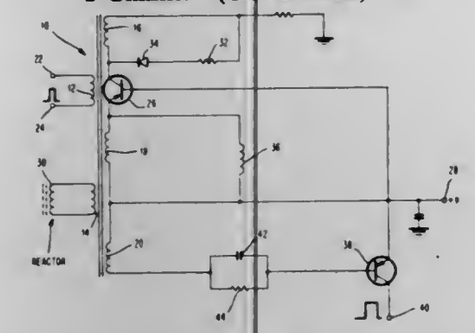
3,275,840
CURRENT DRIVE CIRCUIT
Philip A. Harding, Middletown, and Eugene H. Siegel, Jr., Middletown Township, Monmouth County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 3, 1962, Ser. No. 241,684
15 Claims. (Cl. 307—88)



15. A current driver circuit comprising
a source of pulses,
a plurality *n* of pulse amplifiers each having an output pulse amplitude probability of variance of *v*,
means connecting the inputs of said amplifiers to said source, and

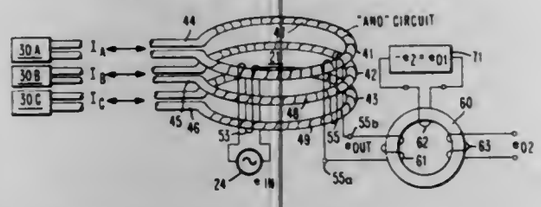
means coupling the outputs of said amplifiers in series to produce an output pulse amplitude probability of variance of v/n.

3,275,841
CONSTANT ENERGY PULSE GENERATOR
Robert A. Pacl, Jr., Willow Grove, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 8, 1962, Ser. No. 201,095
3 Claims. (Cl. 307—88)



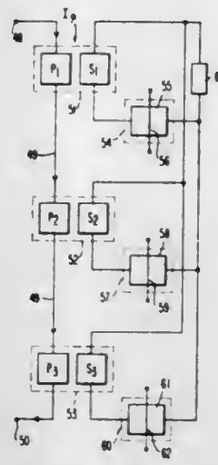
1. A constant energy pulse source comprising a transformer having a plurality of windings, a saturable reactor having a first remanent state and a second saturated state associated with a first of said windings, a source of input pulse signals associated with a second of said windings, said input pulse signals being coupled through said first winding to said saturable reactor and being sufficient in duration and amplitude to drive said saturable reactor into said second saturated state from said first remanent state after a predetermined time period, a switching circuit including a normally non-conducting transistor, a third winding associated with said transistor for receiving a coupled signal from said first winding to switch said transistor to a conducting state when said input signal is applied to said first winding, a utilization circuit, a fourth winding for developing an output signal for said utilization circuit when said transistor is in a conducting state, and said saturable reactor causing said transistor to become non-conducting when it reaches said second saturated state to terminate the output signal applied to said utilization circuit.

3,275,842
MAGNETIC CROSS-FIELD DEVICES AND CIRCUITS
Orestes M. Baycura, Irwin, Pa., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 24, 1962, Ser. No. 232,773
1 Claim. (Cl. 307—88)



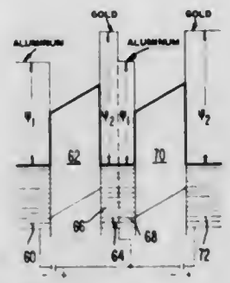
A logic "AND" circuit comprising:
(a) a plurality of conductors;
(b) a magnetic coating formed on each of said conductors;
(c) means for selectively applying a signal current to each of said conductors, each of said signal currents developing a respective first magnetic field in and around the respective conductors;
(d) each said first magnetic field having lines of force which are in a direction transverse to the axis of said conductors;
(e) a first winding wound around said conductors;
(f) means for applying an alternating energizing current to said first winding for developing an alternating second magnetic field having lines of force which extend in a direction along the axes of said conductors;
(g) an output winding wound around said conductors, said output winding having an output voltage developed thereacross which is a function of the interaction of said first and second magnetic fields; whereby
(h) when all of said signal currents are applied to their respective conductors said output voltage is of a first amplitude, and when one or more of said signal currents are not applied to their respective conductors said output voltage is of another amplitude;
(i) a magnetic core having first, second and third windings wound thereon;
(j) said output winding of said "AND" circuit being connected to said first winding of said core;
(k) means for coupling a biasing voltage to said second winding which balances the voltage coupled from said output winding of said "AND" circuit to said first winding of said core when the logic "AND" function is not satisfied to thereby provide a zero voltage output across said third winding when said logic "AND" function is not satisfied; and,
(l) said biasing voltage ceasing to be balanced by the voltage coupled from said output winding of said "AND" circuit to said first winding of said core when said logic "AND" condition is satisfied, whereby said biasing voltage is effective to shift the magnetic state of said core to thereby provide a real output when said logic "AND" condition is satisfied.

3,275,843
THIN FILM SUPERCONDUCTING TRANSFORMERS AND CIRCUITS
Albert J. Meyerhoff, Wynnewood, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 2, 1962, Ser. No. 214,355
14 Claims. (Cl. 307—88.5)



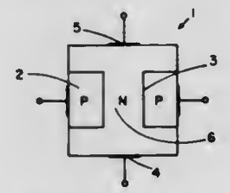
5. A thin film superconducting circuit comprising: a plurality of superconducting transformers each having means for increasing the inductance of the primary and secondary of said transformer including a shield of superconducting material having at least one opening thereon, each said superconducting transformer having its flux linked primary and secondary windings deposited in an adjacent plane within the projected area of said opening on said shield, said primaries of said plurality of said transformer being connected in series; said secondaries of said plurality of transformers being connected in parallel; a plurality of thin film cryotrons coupled to the secondary of each said superconducting transformer; and each said cryotron adapted to become resistive in response to a current applied thereto.

3,275,844
ACTIVE THIN FILM QUANTUM MECHANICAL TUNNELING APPARATUS
John G. Simmons, Norristown, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 16, 1962, Ser. No. 238,164
3 Claims. (Cl. 307—88.5)



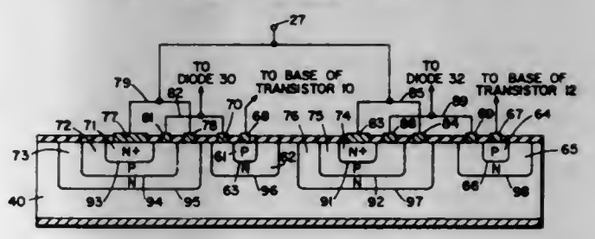
1. Active thin film quantum mechanical tunneling apparatus comprising:
(a) a first and a second pair of conductive material layers, at least one of the conductive layers of each pair being of different relative work function than the other material layer thereof,
(b) each of said pairs of layers of conductive material being separated by an insulating layer whereby a contact potential is developed between said pairs of conductive layers inducing an intrinsic field in the respective insulator permitting electrons to tunnel from the lower work function material to the higher work function material,
(c) the material layer of higher work function of one pair of materials being arranged in contact with the material layer of lower work function of the other pair of materials,
(d) means biasing the lower work function material of one of said pairs of conductive layers negatively while biasing the higher work function material of the other pair of conductive layers positively with respect to the remaining layers effectively increasing the electron injection energy of electrons tunneling from said lower to said higher work function materials producing a gain of better than two-to-one upon energization of said apparatus.

3,275,845
FIELD SWITCHING DEVICE EMPLOYING PUNCHTHROUGH PHENOMENON
Geza Csanky, Mesa, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 27, 1962, Ser. No. 247,697
7 Claims. (Cl. 307—88.5)



1. An isolation device including in combination a semiconductor tetrode comprised of a body of semiconductor material having a constricted region of one conductivity type within said body and two opposed regions of the opposite conductivity type forming junctions on opposite sides of said constricted region, separate gate contacts to said opposed regions, input circuit means connected to said gate contacts and including a signal source for applying input signal voltages between said gate contacts, connections to said constricted region, and output circuit means connected to said connections and including a current source for supplying current through said constricted region which current is a function of the potential difference applied to said contacts as well as the potential applied to said connections, said input circuit means and said output circuit means having no mutual connection and so being isolated from each other.

3,275,846
INTEGRATED CIRCUIT BISTABLE MULTIVIBRATOR
Dean C. Bailey, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 25, 1963, Ser. No. 260,402
9 Claims. (Cl. 307—88.5)

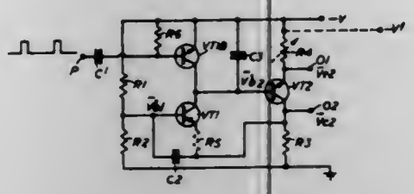


1. A bistable multivibrator circuit including first and second transistors each having collector, emitter and base electrodes, means for connecting the collector electrode of each said transistor to a potential source, means for connecting the emitter electrode of each said transistor to a common reference potential, semiconductor diode means poled for reverse conduction connecting the collector electrode of each said transistor to the base electrode of the other said transistor, said diode means having a reverse breakdown voltage characteristic less than the voltage appearing at the collector electrode of the non-conducting one of said transistors, and with said diode means having a value of reverse junction capacitance to store a charge at least equal to the charge stored by excess minority carriers in the base of the conducting transistor, and circuit means for coupling triggering pulses to the base electrode of said transistors to thereby provide alternate states of conduction and non-conduction, said last named circuit means including first and second pairs of semiconductor diodes series connected between the base electrode of each said transistor and a common trigger input terminal, and a semiconductor diode coupling the junction point of the series diodes in each said pair to the collector electrode of each said transistors whereby when one of the coupling diodes is conducting and the other is reverse biased, the triggering pulse will charge the series diode associated with the conducting diode.

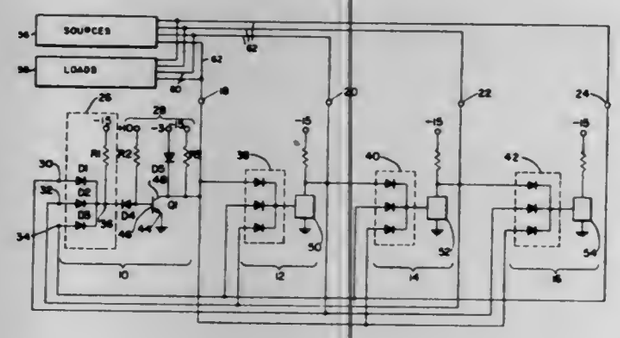
3,275,847
TRANSISTORIZED SAW-TOOTH WAVE GENERATORS UTILIZING DIRECT CURRENT NEGATIVE FEEDBACK
Harry Donald Kitchin, Chalfont St. Peter, Buckinghamshire, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Sept. 12, 1963, Ser. No. 308,468
Claims priority, application Great Britain, Oct. 1, 1962, 37,027/62
9 Claims. (Cl. 307—88.5)

1. A sawtooth generator comprising a first capacitor, first transistor means coupled to said first capacitor to apply a substantially constant charging current thereto

and thus to produce a linearly rising voltage thereacross, means coupled to said first capacitor to periodically discharge said first capacitor and thus to produce a time sequence of linearly rising and falling voltages thereacross, second transistor means coupled to said first capacitor to amplify said rising and falling voltages developed thereacross, and a direct current negative feedback loop connected between the output of said second transistor means and said first transistor means to stabilize the operation of said second transistor means.

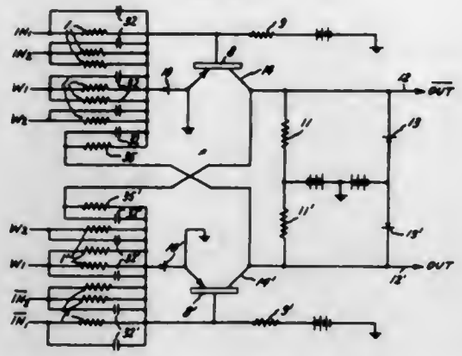


3,275,848
MULTISTABLE CIRCUIT
Chester Gordon Bell, Concord, Mass., assignor to Digital Equipment Corporation, Maynard, Mass.
Filed Sept. 19, 1963, Ser. No. 310,044
8 Claims. (Cl. 307—88.5)



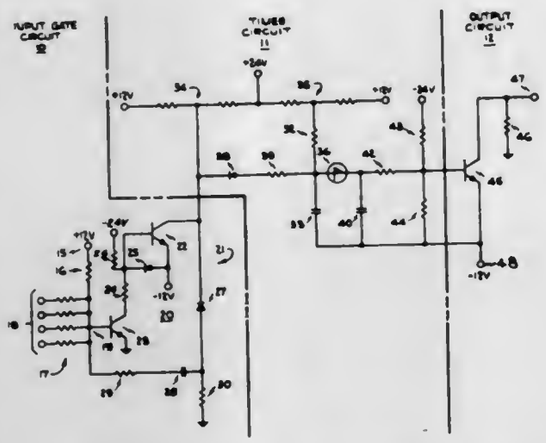
1. An electronic circuit comprising
(A) at least three logic circuits, each of which
(1) has a plurality of input terminals not exceeding the number of logic circuits and an output terminal,
(2) develops a second-level output signal only when all said input terminals receive first-level signals,
(3) develops said first-level signal at its output terminal when any one or more of said input terminals receives a second-level signal,
(4) has its output terminal connected to an input terminal of each of the other logic circuits so that each input terminal of each logic circuit is connected to an output terminal of another different logic circuit, and
(5) is arranged to develop a higher output impedance at its output terminal when it develops said first-level signal than when it develops said second-level signal,
(B) whereby in response to application of an input signal of said second level to a first output terminal and, alternatively, application of an input signal of said first level to all output terminals except said first one, said circuit develops at said first output terminal a persisting second-level signal and constrains the signals at the other output terminals to said first level.

3,275,849
BISTABLE DEVICE EMPLOYING THRESHOLD GATE CIRCUITS
Clarence L. Coates, Jr., Austin, Tex., and Philip M. Lewis II, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Nov. 8, 1963, Ser. No. 322,349
5 Claims. (Cl. 307—88.5)



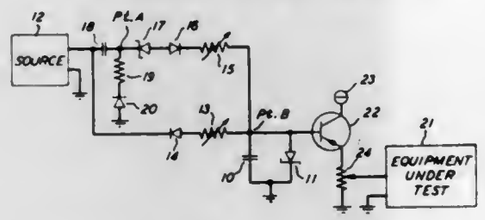
1. A bistable device comprising a pair of complementary threshold gates, each said gate having a plurality of inputs and generating an inverted output signal when the summation of input signals applied thereto exceeds a predetermined threshold value, cross-connections coupling the output of a first said threshold gate as an input to a second gate as well as coupling the output of said second gate as an input to said first gate, and means to provide the cross-connected inputs with weights respectively sufficient by themselves to supply signals which exceed the threshold value of said gates, and means coupling a single input to each of said gates in parallel so that energization of said single input concurrently with another input to said first gate results in producing a binary zero output signal from said first gate and a binary one output signal from said second gate.

3,275,850
TIMER
Roger Edward Arseneau, Elkgrove Village, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Feb. 11, 1964, Ser. No. 344,113
8 Claims. (Cl. 307—88.5)



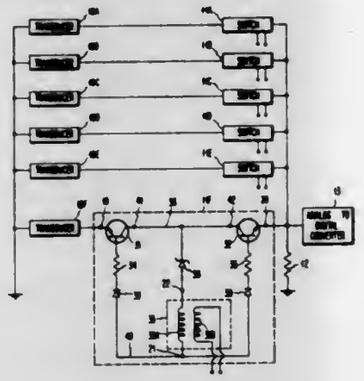
1. A timer comprising an input circuit and an output circuit having an RC network therebetween, means comprising a first diode for isolating a charge built upon the capacitor of said RC network to prevent leakage into said input circuit, means comprising an electronic switching diode for preventing a discharge of said capacitor into said output circuit when said switching diode is "off," means in said input circuit responsive to either of two input signal conditions for either discharging said capacitor via said first diode or causing said capacitor to charge, and means responsive to an accumulation of a predetermined charge upon said capacitor for turning "on" said electronic switching diode and discharging said capacitor into said output circuit.

3,275,851
TRAPEZOIDAL TEST SIGNAL GENERATOR WITH LEADING AND TRAILING EDGE CONTROL
Robert C. Bedingfield, Greensboro, N.C., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 18, 1964, Ser. No. 345,795
5 Claims. (Cl. 307—88.5)



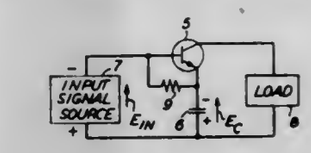
1. In combination
a source for producing a voltage having a rectangular waveform with leading and trailing edges,
first energy storage means responsive to said trailing edge of said rectangular voltage to produce a voltage having a polarity opposite to that of said source voltage,
second energy storage means for storing energy between two predetermined levels,
a first path including a serially connected resistor and diode connected between said source and said second energy storage means to pass current only in response to said voltage having a rectangular waveform,
a second path including a serially connected resistor and diode connected between said first energy storage means and said second energy storage means to pass current only in response to said first energy storage means voltage having a polarity opposite to said source voltage, and
means making available the potential appearing across said second energy storage means as a result of the energy stored therein.

3,275,852
TRANSISTOR SWITCH
James Jursik, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 18, 1964, Ser. No. 352,837
9 Claims. (Cl. 307—88.5)



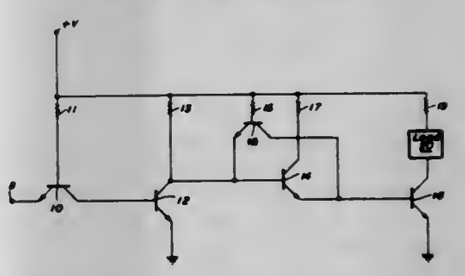
1. A transistor switch comprising:
first and second transistors each having an emitter electrode, a base electrode and a collector electrode;
a common collector connection conecting the collector electrode of said transistors in common;
a common base connection connecting the base electrodes of said transistors in common;
the emitter electrode of said transistors forming a pair of switch terminals; and
a control circuit connected between said common base connection and said common collector connection for opening and closing the path between said switch terminals;
the improvement comprising at least one unidirectional device in said common base connection and means for open-circuiting said control circuit when said switch is in the OFF condition;
whereby said switch can sustain between said switch terminals when said switch is in the open condition a voltage greater than the base emitter breakdown voltage of said transistors.

3,275,853
WAVE TRANSLATING DEVICE FOR PRODUCING SHORT DURATION PULSES
Stanley H. Rothrock, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 6, 1964, Ser. No. 409,414
5 Claims. (Cl. 307—88.5)



1. A pulse generator comprising a two terminal source of an electrical waveform which manifests a shift from a first voltage level to a second voltage level, a transistor having base, collector, and emitter electrodes, circuit means connecting said base electrode to a first terminal of said source, a capacitive storage network connected between said emitter electrode and the second terminal of said source, a load circuit connected between said collector electrode and said second source terminal, and a bypass circuit connected between said base and emitter electrodes so that said capacitive network is charged through said bypass circuit when said waveform is at said first voltage level and is discharged through said load circuit when said waveform shifts to said second voltage level.

3,275,854
CURRENT DRIVER
Michael Cianciola, Vista, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,065
5 Claims. (Cl. 307—88.5)

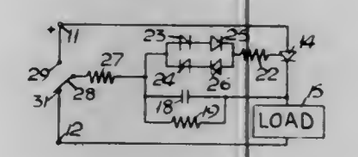


1. A switching circuit for rapidly supplying an electrical charge of a specific polarity to the base electrode of a switching means comprising:
a first electronic switching means including an input means and an output means;

a second switching menas including an input means and an output means, said first electronic switching means and said second electronic switching means coupled in cascade with the input of said second electronic switching means coupled to the input of said first electronic switching means; and

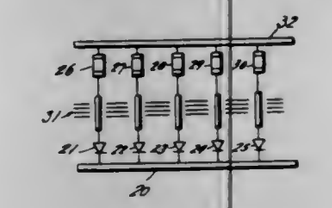
a second switching means including an input means and with said first electronic switching means, said third electronic switching means being inversely conducting with said first electronic switching means when a signal is presented to the input of said first electronic switching means.

3,275,855
POWER CONTROL CIRCUITS
Maurice James Wright, Harborne, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Sept. 9, 1963, Ser. No. 307,649
Claims priority, application Great Britain, Oct. 10, 1962, 38,319/62
7 Claims. (Cl. 307—139)



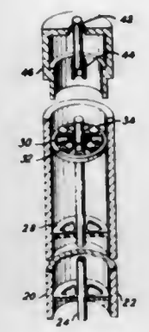
1. A power control circuit comprising in combination a pair of terminals for connection to a D.C. source, a switchable rectifier having its anode and cathode connected to the pair of terminals respectively, a load in the cathode circuit of the switchable rectifier, a capacitor discharging of which effects switching on and off of the switchable rectifier, switch means for controlling charging of said capacitor, said switch means being connectible alternatively to said pair of terminals and being connected to the cathode of said switchable rectifier through said capacitor, and a trigger device through which said switch means is connected to the gate of said switchable rectifier.

3,275,856
SEMICONDUCTOR BANK ASSEMBLY
Walter V. Chumakov, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 31, 1963, Ser. No. 298,820
6 Claims. (Cl. 307—146)



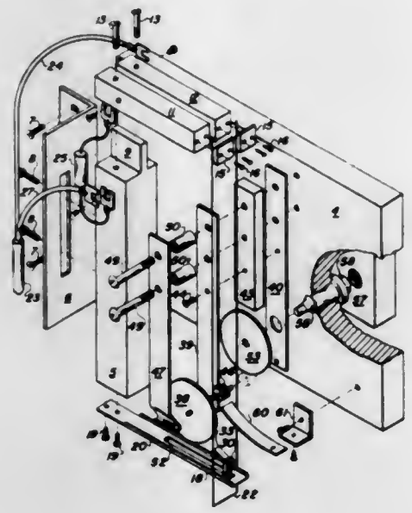
5. A semiconductor bank assembly comprising a plurality of diodes, a plurality of fuses, a current balancing reactor means having a plurality of reactor windings, an anode bus and a cathode bus; each of said plurality of diodes being connected in series with a respective fuse of said plurality of fuses and a respective reactor winding of said plurality of windings; each of said series connected connections of said fuses, diodes and reactor windings terminating on said anode but at one end and said cathode bus at their other end; said reactor windings of each of said series connected fuses, diodes and reactor windings being interposed between their respective fuses and diodes.

3,275,857
SUPERCONDUCTIVE SYSTEMS
Donald C. Freeman, Jr., and Eugene J. M. Lynch, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Aug. 7, 1963, Ser. No. 300,539
6 Claims. (Cl. 307—149)



2. A superconductive system comprising, in combination, a thermally insulated container, a plurality of superconductive circuits in said container, each consisting of a tube and a core of superconductive material in coaxial relationship together with radial connectors at least one of which includes means for controlling the flow of current in such circuits, and means for maintaining said circuits in a superconductive state.

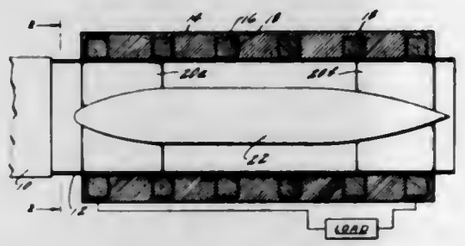
3,275,858
HOT WIRE MOTOR WHICH OSCILLATES AT THE SAME FREQUENCY AS THE INPUT
Christian D. Berger, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed July 16, 1963, Ser. No. 295,464
10 Claims. (Cl. 310—4)



1. An electric motor comprising:
(a) support means,
(b) a drive system including:
(aa) a ratchet wheel rotatably mounted on said support means,
(bb) an electrically conductive wire supported by said support means,
(cc) a pawl drivingly connected to said wire and positioned for driving engagement with said ratchet wheel when oscillated by movement of said wire,

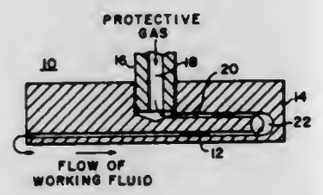
(c) a source of high frequency alternating current having a frequency of 50 to 60 cycles per second connected to said wire,
(d) said wire being constructed and dimensioned so that it heats and expands with rising current flow from said current source and cools and contracts with falling current flow from said current source without breaking the circuit between said wire and said current source.
(e) said wire being constructed and dimensioned so that it expands and contracts synchronously with the frequency of the current applied thereto from said current source,
(f) whereby said pawl is oscillated by said wire in synchronism with the frequency of the current applied to said wire.

3,275,859
INSULATING VANES FOR LINEAR MHD DEVICES
Russell G. Meyerand, Jr., Glastonbury, and Edmund C. Lary, Vernon, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 2, 1961, Ser. No. 142,263
7 Claims. (Cl. 310—11)



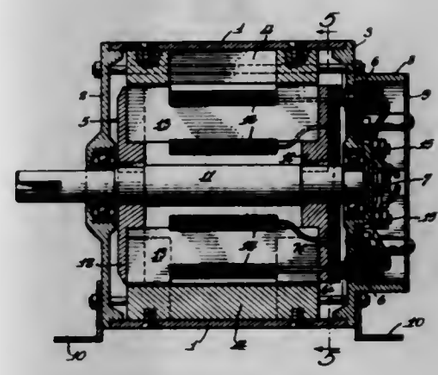
6. In an alternating current magnetohydrodynamic device having a conduit for the passage of a conducting fluid,
means for generating a magnetic field along the length of said conduit, said magnetic field interacting with said conducting fluid to generate azimuthal currents in said conducting fluid,
and vane means extending from the wall of said conduit into said conduit and extending longitudinally along said conduit for interrupting part of said azimuthal currents to facilitate penetration of said magnetic field into said conducting fluid.

3,275,860
ELECTRODE STRUCTURES FOR AN MHD GENERATOR
Stewart Way, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 13, 1962, Ser. No. 209,575
7 Claims. (Cl. 310—11)



1. In energy conversion apparatus operative with a flow of thermally ionized working fluid, an electrode structure operative with an electrically conductive protective gas, said electrode structure comprising: a base member having a surface disposed adjacent said flow of ionized working fluid, and protective gas inlet means operative to supply said protective gas to said base member, and means forming a part of said base member through which said protective gas flows to provide an electrically conductive layer of protective gas between said surface and said flow of working fluid.

3,275,861
ELECTRIC MOTOR WITH ARCUATE POLE PIECES
Max Goroszko, 2443 W. Armitage Ave., Chicago 47, Ill.
Filed Feb. 5, 1965, Ser. No. 432,075
4 Claims. (Cl. 310—46)

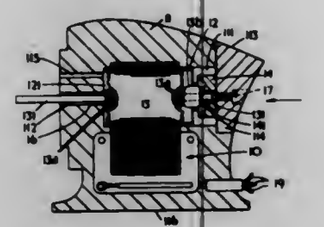


1. An electric motor rotatable about an axis of rotation and operating on the principle of magnetic attraction only, comprising in combination:
(a) a plurality of energizable stator means each comprising a pair of magnetic units, each unit having a core and an energizing winding for said core, means connecting the cores of each of said pairs with each other to form a flux path between said cores, the units of a pair being mounted in said motor in spaced relation in an axial direction, each unit of a pair providing a same given polarity each time it is energized and the units of a pair providing poles of complementary polarities when energized;
(b) a plurality of said stator means mounted in spaced circumferential relation, said stator means being uneven in number;
(c) a rotor comprising a pair of members arranged in spaced radial relation, said members being arcuate such that the reluctance thereof decreases in the direction of rotation, said rotor members being positioned and dimensioned to have a path of rotation adjacent to said stators;
(d) means mounting said rotor members for movement in a given direction relative to said stator means, and said rotor members being mounted closer to said axis than said stator;
(e) said rotor members being dimensioned and positioned in said motor to have one side thereof attracted by one of the magnetic units of a pair and the other side thereof concurrently attracted by the other one of the magnetic units of a pair; and
(f) commutator means electrically connected to said magnetic units for selectively energizing and deenergizing said stator means in response to the relative position of said rotor members to said stator means to cause said stator means to magnetically attract said rotor members as said members move in a direction toward and adjacent said stator means and to terminate or cut-off said attraction when said rotor members move in a direction away from said stator means.

3,275,862
SUBMERSIBLE ELECTRIC MOTOR FOR APPLIANCES

Robert Kren, Sutton Coldfield, England, assignor to James Beresford & Son Limited, Ace Works, Kitts Green, Birmingham, England, a corporation of the United Kingdom of Great Britain and Northern Ireland

Filed Apr. 24, 1963, Ser. No. 275,257
Claims priority, application Great Britain, Nov. 13, 1962, 42,782/62
3 Claims. (Cl. 310—87)



1. A submersible electric motor incorporating a stator section, an encasement for the stator section of a waterproof synthetic plastics material having good electrical insulating properties, good heat conductivity and strength, and which is molded around the stator section so as to embed the stator section in the encasement completely in a waterproof manner, a rotor, a metal liner which is bonded to the stator section in waterproof association therewith during the process of molding the encasement around the stator section and which liner serves to bound the chamber within which the rotor is required to work, bearings for the spindle of the rotor which are enclosed within the encasement, said encasement having a flat under surface providing a base for supporting the electric motor as a whole, a passage in one end portion of the encasement which is open at its outer end to the exterior of the encasement and which at its inner end opens into the hottest zone of the rotor chamber, a detachable section of the encasement which is located at the opposite end portion of the encasement to the end portion first mentioned which is made of the same material, means for securing the detachable section to the main body of the encasement to complete the encasement, the permissible separation of the detachable section from the main body of the encasement facilitating positioning of the rotor within the rotor chamber and permitting of the removal of and the replacement of the rotor as required, a passage in the said detachable section the inner end of which is open to the rotor chamber at the opposite end of the rotor chamber to that first mentioned, and the outer end of which second mentioned passage opens to the exterior of the encasement whereby the liquid within which the electric motor may be immersed may flow through the said second mentioned passage into the rotor chamber and around the rotor as a coolant and subsequently pass out of the rotor chamber by way of the passage first mentioned which leads from the hottest zone of the rotor chamber and leads for conducting electric current to the windings of the stator section which are embedded in and bonded in the encasement during the molding process and which after embedment are permanently retained within the encasement.

3,275,863
ELECTRIC MACHINE CONSTRUCTION

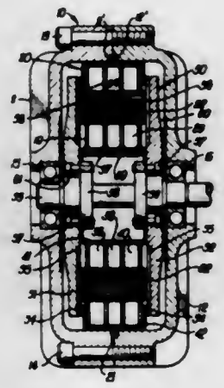
Ferenz H. Fodor, Los Angeles, Calif., assignor, by mesne assignments, of fifty-five percent to Elliott M. Norton and forty-five percent to Ferenz H. Fodor and Leslie G. Turner

Filed Feb. 1, 1965, Ser. No. 431,763
12 Claims. (Cl. 310—166)

1. In an electric machine of the type having a central stator assembly and a pair of axially spaced rotors, one mounted at each side of the stator assembly in close rotatable relation, the provision of a stator assembly comprising:

a plurality of magnetic segments disposed in a generally circular array with axes thereof parallel and lying transversely of the array and including axially spaced opposite end faces; and

means for inducing magnetic flux in said segment including a plurality of windings of non-magnetic material wound about said segments in directions

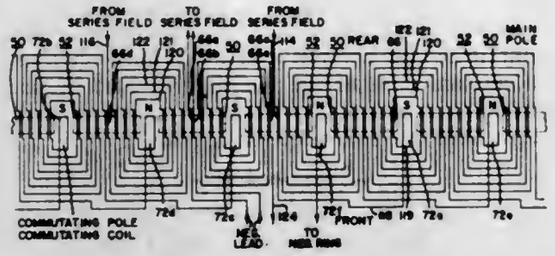


perpendicular to said axes to provide opposite end faces of each segment with opposite polarities, said windings being wound about groups of segments of one or more to provide selectable numbers of stator poles wherein the windings of adjacent groups are wound in opposite directions to provide opposite polarities to adjacent poles.

3,275,864
D.C. MACHINE AND INTERNAL CONNECTIONS THEREFOR

Arthur W. Fennell, Jr., Monroeville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 31, 1963, Ser. No. 334,706
7 Claims. (Cl. 310—180)

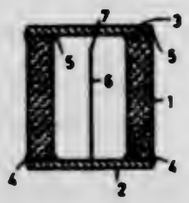


1. In a compensated D.C. dynamoelectric machine, a frame having a plurality of magnetic field pole pieces disposed about its inner periphery, a plurality of compensating conductors extending axially along an inner face of each of said pole pieces, series field strap means disposed on each of said pole pieces and having end connecting portions thereof located on one side of said machine, and means within said machine frame for serially interconnecting said series field strap means between an armature power terminal and an armature circuit ring terminal both of which are located on the side of said machine opposite said one side, said interconnecting means including at least one of said compensating conductors connected between said series field strap means and one of said terminals, the balance of said compensating conductors interconnected to form at least one compensating winding means physically distributed over said pole pieces in series circuit relation between said series field strap means and the other of said terminals.

3,275,865
FIELD EMISSION TUBE WITH LOW TEMPERATURE GAS ADSORPTION

Antonius Gerardus Johannes van Oostrom and Albertus Venema, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 11, 1963, Ser. No. 308,131
Claims priority, application Netherlands, Sept. 11, 1962, 283,116/62
2 Claims. (Cl. 313—11)

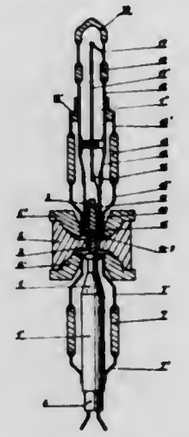


1. An electric discharge device comprising an envelope containing an anode and a cathode, said cathode comprising a wire-like element having one end spaced from the anode with a relatively small radius of curvature whereby electrons are emitted from said cathode by the action of an electric field produced by the anode, said envelope comprising metal portions separated by and joined to ceramic portions by a solder material, an argon atmosphere in said envelope at a pressure of the order of ten torr at room temperature, and means to cool said envelope to a temperature substantially below room temperature and at which the argon gas is substantially adsorbed by said envelope.

3,275,866
MAGNETRON CATHODE STRUCTURES

René Zwobada, Enrico Piatti, Jacques Beal, and Remi Juillerat, all of Paris, France, assignors to Societe Lignes Telegraphiques et Telephoniques, Paris, France, a joint-stock company of France

Filed May 25, 1961, Ser. No. 126,370
Claims priority, application France, June 14, 1960, 829,880; Oct. 31, 1960, 842,663; Apr. 27, 1961, 860,263
6 Claims. (Cl. 313—37)

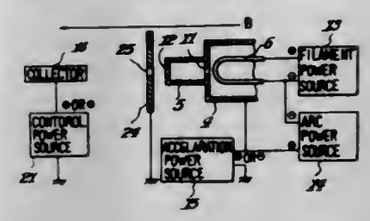


1. A magnetron comprising in combination: an elongated cathode structure including first and second parts; a filamentary heater housed within said first part; means connected to said second part affording connection of a cooling means thereto; an emissive coating on said structure adjacent said first part; at least one cathode hat integral with said second part; an apertured anode surrounding at least the emissive portion of said structure, the aperture being of less diameter than the diameter of said hat; pole pieces connected to said anode; and envelope means connected between said cathode structure and said pole pieces.

3,275,867
CHARGED PARTICLE GENERATOR

Takashi Tsuchimoto, Kodaira-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan

Filed Feb. 13, 1963, Ser. No. 258,249
Claims priority, application Japan, Feb. 15, 1962, 37/5,207
3 Claims. (Cl. 313—63)

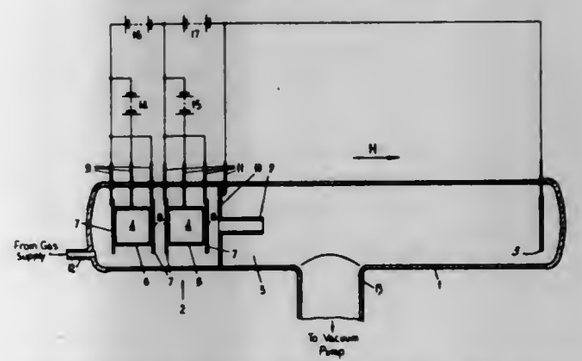


1. A charged particle generator comprising means defining a vacuum chamber, means for creating an axial magnetic field within said vacuum chamber, means defining an arc discharge box, means for supplying gas into said arc discharge box, a plasma chamber contiguous to said arc discharge box, said plasma chamber having a small opening therein adjacent said arc discharge box to provide communication between the arc discharge box and chamber respectively, said plasma chamber having an outlet opening to provide communication between the interior of the plasma chamber and said vacuum chamber, said arc discharge box and said plasma chamber being located within said vacuum chamber so as to create therethroughout from within the interior of said arc discharge box and within said axial magnetic field a low voltage arc discharge plasma and means for impressing an accelerating voltage relative to ground on said arc discharge box to release charged particles within said plasma from said plasma box through the said outlet opening.

3,275,868
APPARATUS FOR GENERATING MASSES OF HOT IONISED GAS AND AMPLIFYING RANDOM FLUCTUATIONS

Ronald Leslie Ferrari, Stanmore, and Alan Reddish, Pinner, England, assignors to The M-O Valve Company Limited, London, England

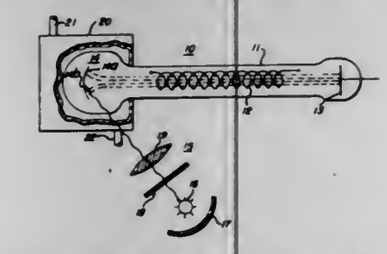
Filed Nov. 13, 1963, Ser. No. 323,382
Claims priority, application Great Britain, Nov. 14, 1962, 43,087/62
1 Claim. (Cl. 313—63)



An apparatus for generating a mass of hot ionised gas comprising: an enclosure containing a gas at a low pressure; a collector electrode and an ion gun housed in said enclosure, the ion gun including two ion sources each consisting of an electrode system generating a gas discharge, and at least one accelerator electrode, in the enclosure, disposed between the collector electrode and the ion sources; and means for applying biasing potentials to the electrodes so as to cause ions to be drawn from the ion sources to form a beam comprising two streams

of gas ions directed onto the collector electrode, said streams travelling in close proximity over a considerable distance, the motions of the ions in each stream being subject to random thermal fluctuations which constitute waves having phase velocities greater and smaller than the mean velocity of that stream, and the magnitudes of the biasing potentials being such that the streams travel at mean velocities differing by an amount such that said waves of smaller phase velocity set up in the faster stream due to said thermal fluctuations interact with said waves of greater phase velocity set up in the slower stream due to said thermal fluctuations, whereby, due to such interaction, there occurs travelling wave tube type amplification of the waves set up in the system due to said thermal fluctuations, thereby increasing the thermal energy of the ions at the expense of the energy of directed motion of the ions.

3,275,869
LOW NOISE ELECTRON EMITTERS
Wolfgang M. Feist, Burlington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed July 12, 1963, Ser. No. 294,555
8 Claims. (Cl. 313—65)



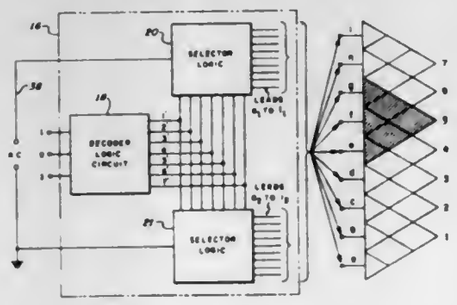
1. A low noise electron emitter comprising a cathode having a layer of material responsive to electromagnetic radiation for emitting electrons, said material being substantially non-responsive to radiation at wavelengths above a threshold wavelength, said electron emitter further comprising means for producing electromagnetic radiation over a range of wavelengths, said means being aligned with said cathode, the shortest wavelength produced by said means being less than said threshold wavelength of said layer of electron emitting material and said shortest wavelength being limited with respect to said threshold wavelength to limit the maximum energy difference between electrons emitted from said layer of electron emitting material.

3,275,870
CERAMIC TYPE ELECTROLUMINESCENT DEVICE WITH MOISTURE PENETRATION PREVENTION SEAL
Ivan E. Buck, Jr., East Orange, and Hans Bullinger, Bloomfield, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 9, 1962, Ser. No. 165,075
5 Claims. (Cl. 313—108)



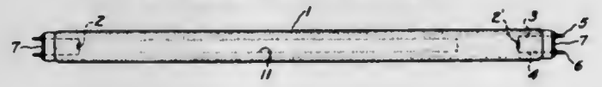
1. A ceramic-type electroluminescent device which is effectively sealed against ingress of moisture: the operative portion of said device comprising, a first electrode layer which is impervious to penetration by moisture, a light-transmitting second electrode layer substantially parallel to and spaced from said first electrode layer and which is pervious to penetration by moisture, and a layer comprising finely divided electroluminescent phosphor embedded in light-transmitting ceramic dielectric material included between said spaced electrode layers; a preformed light-transmitting vitreous layer which is impervious to penetration by moisture overlaying substantially all portions of said second electrode layer and exterior to the operative portion of said device; a thin, continuous, resilient, cured, light-transmitting thermoset adhesive formed as a layer which is resistant to penetration by moisture between and adhering together said light-transmitting second electrode layer and said overlaying vitreous layer; and means for connecting said electrode layers across a source of alternating electric potential.

3,275,871
DISPLAY APPARATUS
Peter G. Ylotis, Astoria, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Feb. 17, 1964, Ser. No. 345,327
8 Claims. (Cl. 313—108)



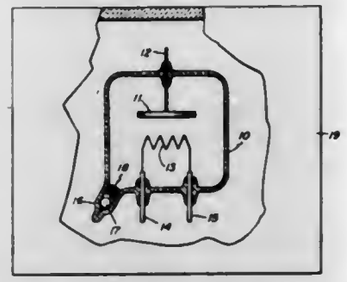
6. Display apparatus comprising a first plurality of substantially parallel transparent conductive strips in a first plane, said strips being skewed with respect to a reference plane, the side of each strip farthest from the reference plane forming an angle with respect to the reference plane, a second plurality of substantially parallel conductive strips in a second plane parallel to said first plane, said second plurality of strips being of such lengths and so skewed with respect to the reference plane that sides of these strips lie in planes with respective sides of the strips of said first plurality of strips, the farthest sides of the strips of said second plurality of strips forming different angles with respect to the reference plane than the aforesaid angles formed by said first plurality of strips, and planar means situated between said first and second planes responsive to voltage differentials applied between opposing strips of said first and second pluralities to illuminate said planar means in the regions where respective electrically excitable strips of said first and second pluralities overlap.

3,275,872
REFLECTOR FLUORESCENT LAMP
Myron A. Chernin, Shaker Heights, and Elton T. Leppelmeier, Highland Heights, Ohio, assignors to General Electric Company, a corporation of New York
Filed July 12, 1963, Ser. No. 294,536
6 Claims. (Cl. 313—109)



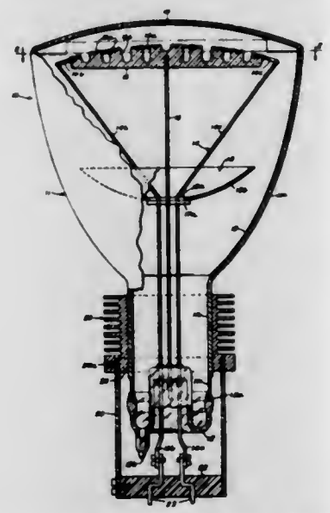
1. A fluorescent reflector lamp comprising a tubular elongated glass envelope having electrodes sealed into opposite ends and containing an ionizable medium including mercury vapor and an inert gas at a low pressure, a reflective coating and a phosphor coating thereover responsive to the ultraviolet radiation produced by an electric discharge through said medium, said reflective coating extending over the entire interior of said envelope except for a window extending in width over a minor portion of the periphery and in length less than the full length of the lamp.

3,275,873
ELECTRIC DISCHARGE DEVICE HAVING IMPROVED DISPENSER CATHODE
John M. Houston, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 1, 1964, Ser. No. 379,659
2 Claims. (Cl. 313—182)



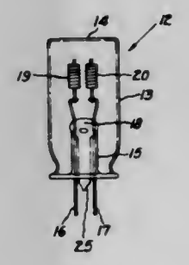
1. An electric discharge device of the high vacuum type comprising an evacuated envelope, a plurality of electrodes exposed to the interior of said envelope including a cathode of refractory metal, a quantity of solid thorium iodide exposed to the interior of said envelope, means for maintaining said iodide at a temperature less than the parts of said device within said envelope and below 350° C., and means maintaining said cathode at a higher temperature than the other parts of said device within said envelope so that said iodide is dissociated at said cathode to dispense thorium to said cathode during operation of the device.

3,275,874
ELECTRICALLY ENERGIZED HEAT RADIATOR
Jo Emmett Jennings, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed May 11, 1962, Ser. No. 193,940
7 Claims. (Cl. 313—183)



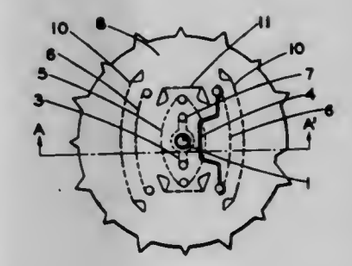
1. An electrically energized heat radiator comprising in combination, an enclosed hermetically sealed housing of nonoxidizing relatively thin metallic material including a radiating end portion forming part of the hermetically sealed housing, a filament spaced within the housing in substantial parallelism with said radiating end portion, dielectric means connected with the wall of the housing on the end thereof opposite said radiating end portion to support said filament and lead-in connections to the filament from outside to within the housing, and a heat reflector apart from the interior surface of said housing and disposed within said housing on the side of said maximum heat radiating portion of the filament opposite said heat concentrating end wall portion of the housing to focus the heat on said maximum heat radiating wall portion.

3,275,875
SPARK TUBE HAVING ACTIVATED THERMIONIC ELECTRODES
Hans L. Wattenbach, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 27, 1962, Ser. No. 247,633
5 Claims. (Cl. 313—185)



1. A spark tube comprising a vitreous envelope having a pair of lead-in wires sealed thereinto through a re-entrant stem and containing a filling of an inert gas at a pressure in the range of 25 to 500 millimeters of mercury, a pair of electrode assemblies attached to said lead-ins and extending side by side within said envelope at an interelectrode distance apart not exceeding 5 millimeters, each electrode assembly comprising a refractory metal shank with refractory metal wire coiled thereover and being activated with electron-emitting material comprising alkaline earth oxide and metal, said material coating the electrode assembly and filling the interstices in the coiling.

3,275,876
ELECTRON DISCHARGE DEVICE COMPRISING AUXILIARY ELECTRODE IN GRID SECTION
Mehmet Esin Ulug, Etobicoke, Ontario, Canada, assignor to Canadian General Electric Company, Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Sept. 28, 1962, Ser. No. 226,997
6 Claims. (Cl. 313—238)



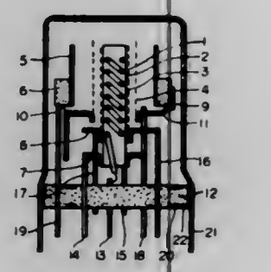
1. An electron discharge device comprising, a substantially evacuated envelope enclosing a cathode and anode mounted in spaced position, first, second, and third control grids mounted in a spaced sequence from the cathode to the anode; and an auxiliary electrode conductively connected to said third control grid and positioned in close proximity to the cathode to improve the positive voltage characteristics for said third control grid.

3,275,877

SINGLE MULTI-ELECTRODE ELECTRON TUBE HAVING A DISC SHAPED CERAMIC STEM WITH A RECESSED PORTION IN ONE FACE THEREOF, SAID RECESS PORTION HAVING A METAL LAYER THEREON

Yoshio Murata, Chiba, Japan, assignor to Hitachi Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan

Filed Jan. 28, 1963, Ser. No. 254,289
Claims priority, application Japan, Jan. 31, 1962, 37/3,265; Feb. 24, 1962, 37/8,852; Mar. 9, 1962, 37/11,090, 37/11,091, 37/11,092, 37/11,093
9 Claims. (Cl. 313—250)



1. A single-end multi-electrode electron tube comprising
a disc-shaped ceramic stem having a recessed portion in one face thereof, said recessed portion having a metal layer over the entire surface thereof,
a plurality of vacuum tube electrodes including at least a control grid, screen grid and plate electrode,
supporting means including supports and electrical leads for supporting said electrodes above said ceramic stem,
a ceramic spacer having a pair of isolated metal layers on one surface thereof, two adjacent ones of said electrodes being secured to respective metal layers on said ceramic spacer,
the electrical lead connected to the one of said two adjacent electrodes interposed between the remaining electrodes of said control grid, screen grid and plate electrode passing through said ceramic stem in the recessed portion thereof and coming into electrical contact with said metal layer on said ceramic stem, the electrical leads connected to said remaining electrodes passing through the portion of the ceramic stem isolated from the metal layer thereon.

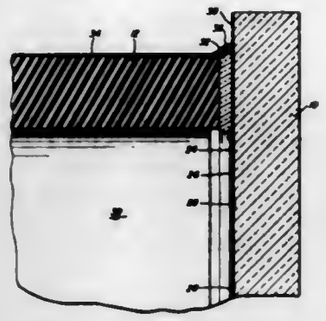
3,275,878

LEAD-IN SEAL FOR EVACUATED ENVELOPE OF AN ELECTRON DISCHARGE DEVICE FOR CONNECTING ELECTRODES LOCATED WITHIN SAID ENVELOPE TO A VOLTAGE SOURCE POSITIONED OUTSIDE SAID ENVELOPE

William H. Wilbanks, Hillsboro, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Feb. 27, 1963, Ser. No. 261,443
9 Claims. (Cl. 313—317)

9. An envelope structure for a cathode ray tube, comprising:
a hollow funnel member of ceramic material having an opening in the larger end thereof;
a face plate of glass material;
a seal layer of electrical insulative glass material fused to the funnel member and joining said face plate to the larger end of said funnel to close the opening in said funnel with a vacuum-tight seal;
a plurality of areas of light transparent, electrically conductive material coated over the inner surface of said face plate, each of said areas being insulatingly spaced from the other areas and having a lead portion extending beneath the seal layer through said seal to the exterior of said envelope; and
a plurality of spaced connector strips of electrically conductive material coated on the outer surface of



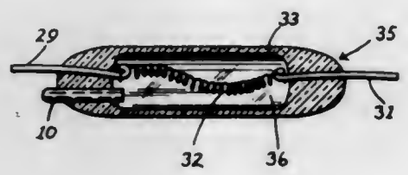
said funnel into electrical contact with different ones of the lead portions of said areas.

3,275,879

CAPSULATED BULB AND METHOD OF MAKING THE SAME

Philip C. Demarest, Pine Brook, Harry R. Foster, Montville, and Elmo E. Crump, West Caldwell, N.J., assignors to Ohmega Laboratories, Pine Brook, N.J., a corporation of New Jersey

Filed July 31, 1961, Ser. No. 128,245
1 Claim. (Cl. 313—317)



A capsulated bulb comprising: a substantially cylindrical glass wall pervious to light; a fine metal filament within said bulb; two separately-formed glass end members fused to said substantially cylindrical glass wall, one at each end, and each of said members having an axial thickness substantially greater than the thickness of said wall; two relatively heavy metal wires substantially parallel to the axis of said cylindrical wall, one of said wires extending through each of said end members and having an end of each of said relatively heavy wires electrically and mechanically attached to one end, respectively, of said filament to support said filament within the space of said bulb; a tube of fusible metal formed with a miniscule bore and hermetically sealed into one of said end members and extending substantially parallel to the axis of said bulb and spaced from said relatively heavy wire, with one end of said tube opening interiorly of said bulb to evacuate gas from said bulb, said bulb having a substantially gas-free interior.

3,275,880

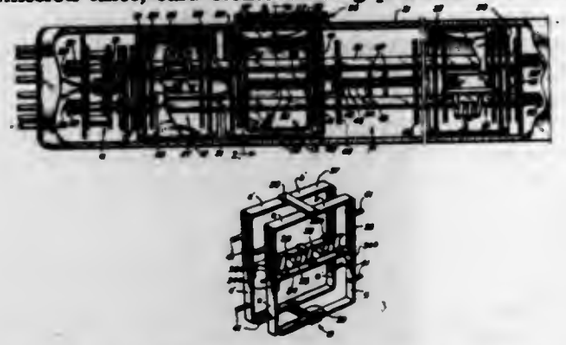
ELECTRON COUPLING SYSTEM, COUPLING THROUGH THE ENVELOPE WALL OF DISCHARGE DEVICE BY ELECTROMAGNETIC COUPLING

Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 21, 1962, Ser. No. 246,468
3 Claims. (Cl. 315—4)

1. An electron coupling system comprising:
an envelope of low magnetic loss material;
an electron source for projecting an electron beam along a predetermined path within said envelope;

a coupler having a predetermined reactance disposed in said envelope along said path for transferring energy of a predetermined frequency between said beam and said coupler;
a plurality of transmission lines each with one end electrically connected to said coupler, the other end of at least two of said lines terminating in a common inductive element thereby producing a magnetic field substantially stronger than elsewhere along said transmission lines, said element being positioned in close



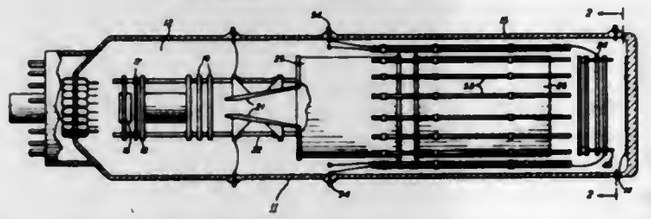
proximity to said envelope, and said transmission lines having respective lengths which produce an equivalent reactance at said ends connected to said coupler for placing said coupler in a resonant condition at said frequency;
and means having an inductive member situated outside of said envelope for coupling to said magnetic field of said common element for inductively transferring energy at said frequency between said common element and said inductive member through said envelope.

3,275,881

ELECTRON BEAM MODULATING DEVICE

Roger P. Hynes, Murray Hill, and Edward J. Walsh, Morris Plains, N.J., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 18, 1962, Ser. No. 247,442
12 Claims. (Cl. 315—13)



1. A cathode-ray tube comprising:
means for forming and projecting a ribbon electron beam;
a pair of deflecting plates for deflecting the beam;
an indicating screen;
a plurality of parallel dielectric rods between the plates and the screen and extending parallel with the direction of the beam deflection; and
four electrodes bonded lengthwise and in quadrature on each rod including a first electrode on each rod facing the deflecting plates, a second electrode on each rod facing the screen with the remaining electrodes being intermediate the first and second electrodes.

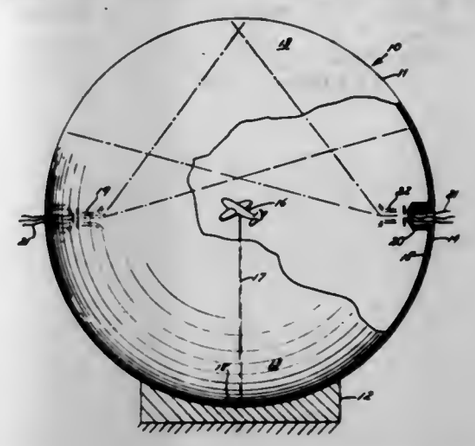
3,275,882

SPHERICAL TRANSPARENT TWO GUN CATHODE RAY TUBE

Milton Morse, 41 Honeck St., Fort Lee, N.J.

Filed May 24, 1963, Ser. No. 283,037
2 Claims. (Cl. 315—13)

1. A spherical oscilloscope device, including: a spherical transparent globe having inner and outer surfaces, a fluorescent coating applied to said inner surface in a sufficiently thin layer to be at least partially transparent when viewed from the outer surface of said globe, a plu-



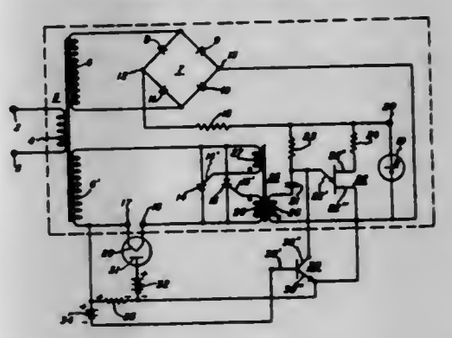
rality of electron guns mounted within said globe, each positioned to project a deflectable electron beam over mutually exclusive areas of said fluorescent coating.

3,275,883

EMISSION CURRENT REGULATOR FOR ION GAUGE

Robert L. Watters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 1, 1963, Ser. No. 320,654
3 Claims. (Cl. 315—106)

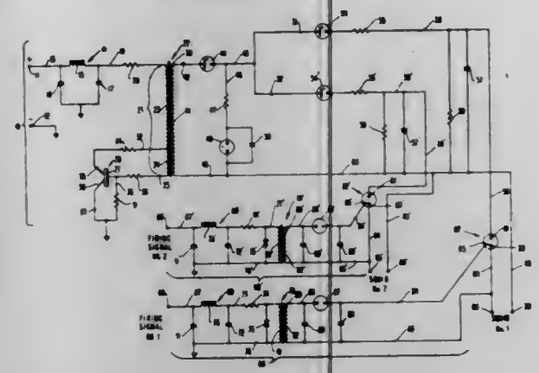


1. In a power supply for the filament of an ion gauge having a thermionic electron-emissive filament and an electron collector, said supply including capacitive means in the control circuit thereof and means for applying power to said filament during a portion of an alternating current power cycle that varies in the opposite direction as changes in the rate of charging of said capacitive means, the improvement of means for varying said rate of charging to effect substantially constant electron emission from said filament comprising: a source of substantially constant charging voltage connected to said capacitive means; a transistor having base, collector and emitter electrodes; means connecting said transistor collector and emitter electrodes in shunt with said capacitive means; a series loop network including said electron collector, a source of unidirectional voltage energizing said electron collector to a voltage relative to said filament at which it collects substantially all of the electrons from said filament, a resistor, and one terminal of said filament; and conductive means connecting said resistor and a source of constant voltage in series voltage-opposing relationship in the base-emitter circuit of said transistor, said source of constant voltage being connected to cause decreased conduction of said transistor and said resistor being connected such that the voltage generated therein by the flow of emission current therethrough increases conduction of said transistor.

3,275,884
ELECTRICAL APPARATUS FOR GENERATING CURRENT PULSES

Louis H. Segall, James C. Morrison, and James Knak, all of Sidney, N.Y., assignors to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware

Filed Sept. 21, 1961, Ser. No. 139,713
14 Claims. (Cl. 315—163)



1. In electrical apparatus for generating current pulses of spark intensity, the combination of an arming circuit and a triggering circuit controlling the discharge of the arming circuit, the arming circuit comprising a generator of direct current pulses, a first storage condenser connected to be charged by the said pulses in the arming circuit substantially to the potential of said pulses, a spark gap device, having a first, main discharge gap with a breakdown voltage value appreciably greater than the potential of said pulses, and a second triggering gap of smaller breakdown potential than the first gap and located in proximity to the first gap, and a discharge circuit connected to the main gap of the spark gap device and adapted to be connected to a load device operated by a current pulse of spark intensity, the triggering circuit being adapted to be connected to a source of current pulses and comprising a discriminating filter which passes only pulses of a predetermined character, a pulse voltage step-up transformer having a primary winding and a secondary winding, the primary winding being connected to be fed by filtered pulses of the triggering circuit, a second storage condenser connected to be charged by the secondary winding of the pulse transformer, and a circuit connecting the second storage condenser to the triggering gap of the spark gap device, the second storage condenser being adapted to be charged to a potential higher than the breakdown voltage of the triggering gap and thereafter to discharge through the triggering gap to initiate discharge of the first storage condenser through the main gap of the spark discharge device.

3,275,885
HIGH PRESSURE DISCHARGE LAMP WITH ELECTROLYSIS PREVENTING MEANS

John M. Pomfrett, Kirtland, Ohio, assignor to General Electric Company, a corporation of New York

Filed Apr. 7, 1965, Ser. No. 446,333
1 Claim. (Cl. 315—330)

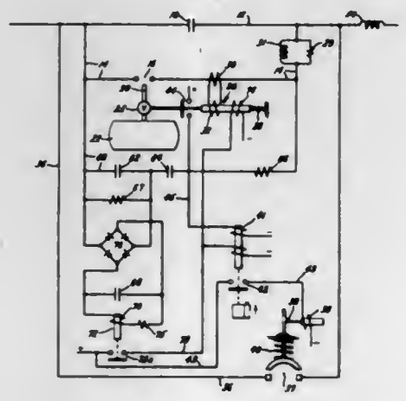


A discharge lamp comprising a vitreous outer jacket enclosing a quartz arc tube, said arc tube having a pair of main thermionic activated electrodes sealed therein at opposite ends, an ionizable filling within said arc tube including mercury and subject to convection effects during horizontal operation of said lamp, said main electrodes being provided with external connections through seals at opposite ends of said arc tube, and a pair of auxiliary tungsten wire starting electrodes located adjacent one of said main electrodes and extending approximately coextensive therewith on either side and provided with external connections through seals generally side-by-side with that of said adjacent main electrode, said auxiliary electrodes being connected together and joined to the main electrode at the opposite end of the arc tube through a current limiting resistor, whereby one of said electrodes is always located on or above the level of the horizontal plane through the adjacent main electrode irrespectively of the orientation of said lamp, said one electrode being sufficiently heated by the discharge to achieve at all times electron emission adequate to prevent electrolysis in the quartz in the vicinity of the seals.

3,275,886
INTERRUPTED ARC RESPONSIVE PROTECTIVE EQUIPMENT FOR SERIES CAPACITORS

Wilfred F. Skeats, Lansdowne, Pa., assignor to General Electric Company, a corporation of New York

Filed Apr. 13, 1964, Ser. No. 359,218
9 Claims. (Cl. 317—12)



1. In a protective arrangement for a series capacitor that comprises: (1) a gap device connected across the series capacitor and adapted to arc over when the voltage across said series capacitor reaches a first predetermined value, (2) blast valve means to cause a blast of dielectric fluid to flow through said gap device for terminating the flow of arcing current therethrough when the voltage across said series capacitor is maintained below a second predetermined level, and (3) blast valve control means actuatable in response to current flow through said gap device and effective while actuated to maintain said blast valve in an operated condition, the improvement comprising:

(a) seal-in means for maintaining said blast valve in an operated condition during a protracted period of intermittent arcing in which short current pulses flow through said gap device at intervals separated by no-current periods as long as several cycles in duration,

(b) said seal-in means comprising:

(i) a control circuit for said blast valve control means,

(ii) a control capacitor connected in said control circuit across said blast valve control means,

(iii) means normally effective while said gap device is non-conducting for holding the voltage across said control capacitor to a low value insufficient to cause actuation of said blast valve control means comprising a low impedance

connected in said control circuit across said control capacitor during charging of said control capacitor,

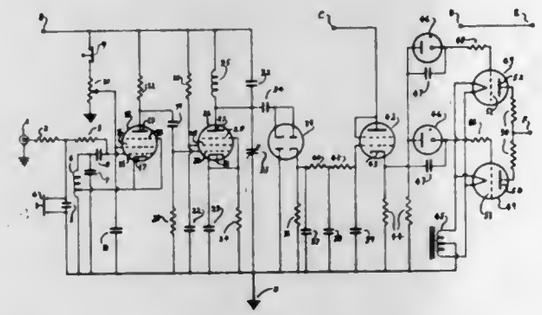
(iv) means for charging said control capacitor in response to arc-over of said gap device,

(v) means including a rectifier connected in said control circuit between said low impedance and said control capacitor for blocking discharge of said control capacitor through said low impedance, and for confining discharge of said control capacitor to a circuit through said blast valve control means, thus prolonging the period in which said blast valve control means is maintained in an actuated condition.

3,275,887
SAFETY MAGNET CONTROLLER

James F. Ellis, R.F.D. 2, Anderson County, Tenn.

Filed Aug. 12, 1963, Ser. No. 301,333
20 Claims. (Cl. 317—13)

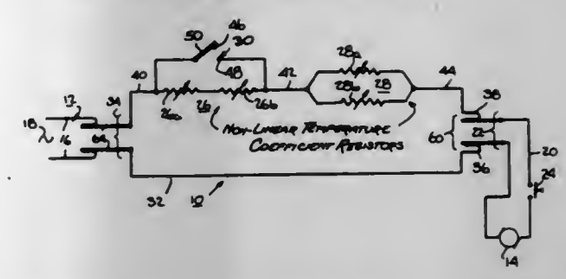


9. An electronic circuit for controlling a direct current in an inductive load, comprising in combination, an oscillator having a controlling input, means for connecting said controlling input to some external circuit yielding a primary controlling signal and thereby blocking said oscillator when the primary controlling signal reaches a pre-determined amplitude, a limiting amplifier stage coupled to an output of said oscillator in such manner as to preclude the possibility that said limiting amplifier might of itself act as an oscillator, a rectifier coupled to the output of said limiting amplifier and yielding an output upon receiving oscillating energy from said limiting amplifier, a filtering circuit receiving the rectified output of said rectifier and removing therefrom most of the frequency component of said oscillator but passing on the true amplitude of said rectified output as well as any rapid changes thereof and thus forming a first controlling bias, means receiving said first controlling bias and yielding therefrom a second controlling bias less in voltage by a fixed amount from that of said first controlling bias so that said second controlling bias will reverse polarity upon sufficient reduction in amplitude of said first controlling bias, an electronic switching component of non-mechanical variety having both a controlling element and current-carrying elements, said second controlling bias being applied to said controlling element, said current-carrying elements being suitable for series connection between a source of direct current electric power and the said inductive load and having capability to withstand such voltage surges as may be generated upon sudden release of the inductive load, said switching component being such that said controlling element must be continually excited with said second controlling bias of a particular polarity in order to maintain said current-carrying elements in an "on" condition, and that upon reversal of polarity of said second controlling bias, as by controlled oscillator blockage and subsequent effects, said current-carrying elements will revert to and be held in an "off" condition.

3,275,888
POWER LINE PROTECTING SURGE CURRENT LIMITER FOR SINGLE-PHASE ELECTRIC MOTORS

W. Robert Dresser, Trumbull, Conn., assignor to Barlow Controls, Inc., Stamford, Conn., a corporation of New York

Filed Sept. 12, 1963, Ser. No. 308,553
11 Claims. (Cl. 317—13)



1. A power line protecting surge current limiter for single-phase electric motors, said limiter comprising:

(a) a current limiting resistor having a substantial negative coefficient of resistance and a resistance value at room temperature large enough to limit current flow to at least approximately the rated current capacity of the power line,

(b) a two-branch circuit adapted to be connected between a power line and a single-phase electric motor,

(c) said current limiting resistor being series interposed in one of said branches so that it will be heated upon passage of current therethrough,

(d) neither current branch having therein a resistor with a positive temperature coefficient of resistance,

(e) a normally open switch connected in shunt with said resistor,

(f) a heat responsive element controlling the normally open switch and operable to close the switch when heated for a period of time sufficient to start the motor when the motor is not in blocked rotor condition,

(g) said current limiting resistor being disposed in heat exchange relationship with the heat responsive element so that when potential is supplied by the power line the current limiting resistor first will maximally limit the current supplied to the motor, then the resistance value of the current limiting resistor will decrease due to its temperature increase while the effective resistance of the motor increases, and then the heat generated by the current limiting resistor will operate the heat sensitive element to close the normally open switch and shunt the current limiting resistor after the motor has started, and

(h) resistance holding means connected in said circuit to generate heat when the switch is closed in order to maintain the switch closed.

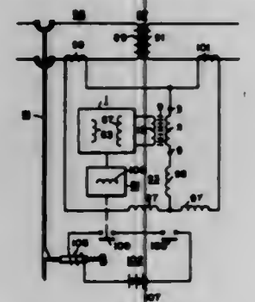
3,275,889
PROTECTION NETWORK

Robert L. Sharp, Pequannock, and William E. Glassburn, Mountainside, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Original application June 13, 1958, Ser. No. 741,854, now Patent No. 3,144,590, dated Aug. 11, 1964. Divided and this application July 15, 1963, Ser. No. 295,105
18 Claims. (Cl. 317—14)

8. In a relaying device, first and second input circuits, first and second relay devices, each said device including operating and a restraining winding means and a switch actuated as a function of the difference in the energization of its said winding means, means connecting said restraining winding means of said first device to at least one of said input circuits for energization in accordance with the magnitude of an electrical quantity in said one

input circuit, means connecting said operating winding means of said first device to both of said input circuits for energization in accordance with the difference in said magnitudes of said electrical quantity in said input circuits, means including filter means connecting said restraining winding means and said operating winding means of said second device to said input circuits for energization in accordance with the difference in magnitudes of an alternating electrical quantity appearing at said input circuits, said filter means being effective to at-



tenuate the passage of first portions of said alternating quantity to said restraining winding means, said first portions being those which occur at all frequencies other than those which are substantially of a selected frequency whereby said restraining winding means is energized solely by second portions of said quantity which occur at frequencies substantially at said selected frequency, said filter means being effective to attenuate the passage of said second portions of said alternating quantity to said operating winding means whereby said operating winding means is energized solely with said first portions of said quantity.

3,275,890

TRANSFORMERS EQUIPPED WITH CIRCUIT INTERRUPTER

Charles J. Carlson, Jr., and Donald J. Farmer, Pine Bluff, Ark., assignors to Central Transformer Corporation, Pine Bluff, Ark., a corporation of Arkansas

Filed Aug. 20, 1963, Ser. No. 303,368
1 Claim. (Cl. 317—15)

In combination with a high voltage loop circuit having a plurality of terminals of the same polarity, an electric transformer having a pair of terminals electrically connected respectively with two of said loop circuit terminals, a fluid-tight tank containing a fluid having dielectric properties, said tank having an aperture therein and a mounting pad surrounding said aperture, electric transformer components including a primary winding and a secondary winding submerged in said fluid within said tank, said primary winding having a terminal selectively connectible with and disconnectible from either or both of said pair of terminals, a fluid-tight housing connected to said tank in alignment with said aperture, said housing including:

(a) a hollow body of insulating material,

(b) a mounting plate of insulating material closing one end of said hollow body and secured thereto in fluid-sealing relationship,

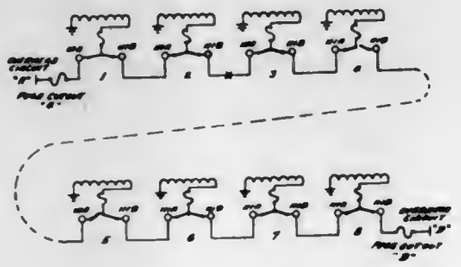
(c) means for securing said mounting plate on said mounting pad in fluid-sealing relationship about said aperture,

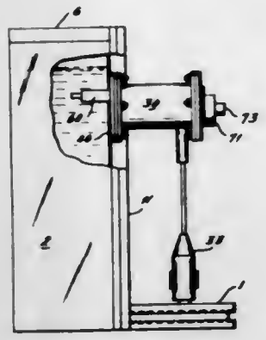
(d) a face plate of insulating material secured in fluid-sealing relationship to the end of said hollow body opposite said mounting plate,

(e) said fluid-tight housing being charged with dielectric fluid different from that in said tank and having both dielectric properties and arc-suppressing properties,

said housing containing a pair of independently operable switches enveloped by said dielectric fluid, said switches having a common stationary contact, a conductor extending through said mounting plate electrically connecting said common stationary contact with said primary winding terminal, a movable contact member for each switch, a pair of conductors extending through said hollow body electrically connecting the movable contact member of each switch respectively with one of said pair of terminals whereby:

(1) when both of said switches are in closed circuit position, a series circuit relationship is established between said pair of terminals so that said switches collectively constitute a series connection between two of the terminals in said high voltage loop circuit,





(2) when either of said switches is in closed circuit position, the primary of said transformer is energized from the corresponding terminal of said high voltage loop circuit, and

(3) when one of said switches is in open circuit position, said high voltage loop circuit is interrupted at the open one of said switches,

and means on the exterior of said face plate for moving said switches independently and selectively into and out of closed circuit position.

3,275,891

TRIGGERED ARC GAP OPERABLE OVER A WIDE RANGE OF SUPPLY VOLTAGE VARIATIONS

Joseph P. Swanson, Portola Valley, Calif., assignor, by mesne assignments, to Energy Systems, Inc., Palo Alto, Calif., a corporation of California

Filed Aug. 14, 1962, Ser. No. 216,864
7 Claims. (Cl. 317—16)

1. A system for protecting a load circuit from a high voltage source when a fault occurs in the load circuit, comprising:

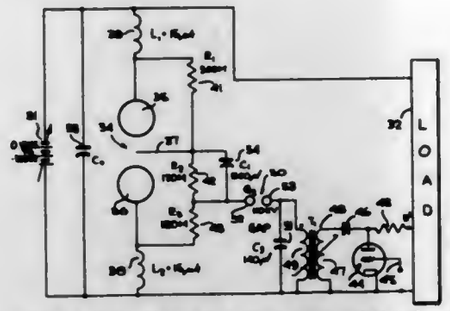
an arc gap discharge arrangement including a pair of opposed spherical electrodes and an intermediate needle electrode;

means for connecting said opposed spherical electrodes to opposite terminals of said source for causing an electric field to be produced between said opposed electrodes;

said connecting means comprising inductance means serially connected between each of said opposed electrodes and a respective terminal of said source;

said intermediate electrode being physically disposed only on an equipotential surface of said electric field;

means for normally maintaining said intermediate electrode at the potential of said equipotential surface whereby said electric field between said opposed electrode is not disturbed;



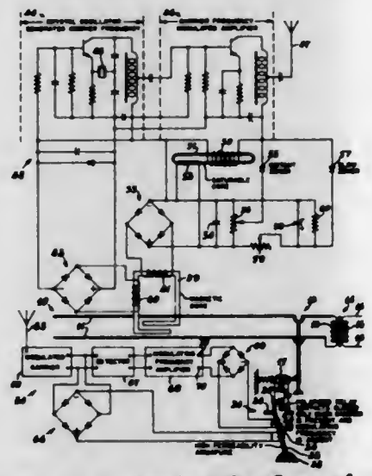
trigger means for changing the potential of said intermediate electrode so as to distort said electric field when a fault occurs in the load circuit, said trigger means including a voltage pulse generating means having a supply of power independent of said high voltage source, whereby said protection system is operative over a wide range of voltage variations of said high voltage source.

3,275,892

SYSTEM FOR MEASURING CURRENT FLOW IN HIGH VOLTAGE ELECTRIC POWER LINES FOR RELAYING AND OTHER PURPOSES

Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill.

Filed June 7, 1963, Ser. No. 286,345
25 Claims. (Cl. 317—60)



1. Apparatus for measuring the flow of current in a high voltage electric power transmission line conductor and transmitting a corresponding signal to a remote point comprising:

(a) a transmitter operating at the potential of said conductor and arranged and adapted to transmit a carrier frequency,

(b) a modulating circuit connected to said transmitter for normally continuously applying a modulating frequency to said carrier frequency,

(c) means responsive to current flow in said conductor for varying the frequency of said modulating frequency as a function of the magnitude of such current flow,

(d) a receiver at said remote point arranged and adapted to receive said carrier frequency modulated by said modulating frequency, and

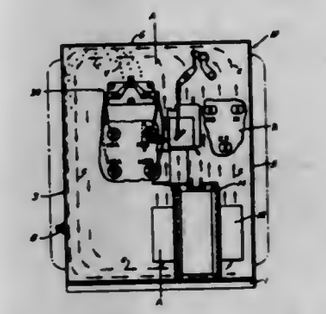
(e) means responsive to the received modulating frequency.

3,275,893

GAS COOLED ELECTRICAL EQUIPMENT FOR DISTRIBUTION SYSTEMS

Webb R. Phillips, James L. Gaddy, Jr., and Reuben E. Russell, Jr., Pine Bluff, Ark., assignors to Central Transformer Corporation, Pine Bluff, Ark., a corporation of Arkansas

Filed May 31, 1963, Ser. No. 284,496
4 Claims. (Cl. 317—100)



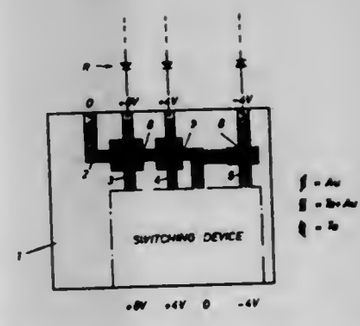
1. In an electric power distribution system, the combination comprising, a transformer having a primary winding, a circuit interrupter having at least two poles, one of said poles being connected to said primary winding, a high voltage supply conductor connected to another pole of said circuit interrupter, and a gas-filled housing surrounding said transformer and circuit interrupter, said housing having a vertical dimension substantially greater than the vertical dimension of said transformer and a horizontal dimension substantially greater than the horizontal dimension of said transformer, said transformer being disposed within said housing adjacent the lower extremity of the vertical dimension of said housing and near one extremity of the horizontal dimension thereof, and said circuit interrupter being disposed within said housing near the opposite extremities of said vertical and horizontal dimensions, whereby gas convection currents induced by heat generated in said transformer have a circulation path downwardly past said circuit interrupter and upwardly past said transformer, in succession, to cool said transformer.

3,275,894

THIN-FILM SWITCHING CIRCUIT

Hans Reiner, Gerlingen, near Stuttgart, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 10, 1964, Ser. No. 374,129
Claims priority, application Germany, June 14, 1963, St 20,732
3 Claims. (Cl. 317—101)



1. A thin-film switching circuit for minimizing the effects of inductance in lead-in wires comprising:

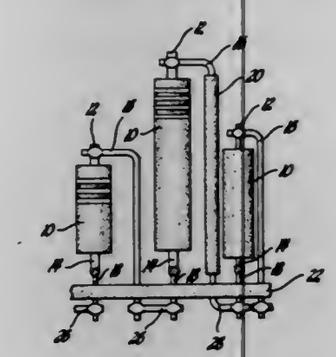
a board of insulating material,

a first conductor on said board including the combination of a layer of material having good conductivity and a layer of material of poor conductivity,

said material of poor conductivity being oxidized in part to form a dielectric layer,

a second conductor on said board composed of a good conductor arranged to cross said first conductor opposite the dielectric layer,
said first and second conductors forming blocking capacitors where they cross over the dielectric layers,
switching means on said board,
means for connecting to positive, negative and zero potentials,
said first conductor connecting between a positive potential and said switching means, and
said second conductor connecting between said zero potential and said switching means.

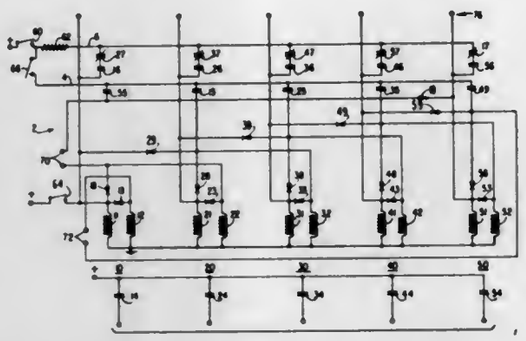
3,275,895
ELECTRONIC ASSEMBLY WITH BUTT WELDED AUXILIARY STANDARD LEADS SUPPORTING COMPONENTS
James H. Flaherty, Hales Corners, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 11, 1964, Ser. No. 388,859
2 Claims. (Cl. 317—101)



1. An electronic assembly including a group of substantially cylindrical components each having leads extending axially therefrom in opposite directions, auxiliary leads welded to the first mentioned leads formed to extend in the same direction parallel to the axis of the component, at least one of the auxiliary leads for each component being butt welded to its corresponding first mentioned lead, an apertured support member, the free ends of the auxiliary leads extending through the apertured member to support and locate the components, and electrical conductor members welded to the auxiliary leads to form an electronic assembly, the auxiliary leads all being of the same diameter and composition to facilitate welding thereof to said conductor members.

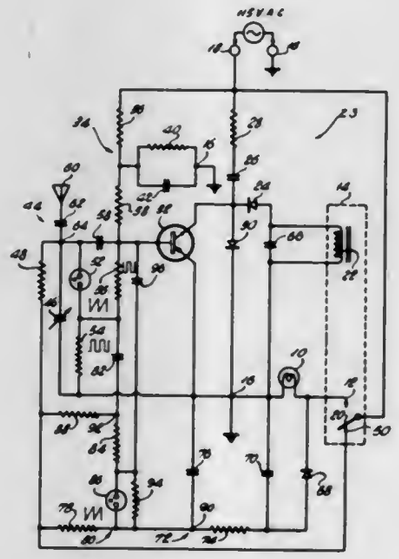
3,275,896
SEQUENTIAL COUNTING CIRCUIT USING DIFFERENTIALLY OPERATED RELAYS
Wyman L. Deeg, Glenview, Ill., assignor to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 21, 1964, Ser. No. 361,598
9 Claims. (Cl. 317—140)

1. A counting circuit operated by a series of input signals comprising a plurality of counting stages arranged in a counting sequence, each of the stages including a pair of windings providing oppositely poled flux fields of substantially the same value and switching means operated by the application of the flux field resulting from the energization of one winding, a source of input signals, circuit means connected between the signal source and the stages for applying successive input signals to the windings in consecutive pairs of adjacent stages in the counting sequence, said circuit means including the switching means in the adjacent stage lower in the counting sequence for applying an input signal to one winding in one stage in the pair to operate its associated switching means and applying an input signal to both of the windings in the other stage of the pair to inhibit operation of the switching means in this other stage, said circuit means also including a holding circuit for each of the stages including an



energizing circuit connected to one of the windings in each stage through the switching means in the next highest stage in the counting sequence, and start circuit means connected to one winding in one of the stages to operate this one stage to prepare the counting circuit for operation.

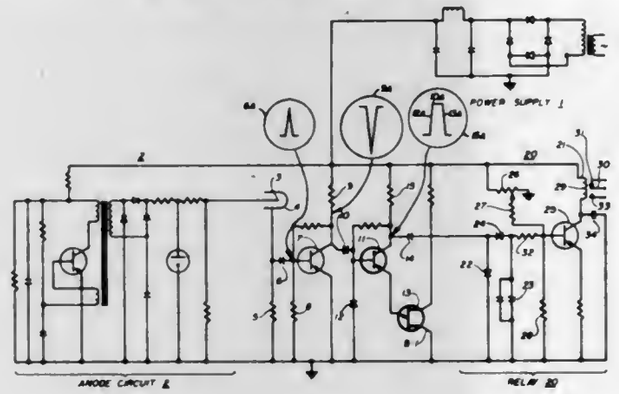
3,275,897
TOUCH CONTROL CIRCUIT
Carl E. Atkins, Montclair, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Continuation of application Ser. No. 277,888, May 3, 1963. This application June 22, 1965, Ser. No. 469,050
4 Claims. (Cl. 317—146)



1. In a touch responsive circuit of the type having a switching circuit which in response to controlling signals energizes a relay to position the armature of the relay in a first position and deenergizes the relay to position the armature of the relay in a second position, the improvement comprising:
(a) an electric signal means including an oscillator coupled to the switching circuit providing a series of first signals to the switching circuit when the armature is in the first position to keep the relay energized and providing a series of second signals to the switching circuit when the armature is in the second position to keep the relay deenergized;

(b) a touch responsive means coupled to the oscillator of the electric signal means which while touched when the relay is in the first position and controlled by the series of first signals will deenergize the relay and which while touched when the relay is in the second position and controlled by the series of second signals will energize the relay;
(c) means coupled to the switching circuit and operative when the relay armature is in the first position for keeping the relay armature in the first position for a period after the relay armature is initially positioned in the first position irrespective of whether the touch responsive means is touched or not; and
(d) means coupled to the switching circuit and including a transition oscillator for keeping the relay in the second position for a period after the relay armature is initially positioned in the second position, irrespective of whether the touch responsive means is touched or not.

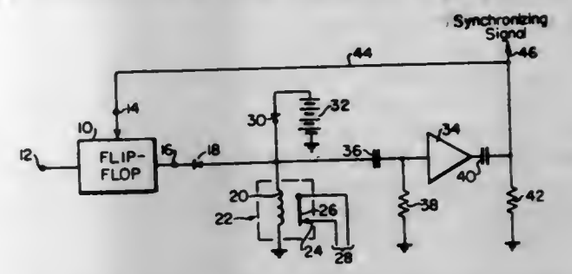
3,275,898
VOLTAGE CONTROL CIRCUIT FOR CONVERTING IRREGULAR VOLTAGE SPIKES TO PULSES OF PREDETERMINED AMPLITUDE AND DURATION
John B. Rosso and Donald E. Seaver, Tulsa, Okla., assignors to National Tank Company, Tulsa, Okla., a corporation of Nevada
Filed July 10, 1963, Ser. No. 294,014
4 Claims. (Cl. 317—148.5)



1. A circuit for producing a voltage pulse, including,
a source of a voltage pulse of very short duration,
a capacitor connected by a first of its plates to the source,
a triode type of transistor connected to the second plate of the capacitor at its base,
a diode connected to the base of the transistor so as to function as a discharge path to ground for the capacitor,
a unijunction transistor connected between the emitter of the triode transistor and ground,
a resistance of predetermined value connected to the collector of the triode transistor,
and a relay circuit connected between the junction of the resistance and the collector and a source of low voltage power to receive the output voltage pulse produced by the foregoing circuit.

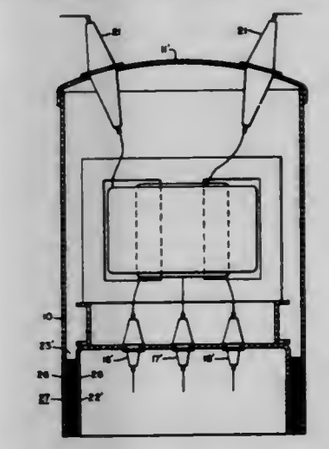
3,275,899
RELAY CONTROL CIRCUIT
Nicholas De Wolf, Boston, Mass., assignor to Teradyne, Inc., Boston, Mass., a corporation of Massachusetts
Filed Sept. 9, 1963, Ser. No. 307,519
7 Claims. (Cl. 317—148.5)

1. A circuit for providing a pulse of electrical energy which is substantially coincident with the first movement of the armature of a relay comprising, in combination, a relay, said relay having an inductive coil and an armature, means for applying a control signal to said relay coil to cause said relay to change state, means responsive to the induced voltage pulse appearing across said relay



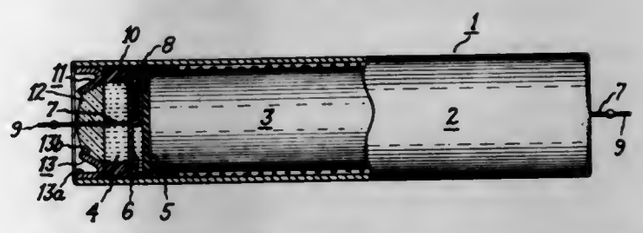
coil when the armature of said relay begins to move for generating said pulse, said last mentioned means including in series relationship, a first differentiating circuit, a amplifier and a second differentiating circuit.

3,275,900
CAPACITOR-TRANSFORMER COMBINATION
Merrill G. Leonard, Brookfield Township, Trumbull County, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 3, 1963, Ser. No. 277,945
3 Claims. (Cl. 317—157.62)



1. A capacitor-transformer combination comprising an enclosure including a tank and a cover for the tank, a transformer core within the enclosure, transformer windings on the core, said tank having a generally annular recess at the bottom thereof, a generally annular capacitor disposed in said recess, and said capacitor being connected in circuit relation with one of said transformer windings.

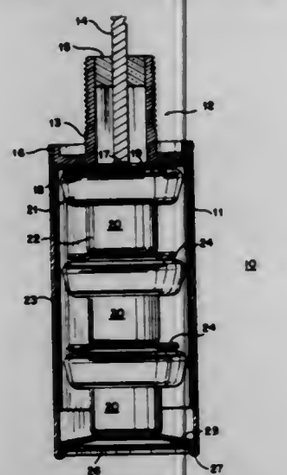
3,275,901
SEALED ELECTRICAL ASSEMBLY
Robert B. Merritt, Daytona Beach, Fla., and Raymond M. Trewhella, Irmo, S.C., assignors to General Electric Company, a corporation of New York
Filed Mar. 14, 1963, Ser. No. 265,163
9 Claims. (Cl. 317—230)



1. A hermetically sealed electrical assembly comprising, in combination, a casing containing an electrolyte and an electrical component immersed therein, said casing having a terminal lead extending outwardly through said

opening and composed of a film-forming metal wire having a dielectric oxide film formed thereon, and a closure hermetically sealing said opening and electrically insulating said terminal lead from said casing, said closure comprising metal ring means joined to said casing and having glass material retained therein in fused sealing relation with said ring means and with said terminal lead passing therethrough, said glass material and said terminal lead having substantially matching coefficients of thermal expansion, and said ring means having a coefficient of thermal expansion at least substantially equal to that of said glass material, said glass material having the approximate composition of 35% BaO, 25% Al_2O_3, 35–40% B_2O_3, and 0–5% CeO_2.

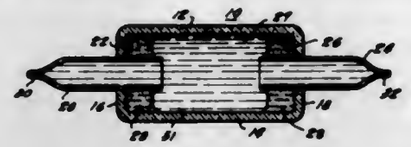
3,275,902
SEALED ELECTROLYTIC CAPACITOR IN HERMETICALLY SEALED CASE
John W. McHugh, Fillmore, and Ronald A. Baker, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,442
12 Claims. (Cl. 317—230)



1. In a hermetically sealed capacitor, a capacitor cell, having a head of one polarity and a container of the other, disposed in a case comprising first and second closed openings, a pressure responsive insulative seal mechanically securing said head in closing engagement with the container, insulative means for isolating said cell from the case, hermetically sealed means adjacent said head for closing said first opening of said case, said sealed means including an insulated terminal electrically connected with the head of said cell, a closure member electrically connected to the container of said cell and hermetically closing the second opening of said case, and pre-load means disposed between the container of the cell and said closure member for exerting a sealing force on the cell, the location of said closure member being selectable for controlling the magnitude of said force.

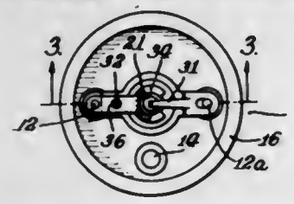
3,275,903
ELECTROCHEMICAL COULOMETER AND METHOD
John J. Banewicz, Dallas, and Gary R. Argue and Richard F. Stewart, Richardson, Tex., assignors, by mesne assignments, to Self-Organizing Systems, Inc., Dallas, Tex., a corporation of Texas
Filed Aug. 3, 1962, Ser. No. 214,758
14 Claims. (Cl. 317—231)

1. An electrochemical coulometer of the type that functions by electrolytic transfer of a measured species in a reversible redox system that comprises two spaced apart compartments, each of said compartments opening into an enclosed area, each of said two spaced apart compartments containing a solution of the measured species in a solvent, the width of each of said compartments being sufficiently small that the solution contained therein is retained in said compartments by capillary forces, a conductive liquid immiscible with said solvent filling said enclosed area and any portion of said two compartments that does not contain said solution, the solubility of said species being substantially less in said conductive liquid



than in said solvent whereby said conductive liquid provides both a diffusion barrier and a conductive path between said compartments, a first electrode contacting said conductive liquid and the solution contained in one of said compartments, a second electrode contacting said conductive liquid and the solution contained in the other of said compartments, and at least one sealable opening for communicating with said enclosed area.

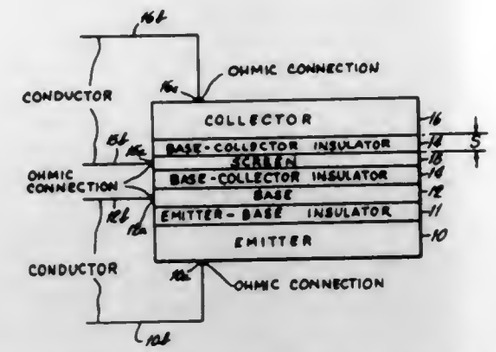
3,275,904
SEMICONDUCTOR DEVICE
Warren H. Parker, Phoenix, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed June 26, 1961, Ser. No. 119,731
3 Claims. (Cl. 317—234)



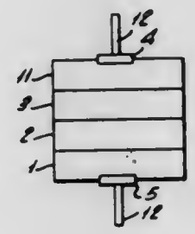
1. In a semiconductor device having a base support structure with a pair of conductor members protruding from one side of said structure, and a semiconductor die unit supported by said structure and positioned between said conductor members, the combination including a first connector member making a connection to the semiconductor die unit and electrically connected to one of said conductor members, a connector part derived from said first connector member and secured to the other of said conductor members, said first connector member and said connector part being physically and electrically separate from each other in the final device but extending in a straight line between said conductor members and initially being one piece to facilitate the alignment of said first connector member relative to said semiconductor die unit and said base support structure in the manufacture of said device, a second connector member electrically connected to said other conductor member and to said semiconductor die unit, said second connector member and said connector part having portions in overlapping relationship relative to each other with means interlocking the same to facilitate the alignment of said second connector member relative to said semiconductor die unit and said base support structure in the manufacture of said device, and solder joints connecting said first and second connector members to the respective conductor member.

3,275,905
THIN FILM TETRODE
Solomon R. Pollack, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,607
11 Claims. (Cl. 317—234)

1. A thin film tunnel emission device comprising a first electrically conductive metallic film, a second electrically insulating film in contact with said first film, a third electrically conductive metallic film in contact with said second film, a fourth electrically insulating film in contact with said third film, a fifth electrically conductive metallic film inserted or sandwiched within said fourth film such that said fifth film is in contact on both sides with said fourth film, a sixth electrically conductive metallic film in contact with said fourth film and an ohmic connection provided to each of said first, third, fifth and sixth electrically conductive metallic films.



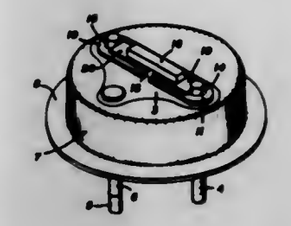
3,275,906
MULTIPLE HETERO-LAYER COMPOSITE SEMICONDUCTOR DEVICE
Yasuo Matsukura and Jyoji Oda, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Aug. 14, 1963, Ser. No. 302,063
Claims priority, application Japan, Aug. 20, 1962, 37/35,895
2 Claims. (Cl. 317—234)



1. In a semiconductor device having a plurality of layers of semiconductor material produced by the epitaxial growth method and in which contiguous layers are of opposite conductivity type; an intermediate layer in said device composed of alloyed Si and Ge of one conductivity type, said intermediate layer being bounded on both sides by layers of Si of a conductivity type opposite said one type, and a further layer of alloyed Ge and Si contiguous one of said opposite conductivity layers of Si.

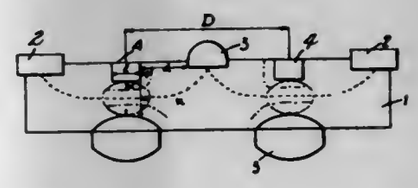
2. In a semiconductor device having a plurality of layers of semiconductor material produced by the epitaxial growth method; an intermediate layer in said device composed of alloyed Si and Ge, said layer having a gradually increasing concentration of Ge in the direction of layer growth, and said layer being bounded on the side of least Ge concentration by an opposite conductivity layer of Si, and on the side of greatest Ge concentration by an opposite conductivity layer comprising Ge in a concentration equal to the concentration of Ge in the intermediate layer at the adjacent boundary.

3,275,907
SEMICONDUCTOR DEVICE MOUNTING WITH EMBEDDED THERMAL MATCHING CONTACT MEMBERS
William Blackford, Fayetteville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 5, 1961, Ser. No. 100,899
2 Claims. (Cl. 317—234)



1. A semiconductor device comprising a generally planar insulating base member having a pair of leads extending therethrough substantially perpendicular to the major faces of said base member, a pair of respective planar conductive members adjacent the respective leads, each conductive member including a metal plate embedded in said base member and providing a planar conductive surface elevated from the surface of said base member, said conductive members being in insulated relationship with respect to one another and each having a portion closely spaced from the respective lead to which it is adjacent, a bar of semiconductor material having a pair of end portions, one of said end portions being conductively secured to one of said conductive members by a first mass of solder which extends to and forms a conductive connection with one of said leads, and the other of said end portions being conductively secured to the other of said conductive members by a second mass of solder which extends to and forms a conductive connection with the other of said leads.

3,275,908
FIELD-EFFECT TRANSISTOR DEVICES
Jean Grosvalet, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Mar. 8, 1963, Ser. No. 263,916
Claims priority, application France, Mar. 12, 1962, 890,695
3 Claims. (Cl. 317—235)

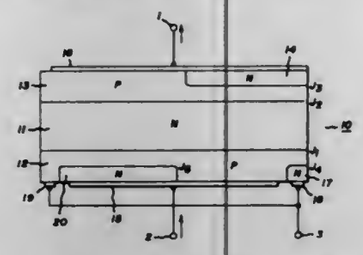


1. A field effect transistor comprising a semiconductor body of one conductivity type having first and second parallel planar sides, an annular ring of opposite conductivity type recessed within the plane of said first side, source and drain electrodes mounted on said first side, concentrically disposed about said ring, a gate electrode mounted on said ring for providing space charge modulation within said semiconductor body, a region of opposite conductivity type formed on said second side to provide for space charge bias control, and wherein the spacing between said drain and gate electrodes is greater than half the width of the semiconductor body between the areas of opposite conductivity type.

3,275,909
SEMICONDUCTOR SWITCH

Frank W. Gutzwiller, Auburn, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 19, 1963, Ser. No. 331,776
4 Claims. (Cl. 317—235)

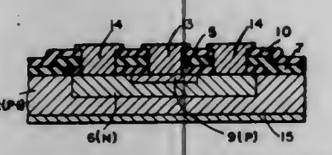


1. A bilateral controllable semiconductor switching device comprising a body of semiconductor material including five layers of one and the opposite conductivity types, layers of one conductivity type being interleaved with layers of the opposite conductivity type forming a plurality of P–N junctions therein, a first main current carrying electrode in low resistance ohmic contact with a surface of an external layer of said body and an exposed surface of an adjacent intermediate layer, a second main current carrying electrode in low resistance ohmic contact with a surface of the other external layer of said body and an exposed surface of an adjacent intermediate layer, a gate region of the same conductivity type as said external layers of said body adjacent said intermediate layer contacted by said first main current carrying electrode, and gating electrode means in ohmic contact with said gate region and with the adjacent intermediate layer to provide for switching the semiconductor device between high and low impedance states for current through said device in opposite senses.

3,275,910
PLANAR TRANSISTOR WITH A RELATIVE HIGHER-RESISTIVITY BASE REGION

Alvin B. Phillips, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 18, 1963, Ser. No. 252,341
3 Claims. (Cl. 317—235)

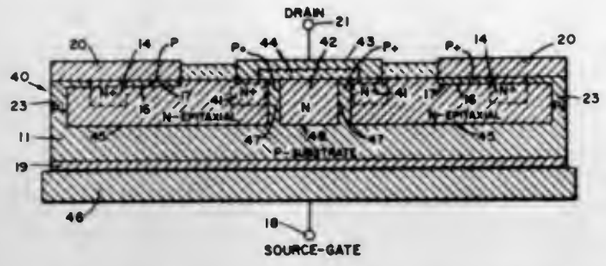


3. An improved transistor comprising a semiconductor crystal element of relatively low resistivity material, a layer of semiconductor material of substantially uniform thickness on said crystal element having a plane surface, a thin emitter region of relatively low resistivity material extending into said layer from said plane surface and defining in said layer an emitter junction extending to said surface and surrounding said emitter region at said surface, a base region in said layer surrounding said emitter region at said surface and bounded by a smooth, regular and abrupt collector junction formed, at the deepest part thereof, between said layer and said crystal element and extending through said layer to said plane surface, a third region extending from said surface completely through said layer and defining the portion of said collector junction extending through said layer, and a protective coating of insulating material completely covering said emitter and collector junctions at said surface, the material in said base region having a relatively high resistivity value for increasing the avalanche breakdown voltage of said junctions, with the low resistivity of the material in said emitter region and that in said crystal element decreasing the saturation voltage of the transistor.

3,275,911
SEMICONDUCTOR CURRENT LIMITER

George C. Onodera, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Nov. 6, 1963, Ser. No. 321,852
9 Claims. (Cl. 317—235)

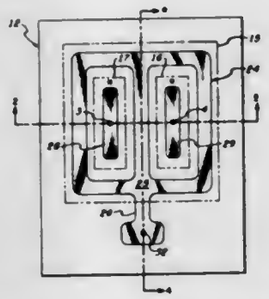


1. A field effect semiconductor device including in combination, a semiconductor crystal element of a selected conductivity type, a first semiconductor layer on said crystal element of a conductivity type opposite to said selected conducting type and having portions which form first and second channel regions which merge together, said first layer having portions of said opposite conductivity type forming a source connection to said first channel region and a drain connection to said second channel region, said channel regions and said crystal element forming a first rectifying junction therebetween, a second semiconductor layer of said selected conductivity type bounding only said first channel region on the side thereof opposite said crystal to form a second rectifying junction, said crystal element forming a first gate coupled to said first and second channel regions and said second layer forming a second gate coupled only to said first channel region, said first and second channel regions having thickness and length dimensions related to each other so that the pinch-off current and voltage values of said second channel region exceed those of said first channel region.

3,275,912
MICROELECTRONIC CHOPPER CIRCUIT HAVING SYMMETRICAL BASE CURRENT FEED

Hans J. Kunz, Raleigh, N.C., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Dec. 17, 1963, Ser. No. 331,164
5 Claims. (Cl. 317—235)



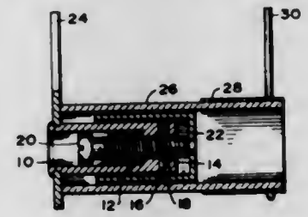
1. A microelectronic device comprising
a pair of transistors formed on a single wafer of semiconductive material, each of said transistors having a base and two additional electrodes,
the bases of said transistors being connected together through said wafer,
one of said additional electrodes of one of said transistors being connected through said wafer to the electrode of the other of said transistors corresponding to said one electrode,

the other of said additional electrodes of one of said transistors and the electrode of the other of said transistors corresponding thereto being formed on the same surface of said wafer within an area which is common to said bases of both transistors,
a base ohmic contact on said area completely surrounding the other electrode and said electrode corresponding thereto,
said contact having a central portion passing between said other electrode and said electrode corresponding thereto, and
a tab connected to said central portion of said contact, said tab being isolated from said wafer by a layer of insulating material,
one end of said tab being relatively narrow with respect to the other end thereof,
said relatively narrow end being connected to said central portion of said contact.

3,275,913
VARIABLE CAPACITOR

Clayton H. Blanchard, Horseheads, N.Y., and Keith S. McIntosh, Derrick City, Pa., assignors to LRC Electronics Incorporated, Horseheads, N.Y., a corporation of New York

Filed Nov. 20, 1964, Ser. No. 412,755
9 Claims. (Cl. 317—249)



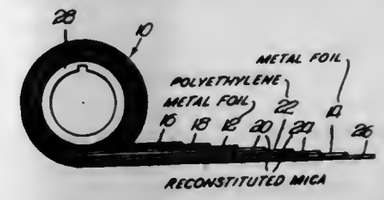
1. A trimmer capacitor comprising
a hollow conductive tubular member terminated at one end by a flat threaded transverse portion, the other end of said member being open,
a plate in a spaced relationship with said transverse portion along the longitudinal axis thereof integrally connected thereto by means of a post at one edge of said plate and transverse portion, said plate having threads in register with the threads in said transverse portion,
an axially movable core closely surrounding said tubular member,
means disposed between said transverse portion and said plate for exerting a force on said plate to cause it to flex about said post,
a screw threaded through said transverse portion and said plate fixedly connected to said core,
a tube of dielectric material closely surrounding said core attached to said tubular member at said other end thereof, and
a conductive coating on the outer surface of said tube for a portion of its length.

3,275,914
ELECTRIC CAPACITOR HAVING DIELECTRIC SPACER OF RECONSTITUTED MICA INTERLEAVED WITH SOLID PLASTIC

Paul S. Hoffman and William M. King, Springfield, Ill., assignors to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware

Filed Sept. 19, 1963, Ser. No. 309,993
2 Claims. (Cl. 317—258)

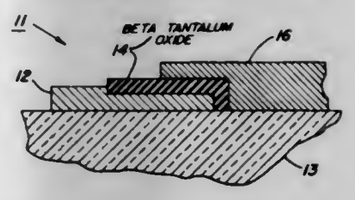
2. An electric capacitor having high Q and long life at high A.C. voltage operating levels and discharge frequencies comprising at least a pair of metal foil armatures, an interposed dielectric spacer therebetween including at least one sheet of solid dielectric material selected from the group consisting of irradiated polyethylene, polyethylene, polypropylene, and polytetrafluoroethylene and a layer of highly porous reconstituted mica overlying each of the two sides of solid dielectric sheet material and substantially coextensive therewith, said assembly being impregnated with castor oil, said webbing of reconstituted mica accommodating thorough impregnation by the castor oil to fill all voids in the assembly and holding the castor oil at the foil and film surfaces, said capacitor having good corona resistance, high Q, and high voltage strength.



3,275,915
BETA TANTALUM THIN-FILM CAPACITORS

Alfred J. Harendza-Harinxma, Trenton, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 17, 1965, Ser. No. 480,383
5 Claims. (Cl. 317—258)

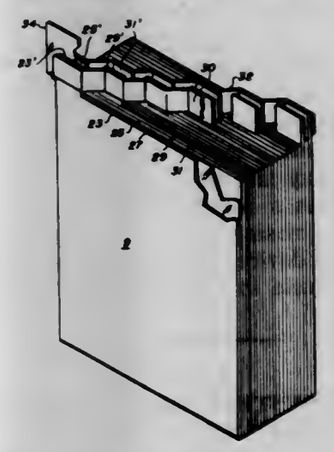


1. A thin-film capacitor comprising:
a thin-film electrode supported on a nonconductive substrate,
a dielectric film of beta tantalum oxide covering a selected area of the electrode, and
a counter electrode opposing the electrode and separated therefrom by the dielectric film.

3,275,916
HIGH Q POWER CAPACITOR

James A. Phillips and Alfred E. Schofield, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission

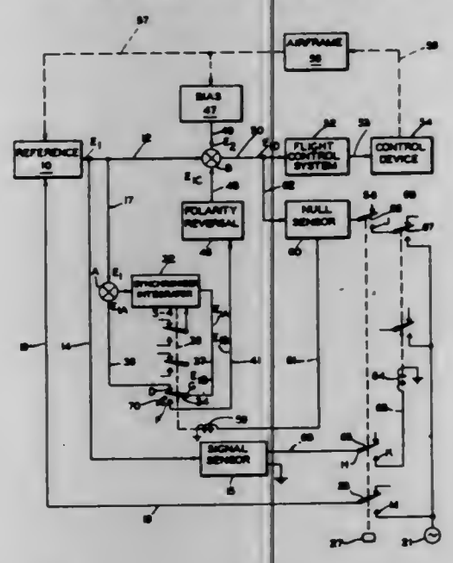
Filed Feb. 15, 1960, Ser. No. 8,892
4 Claims. (Cl. 317—260)



4. A capacitor comprising a plurality of alternating dielectric and metallic sheets, said metallic sheets each having a projecting tab extending from an edge thereof, said metallic sheets positioned in parallel aligned relation with the tabs of each adjacent pair of said metallic sheets aligned with one another and projecting in staggered relationship to tabs of adjacent pairs of metallic sheets, said

tabs all extending from a single side of said capacitor, solid dielectric means extending between said tabs of said pairs of metallic sheets and a single terminal transmission line connected to each of the tabs on one side of said dielectric means and a second single terminal transmission line connected to each of the tabs on the other side of said dielectric means.

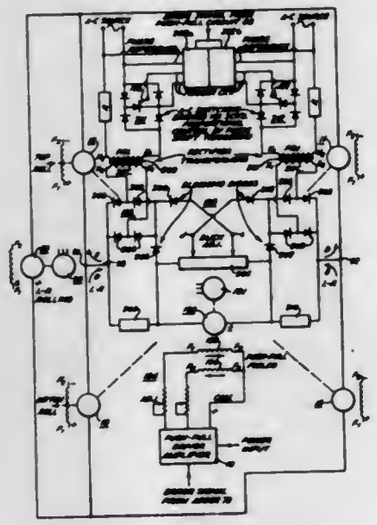
3,275,917
RAPID CORRECTION MOTOR CONTROL SYSTEM OF STEADY STATE FLIGHT ERRORS
William W. Medlinski, Clifton, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Jan. 30, 1963, Ser. No. 255,008
9 Claims. (Cl. 318—18)



1. In a flight control system for a vehicle comprising in combination a first signal generating device for effecting a controlling signal in response to deviation of the vehicle from a first course reference, a second signal generating device for effecting a biasing signal in response to deviation of the vehicle from a second course reference, means for combining said first and second mentioned signals so as to provide a resultant differential signal, means responsive to said resultant differential signal for controlling a course of flight of the vehicle, a third signal generating device operative in response to a signal from said first-mentioned signal device, relay means operable in one sense to selectively connect the output signal from said third device in opposition to the biasing signal from said second device, means responsive to said resultant differential signal for operating said relay means in said one sense upon said differential signal decreasing to a null value, and means for locking said relay means in said one operating sense whereupon the signal applied through said relay means by the third device and in opcombining means a resultant signal for controlling the position to the biasing signal from said second device renders the first device effective to provide through said flight of the vehicle in accordance with said first course reference.

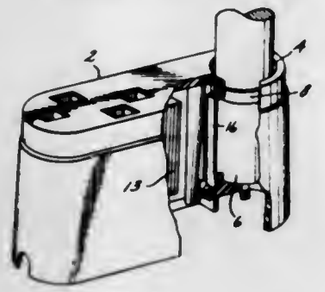
3,275,918
CONTROL SYSTEM FOR A PLURAL MOTOR DRIVE WITH LOAD EQUALIZATION
Louis H. Taylor, Youngstown, Ohio, assignor to The Youngstown Research and Development Company, Youngstown, Ohio, a corporation of Ohio
Filed Apr. 21, 1964, Ser. No. 361,418
10 Claims. (Cl. 318—99)

1. Electric apparatus comprising a first pair of electric motors at least one of which is drivingly connected to a first output shaft, a second pair of electric motors at least one of which is drivingly connected to a second output shaft, an armature of one of said first pair motors connected electrically in series with an armature of one of said second pair motors to form a first neutral point between said series connection, an armature of the other of said first pair motors connected electrically in series with an armature of the other of said second pair motors to form a second neutral point between said series connection, a neutral circuit between said first and second neutral points, said armature of said one of said first pair motors and said armature of said other of said second pair motors being connected to one side of a



source of electrical power which drives all said motors, said armature of said other of said first pair motors and said armature of said one of said second pair motors being connected to the other side of said source of electrical power, current producing means connected into said neutral circuit and producing a current which increases the armature current in one of the two pairs of motors and decreases the armature current in the other of the two pairs of motors to effect changes in apportionment of output torque between said two shafts, means connected to said current producing means for actuating same.

3,275,919
RECHARGER CONTACTS FOR ELECTRIC TOOTHBRUSH
George A. Decker, Wakefield, R.I., and Daniels B. Fisk, Framingham, Mass., assignors to General Electric Company, a corporation of New York
Filed Sept. 9, 1963, Ser. No. 307,634
3 Claims. (Cl. 320—2)



1. A storage case and battery charger for an electric toothbrush comprising:
(a) a housing having a socket formed therein for receiving a motorized toothbrush handle containing a rechargeable battery, said socket having a bottom wall and a side wall, said side wall having an aperture near the upper surface thereof,

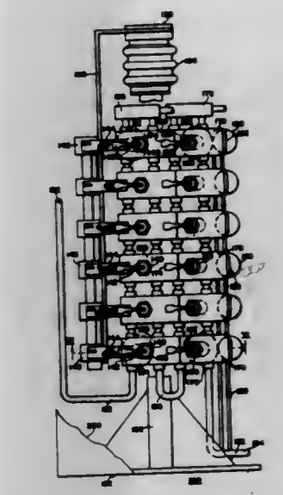
(b) a first charging contact positioned within a first recess formed in said bottom wall for engaging a terminal located on one end of said handle,
(c) a second charging contact for engaging a terminal located on an outside surface of said handle, said second charging contact comprising a flat, electrically conductive, resilient, elongated member, a first end of said member being deformed to provide a projection thereon, said projection protruding inwardly through said side wall aperture, an ear being formed near the second end of said member, said ear being bent in the same direction as said projection to approximately conform to the shape of said side wall, and
(d) means for mounting said second charging contact on the outside surface of said side wall at a point adjacent said bottom wall, said mounting means including a recess on said outside surface for receiving said ear, the resiliency of said ear providing a wedged fit of said ear in said recess,
whereby said second charging contact is mounted on said surface by sliding said second charging contact upwardly causing said ear to fit within said recess, said member to be received by said groove and said projection to protrude inwardly through said aperture.

3,275,920
HIGH VOLTAGE SUPPLY CIRCUIT
Satoshi Shimada, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Oct. 29, 1962, Ser. No. 233,725
Claims priority, application Japan, Oct. 30, 1961, 36/54,256
4 Claims. (Cl. 321—8)

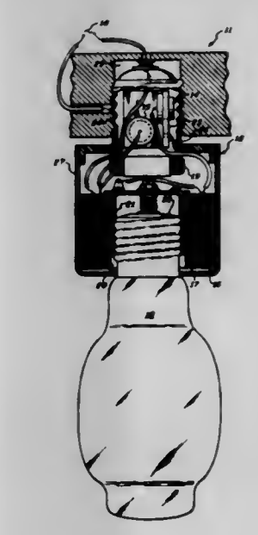
1. In a high voltage supply circuit,
a transformer having a primary winding and two secondary windings each having a pair of end terminals,
a rectifier connected between one terminal of one of said secondary windings and one terminal of the other of said secondary windings,
the other terminals of said windings being each connected to a respective side of a load, the product of the inductance and stray capacitance to ground of each of said secondary windings being thereby substantially less than the product of the inductance and strap capacitance of a winding having a number of turns equal to the total of the number of turns of said secondary windings, to increase the frequency range of operation and efficiency of the circuit.

3,275,921
SEMICONDUCTOR RECTIFIER ASSEMBLY
Frederick G. Fellendorf, Monroeville, and August P. Colaiaco, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 3, 1963, Ser. No. 270,332
9 Claims. (Cl. 321—8)

1. A rectifier assembly physically and electrically interchangeable with ignitron rectifier tubes comprising a base member, a first heat sink member having a plurality of semiconductor diodes mounted in thermal communication with said first heat sink member, said first heat sink member being mounted on and electrically connected to said base member, a second heat sink member disposed on said base member but electrically insulated therefrom having a plurality of semiconductor diodes mounted in thermal communication with said second heat sink member, the semiconductor diodes disposed on said second heat sink being electrically insulated from one another, coolant connections suitably disposed on said rectifier assembly for supplying coolant to said heat sink members, and an electrical terminal, the semiconductor diodes of said second heat sink member being connected in circuit relationship with said electrical terminal.



3,275,922
CONVERSION AND BALLAST UNIT
Kenneth I. Meyer, Middlebury, and Eugene Beck, Roxbury, Conn., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,813
5 Claims. (Cl. 321—15)



1. A conversion unit for lighting fixtures for increasing the peak output voltage and controlling the current therefrom comprising,
(1) voltage doubler circuit means having a pair of rectifying means and a pair of condensers connected

to terminals adapted to be energized by an alternating current source for providing voltage doubling rectification,

(2) said condensers being coaxially arranged one within the other, the innermost condenser having a coaxial aperture adapted to receive a socket,

(3) said voltage doubler circuit means further including current limiting means,

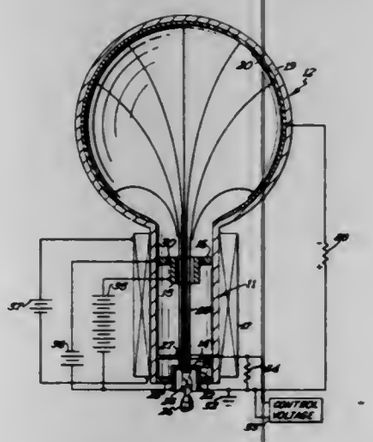
(4) a socket disposed within said aperture and adapted to receive a lamp,

(5) a base adapted to be received in said lighting fixture,

(6) said voltage doubling circuit means being connected to said base and said socket, and

(7) a housing means for enclosing said circuit means and to which said base is attached.

3,275,923
THERMIONIC CONVERTERS
Robert L. Laing, 3527 Aquila Ave. S., St. Louis Park, Minn., and Carol D. Feemster, 444 W. Duarte Road, Apt. E–3, Arcadia, Calif.
Filed June 8, 1965, Ser. No. 462,384
19 Claims. (Cl. 322—2)



1. A thermionic converter for converting heat energy to electrical energy comprising

an enclosure including

means for producing a beam of electrons including a thermionic cathode, adapted to be heated by a source of heat,

means for accelerating said beam of electrons comprising an anode having an aperture therethrough,

and a collector having a conductive surface within said enclosure,

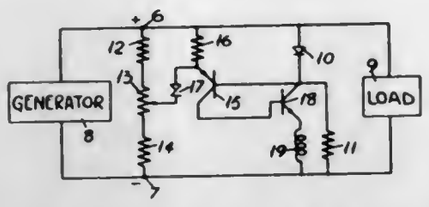
a source of heat for heating said cathode and of a magnitude such that it constitutes the primary source of external energy applied to said converter,

means for applying a positive voltage between said anode and said cathode to accelerate the passage of said electrons through the aperture in said anode to cause said electrons to engage the conductive surface of said collector,

and means operative to withdraw the electrical energy from said generator resulting from the heat applied to said cathode,

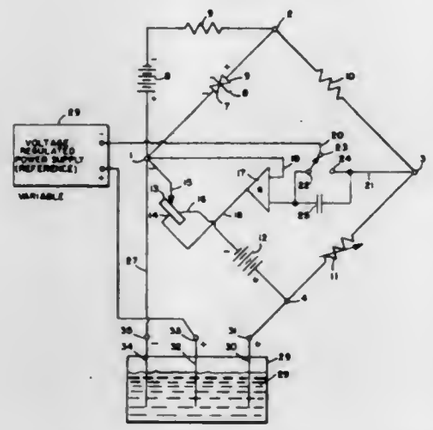
said means including a utilization circuit connected between said collector and said cathode to withdraw the energy from the collector due to the electrons engaging the conductive surface thereof, said utilization circuit being free of any external electrical source of power.

3,275,924
VOLTAGE REGULATORS
Derek Stanley Adams, Acocks Green, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Apr. 5, 1963, Ser. No. 270,963
Claims priority, application Great Britain, Apr. 11, 1962, 13,942/62
7 Claims. (Cl. 322—28)



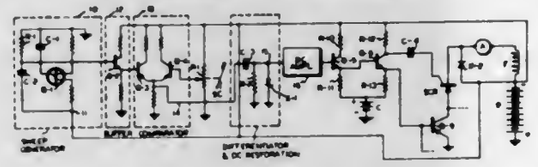
1. A voltage regulator for use with a D.C. generator having a field winding, comprising in combination first and second terminals for connection to said generator, a first transistor, a resistor through which the emitter of the first transistor is connected to the first terminal, a Zener diode through which the emitter of the first transistor is connected to the second terminal, a diode through which the base of the first transistor is connected to the first terminal. a second transistor of opposite conductivity type to the first transistor and having its emitter connected through said field winding of the generator to the second terminal, its base connected to the collector of the first transistor and its collector connected to the base of said first transistor, and a resistive path through which the collector of the second transistor is connected to the second terminal, said Zener diode becoming conductive when the output voltage of the generator exceeds a predetermined value and said second transistor switching between on and off states to regulate the output voltage of the generator.

3,275,925
ELECTROLYTIC CELL ANODE POTENTIAL CONTROL SYSTEM
Kenneth Kupferberg, Flushing, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York
Filed Sept. 7. 1962, Ser. No. 222,142
1 Claim. (Cl. 323—4)



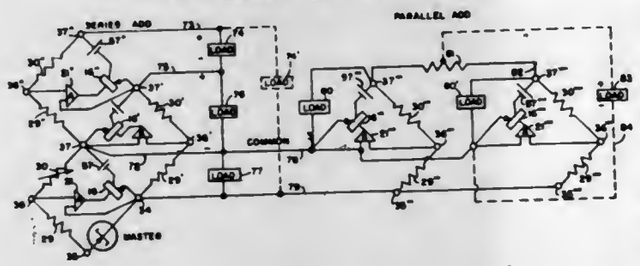
In a system for controlling electrical conditions in an electrolyte, the combination of, an electrolyte through which the current is to be controlled, two main electrodes at least partially immersed in said electrolyte, a bridge circuit controlled voltage programmable regulated power supply including an error amplifier connected to supply programmed power to said electrodes, a sensing electrode at least partially immersed in said electrolyte, a series circuit including a source of reference voltage comprising the output of a variable output voltage regulated power supply, one of said main electrodes and said sensing electrode connected to said error amplifier for programming said regulated power supply to drive current between said main electrodes in accordance with the potential of said sensing electrode and the voltage from said variable output voltage regulated power supply whereby the power output of said programmable power supply is programmed to said main electrodes under control of said variable output power supply and the substantially zero current potential of said electrode.

3,275,926
DIRECT CURRENT CONTROL SYSTEMS
Shay J. Sheheen, Freeville, N.Y., assignor to The Raymond Corporation, Greene, N.Y., a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,270
7 Claims. (Cl. 323—18)



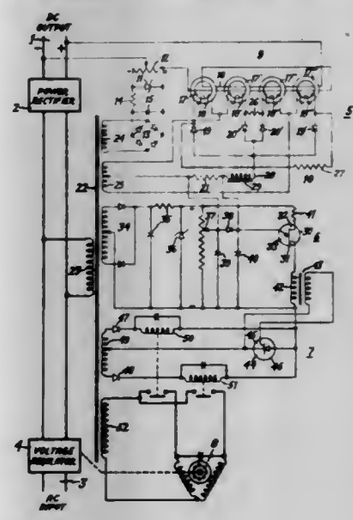
1. A direct current control circuit, comprising, in combination: a direct current source; a PNPN semiconductor controlled-rectifier having an anode, a cathode and a control electrode; a first transistor having a base electrode and collector and emitter terminals; a load circuit, said source, said load circuit, the anode-cathode circuit of said controlled rectifier, and the collector and emitter terminals of said transistor all being connected in a closed series loop; and means for providing substantially rectangular driving pulses periodically to said control electrode of said controlled-rectifier and to said base electrode of said transistor to cause said transistor and said controlled-rectifier to begin to conduct substantially simultaneously at the beginning of each driving pulse, and to interrupt current flow in said closed series loop at the end of each driving pulse.

3,275,927
BRIDGE CONTROLLED MULTIPLE REGULATED POWER SUPPLIES
Kenneth Kupferberg, Flushing, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York
Filed Mar. 15, 1962, Ser. No. 179,851
8 Claims. (Cl. 323—22)



8. A regulated current power supply system including in combination, a first regulated power supply utilizing a four element bridge circuit including at least a source of reference voltage, a fixed reference resistor, a variable output voltage control resistor, and a pair of output terminals including in parallel a source of controlled voltage, and a second regulated power supply utilizing a bridge circuit similar in recited components and their functions to the bridge circuit of said first regulated power supply, a current sensing resistor connected in series with the first said variable output voltage control resistor, and connections between said output terminals of said first regulated supply and the reference voltage arm of said second supply bridge whereby said second supply operates in a slave relationship to said first supply and to maintain regulated current through said current sensing resistor.

3,275,928
VOLTAGE REGULATOR WITH MAGNETIC AMPLIFIER ELEMENTS
Clarence J. Kettler, Stockbridge, Mass., assignor to General Electric Company, a corporation of New York
Filed June 4, 1963, Ser. No. 285,440
4 Claims. (Cl. 323—43.5)

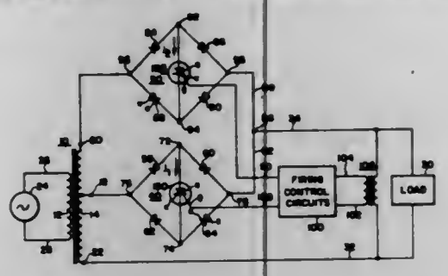


1. In combination, an alternating current supply circuit, a regulator in said circuit for controlling its output voltage, means for producing voltage pulses comprising a four-core saturable reactor having a common control winding on all of its cores and a separate gate winding on each of its cores, means for energizing said control winding with unidirectional current whose magnitude is proportional to the magnitude of deviations of the output voltage of said supply circuit from a predetermined normal value and whose direction is dependent on the direction of said deviations, means for deriving from a pair of said gate windings differential current produced unidirectional voltage pulses during positive half cycles of the voltage of said supply circuit of a polarity depending on the direction of current in said control winding, said control winding being so polarized with respect to said separate gate windings that said means produce oppositely polarized voltage pulses during their respective active half-cycles for a given polarity of differential control current, means for deriving from the other pair of gate windings differential current produced unidirectional voltage pulses during negative half cycles of the voltage of said supply circuit of a polarity depending on the direction of current in said control winding, and means responsive to said voltage pulses of a common polarity only for controlling the direction of operation of said regulator by a phase differential effect depending on whether said common polarity pulses occur during alternate positive or alternate negative half cycles of the voltage of said supply circuit.

3,275,929
ELECTRONIC LOAD TAP CHANGER SYSTEMS
Robert A. Schatz, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 12, 1963, Ser. No. 287,260
6 Claims. (Cl. 323—43.5)

1. A tap changer system comprising an alternating potential source, an alternating potential load, means in-

cluding an inductive winding having tap connections thereon connected in circuit relation with said alternating potential source and said alternating potential load, rectifier means connected in circuit relation with certain of said tap connections and said alternating potential load, and electrical valves connected in circuit relation with each of said rectifier means such that the polarity of



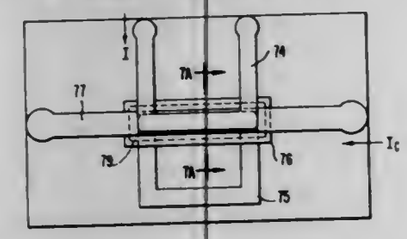
the potential applied to said electrical valve is the same during the positive and negative alternations of said alternating potential source, and means transferring the load current from an electrical valve associated with a tap connection of lower potential to an electrical valve associated with a tap connection of higher potential at any point in the positive and negative alternations of said alternating potential source.

3,275,930

SUPERCONDUCTING CONTROLLED INDUCTANCE CIRCUITS

Carl R. Cassidy, Hatboro, and Albert J. Meyerhoff, Wynnewood, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 13, 1963, Ser. No. 258,268
16 Claims. (Cl. 323—44)



14. A superconducting circuit providing:

means for controlling the inductance of a continuously superconducing current path including;

a continuously superconducting primary winding,

a continuously superconducting secondary winding,

at least a portion of said primary winding located adjacent at least a portion of said secondary winding,

a shield of superconducting material located between the adjacent portions of said primary and secondary windings, and

means for causing said superconducting shield to become resistive thereby enabling the adjacent portions of said primary and secondary winding to be flux linked.

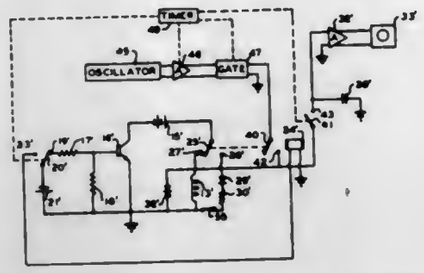
3,275,931

METHOD OF NUCLEAR MAGNETIC RESONANCE WELL LOGGING

Russell L. Collins, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 10, 1962, Ser. No. 222,429
2 Claims. (Cl. 324—.5)

1. The method of well logging which comprises establishing a unidirectional magnetic field in an earth formation surrounding a well bore; permitting said magnetic field to decay; thereafter applying a second magnetic field to the earth formation, said second magnetic field being at substantially right angles with the magnetic field of the earth and alternating in direction at the Larmor frequency of nuclei of liquids in the formation under the magnetic field of the earth, the magnitude of said second magnetic field being such as to shift the moments of the precessing



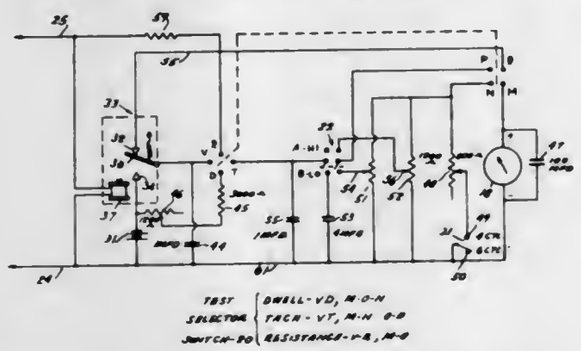
nuclei by 90°; thereafter applying a third magnetic field to the earth formation a plurality of times, said third magnetic field being identical to the second magnetic field except that the magnitude thereof is twice that of second magnetic field; and measuring the precession of the nuclei in the formation each time after the second magnetic field is removed.

3,275,932

R.P.M. DWELL ANGLE AND POINT RESISTANCE TESTER

Lee W. Parmater, Plainwell, Mich., assignor to Kal-Equip Company, Inc., Otsego, Mich., a corporation of Michigan

Continuation of abandoned application Ser. No. 52,131, Aug. 26, 1960. This application May 11, 1965, Ser. No. 458,819
12 Claims. (Cl. 324—16)



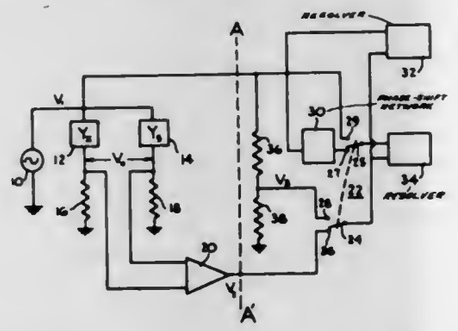
1. Apparatus for measuring dwell angle of breaker points in an ignition system having a source of electrical energy connected in circuit with such breaker points; said apparatus including a relay means, an indicator, a capacitor means, a local battery, an impedance element and test lead means connectable across breaker points under test; said relay means including a first normally closed and a second normally open contact section and an operating coil which when energized opens said first contact section and closes said second contact section; said test lead means connected to said coil for energization of the latter by a source of electrical energy external of said apparatus and in circuit with breaker points under test when such breaker points are open and said test lead means are connected thereacross; circuit means including a first circuit for discharging said capacitor means through said indicator when said coil is deenergized; said first circuit including said first contact section; said circuit means also including a second circuit for discharging said local battery through said indicator when said coil is deenergized; said second circuit including said impedance element and being exclusive of said capacitor means with simultaneous discharges from both said capacitor means and said local battery contributing significantly to control operation of said indicator; a portion of said circuit means, including said second contact section, connecting said capacitor means to charge from energy supplied by said local battery when said coil is energized.

3,275,933

SYSTEM FOR DETERMINING THE IMMITTANCE VECTOR WHICH IS THE DIFFERENCE BETWEEN AN UNKNOWN IMMITTANCE AND A KNOWN IMMITTANCE

Abraham I. Dranetz, Scotch Plains, N.J., assignor to Dranetz Engineering Laboratories, Inc., Plainfield, N.J., a corporation of New Jersey

Filed Nov. 4, 1964, Ser. No. 408,986
5 Claims. (Cl. 324—57)



1. A system for determining the value of an unknown immittance comprising:

a source of controlled A.-C. signal;

an unknown admittance, a known admittance, and a pair of resistors of equal value connected in a four terminal, four legged bridge wherein the known admittance is connected in the first leg, the unknown admittance is connected in the second leg, one of the pair of resistors is connected in the third leg, and the other of the pair of resistors is connected in the fourth leg;

each of the resistors having a conductance much greater than the admittance of each of the known admittance and the unknown admittance;

the controlled A.-C. signal being fed to the bridge across two opposite terminals, one of such terminals being the common junction of the two resistors, the other of such terminals being the common junction of the known admittance and the unknown admittance;

an A.-C. output signal being produced across the other two opposite terminals of the bridge;

a pair of resolvers, each having two inputs;

means connecting the terminals of the bridge across which the A.-C. output signal is produced to one of the inputs of each of the pair of resolvers;

means connecting the terminals of the bridge across which the source of controlled A.-C. signal is connected to the other input of the first of the pair of resolvers such that the output of the first resolver is proportional to the difference between the conductances of the unknown admittance and the known admittance;

a 90° phase shift network having an input and an output;

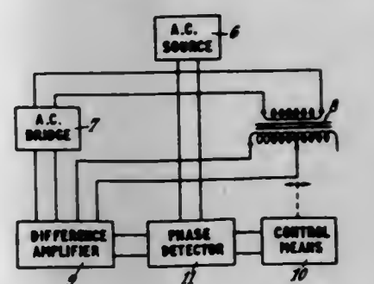
means connecting the source of controlled A.-C. signal to the input of the 90° phase shift network and means connecting the output of the 90° phase shift network to the other input of the second of the pair of resolvers such that the output of the second resolver is proportional to the difference between the susceptances of the unknown admittance and the known admittance.

3,275,934

APPARATUS FOR MEASURING THE OUTPUT VOLTAGE OF AN ALTERNATING CURRENT BRIDGE BY COMPARISON WITH THE OUTPUT OF A VARIABLE TRANSFORMER

Frederick Herbert Laishley, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Feb. 15, 1963, Ser. No. 258,748
Claims priority, application Great Britain, Feb. 28, 1962, 7,766/62
1 Claim. (Cl. 324—99)



Apparatus for measuring the output voltage of an A.C. bridge, comprising in combination a transformer the primary winding of which is connected in use to an A.C. voltage in phase with that supplied to the bridge, said transformer including a plurality of unequal secondary windings each divided into a plurality of equal parts, a uniselector including a plurality of contact pieces and a contact arm movable step by step over said contact pieces, means connecting said contact pieces with the parts of the largest of said secondary windings, a difference amplifier connected to the bridge and to said uniselector so as to receive the output voltage of the bridge and a proportion of the output voltage of the transformer, the difference amplifier producing an A.C. output the phase of which is dependent on which of the voltages applied to the difference amplifier is greater in amplitude, means for operating the uniselector to connect the parts of said largest windings step by step to said amplifier, a phase detector connected to the amplifier so as to produce a direct current output of polarity dependent upon the phase of the output from the amplifier, means operable when the polarity of the phase detector changes for stopping the uniselector and by-passing one part of said largest winding, and a control circuit for successively energising further uniselectors connected to said amplifier and associated with the other secondary windings respectively, and operating them in the same way as the first-mentioned uniselector, so that the final position of the uniselector arms indicates the output voltage from the bridge.

3,275,935

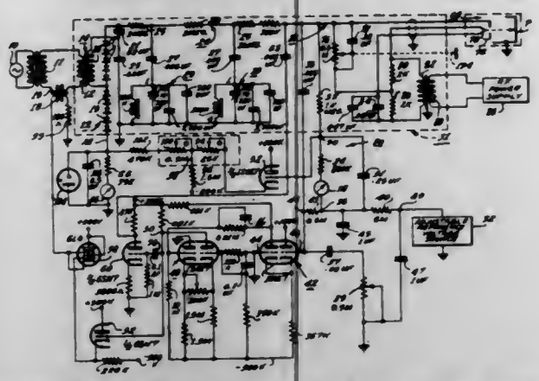
H.V. POWER SUPPLY AND MEASURING SYSTEMS INCLUDING A SUPPLY REGULATION SYSTEM HAVING TWO FEEDBACK PATHS AND RESPONSIVE TO HIGH AND LOW FREQUENCY OUTPUT VARIATIONS

Louis Shapiro, Erlton, N.J., assignor, by mesne assignments, to The First Pennsylvania Banking and Trust Company, as trustee

Filed June 11, 1962, Ser. No. 201,697
18 Claims. (Cl. 324—123)

5. A high voltage electronic system comprising a high voltage power supply including a high voltage terminal, means for varying the power applied to said power supply, and regulating means including a negative feedback circuit connected to said high voltage terminal, said feedback circuit including means providing a reference voltage, amplifying means responsive to the voltage at said terminal and said reference voltage for producing error voltages at its output, and a first feedback path, connected from the output of said amplifying means to said

power varying means for controlling said power varying means in response to low frequency changes in voltage at said terminal, said feedback circuit further including



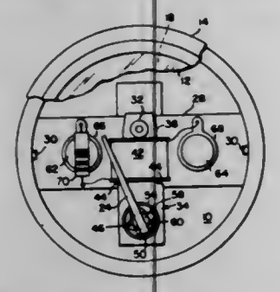
a second feedback path connected from the output of said amplifying means to said terminal for varying the voltage at said terminal in response to high frequency changes in voltage thereat.

3,275,936

ELECTRIC METER INCLUDING PIVOTED MAGNET ROTOR SURROUNDED BY CONTINUOUS POLE FACES

William D. Huston, Rochester, N.Y., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed May 4, 1962, Ser. No. 192,452
3 Claims. (Cl. 324—146)



1. An electrical meter comprising
(a) a generally U-shaped core comprising a single sheet of thin, soft magnetic material,
(b) an electric coil mounted on one leg of said core for producing magnetic flux therein upon energization of said coil,
(c) said core having a circular aperture in one leg with a continuous circular wall, said aperture extending across the major part of the width of the core whereby two magnetically saturable portions of the core are disposed at either side of the aperture,
(d) a permanent magnet, means pivoting said permanent magnet in said aperture, said magnet being polarized in the plane of said aperture, and
(e) means for biasing said magnet toward a preselected angular position relative to said core,
and means for adjusting the reluctance of said core for calibrating said meter.

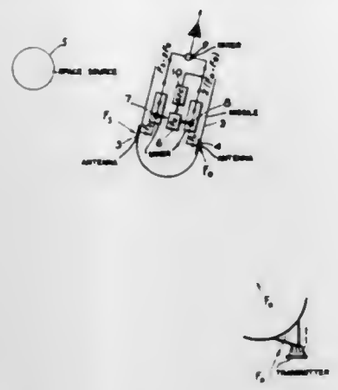
3,275,937

STABILIZED RECEIVERS FOR SPACE VEHICLES

Raymond Rocherolles and Michel Bellenger, both of Paris, France, assignors to C.S.F.-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Mar. 14, 1962, Ser. No. 179,672
Claims priority, application France, Mar. 20, 1961, 856,104
3 Claims. (Cl. 325—15)

1. A receiver for ultra-high frequency energy, adapted to be placed on a space vehicle, comprising: means for receiving from ground ultra-high frequency energy having a stabilized frequency F_o; means for receiving ultra-high frequency energy from a spatial source; a first, a second and a third mixer; a local oscillator having a frequency control input; an automatic frequency control, controlled by said stabilized frequency energy, and having an output connected to said frequency control input of



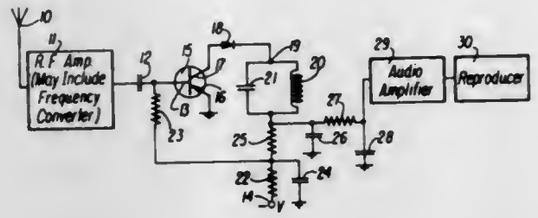
said oscillator, said first and said second mixer being connected to said oscillator and having means for receiving respectively the wave energy incoming from said spatial source and said stabilized frequency energy for generating respective beats; and said third mixer for mixing said respective beats thus eliminating the frequency of said local oscillator and having an output for delivering the resulting beats.

3,275,938

FREQUENCY MODULATION CIRCUIT

Richard D. Carsello, Chicago, and David L. Gunn, Lombard, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 7, 1963, Ser. No. 249,847
6 Claims. (Cl. 325—349)



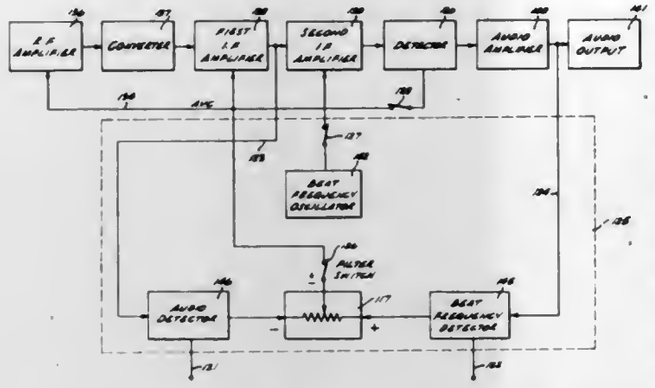
1. A frequency modulation detector circuit for deriving the modulation signal from a frequency modulated carrier wave having a predetermined center frequency, said circuit including in combination, a transistor having a control electrode and output electrodes, input circuit means connected to said control electrode for applying the modulated wave thereto, and a series circuit including a parallel resonant circuit and rectifier means connecting said resonant circuit to said output electrodes, said series circuit further including impedance means, said parallel resonant circuit being tuned to a frequency above the predetermined center frequency of the modulated wave to be detected, said rectifier means being poled to conduct current in the series circuit of the same polarity which is conducted by said output electrodes to provide current flow through said impedance means, and output circuit means connected to said impedance means for deriving the modulation signal.

3,275,939

NOISE MODULATION CONTROL SYSTEM

Sanford B. Luftig, Wichita, Kans., assignor of thirty-seven and one-half percent to The Wheeler Kelly & Hagny Investment Company, Wichita, Kans., and ten and one-half percent to Walter P. Innes, Jr., and nine percent each to Walter P. Innes III, William D. Innes, and Betty S. Innes, all of Eastborough, Kans.

Filed May 17, 1962, Ser. No. 195,493
15 Claims. (Cl. 325—399)



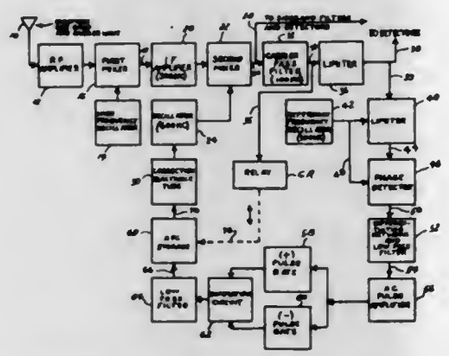
12. In a receiver adapted for reception of combined signals and undesired noise components, said receiver comprising amplification stages for amplifying said signals and noise components:
a comparator coupled to selected different ones of said amplifier stages and having an output,
a fixed frequency oscillator providing a fixed frequency signal and coupled to one of said receiver amplifier stages intermediate said different ones of said amplifier stages, said comparator output representing a comparison of said signals and said noise components and a combination of said signals and noise components and said fixed frequency signal, and
means coupled to said receiver for controlling amplification of said receiver amplifier stages in accordance with said output of said comparator.

3,275,940

AUTOMATIC FREQUENCY CONTROL MEANS FOR SINGLE-SIDEBAND RECEIVERS AND THE LIKE

Leonard R. Kahn, 81 S. Bergen Place, Freeport, N.Y.

Filed May 28, 1963, Ser. No. 283,740
8 Claims. (Cl. 325—423)



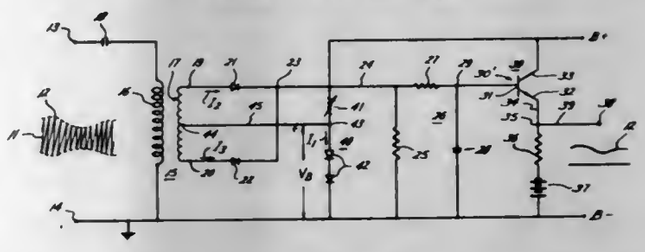
6. In radiant energy receiving equipment subject to occasional fading of the received signal and having a local oscillator establishing a predetermined IF frequency for the equipment, automatic frequency control means comprising means selecting and isolating a sample of a signal carrier component frequency, means generating a stable reference frequency, means comparing said carrier component frequency and said reference frequency and developing a correction signal related to the frequency difference between said carrier component frequency and said stable reference frequency, correction signal storage means to which said correction signal is fed during periods when the incoming carrier level is greater than a predetermined value and from which a stored correction signal is available to maintain said IF frequency substantially constant for a substantial period when the incoming carrier level is less than said predetermined value, and reaction oscillator means responsive to said correction signal for varying said local oscillator in a manner maintaining said IF frequency substantially constant, said correction signal storage means comprising a voltage divider network including a first capacitance charged by said correction signal to a value somewhat less than the voltage of the correction signal, said signal storage circuit further comprising a second capacitance charged by said correction voltage to substantially the full value of said correction voltage, said storage circuit further comprising switch means operated in response to the incoming carrier level to apply the voltage across said first capacitance to said correction reactance means when said incoming carrier level is above a predetermined value, and operable to apply the voltage across said second capacitance to said correction reactance means during a period when said incoming carrier level is less than a predetermined value.

3,275,941

A.C. TO D.C. CONVERTERS

George E. Brechling, Levittown, Pa., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut

Filed Mar. 27, 1961, Ser. No. 98,409
3 Claims. (Cl. 329—101)



1. In a wide-range amplitude detector, the combination comprising: a first, second and third semiconductor elements each having a forward operating range wherein its resistance is relatively high below a characteristic threshold voltage level thereacross and is relatively low above said threshold level; a transformer having a primary winding and a center-tapped secondary winding, means connecting said first and said second elements in oppositely poled directions across said secondary winding a current-limiting impedance connected to said first and second elements, and means connecting said third element and said impedance in series across a direct current source for establishing a forward bias voltage across said third element, means to apply said bias voltage to forward bias said first and said second elements, and means coupled with said first and said second elements for deriving a direct current signal which varies as a function of the amplitude modulations on an alternating current signal applied to said primary winding.

3,275,942

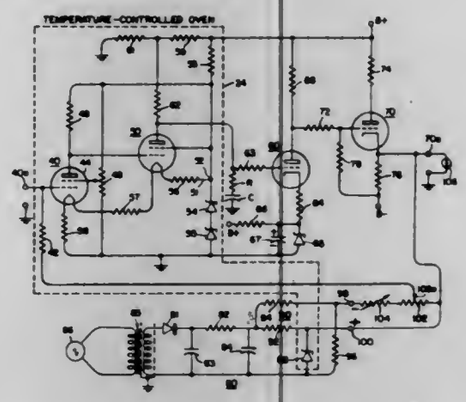
THERMAL STABILIZATION OF DIRECT-COUPLED ELECTROMETER AMPLIFIERS

Ko-Hsin Liu, Hilliard, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed Mar. 27, 1963, Ser. No. 268,318
11 Claims. (Cl. 330—1)

4. An electrometer amplifier comprising an input stage, an output stage, and a degenerative feedback loop connecting said output stage to said input stage, a source of operating voltage, first regulator means including a first

temperature-compensated zener diode connected to said operating voltage source, a source of bucking voltage, second regulator means including a second temperature-compensated zener diode connected across said bucking voltage source; means for enclosing said amplifier input stage and said first and second zener diodes in a temperature-controlled environment, said enclosing means including an oven, means for heating the interior of said oven, sensing means communicating with the interior of said



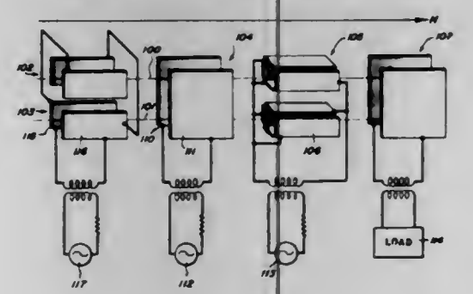
oven for generating a signal proportional to the temperature of said oven interior, controller means responsive to said generated signal for energizing said heating means when ever said interior temperature is less than a desired value therefor; means for connecting the constant voltage thereupon developed by said first regulator to supply an operating voltage to said amplifier input stage, and means for connecting an adjustable portion of the constant voltage developed by said second regulator in series with said feedback loop.

3,275,943

DUAL OUTPUT CHANNEL ELECTRON BEAM PARAMETRIC AMPLIFIER WITH NOISE ELIMINATION

Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware

Filed Apr. 10, 1959, Ser. No. 805,530
4 Claims. (Cl. 330—4.7)



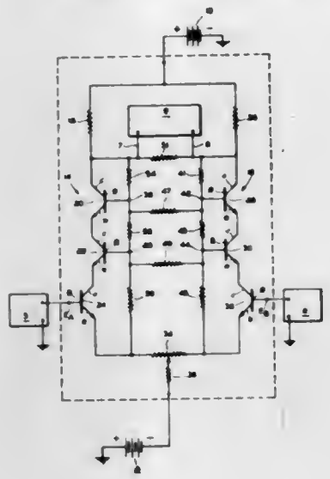
1. An amplifying system comprising: means for projecting a pair of electron beams individually along adjacent predetermined paths; means, including an electron coupler disposed adjacent and in common to said paths, for coupling signal energy in parallel to said beams; means, including a pair of reversely interconnected electron couplers individually disposed adjacent respective ones of said paths, for coupling signal energy to said beams in push-pull; means for terminating one of said coupling means in a noise sink tuned to a frequency ω_2; means for applying input signal energy of a frequency ω_1 to the other of said coupling means; means for impressing pumping signal energy of a frequency ω_3 equal to ω_1 plus ω_2 upon each of said beams but with mutually opposite phase relationship; and means coupled to said beams for deriving amplified input signal energy therefrom.

3,275,944

HIGH VOLTAGE D.C. COUPLED DIFFERENTIAL AMPLIFIER INCLUDING SERIES ENERGIZED TRANSISTORS

Thomas J. Lavin, Midland Park, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Nov. 26, 1963, Ser. No. 326,081
5 Claims. (Cl. 330—18)



1. A circuit arrangement comprising a plurality of transistors each having emitter, base and collector electrodes,
a first and second transistor of said plurality arranged in differential amplifier connection,
the remaining transistors of said plurality being evenly divided into first and second groups in combination with said first and second transistors,
input terminals for supplying differential electrical input signals to the bases of said first and second transistors,
a supply source of electrical energy,
a first resistor in series with said supply source,
one terminal of the series combination of said first resistor and said supply source being connected to the collector of the last transistor of the remaining of said plurality of transistors in said first group,
a second resistor in series with said supply source,
one terminal of the series combination of said second resistor and supply source being connected to the collector of the last transistor of the remaining of said plurality of transistors in said second group,
circuit means providing a direct current series connection from the collector of said first transistor across the emitter-collector paths of the remaining of said plurality of transistors in said first group to said one terminal of the series combination of said first resistor and supply source,
circuit means providing a direct current series connection from the collector of said second transistor across the emitter collector paths of the remaining of said plurality of transistors in said second group to said one terminal of the series combination of said second resistor and supply source,
the other terminal of said supply source being connected to the emitter of said first and second transistors,
a first voltage divider connected from the emitter of said first transistor to the collector of the last transistor of the remaining of said plurality of transistors in said first group,
circuit means connecting each of the base electrodes of the remaining of said transistors of said plurality of transistors in said first group to separate points on said first voltage divider,

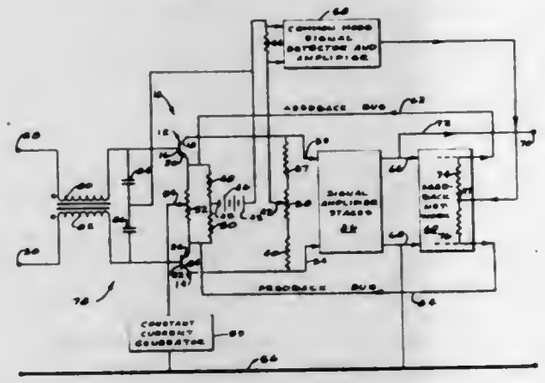
a second voltage divider connected from the emitter of said second transistor to the collector of the last transistor of the remaining of said plurality of transistors in said second group,
circuit means connecting each of the base electrodes of the remaining of said transistors of said plurality of transistors in said second group to separate points on said second voltage divider,
a load resistor connected from the collector of the last transistor of the remaining of said plurality of transistors in said first group to the collector of the last transistor of the remaining of said plurality of transistors in said second group,
electrical output lines leading from opposite ends of the load resistor,
resistance means connecting the separate points on said first voltage divider to the associated separate points on the second voltage divider whereby the base current of the associated pairs of transistors remains constant, thus maintaining an equal voltage division across the series connected transistors.

3,275,945

DIRECT COUPLED DIFFERENTIAL AMPLIFIER WITH COMMON MODE REJECTION

Norman C. Walker, Newport Beach, and Charles E. Engle, Tustin, Calif., assignors to Dana Laboratories, Inc., Santa Ana, Calif., a corporation of California

Filed June 4, 1963, Ser. No. 285,422
8 Claims. (Cl. 330—30)



1. A direct coupled differential amplifier having a pair of amplifier input terminals and a common bus and comprising: a dual transistor input stage including two substantially symmetrically intercoupled transistors each having an input electrode coupled to a respective one of said amplifier input terminals and being of the character sensitive to differential signals on said amplifier input terminals for providing output signals representative thereof; a common mode signal detector and amplifier coupled to said input stage and being responsive to common mode signals on said input terminals to generate a negative feedback signal and to impress it upon a circuit point intercoupled electrically between and equidistant from a like electrode of each of said transistors; an inductive winding intercoupled between each said input electrode of said dual transistors and a respective one of said input terminals; and a filter capacitor intercoupled between each of said inductive windings and said circuit point.

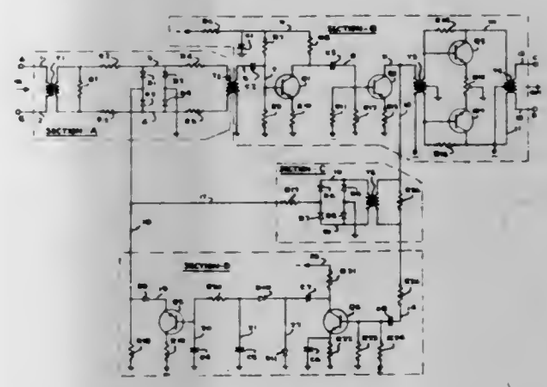
3,275,946

SELF-REGULATING COMPRESSION AMPLIFIER

Donald C. Beatty, 2800 Overhill Road, Birmingham, Ala.

Filed Nov. 6, 1963, Ser. No. 321,783
7 Claims. (Cl. 330—141)

7. For connection in a four-wire communications circuit of the type having a separate pair of conductors for the transmission of signals in each direction, apparatus to sense, at the location of the installation of the apparatus in the circuit, variations of a transmitted signal from a pre-selected magnitude and to restore the signal automatically to said magnitude for transmission beyond said location, comprising:
(a) an input section including
(1) a pair of leads connectable at one end to one of said pairs of conductors of said circuit to provide an input terminus,
(2) a first transformer connected between said leads,
(3) a second transformer connected between said leads at the other ends thereof,
(4) a first resistor connected in shunt across said leads at a location between the transformers,
(5) a pair of second resistors connected in series in each of said leads at a location between said shunt and the second transformer,
(6) a pair of first and a pair of second rectifiers connected in shunt across said leads at a location between the series-connected resistors, the first rectifiers having their negative terminals connected to the respective leads and the second rectifiers having their positive terminals connected to the respective leads, and
(7) a connection extending to ground from a location between the second rectifiers;



(b) a main amplifying section including
(1) an output terminus connectable to said pair of conductors of the communication circuit for further transmission of a signal received by the apparatus and restored thereby to the pre-selected magnitude,
(2) a signal transmission line connected between the second transformer and said output terminus, and
(3) amplification means connected in said signal transmission line and arranged to amplify a signal passing therethrough to a given magnitude in ratio to the magnitude of said signal when passed into the main amplifying section from the input section;
(c) a signal-retard section including
(1) a pair of second leads,
(2) a pair of third and a pair of fourth rectifiers connected in shunt across said second leads, the third rectifiers having their negative terminals connected to one end of the respective second leads and the fourth rectifiers having their positive terminals connected to the respective second leads,
(3) a connection extending to ground from a location between the fourth rectifiers,
(4) a third lead connected at one end to the positive terminals of the third rectifiers,
(5) a third resistor series-connected in the third lead,

(6) a fourth resistor connected between the other ends of the second leads, and

(7) a third transformer connected between the second leads at a location between said other ends of the second leads and the shunt of the fourth rectifiers thereacross; and

(d) an impedance control section including

(1) a second signal transmission line having input and output ends,

(2) amplifying means connected in said second line and arranged to amplify a signal passing therethrough to a given magnitude at the output end of the second line in ratio to the magnitude of said signal when passed into the input end of the second line,

(3) a fourth lead connected between the first signal transmission line and the input end of the second signal transmission line, a portion of the fourth lead having the fourth resistor series-connected therein and constituting the connection of the fourth resistor across the second leads,

(4) a fifth rectifier series-connected in the second signal transmission line at the output end thereof for rectifying current amplified within the impedance control section to direct current, and

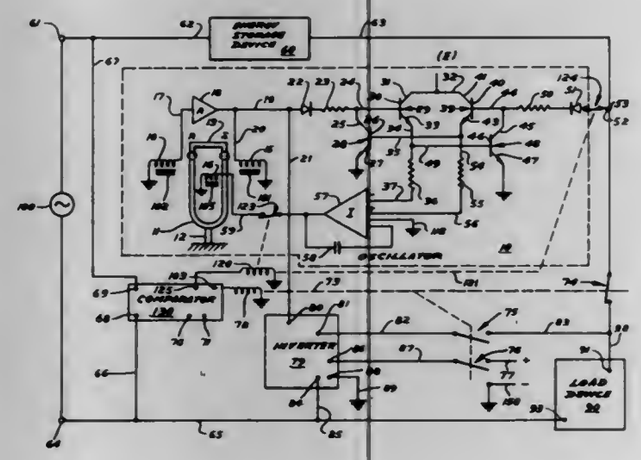
(5) a fifth lead connected between the fifth rectifier and the positive terminals of the first rectifiers, the third lead being connected at its other end to the fifth lead intermediate the ends of the fifth lead.

3,275,947

FREQUENCY CONTROLLED TUNING FORK OSCILLATOR

Robert L. Baker, Spring Lake Park, Minn. (8191 Spring Lake Park Road, Minneapolis, Minn. 55432)

Filed Dec. 9, 1963, Ser. No. 329,091
6 Claims. (Cl. 331—27)



1. Apparatus for controlling the frequency of a tuning fork comprising in combination;

(a) a tuning fork

(b) a first source of magnetic energy mounted in magnetic energy transferring relationship to said tuning fork

(c) input and output means magnetically associated with said fork, said input and output means being interconnected by amplifying means

(d) an alternating reference potential and

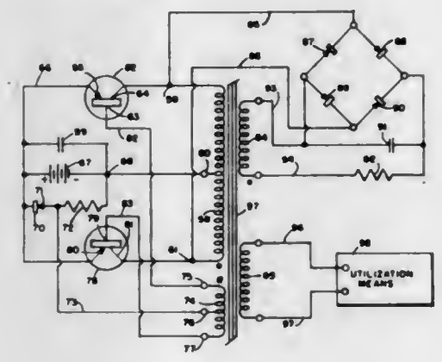
(e) means responsive to variations in frequency synchronism between said alternating reference potential and said output means for controlling the magnitude of magnetic energy transferred to said tuning fork.

3,275,948

INVERTER WITH D.C. FREQUENCY CONTROL

Franklin Rosenbusch, Lake Hiawatha, N.J., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York

Filed Mar. 9, 1964, Ser. No. 350,243
4 Claims. (Cl. 331—113)



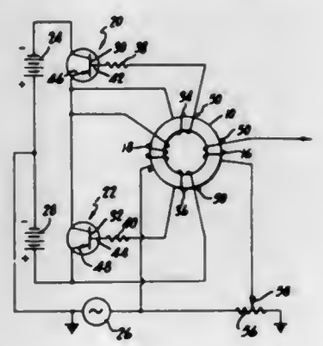
1. In a direct current to alternating current inverter, the combination of, a saturable core, a source of direct current, a main winding on said core, a feed-back winding on said core, a pair of transistors connected to couple said source of direct current with said windings adapted to provide an oscillating circuit, a third winding coupled to said core for providing an output alternating current to utilization means, a fourth winding on said core, rectifying means and current control means connected to said main winding and adapted to supply a controlled direct current to said fourth winding for stabilizing the frequency of said oscillating circuit.

3,275,949

SATURABLE CORE PULSE WIDTH MODULATOR

Keith O. Johnson, Los Angeles, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Feb. 19, 1964, Ser. No. 345,962
2 Claims. (Cl. 332—12)



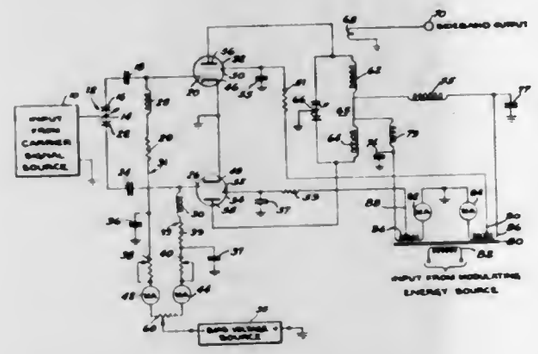
1. A pulse width modulator comprising a bistable magnetic core capable of assuming two states of magnetic saturation, said core including a single input winding, a first control winding, a second control winding, a source of positive D.-C. voltage, a source of negative D.-C. voltage, said first control winding responsive to the change of said core from one state of saturation to the other state of saturation for generating a first control signal, said second control winding responsive to the change of said core from said other state of saturation to said one state of saturation for generating a second control signal, a first transistor switch including a base, an emitter, and a collector, said base being connected to said first control winding for rendering said first transistor conductive in response to said first control signal, said emitter being connected to a junction between said single input winding and said first control winding, said collector being connected to said positive source; said first transistor when conductive applying a first signal to said single input winding, second transistor switch including a second base, a second emitter and a second collector, said second base being connected to said second control winding for rendering said second transistor conductive in response to said second control signal, said second emitter being connected to a junction between said negative source and said second control winding, said second collector being connected to the junction between said single input winding and said first control winding and thus to said first emitter, said second transistor when conductive applying a second signal complementary to said first signal to said single input winding, said core changing from said one state of saturation to said other state of saturation at a rate which is a function of the amplitude of said first signal, said core changing from said other state of saturation to said first state of saturation at a rate which is a function of the amplitude of said second signal, said junction between the single input winding and the first control winding providing an output which is responsive to each change of state of said core for generating an output pulse, whereby an output pulse is provided the width of which is a function of the rate of each change and wherein the amplitude modulator of the output pulse is eliminated.

3,275,950

DOUBLE SIDEBAND SUPPRESSED CARRIER BALANCED MODULATOR CIRCUIT

Edmund E. Birr, Lombard, Ill., assignor to Televiso Electronics, Division of Doughboy Industries, Inc., Wheeling, Ill., a corporation of Wisconsin

Filed Apr. 29, 1963, Ser. No. 276,289
5 Claims. (Cl. 332—43)



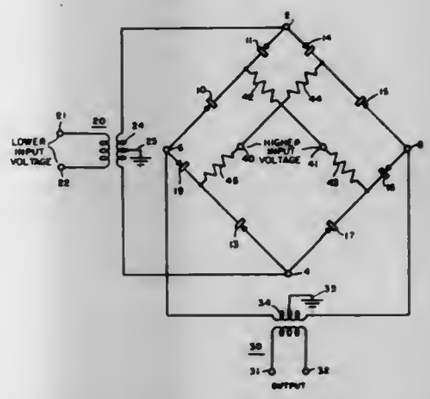
1. An improved balanced modulator circuit comprising in combination two vacuum tubes each having an anode, a cathode and a control grid, a resonant circuit tuned to R.F. signal energy, a modulating signal energy source, the anodes being connected in push-pull configuration to the resonant circuit, the anodes being biased from the modulating energy source through the resonant circuit, the cathodes being connected to ground potential, an R.F. signal energy input terminal for applying R.F. signal energy, the control grids being connected in parallel to the R.F. signal energy input terminal; D.C. bias voltage means, and parallel separate connection means between the control grids and the D.C. bias voltage means, whereby the voltage excursions of the control grids of the individual tubes induced by the anode voltage excursions of the respective tubes are limited only by the impedance of the grid circuit associated with the individual tube.

3,275,951

RING MODULATOR WITH LARGE DYNAMIC OPERATING RANGE

Joachim A. Maass, Wall Township, Monmouth County, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 1, 1963, Ser. No. 299,438
1 Claim. (Cl. 332—43)



A ring modulator comprising eight similar diodes, each having anode and cathode electrodes the cathodes of a first and second of said diodes being connected together, the cathodes of a third and fourth of said diodes being connected together, the cathodes of a fifth and sixth of said diodes being connected together, and the cathodes of a seventh and eighth of said diodes being connected together; a first transformer having a primary winding and a secondary winding with a grounded center tap, one end of said secondary winding being connected to the anodes of said first and eighth diodes the other end of said secondary winding being connected to the anodes of said fourth and fifth diodes; a second transformer having a primary winding with a grounded center and a secondary winding, one end of said primary winding being connected to the anodes of said second and third diodes and the other end of said primary winding being connected to the anodes of said sixth and said seventh diodes; a first and second resistors connected in series between the cathodes of said first and second diodes and the cathodes of said fifth and sixth diodes; a third and fourth resistors connected in series between the cathodes of said third and fourth diodes and the cathodes of said seventh and eighth diodes; a first source of input signals connected across the primary winding of said first transformer; a second source of input signals connected between the junction of said first and second resistors and the junction of said third and fourth resistors, the voltage level of said second source of input signals being higher than the voltage level of said first source of input signals; and an output load connected across the secondary winding of said second transformer.

3,275,952

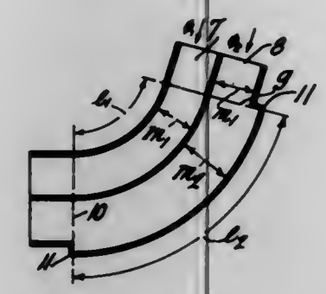
MICROWAVE PHASE SHIFTER SYSTEM PROVIDING SUBSTANTIAL CONSTANT PHASE SHIFT OVER BROAD BAND

Nathaniel I. Korman, Merchantville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 29, 1950, Ser. No. 165,016
6 Claims. (Cl. 333—31)

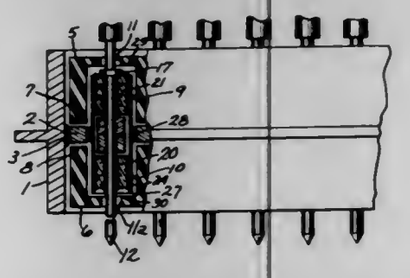
1. A microwave phase shifter providing a substantially constant phase shift over a wide frequency band comprising: a pair of waveguides of different lengths, one of said waveguides having a different cut-off wave length from that of the other, the product of the waveguide length and the wavelength in the waveguide at the mean operating

frequency for one waveguide being equal to that product for the other, and means to apply radio wave energy at



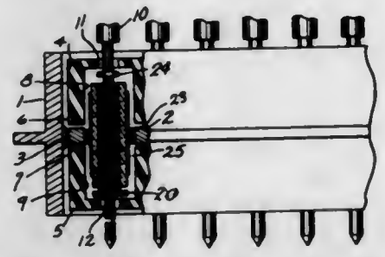
the operating frequency of predetermined relative phase relationship respectively at the ends of the two waveguides.

3,275,953
MULTIPLE PIN CONNECTOR HAVING FERRITE BEAD-CAPACITOR FILTER
Nello Coda, Erie, Pa., and James J. Walsh, Trenton, Ontario, Canada, assignors to Erie Technological Products, Inc., a corporation of Pennsylvania
Filed Aug. 20, 1963, Ser. No. 306,407
4 Claims. (Cl. 333—79)



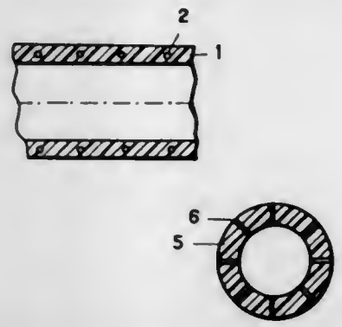
1. A connector having a ground plate with a plurality of openings extending through the plate, a pair of blocks of insulating material respectively on one and on the opposite side of the ground plate, each block having a plurality of sockets with each socket in one block being aligned with an associated socket in the other block and with the open end of each socket adjacent and aligned with one of said openings and with the bottom of each socket spaced axially from the opening with which it is aligned and providing a thrust receiving shoulder, a plurality of filter assemblies each comprising an outer metal tube extending through an opening in the ground plate with one end presented to the shoulder at the bottom of one socket and the other end presented to the shoulder at the bottom of the associated socket, a center conductor pin extending through the tube and through the bottoms of the associated sockets, a ceramic capacitor telescoped over the pin with a major portion telescoped within the tube and having an outwardly projecting flange adjacent the shoulder and overlapping one end of the tube, an inner electrode extending out over the end of the flange and soldered to the pin, and an outer electrode soldered to the tube, another tubular capacitor telescoped over the pin and axially spaced from the first capacitor with a major portion telescoped within the tube and having an outwardly projecting flange overlapping the other end of the tube, an inner electrode extending out over the end of the flange and soldered to the shoulder, and an outer electrode soldered to the tube, ferrite beads on the pin between the capacitors, and means for connecting the outer electrode to the ground plate.

3,275,954
MULTIPLE CONNECTOR WHEREIN PINS HAVE LIMITED MOVEMENT WITHIN HOUSING AND EACH PIN HAS INTEGRAL LOW-PASS FILTER
Nello Coda, Erie, Pa., and James J. Walsh, Trenton, Ontario, Canada, assignors to Erie Technological Products, Inc., a corporation of Pennsylvania
Filed Aug. 20, 1963, Ser. No. 306,406
9 Claims. (Cl. 333—79)



1. A connector having a ground plate with a plurality of openings extending through the plate, a pair of blocks of insulating material respectively on one and on the opposite side of the ground plate, each block having a plurality of sockets with each socket in one block being aligned with an associated socket in the other block and with the open end of each socket adjacent and aligned with one of said openings and with the bottom of each socket spaced axially from the opening with which it is aligned, a pin extending through each opening and through the bottoms of the associated sockets, a shoulder on the pin within each socket and in thrust relation to the bottom of the socket, a filter assembly on each pin comprising ferrite beads on the pin between the shoulders, tubular ceramic capacitor means telescoped over the pin between the shoulders and extending through each opening and having inner electrodes surrounding the beads and connected to the pin and an outer electrode, and means for electrically connecting the outer electrode to the ground plate.

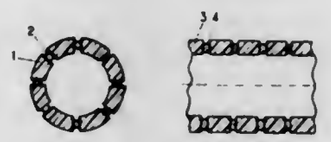
3,275,955
DIELECTRIC-METAL WAVEGUIDE
Marie Pierre Prache, Versailles, France, assignor to Lignes Telegraphiques & Telephoniques, Paris, France
Filed July 15, 1964, Ser. No. 382,905
Claims priority, application France, Aug. 6, 1963, 943,907; Apr. 30, 1964, 972,909
6 Claims. (Cl. 333—95)



1. A transmission circuit for very high frequency electromagnetic waves, adapted to the transmission of a preferred mode having a circular symmetry about a longitudinal axis of said circuit, comprised of a homogeneous cylindrical tube made of a high permittivity and low loss dielectric material inside which are embedded lengths of thin metallic wires spaced and insulated from each other and substantially oriented in a direction in which the electric field of said preferred mode has a zero component, in which said preferred mode is a fundamental circular-symmetrical TM mode and in which said wire lengths are oriented in planes substantially perpendicular to said axis and along circles having their center on said axis.

2. A transmission circuit for very high frequency electromagnetic waves, adapted to the transmission of a preferred mode having a circular symmetry about a longitudinal axis of said circuit, comprised of a homogeneous cylindrical tube made of a high permittivity and low loss dielectric material inside which are embedded lengths of thin metallic wires spaced and insulated from each other and substantially oriented in a direction in which the electric field of said preferred mode has a zero component, in which said preferred mode is a fundamental circular-symmetrical TE mode and in which said wire lengths are oriented in radial directions passing through said axis and located in planes substantially perpendicular thereto.

3,275,956
DIELECTRIC WAVE GUIDE
Marie Pierre Prache, Versailles, France, assignor to Lignes Telegraphiques & Telephoniques, Paris, France
Filed July 15, 1964, Ser. No. 382,906
Claims priority, application France, Aug. 6, 1963, 943,906
4 Claims. (Cl. 333—95)



1. A transmission line for very high frequency electromagnetic waves, adapted to the propagation of the fundamental TM mode having revolution symmetry about a longitudinal axis of said line, comprising a circular cylindrical tube of low-loss dielectric material, in which said dielectric tube comprises principal elongated elements the length of which extends in a direction parallel to said axis and each having their transversal cross-section limited by two circular arcs centered on said axis and two straight line segments passing through said axis, said principal elements being separated from each other by auxiliary strips having smaller cross-section than the principal elongated elements and constituted of a dielectric material having a permittivity lower than that of the material constituting said elements.

4. A transmission line for very high frequency electromagnetic waves, adapted to the propagation of the fundamental TE mode having revolution symmetry about a longitudinal axis of said line, comprising a circular cylindrical tube of low-loss dielectric material, in which said dielectric tube is made up from rings alternately consisting of dielectric materials having a higher and a lower permittivity, said rings being stacked in the direction of said longitudinal axis and the length along said direction of the lower permittivity rings being shorter than that of the higher permittivity rings.

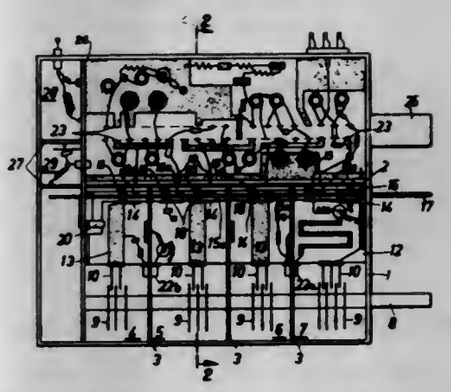
3,275,957
MICROWAVE ENERGY WINDOWS WITH CONDUCTIVE COATING FOR DISSIPATING STATIC CHARGES
Alan Hugh Pickering, Frederick Charles Thompson, and Arthur James Young, Essex, England, assignors to English Electric Valve Company Limited, London, England, a British company
Filed Aug. 19, 1963, Ser. No. 303,038
Claims priority, application Great Britain, Oct. 1, 1962, 37,029/62
7 Claims. (Cl. 333—98)

1. A microwave energy window of insulating material having on at least one of its surfaces a thin resistive conductive coating shaped to form at least one conductor extending substantially perpendicularly to the direction of



the high frequency electric field component in the plane of the window.

3,275,958
U.H.F.-V.H.F. TUNER WITH SWITCHABLE COMMON ELEMENTS
Josef Rehm, Wolnzach Bahnhof, and Robert Mittenhuber, Ingolstadt, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Sept. 15, 1964, Ser. No. 396,560
Claims priority, application Germany, Sept. 18, 1963, T 24,727
19 Claims. (Cl. 334—3)



1. For use in a television receiver, a combined U.H.F. and V.H.F. channel selector switch comprising, in combination:

(a) a housing;

(b) a main partition arranged in said housing and dividing the same into a U.H.F. part and a V.H.F. part, said housing and partition constituting "ground";

(c) capacitatively turnable resonant tank circuit means arranged in said U.H.F. part of said housing, said resonant tank circuit means including inner conductors each having one end directed toward said partition;

(d) inductance means incorporating a plurality of inductances arranged in said V.H.F. part; and

(e) change-over switch means for connecting said inductance means to said inner conductors of said resonant tank circuit means to adapt the switch for V.H.F. operation, said switch means being arranged in the region of said partition and movable between a U.H.F. position wherein said one end of each of said inner conductors is connected directly to ground and a V.H.F. position wherein said one end of each of said inner conductors is connected to a respective one of said inductances.

3,275,959
CIRCUIT BREAKER WITH EXTERNALLY ADJUSTABLE TRIPPING MECHANISM
Ross E. Locher, South Pasadena, Calif., assignor to Zinsco Electrical Products, Los Angeles, Calif., a corporation of California
Filed Dec. 15, 1964, Ser. No. 418,406
5 Claims. (Cl. 335—35)

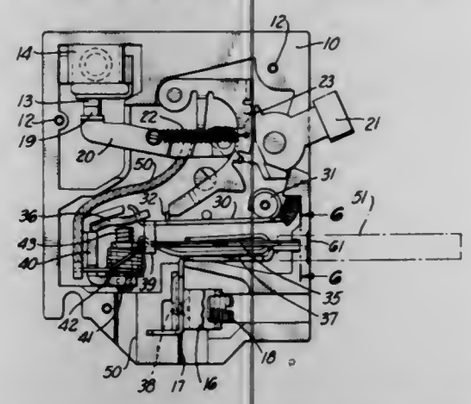
3. In a circuit breaker having a releasable switch, the combination of:

a housing comprising first and second body members joined together along an edge;

a trip member mounted within said housing for releasing said switch;

a mounting bracket carried adjacent one end in said housing and having a plate-like section at the other end;

a thermal responsive member mounted on said plate-like section, with a portion spaced from said bracket disposed for engaging said trip member; and

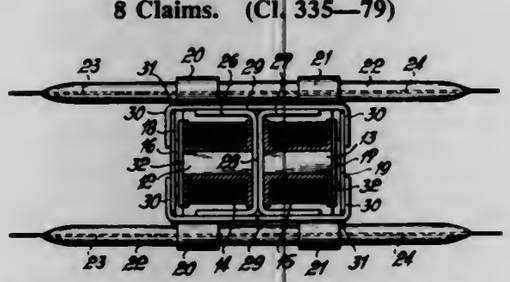


an adjusting strip removably inserted between said body members along said edge for springing said body members apart and having a notch engageable with said bracket for bending said bracket and varying the position of said bracket and said thermal responsive member relative to said trip member.

3,275,960
BISTABLE MAGNETICALLY CONTROLLED SWITCH

Edmund K. Gärtner, Frankfurt am Main, and Thea Schaffert, Petterweil, Germany, assignors to Telefonbau und Normalzeit G.m.b.H., Frankfurt am Main, Germany

Filed Aug. 16, 1965, Ser. No. 480,006
Claims priority, application Germany, Oct. 23, 1964, T 27,269
8 Claims. (Cl. 335—79)



1. A bistable magnetically controlled switch comprising in combination:

(a) a pair of aligned permanent bar magnets;

(b) a pair of energizing windings each operatively related to one of said pair of magnets;

(c) a pair of magnetizable reeds forming a pair of cooperating contacts;

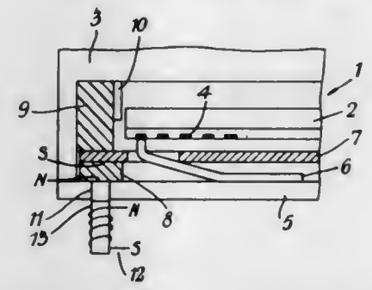
(d) a pair of flux-carrying members of magnetizable sheet metal each including a first portion arranged adjacent and parallel to remote pole surfaces of said pair of magnets and each including a second portion bent out of the general plane of said first portion and having an end situated immediately adjacent to one of said pair of reeds; and

(e) a structure of magnetizable material including a portion arranged between juxtaposed pole surfaces of said pair of magnets and further including a pair of axial extensions each having an end overlapping said end of said second portion of one of said pair of flux-carrying members and separated from said end of said second portion of one of said pair of flux-carrying members by a gap of predetermined width.

3,275,961
WIPER LIFT ENCODERS

Noel Percival Parkinson, Wembley, England, assignor to Moore Reed and Company Limited

Filed Jan. 11, 1965, Ser. No. 424,523
Claims priority, application Great Britain, Jan. 17, 1964, 2,279/64
10 Claims. (Cl. 335—106)

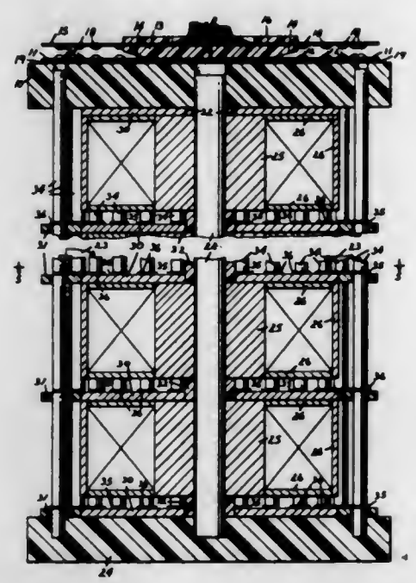


1. A digital encoder comprising an electrical contact support element, a plurality of electrical contacts disposed on said support element, a wiper for sensing engagement with said contacts, one of said support element and wiper being movable relative to the other for successive sensing operation, a housing member of fixed disposition relative to the encoder, resilient compression means operably out of sensing engagement, and sensing control means selectively operable to compress said resilient compression located between said housing member and one of said element and wiper urging the latter component in a first direction transverse to the direction of support element-wiper movement to hold said wiper and contacts normally means in a second direction opposite to said first direction to effect sensing engagement between said wiper and contacts.

3,275,962
ELECTRICAL CIRCUIT SELECTOR

Richard H. Long, E. 1428 Park, Grants Pass, Oreg.

Filed Mar. 26, 1964, Ser. No. 354,951
3 Claims. (Cl. 335—107)



1. An electrical circuit selector, comprising:

a rigid framework including a fixed end member;

a plurality of movable electrical contacts mounted on said end member;

a plurality of actuating rods, said rods being independently mounted on said framework for longitudinal axial motion relative thereto in parallel directions, each rod being in longitudinal axial alignment with one of said electrical contacts;

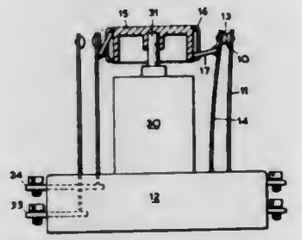
a plurality of electro-magnetic units stacked on said framework in axially spaced positions along the length of said rods, each electromagnetic unit including a wound core fixed to said framework and a movable metal plate adjacent thereto, each metal plate being apertured to slidably receive said rods;

and removable protruding elements on a pre-selected combination of said rods adjacent to each of said plates.

3,275,963
ELECTRICAL CONTACT ARRANGEMENT SETTABLE AT WILL TO BE NORMALLY OPENED OR NORMALLY CLOSED

Hans Hoel, Oslo, Norway, assignor to The English Electric Company Limited, London, England, a British company

Filed July 31, 1964, Ser. No. 386,712
Claims priority, application Great Britain, Sept. 4, 1963, 34,957/63
6 Claims. (Cl. 335—121)



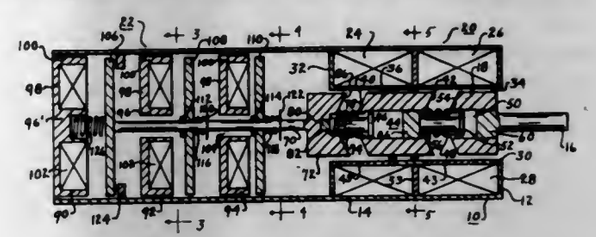
1. An electrical contact arrangement comprising a body portion, first and second contact members, means mounting first and second contact members on the said body portion and constraining movement thereof relative to the body portion along a first predetermined line between mutually engaged and mutually disengaged positions, an operating member movable along a second predetermined line approximately normal to the first line, first and second stops in one of the second contact members and the operating member spaced apart in a direction parallel to said second line, pivot holding means in the other of the second contact member and the operating member, a rigid operating link, first and second pivot means at the two ends of the said rigid operating link, the rigid operating link being pivoted at one end about said pivot holding means and settable at will to pivot about one of the said first and second stops, whereby, when the link pivots about the first stop, movement of the operating member in one direction along the second line moves the second contact member from the disengaged to the engaged position, and, when the link pivots about the second stop, movement of the operating member in the same direction moves the second contact member from the engaged to the disengaged position.

3,275,964
MULTIPLE POSITION SOLENOID DEVICE

Brent Kumm, South Bend, Ind., assignor to Koontz-Wagner Electric Company, Inc., South Bend, Ind., a corporation of Indiana

Filed Jan. 6, 1964, Ser. No. 335,904
10 Claims. (Cl. 335—259)

1. A multiple position solenoid device, comprising a cylindrically-shaped housing, first and second coils mounted in one end of said housing and having hollow cores, two axially movable plunger-like armatures disposed in said cores and spaced from one another for relative axial movement, a lost motion connection between said armatures, a stem on one of said armatures for connection with an element to be operated by said device, a plurality of additional coils having cores with hollow centers spaced from one another in axial alignment in said housing, a shaft extending through the cores and having a head thereon, a lost motion connection between said armatures and said head, a disc-shaped armature on said shaft for each of said last mentioned coils, each being spaced progressively further from its respective coil when

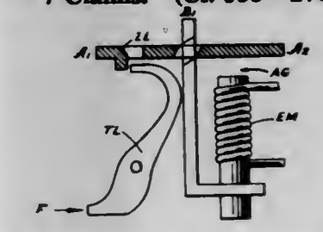


the coils are deenergized, and a lost motion connection between said shaft and each of said last mentioned armatures except the one having the greatest distance to travel to its respective coil when the coil is energized.

3,275,965
BIASED PIVOT ASSEMBLY

George W. Knecht, Brooklyn, N.Y., assignor to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York

Filed Apr. 7, 1964, Ser. No. 357,877
7 Claims. (Cl. 335—276)



6. An electromagnetic circuit comprising an electromagnet, and a biased armature assembly in series with said electromagnet in said magnetic circuit, said armature assembly comprising the combination of a pivotal member having a defined neck portion, a pivoting member having an aperture disposed at the center of gravity thereof and embracing therein the neck portion of said pivotal member, and means at the neck-aperture intersection for providing a pair of pivots offset on either side of the said center of gravity, the effective one of which is always on the same side regardless of the assembly's attitude.

3,275,966
ELECTRICAL TRANSFORMER HAVING A WOVEN WINDING

Artie Dale Ashby, Jr., Arbutus, and Edward R. Higgins, North Linthicum, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

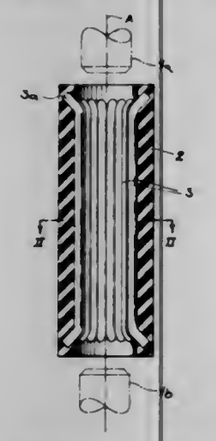
Filed Jan. 13, 1964, Ser. No. 337,331
5 Claims. (Cl. 336—181)



1. An electrical transformer comprising a plurality of input windings and at least one output winding all having

terminals adapted for connection to external electrical circuits, magnetic core means, at least said plurality of input windings being formed of a plurality of insulated conductors, said insulated conductors being interleaved, forming a substantially flat assembly of woven conductors disposed in substantially the same plane, said assembly of conductors being disposed in inductive relation with said magnetic core means, forming a plurality of individual windings having similar electrical characteristics.

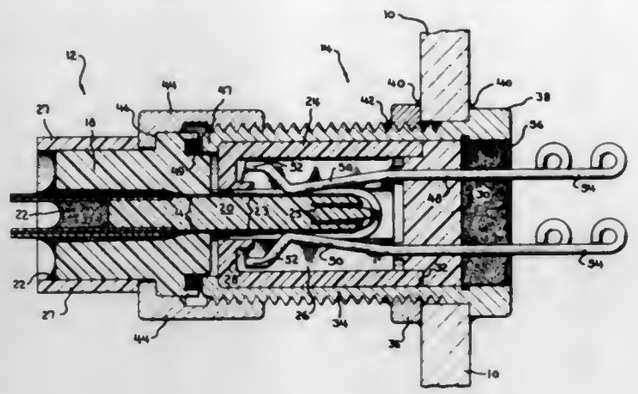
3,275,967
ELECTRICAL COUPLING WITH TWO SLEEVE-CONNECTED PLUGS
Erich Hamm, Romerstrasse 151, Wesseling, near Cologne, Germany
Filed Sept. 2, 1965, Ser. No. 484,563
Claims priority, application Germany, Jan. 4, 1961, H 41,380; Feb. 23, 1961, H 41,824
9 Claims. (Cl. 339—61)



1. An electrical connector comprising a radially deformable elongated supporting sleeve of resilient material provided with a through-going longitudinal bore, said bore being of constant cross-section over at least the major portion of its length, and an array of at least three substantially identical stiff and mutually unconnected elongated conductor elements tangent to the periphery of an imaginary circular cylinder coaxial with said bore, said elements linging the wall of said bore and extending substantially throughout the length thereof in a direction parallel to said axis with freedom of independent individual displacement away from said axis, against the sole resistance of said resilient material, under pressure of a pair of mating plugs inserted into said bore from opposite ends, each of said elements having its extremities anchored to opposite ends of said sleeve.

3,275,968
CONNECTOR FOR A FLEXIBLE FLAT CABLE
William Stephen McCaughey, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed June 23, 1964, Ser. No. 377,326
2 Claims. (Cl. 339—89)

1. A plug termination for a flexible flat cable, said cable comprising a plurality of conductors in side-by-side parallel relationship with each conductor being surrounded by insulating material, an end portion of said cable being folded along a fold line extending parallel to the axis of said cable whereby said end portion comprises two group of parallel conductors disposed in at least two coextensive planes, said cable fairing from a flat condition, in which said conductors are parallel and co-planar, to said folded condition, spacer means between said coextensive planes, the end portions of said conductors being secured to, and supported by, said spacer means, a cylindrical support in surrounding relationship to said spacer and said end portions of said cable, coupling means mounted on said support, said coupling means and said end portions extending beyond said cylindrical support,



said coupling means being engageable with a complementary receptacle having means therein for contacting said conductors.

3,275,969
WIRE SHORTENING AND TYING DEVICE
Charles Sheeran, Cranston, R.I., assignor to Victor Electric Wire & Cable Corp., Coventry, R.I.
Filed Nov. 2, 1964, Ser. No. 408,070
14 Claims. (Cl. 339—103)



1. A tie for securing into a bundle a plurality of folded portions of an electrical wire which is a part of an electrical assembly, said tie comprising a relatively thin flexible strap having two ends and two flat sides

(A) a raised boss at one end of said strap having,
  (1) a groove therein adapted to receive a portion of said electrical wire
(B) an elongated hole through said strap adjacent said boss,
(C) a button extending from one flat side of said strap at the other end of said strap, said button having
  (1) a flat cap
  (2) a neck portion smaller in diameter than said cap and adapted to fit in said elongated hole in engagement with the sides of said hole retained therein by said cap,
(D) means at the same end of said strap as said button and at the other flat side of said strap for joining said strap to said electrical assembly.

3,275,970
CONNECTOR
Bengt J. Johanson, Des Plaines, and Nick Oskerka, Jr., Hillside, Ill., assignors to United-Carr Incorporated, a corporation of Delaware
Filed Feb. 6, 1964, Ser. No. 343,085
1 Claim. (Cl. 339—143)

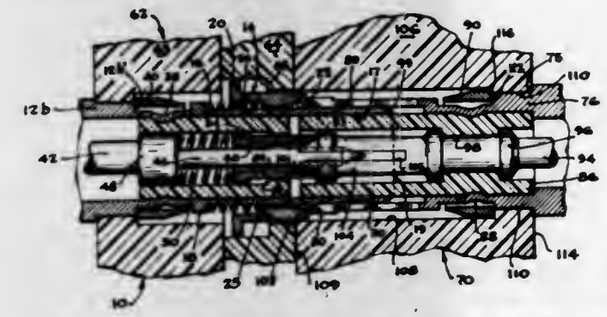
An improved shielded electrical connector defined by mating connector components which provide an assured continuous electrical path between the components, said connector comprising:

a shield associated with each of said mating connector components, the shield of one of said components having a collar thereon and terminating in a conical face, a portion of the shield of the other of said components having a plurality of flexible finger elements each terminating in a truncated conical face,

the truncated conical face of said finger elements defining an obtuse angle with respect to the longitudinal axis of said shield;

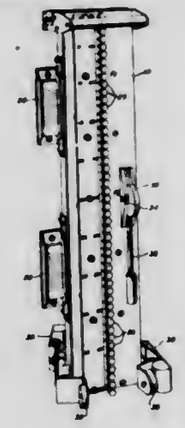
a spring member mounted on said one component, one end of said spring engaging the collar extending from said one component end;

a radially rigid sleeve element telescopically mounted on the shield of said one component, one end of said sleeve engaging the other end of said spring element, the other end of said sleeve having a truncated con-



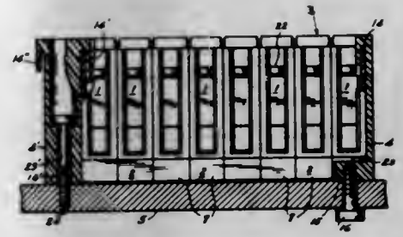
ical face, the truncated conical face of said sleeve defining an acute angle with the longitudinal axis of said shield, the conical face of said sleeve deflecting the flexible finger elements of the other shield into positive electrical contact with said one shield, said spring element biasing the sleeve into positive engagement with the fingers to maintain a radially inward force component on the fingers to maintain positive electrical contact between the connector components.

3,275,971
CONNECTOR
John H. King, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 7, 1964, Ser. No. 388,144
5 Claims. (Cl. 339—151)



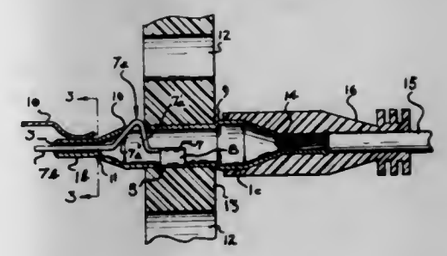
1. Apparatus for providing test connections for a plurality of pairs of electrical conductors comprising, in combination, a U-shaped body member, a platform member pivotally mounted on said body member, a support structure fixedly mounted on said body member, a plurality of pairs of contact members pivotally mounted on said support structure, said contact members normally being urged under spring force to maintain contact with corresponding ones of said conductors, means including said platform member for pivoting all of said contact members in concert thereby to break contact with said conductors and means for selectively locking pairs of said contact members in a relatively open position out of contact with said conductors whereby operation of said pivoting means makes or breaks contact between only preselected ones of said contacts and corresponding ones of said conductors.

3,275,972
TERMINAL ASSEMBLY
Josef Eisert, Heinrichstrasse 1–7, Essen, Germany
Filed Nov. 13, 1963, Ser. No. 323,453
Claims priority, application Germany, Nov. 17, 1962, E 23,881
14 Claims. (Cl. 339—198)



1. A terminal assembly comprising an elongated flexible bar of resiliently deformable but substantially inextensible insulating material; a series of closely adjacent and substantially identical flat dielectric casings with at least partly closed bottoms and open tops secured to said bar in the region of said tops, said casings extending transversely to said bar and being spreadable at their bottoms upon a coiling of said bar upon a center remote from said bottoms; a series of terminal carriers respectively received in said casings, said carriers being overlain by said bar; and a base supporting said casings; and fastening means including a pair of end plates securing said casings to said base.

3,275,973
ONE PIECE PLUGBOARD PLUG CONNECTOR
Bernard Edward Shlesinger, Jr., Annandale, Va., assignor to AMP Incorporated, Harrisburg, Pa.
Filed July 26, 1965, Ser. No. 474,932
24 Claims. (Cl. 339—217)

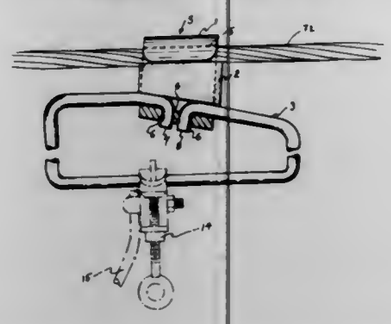


1. A one-piece plug connector comprising a sleeve having a stabilizing section extending outwardly from one end and a pair of aligned openings, one opening being disposed adjacent said stabilizing section, the other opening being spaced from said stabilizing section; a detent member integrally anchored at one end to a piece within said sleeve and including a first section extending from said piece and along an interior surface of said sleeve to said other opening, a second section defining a detent section extending through said other opening and outwardly beyond an exterior surface of said sleeve, a third section extending from said second section through said one opening and along said stabilizing section, and a fourth section defining a nose portion surrounding said stabilizing section; said fourth section being movable relative to said stabilizing section upon a force being applied thereto causing said detent section to remain in a stationary or move slightly outwardly from a normal position of rest.

3,275,974
ELECTRICAL STIRRUP CONNECTOR

James Lenhart Mixon, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Apr. 6, 1964, Ser. No. 357,715
11 Claims. (Cl. 339—243)

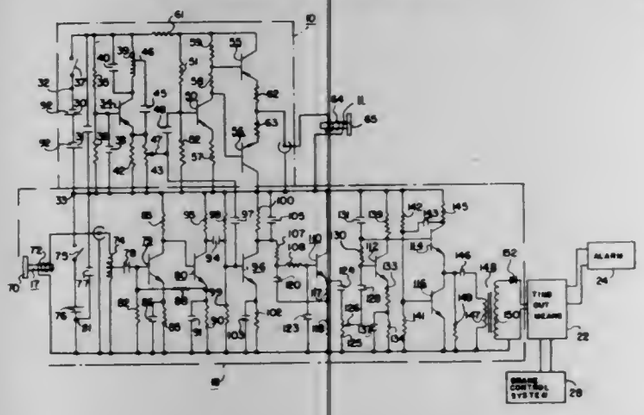


1. An electrical stirrup connector for making tap connections to an electric power line comprising: a connector body member adapted to engage a section of said electric power line, said connector body having an opening to permit said connector body to be placed on said electric power line, a wire loop having a part thereof for disposition in said connector body member, means for securing said part of said wire loop within said connector body to prevent any arcuate movement of said wire loop relative to said connector body, and a wedge-shaped member for engagement within said connector body member to wedge the section of said electric power line and the part of said wire loop between the inner surface of said connector body member and said wedge-shaped member to provide connection therebetween.

3,275,975
ULTRASONIC DETECTING MEANS

Joseph W. King, Lakewood, Ohio, assignor to Cleveland Technical Center, Inc., Cleveland, Ohio, a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,758
12 Claims. (Cl. 340—1)

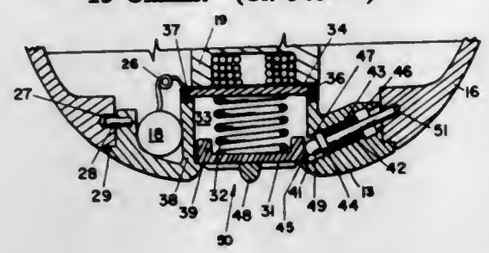


1. In a system for detecting the absence of movement of an ultrasonic energy reflecting body within a predetermined period comprising:
an ultrasonic transmitter for transmitting a beam of energy toward said body;
an ultrasonic Doppler receiver including a transducer for receiving energy reflected from said body;
alarm means for indicating the failure of said receiver to receive a Doppler signal from said body within said predetermined period; and
resettable time-out means connected between said receiver and said alarm means and including means for actuating said alarm means when no Doppler signal is received within said predetermined period.

3,275,976
BOTTOM RELEASE MECHANISM FOR A SONOBUOY

Everett W. Farmer, Reeds Ferry, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Mar. 26, 1964, Ser. No. 354,944
13 Claims. (Cl. 340—2)

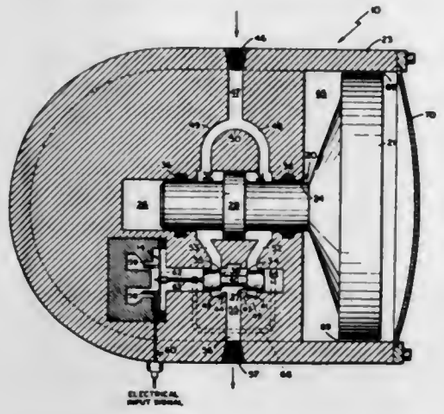


9. A water impact release mechanism for an air launched sonobuoy's contents from said sonobuoy comprised of:
(A) a bottom cap mounted on said sonobuoy to retain said sonobuoy's contents within said housing until said water impact,
(B) an air damped release button having a low moment of inertia mounted within said bottom cap and movable to a release position under the pressure of a dynamic water force upon said water impact, said air damped release button's low moment of inertia thereby providing said release button with the ability to resist high frequency, short duration, shock forces without moving to said release position, and release means activated by said button in its release position to allow the release of said housing's contents.

3,275,977
HYDROACOUSTIC TRANSDUCER WITH CENTERING MEANS

John V. Bouyoucos, 10 Blossom Circle E., Rochester, N.Y.

Original application Nov. 10, 1961, Ser. No. 151,516, now Patent No. 3,212,473. Divided and this application May 28, 1965, Ser. No. 459,859
9 Claims. (Cl. 340—15)

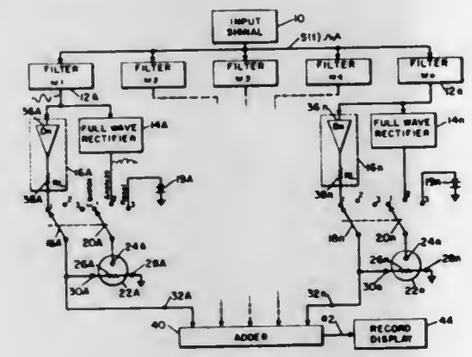


1. A hydroacoustic device comprising
(a) a housing having a cavity therein,
(b) a valving member disposed in said cavity, moveable about a center position,
(c) means including a first path in said housing for passing fluid under pressure through said cavity under the control of said valving member for establishing acoustic vibrations,
(d) said valving member and the walls of said cavity defining at least one chamber,
(e) impedance means in a second path in said housing communicating with said chamber for the flow of fluid into and out of said chamber,
(f) said impedance means including a fluid line having an acoustic impedance higher than that of said valving member at the frequency of vibration of said valving member, and
(g) said valving member and said walls of said cavity defining at least one orifice for controlling the flow of fluid to said one chamber so that motion of said valving member with respect to said center position at a frequency lower than the frequency of said acoustic vibrations results in a pressure variation in said chamber, which pressure variation urges said valving member to said center position.

3,275,978
SEISMIC SIGNAL PROCESSING BY EQUALIZATION OF FREQUENCY COMPONENTS OF A SEISMIC SIGNAL

John L. Shanks, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Mar. 1, 1963, Ser. No. 262,106
5 Claims. (Cl. 340—15.5)



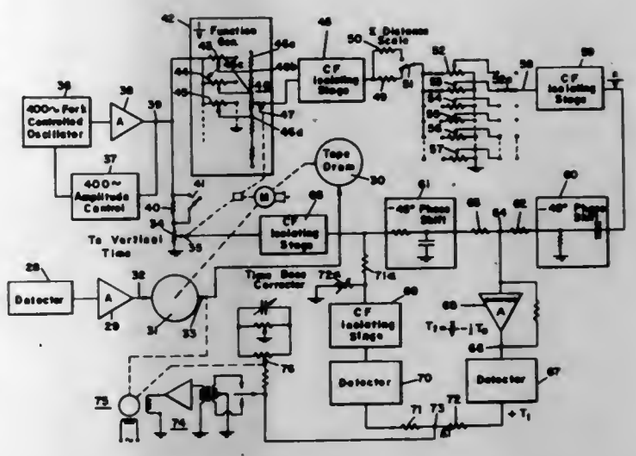
1. An apparatus for processing a seismic signal which comprises in combination: a set of a plurality of parallel sharply-tuned band pass filter sections with each filter section being tuned for a different frequency; rectifier means connected to the output of each such filter section; a constant current source connected to the output of each said filter section and parallel with said rectifier means; a chemical integrator for each filter section, said chemical integrator having a control element and a substrate resistance; switching means when in one position to connect the substrate resistance to said constant current source and to disconnect the control element from the rectifier means and when in a second position to disconnect the substrate resistance from the constant current source and to connect the control element to the rectifier means.

3,275,979
DYNAMICALLY OBTAINING NORMAL MOVEOUT CORRECTION

Silvan E. McAlpin, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Apr. 29, 1963, Ser. No. 276,528
6 Claims. (Cl. 340—15.5)

4. A normal moveout correction system of the type which applies static and dynamic moveout correction to seismic signals received at a detector spaced from a shot point comprising first means for producing a signal proportional to the time between real time and shot time, second means for producing a horizontal time signal proportional to the distance between the shot point and a particular detector divided by the average velocity of the seismic wave from the shot point to the reflecting beds, a phase shifter connected to said first means and to said second means for phase shifting by 90° said real time signal and said horizontal time signal one from the other and for combining said phase shifted signals to produce a slant time signal proportional to the slant travel time

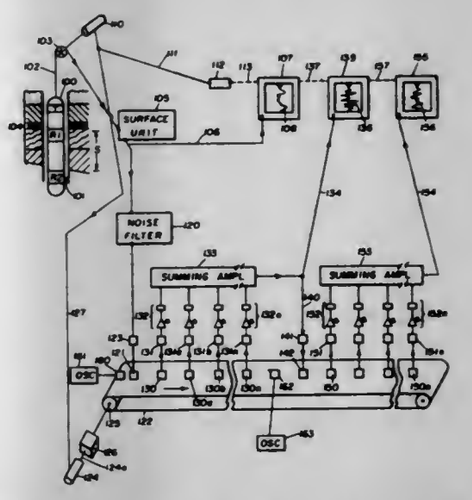


required for a wave to travel from said shot point to a reflecting interface and to said detector, and means for subtracting said real time signal from said slant time signal for producing an output proportional to the normal moveout correction required for seismic signals received at said detector.

3,275,980
METHODS OF INVERSE FILTERING GEOPHYSICAL DATA

Manus R. Foster, Irving, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed May 29, 1963, Ser. No. 284,256
8 Claims. (Cl. 340—15.5)

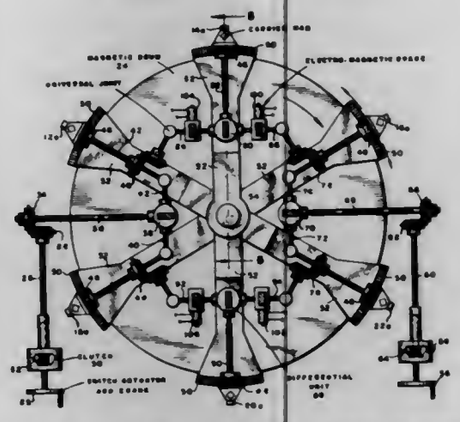


1. In geophysical exploration, the method which comprises the steps of:
(a) generating as a dependent variable a first function controlled by an earth characteristic and which function has been filtered by an operator whose impulse response is a moving-average characteristic, and
(b) passing said first function through a system having an impulse response which converts said moving-average characteristic to a spike function to render said first function more representative of said earth characteristic and more free from system distortion.

3,275,981
APPARATUS FOR CORRELATING DIP LOG TRACES

John H. Sasseen, Malcolm R. MacPhail, and Carl R. Wischmeyer, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Aug. 22, 1963, Ser. No. 303,746
1 Claim. (Cl. 340—15.5)



In combination with a magnetic drum adapted for the recording of a plurality of dip log curves taken at a plurality of equally spaced measuring points around a borehole: six magnetic heads movably mounted about the magnetic drum; and first means connected to said six magnetic heads for displacing four of the six magnetic heads along the magnetic drum, said first means being constructed and arranged to displace a first magnetic head and a second magnetic head by equal amounts in opposite directions, and to displace a third magnetic head and a fourth magnetic head by equal amounts in opposite directions, with the displacements of the first and third magnetic heads being in the same direction, and second means connected to said first means to displace the fifth magnetic head an amount equal to the sum of the displacements of the first and third magnetic heads, and to displace the sixth magnetic head an amount equal to the sum of the displacements of the second and fourth magnetic heads; said first means for displacing four of the six magnetic heads comprising a first rotatable member, a first synchro generator operated by the first rotatable member, a first synchro motor and a second synchro motor connected to said synchro generator and to the first and second magnetic heads, respectively, a second rotatable member, a second synchro generator operated by the second rotatable member, and a third synchro motor and a fourth synchro motor connected to said second synchro generator and to the third and fourth magnetic heads, respectively; said second means comprising means including a synchro differential generator and a synchro motor connecting the first and third magnetic heads to the fifth magnetic head, and means including a synchro differential generator and a synchro motor connecting the second and fourth magnetic heads to the sixth magnetic head.

3,275,982
APPARATUS AND METHOD FOR NORMALIZING OR EQUALIZING SEISMOGRAM TRACES

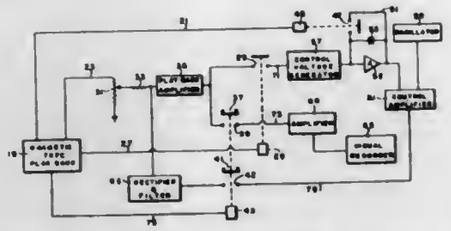
Charles W. Bogs and Richard R. Tharp, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Nov. 26, 1963, Ser. No. 326,042
7 Claims. (Cl. 340—15.5)

1. In seismic exploration wherein a seismic impulse is injected into the earth at a first location, resulting earth movements are detected at a multiplicity of locations spaced from said first location, and the detected earth movements are converted into electrical signals which are recorded as data traces on a reproducible recording medium, the method of eliminating or reducing the effects of variable seismic impulse parameters and variable detecting parameters from the individual data traces, comprising:

reproducing at least a portion of each data trace after the portion thereof corresponding to the reproduction of first arrival signals on the seismogram as a first individual electrical signal;

detecting the average value of a characteristic of said individual electrical signal that is variable as the result of variations in said variable seismic impulse parameters and variable detecting parameters;



producing a control electrical signal having an amplitude that is indicative of said average value;

again reproducing said each data trace to produce a second individual electrical signal;

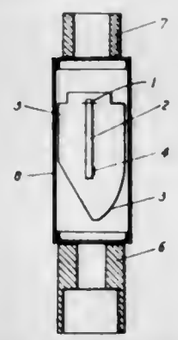
amplifying said second individual electrical signal by an amount that is an inverse function of the amplitude of said control signal; and

recording said amplified signal.

3,275,983
ULTRASONIC INCLINATION METER

Tetsuichi Kaneko, Tokyo, Japan, assignor to Oyo Chishitsu Co. Ltd., Tokyo, Japan, a corporation of Japan

Filed July 30, 1963, Ser. No. 298,783
Claims priority, application Japan, Aug. 7, 1962, 37/32,587
4 Claims. (Cl. 340—18)



1. Inclination metering apparatus comprising, in combination, electrical pulse driving, receiving and recording equipment and an ultrasonic inclination meter,

said meter comprising a casing, a pivot mounted within the casing, a pendulum suspended from the pivot to freely rotate about said pivot in one plane of rotation,

a transducer mounted on said pendulum and electrically connected to said pulse equipment, a reflecting plate mounted within said casing, and

a liquid filling said casing and immersing the pendulum transducer and reflecting surface,

wherein the transducer is driven to propagate ultrasonic pulses toward, and receive reflected pulses from, the reflecting plate,

wherein the distance between the transducer and the reflecting plate changes in direct proportion to the change in the inclination angle from the vertical of the meter in the plane of rotation of the pendulum,

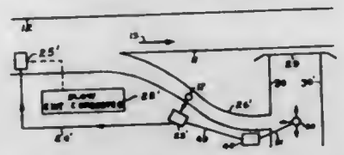
wherein the propagated and reflected pulses are recorded on the pulse recording equipment, and

wherein the time elapse between the propagated and reflected pulses provides a direct measurement of said inclination angle.

3,275,984
TRAFFIC MONITORING AND CONTROL SYSTEM

John L. Barker, Norwalk, Conn., assignor to Laboratory for Electronics, Inc., Waltham, Mass., a corporation of Delaware

Continuation of application Ser. No. 791,460, Feb. 5, 1959, now Patent No. 3,237,154, dated Feb. 22, 1966. This application May 27, 1965, Ser. No. 459,284
12 Claims. (Cl. 340—31)



5. A traffic control system for an exit ramp from an expressway or the like to another road, including

means for sensing a characteristic of traffic flow along said exit ramp, said sensing means providing an electrical signal output having a running average value representing a running average of said traffic flow characteristic as averaged over a series of vehicles in said traffic flow,

means for providing from said output a further electrical signal output having a value representing the rate of change of said average value as representative of the rate of change of said sensed traffic flow characteristic,

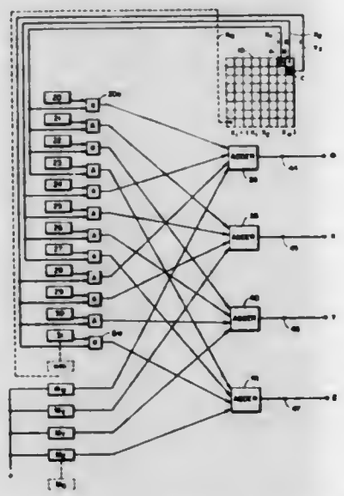
traffic control means near one end of said ramp,

and means coupled to said traffic control means and to said further output for controlling said traffic control means in response to said further output beyond a predetermined value representing a rate of change in said traffic flow characteristic beyond a predetermined minimum amount in a predetermined direction of change.

3,275,985
PATTERN RECOGNITION SYSTEMS USING DIGITAL LOGIC

William H. Dunn, Red Bank, N.J., Curt F. Fey, Chevy Chase, Md., and Laveen N. Kanal and William L. McDermid, Rochester, and Donald F. Smith, Pittsford, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed June 14, 1962, Ser. No. 202,525
15 Claims. (Cl. 340—146.3)

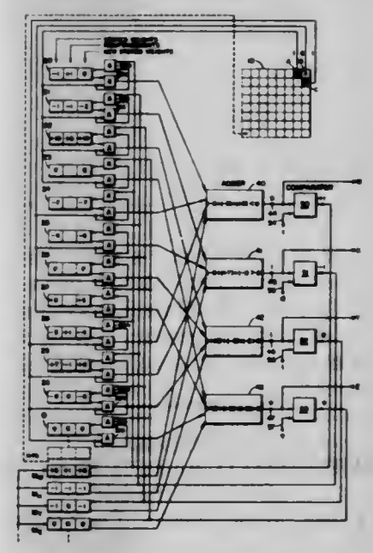


1. A pattern recognition system comprising a plurality of sensing elements for observing the elements of a pattern, a plurality of groups of weight stores, an adder, means for successively gating the weight contents of the stores of the groups of stores to said adder, a register for receiving the summation quantity of each addition, a first and second threshold number generator, a comparator, means for coupling said comparator to said register and to said threshold generators for successively comparing the contents of said register with a first and second threshold number, a plurality of output lines, means for coupling said lines successively to said register for reading out a logical 1 or 0 depending, respectively, on whether the contents of said register is greater than 0 for producing on said output lines a binary output number to identify each pattern, and logical circuit means coupled to said comparator for indicating when the numerical content of said register is intermediate the numerical content of said first and second threshold number.

3,275,986
PATTERN RECOGNITION SYSTEMS

William H. Dunn, Red Bank, N.J., Curt F. Fey, Chevy Chase, Md., and Laveen N. Kanal and William L. McDermid, Rochester, and Donald F. Smith, Pittsford, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed June 14, 1962, Ser. No. 202,529
8 Claims. (Cl. 340—146.3)



1. A pattern recognition system for classifying, by a coded binary number, each of many patterns of an array of two-valued signals, said system comprising an array of sensing elements for deriving said signals, a plurality of groups of storage devices, the storage devices of each group being enabled and disabled, respectively, by the two values of a different one of said signals and each storage device containing a numerically weighted parameter capable of incremental changes, and a plurality of adders, each adder being associated with one storage device of each of said groups to produce a logical 1 or 0 determined by, respectively, summations of said weighted parameters of enabled storage devices which are above and below predetermined threshold values.

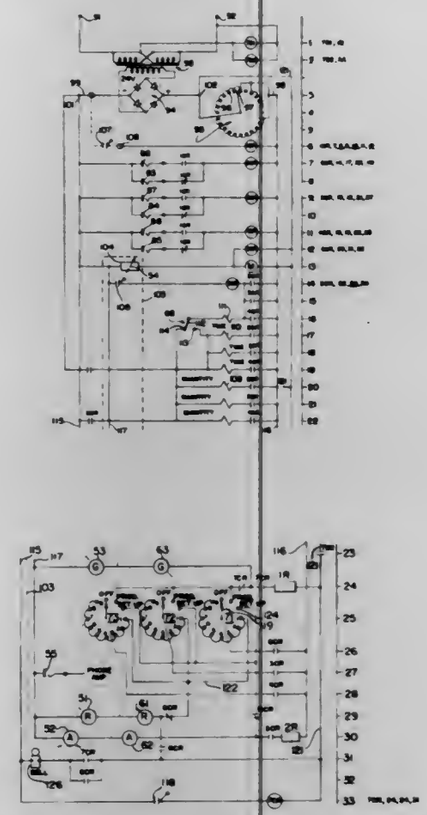
3,275,987
PRODUCTION MONITORING SYSTEM

Charles G. Mann, Farmington, Mich., assignor to Weltronic Company, Southfield, Mich., a corporation of Michigan

Filed May 15, 1961, Ser. No. 109,898
12 Claims. (Cl. 340—147)

4. A system for monitoring machine operations comprising a work station located in the vicinity of the machine to be monitored, a central station remote from

said machine, manually operative means at said work station for indicating conditions at said work station, a read-out mechanism at said central station responsive to said manually operative means at said work station, manually

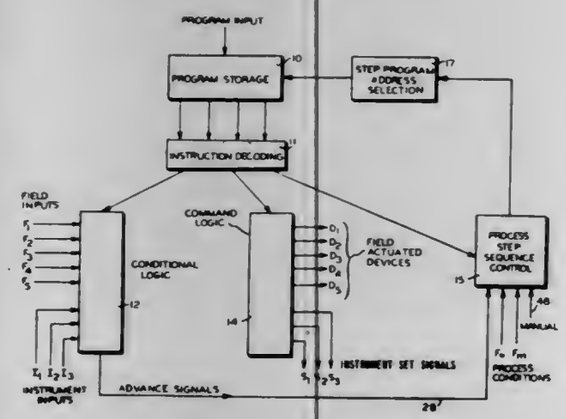


operative means at said central station for selectively assigning said work station to a selected one of a plurality of predetermined production classifications and means responsive to said assigning means for recording the assigned classification of said work station on a time basis.

3,275,988
PROGRAMMED BATCH SEQUENCE CONTROLLER

Edward W. Yetter, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 21, 1961, Ser. No. 132,656
9 Claims. (Cl. 340—172.5)

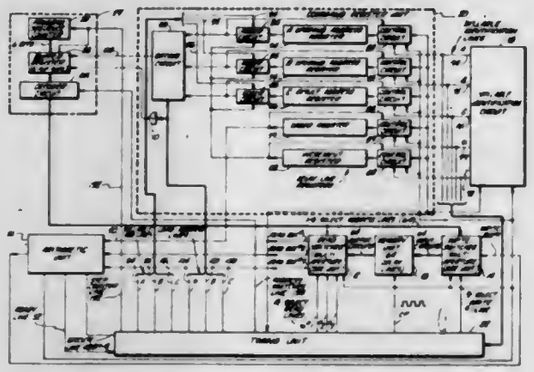


1. A batch sequence controller, comprising, in combination, program storage means, a conditional logic section, a command logic section and a process step sequence control section all obtaining instructions in coded form from said program storage means as to individual apparatus to be placed in circuit effectuating a preselected control objective, means in said conditional logic section initiating progression of said process step sequence control section to a predetermined process control step in later time sequence upon the signalled effectuation of a current process control imposition pursuant to the immediately preceding process control step, and process step program address selection means responsive to said process step sequence control section actuating said program storage means to supply said instructions in coded form unique to said predetermined process control step for repetition of the control cycle.

3,275,989
CONTROL FOR DIGITAL COMPUTERS

Edward L. Glaser, Newtown Square, Pa., and Alan B. Gerlach, Covina, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 2, 1961, Ser. No. 142,095
19 Claims. (Cl. 340—172.5)



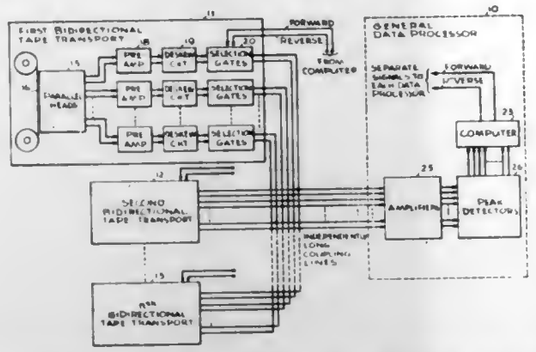
1. A stored program computer system comprising, addressable memory means for storing operands and variable length commands, the commands being arranged in a sequence and at least part of the commands having only those parts which are different from the corresponding part of a preceding command and including a signal identifying the part of the command which is present, means for reading commands out of the memory means, identification means connected to be responsive to the identification signals in a command read out of the memory means for providing an indication of the part which is present in such command, means connected to be responsive to said indication and the corresponding command for storing a signal corresponding to the part of the command which is present, means connected to be responsive to the signals stored in the last mentioned means for selectively addressing storage locations in said memory means containing operands which are to be read, means for reading the operands out of the addressed storage locations of the memory means, and an arithmetic unit connected to be responsive to the content of the signal storing means and the operands read out of said memory means for selectively executing a command.

3,275,990
SIGNAL COUPLING SYSTEMS FOR DIGITAL REPRODUCING SYSTEMS

Charles E. Mendenhall and Sung P. Chur, Los Angeles, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Aug. 21, 1962, Ser. No. 218,260
15 Claims. (Cl. 340—172.5)

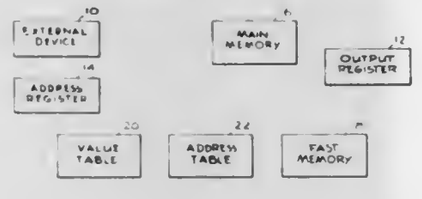
5. A signal coupling system for transmitting parallel digital data pulses over long line lengths comprising: means providing the digital data pulses in parallel channels; delay line means in each of the channels for adjusting the time relationship of pulses therein; first amplifier means in each of the channels coupled to receive pulses from the delay line means, the first amplifier means producing differentially varying signal currents; second, current-responsive amplifier means for receiving the digital data; and a plurality of conductor pairs coupling the first amplifier means to the second amplifier means.



3,275,991
MEMORY SYSTEM

Edward J. Schneberger, Canoga Park, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,597
11 Claims. (Cl. 340—172.5)



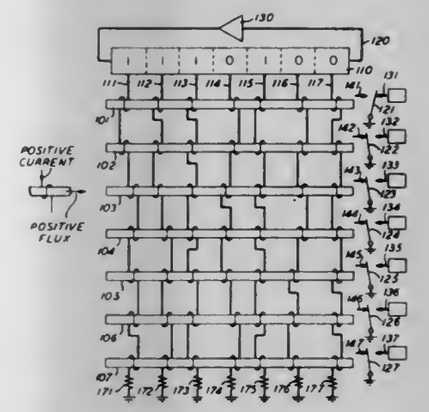


1. For use in a data processing system, a memory system comprising:
an output register;
a first memory having a relatively large number of word storage locations therein, each identifiable by a different digital address;
a second memory having a relatively small number of word storage locations therein;
a third memory including a plurality of storage locations therein each of which is associated with one of said locations in said second memory;
means storing a digital address in each of said third memory storage locations identifying the first memory storage location storing the word information stored in the associated second memory storage location;
external means adapted to generate a digital address identifying one of said first memory storage locations;
means responsive to said external means for transfering to said output register, word information from the second memory storage location associated with the third memory storage location storing said generated digital address and for transferring to said output register word information from the first memory storage location identified by said digital address in the event said digital address is not stored in said third memory; and
means responsive to said word information being transferred from a first memory storage location for storing said word information in a second memory storage location and the digital address identifying said first memory storage location in the third memory storage location associated with said second memory storage location.

3,275,992
LOAD SHARING CLOCK SUPPLIES

Peter G. Neumann, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 4, 1962, Ser. No. 242,199
15 Claims. (Cl. 340—172.5)



1. In combination, means for storing an ordered array of electrical binary impulses, the binary representation of said ordered array of electrical impulses corresponding to the binary representation of a difference set, means to successively and cyclically permute said ordered array, translating means responsive to successive cyclic permutations of said electrical impulses to produce successive time-phased output signals, said translating means comprising an array of input windings coupled to a plurality of flux responsive devices, the binary representation of the coupling senses of the windings coupled to said flux responsive devices corresponding to a cyclic block design, said cyclic block design being derived from said difference set, and means for respectively applying the ordered array of electrical impulses and the permutations thereof to said array of input windings whereby the locus of each time-phased output signal is determined by the cyclic permutation of said electrical impulses.

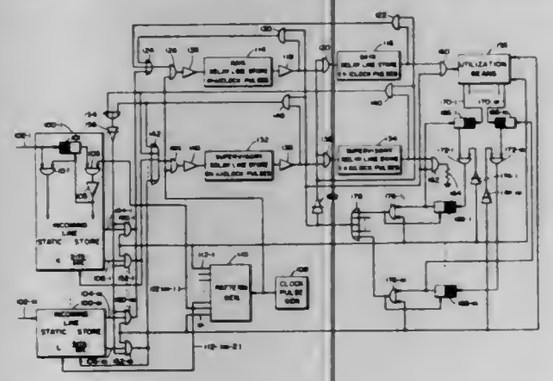
3,275,993
MULTIPLE SHIFT REGISTER BUFFER STORE

William F. Bartlett, Rochester, and Barrie Brightman, Webster, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,656
5 Claims. (Cl. 340—172.5)

1. In a data handling system, a multiple shift register buffer store for binary data received form a given plurality of separate input means and for supplying stored data to utilization means on command therefrom, said buffer store comprising a clock pulse generator for generating clock pulses at a predetermined repetition rate; a cyclically-operated pattern generator coupled to said clock pulse generator and having separate output conductors corresponding respectively to each of said given plurality of

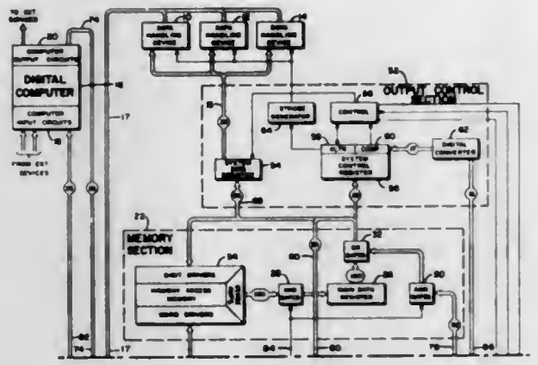
input means for producing a separate mutually-exclusively occurring cell pulse on each of said output conductors in response to each successive group of a predetermined number of successive clock pulses, whereby said successive groups form a time frame composed of a plurality of time intervals equal in number to said predetermined number and each time interval has a duration equal to a clock pulse period, each of said cell pulses having a duration equal to some plural integral number greater than a given integral number of successive time intervals; storage means having separate positions equal in number to said predetermined number, each position corresponding to a different one of said time intervals and capable of storing the binary value of a bit, whereby said storage means is divided into separate cells each of which is composed of those adjacent positions corresponding to those time intervals included within each respective cell pulse and each cell of said storage means corresponds to a different one of said input means; input control means cou-



pled to said plurality of input means, said output conductors of said pattern generator and said storage means and responsive to the presence at any of said input means of each bit of binary data for sampling the value of that bit only once and storing the value of that sample bit in the first-occurring position unoccupied by a previously stored bit of the cell corresponding to that input means at which that bit is present, and output control means coupled to said utilization means, said storage means and to said output conductors, of said pattern generator and responsive to a command signal manifesting a particular cell from said utilization means for transferring to said utilization means the stored value of the bits of binary data occupying the first given integral number of positions of said particular cell and transferring the stored value of the bit of binary data occupying each remaining position of said particular cell to a position which is said integral number of positions closer to the beginning of said particular cell.

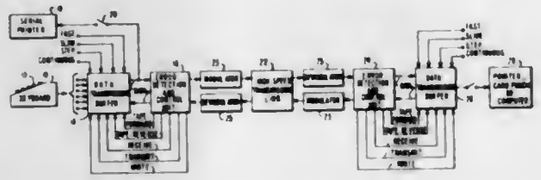
3,275,994
DATA PROCESSING SYSTEM
Earl C. Joseph, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,234
9 Claims. (Cl. 340—172.5)

1. A controller for use with a digital data processing machine for directing the flow of information between said digital data processing machine and a plurality of devices to be controlled, comprising:
- memory means for storing data words and control words, said control words being comprised of at least first and second groups of binary digits;
- control register means coupled to said memory means adapted for receiving control words read out from said memory means;
- a data register coupled to said memory means and adapted for receiving data words read out from said memory;
- translating means coupled to said control register for receiving said first group of binary digits of said control words for selecting only one out of said plurality of devices to be controlled;
- a digital converter device including means for receiving input signals indicative of transmission control; criteria for converting said input criteria quantity to a digital representation thereof;



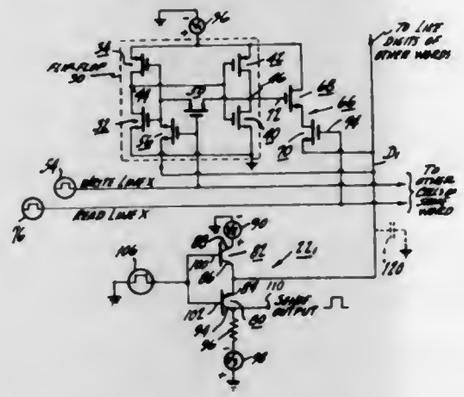
- comparator means coupled to said converter and said said control register for receiving the output signals from said converter and said second group of binary digits of said control word for producing a gating signal when the digits representing said input criteria in said converter has a predetermined relationship to said second group of binary digits; and
- means in said data register responsive to said gating signal for transmitting a data word to the device to be controlled selected by said translating means.

3,275,995
DATA HANDLING SYSTEM
Jacob J. Hagopian, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,542
14 Claims. (Cl. 340—172.5)



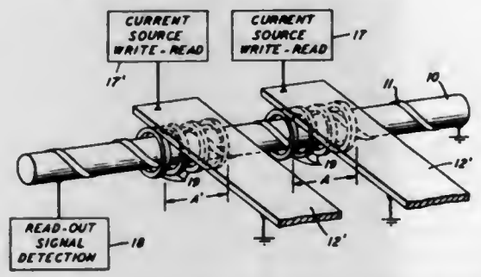
1. A data transmission buffer for asynchronously recording and reproducing data comprising: means for receiving a multi-bit coded signal representative of the character, a magnetic tape having a single recording channel, a magnetic transducer connected to receive the multi-bit coded signal from the receiving means and positioned in recording relationship with the single channel on the magnetic tape, said magnetic transducer including writing means defining a plurality of recording gaps for simultaneously recording the bits of the coded signal received in parallel lengthwise on the single channel when the tape is stationary with respect to the magnetic transducer and including reading means including a single reading gap disposed in reading relationship to the tape closely adjacent one of said recording gaps, means for moving the tape at selected speeds relative to the magnetic transducer, means for restricting the movement of the tape during the recording of the multi-bit coded signal, said restricting means permitting the tape to move a single increment at one of said selected speeds after each recording of a multi-bit coded signal, the length of each increment corresponding to the distance between the reading gap and the furthest recording gap on the magnetic transducer such that the signals recorded pass the reading gap to be reproduced during the incremental movement, whereby the parallel bits representing a character are recorded in serial fashion on the tape to be later reproduced serially at different ones of the selected speeds.

3,275,996
DRIVER-SENSE CIRCUIT ARRANGEMENT
Joseph R. Burns, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,554
10 Claims. (Cl. 340—173)



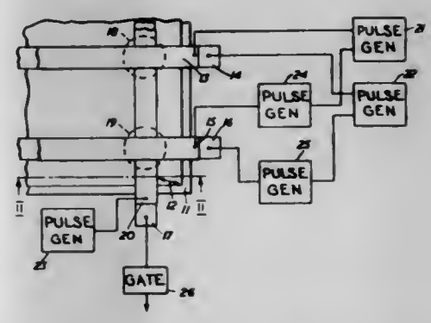
1. The combination comprising:
- a flip-flop having an input means and at least one output terminal;
- coincidence gate means having a conduction path connected at one end to a point of fixed potential, a first control electrode connected to said output terminal, and a second control electrode;
- means for applying a gating signal at said second control electrode when it is desired to sense the output of said flip-flop;
- a common input-sense line connected to both said input means and to the other end of said conduction path;
- first and second transistors of opposite conductivity type each having first and second electrodes defining the ends of a conduction path, and a control electrode, the first electrode of each transistor being connected to said common input-sense line;
- an impedance element having one terminal connected to the second electrode of the first transistor;
- means for connecting the second electrode of the second transistor and the other terminal of said impedance element to points of suitable operating potential; and
- means for applying input signals in common to the control electrodes of said first and second transistors.

3,275,997
MAGNETIC INFORMATION STORAGE UNIT UTILIZING CONDUCTIVE RING COUPLING
Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 21, 1962, Ser. No. 218,399
13 Claims. (Cl. 340—174)



10. An information storage matrix comprising a plurality of magnetic memory elements each having a substantially rectangular hysteresis characteristic and each having a substantially helical magnetic flux carrying path established therein,
- a plurality of transverse electrical conductors inductively coupled to each of said memory elements, each of said electrical conductors defining an address segment on each of said magnetic conductors,
- at least one highly conductive ring encircling said magnetic memory elements at each of said address segments,
- means for selectively applying an energizing pulse to particular ones of said plurality of magnetic memory elements, and
- means for selectively applying an energizing pulse to particular ones of said plurality of electrical conductors.

3,275,998
THIN FILM MAGNETIC MEMORY MATRIX
Peter Istvan Bonyhard, St. Albans, England, assignor to International Computers and Tabulators Limited
Filed Sept. 17, 1962, Ser. No. 223,928
Claims priority, application Great Britain, Sept. 22, 1961, 34,010/61
8 Claims. (Cl. 340—174)

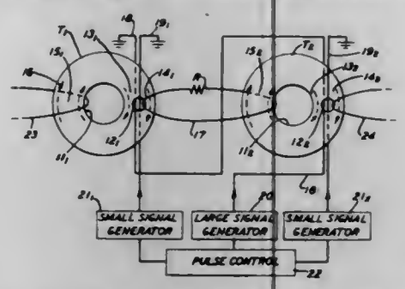


1. A magnetic device, including a storage element comprising first and second like areas of ferromagnetic thin film each having an easy axis of magnetization and each being switchable between first and second opposite stable states of magnetization along said easy axis, said element having a first stable condition in which both said areas are in said first stable state and a second stable condition in which both said areas are in said second stable state; a sense conductor magnetically coupled to both said areas; first and second drive means coupled to said first and second areas, respectively, for applying to said areas magnetic fields substantially perpendicular to said sense conductor; first and second current pulse generating means operative to energise said first and second drive means, respectively, to drive said areas towards the same magnetic state, said second generating means being operative in coincidence with termination of operation of said first generating means; and means responsive to signals induced in said sense conductor at said termination to produce a predetermined output signal only when both said areas are driven from said first stable state.

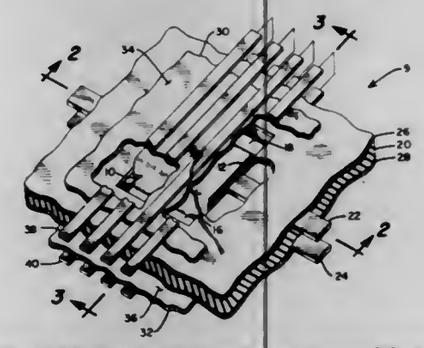
3,275,999
MAGNETIC STORAGE AND TRANSFER CIRCUITS
George W. Dick, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,457
5 Claims. (Cl. 340—174)

1. An information transfer circuit comprising a first and second transfluxor each being apertured to form therein input and output legs, said input and output legs each completing a major flux path in its transfluxor and said output leg also completing a minor flux path in its transfluxor shorter than said major flux path, and means

for incrementally driving the input leg of said second transfluxor to a remanent magnetic state comprising a coupling loop for coupling the output leg of said first transfluxor and the input leg of said second transfluxor by unity turns ratio windings, winding means coupled to the output leg of said first transfluxor, and means for alternately applying to said winding means first and second pulses repeatedly to switch said last mentioned output leg, said first pulses being of a magnitude to switch at a first rate of flux change said output leg around only said minor flux path and said second pulses being of a magnitude to switch said output leg at a second greater rate of flux change.



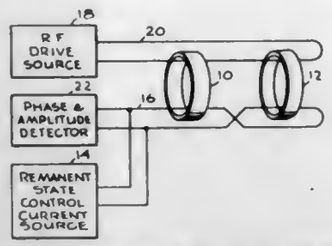
3,276,000
MEMORY DEVICE AND METHOD
William W. Davis, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 30, 1963, Ser. No. 254,913
8 Claims. (Cl. 340—174)



1. A multi-bit memory apparatus comprising:
a non-magnetizable base member;
a tubular memory element of magnetizable material defined by a web formed by two spaced-apart apertures in said non-magnetizable base member;
a plurality of pairs of printed circuit conductors;
a separate, discrete circumferential area of said element sandwiched between and substantially magnetically coupled to only a separate pair of said printed circuit conductors;
each of said areas defining a separate one of said multi-bits.

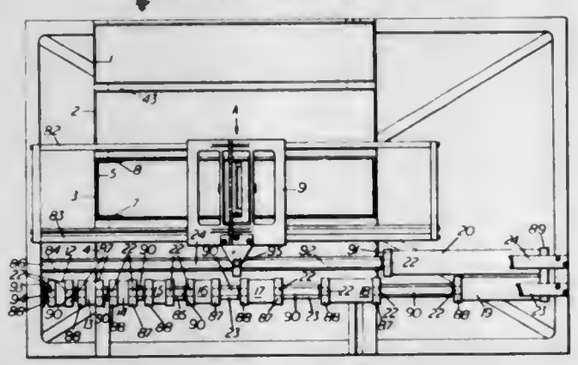
3,276,001
MAGNETIC ANALOG DEVICE
Harold S. Crafts, Palo Alto, Calif., assignor to Research Corporation, New York, N.Y., a corporation of New York
Filed Feb. 8, 1963, Ser. No. 257,203
18 Claims. (Cl. 340—174)

1. A magnetic device comprising magnetic means having a substantially zero flux state and a plurality of opposite remanent flux states on either side of said zero flux state, first winding means coupled to said magnetic means for placing it in a predetermined one of said plurality of opposite remanent flux states, second winding means for applying an excitation to said magnetic means having a predetermined fundamental oscillation frequency and having an amplitude less than that required to alter the remanent flux state of said magnetic means, and detector means coupled to said second winding means and solely responsive to excitation applied by said means for applying excitation for detecting a signal having



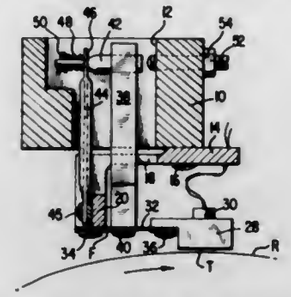
a different frequency than said fundamental oscillation frequency and having an amplitude and phase representative of the location of said predetermined remanent flux state with respect to said zero flux state.

3,276,002
CARD STORAGE AND INFORMATION RETRIEVAL APPARATUS
John Handley, Little Marland, Briar Hill, Purley, Surrey, England
Filed Oct. 4, 1960, Ser. No. 60,395
4 Claims. (Cl. 340—174.1)



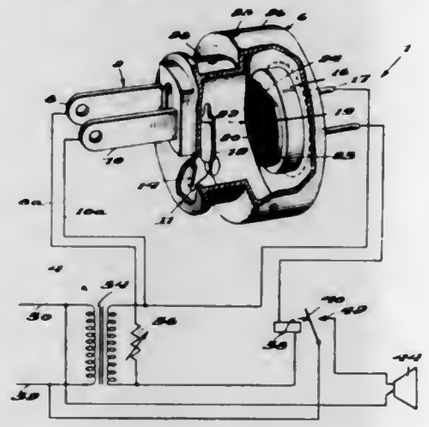
1. In an electro-mechanical storage apparatus where information is stored on relatively thin stiff cards stored side by side in spaced relation in containers of substantially the height of the cards disposed in parallel array with each card having a number of parallel tracks of information recorded thereon, said apparatus including a carriage mounted on guides for movement adjacent to said containers, extraction and return means mounted on the carriage for movement along a line intersecting the plane of a card in a container toward and away from the card, carriage power means connected to the carriage for moving the carriage across the edges of cards in a container, extraction and return power means connected to the extraction and return means for moving the latter, and track reading means mounted on the carriage and adjacent to a plane including said line, the improvement comprising: said extraction and return means including two pairs of forceps-like grippers spaced from each other a distance less than the width of a card along a line parallel thereto, means for closing said grippers into clamping engagement with a card after movement toward said card in the plane thereof, and control means connected to said power means to move said carriage to position the grippers in the plane of a single selected card only, to move said grippers from an open condition into gripping engagement with said selected card, to move the grippers in said plane away from the container thereby carrying only a portion of the card out of the container and past said reading means during which movement the card is read, and thereafter returning the card to stored position in the container, opening the grippers, and returning the grippers to normal position away from the card.

3,276,003
AIR BEARING MAGNETIC HEAD MOUNTING ASSEMBLY
Richard A. Stover, Perkinsville, Vt., assignor to Vermont Research Corporation
Filed Aug. 6, 1963, Ser. No. 300,258
8 Claims. (Cl. 340—174.1)



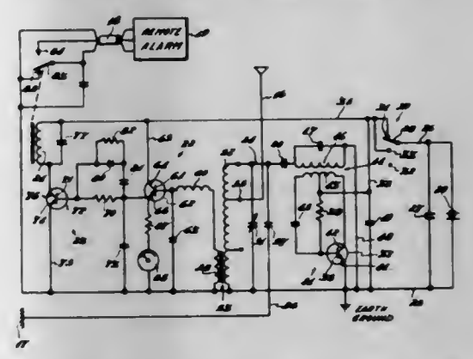
1. A magnetic head mounting assembly of the type wherein magnetic heads are adapted to ride on a hydrodynamically created layer of air adhering to the surface of a rapidly rotating magnetic drum, the assembly comprising:
(a) a plurality of side by side magnetic heads,
(b) a pad member mounting the heads,
(c) a support bar fixedly supported and spaced from the pad member,
(d) a deflection member having one end secured to the support bar,
(e) a single reed spring having one end secured to the pad member and the other end secured to the other end of the deflection member, and
(f) a pair of screw means each threadably engaged in the support bar and the deflection member adjacent the ends thereof for twisting and deflecting the latter to thereby adjust the spacing between ends of the pad member and the magnetic drum and also for initially setting a drop distance between the pad member and the magnetic drum.

3,276,004
APPARATUS FOR DETECTING GAS
Edmund S. Mayo, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,404
2 Claims. (Cl. 340—237)



1. Gas detection apparatus comprising a housing, a module of reagent mounted within said housing, said reagent being color sensitive to the presence of at least one particular gas, said housing having openings to permit atmosphere containing said particular gas to enter and contact said reagent, means to regulate the humidity within said housing, photoelectric means including a lamp and a photodetector positioned within said housing to receive light from said lamp after incidence upon said reagent, whereby color changes of said reagent caused by the presence of said particular gas are sensed by said photodetector, the heat of said lamp serving to convect the surroundnig atmosphere through said housing via said openings therein, and electric means powering said photoelectric means and including an alarm responsive to said photodetector to signal the presence of a predetermined concentrations of said particular gas.

3,276,005
CAPACITY INTRUDER ALARM HAVING CAPACITIVE A.C. COUPLING AND D.C. BIAS COUPLING IN PARALLEL BETWEEN A DETECTOR AND AMPLIFIER
Eric G. Quist, Roxbury, Conn., and Richard H. Geis, Hopewell Junction, N.Y., assignors to Mosler Research Products, Inc., Danbury, Conn., a corporation of Delaware
Filed May 5, 1964, Ser. No. 365,034
7 Claims. (Cl. 340—258)

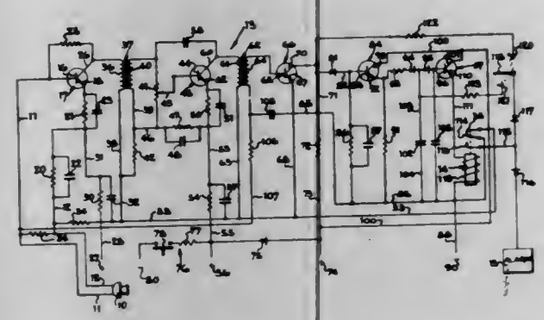


7. A capacity alarm system comprising an oscillator, a tuned resonant circuit connected to said oscillator, said resonant circuit including antenna means and an inductive winding, a first transistor connected to said inductive winding for sensing changes in capacitance in said tuned resonant antenna circuit, said transistor including a collector having a D.C. potential in variable response to said change in capacitance, a second transistor for controlling actuation of an alarm, and fail-safe circuit means interconnecting said first transistor and said second transistor, said fail-safe circuit comprising a resistor interconnecting said collector and said second transistor to provide a D.C. operating bias for said second transistor, and parallel circuit means including a capacitor and series connected sensitivity resistor effective to cause current flow in a reverse direction to said second transistor in response to an increase in capacity in said resonant circuit and a decrease in potential of said collector, and a diode shunting said sensitivity resistor, said diode being connected to provide a high impedance path to current discharged by said capacitor.

3,276,006
AUDIO ACCUMULATOR
Donald E. Hansen, Brookfield Center, Conn., assignor to Mosler Research Products, Inc., Danbury, Conn., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,761
1 Claim. (Cl. 340—261)

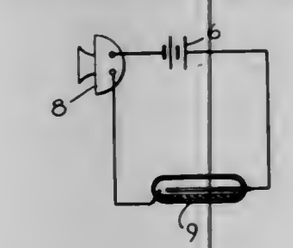
In an alarm system including an audio or vibration pickup effective to produce an electrical signal and alarm means, the combination of a detector for said electrical signal, a buffer transistor connected to said detector, an audio amplifier transistor including a base and an emitter, a series circuit comprising an integrator resistor, and first and second rectifiers for conducting current in one direction interconnecting said detector and the base of said audio amplifier transistor, an integrator capacitor for receiving a charge through said first diode interconnected between the junction of said first and second rectifiers and a reference potential, a second capacitor connected

intermediate said second rectifier and the base of said amplifier transistor for receiving a charge through said second diode, a relay including a winding interconnected to the emitter of said amplifier transistor, said relay having first and second stationary contacts and a movable contact connected to said reference potential, said movable contact being in engagement with said first contact when said relay is deenergized and being in engagement with said second contact when said relay is energized, a second resistor connected to the junction of the first and second rectifiers for regulating the discharge of said in-



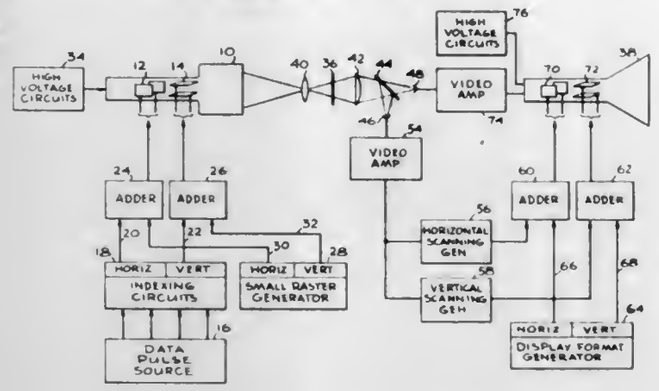
tegrator capacitor at a first rate, a selectively operable switch effective to interconnect said second resistor to the second contact of said relay, said second capacitor having a discharge circuit through said amplifier emitter for discharging therethrough at a second rate slower than the rate of discharge of said integrator capacitor, whereby when said selectively operable switch interconnects said second resistor and second relay contact and said relay is energized, said integrator capacitor is fully discharged prior to the discharge of said second capacitor and deenergization of said relay.

3,276,007
SWIMMING POOL FLOAT-ALARM
Edward P. White, 12 Walnut Place, Massapequa, N.Y.
Filed June 30, 1964, Ser. No. 379,303
3 Claims. (Cl. 340—261)



1. A self-contained swimming pool float-alarm comprising a permanently closed, disc-shaped, hollow float body having on the upper side a centrally disposed protrusion presenting an upstanding cylindrical side wall in spaced relation with respect to the margin of said float body, a cup-shaped circuit support member disposed in inverted relation with respect to said float body with the inner surface of the side wall thereof in frictional slidable engagement with the side wall of said protrusion, an alarm circuit attached to the bottom portion of said cup-shaped circuit support, said alarm circuit comprising a battery for providing electric power, an electrically-actuated alarm and a circuit for actuating said alarm from said battery, said circuit including a tilt-actuated switch that normally is maintained in open position and that is adapted and arranged to become closed to complete said circuit when said float body is tilted, and a cup-shaped cover overlying said alarm circuit in inverted relation thereto, with the inner surface of the side wall thereof in frictional slidable engagement with the exterior of the side wall of said cup-shaped alarm circuit support.

3,276,008
CHARACTER ALIGNMENT AND PROPORTIONAL SPACING SYSTEM
Markvard Hauerbach, Mountain View, Calif., assignor to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 8, 1963, Ser. No. 300,738
9 Claims. (Cl. 340—324)



4. A character display system including a target having a plurality of regions thereon, each of said regions including a first transparent character identity information area having the shape of a character to be displayed and a second transparent character position information area; said first and second areas respectively being of complementary colors; a flying spot scanner including means for producing a light spot and moving said light spot to generate a raster; means for deflecting said light spot to cause it to be incident on one of said regions; dichroic means; means positioning said flying spot scanner with respect to said target and said dichroic means relative to one another for enabling said light spot to be transmitted through said transparent areas of said one of said regions and be incident on said dichroic means; first and second light sensitive means respectively responsive to light transmitted through and reflected from said dichroic means for developing electrical signals representing said character identity and character position information; a display cathode ray tube having a display face; means for generating an electron beam in said display cathode ray tube; means for deflecting said display cathode ray tube electron beam to a selected position on said display face; generator means for causing said display cathode ray tube electron beam to scan said selected position; means responsive to said electrical signal representing said character position information for actuating said generator means; and means for controlling said display cathode ray tube electron beam in response to said electrical signal representing said character identity information.

3,276,009
ANALOG-TO-DIGITAL CONVERTERS
Etienne Honoré and Emile Torcheux, Paris, France, assignors to C.S.F.-Compagnie Generale de Telegraphie Sans Fil, a corporation of France, and Societe Marocaine de Recherches d'Etudes et de Developpements, "Somarede," a corporation of Morocco
Filed Jan. 29, 1963, Ser. No. 254,657
Claims priority, application France, Jan. 31, 1962, 886,465
10 Claims. (Cl. 340—347)

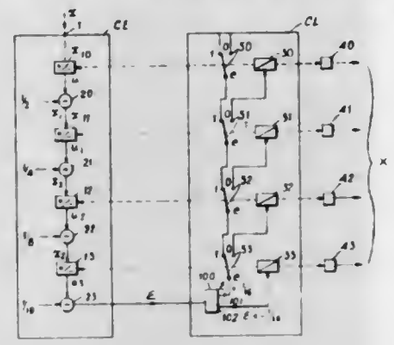
3. A system for converting an analog value x, comprised between $-K$ and $+K$, into a digital value x, including: means for comparing said analog value to a sum S thus providing a value $x-S$, said system comprising: a general input for receiving a voltage proportional to said analog value; a first and a second threshold device, having an input for receiving respectively a voltage ϵ, analog to $K-S$, and a second voltage ϵ, analog to $K-S$, and a second voltage ϵ_2 and two outputs, respectively delivering pulses, when

$$\epsilon < -\frac{1}{2^n} \text{ or } \epsilon > \frac{1}{2^n}$$

and

$$\epsilon < -\frac{1}{2^n - q} \text{ or } \epsilon > 2^n - q$$

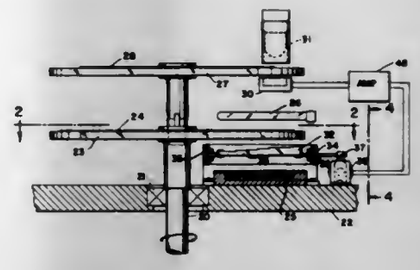
$n-q$ stages, cascade connected between said general input and said input of said second threshold device and q stages cascade connected between said $n-q$ stages and said input of said first threshold device, said stages respectively comprising a polarity inverter having a polarity inverting position and a polarity non inverting position, an input and an output, and a subtracting cell, having a first input, connected to said output of said inverter, and a second input for receiving a voltage analog to $K/2^j$, j being equal to $1 \ldots n$; n flip-flop devices having a first



and a second steady state, and a control input for receiving pulses, tripping them, from one state to the other; respective means for putting said polarity inverters in said first or in said second position, according to whether said flip-flop devices are respectively in said first or in said second state; a first and a second cascade of respectively q and $n-q$ switches, respectively associated with q and $n-q$ of said flip-flop devices having respectively one input and a first and a second output; means controlled by said associated flip-flop devices for selectively connecting said first or said second outputs to said input of said switch according to whether said associated flip-flop is in said first or in said second state; the first switch in each cascade, and the associated flip-flop, having inputs respectively connected to said first and said second output of said first and said second threshold device, said first output of said switch being connected to the input of the switches following it in said cascade, and said second output to said input of the flip-flop associated to said following switch.

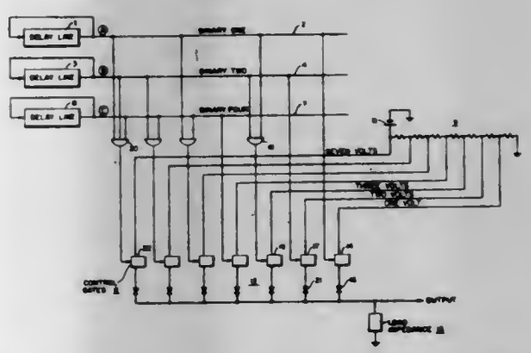
3,276,010
METHOD AND MEANS FOR CORRECTING OUTPUT INDICATIONS OF AN ENCODER
Garrard Mountjoy, Little Rock, Ark., assignor to Baldwin Electronics, Inc., Little Rock, Ark., a corporation of Arkansas
Filed July 30, 1963, Ser. No. 298,645
11 Claims. (Cl. 340—347)

1. In an analog to digital encoder having an encoding disc mounted on a shaft the angular position of which is to be indicated in digital form, the digital indication being subject to error resulting from lack of precision of mechanical components of the system; means for compensating for such lack of precision, comprising in combination, a compensating member mounted on the encoder shaft for rotation therewith, said member having embodied therein a curve representing the error compensation at spaced points in a shaft revolution, and means controlled by said compensating means for modifying the



indication to compensate for error and assure a correct indication at all points in a shaft and encoder disc cycle.

3,276,011
DIGITAL-TO-ANALOG CONVERTER
Uwe A. Pommerening, Webster, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Nov. 8, 1963, Ser. No. 322,374
7 Claims. (Cl. 340—347)



1. A digital-to-analog converter comprising a plurality of conductors, means for marking various ones of said first plurality of conductors in accordance with a binary code, a plurality of control gates each having an input terminal, an output terminal and a control terminal, means coupled between said plurality of conductors and the control terminals of said control gates to enable various ones of said control gates depending upon the binary code impressed upon said plurality of conductors, means for providing a plurality of different voltage levels each associated with a different one of said control gates, means for applying each of said voltage levels to the input terminal of its associated control gate, an output impedance, and means coupled between the output terminals of said control gates and said output impedance for causing current to flow through said output impedance and that one enabled control gate associated with the highest voltage level compared to the levels associated with other enabled control gates and for preventing current from flowing through any other enabled or disenabled control gate.

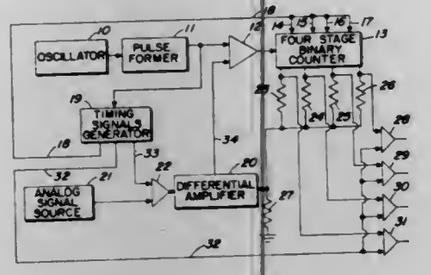
3,276,012
ANALOG-TO-DIGITAL CONVERTER
Frank Secretan, Santa Ana, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Dec. 26, 1963, Ser. No. 333,314
7 Claims. (Cl. 340—347)

1. Analog-to-digital converting means for converting an analog signal to a digital signal and comprising:
counter means having input means and a plurality of stages;
pulse forming means for generating a continuous supply of pulses;

first gating means constructed when opened, to supply pulses from said pulse forming means to said counter means,

first impedance means responsive to the condition of each stage of said counter means to produce first signals representative of the condition of the stages of said counter means,

second impedance means responsive to the signals produced by said first impedance means to produce a second signal representative of the total count contained in said counter means,

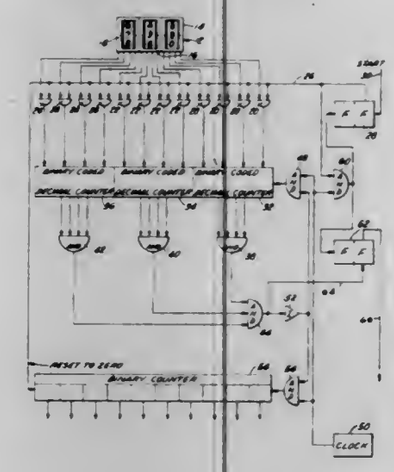


signal comparing means responsive to the said second signal and to said analog signal to produce an output signal having a first characteristic when the ratio of the magnitude of said analog signal to the magnitude of said second signal exceeds a predetermined value, and to produce an output signal having a second characteristic when the ratio of the magnitude of said second signal to said analog signal exceeds a predetermined value,

said first gating means responsive to the signal comparing means output signal having said first characteristic to become opened;

and control means for supplying said analog signal to said signal comparing means at regularly spaced time intervals and to clear said counter means prior to each of said time intervals.

3,276,013
DECIMAL TO BINARY CONVERTER
Gerald F. Chandler, La Mesa, Calif., assignor to Cohu Electronics, Inc., San Diego, Calif., a corporation of Delaware
Filed Feb. 19, 1964, Ser. No. 345,872
18 Claims. (Cl. 340—347)



13. A decimal to binary converter comprising:

means for manually setting a multi-digit decimal number;

a pluraliy of multi-stage binary coded decimal counters;

a source of pulses;

a binary counter;

first gating means coupling said source of pulses to said binary coded decimal counters, said gating means being operable to permit said pulses to count down the binary coded decimal number stored in said counters;

second gating means coupling said source of pulses to said binary counter, said gating means being operable to permit said binary counter to count said pulses;

a plurality of coincidence circuits, each of said circuits having its inputs coupled to each stage of one of said counters whereby each of said circuits produces an output signal when there is no number stored in its respective counter;

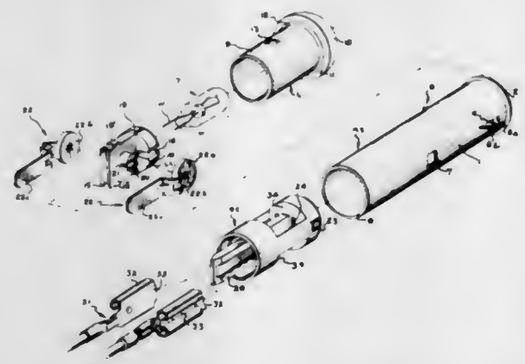
an AND gate having a plurality of inputs coupled to the ouputs of said coincidence circuits for producing an output signal in response to the production of an output signal by each of said coincidence circuits;

means coupling said AND gate to said first and second gating means whereby said gating means are rendered operative when no output signal is produced by said AND gate and inoperative when an output signal is produced by said AND gate;

third gating means operable to couple each of said binary coded decimal counters to said setting means whereby each of said counters converts and stores a single digit of said decimal number; and

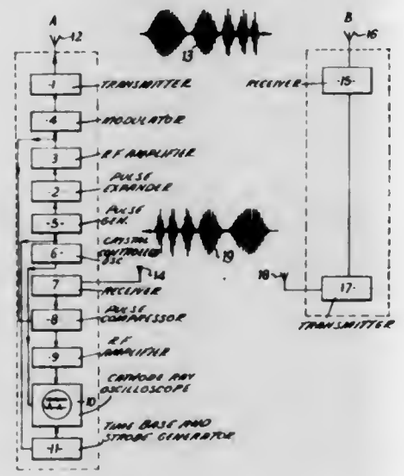
pulse producing means coupled to said third gating means and to said binary counter for operating said third gating means and resetting said binary counter to zero.

3,276,014
HOUSING FOR INDICATING LAMP OR OTHER ELECTRICAL COMPONENTS
Herman Rueger, Lancaster, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 29, 1963, Ser. No. 326,955
9 Claims. (Cl. 340—381)



1. A signal structure to be mounted in an apertured panel, said structure containing a pilot lamp with electrical leads, a hollow tubular housing of insulating material, flange means on one end of said tubular housing, integral resilient fin-like means on said tubular housing spaced from said flange means, said fin-like means being flexible to pass through an aperture to clamp the flange means of said tubular housing against a panel, a lamp-protecting means adapted to be removably mounted in said tubular housing in which said pilot lamp is disposed, said lamp-protecting means having a light-transmitting portion extending outwardly from said flange means when said lamp-protecting means is disposed in said tubular housing, connector-carrier means in said lamp-protecting means carrying connector means, said electrical leads connected to said connector means, and terminal-carrier means including terminal means removably mounted thereon, said terminal-carrier means removably mounted in said tubular housing and being spaced from said flange means, said terminal means being engageable with said connector means when said lamp-protecting means is disposed within said tubular housing.

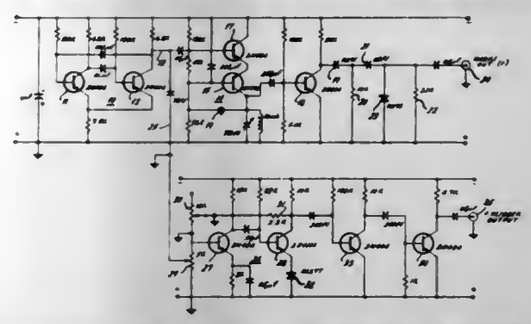
3,276,015
METHODS OF AND APPARATUS FOR MEASURING DISTANCES
William Edward Lerwill, Keston, Kent, and Nigel Allister Anstey, Chelsfield, Kent, England, assignors to Seismograph Service Corporation, Tulsa, Okla.
Filed May 1, 1963, Ser. No. 277,278
Claims priority, application Great Britain, May 8, 1962, 17,628/62
13 Claims. (Cl. 343—6.5)



1. Interrogator apparatus for use in conjunction with a responder in a system employed for measuring distances, said apparatus comprising means for generating a pulse, means for expanding said pulse in order to produce an expanded pulse having a characteristic which varies according to a predetermined non-repetitive pattern, means for transmitting a first signal derived at least in part from said expanded pulse for reception by the responder to cause the latter to transmit a return signal having a characteristic pattern related to that of said first signal, means for compressing said return signal as received by said interrogator said compressing means including means for cross correlating said return signal with a pattern representing at least a portion of the expanded pulse and comprising a magnetostrictive member, input transducer means responsive to said return signal and coupled to said member to produce strains therein, and means including output transducer means coupled to said member for developing a compressed return signal, at least one of said transducer means being adjustable along said member to compensate for phase shifts, and means responsive to the time interval between said pulse and the resulting compressed return signal for measuring the distance between said interrogator and said responder.

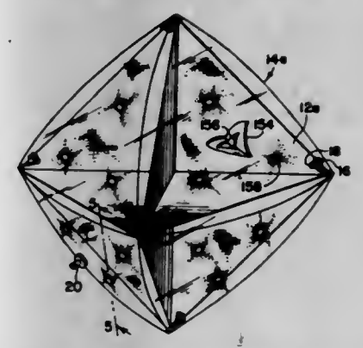
3,276,016
APPARATUS FOR THE CALIBRATION OF RADAR EQUIPMENT
Harvey M. Knickerbocker, National City, Calif., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 3, 1964. Ser. No. 394,240
12 Claims. (Cl. 343—17.7)

1. Apparatus for the calibration of radar equipment, comprising a source of control signal, a crystal oscillator, means for pulsing said oscillator in response to said control signal, means for processing the output of said oscillator to form mark pulses, a one-shot multi-



vibrator coupled to said source to be driven thereby, and means for processing the output of said one-shot multivibrator to form a trigger pulse.

3,276,017
INFLATABLE SUPPORT STRUCTURE
Doyle D. Mullin, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed Oct. 18, 1961, Ser. No. 145,832
3 Claims. (Cl. 343—18)



2. A radar reflector unit comprising corner reflector having a plurality of three-sided reflecting components connected together to form a plurality of inner apices, means for supporting said reflector comprising a container which includes first and second layers of material, means for connecting said layers together at a plurality of points, inlet means for filling the space between the two layers with an inflation medium, the container when inflated forming a multi-sided structure having a plurality of plane surfaces which intersect with each other to form a plurality of triangles having straight edges, and means for attaching the reflector within the container.

3,276,018
PHASE CONTROL ARRANGEMENTS FOR A MULTIPORT SYSTEM
Jesse L. Butler, Groton Road, R.F.D. 2, Nashua, N.H.
Filed May 8, 1963, Ser. No. 278,854
17 Claims. (Cl. 343—100)

12. A digitally responsive phase control system comprising a plurality of phase control modules,

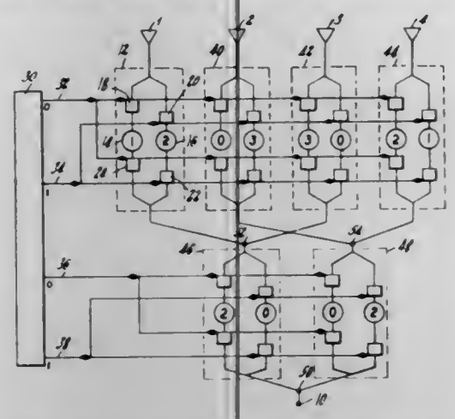
each said phase control module having an input, an output, and N branches where N is the radix of digital control,

each said branch including a fixed phase shifter,

said phase shifters being arranged so that one set of corresponding branches in said phase modules imposes a phase gradient ϕ on the signal transmitted through said phase modules,

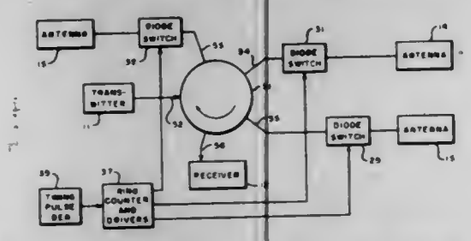
and another set of corresponding branches imposes a phase gradient of $K\phi$ on the signal transmitted through said phase modules where K is an integer, said one set imposing a phase gradient that is inversely related to the phase gradient imposed by said another set,

and means responsive to digital control to connect all the phase shifters in one set in circuit between said module inputs and said module outputs in accord-



ance with the value of the control to impose a predetermined phase gradient as a function of the control on the signal transmitted through said modules.

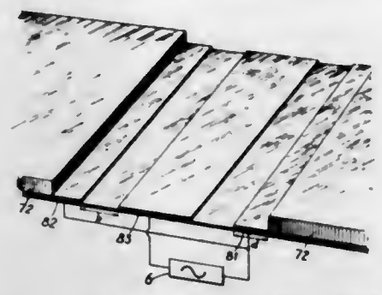
3,276,019
COMBINED SEQUENTIAL BEAM SWITCHER AND DUPLEXER USING MICROWAVE CIRCULATORS
John D. Fackler, Bedford, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Feb. 11, 1964, Ser. No. 344,045
3 Claims. (Cl. 343—175)



1. A combined duplexer and switching system, comprising,
- microwave energy circulating means including a plurality of external connection arms for transmitting microwave energy entering any arm through a portion of said means in a predetermined direction and out by the next succeeding arm,
- a source of microwave energy connected to one of said arms,
- a plurality of antennas connected to successive arms next adjacent to said one arm,
- a receiver connected to that arm most remote from said source,
- a plurality of radio frequency diode switches one interposed between each antenna and said circulating means,
- said switches each being selectively actuable to be conductive or reflective to incident microwave energy, and
- cyclically operating means for rendering each switch in succession conductive and the remainder of said switches reflective.

3,276,020
LOW PROFILE SURFACE WAVE ANTENNA
Henry Maillet, Paris, France, assignor to Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed June 7, 1961, Ser. No. 116,659
Claims priority, application France, June 17, 1960, 830,269
1 Claim. (Cl. 343—705)

A device for radiating ultra high frequency energy comprising: a first and a second transmission line parallel to each other; said first line comprising a first conductive strip, having a thickness small relatively to the operating wavelength, extending in a predetermined direction, and having two parallel sides, two infinite and conductive first planes, respectively extending along said sides and separated therefrom by respective gaps, means fo rcoupling an ultra high frequency source to said line for



creating electromagnetic fields in said gaps; said second transmission line comprising two second strips of a dielectric material, respectively supported on said first planes, at the same distance from said gaps, said first strip and said second strips having the same length equal to $\pi/2c$, c being the coupling coefficient between said two lines.

3,276,021
TELESCOPIC AERIAL FOR AUTOMOTIVE VEHICLES
Georg Horndasch, Esslingen (Neckar), Germany, assignor to Hans Kolbe and Hans Koehler, trading as fuba, Antennenwerke, Hans Kolbe & Co., Bad Salzdetfurth, Germany
Filed May 21, 1963, Ser. No. 281,998
Claims priority, application Germany, May 29, 1962, F 36,923
2 Claims. (Cl. 343—715)



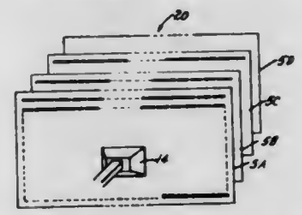
1. A telescopic aerial for mounting on the coach-work of an automotive vehicle, comprising a telescopic mast adapted to pass through a substantially elliptical opening in said coach-work and having a major longitudinal dimension and a minor transverse dimension, said coach-work being inclined with reference to a plane normal to the axis of said mast; a foot at the base of said mast likewise adapted to pass through said opening and comprising a cylindrical first section nearer to said base of said mast and having a cross section corresponding to said minor transverse dimension, and a second section farther from said base of said mast and forming a continuation of said first section, said second section having a cross section other than circular so as to project beyond said first section in two diametrically opposite directions transversely of the axis of said first section and thereby providing a pair of diametrically opposite shoulder-like extensions adapted to be supported against the inner face of said coach-work and provided with abutment faces inclined in a manner and to a degree corresponding to the inclination of said coach-work, said abutment faces being adapted to abut said inner face of said coach-work so that said foot may be inserted through said opening from the outer face of said coach-work, said mast comprising a plurality of telescopable sections including an outermost section of maximum diameter in which the other sections are receivable, and said foot comprising a guide sleeve provided therewithin in which said outermost section is receivable so that the entire mast, including said outermost section, can be telescoped into said foot; and a transmission cable electrically connected with said mast and depending from said second section of said foot axially offset from said mast whereby to prevent interference of said cable with insertion of said second section through the elliptical opening.

3,276,022
DUAL FREQUENCY GREGORIAN-NEWTONIAN ANTENNA SYSTEM WITH NEWTONIAN FEED LOCATED AT COMMON FOCUS OF PARABOLIC MAIN DISH AND ELLIPSOIDAL SUB-DISH
John E. Brunner, Hamilton, Ohio, assignor to Aeronca Manufacturing Corporation, Middletown, Ohio, a corporation of Ohio
Filed May 13, 1964, Ser. No. 366,965
6 Claims. (Cl. 343—727)



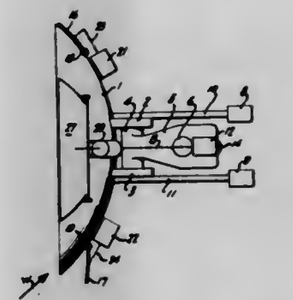
1. An antenna system for simultaneously operating at two frequencies, said antenna system comprising a single paraboloidal main reflector having an axis and a focus located on said axis, an elliposidal sub-reflector having a continuous surface and having one focus coincident with said paraboloidal focus and having a second focus located on said axis, a first feed means directed toward said paraboloidal reflector, said first feed means being disposed at the focus of said paraboloidal reflector to provide a Newtonian feed, second feed means disposed on said axis at the second focus of said ellipsoid for providing a Gregorian feed, said second Gregorian feed means operating at a substantially higher frequency than said first Newtonian feed, said antenna being effective to reflect both said Gregorian feed and said Newtonian feed with substantially optic-ray performance.

3,276,023
GRID ARRAY ANTENNA
Arthur Dorne, Seacliff, Robert G. Malech, Plainview, and Walter Satre, Jr., Bethpage, N.Y., assignors to Dorne and Margolin, Inc., Westbury, N.Y., a corporation of New York
Filed May 21, 1963, Ser. No. 281,979
19 Claims. (Cl. 343—754)



1. An array for reflecting a beam of incident radio frequency energy from a source outside of the confines of said array and changing the phase of the reflected energy with respect to the incident energy comprising a plurality of grid members for reflecting incident energy, each of said grid members having a predetermined shape, said grid members being placed in a predetermined relationship with a predetermined spacing between each grid member of the array, selected ones of said grid members having portions thereof for transmitting the incident energy therethrough, the energy transmitted through one grid member being incident on and reflected by another grid member in the array whereby the respective segments of the reflected beam of energy in front of the array have predetermined phase characteristics as determined by the grid member from which each segment was reflected.

3,276,024
ANTENNA WIND TORQUE REDUCER
Joseph W. Stevens, Menlo Park, Calif., assignor to Textron Inc., Belmont, Calif., a corporation of Rhode Island
Filed Aug. 6, 1962, Ser. No. 214,868
9 Claims. (Cl. 343—757)



2. In combination with a rotatable member carried on a pivotal mounting with drive means for rotating said member to selected angular positions, said member having a surface exposed to wind action which imposes a wind torque on said mounting, a wind torque reducer comprising:
- a vane movable on said member from a retracted position to positions extended therefrom,
- said vane when in an extended position being subjected to wind action and being positioned relative to said pivotal mounting that wind action thereagainst imposes a torque on said mounting in opposition to said wind torque,
- actuator means operative when energized to move said vane to an extended position, and
- means responsive to the presence of wind torque an said mounting for energizing said actuator means.

3,276,025
INFLATABLE DIELECTRIC TUBE ANTENNA
Kurt Ikrath, Elberon, and Wilhelm A. Schneider, Fair Haven, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed July 2, 1964, Ser. No. 380,106
8 Claims. (Cl. 343—757)



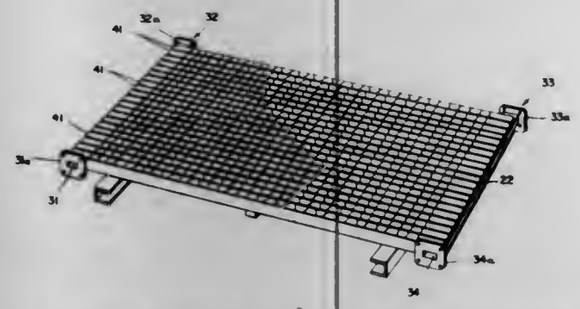
8. An inflatable directional antenna comprising, a flexible hollow tube of dielectric material fixedly attached at one end of a source of microwave radiation, a pump having an outlet communicating with the interior of said tube and a bleeder valve at the other end of said tube, said bleeder valve being directed so that the reaction of the air escaping therefrom causes said tube to move in a conical fashion.

3,276,026

DOPPLER ARRAY WITH PLURAL SLOTTED WAVEGUIDES AND FEED SWITCHING

Alan J. Simmons, Winchester, Mass., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed May 10, 1962, Ser. No. 193,717
2 Claims. (Cl. 343—768)



1. A planar antenna for converting microwave energy from a source thereof into a shaped beam directed at an acute angle with respect to the radiating surface of such antenna, comprising:

(a) a parallel array of identical slotted radiating waveguides, the coupling coefficient of the radiating slots in each such waveguide varying in accordance with the following formula:

$$g(n)=\sin^2\frac{n\pi}{N+1}+D$$

where n is the number of any radiating slot from either end of the radiating waveguides toward the center thereof; N is the total number of radiating slots in any one of the radiating waveguides; and, D is a constant from 0 to about 1; and

(b) coupling means for energizing the planar array with microwave energy from a source thereof, said coupling means including:

(1) a first and second waveguide parallel to each other and coupled, respectively, by coupling slots to the first and the second end of each one of the radiating guides, the coupling coefficient of each coupling slot between each of the first and the second waveguide and each one of the radiating waveguides varying in accordance with the following formula:

$$g(n')=\sin^2\frac{n'\pi}{N'+1}+D$$

where n' is the number of any coupling slot between the first and the second waveguide and a radiating waveguide from either end of the first and the second waveguide toward the center thereof; N' is the total number of radiating waveguides; and D is a constant from 0 to about 1; and

(2) means for connecting the source of microwave energy successively to the different ends of the first and the second waveguide.

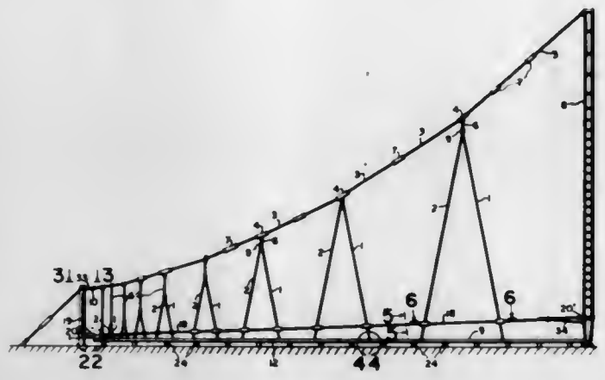
3,276,027

LOGARITHMIC PERIODIC ANTENNA

Ross L. Bell, Dallas, Tex., and William L. Werner, Sunnyvale, Calif., assignors to Granger Associates, Palo Alto, Calif., a corporation of California

Filed Aug. 7, 1962, Ser. No. 215,339
2 Claims. (Cl. 343—792.5)

1. A directional logarithmic periodic antenna having an apex adjacent the ground and comprising a series of mutually spaced triangular hollow tooth structures lying in a common vertical plane and disposed at progressively greater distances from said antenna apex, a catenary cable for supporting the upper ends of said tooth structures, each of said tooth structures comprising a pair of oppositely inclined rods forming an apex at their upper ends supported from said catenary, the dimensions of the tooth structures progressively increasing with distance from the antenna apex, a feed line extending alongside said tooth structures from said antenna apex, the height of said feed line above ground progressively increasing toward the rear of said antenna, distributive capacity members successively disposed alongside said feed line, each of said capacity members comprising a conductor having its ends



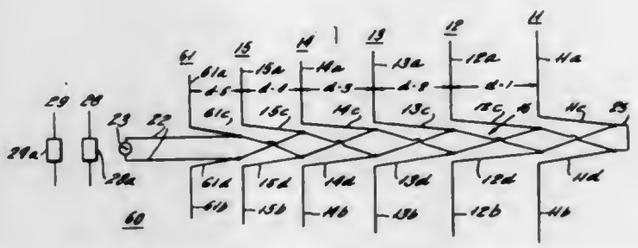
respectively connected to the rods of a respective one of said tooth structures for capacity coupling said feed line to said tooth structures, a longeron extending along the ground beneath said triangular tooth structures and having the rods of said structures attached thereto at predetermined points, and a ground screen underlying said antenna having diagonal wires crossing said longeron and connected thereto at the points of connection of the triangular tooth structure rods thereto, the free ends of said diagonal wires being grounded.

3,276,028

HIGH GAIN BACKFIRE ANTENNA ARRAY

Paul E. Mayes and Ronald D. Grant, Champaign, Ill., assignors to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of New York

Filed Feb. 18, 1964, Ser. No. 345,691
13 Claims. (Cl. 343—792.5)



12. An antenna array providing high directivity values over extremely broad bands of operating frequencies comprising:

a two-wire feeder line;

a plurality of dipoles being arranged transverse to said feeder line at spaced intervals along the length thereof;

each of said dipoles being comprised of first and second elements spaced on opposite sides of said feeder line;

adjacent elements of said dipoles being connected to alternate sides of said feeder line;

a plurality of impedance-transforming networks each connecting an associated dipole element to said feeder line to provide maximum energy transfer between said feeder line and said elements;

said networks comprising transformer means for substantially matching the impedance of each element to the impedance of said feeder line;

said transformer means being a section of transmission line extending substantially parallel to said feeder line;

the length of each transmission line transformer means being approximately one-quarter of the length of the dipole arm to which it is connected;

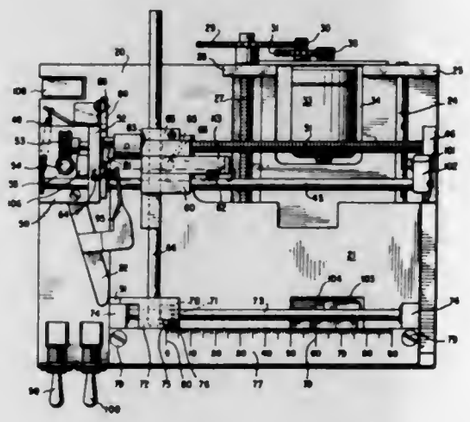
the accumulated length of said first and second element of any one dipole plus the length of the transmission line transformer means connected to said first and second elements being of the order of one and one-quarter wavelength at a frequency within the operating band of the antenna array.

3,276,029

APPARATUS FOR SPEED INDICATION

Arthur Niemeyer Marshall, 5501 Kingsbury Road, Richmond, Va.

Original application Feb. 11, 1963, Ser. No. 257,378, now Patent No. 3,182,331, dated May 4, 1965. Divided and this application Apr. 23, 1965, Ser. No. 458,508
9 Claims. (Cl. 346—18)



1. Apparatus for use upon a motor vehicle for checking the speed of another vehicle comprising a first carriage means having linear movement from a zero position representative of elapsed time, a second carriage means having linear movement from a zero position representative of distance traveled, control means for selectively setting into advancing motion and stopping said first and second carriage means beyond their respective zero positions to establish the average speed of said another vehicle, speed indicator means connected with said first and second carriage means and having its speed indicating position determined by the stopped positions of said first and second carriage means, return means for retracting said first and second carriage means to a position behind their respective zero positions, reset means responsive to the presence of said first and second carriage means behind their respective zero positions to advance said first and second carriage means to their respective zero positions.

3,276,030

ELECTRICAL APPARATUS

Norman L. Stauffer, Englewood, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Mar. 23, 1965, Ser. No. 442,014
4 Claims. (Cl. 346—29)

1. A two axis recorder comprising a first mirror arranged to be driven about an axis by a first input signal, a source of recording radiation arranged to illuminate said mirror, a second mirror arranged to be driven about an axis by a second input signal, said axes arranged at right angles to each other, a spherical reflector arranged to intercept radiation reflected from said first mirror, lens means arranged for forming a first focused image of said source of recording radiation upon the surface of said spherical reflector, said spherical reflector being operably arranged for continuously reflecting said first focused image of said recording radiation as said image is transversely displaced across the surface thereof by the motion of said first mirror about its axis, said spherical reflector being further arranged for reflecting said first focused

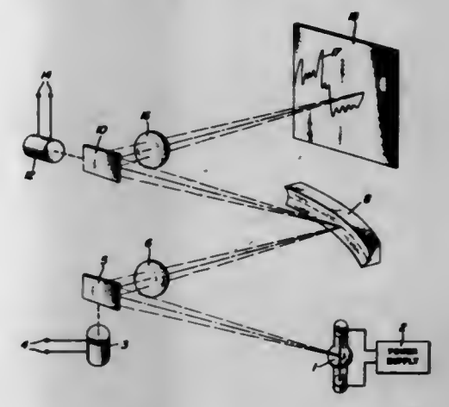


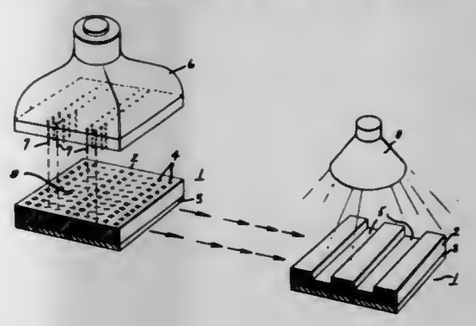
image toward said second mirror, a recording means arranged to intercept radiation reflected from said second mirror, and second lens means arranged to focus said first focused image upon said recording means forming a second focused image thereon, whereby said motion of said first mirror imparts a transverse motion to said first focused image upon said spherical reflector for reflection upon said second mirror and therefrom to said recording means for producing a transvesely moving second focused image thereon and said motion of said second mirror imparts an independent longitudinal displacement to said transversely moving second focused image for forming an X–Y recording on said recording means.

3,276,031

THERMOPLASTIC INFORMATION RECORDING UTILIZING ELECTRETS

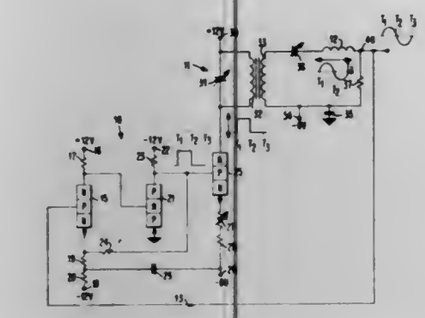
Joseph Gaynor, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 14, 1963, Ser. No. 251,370
9 Claims. (Cl. 346—74)



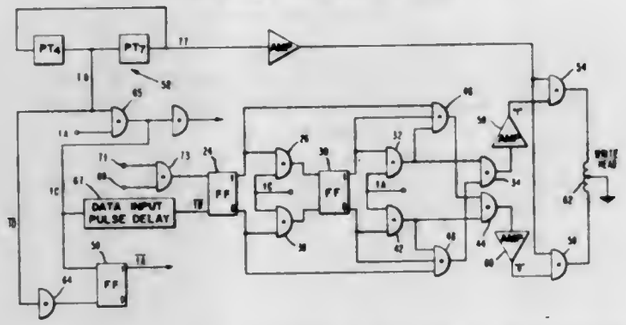
1. A method for recording information in the form of light-modifying deformations on the surface of a recording member which comprises selectively neutralizing a supported volume-polarized thermoplastic electret layer in an image pattern of the information being recorded, and heating the selectively neutralized electret layer to produce deformations corresponding to the image pattern.

3,276,032
OSCILLATOR DRIVING A RESONANT CIRCUIT WITH A SQUARE WAVE AND HAVING NEGATIVE FEEDBACK
Robert Ordower, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 17, 1964, Ser. No. 397,222
3 Claims. (Cl. 346—74)



1. An astable drive circuit for the magnetic write head of magnetic character reader-sorter apparatus, said circuit comprising
a first inverting transistor amplifier operated class A during stable operation of the drive circuit and having a first output;
a common emitter transistor amplifier having a second output and operated between cutoff and saturation during stable operation of the drive circuit in response to signals at the first output;
means providing negative feedback between the second output and the first amplifier;
a third common emitter transistor amplifier having an output circuit connected to the resonant circuit and operated between cutoff and saturation during stable operation of the oscillator in response to signals at the second output;
a resonant circuit including
a first capacitor and the primary winding of a transformer connected in parallel in the output circuit of the third amplifier and tuned to a desired frequency, and
a second capacitor, the secondary winding of said transformer and said write head connected in series and tuned to the desired frequency; and
means providing positive feedback between the resonant circuit and the first amplifier.

3,276,033
HIGH PACKING DENSITY BINARY RECORDING SYSTEM
George R. Cogar, Lancaster, Norwalk, Conn., and Floyd E. Ross, Warminster, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 8, 1962, Ser. No. 201,197
5 Claims. (Cl. 346—74)



1. In a system for recording a series of information signals of two characteristically different types onto a record medium with said series including first and second information signals separated in time by one digit period, the combination comprising first and second storage circuits, means for applying said first and second information signals to said first storage circuit, means for applying the information stored in said first storage circuit to said second storage circuit whereby said first information signal is stored in said second storage circuit at the same time that said second information signal is stored in said first storage circuit, and means for comparing the information stored in said first and second storage circuits and generating an additional signal between said first and second information signals, means for recording said additional signal on a non-information bearing area of said record medium each time said first and second storage circuits are storing the same type of information signals.

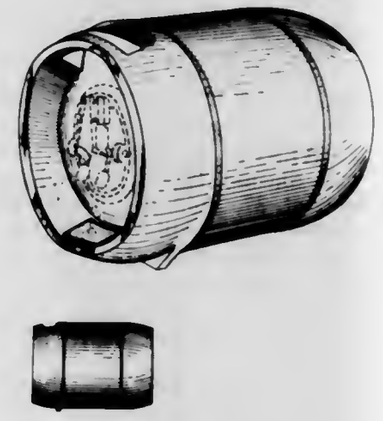
DESIGNS

SEPTEMBER 27, 1966

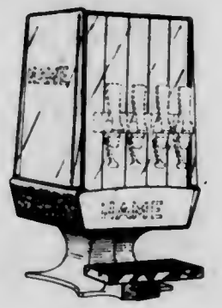
205,824
CARD DISPLAY HOLDER
Robert Fisher, 51 Murphy St., South Yarra, Victoria, Australia
Continuation of design application Ser. No. 82,770, Nov. 23, 1964. This application Oct. 22, 1965, Ser. No. 87,816
Claims priority, application Australia May 26, 1964
Term of patent 14 years
(Cl. D1—3)



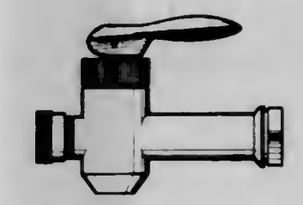
205,825
BEVERAGE DISPENSING TANK, OR SIMILAR ARTICLE
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Jan. 5, 1966, Ser. No. 470
Term of patent 14 years
(Cl. D2—3)



205,826
BEVERAGE DISPENSER, OR SIMILAR ARTICLE
James R. Reichow, Edina, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Jan. 5, 1966, Ser. No. 472
Term of patent 3½ years
(Cl. D2—3)



205,827
FAUCET FOR A BEVERAGE DISPENSER OR THE LIKE
Walter A. Plagenberg, St. Louis County, Mo., assignor to White Cross Manufacturing Co., Inc., a corporation of Missouri
Filed May 28, 1965, Ser. No. 85,497
Term of patent 14 years
(Cl. D2—3)



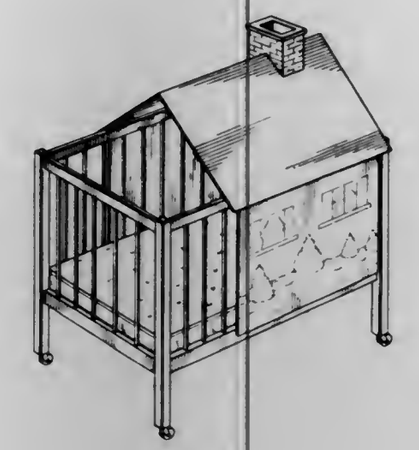
205,828
GLOVE
Stuart J. Beebe, P.O. Box 1441, Corsicana, Tex.
Filed Nov. 8, 1965, Ser. No. 88,030
Term of patent 14 years
(Cl. D3—11)



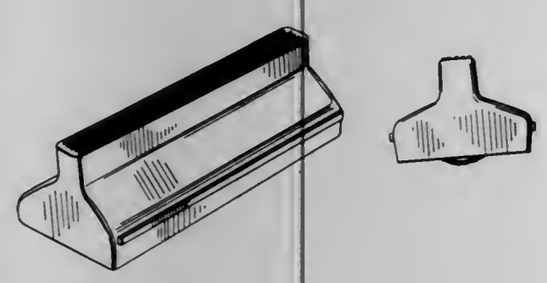
205,829
PROTECTIVE MAKE-UP HOOD
Lillian L. Gettinger, 2509 Shelley Dale Drive, Baltimore, Md.
Filed Apr. 7, 1965, Ser. No. 84,665
Term of patent 14 years
(Cl. D3—13)



205,830
CRIB
Stephen J. Rudy, 107 Overlook Drive, Greenwich, Conn.
Filed May 3, 1965, Ser. No. 85,068
Term of patent 14 years
(Cl. D5—5)



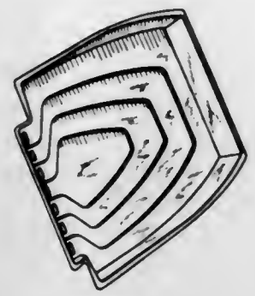
205,831
HAND SWEEPER
Saul Langner, 12 W. 27th St., New York, N.Y.
Filed Apr. 11, 1966, Ser. No. 1,853
Term of patent 14 years
(Cl. D9—2)



205,832
BACK BATH BRUSH
August Freidrich Sichelschmidt, 185 Parkside Drive, Toronto, Ontario, Canada
Filed Oct. 14, 1963, Ser. No. 76,971
Term of patent 14 years
(Cl. D9—2)



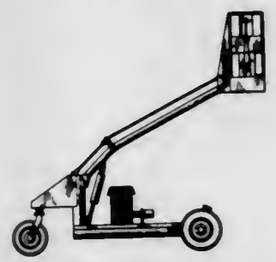
205,833
DRAINAGE TRAY FOR SINK OR THE LIKE
Norman Gardner, New Rochelle, N.Y., assignor to Joy Plastics, Inc., New York, N.Y., a corporation of New York
Filed Sept. 20, 1965, Ser. No. 87,079
Term of patent 14 years
(Cl. D9—6)



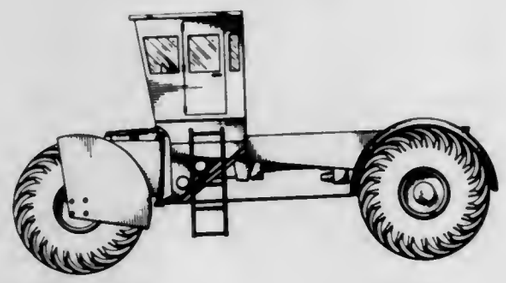
205,834
BUILDING
Richard C. Beach and Alvin E. Pierce, both of Fort Worth, Tex., assignors to Champlin Petroleum Company, Fort Worth, Tex., a corporation of Delaware
Filed Jan. 11, 1966, Ser. No. 567
Term of patent 14 years
(Cl. D13—1)



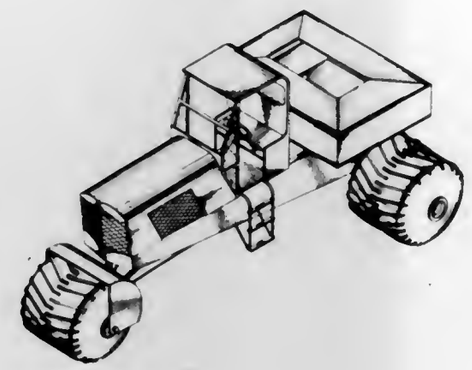
205,835
AERIAL PLATFORM
Emmet G. Slusher, Rte. 2, Lexington, Mo.
Filed Sept. 27, 1965, Ser. No. 87,167
Term of patent 14 years
(Cl. D14—3)



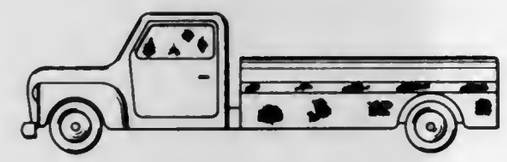
205,836
THREE-WHEELED SWAMP BUGGY WITH FORWARD CAB
Ward T. Commons, Halsey, Oreg.
Filed Oct. 18, 1965, Ser. No. 87,576
Term of patent 14 years
(Cl. D14—3)



205,837
HOPPER-CARRYING THREE-WHEELED SWAMP BUGGY
Ward T. Commons, Halsey, Oreg.
Filed Oct. 18, 1965, Ser. No. 87,578
Term of patent 14 years
(Cl. D14—3)



205,838
TANK TRUCK
Bernard H. Hesemann, P.O. Box 374, Orleans, Nebr.
Filed Oct. 24, 1965, Ser. No. 87,929
Term of patent 14 years
(Cl. D14—3)



205,839
BABY CHAIR AND TABLE COMBINATION
Donald B. Cerf, 309 E. Live Oak, San Gabriel, Calif.
Filed May 10, 1965, Ser. No. 85,196
Term of patent 14 years
(Cl. D15—1)



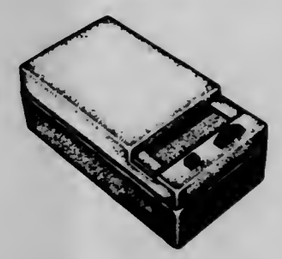
205,840
CONVERTIBLE CHAIR FOR A CHILD
William W. Jones, Albuquerque, N. Mex., and Richard P. Niesz and Lawrence H. Sharp, Amarillo, Tex., assignors to Rocky-Hi, Inc., Amarillo, Tex., a corporation of Texas
Filed Aug. 31, 1965, Ser. No. 86,787
Term of patent 14 years
(Cl. D15—1)



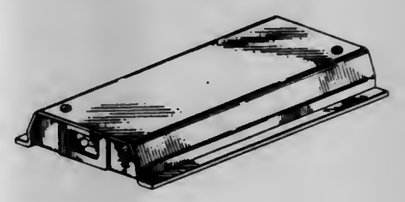
205,841
PIANO TOUCH INSTRUCTOR
Loren R. Withers, 2741 Dogwood Road, Durham, N.C.
Filed Aug. 3, 1965, Ser. No. 86,426
Term of patent 7 years
(Cl. D25—1)



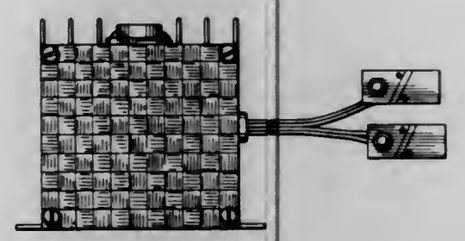
205,842
CASING FOR A PUNCHED TAPE READER
Helmut Riffert, Zetel, and Alfons Boothby, Wilhelmshaven, Germany, assignors to Olympia Werke AG, Wilhelmshaven, Germany
Filed Jan. 18, 1965, Ser. No. 83,481
Claims priority, application Germany Aug. 28, 1964
Term of patent 14 years
(Cl. D26—5)



205,843
SERVICE FITTING FOR UNDERFLOOR WIRING DUCT
De Forest D. Butler, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed July 8, 1965, Ser. No. 86,078
Term of patent 14 years
(Cl. D26—5)

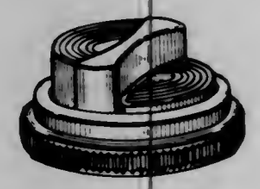


205,844
TRANSISTOR IGNITION UNIT FOR AN AUTOMOBILE OR SIMILAR ARTICLE
Robert G. Van Houten, Grand Junction, Colo., assignor to Delta Products, Inc., Grand Junction, Colo., a corporation of Colorado
Filed Mar. 4, 1965, Ser. No. 84,096
Term of patent 14 years
(Cl. D26—13)



205,845
MOTOR STARTER HOUSING
Joseph M. Parriott, Westport, Conn., and Douglas A. Long, New York, N.Y., assignors to Federal Pacific Electric Company, a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 84,958
Term of patent 14 years
(Cl. D26—13)

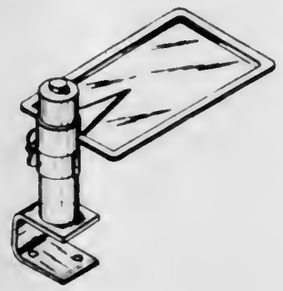
205,846
CONTROL KNOB FOR AN ELECTRICAL SWITCH
David E. Scott, Royal Oak, Mich., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed July 6, 1965, Ser. No. 86,025
Term of patent 14 years
(Cl. D26—13)



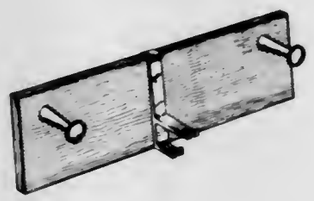
205,847
COMBINED FURNITURE PEDESTAL AND ADJUSTABLE CASTER UNIT
Wayne W. Good, Sturgis, Mich., assignor to Harter Corporation, Sturgis, Mich., a corporation of Michigan
Filed May 20, 1965, Ser. No. 85,376
Term of patent 14 years
(Cl. D33—1)



205,848
COMBINED TELEPHONE SHELF AND MOUNTING BRACKET THEREFOR
James E. Poole, 4348 Noble Ave., Sherman Oaks, Calif.
Filed July 14, 1965, Ser. No. 86,147
Term of patent 7 years
(Cl. D33—3)



205,849
COMBINED HAT AND COAT RACK
Raymond A. Magnuson, Hinsdale, Ill., assignor to Vogel-Peterson Co., Elmhurst, Ill., a corporation of Illinois
Filed Sept. 10, 1965, Ser. No. 86,934
Term of patent 14 years
(Cl. D33—8)



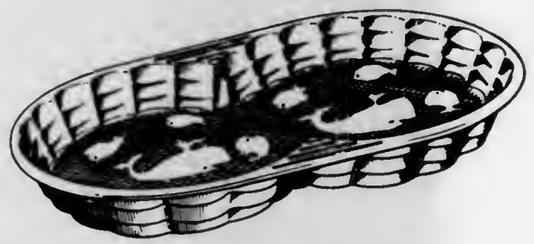
205,850
STUFFED TOY
Terrance R. Mitchell, Bloomington, Minn., assignor to Spectacular Products, Inc., Cannon Falls, Minn., a corporation of Minnesota
Filed Feb. 3, 1966, Ser. No. 910
Term of patent 14 years
(Cl. D34—2)



205,851
BOWLING PRACTICE GAME TARGET OR SIMILAR ARTICLE
Chalmer R. Smith, 32 Burton Ave. NE., Massillon, Ohio
Filed Oct. 20, 1965, Ser. No. 87,642
Term of patent 14 years
(Cl. D34—5)



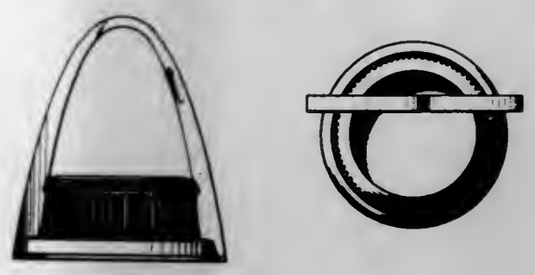
205,852
PLAY POOL OR SIMILAR ARTICLE
Leonard E. Greenberg, West Hartford, and Joseph Diemond, Simsbury, Conn., assignors to Coleco Industries, Inc., Hartford, Conn., a corporation of Connecticut
Filed Oct. 22, 1965, Ser. No. 87,756
Term of patent 14 years
(Cl. D34—5)



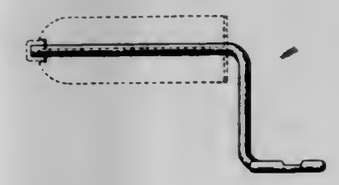
205,853
INFLATABLE NOVELTY HEAD GEAR
Elizabeth Ivon, 110 E. 36th St., New York, N.Y.
Filed Aug. 9, 1965, Ser. No. 86,514
Term of patent 14 years
(Cl. D34—15)



205,854
PLANTER OR THE LIKE
Esther Emmerich, 116 E. Main St., Mascoutah, Ill., and Concetta A. Richardson, 2245 Grandview, Springfield, Ill.
Filed Nov. 8, 1965, Ser. No. 88,040
Term of patent 14 years
(Cl. D35—3)



205,855
PAPER ROLL HOLDER OR THE LIKE
Russell K. Swanson, Kansas City, Mo., assignor to Central Molding and Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed July 26, 1965, Ser. No. 86,278
Term of patent 14 years
(Cl. D41—1)



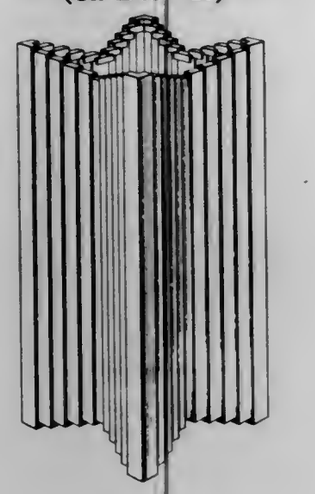
205,856
INTERVAL TIMER
Helmut D. Beerbaum, New Haven, Conn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 83,764
Term of patent 14 years
(Cl. D42—7)



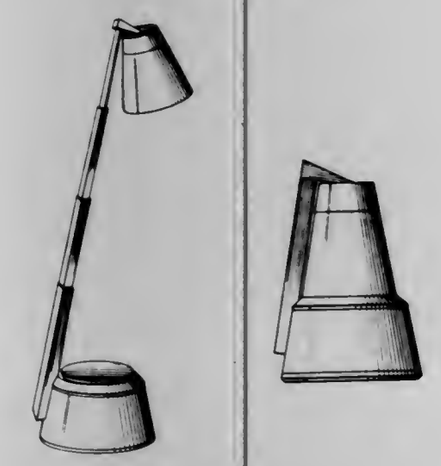
205,857
BROOCH OR SIMILAR ARTICLE
Lloyd F. Crisfield, 5418 Calle De Arboles, Torrance, Calif.
Filed Oct. 24, 1965, Ser. No. 87,907
Term of patent 14 years
(Cl. D45—19)



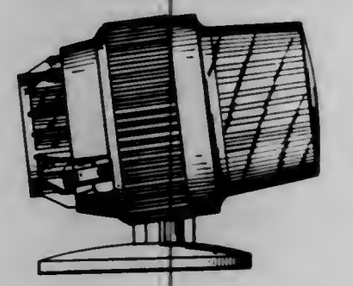
205,858
LAMP
Leo H. Klausen, 338 Hillcrest Ave., Willowdale, Ontario, Canada
Filed Aug. 2, 1965, Ser. No. 86,403
Term of patent 14 years
(Cl. D48—18)



205,859
EXTENSIBLE TABLE LAMP OR SIMILAR ARTICLE
Milton S. Pohl, Brookville, and Harvey A. Schwartz, Merrick, N.Y., assignors to Soss Manufacturing Company, Detroit, Mich., a corporation of Nevada
Filed Nov. 18, 1965, Ser. No. 88,140
Term of patent 14 years
(Cl. D48—20)



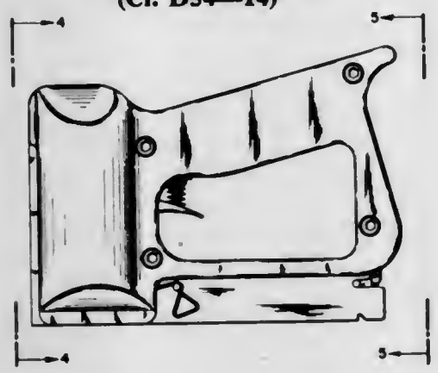
205,860
COMBINATION SIGNAL LAMP AND SIREN FOR A JUVENILE VEHICLE
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Aug. 16, 1965, Ser. No. 86,591
Term of patent 14 years
(Cl. D48—24)



205,861
SPOON
Tsunehiko Ikeda, 240 Sakuragaoka, Hodogaya-ku, Yokohama-shi, Japan
Filed June 24, 1965, Ser. No. 85,881
Term of patent 14 years
(Cl. D54—12)



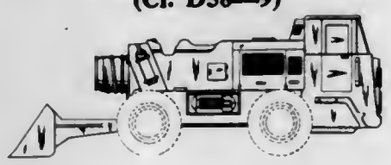
205,862
ELECTRIC STAPLER
Norman R. Doherty, 32 Sunset Ave., Farmingdale, N.Y.
Filed Dec. 27, 1965, Ser. No. 344
Term of patent 14 years
(Cl. D54—14)



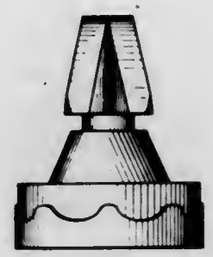
205,863
SPECTACLE FRAME FRONT
Harry Weissman, Great Neck, N.Y. (% Paramount Optical Mfg. Corp., 60—06 39th Ave., Woodside, N.Y. 11377)
Filed May 25, 1965, Ser. No. 85,515
Term of patent 14 years
(Cl. D57—1)



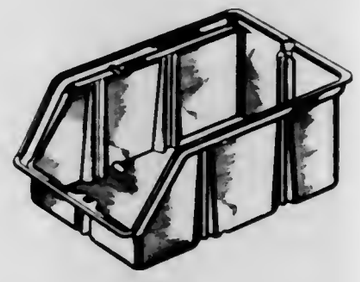
205,864
BOTTLE OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed July 30, 1964, Ser. No. 81,078
Term of patent 14 years
(Cl. D58—9)



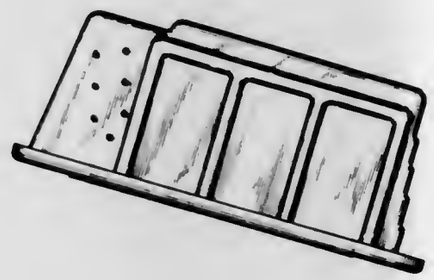
205,865
CLOSURE
Alvin J. Porter, Hopkins, Minn., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 88,240
Term of patent 14 years
(Cl. D58—26)



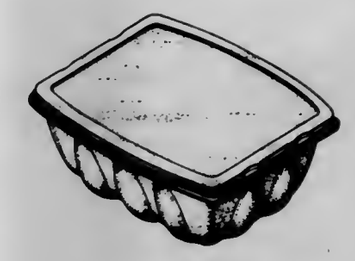
205,866
STACKABLE BIN BOX
Donald J. Asenbauer, 13820 E. Close St., Whittier, Calif.
Filed June 18, 1965, Ser. No. 85,796
Term of patent 14 years
(Cl. D58—12)



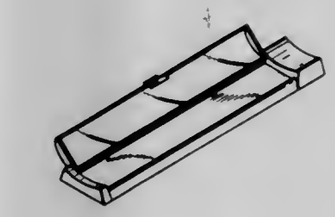
205,867
TOTE TRAY
Anson W. Voorhees, Jr., and Carl C. Cole, Tucson, Ariz., assignors to Pioneer Products, Inc., Tucson, Ariz., a corporation of Arizona
Filed Aug. 9, 1965, Ser. No. 86,494
Term of patent 14 years
(Cl. D58—12)



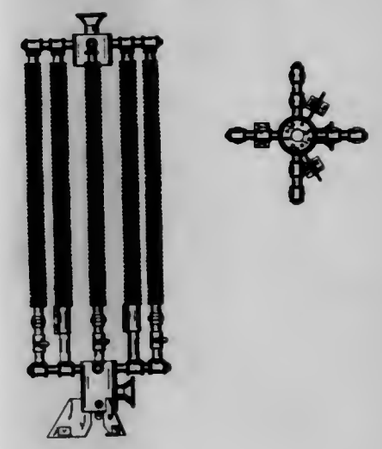
205,868
COMBINED CONTAINER AND CLOSURE THEREFOR
Milton Immermann, Piermont, Archie G. Drummond, Jr., Wantagh, and Harold J. Vanderhyde, North Merrick, N.N.Y., Robert C. Fogle, Darien, Conn., and Roger H. Sweet, Bayside, and Calvin Lee Payne, Jr., Hastings on Hudson, N.Y., assignors to Clayton Anderson & Co., Dallas, Tex., a corporation of Delaware
Filed Sept. 24, 1965, Ser. No. 87,156
Term of patent 14 years
(Cl. D58—12)



205,869
DISPLAY BOX
Jerome G. Hahn, Englewood, N.J., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 84,657
Term of patent 7 years
(Cl. D58—12.7)



205,870
HEAT EXCHANGER
Wilkes E. Hill, 10 Summit St., Erie, Pa.
Filed Oct. 14, 1965, Ser. No. 87,474
Term of patent 14 years
(Cl. D62—4)



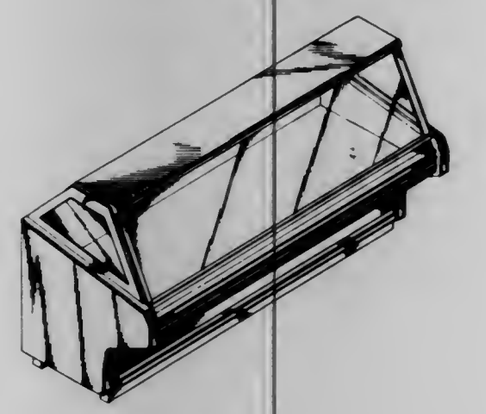
205,871
ILLUMINABLE HOLDER FOR A TELEPHONE AND WRITING PAD
Leonard S. Youngs, 5903 Watt Ave., North Highlands, Calif.
Filed Aug. 10, 1965, Ser. No. 86,521
Term of patent 14 years
(Cl. D74—1)



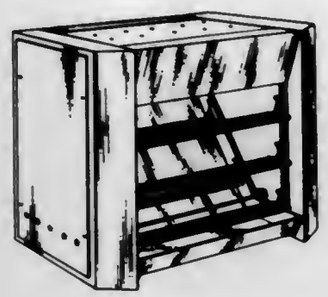
205,872
WRITING INSTRUMENT
Kenneth Parker, Janesville, Wis., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin
Filed June 5, 1964, Ser. No. 80,299
Term of patent 14 years
(Cl. D74—17)



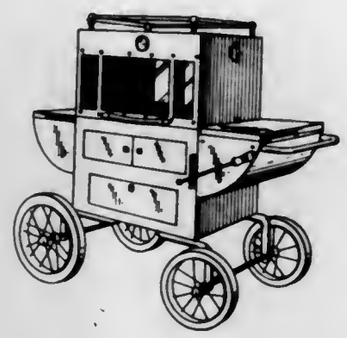
205,873
REFRIGERATED DISPLAY CASE
Winfield R. Burtis, Trenton, N.J., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Apr. 5, 1965, Ser. No. 84,610
Claims priority, application Canada Mar. 25, 1965
Term of patent 14 years
(Cl. D80—11)



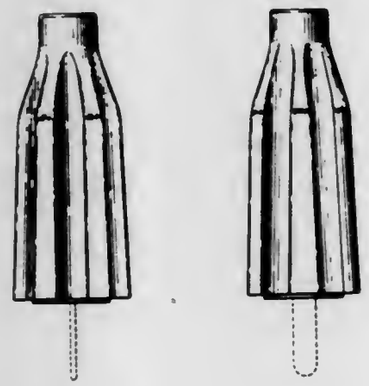
205,874
PRETZEL BAKING OVEN
Charles W. King, 4418 Spruce St., Philadelphia, Pa.
Filed May 28, 1965, Ser. No. 85,488
Term of patent 14 years
(Cl. D81—10)



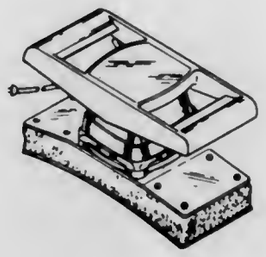
205,875
PORTABLE GRILL
Harley B. Weatherly, 11 Lynncrest St., Chattanooga, Tenn.
Filed Sept. 3, 1965, Ser. No. 86,837
Term of patent 14 years
(Cl. D81—10)



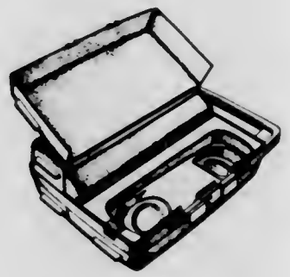
205,876
FROZEN CONFECTION
James S. Merritt, Shawnee Mission, Kans., assignor to The James S. Merritt Company, Kansas City, Mo., a corporation of Missouri
Filed Nov. 19, 1965, Ser. No. 88,153
Term of patent 14 years
(Cl. D82—2)



205,877
MASSAGER
Joseph A. La Barber, 1313 Maenpah Circle, Las Vegas, Nev.
Filed Nov. 15, 1965, Ser. No. 88,113
Term of patent 14 years
(Cl. D83—1)



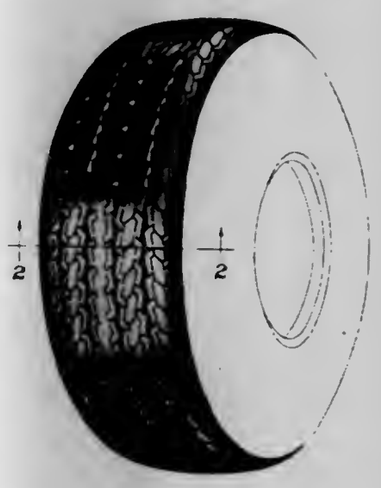
205,878
CARRYING CASE FOR TELEPHONIC COMMUNICATIONS APPARATUS
Frederick G. Buhrendorf, Colts Neck, N.J., Henry Dreyfuss, South Pasadena, Calif., and Oskar Loosme, Lincroft, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 20, 1965, Ser. No. 87,068
Term of patent 14 years
(Cl. D87—5)



205,879
PLEATED UMBRELLA
Edward Chodosh, 36–40 Northiam St., Hackney E. 8, England
Filed Oct. 8, 1964, Ser. No. 82,084
Claims priority, application Great Britain Apr. 10, 1964
Term of patent 14 years
(Cl. D88—3)



205,880
TIRE
Glen L. Wittenmyer, 121 Dodge Ave., Akron, Ohio
Filed Dec. 22, 1965, Ser. No. 279
Term of patent 14 years
(Cl. D90—20)



LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 27TH DAY OF SEPTEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Le Grice, Edward B. Rosa floribunda plant. 2,673, 9–27–66, Cl. 24.

Motzkau, Henry W., to Yoder Bros., Inc. Azalea plant. 2,672, 9–27–66, Cl. 57.

Yoder Bros, Inc.: *See*—
Motzkau, Henry W. 2,672.

LIST OF DESIGN PATENTEES

Anderson, Clayton, & Co.: *See*—
Immermann, Milton, Drummond, Vanderhyde, Fogle, Sweet, and Payne. 205,868.

Asenbauer, Donald J. Stackable bin box. 205,866, 9–27–66, Cl. D58—12.

Beach, Richard C., and A. E. Pierce, to Champlin Petroleum Co. Building. 205,834, 9–27–66, Cl. D13—1.

Beebe, Stuart J. Glove. 205,828, 9–27–66, Cl. D3—11.

Beerbaum, Helmut D., to Robertshaw Controls Co. Interval timer. 205,856, 9–27–66, Cl. D42—7.

Bell Telephone Laboratories, Inc.: *See*—
Buhrendorg, Frederick G., Dreyfuss, and Loosme. 205,878.

Boothby, Alfons: *See*—
Riffert, Helmut, and Boothby. 205,842.

Buhrendorg, Frederick G., H. Dreyfuss, and O. Loosme, to Bell Telephone Laboratories, Inc. Carrying case for telephonic communications. 205,878, 9–27–66, Cl. D87—5.

Burtis, Winfield R., to Emhart Corp. Refrigerated display case. 205,873, 9–27–66, Cl. D80—11.

Butler, De Forest D., to Square D Co. Service fitting for underfloor wiring duct. 205,843, 9–27–66, Cl. D26—5.

Central Molding and Mfg. Co.: *See*—
Swanson, Russell K. 205,855.

Cerf, Donald B. Baby chair and table combination. 205,839, 9–27–66, Cl. D15—1.

Champlin Petroleum Co.: *See*—
Beach, Richard C. and Pierce. 205,834.

Chodosh, Edward. Pleated umbrella. 205,870, 9–27–66, Cl. D88—3.

Cole, Carl C.: *See*—
Voorhees, Anson W., Jr., and Cole. 205,867.

Coleco Industries, Inc.: *See*—
Greenberg, Leonard E., and Diemond. 205,852.

Colgate-Palmolive Co.: *See*—
Douglas, Livingston C. 205,864.

Commons, Ward T. Three-wheeled swamp buggy with forward cab. 205,836, 9–27–66, Cl. D14—3.

Commons, Ward T. Hopper-carrying three-wheeled swamp buggy. 205,837, 9–27–66, Cl. D14—3.

Cornelius Co., The: *See*—
Cornelius, Richard T. 205,825.
Reichow, James R. 205,826.

Cornelius, Richard T., to The Cornelius Co. Beverage dispensing tank, or similar article. 205,825, 9–27–66, Cl. D2—3.

Crisfield, Lloyd F. Brooch or similar article. 205,857, 9–27–66, Cl. D45—19.

Delta Products, Inc.: *See*—
Van Houten, Robert G. 205,844.

Diemond, Joseph: *See*—
Greenberg, Leonard E., and Diemond. 205,852.

Doherty, Norman R. Electric stapler. 205,862, 9–27–66, Cl. D54—14.

Douglas, Livingston C., to Colgate-Palmolive Co. Bottle or similar article. 205,864, 9–27–66, Cl. D58—9.

Dreyfuss, Henry: *See*—
Budrendorg, Frederick G., Dreyfuss, and Loosme. 205,878.

Drummond, Archie G., Jr.: *See*—
Immermann, Milton, Drummond, Vanderhyde, Fogle, Sweet, and Payne. 205,868.

Emhart Corp.: *See*—
Burtis, Winfield R. 205,873.

Emmerich, Esther, and C. A. Richard. Planter or the like. 205,854, 9–27–66, Cl. D35—3.

Federal Pacific Electric Co.: *See*—
Parriott, Joseph M., and Long. 205,845.

Fisher, Robert. Card display holder. 205,824, 9–27–66, Cl. D1—3.

Fogle, Robert C.: *See*—
Immermann, Milton, Drummond, Vanderhyde, Fogle, Sweet, and Payne. 205,868.

Gardner, Norman, to Joy Plastics, Inc. Drainage tray for sink or the like. 205,833, 9–27–66, Cl. D9—6.

Gettinger, Lillian L. Protective make-up hood. 205,829, 9–27–66, Cl. D3—13.

Good, Wayne W., to Harter Corp. Combined furniture pedestal and adjustable caster unit. 205,847, 9–27–66, Cl. D33—1.

Greenberg, Leonard E., and J. Diemond, to Coleco Industries, inc. Play pool or similar article. 205,852, 9–27–66, Cl. D34—5.

Hahn, Jerome G., to Jacoby-Bender, Inc. Display box. 205,869, 9–27–66, Cl. D58—12.7.

Harter Corp.: *See*—
Good, Wayne W. 205,847.

Hesemann, Bernard H. Tank truck. 205,838, 9–27–66, Cl. D14—3.

Hill, Wilkes E. Heat exchanger. 205,870, 9–27–66, Cl. D62—4.

Ikeda, Tsunehiko. Spoon. 205,861, 9–27–66, Cl. D54—12.

Immermann, Milton, A. G. Drummond, Jr., H. J. Vanderhyde, R. C. Fogle, R. H. Sweet, and C. L. Payne, Jr., to Clayton Anderson & Co. Combined container and closure therefor. 205,868. 9–27–66, Cl. D58—12.

Ivon, Elizabeth. Inflatable novelty head gear. 205,853, 9–27–66, Cl. D34—15.

Jacoby-Bender, Inc.: *See*—
Hahn, Jerome G. 205,869.

Jones, William W., R. P. Niesz, and L. H. Sharp, to Rocky-Hi, Inc. Convertible chair for a child. 205,840, 9–27–66, Cl. D15—1.

Joy Plastics, Inc.: *See*—
Gardner, Norman. 205,833.

King, Charles W. Pretzel baking oven. 205,874, 9–27–66, Cl. D81—10.

Klausen, Leo H. Lamp. 205,858, 9–27–66, Cl. D48—18.

La Barber, Joseph A. Massager. 205,877, 9–27–66, Cl. D83—1.

Languer, Saul. Hand sweeper. 205,831, 9–27–66, Cl. D9—2.

Long, Douglas A.: *See*—
Parriott, Joseph M., and Long. 205,845.

Loosme, Oskar: *See*—
Buhrendorg, Frederick G., Dreyfuss, and Loosme. 205,878.

Magnuson, Raymond A., to Vogel-Peterson Co. Combined hat and coat rack. 205,849, 9–27–66, Cl. D33—8.

Merritt, James S., to The James S. Merritt Co. Frozen confection. 205,876, 9–27–66, Cl. D82—2.

Merritt, James S., Co., The: *See*—
Merritt, James S. 205,876.

Mitchell, Terrance R., to Spectacular Products, Inc. Stuffed toy. 205,850, 9–27–66, Cl. D34—2.

Murray Ohio Mfg. Co., The: *See*—
Schreckengost, Viktor. 205,860.

National Dairy Products Corp.: *See*—
Porter, Alvin J. 205,865.

Niesz, Richard P.: *See*—
Jones, William W., Niesz, and Sharp. 205,840.

Olympia Werke AG: *See*—
Riffert, Helmut, and Boothby. 205,842.

Parker, Kenneth, to The Parker Pen Co. Writing instrument. 205,872, 9–27–66, Cl. D74—17.

Parker Pen Co., The: *See*—
Parker, Kenneth. 205,872.

Parriott, Joseph M., and D. A. Long, to Federal Pacific Electric Co. Motor starter housing. 205,845, 9–27–66, Cl. D26—13.

Payne, Calvin L., Jr.: *See*—
Immermann, Milton, Drummond, Vanderhyde, Fogle, Sweet, and Payne. 205,868.

Pierce, Alvin E.: *See*—
Beach, Richard C., and Pierce. 205,834.

Pioneer Products, Inc.: *See*—
Voorhees, Anson W., Jr., and Cole. 205,867.

Plagenberg, Walter A., to White Cross Mfg. Co., Inc. Faucet for a beverage dispenser or the like. 205,827, 9–27–66, Cl. D2—3.

Pohl, Milton S., and H. A. Schwartz, to Soss Mfg. Co. Extensible table lamp or similar article. 205,859, 9–27–66, Cl. D48—20.

Poole, James E. Combined telephone shelf and mounting bracket therefor. 205,848, 9–27–66, Cl. D33—3.

Porter, Alvin J., to National Dairy Products Corp. Closure. 205,865, 9–27–66, Cl. D58—26.

Reichow, James R., to The Cornelius Co. Beverage dispenser, or similar article. 205,826, 9–27–66, Cl. D2—3.

Richard, Concetta A.: *See*—
Emmerich, Esther, and Richard. 205,854.

Riffert, Helmut, and A. Boothby, to Olympia Werke AG. Casing for a punched tape reader. 205,842, 9–27–66, Cl. D26—5.

Robertshaw Controls Co.: *See*—
Beerbaum, Helmut D. 205,856.

Rocky-Hi, Inc.: *See*—
Jones, William W., Niesz, and Sharp. 205,840.

Rudy, Stephen J. Crib. 205,830, 9–27–66, Cl. D5—5.

Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Combination signal lamp and siren for a juvenile vehicle. 205,860, 9–27–66, Cl. D48—24.
Schwartz, Harvey A.: *See*—
Pohl, Milton S., and Schwartz. 205,859.
Scott, David E., to Square D Co. Control knob for an electrical switch. 205,846, 9–27–66, Cl. D26—13.
Sharp, Lawrence H.: *See*—
Jones, William W., Niess, and Sharp. 205,840.
Sicheischmidt, August F. Back bath brush. 205,832, 9–27–66, Cl. D9—2.
Slusher, Emmet G. Aerial platform. 205,835, 9–27–66, Cl. D14—3.
Smith, Chalmer R. Bowling practice game target or similar article. 205,851, 9–27–66, Cl. D34—5.
Soss Mfg. Co.: *See*—
Pohl, Milton S., and Schwartz. 205,859.
Spectacular Products, Inc.: *See*—
Mitchell, Terrance R. 205,850.
Square D Co.: *See*—
Butler, De Forest D. 205,843.
Scott, David E. 205,846.
Swanson, Russell K., to Central Molding and Mfg. Co. Paper roll holder or the like. 205,855, 9–27–66, Cl. D41—1.
Sweet, Roger H.: *See*—
Immermann, Milton, Drummond, Vanderhyde, Fogle, Sweet, and Payne. 205,868.
Vanderhyde, Harold J.: *See*—
Immermann, Milton, Drummond, Vanderhyde, Fogle, Sweet, and Payne. 205,868.
Van Houten, Robert G., to Delta Products, Inc. Translator ignition unit for an automobile or similar article. 205,844, 9–27–66, Cl. D26—13.
Vogel-Peterson Co.: *See*—
Magnuson, Raymond A. 205,849.
Voorhees, Anson W., Jr., and C. C. Cole, to Pioneer Products, Inc. Tote tray. 205,867, 9–27–66, Cl. D58—12.
Weatherly, Harley B. Portable grill. 205,875, 9–27–66, Cl. D81—10.
Weissman, Harry. Spectacle frame front. 205,863, 9–27–66, Cl. D57—1.
White Cross Mfg. Co., Inc.: *See*—
Plagenberg, Walter A. 205,827.
Withers, Loren R. Piano touch instructor. 205,841, 9–27–66, Cl. D25—1.
Wittenmyer, Glen L. Tire. 205,880, 9–27–66, Cl. D90—20.
Youngs, Leonard S. Illuminable holder for a telephone and writing pad. 205,871, 9–27–66, Cl. D74—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 27TH DAY OF SEPTEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Ferdon, Gilbert D., and Henschen. 3,275,765.
McCaughey, William S. 3,275,968.
Mixon, James L., Jr. 3,275,974.
Rueger, Herman. 3,276,014.
Shlesinger, Bernard E., Jr. 3,275,973.
Abbott Laboratories: *See*—
Endicott, Clarence J., and Martin. 3,275,518.
Abermeth, Hubert, to Klockner-Humboldt-Deutz Aktiengesellschaft. Rotary piston internal combustion engine. 3,274,980, 9–27–66, Cl. 123—8.
Abex Corp.: *See*—
Wahlgren, John G. 3,274,825.
Abos, Ralph L., to Polycarbide Corp. Apparatus for forming high-temperature resistant member. 3,275,735, 9–27–66, Cl. 13—25.
Abraham, Carlos S. Steam iron. 3,274,714, 9–27–66, Cl. 38—77.
Achen, Robert K. Guessing game device. 3,275,323, 9–27–66, Cl. 273—120.
Achin, Gerard R.: *See*—
Thomson, Arthur J., Achin, and Rynhart. 3,275,425.
Acme Visible Records, Inc.: *See*—
Janssen, Alexander P. 3,274,715.
Adams, Albert, S. E. Tschappler, and H. U. Ziemer, to International Minerals & Chemicals Corp. Beneficiation of langbeinite-containing materials. 3,275,141, 9–27–66, Cl. 209—166.
Adams, Clyde M., Jr., to American Machine & Foundry Co. Method of flame-hardening welded structures. 3,275,481, 9–27–66, Cl. 148—127.
Adams, Derek S., to Joseph Lucas (Industries) Ltd. Voltage regulators. 3,275,924, 9–27–66, Cl. 322—28.
Addressograph-Multigraph Corp.: *See*—
Dunn, Robert A. 3,274,840.
Adler, Robert, to Zenith Radio Corp. Electron coupling system, coupling through the envelope wall of discharge device by electromagnetic coupling. 3,275,880, 9–27–66, Cl. 315—4.
Adler, Robert, to Zenith Radio Corp. Dual output channel electron beam parametric amplifier with noise elimination. 3,275,943, 9–27–66, Cl. 330—4.7.
Ador Corp.: *See*—
Riegelman, Harry M. 3,275,361.
Aerojet-General Corp.: *See*—
Lieberman, Irving, and Zernow. 3,274,771.
Aeronautical Machinery Corp.: *See*—
Bloch, Erich. 3,275,297.
Aeronca Mfg. Corp.: *See*—
Brunner, John E. 3,276,022.
Affleck, John H., III.: *See*—
Bristow, Robert H., and Affleck. 3,275,435.
Agfa Aktiengesellschaft: *See*—
Biedermann, Klaus, Jakob, Kubitzek, and Simson. 3,274,913.
Biedermann, Friedrich, Fauth, Jakob, Simson, and Wasielewski. 3,274,914.
Aghnides, Elie P. Aerators with enlarged stream outlets. 3,275,246, 9–27–66, Cl. 239—428.5.
Agricola, Norman F.: *See*—
Thackeray, William E. 3,275,007.
Aguinek, Alvin: *See*—
Mishcon, Lester, and Aguinek. 3,274,800.
Aibara, Kosaku: *See*—
Kobayashi, Hiroto, and Aibara. 3,275,022.
Ahlström, A. Osakeyhtio: *See*—
Valtanen, Seppo O., Punttila, and Sjolund. 3,275,156.
Ainis, Herman, to California Institute Research Foundation. Method and aparatus for controlling culture growth. 3,275,528, 9–27–66, Cl. 195—104.
Air Preheater Co., Inc., The: *See*—
Dore, Franklyn. 3,274,672.
Air Reduction Co., Inc.: *See*—
Cushman, Everett H. 3,275,786.
Mitchell, Harold C. 3,274,789.
Aircraft Armaments, Inc.: *See*—
Barr, Irwin R. 3,275,193.
Airetool Mfg. Co., The: *See*—
Martin, Paul W. 3,275,116.
Ajinomoto Co., Inc.: *See*—
Shiro, Teruo, Konishi, Okumura, and Takahashi. 3,275,526.
Akers, John N. Multi-stage water distilling apparatus. 3,275,530, 9–27–66, Cl. 202—174.
Akron Products Co., The: *See*—
Cruse, William C. 3,274,680.
Aleck, Benjamin J., to Arde-Portland, Inc. Generalized stretch forming. 3,274,813, 9–27–66, Cl. 72—62.
Alexander, Robert R., and A. J. Urjil, to W. R. Grace & Co. Ternolymer of vinyl acetate, dialkyl ester and alkyl acrylate. 3,275,589, 9–27–66, Cl. 260—29.6.
Alexandrovsky, George. Oxygen steel making. 3,275,432, 9–27–66, Cl. 75—60.
Alexandrowicz, Alvin W.: *See*—
Herbenar, Edward J., and Alexandrowicz. 3,275,338.
Allen, Duff S., Jr., E. R. Ruso, and S. A. Frankel, to American Cyanamid Co. Alpha-cyanomethylaminonitrile and alpha-carboxamidomethylaminonitride compounds. 3,275,677, 9–27–66, Cl. 260—465.
Allen Fruit Co., Inc.: *See*—
Allen, Kenneth M., Van Dyke, and Breunsbach. 3,275,136.
Allen, James M., and A. J. Scalzo, to Westinghouse Electric Corp. Elastic fluid apparatus. 3,275,294, 9–27–66, Cl. 253—39.1.
Allen, Kenneth M., L. H. Van Dyke, Jr., and R. L. Breunsbach, to Allen Fruit Co., Inc. Apparatus for detecting seeds in fruit. 3,275,136, 9–27–66, Cl. 209—74.
Allen, William M., to Hoover Ball and Bearing Co. Preparation of meat products. 3,275,452, 9–27–66, Cl. 99—109.
Allied Chemical Corp.: *See*—
Bolger, John C. 3,275,252.
Oswald, Hendrikus J., and Turi. 3,275,592.
Schule, Elmer C., and Pike. 3,275,733.
Wooster, George S., and Berger. 3,275,709.
Wooster, George S., and Kane. 3,275,710.
Wooster, George S. 3,275,711.
Allin, Norman J., to Bradley A. Kendis, trustee. Variable pitch propeller. 3,275,083, 9–27–66, Cl. 170—160.13.
Allis-Chalmers Mfg. Co.: *See*—
Colton, Ervin. 3,275,414.
Colton, Ervin. 3,275,467.
Hooper, Donald M. 3,274,674.
Matthews, Dean A. 3,275,092.
Pflanz, Herbert M., and Wachta. 3,275,777.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Almstrom, Knut. 3,275,838.
Allswede, Jerry L.: *See*—
Jackman, Robert M., and Allswede. 3,274,662.
Almstrom, Knut, to Allmanna Svenska Elektriska Aktiebolaget. Equipment for regulating transmitted power between two asynchronously connected electric alternating current grids. 3,275,838, 9–27–66, Cl. 307—82.
Aloia, Dominick. Level and rule combination. 3,274,695, 9–27–66, Cl. 33—265.
Alsch, Richard E., to Graham Transmissions, Inc. Torque switch for variable speed transmissions. 3,274,859, 9–27–66, Cl. 74—796.
Aluminum Co. of America: *See*—
Demsey, John N., Jr., and Huber. 3,274,905.
Alvin, William R. Water treatment apparatus. 3,275,030, 9–27–66, Cl. 137—565.
Alyea, Harold W., E. D. Jurasinski, and E. V. Fliss, to Johnson Service Co. Dampers and seal means therefor. 3,275,031, 9–27–66, Cl. 137—601.
American Brake Shoe Co.: *See*—
Henry, Augustus P. 3,275,017.
American Can Co.: *See*—
Livingstone, Alexander. 3,275,200.
American Cyanamid Co.: *See*—
Allen, Duff S., Jr., Ruso, and Frankel. 3,275,677.
Cantrall, Edward W., and Bernstein. 3,275,624.
Freeman, Mark P., and Fussman. 3,275,411.
Hofmann, Corris M. 3,275,688.
Nash, Robert A., and Weidenheimer. 3,275,513.
Petropoulos, John C., and Megna. 3,275,599.
Skrivan, Joseph F. 3,275,412.
American Enka Corp.: *See*—
Gonsalves, Conrad J. 3,274,764.
American Machine & Foundry Co.: *See*—
Adams, Clyde M., Jr. 3,275,481.
American Optical Co.: *See*—
Siegmund, Walter P. 3,275,428.
American Pipe and Construction Co.: *See*—
Hausmann, Delbert A., and Szulc. 3,275,040.
American Radiator & Standard Sanitary Corp.: *See*—
Fowell, Andrew J. 3,275,223.
Huston, William D. 3,275,936.
Kozel, James A., and McClure. 3,275,033.
Plasko, Emil R. 3,275,014.
American Safety Equipment Corp.: *See*—
Hamann, Walter F. 3,274,656.
American Telephone and Telegraph Co.: *See*—
Howell, Jesse O., and MacLeod. 3,275,754.
American Thermocatalytic Corp.: *See*—
Weiss, Gerhart, and Cornely. 3,275,497.
Ampex Corp.: *See*—
Johnson, Keith O. 3,275,949.
Mendenhall, Charles E., and Chur. 3,275,990.
Amsted Industries Inc.: *See*—
Lohman, Gordon R. 3,274,681.
Anaconda Wire and Cable Co.: *See*—
O'Mara, Joseph B., and D'Ascoli. 3,274,688.
Anchor Hocking Glass Corp.: *See*—
Roberts, Cecil P., and Runco. 3,274,748.
Anderson, Armand: *See*—
Weaver, Paul J. 3,275,769.
Anderson Electric Corp.: *See*—
Flynn, Gordon L., Kidd, and Peek. 3,275,738.

Anderson, James H. Internal pipe bender. 3,274,817, 9–27–66, Cl. 72—298.

Anderson, John B.: *See*—
Wiechard, Robert N., and Anderson. 3,274,961.

Anderson, Richard M., and R. A. Essig, to Westinghouse Electric Corp. Heat pump defrost system. 3,274,793, 9–27–66, Cl. 62—151.

Andrel, Raymond: *See*—
Glass, Ronald, Andrel and Harrison. 3,275,158.

Andren, Karl H., and C. R. Tuttle, to Artos Engineering Co. Terminal attaching device. 3,274,664, 9–27–66, Cl. 29—33.

Andress, Peter, Jr., to Union Oil Co. of California. Fluid flow control device. 3,275,037, 9–27–66, Cl. 138—46.

Andouart, Leon, to Societe des Etablissements Andouart. Extrusion machines for plastic material. 3,274,647, 9–27–66, Cl. 18—12.

Andrews, Peter G., to Walker Mfg. Co. Method of making a muffler. 3,274,678, 9–27–66, Cl. 29—471.1.

Angst, Walter, to Kollsman Instrument Corp. Vertical velocity indicator. 3,274,830, 9–27–66, Cl. 73—179.

Annis, Max R., to Esso Production Research Co. Drilling muds. 3,275,551, 9–27–66, Cl. 252—8.5.

Anocut Engineering Co.: *See*—
Williams, Lynn A. 3,275,543.

Anstey, Nigel A.: *See*—
Lerwill, William E., and Anstey. 3,276,015.

Aoki, Tomoo, to Toyo Cloth Co. Ltd., and Toyo Rayon Co. Ltd. Method for the production of artificial leather. 3,275,468, 9–27–66, Cl. 117—63.

Arde-Portland, Inc.: *See*—
Aleck, Benjamin J. 3,274,813.

Argue, Gary R.: *See*—
Banewicz, John J., Argue, and Stewart. 3,275,903.

Armour and Co.: *See*—
Cramer, John W. 3,274,642.
Knauss, Robert L. 3,274,639.

Armstrong Cork Co.: *See*—
Horst, Robert L. 3,274,668.

Arnold, Robert T. Container transport device. 3,275,175, 9–27–66, Cl. 214—383.

Arseneau, Roger E., to International Telephone and Telegraph Corp. Timer. 3,275,850, 9–27–66, Cl. 307—88.5.

Artos Engineering Co.: *See*—
Andren, Karl H., and Tuttle. 3,274,664.

Ashby, Artie D., Jr., and E. R. Higgins, to Westinghouse Electric Corp. Electrical transformer having a woven winding. 3,275,966, 9–27–66, Cl. 336—181.

Ashby, Billy B., to Esso Research and Engineering Co. Apparatus for drying particulate materials. 3,274,698, 9–27–66, Cl. 34—48.

Atkins, Carl E., to Tung-Sol Electric Inc. Touch control circuit. 3,275,897, 9–27–66, Cl. 317—146.

Atkinson, Guy F., Co.: *See*—
Rein, Edward N., and Dolman. 3,275,330.

Atlas Copco Aktiebolag: *See*—
Zettergren, Birger. 3,275,388.

Atlas Corp.: *See*—
Poller, Harry S. 3,274,879.

Auld, Samuel H., Jr., to Siegler Lear Inc. Automatic control for aircraft. 3,275,268, 9–27–66, Cl. 244—77.

Automatic Canteen Co. of America: *See*—
Panochyk, Ralph G. 3,274,718.

Automatic Electric Laboratories, Inc.: *See*—
Esperseth, Maurice H., Sikorski, Spellnes, and Wedmore. 3,275,752.

Automation Devices, Inc.: *See*—
Gardner, George J. 3,275,120.

Automation Industries, Inc.: *See*—
Welghart, Frederick G. 3,274,821.

Avien, Inc.: *See*—
Nee, Thomas F. 3,275,418.

Azetec Mfg. Co.: *See*—
Meshew, Allan D. 3,275,299.

Baas, Erwin. Anchor. 3,274,969, 9–27–66, Cl. 114—208.

Baba, Kunio, 50% to Dearman Co., Ltd. Apparatus for automatic locking and releasing cord reels and automatic connecting and disconnecting of the cord on the reel. 3,275,780, 9–27–66, Cl. 200—153.

Babcock & Wilcox Co., The: *See*—
Evans, Sidley O. 3,274,812.
Schinderberg, Donald C., and Winders. 3,275,521.

Babich, Edward, and R. H. Leidal, to Galaxy Boring Co. Boring bar. 3,274,862, 9–27–66, Cl. 77—58.

Babson, Edward S., to United Shoe Machinery Corp. Conveyor control devices. 3,274,953, 9–27–66, Cl. 104—172.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Bonitz, Eckhard, and Daeuble. 3,275,400.
Huenig, Siegfried, Geldern, and Luecke. 3,275,639.
Poehler, Guenter, Waldmann, and Corr. 3,275,692.
Siebel, Hans P., and Otto. 3,275,712.
Steinbrunn, Gustav, Fischer, and Flickinger. 3,275,670.

Baechtel, Clarence R., to Westinghouse Air Brake Co. Fluid pressure brake system. 3,275,383, 9–27–66, Cl. 303—18.

Bailey, Bruce L., B. Y. Karagoz, and P. Peller, to Great Lakes Carbon Corp. Fabrication of carbon and graphite bodies. 3,275,488, 9–27–66, Cl. 156—89.

Bailey, David N. Metal storm door and stop therefor. 3,274,733, 9–27–66, Cl. 49—387.

Bailey, Dean C., to Motorola, Inc. Integrated circuit bistable multivibrator. 3,275,846, 9–27–66, Cl. 307—88.5.

Bair, Daniel L.: *See*—
Keith, Carl D., and Bair. 3,275,567.

Baits, Stephen S., to Sundstrand Corp. Pump or motor wobbler mounting. 3,274,948, 9–27–66, Cl. 103—162.

Baizer, Manuel M., to Monsanto Co. Substituted aryloxyalkylene amines. 3,275,629, 9–27–66, Cl. 260—247.7.

Baker, Robert L. Frequency controlled tuning fork oscillator. 3,275,947, 9–27–66, Cl. 331—27.

Baker, Ronald A.: *See*—
McHugh, John W., and Baker. 3,275,902.

Bakker, Pieter M., and H. Buesink, to Shell Oil Co. Production of surface-active ether sultonates. 3,275,682, 9–27–66, Cl. 260—513.

Balch, George. Comparison calculator. 3,275,235, 9–27–66, Cl. 235—84.

Baldwin Electronics, Inc.: *See*—
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Barnett, Robert E., and J. M. Dines, to The Eagle-Picher Co. Battery grid. 3,275,473, 9–27–66, Cl. 136—64.

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Bartelt Engineering Co., Inc.: *See*—
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Baum, Lester A. H., P. F. Bruins, and L. Henschel, to Mobil Oil Corp. Asphalt-containing compositions and method for their preparation. 3,275,585, 9–27–66, Cl. 260—28.

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Beatty, Donald C. Self-regulating compression amplifier. 3,275,946, 9–27–66, Cl. 330—141.

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Johnson, William A. 3,275,399.
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Bobeck, Andrew H. 3,275,997.
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Caldwell, William N., Ericsson, Prescott, and Whidden. 3,275,279.
Dick, George W. 3,275,999.
Hall, Norris R., Ham, Hostetler, Hutchinson, and Strommen. 3,275,755.
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Moses, Kurt, and Hartog. 3,275,810.
Pfeifer, Gunther. 3,275,381.
Segall, Louis H., Morrison, and Knak. 3,275,884.
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Beverly, Robert E., Jr., to Zac-Lac Paint & Lacquer Corp. Device for measuring liquid in containers. 3,274,690, 9–27–66, Cl. 33—126.7.

Bexten, Eugen, to International Harvester Co. Crawler tractor suspension. 3,275,386, 9–27–66, Cl. 305—10.

Beylik, John R. Method of lining water wells and noncorrosive liner therefor. 3,275,081, 9–27–66, Cl. 166—228.

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Birr, Edmund E., to Televiso Electronics, Division of Doughboy Industries, Inc. Double sideband suppressed-carrier, balanced-modulator circuit. 3,275,950, 9–27–66, Cl. 332—43.

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Blum, Joseph L., Jr. Interlocking wallboard. 3,274,743, 9–27–66. Cl. 52—284.

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Bogue, Leonard E. Mail box signal device. 3,275,227, 9–27–66, Cl. 232—34.

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Bopp, Cecil W., to The Greater Iowa Corp. Lifting fork for sheet material. 3,275,367, 9–27–66, Cl. 294—67.

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Stanley, Robert H., and Howden. 3,275,569.

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Brown, Arlie L., N. F. Cook, H. E. Hackney, E. J. Hulsey, C. H. Mueller, J. B. Wegmann, and W. C. Swanker to The McNeil Corp. Record player. 3,275,327, 9–27–66, Cl. 274—10.

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Schneberger, Edward J. 3,275,991.

Bunting, Ernest V., to Massey-Ferguson Inc. Tractor hydraulic control system. 3,275,084, 9–27–66, Cl. 172—9.

Bunting, Ernest V., and E. J. Skiba, to Massey-Ferguson Inc. Power operating and control system for tractors. 3,275,085, 9–27–66, Cl. 172—10.

Burndy Corp.: *See*—
Mileikowsky, Hovav, Horvath, and Rosner. 3,274,630.

Burns, Joseph R., to Radio Corp. of America. Driver-sense circuit arrangement. 3,275,996, 9–27–66, Cl. 340—173.

Burnside, Walter M. Amusement device with changeable score control mechanism. 3,275,322, 9–27–66, Cl. 273—119.

Burnside, Walter M. Surface projectile game having additional target scoring means. 3,275,324, 9–27–66, Cl. 273—126.

Burroughs Corp.: *See*—
Cassidy, Carl R., and Meyerhoff. 3,275,930.
Glasser, Edward L., and Gerlach. 3,275,989.
Meyerhoff, Albert J. 3,275,843.
Simmons, John G. 3,275,844.

Burt, Harold R.: *See*—
Campbell, H. Albert, Jr., and Burt. 3,275,256.

Bush, Edmund H., to Firth Cleveland Ltd. Ventilating rans. 3,275,224, 9–27–66, Cl. 230—125.

Butler, Harry S., to Ethyl Corp. Stabilizer for trimethylphosphate. 3,275,717, 9–27–66, Cl. 260—963.

Butler, Jesse L. Phase control arrangements for a multiport system. 3,276,018, 9–27–66, Cl. 343—100.

Buvet, René, to Electricite de France-Service National. Oxygen power electrodes. 3,275,474, 9–27–66, Cl. 136—86.

Bylsma, Harold R., to The Dow Chemical Co. Phenolic adducts of diphenyloxides or biphenyls, with epoxy resins. 3,275,708, 9–27–66, Cl. 260—830.

C.S.F.-Compagnie Generale de Telegraphie Sans Fil: *See*—
Grosvalet, Jean. 3,275,908.
Honore, Etienne, and Torcheux. 3,276,009.
Rocherolles, Raymond, and Bellenger. 3,275,937.

Cable-Clean Corp.: *See*—
Stevenson, Clair V. 3,274,633.

Cahill, Bernard S., to National Rejectors, Inc. Method and apparatus for detecting currency. 3,275,138, 9–27–66, Cl. 209—111.7.

Calco Mfg. Co.: *See*—
Forsmark, Harold R. 3,274,853.

Caldwell, John, and R. H. Telfer, to The English Electric Co. Ltd. Turbine blade with tapered one-piece erosion shield. 3,275,295, 9–27–66, Cl. 253—77.

Caldwell, William N., J. W. Ericsson, R. E. Prescott, and W. E. Whidden, to Bell Telephone Laboratories, Inc. Telephone directory cover and holder. 3,275,279, 9–27–66, Cl. 248—447.

California Institute Research Foundation: *See*—
Ainis, Herman. 3,275,528.

Caller, James M., to United States of America, Atomic Energy Commission. Coaxial cable terminating means. 3,275,737, 9–27–66, Cl. 174—89.

Calmac Corp.: *See*—
MacCracken, Calvin D. 3,274,990.

Cameron Iron Works, Inc.: *See*—
Gruller, David L. 3,275,032.
Kowalski, Ludwig R. 3,275,025.

Campbell, H. Albert, Jr., and H. R. Burt, to K.W.F. Industries, Inc. Sectional tape spool construction. 3,275,256, 9–27–66, Cl. 242—71.8.

Campbell, Robert G. Display means. 3,275,818, 9–27–66, Cl. 240—10.

Campbell, Robert L., and M. B. Kudsi, to United Aircraft Products Inc. Plate-type evaporative cooler and wick therefor. 3,275,074, 9–27–66, Cl. 165—166.

Campbell Soup Co.: *See*—
Glide, Louis C. 3,275,147.

Campbell, Thomas M., Jr., and W. Markert, Jr., to United States of America, Atomic Energy Commission. Nuclear reactor wet thermal insulation. 3,275,523, 9–27–66, Cl. 176—44.

Canada Packers Ltd.: *See*—
Ziegler, Peter, and Grivas. 3,275,665.

Canadian General Electric Co., Ltd.: *See*—
Ulug, Mehmet E. 3,275,876.

Canadian Industries Ltd.: *See*—
Chu, Ning Jo. 3,275,627.

Cannon, Paul L., Jr., and D. N. Kramer, to United States of America, Army. Bioelectric method for the detection of anticholinester-gases. 3 275,534, 9–27–66, Cl. 204—1.

Cantrall, Edward W., and S. Bernstein, to American Cyanamid Co. Estra-1,3,5(10)-trienes having solubilizing groups. 3,275,624, 9–27–66, Cl. 260—239.55.

Cappuccio, Vittorio E., to Montecatini Societa Generale per l' Industria Minerarla e Chimica. Process and apparatus for manufacturing tubular films of synthetic thermoplastic materials. 3,275,723, 9–27–66, Cl. 264—70.

Carabateas, Philip M., to Sterling Drug Inc. 4-acyloxy-4-aryl-1-(arylaminoalkyl) piperidines and their preparation. 3,275,641, 9–27–66, Cl. 260—294.

Carangelo, Pasquale S.; ⅓ each to, A. Celentano, and A. P. Dello. Containers and closures therefor. 3,275,214, 9–27–66, Cl. 220—17.

Card, Londa Y. Infant-holding attachment for automobile seats. 3,275,373, 9–27–66, Cl. 297—389.

Carlson, Charles J., Jr., and D. J. Farmer, to Central Transformer Corp. Transformers equipped with circuit interrupter. 3,275,890. 9–27–66, Cl. 317—15.

Carlson, Heinz F., to FMC Corp. Plate inverting mechanism. 3,275,122, 9–27–66, Cl. 198—33.

Carlsson, Stig A. I.: *See*—
Flodin, Per G. M., Johansson, and Carlsson. 3,275 576.

Carnaud, J. J. & Forges De Basse-Indre, Etablissements: *See*—
Petin, Jean. 3,275,537.

Carr, Hugh B., to S. P. Kinney Engineering, Inc. Disc-type strainer. 3,275,151, 9–27–66, Cl. 210—333.

Carrier Corp.: *See*—
McGrath, William L. 3,275,068.

Carsello, Richard D., and D. L. Gunn, to Motorola, Inc. Frequency modulation circuit. 3,275,938, 9–27–66, Cl. 325—349.

Carsey, Eugene A., to The Kirk & Blum Mfg. Co. Dust control apparatus for metal working machines. 3,274,892, 9–27–66 Cl. 90—24.

Carter, Joseph C., and M. B. Rodin, to United States of America, Atomic Energy Commission. Method and system for supplying thrust to a space vehicle. 3,274,770, 9–27–66, Cl. 60—203.

Case, J. I., Co.: *See*—
Ralston, Harold A. 3,275,341.

Cassidy, Carl R., and A. J. Meyerhoff, to Burroughs Corp. Superconducting controlled inductance circuits. 3,275,930, 9–27–66, Cl. 323—44.

Cataldo, Roy S., to General Motors Corp. Wave engine gastier. 3,274,777, 9–27–66, Cl. 60—39.77.

Caterpillar Tractor Co.: *See*—
Grant, Gerald E., and Helton. 3,274,908.

Cathers, George I., and J. C. Mailen, to United States of America, Atomic Energy Commission. Continuous-gas-phase volatility process. 3,275,422, 9–27–66, Cl. 23—325.

Catino, Sigmund C.: *See*—
Strobel, Albert F., and Catino. 3,275,462.
Strobel, Albert F., Catino, and Leibowitz. 3,275,520.

Caza, Roger M. Ink fountain roller interrupting means. 3,274,932. 9–27–66. Cl. 101—351.

Celanese Corp. of America: *See*—
Kray, Raymond J., and Stevenson. 3,275,604.

Celentano, Alfred: *See*—
Carangelo, Pasquale S. 3,275,214.

Centre de Recherches de Pont-A-Mousson: *See*—
Brunot, Jean-Paul. 3,274,857.

Central Transformer Corp.: *See*—
Carlson, Charles J., Jr., and Farmer. 3,275,890.
Phillips, Webb R., Gaddy, and Russell. 3,275,893.

Challenger, Kenneth D., to Helmerich & Payne, Inc. Secondary seal. 3,275,183. 9–27–66, Cl. 220—26.

Chamberlin, Coleman R. Multi-purpose retention clip. 3,275,003. 9–27–66, Cl. 129—16.7.

Champa, Joseph A.: *See*—
Radke, Arthur O., Oswald, and Champa. 3,275,372.

Chandler, Gerald F., to Cohn Electronics, Inc. Decimal-to-binary converter. 3,276,013, 9–27–66, Cl. 340—347.

Chang, Hung C., and L. J. Kroko, to Westinghouse Electric Corp. Apparatus for and preparation of silicon carbide single crystals. 3,275,415, 9–27–66, Cl. 23—208.

Chang, Winston H., to General Electric Co. Molybdenum-base alloy. 3,275,434, 9–27–66, Cl. 75—176.

Channing, Ronald F.: *See*—
Hughes, Roy H., and Channing. 3,275,741.

Chapman, Kenneth H., ½ to M. A. Easley. Device for removing and replacing radiator caps. 3,274,864, 9–27–66, Cl. 81—90.

Charles, Richard J., to General Electric Co. Glass bodies and methods of treatment thereof. 3,275,470, 9–27–66, Cl. 117—106.

Charley, Philip J.: *See*—
Saltman, Paul D., and Charley. 3,275,514.

Chase, Donald C., to Farrel Corp. Extruder-roller die. 3,274,645, 9–27–66, Cl. 18—12.

Chase-Shawmut Co., The: *See*—
Salzer, Erwin. 3,275,771.

Cheek, Edward E.: *See*—
Sahin, Raymond H., and Cheek. 3,275,169.

Chernack, Milton, to Prestodial Inc. Apparatus for selectively removing toothed portions of a toothed cam. 3,274,875, 9–27–66, Cl. 83—411.

Cherniavskyj, Jaroslav, to Bell & Howell Co. Motion picture projector. 3,275,253, 9–27–66, Cl. 242—55.11.

Cherniavskyj, Jaroslav, to Bell & Howell Co. Spindle adapter for super 8 supply reel. 3,275,257, 9–27–66, Cl. 242—71.8.

Chernin, Myron A., and E. T. Lepplemeier, to General Electric Co. Reflector fluorescent lamp. 3,275,872, 9–27–66, Cl. 313—109.

Chicago Bridge & Iron Co.: *See*—
Karoly, John A., and Bryant. 3,275,249.
Lange, Kenneth W. 3,274,785.

Chicago Machinery Laboratory, Inc.: *See*—
McCain, William B., and Bulka. 3,275,118.
McCain, William B., and Cosgrove. 3,275,210.

Chicago Pneumatic Tool Co.: *See*—
Fischer, Howard R., Marcantonio, and D'Haem. 3,274,903.

Chisholm, Douglas S., to The Dow Chemical Co. Bearing. 3,275,231, 9–27–66, Cl. 233—24.

Chovan, Dale A., to Westinghouse Air Brake Co. Hose connection device. 3,275,349, 9–27–66, Cl. 285—252.

Christoff, James W., to Mannix International Inc. Railroad track gripping apparatus. 3,274,951, 9–27–66, Cl. 104—7.

Christensen, Dan A.: *See*—
Peickii, Vasalie L., Christensen, and Bradfute. 3,275,352.

Chrysler Corp.: *See*—
Bien, Alfred A. 3,274,638.
Ziegenfelder, Robert C. 3,274,915.

Chu, Ning J., to Canadian Industries Ltd. 6-morpholino-2,2,4 triloweralkyl-1,2 dihydroquinolines. 3,275,627, 9–27–66, Cl. 260—247.5.

Chumakov, Walter V., to I-T-E Circuit Breaker Co. Semiconductor bank assembly. 3,275,856, 9–27–66, Cl. 307—146.

Chur, Sung P.: *See*—
Mendenhall, Charles E., and Chur. 3,275,990.

Churchill, John W., and T. M. Jenney, to Olin Mathieson Chemical Corp Production of tetrachlorobenzenes. 3,275,697. 9–27–66, Cl. 260—650.

Churchill, Walter A. Electrical heat exchanger. 3,275,801, 9–27–66, Cl. 219—457.

Cianciola, Michael, to General Precision, Inc. Current driver. 3,275,854, 9–27–66, Cl. 307—88.5.

Ciba Ltd.: *See*—
Widmer, Gustav, Batzer, and Nikles. 3,275,661.

Cincinnati Milling Machine Co., The: *See*—
Huff, Robert J. 3,274,842.
Luebkemann, Harry E. 3,274,843.

Cities Service Oil Co.: *See*—
Revukas, Anthony J. 3,275,668.

Clare, C. P., & Co.: *See*—
Deeg, Wyman L. 3,275,896.

Clark, Ezekail L., to The North American Coal Corp. Process for the treatment of solids at high temperatures. 3,275,405, 9–27–66, Cl. 23—142.

Cleary, Gerald V., Jr. Insert for newspapers. 3,275,316, 9–27–66, Cl. 270—57.

Clerc, Maurice J.: *See*—
Benmussa, Henri, and Clerc. 3,275,753.

Cleveland Technical Center, Inc.: *See*—
King, Joseph W. 3,275,975.

Clodrey Polyflex, Etablissements: *See*—
Refabert, Claude. 3,274,729.

Coates, Clarence L., Jr., and P. M. Lewis II, to General Electric Co. Threshold gate adder for minimizing carry propagation. 3 275 812 9–27–66, Cl. 235—173.

Coates, Clarence L., Jr., and P. M. Lewis II, to General Electric Co. Bistable device employing threshold gate circuits. 3 275,849. 9–27–66. Cl. 307—88.5.

Cockerell, Christopher S., to Hovercraft Development Ltd. Foils for movement in a fluid. 3,275,266, 9–27–66, Cl. 244—42.

Coda, Nello, and J. J. Walsh, to Erie Technological Products, Inc. Multiple pin connector having ferrite bead-capacitor filter. 3,275,953, 9–27–66. Cl. 333—79.

Coda, Nello, and J. J. Walsh, to Erie Technological Products, Inc. Multiple connector wherein pins have limited movement within housing and each pin has integral low-pass filter. 3,275,954, 9–27–66, Cl. 333—79.

Codichini, Joseph J., R. W. Eichler, and T. F. Hayne, to Xerox Corp. Xerographic charging apparatus. 3,275,837, 9–27–66, Cl. 307—2.

Cogar, George R., and F. E. Ross, to Sperry Rand Corp. High packing density binary recording system. 3,276,033, 9–27–66, Cl. 346—74.

Cohen, Abraham Bernard, to E. I. du Pont de Nemours and Co. Image transfer process and elements therefor. 3,275,437, 9–27–66, Cl. 96—29.

Cohen, Murray S., M. M. Fein, J. Green, and G. J. Donovan, to Thiokol Chemical Corp. Reaction products of nitrile containing decarboranes and olefinic rubber. 3,275,483, 9–27–66, Cl. 149—22.

Cohn, Bernard, to Technilith Inc. Printing plate and method of making same. 3,275,441, 9–27–66, Cl. 96—75.

Cohn, Johann G. E., and P. A. Danna, to Engelhard Industries, Inc. Fuel cell and method of shifting the fuel electrolyte interface. 3,275,475, 9–27–66, Cl. 136—86.

Cohu Electronics, Inc.: *See*—
Chandler, Gerald F. 3,276,013.

Coker, James N., to E. I. du Pont de Nemours and Co. Curing thiocarbonyl fluoride/allyl chloroformate copolymers with polyvalent metal oxides. 3,275,607, 9–27–66, Cl. 260—77.5.

Colaiaco, August P.: *See*—
Fellendorf, Frederick G., and Colaiaco. 3,275,921.

Coleco Industries, Inc.: *See*—
Diemond, Joseph, Gershman, Sundberg, and Vangsness. 3,274,621.

Collins Machinery Corp.: *See*—
Behnke, Howard N. 3,274,627.

Collins Radio Co.: *See*—
Secretan, Frank. 3,276,012.

Collins, Raymond L., to Olin Mathieson Chemical Corp. Container. 3,275,216, 9–27–66, Cl. 229—37.

Collins, Russell L., to Phillips Petroleum Co. Method of nuclear magnetic resonance well logging. 3,275,931, 9–27–66, Cl. 324—.5.

Colston, John R., to Bowles Engineering Corp. High-gain, pure-fluid amplifier. 3,275,013, 9–27–66, Cl. 137—81.5.

Colton, Ervin, to Allis-Chalmers Mfg. Co. Method of preparing hexaboron silicide (B_6Si). 3,275,414, 9–27–66, Cl. 23—204.

Colton, Ervin, to Allis-Chalmers Mfg. Co. Coated graphite and method of coating. 3,275,467, 9–27–66, Cl. 117—46.

Columbia Ribbon and Carbon Mfg. Co., Inc.: *See*—
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Newman, Douglas A. 3,274,929.

Combustion Engineering, Inc.: *See*—
Petit, Elwood P. 3,274,979.
Pincus, Meyer. 3,275,073.
Rickard, Earl K., and Schroeder. 3,274,977.
Wiechard, Robert N., and Anderson. 3,274,961.

Commercial Solvents Corp.: *See*—
Egly, Richard S. 3,275,485.

Commissariat a l'Energie Atomique: *See*—
Huyghe, Jean, and Mondin. 3,274,752.
Leclou, Andre. 3,275,181.
Pascard, Roger. 3,275,564.

Communication Patents Ltd.: *See*—
Quinton, Kenneth C., and Smart. 3,275,742.

Compagnie des Ateliers et Forges de la Loire (St. Chamond-Firminy-St. Etienne-Jacob-Holtzer): *See*—
Leroy, Pierre, and Simon. 3,275,721.

Compagnie Generale de Telegraphie Sans Fil: *See*—
Maillet, Henry. 3,276,020.

Conant, John E., to Melpar, Inc. Wide angle television system utilizing optical fibers. 3,275,743, 9–27–66, Cl. 178—5.2.

Conklin, William R.: *See*—
Stentz, Blair E., and Conklin. 3,275,393.

Connell, Christina I.: *See*—
Shaw, Charles G., and Connell. 3,275,511.

Consolidation Coal Co.: *See*—
Retallick, William B. 3,275,546.

Container Corp. of America: *See*—
O'Leary, John M., Jr. 3,275,715.

Continental Can Co., Inc.: *See*—
Ganz, Robert H. 3,275,219.
Piazze, Thomas E. 3,274,869.

Continental Gummi-Werke Aktiengesellschaft: *See*—
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Continental Gummi-Werke A.G.: *See*—
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Continental Illinois National Bank and Trust Co. of Chicago as trustee: *See*—
Voitik, Robert M. 3,275,334.

Continental Oil Co.: *See*—
Shock, D'Arcy A., Sudbury, and Gant. 3,274,784.

Control Data Corp.: *See*—
Lillestrand, Robert L., Hilt, and Harrington. 3,274,880.

Cook, Norbert F.: *See*—
Brown, Arlie L., Cook, Hackney, Hulsey, Mueller, Wegmann, and Swanker. 3,275,327.

Cook, Wendell S., to The Firestone Tire & Rubber Co. 7-nitroso-7,14-diazadispiro-[5.1.5.2]-pentadecane-15-thione and lower alkyl derivatives thereof. 3,275,650, 9–27–66, Cl. 260—309.7.

Cooper-Bessemer Corp., The: *See*—
Morinn, Willard A., Ostborg, and White. 3,274,781.

Corbett, Herbert O., to National Distillers and Chemical Corp. Seamless extruded thermoplastic self-sustaining lay-flat continuous tube. 3,275,039, 9–27–66, Cl. 138—148.

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Shore, Richard C. 3,275,171.

Cordonnier, Gerard A. F. M. J.: *See*—
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Cornell, Dudley E., III., and R. A. O'Connell, to Teaching Machines, Inc. Portable teaching machines. 3,274,704, 9–27–66, Cl. 35—9.

Cornely, Kurt W.: *See*—
Weiss, Gerhart, and Cornely. 3,275,497.

Corner, Howard E.: *See*—
Williams, Robert L., Corner, and Bell. 3,275,061.

Corning Glass Works: *See*—
MacDowell, John F. 3,275,493.

Corr, Hubert: *See*—
Poehler, Guenter, Waldmann, and Corr. 3,275,692.

Cosgrove, James F.: *See*—
McCain, William B., and Cosgrove. 3,275,210.

Cott, Georges E., to Societe Anonyme Reliure Industrielle S.T.D. Loose-leaf binders having pivotable rings. 3,275,005, 9–27–66, Cl. 129—24.

Cottrell, Robert A. Control system for well pump. 3,274,940, 9–27–66, Cl. 103—25.

Coty, Vernon F., to Mobil Oil Corp. Microbial synthesis of polymers. 3,275,610, 9–27–66, Cl. 260—80.

Courtaulds, Ltd.: *See*—
Daul, George C., Drake, and Duke. 3,275,402.

Couture, Philip L., to General Instrument Corp. Apparatus for electroplating leads of small electronic components. 3,275,542, 9–27–66, Cl. 204—222.

Crabb, Clarence R., and L. S. McDonald, to The Dow Chemical Co. Desiccant regeneration. 3,275,549, 9–27–66, Cl. 210—30.

Crafts, Harold S., to Research Corp. Magnetic analog device. 3,276,001, 9–27–66, Cl. 340—174.

Crafts, Walter: *See*—
Hilty, Donald C., Crafts, and Solomon. 3,275,433.

Craig, Richard W.: *See*—
Kelly, Oliver K., Gage, and Craig. 3,274,854.

Cramer, John W., to Armour and Co. Apparatus for prilling ammonium nitrate. 3,274,642, 9–27–66, Cl. 18—2.7.

Cramer, Richard A.: *See*—
Folsom, Theodore R., and Cramer. 3,275,804.

Crane Co.: *See*—
Hirzel, Edgar A. 3,275,384.

Cranskens, Georg, to Lumoprint Zindler K.G. Sheet dispenser. 3,275,192, 9–27–66, Cl. 221—259.

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Croft, Paul H. Sports cycle carriers. 3,275,206, 9–27–66, Cl. 224—42.03.

Crow, Morgan L., to Dresser Industries, Inc. Dual string hydraulic packer. 3,275,079, 9–27–66, Cl. 166—122.

Crow, Leonard R. Wire unreeling and tensioning device. 3,275,264, 9–27–66, Cl. 242—129.8.

Crown Zellerbach Corp.: *See*—
Herschler, Robert J. 3,275,504.
Herschler, Robert J. 3,275,505.

Crump, Elmo E.: *See*—
Demarest, Philip C., Foster, and Crump. 3,275,879.

Cruse, William C., to The Akron Products Co. Method of tying together a plurality of bodies. 3,274,680, 9–27–66, Cl. 29—509.

Csanky, Geza, to Motorola, Inc. Field switching device employing punchthrough phenomenon. 3,275,845, 9–27–66, Cl. 307—88.5.

Cummins-Chicago Corp.: *See*—
Quinn, James L., Knutson, and Dreyer. 3,275,232.
Quinn, James L., and Jones. 3,275,806.

Curtin, Paul J., to McGraw-Edison Co. Light sensitive bimetallic control switch. 3,275,832, 9–27–66, Cl. 250—206.

Cushing, Vincent J. Electromagnetic flowmeter. 3,274,831, 9–27–66, Cl. 73—194.

Cushing, Walter V., to Westinghouse Electric Corp. Method for processing discharge lamps. 3,275,397, 9–27–66, Cl. 316—25.

Cushman, Everett H., to Air Reduction Co. Inc. High-speed butt-welding method and apparatus. 3,275,786, 9–27–66, Cl. 219—60.

Cutler-Hammer, Inc.: *See*—
Prosser, David C., and Ronning. 3,275,123.

Cutler, Neville G.: *See*—
Kassler, Henry, and Cutler. 3,275,499.

Czech, Clifford F., to McGraw-Edison Co. Dry cleaning machine. 3,274,807, 9–27–66, Cl. 68—12.

Czubak, Albin S., to Micromatic Home Corp. Expandable rotary boring tool. 3,274,861, 9–27–66, Cl. 77—58.

D-G Controls, Inc.: *See*—
Gage, Jack R., and Diamond. 3,275,058.

Daeuble, Manfred: *See*—
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Daiichi Seiyaku Kabushiki Kaisha: *See*—
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Dakin, Robin M., to Bristol-Siddeley Engines Ltd. Governor control for a fuel system of a gas turbine power-producing plant. 3,274,773, 9–27–66, Cl. 60—39.28.

Dana Laboratories, Inc.: *See*—
Walker, Norman C., and Engle. 3,275,945.

Daniel, Otton. Non-clogging water intake for water vessels. 3,274,970, 9–27–66, Cl. 115—.5.

Danna, Peter A.: *See*—
Cohn, Johann G. E., and Danna. 3,275,475.

Danner, Eugene G. Drive shaft arrangement for a fluid circulating device. 3,274,799, 9–27–66, Cl. 64—4.

Darling, L. A., Co., The: *See*—
Stackhouse, David W. 3,274,735.

D'Ascoli, Ralph G.: *See*—
O'Mara, Joseph B., and D'Ascoli. 3,274,688.

Daubenspeck, Benjamin K., to Remington Arms Co., Inc. Method and apparatus for treating toilet waste. 3,275,550, 9–27–66, Cl. 210—60.

Daul, George C., T. F. Drake, and M. W. Duke, to Courtaulds, Ltd. Formaldehyde modification of cellulose conducted in the presence of a stiffening agent and a Lewis acid metallic salt. 3,275,402, 9–27–66 Cl. 8—115.6.

Davies, Ben, and P. H. Havranek, to Harbison-Walker Refractories Co. Refractory. 3,275,461, 9–27–66, Cl. 106—58.

Davies, John H.: *See*—
Kirby, Peter, Roberts, and Davies. 3,275,646.

Davis, George B., Jr.: *See*—
Morrissey, Thomas G., Davis, and Short. 3,275,101.

Davis, Harold G., to Padde Pty. Ltd. Fire resistant door. 3,274,734, 9–27–66, Cl. 49—503.

Davis, William W., to Sperry Rand Corp. Memory device and method. 3,276,000, 9–27–66, Cl. 340—174.

Dawidowicz, Jan, to Eversharp, Inc. Laminated razor blade for injector razor. 3,274,686, 9–27–66, Cl. 30—348.

Dearman Co., Ltd.: *See*—
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De Buhr, Harold E.: *See*—
Soteropulos, Gust, de Buhr, and Gustafson. 3,274,761.

Debus, Karl, to Linotype G.m.b.H. Apparatus for symmetrically cutting a cast line. 3,274,876, 9–27–66, Cl. 83—415.

Debus, Karl, to Linotype G.m.b.H. Assembling apparatus for linecasting machines. 3,275,127, 9–27–66, Cl. 199—21.

Decker, George A., and D. B. Fisk, to General Electric Co. Recharger contacts for electric toothbrush. 3,275,919, 9–27–66, Cl. 320—2.

Deeg, Wyman L., to C. P. Clare & Co. Sequential counting circuit using differentially operated relays. 3,275,896, 9–27–66, Cl. 317—140.

Deere & Co.: *See*—
Kleckner, Richard M. 3,274,902.
Meyer, Raymond J., Jensen, and Wetrich. 3,274,858.
Soteropulos, Gust, de Buhr, and Gustafson. 3,274,761.

Dehlsen, James G. P., to The Parker Pen Co. Ball point pen incorporating a point reconditioning device. 3,274,975, 9–27–66, Cl. 120—1.

Delmund, Linder, L. P., and R. N. Tower crane with loading boom. 3,275,162, 9–27–66, Cl. 212—76.

Delmund, Richard N.: *See*—
Delmund, Linder, L. P., and R. 3,275,162.

Delmund, Richard N.: *See*—

Delacour, Jacques, and J. Parola, to Institut Francais du Petrole des Carburants et Lubrifiants. Well drilling apparatus. 3,275,300, 9–27–66, Cl. 254—175.7.

Dello, Anthony P.: *See*—
Carangelo, Pasquale S. 3,275,214.

De Lucia, Victor E. High-vacuum miniaturized relay. 3,275,776, 9–27–66, Cl. 200—144.

De Lucia, Victor E. Vacuum relay having improved contact electrodes. 3,275,783, 9–27–66, Cl. 200—166.

Demarest, Philip C., H. R. Foster, and E. E. Crump, to Ohmega Laboratories. Capsulated bulb and method of making the same. 3,275,879, 9–27–66, Cl. 313—317.

Demsey, John N., Jr., and J. A. Huber, to Aluminum Co. of America. Method of making a composite container. 3,274,905, 9–27–66, Cl. 93—94.

Dendix Brushes Ltd.: *See*—
Godfrey, Leonard R. 3,274,634.

Dennison Mfg. Co.: *See*—
McKechnie, William H. 3,275,219.

Desaules, Jean-Jacques, and H.-L. Henchoz, to Fabrique de'Horlogerie Chs. Tissot et Fils S.A. Fixing device of the inner end of a regulating hairspring in a timepiece. 3,274,766, 9–27–66, Cl. 58—115.

Deubel, Reinhold: *See*—
Fuchs, Otto, Deubel, Brechlin, Bühner, Feess, and Zimmermann. 3,275,401.

Deutsche Gold-und Silber-Scheideanstalt vormals: *See*—
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DeVibiiss Co., The: *See*—
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Devices Inc.: *See*—
Neff, Robert E. 3,275,772.

De Vries, Jan W., to Organon Inc. Purification of fat mobilizing substances. 3,275,515, 9–27–66, Cl. 167—74.

Dewar, Eric T.: *See*—
Black, William A. P., Dewar, and Rutherford. 3,275,582.

DeWolf, Nicholas, to Teradyne, Inc. Relay control circuit. 3,275,899, 9–27–66, Cl. 317—148.5.

D'Haem, Marcel P.: *See*—
Fischer, Howard R., Marcantonio, and D'Haem. 3,274,903.

Diamond, Bernard: *See*—
Gage, Jack R., and Diamond. 3,275,058.

Diamond International Corp.: *See*—
Bixler, Kenneth D. 3,275,134.
Reifers, Richard F. 3,275,213.

Dick, A. B., Co.: *See*—
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Hauerbach, Markvard. 3,276,008.
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Dick, George W., to Bell Telephone Laboratories, Inc. Magnetic storage and transfer circuits. 3,275,999, 9–27–66, Cl. 340—174.

Diehl, Donald J.: *See*—
Hanson, Chris A. 3,274,849.

Diehl, Ward F., to General Motors Corp. Apparatus for fluid pressure measurement. 3,274,834, 9–27–66, Cl. 73—419.

Diemond, Joseph, M. Y. Gershman, H. L. Sundberg, Jr., and N. A. Vangsness, to Coleco Industries, Inc. Water-retaining recreational structure for swimming pools and the like. 3,274,621, 9–27–66, Cl. 4—172.

Diery, Helmut: *See*—
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Diesel Equipment Ltd.: *See*—
MacRae, Allister S., and Martin. 3,275,170.

Dietrich, Verne E., to Spraying Systems Co. Apparatus for spray analysis. 3,275,744, 9–27–66, Cl. 178—6.

Differential Hydraulics, Inc.: *See*—
Berry, Frank. 3,274,943.

Digital Equipment Corp.: *See*—
Bell, Chester G. 3,275,848.

Dill, Robert F.: *See*—
Worson, Lee, and Dill. 3,274,906.

Dilling, Elmer D., to Titanium Metal Corp. of America. Rolling mill. 3,274,814, 9–27–66, Cl. 72—74.

Dines, James M.: *See*—
Barnett, Robert E., and Dines. 3,275,473.

Dinglewerke Aktiengesellschaft: *See*—
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Dobbyn, Geoffrey F., to Pneumatic Scale Corp., Ltd. Packaging machine. 3,275,043, 9–27–66, Cl. 141—142.

Doehlemann, Ernst, F. Kaess, and L. Reitter, to Suddeutsche Kalkstickstoff-Werke Aktiengesellicaft. Melamine production improvement. 3,275,632, 9–27–66, Cl. 260—249.7.

Dolberg, Ben. Stiffener for thin sheet material. 3,275,066, 9–27–66, Cl. 160—330.

Dole Valve Co., The: *See*—
Kolze, Lawience A. 3,275,237.

Dolfi, James J., Sr. Automatic vacuum spoiler for internal combustion engines. 3,274,984, 9–27–66, Cl. 123—124.

Dolman, Robert E.: *See*—
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Donaldson Co., Inc.: *See*—
Johnson, Billie L., and Boyd. 3,275,335.

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Doppelmayr, Emil. Cable operating control mechanism. 3,274,954, 9–27–66, Cl. 104—178.

Dore, Franklyn, to The Air Preheater Co., Inc. Method of making a heat exchanger. 3,274,672, 9–27–66, Cl. 29—157.3.

Dornbush, Clinton L., and W. H. Francillon, to Georgia-Pacific Corp. Box with laminated corrugated collar. 3,275,217, 9–27–66, Cl. 229—37.

Dorne and Margolin, Inc.: *See*—
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Crabb, Clarence R., and McDonald. 3,275,549.
Garms, David C. 3,275,588.
Jackman, Robert M., and Allswede. 3,274,662.
Kuchek, Henry A. 3,275,424.
Monroe, Roger F. 3,275,655.
Pedjac, Joseph J., and Pumpelly. 3,275,578.
Pye, David J., and Peterson. 3,275,561.
Rubens, Louis C., and Urchick. 3,275,713.
Thompson, Clifford F. 3,275,714.
Vigneault, Richard E., Finster, and Laudry. 3,274,731.
Walters, Harold A. 3,275,548.
Wiggins, Glenn C. 3,275,716.

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Downen, Jim L.: *See*—
Sutliff, Wayne N., and Downen. 3,275,354.

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Drake, Thomas F.: *See*—
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Dranetz, Abraham I., to Dranetz Engineering Laboratories, Inc. System for determining the immittance vector which is the difference between an unknown immittance and a known immittance. 3,275,933, 9–27–66, Cl. 324—57.

Dranetz Engineering Laboratories, Inc.: *See*—
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Dresser Industries, Inc.: *See*—
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Dresser, W. Robert, to Barlow Controls, Inc. Power line protecting surge current limiter for single-phase electric motors. 3,275,888, 9–27–66, Cl. 317—13.

Dreyer, Alwyn J. Picture framing. 3,274,721, 9–27–66, Cl. 40—152.

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Dubusker, William, F. S. Pogorzelski, and C. W. Fridrich, to McDonnell Aircraft Corp. Apparatus for welding sheet material. 3,275,794, 9–27–66, Cl. 219—125.

Dudson, Brian H. Method of building in situ construction using sequential molding techniques. 3,275,719, 9–27–66, Cl. 264—33.

Duhl, Daniel, to Indian Head Mills, Inc. Fabric containing elastomeric filler and method. 3,274,806, 9–27–66, Cl. 66—192.

Duhl, Daniel, to Indian Head Mill, Inc. Fabric and method. 3,274,805, 9–27–66, Cl. 66—192.

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Dunn, William H., C. F. Fey, L. N. Kanal, W. L. McDermid, and D. F. Smith, to General Dynamics Corp. Pattern recognition systems using digital logic. 3,275,985, 9–27–66, Cl. 340—146.3.

Dunn, William H., C. F. Fey, L. N. Kanal, W. L. McDermid, and D. F. Smith, to General Dynamics Corp. Pattern recognition system. 3,275,986, 9–27–66, Cl. 340—146.3.

Dunning, William S. Loudspeaker assembly having loudspeaker wholly supported by vibratory diaphragm. 3,275,100, 9–27–66, Cl. 181—31.

Du Pont de Nemours E. I. and Co.: *See*—
Barlow David O. 3,275,673.
Baurledel, Friedrich, Franke, and Lang. 3,275,444.
Bechtold, Max F. 3,275,612.
Braun, Robert A. 3,275,463.
Bond, William B. 3,275,594.
Cohen, Abraham B. 3,275,437.
Coker, James N. 3,275,607.
Harrison, Jean B., and Hoffman. 3,275,517.
Massey, William M., and Pope. 3,274,644.
Mayo, Edmund S., Jr. 3,276,004.
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Thomas, Lee W. 3,275,590.
West, William A. 3,275,637.
Yetter, Edward W. 3,275,988.

Durkoppwerke Aktiengesellschaft: *See*—
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Dyfoam Corp.: *See*—
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Dynamit Nobel Aktiengesellschaft: *See*—
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Eager, George S., Jr., to General Cable Corp. X-ray and diathermy cable. 3,275,739, 9–27–66, Cl. 174—107.

Eagle Picher Co., The: *See*—
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Earl, Thomas D., and W. J. Eggington, to Bell Aerospace Corp. Aircraft with ground-effect-type landing gear. 3,275,270, 9–27–66, Cl. 244—110.

Earthcavator Co., Inc.: *See*—
Jones, Dwight C. 3,274,712.
Jones, Dwight C. 3,274,713.

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Chapman, Kenneth H. 3,274,864.

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Eastman Kodak Co.: *See*—
Brunson, Marion O., and Huffaker. 3,275,494.

Easton, Dewey S.: *See*—
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Eaton Yale & Towne Inc.: *See*—
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Ebbert, Robert J. Ball track timing device. 3,274,852, 9–27–66, Cl. 74—568.

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Ecke, Lee E. House trailer with retractable patio roof. 3,275,369, 9–27–66, Cl. 296—23.

Edison: *See*—
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Edmisten, John H. Control system for ice machine. 3,274,791, 9–27–66, Cl. 62—137.

Edoco Technical Products, Inc.: *See*—
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Edwardh, Karl I. Dosage apparatus. 3,275,019, 9–27–66, Cl. 137—99.

Edwards, William R.: *See*—
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Egly, Richard S., to Commercial Solvents Corp. Ammonium nitrate slurry sensitized with nitro substituted alkanols. 3,275,485, 9–27–66, Cl. 149—47.

Ehlscheid, Günter, to R. Winkler, and K. Dunnbier. Window-cutting device for envelopes and bag-making machines. 3,274,871, 9–27–66, Cl. 83—99.

Eichler, Rolf W.: *See*—
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Eickmann, Karl. Rotary vane machine. 3,274,945, 9–27–66, Cl. 103—136.

Eidus, William. Thermoelectric dental probe. 3,274,995, 9–27–66, Cl. 128—2.

Eisert, Josef. Terminal assembly. 3,275,972, 9–27–66, Cl. 339—198.

Ekco Containers, Inc.: *See*—
Griese, Elmer W., Jr. 3,274,964.

Ekegren, Sven G., and P. V. H. Bladh, to Separator, Aktiebolaget. Method and apparatus for emptying and filling centrifuges. 3,275,142, 9–27–66, Cl. 210—78.

Eklund, Leif S. I., to Interconsult Aktiebolag. Inflatable discharge device. 3,275,197, 9–27–66, Cl. 222—195.

Elb-Schliff Edmund Lang: *See*—
Lang, Edmund. 3,275,495.

Electrolux, Aktiebolaget: *See*—
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Ellis, Alan F., and J. G. D. Schulz, to Gulf Research & Development Co. Nitrogen-containing diaryl compounds. 3,275,651, 9–27–66, Cl. 260—326.

Ellis, James F. Safety magnet controller. 3,275,887, 9–27–66, Cl. 317—13.

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Fogle, Merlyn W. 3,275,575.

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Emerson Electric Mfg. Co.: *See*—
Wince, Vearl S., and Meyer. 3,275,822.

Emerson, William S., R. N. MacNair, and C.-H. Wang, to Arthur D. Little, Inc. Catalytic system for the addition of bisulfites to olefins. 3,275,681, 9–27–66, Cl. 260—513.

Emrick, Donald D., R. J. Sating, and R. Zorska, to The Standard Oil Co. Process for preparing alpha-olefin polymers which are substantially free of residual catalyst. 3,275,613, 9–27–66, Cl. 260—93.7.

Endicott, Clarence J., and W. T. Martin, to Abbott Laboratories. Tablet coating. 3,275,518, 9–27–66, Cl. 167—82.

Energy Systems, Inc.: *See*—
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Engelhard Industries, Inc.: *See*—
Cohn, Johann G. E., and Danna. 3,275,475.
Fritz, Samuel D. 3,275,154.
Keith, Carl D., and Bair. 3,275,567.
Rubin, Leonard R. 3,274,754.

Engelhardt, Edward L., and H. C. Zell, to Merck & Co., Inc. Substituted 1-hydrocarbyl-4-(10-thiaxanthylidene) piperidines. 3,275,640, 9–27–66, Cl. 260—293.4.

Engelhardt, Edward L., to Merck & Co., Inc. 3-alkylsulfonyl-5-(tertiaryaminopropylidene)- and 5-hydroxy-5-(tertiaryaminopropyl-5H-dibenzo-[a,d] cycloheptenes. 3,275,689, 9–27–66, Cl. 260—570.8.

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Caldwell, John, and Telfer. 3,275,295.
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English Electric Valve Co. Ltd.: *See*—
Pickering, Alan H., Thompson, and Young. 3,275,957.

Eppstein, Samuel H., to The Upjohn Co. Pituitary gland extract and process for its manufacture. 3,275,516, 9–27–66, Cl. 167—74.

Erhart, Robert C., and J. M. Weaver, to Lord Corp. Mounting with elastomeric struts. 3,275,275, 9–27–66, Cl. 248—358.

Erickson, Arthur W. Shock absorbing system for containers. 3,275,131, 9–27–66, Cl. 206—46.

Erico Products, Inc.: *See*—
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Ericsson, James W.: *See*—
Caldwell, William N., Ericsson, Prescott, and Whidden. 3,275,279.

Erie Technological Products, Inc.: *See*—
Coda, Nello, and Walsh. 3,275,953.
Coda, Nello, and Walsh. 3,275,954.

Esperseth, Maurice H., F. B. Sikorski, K. K. Spelines, and W. R. Wedmore, to Automatic Electric Laboratories, Inc. Communication switching system. 3,275,752, 9–27–66, Cl. 179—18.

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Ashby, Billy B. 3,274,698.
Bogs, Charles W., and Tharp. 3,275,982.

Esso Production Research Co.: *See*—
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Sasseen, John H. 3,275,757.
Sasseen, John H., MacPhail, and Wischmeyer. 3,275,981.
Shanks, John L. 3,275,978.
Skarstrom, Charles W. 3,274,751.
Walker, David G., and Edwards. 3,275,699.
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Ethington, Paul J. Combination lock apparatus and slip coupling therefor. 3,274,811, 9–27–66, Cl. 70—301.

Ethington, Paul J. Combination lock apparatus having lock elements with alignable openings. 3,275,763, 9–27–66, Cl. 200—43.

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Eutectic Welding Alloys Corp.: *See*—
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Evering, Bernard L.: *See*—
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Battista, Orlando A. 3,275,580.
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Carlson, Heinz F. 3,275,122.
Goldsborough, Harry G., and Gerlach. 3,275,189.
Hedges, Albert R. 3,275,387.
Ludwig, Harvey F. and R. G. 3,275,149.
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Faber, Kurt H. A. E., to Sandvikens Jernverks Aktiebolag. Chip cutting rotary drill. 3,274,863, 9–27–66, Cl. 77—67.

Fabrique de'Horlogerie Chs. Tissot et Fils S.A.: *See*—
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Faessinger, Robert W.: *See*—
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Faisandier, Jacques, to Societe Anonyme dite: Societe d'Applications des Machines Motrices. Hydraulic motor. 3,274,898, 9–27–66, Cl. 91—205.

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Hartmann, Karl, and Schmittmann. 3,274,765.
Holzrichter, Hermann, Kronig, and Frenz. 3,275,680.
Pampus, Gottfried, Schön, and Witte. 3,275,614.
Schnell, Hermann, Bottenbruch, and Krimm. 3,275,601.
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Fuchs, Otto, Deubel, Brechlin, Bühner, Feess, and Zimmermann. 3,275,401.
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Weiss, Eduard, and Fischer. 3,275,602.

Farmer, Donald J.: *See*—
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Farmer, Everett W., to Sanders Associates, Inc. Bottom release mechanism for a sonobuoy. 3,275,976, 9–27–66, Cl. 340—2.

Farrington Business Machines Corp.: *See*—
Patterson, James M., Jr. 3,274,931.

Fauth, Gunter: *See*—
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Pohlman, Henry K. 3,275,729.
Scott, Arthur M., and Haynie. 3,275,333.

Feemster, Carol D.: *See*—
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Feess, Erich: *See*—
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Feild, George B., to Hercules Inc. Method and apparatus for orienting an extruded polymeric wire coating. 3,275,730, 9–27–66, Cl. 264—174.

Fein, Marvin M.: *See*—
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Feist, Wolfgang M., to Raytheon Co. Low-noise electron emitters. 3,275,869, 9–27–66, Cl. 313—65.

Fekete, Stephen I., to Mannix International Inc. Railroad track gripping apparatus. 3,274,952, 9–27–66, Cl. 104—7.

Felder, Hans C., G. Schilling, K. H. Zennig, and K. J. Boehnke, to Sperry Rand Corp. Record card punching machine. 3,275,234, 9–27–66, Cl. 234—58.

Fell, Albert C.: *See*—
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Fell, Ann A.: *See*—
Leone, Nick A. 3,274,774.

Fellendorf, Frederick G., and A. P. Colalaco, to Westinghouse Electric Corp. Semiconductor rectifier assembly. 3,275,921, 9–27–66, Cl. 321—8.

Fennell, Arthur W., Jr., to Westinghouse Electric Corp. D.C. machine and internal connections therefor. 3,275,864, 9–27–66, Cl. 310—180.

Fentiman, Arthur E., to Triodetic Structures Ltd. Separable joint. 3,275,351, 9–27–66, Cl. 287—54.

Fenton, Ralph V., and W. H. Isely, to Honeywell Inc. Control apparatus. 3,274,837, 9–27–66, Cl. 74—5.7.

Ferdon, Gilbert D., and H. E. Henschen, to AMP Inc. Electrical connecting and switch device. 3,275,765, 9–27–66, Cl. 200—51.1.

Ferguson, Millard A., to General Motors Corp. Electrical discharge machining apparatus. 3,275,788, 9–27–66, Cl. 219—69.

Fernandez, Manuel, to Honeywell Inc. Aircraft instrument. 3,274,829, 9–27–66. Cl. 73—178.

Ferrari, Ronald L., and A. Reddish, to The M-O Valve Co. Ltd. Apparatus for generating masses of hot ionised gas and amplifying random fluctuations. 3,275,868, 9–27–66, Cl. 313—63.

Ferrence, Peter: *See*—
Henry, Clemence J., Thomas, and Ferrence. 3,275,559.

Ferris, Wallace A., to Stamicarbon N.V. Routing attachment adapter for a power-driven hand drill. 3,274,889, 9–27–66, Cl. 90—12.

Ferro Corp.: *See*—
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Fey, Curt F.: *See*—
Dunn, William H., Fey, Kanal, McDermid, and Smith. 3,275,985
Dunn, William H., Fey, Kanal, McDermid, and Smith. 3,275,986.

Fiber Industries, Inc.: *See*—
Macleod, Roderick B., and Pallyenko. 3,275,732.

Fidelity File Box, Inc.: *See*—
Fiterman, Benjamin. 3,275,392.

Fields, Joseph E.: *See*—
Mottus, Edward H., and Fields. 3 275,611.

Filler, William S. Method and apparatus for generating seismic waves. 3,275,098, 9–27–66, Cl. 181—.5.

Finster, Kenneth C.: *See*—
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Firestone Tire & Rubber Co., The: *See*—
Cook, Wendell S. 3,275,650.

Firth Cleveland Ltd.: *See*—
Bush, Edmund H. 3,275 224.

Firsching, Ferdinand H., to Research Corp. Process for separating rare earth metal values. 3,275,404, 9–27–66, Cl. 23—22.

First Pennsylvania Banking and Trust Co.: *See*—
Shapiro, Louis. 3,275,935.

Fischer, Adolf: *See*—
Steinbrunn, Gustav, Fischer, and Flickinger. 3,275,670.

Fischer, Edgar: *See*—
Weiss, Eduard and Fischer. 3,275,602.

Fischer, Howard R., L. F. Marcantonio, and M. P. D'Haem, to Chicago Pneumatic Tool Co. Piston motor. 3,274,903, 9–27–66, Cl. 92—13.

Fischer, John F.: *See*—
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Fischer, Raymond C., to International Harvester Co. Vibrator-type waferizer. 3,274,925, 9–27–66, Cl. 100—186.

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Ollivier, Louis A., and Skitt. 3,274,833.

Fisher, Robert C., to Hamill Mfg. Co. Safety belt buckle. 3,274,655, 9–27–66, Cl. 24—196.

Fisk, Daniels B.: *See*—
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Fiterman, Benjamin, to Fidelity File Box, Inc. Storage file box. 3,275,392, 9–27–66, Cl. 312—108.

Flaherty, James H., to General Motors Corp. Electronic assembly with butt-welded auxiliary standard leads supporting components. 3,275,895, 9–27–66, Cl. 317—101.

Flickinger, Erich: *See*—
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Fliss, Eugene V.: *See*—
Alyea, Harold W., Jurasinski, and Fliss. 3,275,031.

Flodin, Per G. M., J. A. O. Johansson, and S. A. I. Carlsson, to Aktiebolaget Pharmacia. Cation-exchanges from cross-linked polyhydroxy materials. 3,275,576, 9–27–66, Cl. 260—2.2.

Florida Brace Corp.: *See*—
Jewett, Eugene L. 3,274,996.

Fluegel, Dale A.: *See*—
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Flynn, Gordon L., B. E. Kidd, III, and V. E. Peek, to Anderson Electric Corp. Cable connector with crimping die locating grooves. 3,275,738, 9–27–66, Cl. 174—94.

Fockens, Foppe H.: *See*—
Jonkers, Conelius O., and Fockens. 3,274,947.

Fodor, Ferenz H., 55% to E. M. Norton, and 45% to F. H. Fodor and L. G. Turner. Electric machine construction. 3,275,863, 9–27–66, Cl. 310—166.

Fogle, Merlyn W., to Eltra Corp. Cation exchange membrane from a sulfated polyvinyl alcohol. 3,275,575, 9–27–66, Cl. 260—2.2.

Foldessy, Justin E., and A. L. Poulos, to United States Steel Corp. Quickly disconnectable starter bar. 3,274,653, 9–27–66, Cl. 22—57.2.

Folsom, Theodore R., and R. A. Cramer, to The Regents of The University of California. Computing apparatus. 3,275,804, 9–27–66, Cl. 235—61.6.

Foote, Donald S., and R. A. Sahlin, to Remington Arms Co., Inc. Percussion sensitive pyrotechnic or pyrophoric alloy type priming mixture. 3,275,484, 9–27–66, Cl. 149—38.

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Kupferberg, Kenoeth. 3,275,927.
Rosenbusch, Franklin. 3,275,948.

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Hall, Leslie. 3,274,740.
Kennedy, Everett P. 3,275 094.
Konrad, Eugene W., and Zundel. 3,274,848.
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Smith, Raymond P. 3,275,370.
Stockton, Thomas R. 3,275 010.
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Turck, William B., and Bertouille. 3,275,353.

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Forehand, Joseph E., to United States of America, Army. Flexible wing aircraft. 3,275,271, 9–27–66, Cl. 244—138.

Forest, Gerard M. Target apparatus with discriminating electrical indicator, and projectiles therefor. 3,275,321, 9–27–66, Cl. 273—102.2.

Forsmark, Harold R., to Calco Mfg. Co. Ratchet drive rotary valve actuating mechanism. 3,274,853, 9–27–66, Cl. 74—625.

Forster, Johann, ½ to Vdo Tachometer Werke Schindling, Adolf, G.m.b.H., and ½ to Ferma Golde & Co. G.m.b.H. Flexible cable. 3,274,846, 9–27–66, Cl. 74—422.

Foseco International Ltd.: *See*—
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Foster, Charles H. Mercury switch. 3,274,939, 9–27–66, Cl. 103—25.

Foster, Harry R.: *See*—
Demarest, Philip C., Foster, and Crump. 3,275,879.

Foster, Manus R., to Mobil Oil Corp. Methods of inverse filtering geophysical data. 3,275,980, 9–27–66, Cl. 340—15.5.

Fowell, Andrew J., to American Radiator & Standard Sanitary Corp. Fluid moving means. 3,275,223, 9–27–66, Cl. 230—125.

Fowle, Arthur A., T. P. Heuchling, A. Latham, Jr., C. A. Schulte, and R. E. Kronauer, to Arthur D. Little, Inc. Fluid operating apparatus. 3,274,795, 9–27–66, Cl. 62—403.

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Francia, Benjamin R., and M. A. Pera. French roll dough processing mechanism. 3,274,956, 9–27–66, Cl. 107—8.

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Frania, Josef, and F. Scheele, to Westinghouse Bremsen-Gesellschaft, m.b.H. Pneumatic constant speed control apparatus for power machines. 3,275,009, 9–27–66, Cl. 137—36.

Frankel, Samuel R. Tape perforator with variable width tape guide attachment. 3,275,233, 9–27–66, Cl. 234—1.

Frankel, Sidney A.: *See*—
Allen, Duff S., Jr., Dobbs, Ruso, and Frankel. 3,275,677.

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Bauriedel, Friedrich, Franke, and Lang. 3,275,444.

Franklin, Edmond G., to The Hoover Co. Shampooing and scrubbing device. 3,274,632, 9–27–66, Cl. 15—29.

Franks, Bobby G., to Phillips Petroleum Co. Retainer ring and washer for tractor-trailer with fifth wheel. 3,275,390, 9–27–66, Cl. 308—136.

Freeby, Le Roy W., and W. F. Jackson, to Robertshaw Controls Co. Plural sequentially operated snap-action valves. 3,275,035, 9–27–66, Cl. 137—630.14.

Freeman, Donald C., Jr., and E. J. M. Lynch, to Union Carbide Corp. Superconductive systems. 3,275,857, 9–27–66, Cl. 307—149.

Freeman, Mark P., and F. Fussman, to American Cyanamid Co. Plasma production of titanium dioxide. 3,275,411, 9–27–66, Cl. 23—202.

Fregeolle, Donat H., to The Banner Co. Yarn feeding means. 3,274,801, 9–27–66, Cl. 66—125.

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Friend, Charlotte E. Book having plastic pages and adherent plastic overlays. 3,274,706, 9–27–66, Cl. 35—20.

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Frischkorn, Richard, and M. H. Humes, to General Motors Corp. Method for assembling cell components in storage batteries. 3,275,793, 9–27–66, Cl. 219—94.

Fritz, Henry E., to Union Carbide Corp. Process for producing 2-phenylglutaric acid and derivatives thereof. 3,275,683, 9–27–66, Cl. 260—515.

Fritz, Henry E., and D. W. Peck, to Union Carbide Corp. Bis[9-(substituted alkyl)-fluoren-9-yl]alkanes. 3,275,684, 9–27–66, Cl. 260—515.

Fritz, Samuel D., to Engelhard Industries, Inc. Comb for string type vacuum filter. 3,275,154, 9–27–66, Cl. 210—386.

Fritzberg, Edward L., to The Pillsbury Co. Method of agglomerating solid particulate material. 3,275,449, 9–27–66, Cl. 99—80.

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Fromm, Frank H., Jr. Method and mechanism for transferring fabric blanks. 3,275,317, 9–27–66, Cl. 271—26.

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Fuchs, Otto, R. Deubel, A. Brechlin, H. Bübner, E. Feess, and H. Zimmermann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning. Process for preparing fast dyeings or prints on cellulose materials. 3,275,401, 9–27–66, Cl. 8—54.2.

Fueslein, John R., R. R. Rader, and E. C. Roper, to Mueller Brass Co. Method of sealing tubing. 3,274,747, 9–27–66, Cl. 53—22.

Fujiwara, Katsuji. Air trap. 3,275,020, 9–27–66, Cl. 137—195.

Furkert, Herbert, and R. Schertz, to Dr. A. Zieren Chemiebau G.m.b.H. Method of recovery of ammonia and sulfur dioxide. 3,275,407, 9–27–66, Cl. 23—178.

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Gade, John C., to Rockwell-Standard Corp. Quick change plating bath fixture. 3,275,554, 9–27–66, Cl. 204—297.

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Gamberini, Goffredo. Supply roll brake. 3,275,259, 9–27–66, Cl. 242—75.44.

Ganley, Gregory J., to Honeywell Inc. Friction coupling and brake control apparatus. 3,275,109, 9–27–66, Cl. 192—7.

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Garden, William B., to Wilson & Garden Ltd. Connecting member for a board for educational purposes and a board incorporating such a member. 3,274,707, 9–27–66, Cl. 35—62.

Gardner, George J., to Automation Devices, Inc. Alignment means for vibratory feeders. 3,275,120, 9–27–66, Cl. 198—33.

Garms, David C., to The Dow Chemical Co. Ethyleniminepolyalkylenepolyamine-polyepihalohydrin terpolymer flocculants. 3,275,588, 9–27–66, Cl. 260—29.2.

Gartner, Edmund K., and T. Schaffert, to Telefonbau und Normalzeit G.m.b.H. Bistable magnetically controlled switch. 3,275,960, 9–27–66, Cl. 335—79.

Garty, Kenneth T., and T. B. Gibb. Jr., to Union Carbide Corp. Polymerization of oxirane monoepoxides in the presence of an organometallic compound and an alcohol. 3,275,598, 9–27–66, Cl. 260—47.

Gary, Thomas H., to Lockheed Aircraft Corp. Extensible and retractable tie-down fitting. 3,275,284, 9–27–66, Cl. 248—361.

Gash, Virgil W., to Monsanto Co. Process for the liquid phase direct oxidation of olefins to olefin oxides. 3,275,662, 9–27–66, Cl. 260—348.5.

Gaubatz, Arthur W., to General Motors Corp. Exhaust nozzle fluid seal. 3,275,243, 9–27–66, Cl. 239—265.35.

Gaudry, Paul E., to Electrolux Aktiebolaget. Cordwinder. 3,275,760, 9–27–66, Cl. 191—12.2.

Gauthier, William D., and E. Kock, to The DeVilbiss Co. Controllable reciprocator. 3,274,860, 9–27–66, Cl. 74—829.

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Gaynor, Joseph, to General Electric Co. Thermoplastic information recording utilizing electrets. 3,276,031, 9–27–66, Cl. 346—74.

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Geller, Roger E., to General Motors Corp. Steering wheel assembly. 3,274,851, 9–27–66, Cl. 74—552.

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Strobel, Albert F., Catino, and Leibowitz. 3,275,520.

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Bartlett, William F., and Brightman. 3,275,993.
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Dunn, William H., Fey, Kanal, McDermid, and Smith. 3,275,986.
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Pommerening, Uwe A. 3,276,011.
Sather, Stanley L. 3,274,839.
Scott, William J. 3,275,347.
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Bochan, John. 3,275,143.
Bonenfant, Leo J., and Thurston. 3,274,663.
Bristow, Robert H., and Affleck. 3,275,435.
Chang, Winston H. 3,275,434.
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Chernin, Myron A., and Leppelmeier. 3,275,872.
Coates, Clarence L., Jr., and Lewis. 3,275,812.
Coates, Clarence L., Jr., and Lewis. 3,275,849.
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Gaynor, Joseph. 3,276,031.
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Houston, John M. 3,275,873.
Isaacs, William R., and Stowe. 3,275,762.
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Kettler, Clarence J. 3,275,928.
Knoll, Marvin E., and Nicklas. 3,275,748.
Merritt, Robert E., and Trewhella. 3,275,901.
Morey, Everett D. 3,274,808.
Newberry, Sterling P. 3,275,787.
Pomfrett, John M. 3,275,885.
Robb, Walter L. 3,274,750.
Shonebarger, Francis J. 3,275,358.
Skeats, Wilfred F. 3,275 886.
Staples, Paul R. 3,275,236.
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General Mills, Inc.: *See*—
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Cataldo, Roy S. 3,274,777.
Diehl Ward F. 3,274,834.
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Frischkorn, Richard, and Humes. 3,275,793.
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Geller, Roger E. 3,274,851.
Haupt, Robert H., and Wanttaja. 3 275,538.
Hawkins, Cyril M., and Sobey. 3,274,772.
Herring, Russell L. 3,274,983.
Illar, William A., and Rood. 3,275,277.
Jacoby, Gerald B. 3,274,904.
Kelley, Oliver K., Gage, and Craig. 3,274,854.
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Glaser, Edward L., and A. B. Gerlach, to Burroughs Corp. Control for digital computers. 3,275,989, 9–27–66, Cl. 340—172.5.

Glass, Ronald, R. Andrel, and A. S. Harrison, to Keltec Industries Inc. Envelope container storage device. 3,275,158, 9–27–66, Cl. 211—40.

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Godbersen, Byron L. Boat centering and stop apparatus. 3,275,167, 9–27–66, Cl. 214—1.

Goder, Richard. Incinerator. 3,274,960, 9–27–66, Cl. 110—7

Godfrey, Leonard R., to Dendix Brushes Ltd. Rotary brushes and components for use in rotary brush. 3,274,634, 9–27–66, Cl. 15—198.

Godsalk, James B., to Fox Products Co. Poultry watering valves. 3,275,026, 9–27–66, Cl. 137—408.

Gogarty, William B., and R. W. Olson, to Marathon Oil Co. Viscosity control in petroleum recovery. 3,275,075, 9–27–66, Cl. 166—9.

Goins, Robert R., to Phillips Petroleum Co. Blending. 3,275,303, 9–27–66, Cl. 259—95.

Golaz, Anne-Marie (nee Petroff), and G. A. F. M. J. Cordonnier. Protective device such as umbrella, sunshade or the like. 3,275,815, 9–27–66, Cl. 240—6.42.

Goldberg, Moses W., L. M. Jampolsky, and R. W. Kierstead, to Hoffmann-La Roche Inc. Dodecahydrophenanthrene derivatives. 3,275,691, 9–27–66, Cl 260—586.

Golding, Kenyon E.: *See*—
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Goldstein, Emanuel, to Universal Oil Products Co. Process for the production of citronellol. 3,275,696, 9–27–66, Cl. 260—631.5.

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Golla, Anthony A. Automatically signaling delivery box. 3,275,228, 9–27–66, Cl. 232—34.

Gonsalves, Conrad J., to American Enka Corp. Thread joint. 3,274,764, 9–27–66, Cl. 57—142.

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Goolsby, Robert E., and D. E. Yount. Hay wafer regulator. 3,274,957, 9–27–66, Cl. 107—14.

Goroszko, Max. Electric motor with arcuate pole pieces. 3,275,661, 9–27–66, Cl. 310—46.

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Hoeg, Donald F., and Liebman. 3,275,577.
Stierli, Robert F., and Becker. 3,275,579.

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Graham, Seymour C.: *See*—
Mueller, Martin. 3,275,121.

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Gray, Willard F. M., to General Electric Co. High-temperature insulation for electrical conductors. 3,275,740, 9–27–66, Cl. 174—121.

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Greater Iowa Corp., The: *See*—
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Green, Joseph: *See*—
Cohen, Murray S., Fein, and Green. 3,275,483.

Green, Milton, to Polaroid Corp. 1-(4'-hydroquinonylalkylphenyl)-3-N-(hydroxylalkyl) - carbamyl-4-[N.N - dialkylsulfonamido)phenylazo]-5-pyrazolones. 3,275,617, 9–27–66, Cl. 260—163.

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Green, William F.: *See*—
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Greene, Janice L.: *See*—
Idol, James D., Jr., Greene, and Gray. 3,275,675.

Greene, Janice L., N. W. Standish, and N. R. Gray, to The Standard Oil Co. Process for preparing cyclobutene-1,2-dicyanide. 3,275,676, 9–27–66, Cl. 260—464.

Greger, Paul, and H. Rehn, to Voigtlander A.G. Film-transport and shutter-release interlock mechanism for cameras. 3,274,911, 9–27–66, Cl. 95—31.

Gregg, Paul V., to Walker Mfg. Co. Flange. 3,275,346, 9–27–66, Cl. 285—49.

Gregoire Engineering and Development Co.: *See*—
Gregoire, Resta S. 3,274,739.

Gregoire, Resta S., to Gregoire Engineering and Development Co. Sheet panel assembly and supporting members therefor. 3,274,739, 9–27–66, Cl. 52—169.

Grenier, Maurice, and P. Petit, to L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des procedes Georges Claude. Method for cooling a gaseous mixture to a low temperature. 3,274,787, 9–27–66, Cl. 62—23.

Grier, Robert C., Jr. Leg splint. 3,274,998, 9–27–66, Cl. 128—85.

Griese, Elmer W., Jr., to Ekco Containers, Inc. Re-closable hermetically sealed container. 3,274,964, 9–27–66, Cl. 113—121.

Grinnell Corp.: *See*—
Boteler, Henry W. 3,275,292.

Grivas, John C.: *See*—
Ziegler, Peter, and Grivas. 3,275,665.

Grosvalet, Jean, to C.S.F.-Compagnie Generale de Telegraphie Sans Fil. Field-effect transistor devices. 3,275,908, 9–27–66, Cl. 317—235.

Grover, Philip D., to Grover Products Corp. Over-center snap switch. 3,275,773, 9–27–66, Cl. 200—138.

Grover Products Corp.: *See*—
Grover, Philip D. 3,275,773.

Gruller, David L., to Cameron Iron Works, Inc. Valve. 3,275,032, 9–27–66, Cl. 137—608.

Guindi, Saad F.: *See*—
Tantawi, Mohamed H., Rahman, and Guindi. 3,275,472.

Gulf Research & Development Co.: *See*—
Ellis, Alan F., and Schulz. 3,275,651.
McGrath, Joseph J., and Tempalski. 3,275,553.

Gunn, John M. Apparatus for producing fibrous wagers or flakes. 3,275,049. 9–27–66, Cl. 144—176.

Gustafson, Blaine W.: *See*—
Soteropulos, Gust, de Buhr, and Gustafson. 3,274,761.

Gutmann, Ferdinand, & Co.: *See*—
Nossal, Fred, and Klein. 3,275,203.

Gutsche, Klaus: *See*—
Priewe, Hans, and Gutsche. 3,275,635.

Gutshall, Charles E., to Illinois Tool Works Inc. Bolt and washer assembly with cooperating pawl and ratchet means. 3,275,055. 9–27–66, Cl. 151—37.

Gutzwiller, Frank W., to General Electric Co. Semiconductor switch. 3,275,909, 9–27–66, Cl. 317—235.

Haage, Konrad, to Heusser-Delmag A.G. Vibrating and tamping devices. 3,274,907, 9–27–66, Cl. 94—48.

Hahn, Willi: *See*—
Stroh, Rudolf, Haberland, and Hahn. 3,275,690.

Hackmann, Johannes Th., and P. Kirby, to Shell Oil Co. Phosphorus esters of hydoxy-1,2,3-benzothiadiazoles. 3,275,047. 9–27–66, Cl. 260—304.

Hackney, Harry E.: *See*—
Brown, Arlie L., Cook, Hackney, Hulsey, Mueller, and Wegmann. 3,275,327.

Hahn, Willi: *See*—
Stroh, Rudolf, Haberland, and Hahn. 3,275,690.

Hahn, Willi, and K. Gollasch, to Farbenfabriken Bayer Aktiengesellschaft. Process for the preparation of aromatic mercanto compounds. 3,275,694, 9–27–66, Cl. 260—609.

Halcon International Inc.: *See*—
Marcell, Richard L. 3,275,695.

Hall, Leslie, to Ford Motor Co. Motor vehicle window. 3,274 740. 9–27–66, Cl. 52—208.

Hall, Marchand B., to United States Steel Corp. Control system for wire-tying apparatus. 3,274,921, 9–27–66, Cl. 100—4.

Hall, Matthew & Co. Ltd.: *See*—
Venison, Douglas M., and Pite. 3,274,622.

Hall, Norris R., J. H. Ham, Jr., W. E. Hostetler, K. O. Hutchinson, and L. A. Strommen, to Bell Telephone Laboratories, Inc. Magnetic repertory dialer with pulse reconstitutor. 3,275,755, 9–27–66, Cl. 179—90.

Hall, Roger L., to Sanders Associates, Inc. Electronic plotter utilizing storage tubes. 3,275,747, 9–27–66, Cl. 178—6.8.

Halpern, Otto: *See*—
Bowers, Albert, and Halpern. 3,275,656.

Halstensgard, Harvey O.: *See*—
Timberlake, John R., Halstensgard, and Thayer. 3,275,115.

Ham, James H., Jr.: *See*—
Hall, Norris R., Ham, Hostetler, Hutchinson, and Strommen. 3,275,755.

Hamamura, Yasuji, K. Hayashiya, and K. Naito, ½ to Takeda Chemical Industries Ltd. Eating-inducing compositions for silkworms. 3,275,446, 9–27–66, Cl. 99—2.

Hamann, Walter F., to American Safety Equipment Corp. Belt mounting in safety belt buckles. 3,274,656, 9–27–66, Cl. 24—196.

Hamill Mfg. Co.: *See*—
Fisher, Robert C. 3,274,655.

Hamilton Casco, Inc.: *See*—
Moore, Donald L., and Snyder. 3,275,375.

Hamilton, Sanborn. Digital temperature measurement and display system. 3,274,832, 9–27–66, Cl. 73—339.

Hamilton Watch Co.: *See*—
Bergey, John M. 3,275,767.

Hamm, Erich. Electrical coupling with two sleeve-connected plugs. 3,275,967, 9–27–66, Cl. 339—61.

Hammelman, N. Paul. Controllable jet nozzle pipe cleaning device. 3,275,247, 9–27–66, Cl. 239—447.

Hammond, John E., to National Distillers and Chemical Corp. Modified polyolefins. 3,275,616, 9–27–66, Cl. 260—94.9.

Hand, Albert M., to Steadman Industries Ltd. Demountable containers provided with jack legs for raising and lowering the same. 3,275,298, 9–27–66, Cl. 254—45.

Handler, Wolfgang, to Telefunken Patentverwertungs-G.m.b.H. Binary register control unit. 3,275,811, 9–27–66, Cl. 235—156.

Handley, John. Card storage and information retrieval apparatus. 3,276,002, 9–27–66, Cl. 340—174.1.

Handy, Richard L., to Soil Technical Associates, Inc. Method of stopping landslides and soil shear failures. 3,274,783, 9–27–66, Cl. 61—35.

Hanna, Ralph T., to United States Steel Corp. Blast furnace bell. 3,275,310, 9–27–66, Cl. 266—27.

Hanscom, H. F., & Co., Inc.: *See*—
Hanscom, Harris F. 3,275,261.

Hanscom, Harris F., to H. F. Hanscom & Co., Inc. Collapsible reel. 3,275,261, 9–27–66, Cl. 242—110.2.

Hansen, Donald E., to Mosler Research Products, Inc. Audio accumulator. 3,276,006, 9–27–66, Cl. 340—261.

Hansen, Kern B. E. Nail-driving device. 3,275,209, 9–27–66, Cl. 227—10.

Hansen, Leslie N. Folding door. 3,275,064, 9–27–66, Cl. 160—206.

Hanson, Chris A., ½ to D. J. Diehl. Extension handle for outboards. 3,274,849, 9–27–66, Cl. 74—480.

Harbison-Walker Refractories Co.: *See*—
Davies, Ben, and Havranek. 3,275,461.
Leatham, Earl, Pack, and Weaver. 3,275,410.

Harding, Philip A., and E. H. Siegel, Jr., to Bell Telephone Laboratories, Inc. Current drive circuit. 3,275,840, 9–27–66, Cl. 307—88.

Harendza-Harinxma, Alfred J., to Western Electric Co., Inc. Beta tatalum thin-film capacitors. 3,275,915, 9–27–66, Cl. 317—258.

Harper, Ralph E. Method of recovering water from sea water. 3,275,532, 9–27–66, Cl. 203—11.

Harper, Samuel D., to Honeywell Inc. Electrical apparatus. 3,275,807, 9–27–66, Cl. 235—92.

Harriman Mfg. Co., The: *See*—
Petitt, William H. 3,275,087.

Harrington, Daniel C.: *See*—
Lillestrand, Robert L., Hilt, and Harrington. 3,274,880.

Harrington, Thomas L.: *See*—
Vanstrum, Robert C., Harrington, and Tung. 3,274,888.

Harris-Intertype Corp.: *See*—
Zugel, Victor A. 3,275,315.

Harrison, Albertis S.: *See*—
Glass, Ronald, Andrel, and Harrison. 3,275,158.

Harrison, Geoffrey L., to Dowty Equipment of Canada Ltd. Hydraulic apparatus. 3,274,856, 9–27–66, Cl. 74—733.

Harrison, Jean B., and H. E. Hoffman, to E. I. du Pont de Nemours and Co. Anti-tumor N-nitrosomorpholine. 3,275,517, 9–27–66, Cl. 167—78.

Harshaw Chemical Co., The: *See*—
Lind, Edward L. 3,275,827.

Hartmann, Karl, and H.-R. Schnittmann, to Farbenfabriken Bayer Aktiengesellschaft. Stranded rope comprising endless, synthetic plastic threads. 3,274,765, 9–27–66, Cl. 57—144.

Hartog, Ernest: *See*—
Moses, Kurt, and Hartog. 3,275,810.

Hartsock, Robert E. Selector switch components. 3,275,782, 9–27–66, Cl. 200—166.

Hartzell, Harry F., Jr., to Koppers Co., Inc. Safety device for suspended conveyor take-up mechanisms. 3,275,126, 9–27–66, Cl. 198—208.

Hasspacher, Klaus: *See*—
Müller, Erich, and Hasspacher. 3,275,625.

Hastings, Earle G., Jr., to Hasty-Bake Mfg. Co., Inc. Hood support for charcoal cooker. 3,274,987, 9–27–66, Cl. 126—25.

Hasty-Bake Mfg. Co., Inc.: *See*—
Hastings, Earle G., Jr. 3,274,987.

Hauer, Josef, and Z. Kobera, to Zavody V. I. Lenina Plzen. Method of producing a projection on a machine component. 3,274,671, 9–27–66, Cl. 29—157.

Hauerbach, Markvard, to A. B. Dick Co. Apparatus for spacing characters. 3,274,909, 9–27–66, Cl. 95—4.5.

Hauerbach, Markvard, to A. B. Dick Co. Character alignment and proportional spacing system. 3,276,008, 9–27–66, Cl. 340—324.

Haupt, Robert H., and G. E. Wanttaja, to General Motors Corp. Electrochemical machining method and apparatus. 3,275,538, 9–27–66, Cl. 204—143.

Hausmann, Delbert A., and A. B. Szulc, to American Pipe and Construction Co. Outlet construction for concrete pipe and method of making same. 3,275,040, 9–27–66, Cl. 138—176.

Hauth, Joseph J.: *See*—
Bloomster, Clarence H., and Hauth. 3,275,525.

Haveg Industries, Inc.: *See*—
Lux, John H., and Obsol. 3,275,179.
Obsol, Ernest O. 3,275,720.

Havranek, Peter H.: *See*—
Davies, Ben, and Havranek. 3,275,461.

Hawkins, Cyril M., and A. J. Sobey, to General Motors Corp. Continuously staged rocket construction. 3,274,772, 9–27–66, Cl. 60—225.

Hawkins, Jack S., to Jennings Radio Mfg. Corp. Hermetically sealed relay having high and low voltage contact assemblies in a common chamber. 3,275,775, 9–27–66, Cl. 200—144.

Hayashiya, Keizo: *See*—
Hamamura, Yasuji, Hayashiya, and Naito. 3,275,446.

Haydock, Raymond S., ½ each to R. Haydock, Jr., and S. L. Haydock. Patio tray leg retainer. 3,275,278, 9–27–66, Cl. 248—431.

Haydock, Raymond, Jr.: *See*—
Haydock, Raymond S. 3,275,278.

Haydock, Sandra L.: *See*—
Haydock, Raymond S. 3,275,278.

Hayes, Paul E. and R. F. Sail. 3,274,968, 9–27–66, Cl. 114—103.

Hayes, Richard F.: *See*—
Hayes, Paul E. and R. F. 3,274,968.

Hayne, Thomas F.: *See*—
Codichini, Joseph J., Eichler, and Hayne. 3,275,837.

Haynie, Robert N.: *See*—
Scott, Arthur M., and Haynie. 3,275,333.

Hayssen Mfg. Co.: *See*—
James, Robert C., Wilson, and Pringle. 3,274,746.

Heald Machine Co., The: *See*—
Kuniholm, Martin L. 3,274,738.

Hedges, Albert R., to FMC Corp. Vehicle suspension system. 3,275,387, 9–27–66, Cl. 305—27.

Hefner, Lawrence, deceased (by S. G. Hefner, surviving spouse). Refuse compactor. 3,274,922, 9–27–66, Cl. 100—52.

Hefner, Sarah G.: *See*—
Hefner, Lawrence C. 3,274,922.

Hein, Lehmann & Co. A.G.: *See*—
Hirsch, Wolfram. 3,275,153.

Held, Richard A. Machine for tapering tubing. 3,274,816, 9–27–66, Cl. 72—189.

Helmerich & Payne, Inc.: *See*—
Challenger, Kenneth D. 3,275,183.

Helms, John D., to Texas Instruments Inc. Welding apparatus. 3,275,790, 9–27–66, Cl. 219—78.

Helton, Eugene L.: *See*—
Grant, Gerald E., and Helton. 3,274,908.

Henchoz, Henri-Louis: *See*—
Desaules, Jean-Jacques, and Henchoz. 3,274,766.

Hendrickson, Otto, ½ to A. Lohbeck. Double piston pneumatic filling machine. 3,274,895, 9–27–66, Cl. 91—179.

Hendrickson, Henry G., to Kaiser Aluminum & Chemical Corp. Apparatus for forming articles. 3,274,818, 9–27–66, Cl. 72—336.

Hendrickson, Henry G., to Kaiser Aluminum & Chemical Corp. Closure having tear strip opening means. 3,275,184, 9–27–66, Cl. 220—54.

Henry, Augustus P., to American Brake Shoe Co. Three-stage servo valve. 3,275,017, 9–27–66, Cl. 137—83.

Henry, Clemence J., P. R. Thomas, and P. Ferrence, to Texaco Inc. Hydraulic fluid. 3,275,559, 9–27–66, Cl. 252—75.

Henschel, George G. Elastically expandable watchband. 3,274,767, 9–27–66, Cl. 59—79.

Henschel, Leonard: *See*—
Baum, Lester A. H., Bruins, and Henschel. 3,275,585.

Henschen, Homer E.: *See*—
Ferdon, Gilbert D., and Henschen. 3,275,765.

Herbenar, Edward J., and A. W. Alexandrowicz, to TRW Inc. Idler arm bracket and socket assembly. 3,275,338, 9–27–66, Cl. 280—95.

Herbert, Jean L., to Societé des Verreries Industrielles Reunies de Loing. Opal glass with a low coefficient of thermal expansion. 3,275,492, 9–27–66, Cl. 161—1.

Hercules Inc.: *See*—
Breslow, David S. 3,275,595.
Feild, George B. 3,275,730.
Klug, Helmut, Kuchinka, Peters, Schleede, and Winter. 3,275,596.
Maus, Otto, and Prins. 3,275,597.
Plunguian, Mark. 3,275,250.
Vandenberg, Edwin J. 3,275,573.

Herr, Charles H., ½ to L. W. Matheny. Automatic calendar. 3,274,717, 9–27–66, Cl. 40—111.

Herring, Russell L., to General Motors Corp. Sloping push rod rocker arm mounting. 3,274,983, 9–27–66, Cl. 123—90.

Herschler, Robert J., to Crown Zellerbach Corp. Method for controlling microbiological organisms with compositions comprising halogenated levulinic acid and derivatives. 3,275,504, 9–27–66, Cl. 167—22.

Herschler, Robert J., to Crown Zellerbach Corp. Process for preparing a biocidal composition comprising halogenated levulinic acid. 3,275,505, 9–27–66, Cl. 167—22.

Heuchling, Theodore P.: *See*—
Fowle, Arthur A., Heuchling, Latham, Schulte, and Kronauer. 3,274,795.

Heusser-Deimag A.G.: *See*—
Haage, Konrad. 3,274,907.

Hewson, George F., Jr., to St. Luke's Hospital Center. Braces for correcting hip dislocation. 3,274,997, 9–27–66, Cl. 128—78.

Heyman Mfg. Co.: *See*—
Klumpp, Ferdinand, Jr. 3,275,423.

Heywood, James H. Corner fastener for aluminum extrusions. 3,275,356, 9–27–66, Cl. 287—189.36.

Hidding, Walter E. Plastic carrier for bottles. 3,275,366, 9–27–66, Cl. 294—31.2.

Hierl, Carl, Himolla Postemobelwerke G.m.b.H.: *See*—
Holsner, Josef, and Schefthaler. 3,275,374.

Higgins, Edward R.: *See*—
Ashby, Artie D., Jr., and Higgins. 3,275,966.

Higginson, Austin H., and C. C. Roshon, to International Business Machines Corp. Mechanical chip posting mechanism. 3,274,665, 9–27–66, Cl. 29—33.

Highley, Thomas T., Jr., M. Joseph, C. W. Ross, and A. J. Williams, Jr., to Leeds and Northrup Co. Vibratory type osynchronous converter. 3,275,781, 9–27–66, Cl. 200—166.

Hildebrandt, Alexander B., to Esso Production Research Co. Apparatus for measuring the azimuth and inclination of a borehole. 3,274,694, 9–27–66, Cl. 33—205.

Hiller, Georg, to Georg Bruckmayer, Dr., Flottweg-Motorenwerk. Bowl centrifuge. 3,275,230, 9–27–66, Cl. 233—7.

Hills, Clarence E. Universal milling machine. 3,274,890, 9–27–66, Cl. 90—13.

Hillson, Frank, and R. Krivisky. Universal drawer slide. 3,275,396, 9–27–66, Cl. 312—341.

Hilt, William M.: *See*—
Lillestrand, Robert L., Hilt, and Harrington. 3,274,880.

Hilty, Donald C., W. Crafts, and S. Solomon, to Union Carbide Corp. Steel treating agent consisting of Ba—Ca—Al—Fe—Mn—Si. 3,275,433, 9–27–66, Cl. 75—134.

Himmel, Martin. Percolator coffee pot and top thereof. 3,275,186, 9–27–66, Cl. 220—82.5.

Himolla Polstermobelwerk, Hierl, Carl, G.m.b.H.: *See*—
Holsner, Josef, and Schefthaler. 3,275,374.

Hinds, William A. Portable lamp. 3,275,824, 9–27–66, Cl. 240—81.

Hinkle, James O., and P. Toth, Jr., to Western Electric Co., Inc. Article unloading and transfer apparatus. 3,274,749, 9–27–66, Cl. 53—251.

Hirsch, Leon C., and F. Ourednik, to United States Surgical Corp. Surgical stapler with replaceable cartridge. 3,275,211, 9–27–66, Cl. 227—124.

Hirsch, Wolfram, to Hein, Lehmann & Co. A.G. Sieve-centrifuge. 3,275,153, 9–27–66, Cl. 210—369.

Hirsiger, Eugen, to H. A. Schlatter A.G. Seam welding machine. 3,275,792, 9–27–66, Cl. 219—82.

Hirsel, Edgar A., to Crane Co. Automatic brake control system. 3,275,384, 9–27–66, Cl. 303—21.

Hit Sales Corp.: *See*—
Wolpin, Kermit. 3,274,716.

Hitachi, Ltd.: *See*—
Hosogai, Takashi, and Ebisawa. 3,275,293.
Murata, Yoshi. 3,275,877.

Hodges Research and Development Co.: *See*—
Williams, Beverly E. 3,275,041.
Williams, Beverly E. 3,275,455.

Hoeg, Donald F., and S. Liebman, to W. R. Grace & Co. Preparing foams of polypropylene-butene-1 copolymers. 3,275,577, 9–27–66, Cl. 260—2.5.

Hoel, Hans, to The English Electric Co., Ltd. Electrical contact arrangement settable at will to be normally opened or normally closed. 3,275,963, 9–27–66, Cl. 335—121.

Hoenick, Hans, to Dr. Ing. H. c. F. Porsche, KG. Stabiliser for vehicles. 3,275,313, 9–27–66, Cl. 267—11.

Hoffman, Howard E.: *See*—
Harrison, Jean B., and Hoffman. 3,275,517.

Hoffman, Paul S., and W. M. King, to Sangamo Electric Co. Electric capacitor having dielectric spacer of reconstituted mica interleaved with solid plastic. 3,275,914, 9–27–66, Cl. 317—258.

Hoffman, Thomas E., W. H. Hogan, R. M. Lucas, and R. W. Moore, Jr., to Arthur D. Little Inc. Cryogenic liquid storage vessel. 3,274,788, 9–27–66, Cl. 62—45.

Hoffmann-La Roche Inc.: *See*—
Goldberg, Moses W., Jampolsky, and Kierstead. 3,275,691.
Magid, Louis, Sleezer, and Stefko. 3,275,510.

Hofmann, Corris M., to American Cyanamid Co. 3,4,5-tri (lower) alkoxycinnamamides. 3,275,688, 9–27–66, Cl. 260—559.

Hogan, Walter H., and R. W. Stuart, to Arthur D. Little Inc. Cryogenic refrigeration method and apparatus operating on an expansible fluid. 3,274,786, 9–27–66, Cl. 62—6.

Hogan, Walter H.: *See*—
Hoffman, Thomas E., Hogan, Lucas, and Moore. 3,274,788.

Hogopian, Jacob J., to International Business Machines Corp. Data handling system. 3,275,995, 9–27–66, Cl. 340—172.5.

Holce, Thomas J., to Varian Associates. Automatic high-vacuum system. 3,275,221, 9–27–66, Cl. 230—2.

Hollyday, William C., Jr.: *See*—
Brownawell, Darrell W., and Hollyday. 3,275,427.

Holm, Per T. Calendar device. 3,275,343, 9–27–66, Cl. 281—17.

Holonbane Co., Inc.: *See*—
Welty, Dale E. 3,275,825.
Wince, Vearl S., and Meyer. 3,275,822.

Holstein, Arthur G. D-galactone-gamma lactone containing premix for leavened baked food products. 3,275,450, 9–27–66, Cl. 99—94.

Holstein, Arthur G. Alpha-glucoheptono-gamma-lactone containing premix for leavened baked food products. 3,275,451, 9–27–66, Cl 99—94.

Holsinger, Rudolph J., L. E. Reid, and G. D. Blake, to Mobil Oil Corp. High-temperature lubrication process. 3,275,102, 9–27–66, Cl. 184—1.

Holsner, Josef, and A. Schefthaler, to Carl Hierl Himolla Polstermobelwerk G.m.b.H. Upholstered furniture comprising a head rest. 3,275,374, 9–27–66, Cl. 297—403.

Holsrichter, Hermann, W. Kronig, and B. Frens, to Farbenfabriken Bayer Aktiengesellschaft. Production of organic acetates in presence of a noble metal catalyst and oxygen. 3,275,680, 9–27–66, Cl. 260—497.

Honeywell Inc.: *See*—
Fenton, Ralph V., and Isely. 3,274,837.
Fernandes, Manuel. 3,274,829.
Harper, Samuel D. 3,275,807.
Ganley, Gregory J. 3,275,109.
Morrison, Stanley R. 3,275,835.
Nilles, John D. 3,275,238.
Pitts, Warren R. 3,275,255.
Stauffer, Norman L. 3,276,030.
Strong, Roger K. 3,275,541.

Honore, Etienne, and E. Torcheux, to C.S.F.-Compagnie Generale de Telegraphie Sans Fil, and Societe Marocaine de Recherches D'Etudes et de Developpements "Somarede." Analog-to-digital converters. 3,276,009, 9–27–66, Cl. 340—347.

Hooker Chemical Corp.: *See*—
Kujawa, Francis M., and Worsley. 3,275,606.

Hooper, Donald M., to Allis-Chalmers Mfg. Co. Valve guide removing and installing tool. 3,274,674, 9–27–66, Cl. 29—214.

Hoover Ball and Bearing Co.: *See*—
Allen, William M. 3,275,452.

Hoover Co., The: *See*—
Berger, Christian D. 3,275,858.
Merrett, John. 3,275,784.
Searle, Walter W. R. 3,275,152.

Horgan, William J., Jr.: *See*—
Blum, Louis, and Horgan. 3,274,744.

Horizons Inc.: *See*—
Wainer, Eugene. 3,275,443.

Horndasch, Georg, to H. Kolbe, and H. Koehler, d.b.a. fuba'm Antennenwerke, Hans Kobe & Co. Telescopic aerial for automotive vehicles. 3,276,021, 9–27–66, Cl. 343—715.

Horst, Robert L., to Armstrong Cork Co. Method of making three-dimensional dielectric lens. 3,274,668, 9–27–66, Cl. 29—155.5.

Horton, Thomas J. Device for storing and mixing dental amalgams. 3,275,302, 9–27–66, Cl. 259—72.

Horvath, Carl: *See*—
Mileikowsky, Hovay, Horvath, and Rosner. 3,274,630.

Hosogai, Takashi, and H. Ebisawa, to Hitachi, Ltd. Control device for controlling the closing operation of water shut-off means of a water pump-turbine. 3,275,293, 9–27–66, Cl. 253—24.

Hostetler, Willard E.: *See*—
Hall, Norris R., Ham, Hostetler, Hutchinson, and Strommern. 3,275,755.

Hotine, William, and G. F. Maxwell, to General Dynamics Corp. Apparatus for interconnecting elements. 3,275,736, 9–27–66, Cl. 174—84.

Hotwork Ltd.: *See*—
Ward, Trevor. 3,275,057.

Houdaille Industries, Inc.: *See*—
Schott, Arthur K. 3,274,689.

Hough, Sidney D. Hydraulic machine. 3,274,900, 9–27–66, Cl. 91—298.

Houston, John M., to General Electric Co. Electric discharge device having improved dispenser cathode. 3,275,873, 9–27–66, Cl. 313—182.

Hovercraft Development Ltd.: *See*—
Cockerell, Christopher S. 3,275,266.

Howard, Augustus A., and G. H. Weise. Safety valve system for flammable liquids and gases. 3,275,012, 9–27–66, Cl. 137—76.

Howd, James W. and R. E. Strap for rescue, carrying, and emergency use. 3,275,205, 9–27–66, Cl. 224—6.

Howd, Robert E.: *See*—
Howd, James W. and R. E. 3,275,205.

Howden, Derek: *See*—
Emeleus, Harry J., and Howden. 3,275,570.
Stanley, Robert H., and Howden. 3,275,568.
Stanley, Robert H., and Howden. 3,275,569.

Howell, Jesse O., and D. A. MacLeod, to American Telephone and Telegraph Co. Call distributing circuit. 3,275,754, 9–27–66, Cl. 179—18.

Howson, W. H., Ltd.: *See*—
Middlemiss, Herbert. 3,275,445.

Hubbard, Loy O. Bakery boxes. 3,275,220, 9–27–66, Cl. 229—47.

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Huenig, Siegfried, L. Geldern, and E. Luecke, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. O-alkyl-nitrosimmonium salts and process for their production. 3,275,639, 9–27–66, Cl. 260—293.

Huff, Robert J., to The Cincinnati Milling Machine Co. Lathe transmission mechanism. 3,274,842, 9–27–66, Cl. 74—335.

Huffaker, James E.: *See*—
Brunson, Marion O., and Huffaker. 3,275,494.

Hughes Aircraft Co.: *See*—
Myer, Jon H. 3,275,273.

Hughes, Ray C., to North American Philips Co., Inc. Method of making mercury-doped germanium semiconductor crystals. 3,275,557, 9–27–66, Cl. 252—62.3.

Hughes, Roy H., and R. F. Channing, to Time Inc. Knock-out mask detector in scanner apparatus. 3,275,741, 9–27–66, Cl. 178—5.2.

Hulsey, Edward J.: *See*—
Brown, Arlie L., Cook, Hackney, Hulsey, Mueller, and Wegmann. 3,275,327.

Hultgren, George W., to United Tool & Plastic, Inc. Dispenser for material in slender stick form. 3,275,132, 9–27–66, Cl. 206—56.

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Smith, Floyd A., Graybeal, and Parks. 3,275,077.

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Hunt, Patrick H., to Texas Instruments Inc. Production of dislocation-free silicon single crystals. 3,275,417, 9–27–66. Cl. 23—273.

Hurlow, John B. Power-boosted, push-pull, cable control apparatus. 3,274,893, 9–27–66, Cl. 91—49.

Huston, William D., to American Radiator & Standard Sanitary Corp. Electric meter including pivoted magnet rotor surrounded by continuous pole faces. 3,275,936, 9–27–66, Cl. 324—146.

Hutcheon, Charles F. Merchandise display card and clip therefor. 3,275,274, 9–27–66, Cl. 248—309.

Hutchinson, Kenneth O.: *See*—
Hall, Norris R., Ham, Hostetler, Hutchinson, and Strommern. 3,275,755.

Hutson, Tom, Jr., to Phillips Petroleum Co. Alkylation. 3,275,702, 9–27–66, Cl. 260—671.

Huyghe, Jean, and H. Mondin, to Commissariat a l'Energie Atomique. Process and apparatus for improving the transfer of heat from a hot gaseous fluid. 3,274,752, 9–27–66, Cl. 55—89.

Hydock, John K. Magnetically liftable foot-positioning block for golfers. 3,275,320, 9–27–66, Cl. 273—32.

Hydraulic-Drive A. G.: *See*—
Thoma, Oswald H. 3,274,949.

Hynes, Roger P., and E. J. Walsh, to Bell Telephone Laboratories Inc. Electron beam modulating device. 3,275,881, 9–27–66, Cl. 315—13.

I-T-E Circuit Breaker Co.: *See*—
Chumakov, Walter V. 3,275,856.

Ideal Brass Works Inc.: *See*—
Quinn, Bert A. 3,275,364.

Idol, James D., Jr., J. L. Greene, and N. R. Gray, to The Standard Oil Co. Process for making cyclobutane-1,2-dicyanides. 3,275,675, 9–27–66, Cl. 260—464.

Igaue, Toshio, and T. Shimodera, to Mitsui Osk Lines, Ltd., and Kobe Steel Works, Ltd. Shoring stanchions for marine use. 3,274,967, 9–27–66, Cl. 114—75.

Ikratch, Kurt, and W. A. Schneider, to United States of America, Army. Inflatable dielectric tube antenna. 3,276,025, 9–27–66, Cl. 343—757.

Illar, William A., and A. A. Rood, to General Motors Corp. Vehicle seat. 3,275,277, 9–27–66, Cl. 248—399.

Illinois Tool Works Inc.: *See*—
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Imperial-Eastman Corp.: *See*—
Kody, Joseph D., and Rabin. 3,275,350.

Indian Head Mills, Inc.: *See*—
Duhl, Daniel. 3,274,805.
Duhl, Daniel. 3,274,806.

Industrial Nucleonics Corp.: *See*—
Liu, Ko-Hsin. 3,275,942.
Martin, Philip T. 3,275,831.

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Kulman, Melvin L. 3,275,047.

Ingram, Maxwell. Direct reading shaft horsepower meter systems. 3,274,826, 9–27–66, Cl. 73—136.

Institut Francais du Petrole des Carburants et Lubrifiants: *See*—
Delacour, Jacques, and Parola. 3,275,300.

Integrated Electronics Corp.: *See*—
Meister, Jack B., and Staten. 3,274,790.

Intercompany Corp.: *See*—
Warczak, Russell C. 3,275,196.

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International Business Machines Corp.: *See*—
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Baycura, Orestes M. 3,275,842.
Higginson, Austin H., and Roshon. 3,274,665.
Hogopian, Jacob J. 3,275,995.
Kern, Richard W. 3,274,883.
Kollar, Ernest P., and Taft. 3,274,722.
Lasky, Theodore A. 3,275,110.
Meier, Johann H. 3,275,015.
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Treiber, Walter C., and McGill. 3,274,874.
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International Computers and Tabulators Ltd.: *See*—
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International Flavors & Fragrances, Inc.: *See*—
Theimer, Ernst T., and Lemberg. 3,275,701.

International Harvester Co.: *See*—
Bexten, Eugen. 3,275,386.
Brunger, Ronald N. 3,275,816.
Fischer, Raymond C. 3,274,925.
Kampert, Keith W., and Zimmerman. 3,275,173.
Konefes, Joseph H. 3,275,174.
Salna, Karl, and Granryd. 3,274,780.
Suchomel, Raymond F. 3,275,072.
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International Minerals & Chemicals Corp.: *See*—
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International Standard Electric Corp.: *See*—
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Reinet, Hans. 3,275,894.

International Telephone and Telegraph Corp.: *See*—
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Rieber, Frank, Jr. 3,275,078.

Irvin, Charles L., to Johns-Manville Corp. Method of forming slotted panels. 3,275,727, 9–27–66, Cl. 264—146.

Isaacs, William R., and K. R. Stowe, to General Electric Co. Automatic circuit closer with spring biased normally closed contact structure. 3,275,762, 9–27–66, Cl. 200—16.

Isely, William H.: *See*—
Fenton, Ralph V., and Isely. 3,274,837.

JFD Electronics Corp.: *See*—
Mayes, Paul E., and Grant. 3,276,028.

Jabco., Inc.: *See*—
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Jackman, Robert M., and J. L. Allswede, to The Dow Chemical Co. Positioning machine. 3,274,662, 9–27–66, Cl. 29—25.19.

Jackson, Beal S. Straight and curved bearing puller. 3,274,675, 9–27–66, Cl. 29—267.

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Jackson, Wilbur F.: *See*—
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Jacobellis, Alphonse A., to Security National Bank of Long Island. Filter for check valve. 3,275,145, 9–27–66, Cl. 210—136.

Jacobs, Arthur. License plate holder. 3,274,723, 9–27–66, Cl. 40—209.

Jacobson, Martin, to Rau Findings Co. Clasps. 3,275,362, 9–27–66, Cl. 292—204.

Jacoby, Gerald B., to General Motors Corp. Vented brake wheel cylinder assembly. 3,274,904, 9–27–66, Cl. 92—99.

Jahnke, Richard W.: *See*—
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Biedermann, Friedrich, Fauth, Jakob, Simson, and Esdirlieski. 3,274,914.

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James, William A., and J. J. Wallace, to The Sherwin-Williams Co. Display device. 3,275,159, 9–27–66, Cl. 211—49.

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Janoski, Edward J., and R. E. Moore, to Sun Oil Co. Preparation of alkyladamantanes having an ethyl substituent. 3,275,700, 9–27–66, Cl. 260—666.

Janssen, Alexander P., to Acme Visible Records, Inc. Record filing device. 3,274,715, 9–27–66, Cl. 40—102.

Javaux, Gustave. Glass processing apparatus including a reciprocating roller. 3,275,429, 9–27–66, Cl. 65—185.

Jeanneret, Jean L., to Foseco International Ltd. Mold dressings for use in foundry practice. 3,275,460, 9–27–66, Cl. 106—38.22.

Jelínek, Václav: *See*—
Buděšínský, Zdeněk, Jelínek, and Přikryl. 3,275,633.

Jones, Jack W.: *See*—
Mayes, Fred M., and Jones. 3,275,805.

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Jennings, Jo E., to Jennings Radio Mfg. Corp. Electrically energized heat radiator. 3,275,874, 9–27–66, Cl. 313—183.

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Jensen, James K.: *See*—
Meyer, Raymond J., Jensen, and Wetrich. 3,274,858.

Jenson, Kenneth S., and F. W. Suhr, to Preway, Inc. Air heater. 3,274,989, 9–27–66, Cl. 126—110.

Jepson, Ivar, and G. R. Wolter, to Sunbeam Corp. Juice extractor attachment for mixer. 3,275,051, 9–27–66, Cl. 146—3.

Jewett, Eugene L., to Florida Brace Corp. Surgical brace. 3,274,996, 9–27–66, Cl. 128—78.

Jimenez, James A., and H. H. Olmsted. Bun divider and rounder. 3,274,959, 9–27–66, Cl. 107—68.

Johanson, Bengt J., and N. Oskerka, Jr. Connector. 3,275,970, 9–27–66, Cl. 339—143.

Johansson, Johan A. O.: *See*—
Flodin, Per C. M., Johansson, and Carlsson. 3,275,576.

Johns-Manville Corp.: *See*—
Irvin, Charles L. 3,275,727.
Mastrobattista, Alex A., and Fordon. 3,275,331.

Johnson, Billie L., and J. A. Boyd, to Donaldson Co., Inc. High-pressure seal. 3,275,335, 9–27–66, Cl. 277—180.

Johnson, Charles M., and J. E. Lowder, to Johnson Mfg. Co. Earth scraper with retractable bottom wall. 3,274,711, 9–27–66, Cl. 37—129.

Johnson, Keith O., to Ampex Corp. Saturable core pulse width modulator. 3,275,949, 9–27–66, Cl. 332—12.

Johnson, Kenneth W., to Barry Wright Corp. Self-locking clamp. 3,275,276, 9–27–66, Cl. 248—361.

Johnson Mfg. Co.: *See*—
Johnson, Charles M., and Lowder. 3,274,711.

Johnson, Oscar H. to Parker Mfg. Co. Stapler. 3,275,212, 9–27–66, Cl. 227—132.

Johnson, Philip E., 50% to M. C. Lessa. Combination cartridge. 3,274,934, 9–27–66, Cl. 102—38.

Johnson Service Co.: *See*—
Alyea, Harold W., Jurasinski, and Fliss. 3,275,031.

Johnson, William A., to Bell & Howell Co. Motion picture camera. 3,275,399, 9–27–66, Cl. 352—141.

Jolls, Lewis M.; deceased; and I. Timmons, administratrix. Mounting for mower attachment. 3,274,762, 9–27–66, Cl. 56—25.4.

Jones, Dwight C., to Earthcavator Co., Inc. Retractable scarifier. 3,274,712, 9–27–66, Cl. 37—145.

Jones, Dwight C., to Earthcavator Co., Inc. Hydraulically controlled scarifier. 3,274,713, 9–27–66, Cl. 37—145.

Jones, John E.: *See*—
Quinn, James L., and Jones. 3,275,806.

Jones, John L. Transmission. 3,274,847, 9–27–66, Cl. 74—425.

Jonkers, Conelius O., and F. H. Fockens, to C. van der Lely, N.V. Hydraulic pump or motor. 3,274,947, 9–27–66, Cl. 103—162.

Jorey, Harold R.: *See*—
Lovell, Walter C., Jorey, and Lovell. 3,275,178.

Joseph, Earl C., to Sperry Rand Corp. Data processing system. 3,275,994, 9–27–66, Cl. 340—172.5.

Joseph, Morris: *See*—
Highley, Thomas T., Jr., Joseph, Ross, and Williams. 3,275,781.

Journal Box Servicing Corp.: *See*—
Potter, Thomas W. 3,274,823.

Jünger, Carl, to Bopp & Reuther G.m.b.H. Hydraulic apparatus. 3,274,894, 9–27–66, Cl. 91—87.

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Kabushiki Kaisha Hitachi Seisakusho: *See*—
Tsuchimoto, Takashi. 3,275,867.

Kabushiki Kaisha Keihin Seiki Seisakusho: *See*—
Kobayashi, Hiroto, and Aibara. 3,275,022.

Kadron G.m.b.H.: *See*—
Kracht, Otto, and Schumacher. 3,275,024.

Kaess, Franz: *See*—
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Kahllo, Mary. Body supporting apparatus. 3,274,618, 9–27–66, Cl. 4—112.

Kaiser Aluminum & Chemical Corp.: *See*—
Hendrickson, Henry G. 3,274,818.
Hendrickson, Henry G. 3,275,184.

Kaiser, Francis T.: *See*—
Brown, John W., Jr., Buesing, and Kaiser. 3,275,244.

Kaiser, Willard D., J. C. Swain, and G. E. Manning, to Westinghouse Air Brake Co. Handle means for percussive tool. 3,275,089, 9–27–66, Cl. 173—162.

Kahn, Leonard R. Automatic frequency control means for single-sideband receivers and the like. 3,275,940, 9–27–66, Cl. 325—423.

Kal-Equip Co., Inc.: *See*—
Parmater, Lee W. 3,275,932.

Kampert, Keith W., and R. F. Zimmerman, to International Harvester Co. Load handling vehicle. 3,275,173, 9–27–66, Cl. 214—140.

Kanal, Laveen N.: *See*—
Dunn, William H., Fey, Kanal, McDermid, and Smith. 3,275,985.
Dunn, William H., Fey, Kanal, McDermid, and Smith. 3,275,986.

Kane, Aloysius J.: *See*—
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Kaneko, Tetsuichi, to Oyo Chishitsu Co. Ltd. Ultrasonic inclination meter. 3,275,983, 9–27–66, Cl. 340—18.

Karagos, Berch Y.: *See*—
Bailey, Bruce L., Karagos, and Peller. 3,275,488.

Karlstads Mekaniska Werkstad, Aktiebolaget: *See*—
Tell, Lars E. K. A. 3,275,155.

Karoly, John A., and C. C. Bryant, to Chicago Bridge & Iron Co. Entrance nozzle for flashing superheated liquid. 3,275,249, 9–27–66, Cl. 239—523.

Karraker, David G., and W. C. Perkins, to United States of America, Atomic Energy Commission. Recovery of actinides from halite debris. 3,275,421, 9–27–66, Cl. 23—319.

Kasahara, Tadashi, to Konishiroku Shashin Kogyo Kabushiki-Kaisha. Single-lens reflex camera. 3,274,912, 9–27–66, Cl. 95—44.

Kassler, Henry, and N. G. Cutler. Stabilised organic sulphur-containing phosphorous insecticides. 3,275,499, 9–27–66, Cl. 167—22.

Kasten, John E. Forage wagon clutch. 3,275,176, 9–27–66, Cl. 214—519.

Katavolos, James: *See*—
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Kay, Edward L.: *See*—
Knowles, Edwin C., Kay, and McCoy. 3,275,636.

Kaydon Engineering Corp., The: *See*—
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Keen, Everett M., and A. J. Siciliano, to Keen Mfg. Corp. Egg-laying batteries. 3,274,972, 9–27–66, Cl. 119—48.

Keen Mfg. Corp.: *See*—
Keen, Everett M and Siciliano. 3,274,972.

Keever, James D.: *See*—
Thorneburg, James L., Thorneburg, and Keever. 3,274,804.

Kehoe, Edward C., and E. C. Walker, to Saline Water Conversion Corp. Falling film still having convex film feeding spillways. 3,275,529, 9–27–66, Cl. 202—172.

Keith, Carl D., and D. L. Bair, to Engelhard Industries, Inc. Method of preparing a sulfided platinum on carbon catalyst. 3,275,567, 9–27–66, Cl. 252—439.

Kelch, Heins, to Kienale Apparate G.m.b.H. Arrangement for transforming a rotary motion into a reciprocating motion. 3,274,838, 9–27–66, Cl. 74—54.

Kelco Co.: *See*—
Schweiger, Richard G. 3,275,581.

Kell, Ray D., to Radio Corp. of America. Method of adhering particles to a support surface. 3,275,466, 9–27–66, Cl. 117—33.5.

Keller, Chauncey A. R.: *See*—
Statler, Lowell E., and Keller. 3,275,048.

Keller, Hans-Otto, and G. Sommer, to Maschinenfabrik Moenus A.G. Needle drive mechanism for bag sewing machines. 3,274,963, 9–27–66, Cl. 112—213.

Kelley, Oliver K., K. W. Gage, and R. W. Craig, to General Motors Corp. Transmission. 3,274,854, 9–27–66, Cl. 74—677.

Kelly, Anthony H., to Westinghouse Electric Corp. Air conditioning apparatus. 3,275,069, 9–27–66, Cl. 165—64.

Kelsey-Hayes Co.: *See*—
Malthaner, Sylvester A. 3,275,378.

Keltec Industries Inc.: *See*—
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Kempe, Robert A., and K. R. Szczepanisk, to Metalphoto Corp. Process for developing photosensitized anodized aluminum plates. 3,275,440, 9–27–66, Cl. 96—66.

Kendall Co., The: *See*—
Rosecrans, Dean A. 3,275,001.

Kendis, Bradley A., trustee: *See*—
Allin, Norman J. 3,275,083.

Kendt, Norman L., to General Electric Co. Misalignment compensating coupling. 3,275,344, 9–27–66, Cl. 285—9.

Kennedy, Everett P., to Ford Motor Co. Motor vehicle pedal support. 3,275,094, 9–27–66, Cl. 180—90.6.

Kennedy, Harold E., to H. H. Robertson Co. Process for fabricating protected metal sheets. 3,274,679, 9–27–66, Cl. 29—473.1.

Kennedy Van Saun Mfg. & Eng. Corp.: *See*—
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Kerensky, Gleb, to The English Electric Co. Ltd. Regulation of hydraulic turbines. 3,275,008, 9–27–66, Cl. 137—25.

Kern, Curtis R., and H. L. Rice, to Milchem Inc. Well treating composition and method. 3,275,552, 9–27–66, Cl. 252—8.55.

Kern, Richard W., to International Business Machines Corp. Optical angular orientation measuring system. 3,274,883, 9–27–66, Cl. 88—14.

Kettler, Clarence J., to General Electric Co. Voltage regulator with magnetic amplifier elements. 3,275,928, 9–27–66, Cl. 323—43.5.

Kidd, Benjamin E. III: *See*—
Flynn, Gordon L., Kidd, and Peek. 3,275,738.

Kiefer, Bernhard: *See*—
Kuhne, Rudolf, Diery, and Kiefer. 3,275,672.

Kienzle Apparate G.m.b.H.: *See*—
Kelch, Heins. 3,274,838.

Kierstead, Richard W.: *See*—
Goldberg, Moses W., Jampolsky, and Kierstead. 3,275,691.

Kiessling, Rudolf H., and C. A. Schaefer, to Square D Co. Electric limit switch having a diagonally divided housing, a detachable actuator and mechanisms for causing selected operation of a push-button snap-switch. 3,275,764, 9–27–66, Cl. 200—47.

Kilbourn, Eugene L., to S. H. Leggitt Co. Method of making lever arms. 3,274,677, 9–27–66, Cl. 29—417.

Kilmer, Lauren G., and R. K. Shearman, to Sinclair Research, Inc. Explosion pressure responsive switch. 3,275,770, 9–27–66, Cl. 200—82.

Kilsheimer, John R., and H. H. Moorefield, to Union Carbide Corp. Aminonaphthyl and alkylaminonaphthyl N-methylcarbamates and insecticidal compositions thereof. 3,275,507, 9–27–66, Cl. 167—32.

Kindseth, Harold V.: *See*—
Roth, Donald J., Zeller, and Kindseth. 3,275,498.

King, Charles H.: *See*—
Bates, Mortimer C., and King. 3,275,363.

King, John H., to Bell Telephone Laboratories, Inc. Connector. 3,275,971, 9–27–66, Cl. 339—151.

King, Joseph W., to Cleveland Technical Center, Inc. Ultrasonic detecting means. 3,275,975, 9–27–66, Cl. 340—1.

King, William M.: *See*—
Hoffman, Paul S., and King. 3,275,914.

Kinney, S. P., Engineering, Inc.: *See*—
Carr, Hugh B. 3,275,151.

Kinsey, Denis V., L. J. Valette, and J. Lothe, to United Kingdom Atomic Energy Authority. High-temperature gas-cooled reactors with internal fission by-product trapping means. 3,275,522, 9–27–66, Cl. 176—37.

Kirby, Peter, J. Roberts, and J. H. Davies. Preparation of thiadiazoles. 3,275,646, 9–27–66, Cl. 260—304.

Kirby, Peter: *See*—
Hackmann, Johannes Th., and Kirby. 3,275,647.

Kirk & Blum Mfg. Co., The: *See*—
Carsey, Eugene A. 3,274,892.

Kirk, Charles R. Swivel hook for apertured board. 3,275,272, 9–27–66, Cl. 248—225.

Kirsten, James O. F. Metal shears. 3,274,872, 9–27–66, Cl. 83—162.

Kisling, Edward J. Power driven miter saw. 3,275,044, 9–27–66, Cl. 143—6.

Kitchin, Harry D., to The Marconi Co. Ltd. Transistorized saw-tooth wave generators utilizing direct current negative feedback. 3,275,847, 9–27–66, Cl. 307—88.5.

Klamath-Ward, Inc.: *See*—
Beeley, Howard K. 3,275,045.

Klein, Hans-Christof, to Alfred Teves Maschinen- und Armaturenfabrik Kommandit-Gesellschaft. Prime-mover system. 3,274,768, 9–27–66, Cl. 60—19.

Klein, Hans-Christof, to Alfred Teves Kommanditgesellschaft. Flow regulator for fluid systems. 3,274,779, 9–27–66, Cl. 60—53.

Klein, Max: *See*—
Nossal, Fred, and Klein. 3,275,203.

Kleinberg, Gustave. Ovens for treating compressed coal briquettes. 3,274,702, 9–27–66, Cl. 34—171.

Kleinewefers, Joh., Sohne Maschinenfabrik: *See*—
Munch, Erhardt. 3,274,923.

Klingel, John B., to Struthers Scientific and International Corp. Method of autoclaving concrete blocks. 3,276,724, 9–27–66, Cl. 264—82.

Klinzing, A. F., Co., Inc.: *See*—
Prentice, George D. 3,275,125.

Klockner-Humboldt-Deutz Aktiengesellschaft: *See*—
Abermeth, Hubert. 3,274,980.

Kloos, Nantko, to Shell Oil Co. Alkyd resins prepared from epoxy esters of monocarboxylic acids and process for the production of same. 3,275,583, 9–27–66, Cl. 260—22.

Klug, Helmut, K. Kuchinka, H. Peters, D. Schleede, and J. Winter, to Hercules Inc. Fire resistant polyolefins containing an arsenic, antimony, or bismuth compound and a halogenated diaromatic ester of a dicarboxylic acid. 3,275,596, 9–27–66, Cl. 260—45.75.

Klumpp, Ferdinand, Jr., to Heyman Mfg. Co. Grounding pin. 3,275,423, 9–27–66, Cl. 29—183.

Knak, James: *See*—
Segall, Louis H., Morrison, and Knak. 3,275,884.

Knapsack-Griesheim Aktiengesellschaft: *See*—
Sennewald, Kurt, Vogt, and Weiden. 3,275,581.

Knauss, Robert L., to Armour and Co. Hide-pulling apparatus. 3,274,639, 9–27–66, Cl. 17—21.

Knecht, George W., to Murray Mfg. Corp. Biased pivot assembly. 3,275,965, 9–27–66, Cl. 335—276.

Kneip, George D., Jr.: *See*—
Betterton, Jesse O., Jr., Kneip, Easton, and Scarbough. 3,275,480.

Knickerbocker, Harvey M., to Philco Corp. Apparatus for the calibration of radar equipment. 3,276,016, 9–27–66, Cl. 343—17.7.

Knoll, Marvin E., and W. H. Nicklas, to General Electric Co. Electron beam-defining device and method for producing the same. 3,275,748, 9–27–66, Cl. 178—7.87.

Knopf, Robert J.: *See*—
Brotherton, Thomas K., Lynn, and Knopf. 3,275,679.

Knowles, Edwin C., E. L. Kay, and F. C. McCoy, to Texaco Inc. Amine hexa fluotitanates. 3,275,636, 9-27-66, Cl. 260—270.

Knowles, Keith, to The British Iron and Steel Research Association. Forging presses. 3,274,819, 9-27-66, Cl. 72—421.

Knox, Arthur W., to Mitchel & King Ltd. Cutting appliances. 3,274,685, 9-27-66, Cl. 30—211.

Knox, Lawrence H., to Syntex Corp. 3,17-disubstituted-1,3,5(10)-estratriene derivatives. 3,275,623, 9-27-66, Cl. 260—239.55.

Knudsen, Knud J., to Lewis Engineering Co. Correlating time and event recorder. 3,275,808, 9-27-66, Cl. 235—92.

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Kobayashi, Hiroto, and K. Aibara, to Kabushiki Kaisha Keihin Seiki Seisakusho. Valve assembly. 3,275,022, 9-27-66, Cl. 137—221.

Kobe Steel Works, Ltd.: *See*—
Igaue, Toshio, and Shimodera. 3,274,967.

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Koch, Fritz. Construction toy. 3,274,728, 9-27-66, Cl. 46—29.

Kocher, Erich J., and J. N. Long, to Vilter Mfg. Corp. Refrigeration system with lube oil separation means. 3,274,796, 9-27-66, Cl. 62—473.

Kock, Erhard: *See*—
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Kolze, Lawrence A., to The Dole Valve Co. Rotary shear valve with remote control. 3,275,237, 9-27-66, Cl. 236—51.

Komarmy, Julius M., to General Motors Corp. Test for engine oil contamination. 3,274,820, 9-27-66, Cl. 73—61.

Konefes, Joseph H., to International Harvester Co. Automatic leveling device. 3,275,174, 9-27-66, Cl. 214—140.

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Konrad, Erich: *See*—
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Konrad, Eugene W., and R. P. Zundel, to Ford Motor Co. Multiple speed ratio power transmission mechanism and automatic control system. 3,274,848, 9-27-66, Cl. 74—472.

Kootz-Wagner Electric Co., Inc.: *See*—
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Koppers Co., Inc.: *See*—
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Korman, Nathaniel I., to Radio Corp. of America. Microwave phase shifter system providing substantial constant phase shift over broad band. 3,275,952, 9-27-66, Cl. 333—31.

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Kozel, James A., and G. L. McClure, to American Radiator & Standard Sanitary Corp. Adjustable liquid metering means for shut-off valves. 3,275,033, 9-27-66, Cl. 137—613.

Kozlowski, Lawrence S.; 25% each, to E. Sripstead, and V. DeRosier, and M. B. Legatz. Fuel tank cap lock. 3,274,809, 9-27-66, Cl. 70—163.

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Krehbiel, John H., to Molex Products Co. Switch connector. 3,275,766, 9-27-66, Cl. 200—51.

Krempff, Robert, to Saint-Gobain de Compagnie. Conversion of SO_2 to SO_3 with a catalyst of selected porosity. 3,275,406, 9-27-66, Cl. 23—175.

Kren, Robert, to James Beresford & Son Ltd. Submersible electric motor for appliances. 3,275,662, 9-27-66, Cl. 310—87.

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Kritzer, Richard W., to Peerless of America, Inc. Heat exchangers. 3,275,071, 9-27-66, Cl. 165—121.

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Kühne, Rudolf, H. Diery, and B. Kiefer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing sulfonic acid esters. 3,275,672, 9-27-66, Cl. 260—456.

Kujawa, Francis M., and M. Worsley, to Hooker Chemical Corp. Compositions containing adducts of hexahalocyclopentadiene. 3,275,806, 9-27-66, Cl. 260—75.

Kuman, Melvin L., to Ingersoll-Rand Co. Fastener holder for power tools. 3,275,047, 9-27-66, Cl. 144—32.

Kumm, Brent, to Koots-Wagner Electric Co., Inc. Multiple position solenoid device. 3,275,964, 9-27-66, Cl. 335—259.

Kunihiro, Toshihiro, and N. Shimasaki, to Nippon Electric Co. Ltd. Two-stage multiplex switching system employing interlaced connections between highways and external circuit groups. 3,275,749, 9-27-66, Cl. 179—15.

Kunlholm, Martin L., to The Heald Machine Co. Grinding machine. 3,274,738, 9-27-66, Cl. 51—165.

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Kuoppamaki, Lauri J. and E. O. Electric heater for use in a sauna bath. 3,275,800, 9-27-66, Cl. 219—367.

Kupferberg, Kenneth, to Forbro Design Corp. Electrolytic cell anode potential control system. 3,275,925, 9-27-66, Cl. 323—4.

Kupferberg, Kenneth, to Forbro Design Corp. Bridge controlled multiple regulated power supplies. 3,275,927, 9-27-66, Cl. 323—22.

Kurtz, Abraham N., to Union Carbide Corp. Process for the preparation of alkali metal salts of acetylenic acids. 3,275,686, 9-27-66, Cl. 260—533.

Kyle, James C., to Physical Sciences Corp. Detonation squib. 3,274,937, 9-27-66, Cl. 102—70.2.

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Simmons, Alan J. 3,276,026.

Laing, Robert L., and C. D. Feemster. Thermionic converters. 3,275,923, 9-27-66, Cl. 322—2.

L'air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des procedes Georges Claude: *See*—
Grenier, Maurice, and Petit. 3,274,787.

Laishley, Frederick H., to Joseph Lucas (Industries) Ltd. Apparatus for measuring the output voltage of an alternating current bridge by comparison with the output of a variable transformer. 3,275,934, 9-27-66, Cl. 324—99.

Lamoureaux, Raymond L. Painter's utility implement. 3,275,187, 9-27-66, Cl. 220—90.

Landau, Richard E. Dewatering clayey and silty soil. 3,274,782, 9-27-66, Cl. 61—11.

Lang, Edmund, to Elb-Schliff Edmund Lang. Machine stand and cooling means therefor. 3,275,495, 9-27-66, Cl. 165—47.

Lang, Ernest U., and E. E. Mallory, to National-Standard Co. Band clutch with cup-shaped outer member. 3,275,111, 9-27-66, Cl. 192—41.

Lang, Hilde: *See*—
Banriedel, Friedrich, Franke, and Lang. 3,275,444.

Lange, Kenneth W., to Chicago Bridge & Iron Co. Apparatus for preventing ice and frost formation under low-temperature tanks. 3,274,785, 9-27-66, Cl. 61—36.

Langguth, Robert P., to Monsanto Co. Corrosion-inhibited phosphate solutions. 3,275,566, 9-27-66, Cl. 252—389.

Lanham, Edward H. Signal conversion circuit for "E" and "M" telephone leads. 3,275,750, 9-27-66, Cl. 179—16.

Lanphere, Gerald B., to Lipe-Rollway Corp. Auxiliary facing stop control system. 3,274,866, 9-27-66, Cl. 82—34.

Lary, Edmund C.: *See*—
Meyerand, Russell G., Jr., and Lary. 3,275,859.

Lasky, Theodore A., to International Business Machine Corp. Latch-operated clutch with dual pawls. 3,275,110, 9-27-66, Cl. 192—28.

Latham, Allen, Jr.: *See*—
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Martin, Warner W. 3,274,993.

Lau, Gary K. Auxiliary handle for coaster wagon. 3,275,337, 9-27-66, Cl. 280—87.1.

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Vigeault, Richard E., Finster, and Laudry. 3,274,731.

Laurent, Joseph J. Pocket electric apparatus with chargeable battery. 3,275,819, 9-27-66, Cl. 240—10.65.

Lausing, Engel: *See*—
Zaar, Stig G. B., Wallenius, and Lausing. 3,275,416.

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Lavin, Thomas J., to The Bendix Corp. High-voltage D.C. coupled differential amplifier including series energized transistors. 3,275,944, 9-27-66, Cl. 330—18.

Lawson Engineering Co.: *See*—
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Lawson, John B.: *See*—
Lawson, Robert H. and J. B. 3,274,824.

Lawson, Robert H. and J. B., to Lawson Engineering Co. Method and apparatus for tensile testing. 3,274,824, 9-27-66, Cl. 73—95.5.

Layton, Jack D., to Layton Mfg. Co. Mechanism for attaching trailing and lead vehicles. 3,275,342, 9-27-66, Cl. 280—460.

Layton Mfg. Co.: *See*—
Layton, Jack D. 3,275,342.

Lear, Siegler, Inc.: *See*—
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Le Blanc, Roger C. Motion picture film splicing tape punch. 3,274,667, 9-27-66, Cl. 30—360.

Leclou, Andre, to Commissariat A l'Energie Atomique. Mechanical coupling device, especially for pressure vessels. 3,275,181, 9-27-66, Cl. 220—18.

Lednicer, Daniel, to The Upjohn Co. Tertiary-aminoalkoxy-substituted 3,4-diphenylcoumarins. 3,275,658, 9-27-66, Cl. 260—343.2.

Leeds and Northrup Co.: *See*—
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Strobel, Albert F., Catino, and Leibowitz. 3,275,520.

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Rocher, Pierre M., and Thomas. 3,274,885.

Leonard, Merrill G., to Westinghouse Electric Corp. Capacitor-transformer combination. 3,275,900, 9-27-66, Cl. 317—157.62.

Leone, Nick A., 10% each to A. C. and A. A. Fell, and J. F. and B. J. Murray. Reciprocating piston rotating cylinder block rotary engine. 3,274,774, 9-27-66, Cl. 60—39.34.

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Chernin, Myron A., and Lepplemeier. 3,275,872.

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Leroy, Pierre, and R. Simon, to Compagnie des Ateliers et Forges de la Loire (St. Chamond-Firminy-St. Etienne-Jacob-Holtzer). Method of casting and firing a layered ceramic article. 3,275,721, 9-27-66, Cl. 264—60.

Lerwill, William E., and N. A. Anstey, to Seismograph Service Corp. Methods of and apparatus for measuring distances. 3,276,015, 9-27-66, Cl. 343—6.5.

Lessa, Michael C.: *See*—
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Levin, Simon. Preparation of magnetic records including the use of photographic techniques. 3,275,438, 9-27-66, Cl. 96—35.

Levoin, Francis, to Real Patentauswertungs Anstalt. Multiple pen comprising a plurality of writing points of different colors. 3,274,976, 9-27-66, Cl. 120—42.13.

Levy, Harold, and A. D. Tait, to G. D. Searle & Co. 4-hydroxy-3,6-diketo steroids and enol ethers corresponding. 3,275,664, 9-27-66, Cl. 260—397.4.

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Coates, Clarence L., Jr., and Lewis. 3,275,812.
Coates, Clarence L., Jr., and Lewis. 3,275,849.

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Liebman, Samuel: *See*—
Hoeg, Donald F., and Liebman. 3,275,577.

Lien, Howard C., to A. A. Smith. Apparatus and method for making crutch pads. 3,274,641, 9-27-66, Cl. 18—1.

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Prache, Marie P. 3,275,955.
Prache, Marie P. 3,275,956.

Lillestrand, Robert L., W. M. Hilt, and D. C. Harrington, to Control Data Corp. Method and apparatus for occultation detection for space navigation. 3,274,880, 9-27-66, Cl. 88—1.

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Debus, Karl. 3,275,127.

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Hoffman, Thomas E., Hogan, Lucas, and Moore. 3,274,788.
Hogan, Walter H., and Stuart. 3,274,786.
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Waldron, Stoddard S., and Bleyle. 3,275,345.

Liu, Ko-Hsin, to Industrial Nucleonics Corp. Thermal stabilization of direct-coupled electrometer amplifiers. 3,275,942, 9-27-66, Cl. 330—1.

Livera, Phillip A., and S. B. Lyons, to Westinghouse Electric Corp. Lead-wire feeding apparatus. 3,275,190, 9-27-66, Cl. 221—93.

Livingstone, Alexander, to American Can Co. Pressurized dispensing container. 3,275,200, 9-27-66, Cl. 222—389.

Lloyd, William A., and R. Zaphiropoulos, to Varian Associates. Vacuum brazing system. 3,275,789, 9-27-66, Cl. 219—72.

Locher, Ross E., to Zinsco Electrical Products. Circuit breaker with externally adjustable tripping mechanism. 3,275,959, 9-27-66, Cl. 335—35.

Lockheed Aircraft Corp.: *See*—
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Long, Richard H. Electrical circuit selector. 3,275,962, 9-27-66, Cl. 335—107.

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Loveless, Compere, to Union Tank Car Co. Combined gas inlet conduit and electrode for liquid conveying apparatus. 3,275,021, 9-27-66, Cl. 137—209.

Lovell, Walter C. and P. A., and H. R. Jorey, said Jorey and said P. A. Lovell, assors. to said W. C. Lovell. Sealing gasket used with crown-type bottle caps. 3,275,178, 9-27-66, Cl. 215—40.

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Lowell, Carl E., and R. P. Goton, to Union Carbide Corp. Method of preparing an oxidation resistant article. 3,275,471, 9-27-66, Cl. 117—169.

Lubowe, Irwin I. Allantoin-pantothenate compounds. 3,275,643, 9-27-66, Cl. 260—299.

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Lucas, Robert M.: *See*—
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Lucien, Rene, to Societe a Responsabilite Limitee: Recherches Etudes Production R.E.P. Wheel for a tubeless tire. 3,275,377, 9–27–66, Cl. 301—6.

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Ludwig, Harvey F. and R. G. 3,275,149.

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Luftig, Sanford B., 37½% to The Wheeler Kelly & Hagny Investment Co., 10½% to W. P. Innes, Jr., 9% to W. P. Innes III, 9% to W. D. Innes, and 9% to B. S. Innes. Noise modulation control system. 3,275,939, 9–27–66, Cl. 325—399.

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Lung, Kenneth R., to The Tait Mfg. Co. Pumps. 3,274,942, 9–27–66, Cl. 103—87.

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Lutes, Harry L., and R. J. Smith, to Kornylak Corp. Belt driven live roller conveyor. 3,275,124, 9–27–66, Cl. 198—127.

Lux, John H., and E. O. Ohsol, to Haveg Industries, Inc., Spin welded thermoplastic container. 3,275,179, 9–27–66, Cl. 220—4.

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Maass, Joachim A., to United States of America, Army. Ring modulator with large dynamic operating range. 3,275,951, 9–27–66, Cl. 332—43.

Maccone, Sergio: *See*—
Pinamonti, Franco, and Maccone. 3,275,500.

MacCracken, Calvin D., to Calmac Corp. Mass-production low-cost furnace for supplying high-temperature, high-velocity air for domestic heating. 3,274,990, 9–27–66, Cl. 126—110.

MacDonald, George A.: *See*—
Traver, Alfred E., and MacDonald. 3,274,985.

MacDonald, Murdo A., to Tru-Tork, Inc. Article-feed apparatus having an article transfer means and fluid means to propel articles through a tube. 3,275,191, 9–27–66, Cl. 221—175.

MacDowell, John F., to Corning Glass Works. Glass body having surface crystalline layer thereon and method of making it. 3,275,493, 9–27–66, Cl. 161—1.

MacGregor, Raymond E., to Sperry Rand Corp. Tape cleaner. 3,274,636, 9–27–66, Cl. 15—306.

Macher, Karl H., to Jos. Schneider & Co. Four-component objective having two movable components. 3,274,887, 9–27–66, Cl. 88—57.

MacKenzie, Kenneth W. Golf putting trainer. 3,275,325, 9–27–66, Cl. 273—179.

MacLeod, Donald A.: *See*—
Howell, Jesse O., and MacLeod. 3,275,754.

Macleod, Roderick B., and P. Paliyenko, to Fiber Industries, Inc. Process for preparing thick and thin novelty yarns. 3,275,732, 9–27–66, Cl. 264—290.

MacNair, Richard N.: *See*—
Emerson, William S., MacNair, and Wang. 3,275,681.

MacPhail, Alexander C. B.: *See*—
Waight, Francis H., MacPhail, and Southern. 3,275,-555.

MacPhail, Malcolm R.: *See*—
Sasseen, John H., MacPhail, and Wischmeyer. 3,275,-981.

MacRae, Allister S., and J. C. Martin, to Diesel Equipment Ltd. Hydraulic loading devices. 3,275,170, 9–27–66, Cl. 214—75.

Magic Servant Products Co.: *See*—
Moore, Bennett J. 3,275,245.

Magid, Louis, P. E. Sleezer, and P. L. Stefko, to Hoffmann-LaRoche Inc. Topical antitussive preparations. 3,275,510, 9–27–66, Cl. 167—58.

Maguire, Edward J., Jr.: *See*—
Maguire, Edward J., Sr., E. F. Maguire, and E. J. Maguire, Jr. 3,274,700.

Maguire, Edward J., Sr., E. F. Maguire, and E. J. Maguire, Jr. Generating apparatus for use in removing flammable materials from ducts. 3,274,700, 9–27–66, Cl. 34—104.

Maguire, Eugene F.: *See*—
Maguire, Edward J., Sr., E. F. Maguire, and E. J. Maguire, Jr. 3,274,700.

Maier, Karl H., and K. Voggel, to Membranfilter-Gesellschaft G.m.b.H. Fa. Method of determination of the content of microorganisms in air. 3,275,527, 9–27–66, Cl. 195—103.5.

Mailen, James C.: *See*—
Cathers, George I., and Mailen. 3,275,422.

Mailliet, Henry, to Compagnie Generale de Telegraphie Sans Fil. Low-profile surface wave antenna. 3,276,020, 9–27–66, Cl. 343—705.

Malech, Robert G.: *See*—
Dorne, Arthur, Malech, and Satre. 3,276,023.

Mallory, Edwin E.: *See*—
Lang, Ernest U., and Mallory. 3,275,111.

Mallory, P. R., & Co., Inc.: *See*—
McHugh, John W., and Baker. 3,275,902.

Malthaner, Sylvester A., to Kelsey-Hayes Co. Spoked vehicle wheel having selective spacer means for axially positioning a tire rim. 3,275,378, 9–27–66, Cl. 301—12.

Mann, Charles G., to Weltronic Co. Production monitoring system. 3,275,987, 9–27–66, Cl. 340—147.

Manning, David T., to Union Carbide Corp. Stabilization of organic isocyanates with monoalkenyl-thioureas. 3,275,-671, 9–27–66, Cl. 260—455.

Manning, George E.: *See*—
Kaiser, Willard D., Swain, and Manning. 3,275,089.

Mannix International Inc.: *See*—
Christoff, James W. 3,274,951.
Fekete, Stephen I. 3,274,952.

Manz, August F., to Union Carbide Corp. Work-in-circuit metal arc welding. 3,275,797, 9–27–66, Cl. 219—137.

Maras, Julia R. Curtains. 3,275,065, 9–27–66, Cl. 160—330.

Marathon Oil Co.: *See*—
Gogarty, William B., and Olson. 3,275,075.

Marcantonio, Livio F.: *See*—
Fischer, Howard R., Marcantonio, and D'Haem. 3,274,903.

Marcell, Richard L., to Halcon International Inc. Recovery of boric acid for reuse in the oxidation of hydrocarbons. 3,275,695, 9–27–66, Cl. 260—631.

Marconi Co. Ltd., The: *See*—
Kitchin, Harry D. 3,275,847.

Markert, Wallace, Jr.: *See*—
Campbell, Thomas M., Jr., and Markert. 3,275,523.

Marks, William J. Scraper device. 3,274,684, 9–27–66, Cl. 30—171.

Marnett, Lawrence F., R. J. Tenney, and J. B. Thompson, to C. J. Patterson Co. Method for the protection of loci susceptible to the growth of undesired microorganisms. 3,275,503, 9–27–66, Cl. 167—22.

Maromatic Co., Inc.: *See*—
Roland, Max G. 3,274,673.

Marshall, Arthur N. Apparatus for speed indication. 3,276,-029, 9–27–66, Cl. 346—18.

Martell, Michael J., Jr., and A. S. Tomcufcik. Novel 2-carboxamido - N-imidomethyl-6-demethyl-6-deoxytetracyclines. 3,275,652, 9–27–66, Cl. 260—326.

Martin, James. Apparatus for controlling aircraft. 3,275,267, 9–27–66, Cl. 244—75.

Martin, John C., to General Motors Corp. Domestic electric appliance. 3,275,798, 9–27–66, Cl. 219—312.

Martin, John C.: *See*—
MacRae, Allister S., and Martin. 3,275,170.

Martin, Paul W., to The Airetool Mfg. Co. Air-powered tool with overload cutoff. 3,275,116, 9–27–66, Cl. 192—150.

Martin, Philip T., to Industrial Nucleonics Corp. Radiation shutter collimator. 3,275,831, 9–27–66, Cl. 250—105.

Martin, Warner W., to The Lau Blower Co. Humidifier. 3,274,992, 9–27–66, Cl. 126—113.

Martin, Warner W., to The Lau Blower Co. Humidifier. 3,274,993, 9–27–66, Cl. 126—113.

Martin, William T.: *See*—
Endicott, Clarence J., and Martin. 3,275,518.

Martino, Lawrence A., to Monsanto Co. Parison severing method. 3,275,728, 9–27–66, Cl. 264—150.

Maschinenfabrik Moenus A.G.: *See*—
Keller, Hans-Otto, and Sommer. 3,274,963.

Mason, Julien J., to Westinghouse Electric Corp. Apparatus for heat-treating lamp filaments. 3,275,398, 9–27–66, Cl. 316—27.

Massey-Ferguson Inc.: *See*—
Bunting, Ernest V. 3,275,084.
Bunting, Ernest V., and Skiba. 3,275,085.

Massey, William M., and B. L. Pope, to E. I. du Pont de Nemours and Co. Adjustable profile chimney. 3,274,644, 9–27–66, Cl. 18—8.

Massinger, Heinz. Furniture frame construction. 3,275,394, 9–27–66, Cl. 312—257.

Master Specialties Co.: *See*—
Roeser, John O. 3,275,779.

Mastrobattista, Alex A., and W. J. Fordon, to Johns-Manville Corp. Seal and method of manufacture. 3,275,331, 9–27–66, Cl. 277—1.

Matheny, L. W.: *See*—
Herr, Charles H. 3,274,717.

Matsukura, Yasuo, and J. Oda, to Nippon Electric Co. Ltd. Multiple hetero-layer composite semiconductor device. 3,275,906, 9–27–66, Cl. 317—234.

Matthews, Dean A., to Allis-Chalmers Mfg. Co. Electric truck battery compartment. 3,275,092, 9–27–66, Cl. 180—68.5.

Mattox, William J., to Esso Research and Engineering Co. Crystalline zeolite composition and method of preparation thereof. 3,275,571, 9–27–66, Cl. 252—451.

Mauz, Otto, and E. Prinz, to Hercules Inc. Stabilized polyolefin containing a mixed ester of a polyfunctional alcohol with a phenol carboxylic acid and an aliphatic carboxylic acid. 3,275,597, 9–27–66, Cl. 260—45.85.

Maxwell, Guy F.: *See*—
Hotine, William, and Maxwell. 3,275,736.

May, Evalyn S., to Federal-Mogul-Corp. Oil seal. 3,275,332, 9–27–66, Cl. 277—37.

May, Harry C., to Westinghouse Air Brake Co. Combined dynamic and fluid pressure brake system for railway vehicles. 3,275,380, 9–27–66, Cl. 303—3.

Mayer, Edward F., to Xerox Corp. Method of image reproduction utilizing a uniform releasable surface film. 3,275,-436, 9–27–66, Cl. 96—1.

Mayer & Phelps Ltd.: *See*—
Pile Charles E. 3,274,658.

Mayes, Fred M., and J. W. Jones, to Sun Oil Co. Data transmission system. 3,275,805, 9–27–66, Cl. 235—61.11.

Mayes, Paul E., and R. D. Grant, to JFD Electronics Corp. High-gain backfire antenna array. 3,276,028, 9–27–66, Cl. 343—792.5.

Mayhew, George C.: *See*—
Paul, Wortley B., Jr., and Mayhew. 3,274,742.

Mayland, Bertrand J., to Girdler Corp. Removal of carbon dioxide and hydrogen sulfide from gaseous mixtures. 3,275,403, 9–27–66, Cl. 23—3.

Mayo, Edmund S., Jr., to E. I. du Pont de Nemours and Co. Apparatus for detecting gas. 3,276,004, 9–27–66, Cl. 340—237.

McAlpin, Silvan E., to Socony Mobil Oil Co., Inc. Dynamically obtaining normal moveout correction. 3,275,979, 9–27–66, Cl. 340—15.5.

McArthur George Jr., to The Sunray Stove Co. Gas range. 3,274,988, 9–27–66, Cl. 126—39.

McBride, Richard T., to E. I. du Pont de Nemours and Co. Surface treatment of shaped organic polymeric structures. 3,275,540, 9–27–66, Cl. 204—165.

McCain, William B., and J. F. Cosgrove, to Chicago Machinery Laboratory, Inc. Signature machine. 3,275,210, 9–27–66, 9–27–66, Cl. 227—82.

McCain, William B., and R. I. Bulka, to Chicago Machinery Laboratory, Inc. Trimming machine. 3,275,118, 9–27–66, Cl. 198—19.

McCall, Patrick P., to Esso Research and Engineering Co. Hydrofining of microcrystalline wax. 3,275,545, 9–27–66, Cl. 208—27.

McCarthy, Charles A. Pillow cases. 3,274,623, 9–27–66, Cl. 5—339.

McCarthy, Donald A.: *See*—
Tedeschi, William R., and McCarthy. 3,275,201.

McCarthy, John A., to United States Steel Corp. Method of forming a brown coating on steel articles. 3,275,536, 9–27–66, Cl. 204—56.

McCaughey William S., to AMP Inc. Connector for a flexible flat cable. 3,275,968, 9–27–66, Cl. 339—89.

McClune, James W., and W. F. Green, to Special Devices, Inc. Cavity radiator with a pyrotechnic charge that remains intact during and after combustion. 3,275,829, 9–27–66, Cl. 250—85.

McClure, Gerald L.: *See*—
Kozel, James A., and McClure. 3,275,033.

McCoy Frederic C.: *See*—
Knowles, Edwin C., Kay, and McCoy. 3,275,636.

McCulloch, Bryson: *See*—
Gallagher, John E., Crider, and McCulloch. 3,274,676.

McCulloch Corp.: *See*—
Robechaud, Gerald C. 3,275,307.

McCullough, John E., to Arthur D. Little, Inc. Nozzle system and fuel oil burner incorporating it. 3,275,059, 9–27–66, Cl. 158—28.

McCracken, Paul B., to Berkeley Pump Co. Control apparatus for adjusting pressure-flow characteristic of a pump. 3,274,938, 9–27–66, Cl. 103—11.

McDermid, William L.: *See*—
Dunn, William H., Fey, Kanal, McDermid, and Smith. 3,275,985.
Dunn, William H., Fey, Kanal, McDermid, and Smith. 3,275,986.

McDonald, Leighton S.: *See*—
Crabb, Clarence R., and McDonald. 3,275,549.

McDonnell Aircraft Corp.: *See*—
Dubusker, William, Pogorzelski, and Fridrich. 3,275,794.

McDowell-Wellman Engineering Co.: *See*—
Sabin, Raymond H., and Cheek. 3,275,169.

McGill, Richard A.: *See*—
Treiber, Walter C., and McGill. 3,274,874.

McGrath, Joseph J., and C. S. Tempalski, to Gulf Research & Development Co. Grease composition. 3,275,553, 9–27–66, Cl. 252—28.

McGrath, William L., to Carrier Corp. Air distribution system. 3,275,068, 9–27–66, Cl. 165—31.

McGraw-Edison Co.: *See*—
Curtin, Paul J. 3,275,832.
Czech, Clifford F. 3,274,807.

McHugh, John W., and R. A. Baker, to P. R. Mallory & Co., Inc. Sealed electrolytic capacitor in hermetically sealed case. 3,275,902, 9–27–66, Cl. 317—230.

McIntosh, Keith S.: *See*—
Blanchard, Clayton H., and McIntosh. 3,275,913.

McKechnie, William H., to Dennison Mfg. Co. Self-locking box. 3,275,219, 9–27–66, Cl. 229—45.

McManus, Calvin J., and F. J. Upton, to Foster Wheeler Corp. Process for constructing a petroleum refinery. 3,274,745, 9–27–66, Cl. 52—745.

McNeil Corp., The: *See*—
Brown, Arlie L., Cook, Hackney, Hulsey, Mueller, Wegmann, and Swanker. 3,275,327.

Medlinski, William W., to The Bendix Corp. Rapid correction motor control system of steady state flight errors. 3,275,917, 9–27–66, Cl. 318—18.

Meer, Winfried, to Siemens & Halske Aktiengesellschaft. Semiconductor P-N junction device and method of its manufacture. 3,275,482, 9–27–66, Cl. 148—177.

Megna, Ignazio S.: *See*—
Petropoulos, John C., and Megna. 3,275,599.

Meier, Johann H., to International Business Machines Corp. Tuning fork oscillator. 3,275,015, 9–27–66, Cl. 137—81.5.

Meijers, Pieter, to Gemeente's-Gravenhage. Diaphragm check valve. 3,275,291, 9–27–66, Cl. 251—331.

Meister, Jack B., and R. J. Staten, to Integrated Electronics Corp. Temperature sensing control means for ice making devices. 3,274,790, 9–27–66, Cl. 62—135.

Melpar, Inc.: *See*—
Conant, John E. 3,275,743.

Meltzer, Henry E. Heat shrinking apparatus. 3,275,799, 9–27–66, Cl. 219—342.

Membranfilter-Gesellschaft G.m.b.H. Fa.: *See*—
Maier, Karl H., and Voggel. 3,275,527.

Mendenhall, Charles E., and S. P. Chur, to Ampex Corp. Signal coupling systems for digital reproducing systems. 3,275,990, 9–27–66, Cl. 340—172.5.

Menell, Hans, to Continental Gummi-Werke Aktiengesellschaft. Pneumatic vehicle tire. 3,275,056, 9–27–66, Cl. 152—356.

Mennesson Bernard R. to Societe d'Appareils de Controle et d'Equipment des Moteurs S.a.c.e.M. Frames of bicycles, especially in those of bicycles provided with an auxiliary engine. 3,275,339, 9–27–66, Cl. 280—281.

Merck & Co., Inc.: *See*—
Engelhardt, Edward L. 3,275,689.
Engelhardt, Edward L., and Zell. 3,275,640.
Schultz, Everett M. 3,275,685.
Shen, Tsung-Ying. 3,275,644.
Shen, Tsung-Ying. 3,275,645.
Slates, Harry L., and Wendler. 3,275,648.

Merrett, John, to The Hoover Co. Induction heating coil. 3,275,784, 9–27–66, Cl. 219—10.79.

Merriam, Robert C. Helmet for water sports. 3,274,612, 9–27–66, Cl. 2—3.

Merrill, Olonzo D., Jr., to E. I. du Pont de Nemours and Co. Unwinding apparatus. 3,275,262, 9–27–66, Cl. 242—128.

Merritt, Robert B., and R. M. Trewhella, to General Electric Co. Sealed electrical assembly. 3,275,901, 9–27–66, Cl. 317—230.

Meshew, Allan D., to Azetec Mfg. Co. Manhole cover handling device. 3,275,299, 9–27–66, Cl. 254—131.

Messina, Salvatore J., and J. H. Pulliam. Explosive spearhead. 3,274,936, 9–27–66, Cl. 102—48.

Metalphoto Corp.: *See*—
Kempe, Robert A., and Szczepaniak. 3,275,440.

Methode Electronics, Inc.: *See*—
Schroeder, Duane A. 3,275,486.

Metzger, Hendrix W. Mattress. 3,274,625, 9–27–66, Cl 5—345.

Meyer, Andre J. Rotary liquid piston machines. 3,275,222, 9–27–66, Cl. 230—116.

Meyer, Carl X.: *See*—
Wince, Vearl S., and Meyer. 3,275,822.

Meyer, Gerald R., to himself and R. I. Ward, as joint tenants with right of survivorship. Hoisting truck having boom means comprising a tension fulcrum bar. 3,275,296, 9–27–66, Cl. 254—8.

Meyer, Kenneth I., and E. Beck, to Sperry Rand Corp. Conversion and ballast unit. 3,275,922, 9–27–66, Cl. 321—15.

Meyer, Raymond J., J. K. Jensen, and P. D. Wetrich, to Deere & Co. Transmission. 3,274,858, 9–27–66, Cl. 74—761.

Meyer, Ronald K. Examination light. 3,275,814, 9–27–66, Cl. 240—2.18.

Meyerand Russell G., Jr., and E. C. Lary, to United Aircraft Corp. Insulating vanes for linear MHD devices. 3,275,-859, 9–27–66, Cl. 310—11.

Meyercord Co., The: *See*—
Rathke, Harry C., and Briggs. 3,275,465.

Meyerhoff, Albert J.: *See*—
Cassidy, Carl R., and Meyerhoff. 3,275,930.

Meyerhoff, Albert J., to Burroughs Corp. Thin film superconducting transformers and circuits. 3,275,843, 9–27–66, Cl. 307—88.5.

Michaels, Frederick A.: *See*—
Vancha, John. 3,275,836.

Micromatic Home Corp.: *See*—
Czubak, Albin S. 3,274,861.

Middlemiss, Herbert, ½ to W. H. Howson Ltd. Photographic half-tone contact screens. 3,275,445, 9–27–66, Cl. 96—116.

Midland-Ross Corp.: *See*—
Schultz, Forrest O. E. 3,275,225.

Milchem Inc.: *See*—
Kern, Curtis R., and Rice. 3,275,552.

Mileikowsky, Hovav, C. Horvath, and S. Rosner, to Burndy Corp. Brushing machine. 3,274,630, 9–27–66, Cl. 15—21.

Mill, George S., to Shell Oil Co. Iodine recovery from organic iodides. 3,275,704, 9–27–66, Cl. 260—673.

Miller, Imrich M., to Universal Mfg. Corp. Thermal protective arrangement for inductive devices. 3,275,774, 9–27–66, Cl. 200—142.

Miller, Robert H.: *See*—
Wilson, William B. 3,275,365.

Milne, James G., Jr.: *See*—
Morrissey, Thomas G., Davis, and Short. 3,275,101.

Minnesota Mining and Mfg. Co.: *See*—
Vanstrum, Robert C., Harrington, and Tung. 3,274,888.

Mischon, Lester, and A. Agulnek, to The Singer Co. Pattern controlling mechanism for knitting machines. 3,274,800, 9–27–66, Cl. 66—50.

Mitchell, Harold C., to Air Reduction Co., Inc. Process for removing congealed impurities from a gas expander. 3,274,-789, 9–27–66, Cl. 62—85.

Mittelstaedt, Georg S. Radiographic intensifying means. 3,275,828, 9–27–66, Cl. 250—80.

Mitchel & King Ltd.: *See*—
Knox, Arthur W. 3,274,685.

Mitsubishi Denki Kabushiki Kaiba: *See*—
Morioka, Shoji. 3,275,778.

Mitsui Osk Lines, Ltd.: *See*—
Igaue, Toshio, and Shimodera. 3,274,967.

Mittenhuber, Robert: *See*—
Rehm, Josef, and Mittenhuber. 3,275,958.

Mixon, James L., Jr., to AMP Inc. Electrical stirrup connector. 3,275,974, 9–27–66, Cl. 339—243.

Mizer, Bill L., R. T., and D. E. Whitehurst, to Builders Equipment Co. Slump block producing machine. 3,274,660, 9–27–66, Cl. 25—41.

Mizer, Robert T.: *See*—
Mizer, Bill L., R. T., and Whitehurst. 3,274,660.

Moffitt, Guy R., Jr., and M. Weiss, to Barnes Engineering Co. Constant current system for photoelectric multiplier tube. 3,275,833, 9–27–66, Cl. 250—207.

Mondin, Henri: *See*—
Huyghe, Jean, and Mondin. 3,274,752.

Monnin, Philip V., to Ford Motor Co. Shock absorber and auxiliary spring unit. 3,275,312, 9–27–66, Cl. 267—8.

Monroe, Roger F., to The Dow Chemical Co. 2,3-epithiopropyl 1-ethynylcyclohexyl ether. 3,275,655, 9–27–66, Cl. 260—327.

Montagnon, Jean R., and G. Gourdon, to Societe Nouvelle Rica. Apparatus for the adsorptive recovery of solvents. 3,274,755, 9–27–66, Cl. 55—171.

Montecatini Societa Generale per l' Industria Mineraria e Chimica: *See*—
Pinamonti, Franco, and Maccone. 3,275,500.

Mobil Oil Corp.: *See*—
Baum, Lester A. H., Bruins, and Henschel. 3,275,585.
Coty, Vernon F. 3,275,610.
Foster, Manus R. 3,275,980.
Holsinger, Rudolph J., Reid, and Blake. 3,275,102.
Mosher, Donald K. 3,274,855.
Sharp, Lorid G. 3,275,076.
Traver, Alfred E., and MacDonald. 3,274,985.

Molex Products Co.: *See*—
Krehbiel, John H. 3,275,766.

Monsanto Chemicals Ltd.: *See*—
Brown, Joseph P. 3,275,628.

Monsanto Co.: *See*—
Balzer, Manuel M. 3,275,629.
Gash, Virgil W. 3,275,662.
Krantz, Leon. 3,274,617.
Langguth, Robert P. 3,275,566.
Leib, Robert I. 3,275,687.
Martino, Lawrence A. 3,275,728.
Mottus, Edward H., and Fields. 3,275,611.
Symes, William F. 3,275,630.
Weissenberger, Gustav. 3,275,659.

Montecatini Societa Generale per l' Industria Mineraria e Chimica: *See*—
Cappuccio, Vittorio E. 3,275,723.

Montgomery, Franklin L., and D. C. Remy, to E. I. du Pont de Nemours and Co. Polymers consisting of 1,3,4-oxadiazole rings linked by perfluoroalkylene and optionally, arylene radicals. 3,275,608, 9–27–66, Cl. 260—78.4.

Moore, Bennett J., to Magic Servant Products Co. Burner assembly. 3,275,245, 9–27–66, Cl. 239—399.

Moore, Donald L., and O. E. Snyder, to Hamilton Casco, Inc. Chair. 3,275,375, 9–27–66, Cl. 297—445.

Moore, Raymond W., Jr.: *See*—
Hoffman, Thomas E., Hogan, Lucas, and Moore. 3,274,788.

Moore Reed and Co. Ltd.: *See*—
Parkinson, Noel P. 3,275,961.

Moore, Robert E.: *See*—
Janoski, Edward J., and Moore. 3,275,700.

Moorefield, Herbert H.: *See*—
Klisheimer, John R., and Moorefield. 3,275,507.

Morain, Willard A., J. L. Ostborg, and D. White, to The Cooper-Bessemer Corp. Cryogenic expansion engine. 3,274,781, 9–27–66, Cl. 60—64.

Moran, Edward S., Sr. Intermittent drive unit. 3,274,845, 9–27–66, Cl. 74—394.

Morat, Franz, G.m.b.H.: *See*—
Schmidt, Richard, and Stocks. 3,274,802.
Schmidt, Richard. 3,274,803.

Morey, Everett D., to General Electric Co. Basket for automatic washing machine. 3,274,808, 9–27–66, Cl. 68—23.

Morin, Robert B., and B. G. Jackson, to Eli Lilly and Co. Penicillin conversion via sulfoxide. 3,275,626, 9–27–66, Cl. 260—243.

Morioka, Shoji, to Mitsubishi Denki Kabushiki Kaiba. Compressed-gas circuit interrupter with pressurized arcing chambers and downstream blast valve. 3,275,778, 9–27–66, Cl. 200—148.

Morris, George H. Spring release locking attachment for cultivator shanks. 3,275,086, 9–27–66, Cl. 172—266.

Morris, Rexford M., to Therm-O-Disc, Inc. Thermoelectric valve. 3,275,285, 9–27–66, Cl. 251—11.

Morris, Virgil W.: *See*—
Woods, Louis S., and Morris. 3,274,973.

Morrison, James C.: *See*—
Segall, Louis H., Morrison, and Knak. 3,275,884.

Morrison, Stanley R., to Honeywell Inc. Photosensitive accelerometer utilizing radiation pressure. 3,275,835, 9–27–66, Cl. 250—231.

Morrison, Thomas E. Stud locating device. 3,274,692, 9–27–66, Cl. 33—169.

Morrissey, Thomas G., G. B. Davis, Jr., and H. H. Short, 40% to J. G. Milne, Jr., 40% to H. H. Short, and 20% to G. B. Davis, Jr. Acoustic structural unit. 3,275,101, 9–27–66, Cl. 181—33.

Morse, Milton. Spherical transparent two-gun cathode ray tube. 3,275,882, 9–27–66, Cl. 315—13.

Moses, Kurt, and E. Hartog, to The Bendix Corp. Self-testing means for computer control signal attenuating devices. 3,275,810, 9–27–66, Cl. 235—151.31.

Mosher, Donald K., to Mobil Oil Corp. Sample chamber system. 3,274,835, 9–27–66, Cl. 73—422.

Mosler Research Products, Inc.: *See*—
Hansen, Donald E. 3,276,006.
Quist, Eric G., and Geis. 3,276,005.

Motorola, Inc.: *See*—
Bailey, Dean C. 3,275,846.
Carsello, Richard D., and Gunn. 3,275,938.
Csanky, Geza. 3,275,845.

Motorola, Inc.: *See*—Continued
Onodera, George C. 3,275,911.
Parker, Warren H. 3,275,904.
Phillips, Alvin B. 3,275,910.

Mottus, Edward H., and J. E. Fields, to Monsanto Co. Process for polymerizing unsaturated monomers with a catalyst comprising an organoboron compound, a peroxygen compound and an amine. 3,275,611, 9–27–66, Cl. 260—80.5.

Moulder, Morgan M. Dispenser of treatment materials interposable between two garden hose portions. 3,275,194, 9–27–66, Cl. 222—48.

Mountjoy, Garrard, to Baldwin Electronics, Inc. Method and means for correcting output indications of an encoder. 3,276,010, 9–27–66, Cl. 340—347.

M-O Valve Co. Ltd., The: *See*—
Ferrari, Ronald L., and Reddish. 3,275,868.

Moyers, Ashton P.: *See*—
Moyers, Thomas E., H. C. and A. P. 3,275,046.

Moyers, Hugh C.: *See*—
Moyers, Thomas E., H. C. and A. P. 3,275,046.

Moyers, Thomas E., H. C., and A. P. Portable pulpwood cut-off and loading machine. 3,275,046, 9–27–66, Cl. 143—46.

Mueller Brass Co.: *See*—
Fuesslein, John R., Rader, and Roper. 3,274,747.

Mueller, Carl H.: *See*—
Brown, Arlie L., Cook, Hackney, Hulsey, Mueller, and Wegman. 3,275,327.

Mueller, Martin, to Seymour C. Graham. Lid arrangement apparatus. 3,275,121, 9–27–66, Cl. 198—33.

Müller, Adam, to Dr. A. Muller, Chemisches Laboratorium. Process for the preparation of highly concentrated dry hops by freezing.

Muller, Dr. A., Chemisches Laboratorium: *See*—
Müller, Adam. 3,275,447.

Müller Erich, and K. Hasspacher, to Boehringer Ingelheim G.m.b.H. Derivatives of 7-sulfamyl-3,4-dihydro-1,2,4-benzothiadiazine-1,1-dioxide and process for their preparation. 3,275,625, 9–27–66, Cl. 260—243.

Muller, Georges, to Roussel-UCLAF, S.A. Novel 18,20-β-dioxygenated-5β-pregnanes. 3,275,620, 9–27–66, Cl. 260—239.55.

Muller, Kurt: *See*—
Vielmo, Oskar, and Muller. 3,275,385.

Mullin, Doyle D., to General Mills, Inc. Inflatable support structure. 3,276,017, 9–27–66, Cl. 343—18.

Multifol Patentverwertungs-A.G.: *See*—
Utz, Kastulus. 3,275,725.

Munch, Erhardt, to Joh. Kleinevefers Sohne Maschinenfabrik. Machine for treating paper webs, especially satining or glazing calender. 3,274,923, 9–27–66, Cl. 100—70.

Murakami, Paul. Car door actuator device. 3,274,732, 9–27–66, Cl. 49—280.

Murata, Yoshi, to Hitachi Ltd. Single multi-electrode electron tube having a disc shaped ceramic stem with a recessed portion in one face thereof said recess portion having a metal layer thereon. 3,275,877, 9–27–66, Cl. 313—250.

Murray Mfg. Corp.: *See*—
Knecht, George D. 3,275,965.

Murawsky, Fritz: *See*—
Schubert, Manfred, and Murawsky. 3,274,409.

Murray, James F.: *See*—
Leone, Nick A. 3,274,774.

Murray, Betty J.: *See*—
Leone, Nick A. 3,274,774.

Myer, Jon H., to Hughes Aircraft Co. Support structure for laser rods. 3,275,273, 9–27–66, Cl. 248—264.

Myer, Oscar & Co., Inc.: *See*—
Vedvik, Andrew H. 3,275,165.

Myers, Howard A. Sponge mops. 3,274,635, 9–27–66, Cl. 15—244.

Nagel, Herbert, to Wolverine Flexographic Mfg. Co. Rotary printing press with means for reversing cylinder rotation. 3,274,930, 9–27–66, Cl. 101—180.

Nagel, Herbert, to Wolverine Flexographic Mfg. Co. Reversible one way clutch. 3,275,112, 9–27–66, Cl. 192—44.

Naito, Kenichi: *See*—
Hamamura, Yasuji, Hayashiya, and Naito. 3,275,446.

Nash, Alan R. B. Rotary dampers. 3,274,836, 9–27–66, Cl. 74—574.

Nash, Robert A., and J. F. Weidenheimer, to American Cyanamid Co. Stable calcium tetracycline compositions. 3,275,513, 9–27–66, Cl. 167—65.

National Distillers and Chemical Corp.: *See*—
Corbett, Herbert O. 3,275,039.
Hammond, John E. 3,275,616.

National Rejectors, Inc.: *See*—
Cahill, Bernard S. 3,275,138.

National-Standard Co.: *See*—
Lang, Ernest U., and Mallory. 3,275,111.

National Tank Co.: *See*—
Rosso, John B., and Seaver. 3,275,898.

Naylor, Straut W. Upright crop dryer. 3,274,699, 9–27–66, Cl. 34—56.

Neagle, Richard, to Edison. Assemblable and disassemblable partition. 3,274,741, 9–27–66, Cl. 52—242.

Nedschroef Octrooi Maatschapij, N. V.: *See*—
Van de Meerendonk, Gerardus C. 3,274,626.

Nee, Thomas F., to Avien, Inc. Apparatus for containing a non-rigid or fluid material. 3,275,418, 9–27–66, Cl. 23—281.

Neely, Charles W., to Neely Mfg. Co., Inc. Garment cover. 3,275,128, 9–27–66, Cl. 206—7.

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Neff, Robert E., to Devices Inc. Clear barrel cartridge fuse. 3,275,772, 9–27–66, Cl. 200—129.

Neilson, William J., and J. F. Fischer, to Smith Industries International, Inc. Carburized drill bit bearing. 3,275,389, 9–27–66, Cl. 308—8.2.

Nelson, Wayne F., and G. R. Boyd, to Koehring Co. Valve release mechanism for a well device. 3,275,080, 9–27–66, Cl. 166—225.

Nennerfelt, Carl B., to North Electric Co. Party line adapter for four-conductor switching system. 3,275,751, 9–27–66, Cl. 179—17.

Neumann, Peter G., to Bell Telephone Laboratories Inc. Load sharing clock supplies. 3,275,992, 9–27–66, Cl. 340—172.5.

Newberry, Sterling P., to General Electric Co. Process and apparatus for producing particles by electron melting and ultrasonic agitation. 3,275,787, 9–27–66, Cl. 219—69.

Newman, Douglas A., to Columbia Ribbon and Carbon Mfg. Co., Inc. Planographic printing plate. 3,274,928, 9–27–66, Cl. 101—149.2.

Newman, Douglas A., to Columbia Ribbon and Carbon Mfg. Co., Inc. Planographic printing plate and processes. 3,274,929, 9–27–66, Cl. 101—149.2.

Nichols, Gordon E., to Winthrop-Atkins Co., Inc. Easel-type mount. 3,275,280, 9–27–66, Cl. 248—459.

Nicklas, William H.: *See*—
Knoll, Marvin E., and Nicklas. 3,275,748.

Niemitz, Gerhard, to Kennedy Van Saun Mfg. & Eng. Corp. Stationary circular contact cooler for calcined lime and other materials. 3,274,701, 9–27–66, Cl. 34—164.

Niese, Leo J., to Toledo Scale Corp. Checkweighing and assorting system having a tiltable conveyor belt. 3,275,135, 9–27–66, Cl. 209—74.

Nikles, Erwin: *See*—
Widmer, Gustav, Batzer, and Nikles. 3,275,661.

Nilles, John D., to Honeywell Inc. Vibration damping pneumatic control device. 3,275,238, 9–27–66, Cl. 236—87.

Nippon Electric Co, Ltd.: *See*—
Kunihiro, Toshihiro, and Shimasaki. 3,275,749.
Matsukura, Yasuo, and Oda. 3,275,906.

Noerdinger, Claude J. Inflatable air mattress. 3,274,624, 9–27–66, Cl. 5—345.

Noguchi, Masaaki, and S. Sakakibara, to To Yota Motors Co., Ltd. Two-cycle two-cylinder internal combustion engine. 3,274,982, 9–27–66, Cl. 123—56.

Nord-Aviation Societe Nationale de Constructions Aeronautiques: *See*—
Ravel, Maurice. 3,274,776.

Nordsieck, Arnold T., to General Motors Corp. Method of producing a spherical Gyro rotor. 3,274,666, 9–27–66, Cl. 29—148.4.

North American Coal Corp., The: *See*—
Clark, Ezekail L. 3,275,405.

North American Philips Co., Inc.: *See*—
Hughes, Ray C. 3,275,557.
Spaapen, Joseph B. M., and Verhoeven. 3,275,539.
Van Oostrom, Antonius G. J., and Venema. 3,275,865.

North Electric Co.: *See*—
Nennerfelt, Carl B. 3,275,751.

Norton, Elliott M.: *See*—
Fodor, Ferenz H. 3,275,863.

Nossal, Fred, and M. Klein, to Ferdinand Gutmann & Co. Low vapor permeability container closure including push-out tab for forming pour mouth and method for making same. 3,275,203, 9–27–66, Cl. 222—541.

Nutton, Leonard C.: *See*—
Sturges, Nigel, and Nutton. 3,275,204.

Nutten, Warren D., to The Tillotson Mfg. Co. Fuel feed and charge forming apparatus with priming device. 3,275,305, 9–27–66, Cl. 261—34.

Oberg Mfg. Co., Inc.: *See*—
Vecchi, John C. 3,274,878.

O'Brien, Edward J., and R. P. Williams, to Spraying Systems Co. Modified full cone nozzle. 3,275,248, 9–27–66, Cl. 239—487.

O'Connell, Robert A.: *See*—
Cornell, Dudley E., III, and O'Connell. 3,274,704.

Oda, Jyoji: *See*—
Matsukura, Yasuo, and Oda. 3,275,906.

Oesterle, Kurt M. Apparatus for the electrostatic precipitation of coating material. 3,275,239, 9–27–66, Cl. 239—15.

Ohl, David, to Standard Pressed Steel Co. Compression locking nut. 3,275,054, 9–27–66, Cl. 151—5.

Office National d'Etudes et de Recherches Arospatiales: *See*—
Berton, Pierre. 3,274,775.

Ohmega Laboratories: *See*—
Demarest, Philip C., Foster, and Crump. 3,275,879.

Ohsol, Ernest O.: *See*—
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Ohsol, Ernest O., to Haveg Industries, Inc. Method of extruding foamed fibers having outer skins integral therewith. 3,275,720, 9–27–66, Cl. 264—48.

Okuda, Noriyuki: *See*—
Tsunoda, Kiyoshi, and Okuda. 3,275,508.

Okumura, Shinji: *See*—
Shiro, Teruo, Konishi, and Okumura. 3,275,526.

O'Leary, John M., Jr., to Container Corp. of America. Process for incorporating additives into polyolefins. 3,275,715, 9–27–66, Cl. 260—889.

Olin Mathieson Chemical Corp.: *See*—
Churchill, John W., and Jenney. 3,275,697.
Collins, Raymond L. 3,275,216.
Schwarer, Richard F., Kongpricha, and Preusse. 3,275,418.

Oliveira, Fabio de A. Method for injecting sand in moulding machines. 3,274,651, 9–27–66, Cl. 22—193.

Ollivier, Louis A., and J. B Skitt, Jr., to Fisher & Porter Co. Differential pressure transmitters. 3,274,833, 9–27–66, Cl. 73—407.

Olmsted, Harold H.: *See*—
Jimenez, James A., and Olmsted. 3,274,959.

Olson, Russell W.: *See*—
Gogarty, William B., and Olson. 3,275,075.

O'Mara, Joseph B., and R. G. D'Ascoli, to Anaconda Wire and Cable Co. Cable jointing template. 3,274,688, 9–27–66, Cl. 33—112.

Oney, John. Weed guard for treble hook. 3,274,726, 9–27–66, Cl. 43—43.4.

Onodera, George C., to Motorola, Inc. Semiconductor current limiter. 3,275,911, 9–27–66, Cl. 317—235.

Oppenheimer, Seymour, to Tee-Pak, Inc. Natural gut-colored fibrous meat casing. 3,275,456, 9–27–66, Cl. 99—176.

Optner, Philip S., and R. E. Kresge, to Lermer Packaging Corp. Mailing container construction. 3,275,180, 9–27–66, Cl. 220—17.

Ordower, Robert, to International Business Machines Corp. Oscillator driving a resonant circuit with a square wave and having negative feedback. 3,276,032, 9–27–66, Cl. 346—74.

Organon Inc.: *See*—
De Vries, Jan W. 3,275,515.
Siegmann, Cornelis M. 3,275,666.

Ort, George M., to A. B. Dick Co. Offset erasing fluid. 3,275,563, 9–27–66, Cl. 252—171.

Oskerka, Nick, Jr.: *See*—
Johanson, Bengt J., and Oskerka. 3,275,970.

Ostborg, John L.: *See*—
Morain, Willard A., Ostborg, and White. 3,274,781.

Ostwald, Fritz, to Alfred Teves Maschinen- und Armaturenfabrik KG. Fluid cushion. 3,275,314, 9–27–66, Cl. 267—64.

Oswald, Hendrikus J., and E. Turi, to Allied Chemical Corp. Cyanurate and isocyanurate stabilized halogen-containing olefin polymer compositions. 3,275,592, 9–27–66, Cl. 260—45.8.

Oswald, William C.: *See*—
Radke, Arthur O., Oswald, and Champa. 3,275,372.

O'Sullivan, Thomas F.: *See*—
Palchik, Edward H., O'Sullivan, and Tucker. 3,274,978.

Otken, Edwin J., to Good Humor Corp. Comestible. 3,274,958, 9–27–66, Cl. 107—54.

Otto, Hans-Werner: *See*—
Siebel, Hans P., and Otto. 3,275,712.

Ourednik, Frank: *See*—
Hirsch, Leon C., and Ourednik. 3,275,211.

Owens-Illinois, Inc.: *See*—
Lusher, Kenneth G., and Wells. 3,274,927.

Oyo Chishitsu Co. Ltd.: *See*—
Kaneko, Tetsuichi. 3,275,983.

Oxel, Berton R., to Dyfoam Corp. Apparatus for determining the expansive pressure of molded polystyrene beads. 3,274,643, 9–27–66, Cl. 18—4.

Pachmayr, Frank A. Detachable firearm recoil pads. 3,274,725, 9–27–66, Cl. 42—74.

Pack, Albert H.: *See*—
Leatham, Earl, Pack, and Weaver. 3,275,410.

Pacl, Robert A., Jr., to Sperry Rand Corp. Constant energy pulse generator. 3,275,841, 9–27–66, Cl. 307—88.

Padde Pty. Ltd.: *See*—
David, Harold G. 3,274,734.

Paige Co., The: *See*—
Paige, Richard E. 3,275,215.

Paige, Richard E., to The Paige Co. Container. 3,275,215, 9–27–66, Cl. 229—31.

Palchik, Edward H., T. F. O'Sullivan, and W. Tucker, to The Lummus Co. Vertical tube fluid heater. 3,274,978, 9–27–66, Cl. 122—356.

Paliyenko, Paul: *See*—
Macleod, Roderick B., and Paliyenko. 3,275,732.

Palmquist, Carl W.: *See*—
Waeldner, William J., and Palmquist. 3,274,916.

Pampus, Gottfried, N. Schön, and J. Witte, to Farbenfabriken Bayer Aktiengesellschaft. Process of producing cis-1,4 polybutadiene with a catalyst containing an organic iodine compound. 3,275,614, 9–27–66, Cl. 260—94.3.

Panochyk, Ralph G., to Automatic Canteen Co. of America. Information display panel. 3,274,718, 9–27–66, Cl. 40—124.

Papersch, Viktor, to G. D. Searle & Co. 7-hydroxy-2,4-dioxo-1,2,3,4,5,6-hexahydropyrido[2,3-d]-pyrimidines. 3,275,634. 9–27–66, Cl. 260—256.4.

Papesch, Viktor, to G. D. Searle & Co. 7-hydroxy-2,4-dioxo-1,2,3,4,5,6-hexahydropyrido [2,3-d]-pyrimidines. 3,275,634, 9–27–66, Cl. 260—256.4.

Paquette, Leo A., to The Upjohn Co. 2-aza-bicyclo[3.2.0]hept-6-ens-3-ones and process for their production. 3,275,653. 9–27–66, Cl. 260—326.5.

Parish, Clyde E., to Signal Oil and Gas Co. Dehydration of alcohols. 3,275,698, 9–27–66, Cl. 260—666.

Parker, John M.: *See*—
Wasson, Burton K., and Parker. 3,275,660.

Parker Mfg. Co.: *See*—
Johnson, Oscar H. 3,275,212.

Parker Pen Co., The: *See*—
Dehlsen, James G. P. 3,274,975.

Parker, Warren H., to Motorola, Inc. Semiconductor device. 3,275,904, 9–27–66, Cl. 317—234.

Parkinson, Lee D. Wire dispensing reel. 3,275,263, 9–27–66, Cl. 242—129.

Parkinson, Noel P., to Moore Reed and Co. Ltd. Wiper lift encoders. 3,275,961, 9–27–66, Cl. 335—106.

Parks, Mercer H.: *See*—
Smith, Floyd A., Graybeal, and Parks. 3,275,077.

Parman, Henry O., to Electrolux Corp. Disposable vacuum cleaner dust containers. 3,274,758, 9–27–66, Cl. 55—279.

Parmater, Lee W., to Kal-Equip Co., Inc. R.P.M. dwell angle and point resistance tester. 3,275,932, 9–27–66, Cl. 324—16.

Parola, Jean: *See*—
Delacour, Jacques, and Parola. 3,275,300.

Parr, Edward L. Pump actuated by ocean swells. 3,274,941, 9–27–66, Cl. 103—68.

Parsons, Frederick L. Screw vane pump. 3,274,944, 9–27–66, Cl. 103—130.

Pascard, Roger, to Commissariat a l'Energie Atomique. Process of fabrication of sintered compounds based on uranium and plutonium. 3,275,564, 9-27-66, Cl. 252—301.1.

Patent Concern N.V.: *See*—
Van der Lely, Cornelis. 3,274,926.

Patent License Corp.: *See*—
Zimmerman, Edward C., and Aleksa. 3,275,823.

Patterson, C. J., Co.: *See*—
Marnett, Lawrence F., Tenney, and Thompson. 3,275,503.

Patterson, James M., Jr., to Farrington Business Machines Corp. Printing apparatus. 3,274,931, 9-27-66, Cl. 101—269.

Paul, Wortley B., Jr., and G. C. Mayhew, to General Refractories Co. Refractory wall construction. 3,274,742, 9-27-66, Cl. 52—245.

Pavey, Arthur R. B., A. Puchnarewicz, and J. Katavolos, to U.S. Industries Inc. Engineering Ltd. Teaching machines. 3,274,703, 9-27-66, Cl. 35—9.

Pavey, George M., Jr., to Sonic Engineering Co. Marine seismic cable system. 3,275,097, 9-27-66, Cl. 181—.5.

Pawl, Walter S. Hand combined vehicle steering, power, and braking control handle. 3,275,093, 9-27-66, Cl. 180—77.

Peaslee, Robert L., and C. C. Tennenhouse, to Wall Colmonoy Corp. Spray apparatus. 3,275,240, 9-27-66, Cl. 239—61.

Peck, David W.: *See*—
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Pedjac, Joseph J., and C. T. Pumpelly, to The Dow Chemical Co. Flame resistant urethane polymer compositions of improved dimensional stability containing a pentahalophenyl ester and an antimony compound. 3,275,578, 9-27-66, Cl. 260—2.5.

Peek, Vernon E.: *See*—
Flynn, Gordon L., Kedd, and Peek. 3,275,738.

Peelbond Products, Inc.: *See*—
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Peerless of America, Inc.: *See*—
Kritzer, Richard W. 3,274,797.
Kritzer, Richard W. 3,275,071.

Peickii, Vasalie L., D. A. Christensen, and J. H. Bradfute, to Federal Mogul Corp. Mechanical linkage joint. 3,275,352, 9-27-66, Cl. 287—85.

Peller, Paul: *See*—
Bailey, Bruce L., Karagoz, and Peller. 3,275,488.

Pennsalt Chemicals Corp.: *See*—
Saraceno, Anthony J. 3,275,574.
Smith, Harold V. 3,275,562.

Pera, Marlo A.: *See*—
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Peras, Lucien, to Regie Nationale des Usines Renault. Cylinder heads for internal combustion engines. 3,274,981, 9-27-66, Cl. 123—30.

Perez, Guillermo, to Royal Typewriter Co., Inc. Tape reeling apparatus. 3,275,258. 9-27-66, Cl. 242—75.5.

Perkins, William C.: *See*—
Karraker, David G., and Perkins. 3,275,421.

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Peters, Henrich: *See*—
Klug, Helmut, Kuchida, Peters, Schleede, and Winter. 3,275,596.

Peterson, Donald K.: *See*—
Pye, David J., and Peterson. 3,275,561.

Peterson, William H., to Pullman Inc. Hydraulic draft gear arrangement. 3,275,164, 9-27-66, Cl. 213—43.

Petin, Jean, to J. J. Carnaud & Forges de Basse-Indre, Etablissements. Process of anodizing aluminum. 3,275,537, 9-27-66. Cl. 204—58.

Petit, Elwood P., to Combustion Engineering, Inc. Soot blower operation for vapor generator furnaces. 3,274,979, 9-27-66, Cl. 122—392.

Petit, Pierre: *See*—
Grenier, Maurice, and Petit. 3,274,787.

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Petitt, William H., to The Harriman Mfg. Co. Adjustable disc harrow. 3,275,087, 9-27-66, Cl. 172—572.

Petropoulos, John C., and I. S. Megna, to American Cyanamid Co. Resinous composition and process for preparing the same 3,275,599, 9-27-66, Cl. 260—47.

Pfizer, Chas. & Co., Inc.: *See*—
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Pflanz, Herbert M., and Z. A. Wachta, to Allis-Chalmers Mfg. Co. Multipoint contacts employing the arc rotating principle. 3,275,777. 9-27-66, Cl. 200—144.

Pfeifer, Gunther, to The Bendix Corp. Fluid pressure servomotor. 3,275,381, 9-27-66, Cl. 303—7.

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Zaar, Stig G. B., Wallenius, and Lausing. 3,275,416.

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Phillips, Alvin B., to Motorola, Inc. Planar transistor with a relative higher-resistivity base region. 3,275,910, 9-27-66, Cl. 317—235.

Phillips, Bernard C., to The Tillotson Mfg. Co. Fuel feed and charge forming apparatus. 3,275,308, 9-27-66, Cl. 261—35.

Phillips, James A., and A. E. Schofield, to United States of America, Atomic Energy Commission. High Q power capacitor. 3,275,916, 9-27-66, Cl. 317—260.

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Bauer, Robert D. 3,275,707.
Box, E. O., Jr. 3,275,706.
Brundrett, Leon P. 3,275,304.
Collins, Russell L. 3,275,931.
Franks, Bobby G. 3,276,390.

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Goins, Robert R. 3,275,303.
Hutson, Tom, Jr. 3,275,702.
Kosinsky, Edward J. 3,275,731.
Sailors, Howard R. 3,275,565.
Stapp, Paul R. 3,275,706.
Tolin, Ernest D., and Fluegel. 3,275,809.

Phillips, Webb R., J. L. Gaddy, Jr., and R. E. Russell, Jr., to Central Transformer Corp. Gas cooled electrical equipment for distribution systems. 3,275,893, 9-27-66, Cl. 317—100.

Physical Sciences Corp.: *See*—
Kyle, James C. 3,274,937.

Phyfe, Lawson M.: *See*—
Vandivere, Edward J., and Phyfe. 3,275,802.

Paganis, James: *See*—
Weller, Ernest E., and Paganis. 3,275,587.

Piatti, Enrico: *See*—
Zwobada, Rene, Piatti, and Beal. 3,275,866.

Piazze, Thomas E., to Continental Can Co., Inc. Method of simultaneously punching a hole and piercing an edge portion in the lip of a plastic bag. 3,274,869, 9-27-66, Cl. 83—52.

Pickering, Alan H., F. C. Thompson, and A. J. Young, to English Electric Valve Co. Ltd. Microwave energy windows with conductive coating for dissipating static charges. 3,275,957, 9-27-66, Cl. 333—98.

Piehler, Wendell H. Collar construction for shirts. 3,274,615, 9-27-66, Cl. 2—141.

Pike, Herbert J., Jr.: *See*—
Schule, Elmer C., and Pike. 3,275,733.

Pile, Charles E., to Down Bros., and Mayer & Phelps Ltd. Clamping devices. 3,274,658, 9-27-66, Cl. 24—259.

Pilkington Bros. Ltd.: *See*—
Beattie, John R. 3,275,430.

Pillsbury Co., The: *See*—
Fritsberg, Edward L. 3,275,449.

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Pincus, Meyer, to Combustion Engineering, Inc. Fastening of attachments such as boiler casing to expanded metal. 3,275,073, 9-27-66, Cl. 165—136.

Pite, John J.: *See*—
Venison, Douglas M., and Pite. 3,274,022.

Pitts, Warren R., to Honeywell Inc. Reel mount. 3,275,255, 9-27-66, Cl. 242—68.3.

Pittsburgh Plate Glass Co.: *See*—
Rabenold, Ronald R. 3,275,734.

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Plunk, Rowe A. Releasable retrieving tool. 3,275,368, 9-27-66, Cl. 294—86.3.

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Poarch, Arthur E., and M. W. Kossoy, to Western Dairy Products, Inc. Method of making meat curing salt compositions. 3,275,459, 9-27-66, Cl. 99—222.

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Poehler, Guenter, H. J. Waldmann, and H. Corr, to Badische Anilin-& Soda-Fabrik Aktiengesellschaft. Recovery of pure cyclohexanone and cyclohexanol. 3,275,692, 9-27-66. Cl. 260—586.

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Reynolds, Jay B., to J. B. Reynolds, Inc. Ground heat steam generator. 3,274,769, 9-27-66, Cl. 60—26.

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Roberts, Cecil P., and J. C. Runco, to Anchor Hocking Glass Corp. Sealing machine and method. 3,274,748, 9–27–66, Cl. 53—38.
Roberts, Fred T., and R. E. Roberts, to Fred T. Roberts & Co. Reinforced helically corrugated flexible hose. 3,275,038, 9–27–66, Cl. 138—122.
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Rocher, Pierre M., and C. G. Thomas, to Lentilles Ophtalmiques Rationelles. Polishing of corneal lenses. 3,274,737, 9–27–66, Cl. 51—131.
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Rosanan, Michael. Method of removing meat from crabs. 3,274,040, 9–27–66, Cl. 17—45.
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Rost, Clarence A. Ambulatory amusement and exercising device. 3,275,319, 9–27–66, Cl. 272—70.1.
Roth, Donald J., J. E. Zeller, and H. V. Kindseth, to Bemis Bro, Bag Co. Pulp molding machine. 3,275,498, 9–27–66, Cl. 162—253.
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Rowan, Robert L. and Yetta. Method for treating intestinal disorders with a silicone composition enema. 3,275,509, 9–27–66, Cl. 167—56.
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Rubin, Leonard R., to Engelhard Industries, Inc. Gas purification apparatus. 3,274,754, 9–27–66, Cl. 55—158.
Rudolph, Martin. Method of and apparatus for blow molding large hollow bodies. 3,275,726, 9–27–66, Cl. 264—98.
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Sampson, George H., to Winthrop-Aktins Co., Inc. Easel structure. 3,275,281, 9–27–66, Cl. 248—465.
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Hall, Roger L. 3,275,747.
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Saraceno, Anthony J., to Pennsalt Chemicals Corp. Coordination polymers involving doubly bridged trivalent octahedral metals. 3,275,574, 9–27–66, Cl. 260—2.
Sardinas, Joseph L., to Chas. Pfizer & Co., Inc. Milk-curdling enzyme elaborated by endothia parasitica. 3,275,453, 9–27–66, Cl. 99—116.
Sasseen, John H., to Esso Production Research Co. Carrier-erase magnetic tape recording. 3,275,757, 9–27–66, Cl. 179—100.2.
Sasseen, John H., M. R. MacPhail, and C. R. Wischmeyer, to Esso Production Research Co. Apparatus for correlating dip log traces. 3,275,981, 9–27–66, Cl. 340—15.5.
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Sauer, Hans, to C. Zeiss. Combined viewfinder and range-finder with composite birefringement prism assembly for photographic cameras. 3,274,881, 9–27–66, Cl. 88—2.6.
Sauer, Louis E., to L. E. Sauer Machine Co. Rotary anvil construction. 3,274,873, 9–27–66, Cl. 83—347.
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Sauer, Louis E. 3,274,873.
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Sawada, Yasuhiro, to Yawata Iron & Steel Co., Ltd. Sintering apparatus with automatic control. 3,275,431, 9–27–66, Cl. 75—5.
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Schaeff, Karl, G.G., Maschinenfabrik, Firma: *See*—
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Schmermund, Alfred. Means for cutting a web to produce overlapped sheets. 3,274,870, 9–27–66, Cl. 83—88.
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Schrottle, Wilhelm, to H. Wacker and P. Wacker. Reversing means for percussion hammers. 3,275,088, 9–27–66, Cl. 173—110.
Schubert, Karl. Apparatus for the production of sheathed welding electrodes comprising an extruding machine. 3,274,649, 9–27–66, Cl. 18—13.
Schubert, Manfred, and F. Murawsky, to Zentrale Forschungsstelle Fur Die Kali-Industrie Beim VEB Kaliwerk "Glückauf" Sondershausen. Process for the production of magnesium oxide from magnesium chloride hydrate. 3,275,409, 9–27–66, Cl. 23—201.
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Schule, Elmer C., and H. J. Pike, Jr., to Allied Chemical Corp. Process for the production of hollow articles of polymerized lactams. 3,275,733, 9–27–66, Cl. 264—310.
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Schultz, Forrest O. E., to Midland-Ross Corp. Fluid compressor. 3,275,225, 9–27–66, Cl. 230—141.
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Schwartz, Robert A. D., and S. W. Lindheim. Framework structures for suspended ceiling and lighting systems. 3,275,817, 9–27–66, Cl. 240—9.
Schweiger, Richard G., to Kelco Co. Copolymerizates including methyl glucoside allyl ethers and process of preparing same. 3,275,581, 9–27–66, Cl. 260—17.4.
Schweitzer, Edmund O., Jr. System for measuring current flow in high voltage electric power lines for relaying and other purposes. 3,275,892, 9–27–66, Cl. 317—60.
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Sehring, Richard, and K. Zelle, to C. H. Sohn Boehringer. O,O-dialkyl-O-(2,5-dichloro-4-bromo-phenyl)-thiophosphates. 3,275,718, 9–27–66, Cl. 260—964.
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Shanks, John L., to Esso Production Research Co. Seismic signal processing by equalization of frequency components of a seismic signal. 3,275,978, 9–27–66, Cl. 340—15.5.

Sharp, Robert L., and W. E. Glassburn, to Westinghouse Electric Corp. Protection network. 3,275,889, 9–27–66, Cl. 317—14.

Shapiro, Louis, to First Pennsylvania Banking and Trust Co. H.V. power supply and measuring system having two feedback paths and responsive to high and low frequency output variations. 3,275,935, 9–27–66, Cl. 324—123.

Shappell, Stanley C., to Sylvania Electric Products Inc. Lead-in wire orienting apparatus. 3,275,119, 9–27–66, Cl. 198—33.

Sharp, Lorid G., to Mobil Oil Corp. Recovery of asphaltic-type petroleum from a subterranean reservoir. 3,275,076, 9–27–66, Cl. 166—11.

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Shen, Tsung-Ying, to Merck & Co., Inc. N-(1-acyl-3-indolyl)-acids. 3,275,645, 9–27–66, Cl. 260—304.

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Shlesinger, Bernard E., Jr., to AMP Inc. One piece plug-board plug connector. 3,275,973, 9–27–66, Cl. 339—217.

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Shoneberger, Francis J., to General Electric Co. Glass-to-metal and glass-to-ceramic seals. 3,275,358, 9–27–66, Cl. 287—189.365.

Shore, Richard C., 50% to S. S. Corbett, Jr. Vehicle with swingable load-supporting structure. 3,275,171, 9–27–66, Cl. 214—131.

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Sieberts, Karl, to Siemens & Halske Aktiengesellschaft. Method of permanently contacting an electronic semiconductor. 3,274,667, 9–27–66, Cl. 29—155.5.

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Siegmann, Cornelis M., to Organon Inc. 16-methylene-steriods of the estreme series. 3,275,666, 9–27–66, Cl. 260—397.5.

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Skeats, Wilfred F., to General Electric Co. Interrupted arc responsive protective equipment for series capacitors. 3,275,886, 9–27–66, Cl. 317—12.

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Smith, Raymond P., to Ford Motor Co. Motor vehicle. 3,275,370, 9–27–66, Cl. 296—63.

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Societe a Responsabilite Limitee: Resherches Etudes Production R.E.P.: *See*—
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Sortor, Charles H., to FMC Corp. Stereoscopic film viewing apparatus. 3,274,884, 9–27–66, Cl. 88—29.

Soteropulos, Gust, H. E. de Buhr, and B. W. Gustafson, to Deere & Co. Crop watering machine. 3,274,761, 9–27–66, Cl. 56—1.

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Stanley, Robert H., and D. Howden, to British Titan Products Co. Ltd. Lower valent titanium-aluminum halides. 3,275,568, 9–27–66, Cl. 252—442.

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Tantawi, Mohamed H., A. M. M. A. Rahman, and S. F. Guindi, to Societe Des Sucreries et de Distillerie D'Egykte. Continuous process for the extraction of sugar and apparatus therefor. 3,275,472, 9–27–66, Cl. 127—5.
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Wiggins, John H., Jr., to Esso Production Research Co. Vibration isolator. 3,274,798, 9–27–66. Cl. 64—1.

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Wilbushewich, Eugen. Apparatus for producing ice blocks in molds. 3,274,794. 9–27–66, Cl. 62—349.

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Williams, Beverly E., to Hodges Research and Development Co. Bacteria-resistant fabric. 3,275,041, 9–27–66, Cl. 139—424.

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Williams, Neil S. Sunshade for camera. 3,274,910, 9–27–66, Cl. 95—11.

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Nagel, Herbert. 3,275,112.

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Mayer, Edward F. 3,275,436.

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Zeller, Jean E.: *See*—
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Weil, Albert G., and W. A. and K. W. Zeuschner. 3,274,792.

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Kampert, Keith W., and Zimmerman. 3,275,173.

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CLASSIFICATION OF PATENTS

ISSUED SEPTEMBER 27, 1966

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,274,612	29–214	3,274,674	57–106	3,274,763	74–552	3,274,851	99– 94	3,275,451	126–110	3,274,989
9	3,274,613	267	3,274,675	142	3,274,764	568	3,274,852	109	3,275,452		3,274,990
14	3,274,614	400	3,274,676	144	3,274,765	574	3,274,836	116	3,275,453		3,274,991
141	3,274,615	417	3,274,677	58–115	3,274,766	625	3,274,853	171	3,275,454	113	3,274,992
161	3,274,616	471.1	3,274,678	59– 79	3,274,767	677	3,274,854	174	3,275,455		3,274,993
301	3,274,617	473.1	3,274,679	60– 19	3,274,768	687	3,274,855	176	3,275,456	127– 5	3,275,472
4–112	3,274,618	509	3,274,680	26	3,274,769	733	3,274,856	192	3,275,457	128– 2	3,274,994
145	3,274,619	528	3,274,681	39.28	3,274,773	752	3,274,857	207	3,275,458		3,274,995
149	3,274,620	30– 34	3,274,682	39.34	3,274,774	761	3,274,858	222	3,275,459	78	3,274,996
172	3,274,621	51	3,274,683	39.47	3,274,775	796	3,274,859	404	3,274,920		3,274,997
287	3,274,622	171	3,274,684	39.74	3,274,776	829	3,274,860	100– 4	3,274,921	85	3,274,998
5–339	3,274,623	211	3,274,685	39.77	3,274,777	75– 5	3,275,431	52	3,274,922	156	3,274,999
345	3,274,624	348	3,274,686	52	3,274,778	60	3,275,432	70	3,274,923	272	3,275,000
	3,274,625	360	3,274,687	53	3,274,779	134	3,275,433	153	3,274,924	349	3,275,001
8– 4	3,275,400	33–112	3,274,688		3,274,780	176	3,275,434	186	3,274,925	581	3,275,002
54.2	3,275,401	125	3,274,689	64	3,274,781	201	3,275,435	188	3,274,926	129– 16.7	3,275,003
115.6	3,275,402	126.7	3,274,690	203	3,274,770	77– 58	3,274,861	101– 40	3,274,927		3,275,004
10– 12	3,274,626		3,274,691	225	3,274,772		3,274,862	149.2	3,274,928	24	3,275,005
96	3,274,627	169	3,274,692	251	3,274,771	67	3,274,863		3,274,929	131–183	3,275,006
12–146	3,274,628	174	3,274,693	61– 11	3,274,782	81– 90	3,274,864	180	3,274,930	132– 40	3,275,007
13– 25	3,275,735	205	3,274,694	35	3,274,783	185	3,274,865	269	3,274,931	136– 64	3,275,473
14– 71	3,274,629	215	3,274,695	36	3,274,784	82– 34	3,274,866	351	3,274,932	86	3,275,474
15– 21	3,274,630	226	3,274,696		3,274,785	39	3,274,867	102– 21.6	3,274,933		3,275,475
22	3,274,631	34– 36	3,274,697	62– 6	3,274,786	83– 5	3,274,868	38	3,274,934		3,275,476
29	3,274,632	48	3,274,698	23	3,274,787	52	3,274,869	41	3,274,935	90	3,275,477
88	3,274,633	56	3,274,699	45	3,274,788	88	3,274,870	48	3,274,936	148	3,275,478
198	3,274,634	104	3,274,700	85	3,274,789	99	3,274,871	70.2	3,274,937	233	3,275,479
244	3,274,635	164	3,274,701	135	3,274,790	162	3,274,872	103– 11	3,274,938	137– 25	3,275,008
306	3,274,636	171	3,274,702	137	3,274,791	347	3,274,873	25	3,274,939	36	3,275,009
522	3,274,637	35– 9	3,274,703	138	3,274,792	348	3,274,874		3,274,940	53	3,275,010
16– 86	3,274,638		3,274,704	151	3,274,793	411	3,274,875	68	3,274,941		3,275,011
17– 21	3,274,639	17	3,274,705	349	3,274,794	415	3,274,876	87	3,274,942	76	3,275,012
45	3,274,640	20	3,274,706	403	3,274,795	473	3,274,877	125	3,274,943	81.5	3,275,013
18– 1	3,274,641	62	3,274,707	473	3,274,796	698	3,274,878	130	3,274,944		3,275,014
2.7	3,274,642	36– 3	3,274,708	511	3,274,797	85– 5	3,274,879	136	3,274,945		3,275,015
4	3,274,643	10	3,274,709	64– 1	3,274,798	88– 1	3,274,880	161	3,274,946		3,275,016
8	3,274,644	37– 2	3,274,710	4	3,274,799	2.6	3,274,881	162	3,274,947	83	3,275,017
12	3,274,645	129	3,274,711	65– 4	3,275,428	14	3,274,882		3,274,948	88	3,275,018
	3,274,647	145	3,274,712	185	3,275,429		3,274,883		3,274,949	99	3,275,019
13	3,274,646		3,274,713	204	3,275,430	29	3,274,884		3,274,950	195	3,275,020
	3,274,648	38– 77	3,274,714	66– 50	3,274,800	56	3,274,885	104– 7	3,274,951	209	3,275,021
	3,274,649	40–102	3,274,715	125	3,274,801	57	3,274,886		3,274,952	221	3,275,022
22– 57.2	3,274,653	107	3,274,716	138	3,274,802		3,274,887	172	3,274,953	315	3,275,023
58	3,274,650	111	3,274,717	168	3,274,803	82	3,274,888	178	3,274,954		3,275,024
193	3,274,651	124	3,274,718	171	3,274,804	90– 12	3,274,889	105–224.1	3,274,955	330	3,275,025
	3,274,652	142	3,274,719	192	3,274,805	13	3,274,890	106– 38.22	3,275,460	408	3,275,026
23– 3	3,275,403	143	3,274,720		3,274,806	16	3,274,891	58	3,275,461	489	3,275,027
22	3,275,404	152	3,274,721	68– 12	3,274,807	24	3,274,892	196	3,275,462	527.6	3,275,028
142	3,275,405	158	3,274,722	23	3,274,808	91– 49	3,274,893	287	3,275,463	560	3,275,029
175	3,275,406	209	3,274,723	70–163	3,274,809	87	3,274,894	288	3,275,464	565	3,275,030
178	3,275,407	42– 16	3,274,724	288	3,274,810	179	3,274,895	107– 8	3,274,956	601	3,275,031
182	3,275,408	74	3,274,725	301	3,274,811	198	3,274,896	14	3,274,957	608	3,275,032
201	3,275,409	43– 43.4	3,274,726	72– 60	3,274,812	199	3,274,897	54	3,274,958	613	3,275,033
	3,275,410	44– 62	3,275,427	62	3,274,813	205	3,274,898	68	3,274,959	624.19	3,275,034
202	3,275,411	46– 16	3,274,727	74	3,274,814	265	3,274,899	110– 7	3,274,960	630.14	3,275,035
	3,275,412	29	3,274,728	152	3,274,815	298	3,274,900	56	3,274,961	636.1	3,275,036
203	3,275,413	232	3,274,729	189	3,274,816	392	3,274,901	112– 65	3,274,962	138– 46	3,275,037
204	3,275,414	47– 1	3,274,730	298	3,274,817	420	3,274,902	213	3,274,963	122	3,275,038
208	3,275,415	9	3,274,731	336	3,274,818	92– 13	3,274,903	113–121	3,274,964	148	3,275,039
230	3,275,416	49–280	3,274,732	421	3,274,819	99	3,274,904	114– 16	3,274,965	176	3,275,040
273	3,275,417	387	3,274,733	73– 61	3,274,820	93– 24	3,274,905	62	3,274,966	139–424	3,275,041
281	3,275,418	503	3,274,734	67.8	3,274,821	94– 39	3,274,906	75	3,274,967	141– 27	3,275,042
301	3,275,419	504	3,274,735	67.9	3,274,822	48	3,274,907	103	3,274,968	142	3,275,043
313	3,275,420	51–105	3,274,736	94	3,274,823		3,274,908	208	3,274,969	143– 6	3,275,044
319	3,275,421	131	3,274,737	95.5	3,274,824	95– 4.5	3,274,909	115– .5	3,274,970	37	3,275,045
325	3,275,422	165	3,274,738	100	3,274,825	11	3,274,910	117– 3.1	3,275,465	46	3,275,046
24–125	3,274,654	52–169	3,274,739	136	3,274,826	31	3,274,911	33.5	3,275,466	144– 32	3,275,047
196	3,274,655	208	3,274,740	139	3,274,827	44	3,274,912	46	3,275,467	115	3,275,048
	3,274,656	242	3,274,741	141	3,274,828		3,274,913	63	3,275,468	176	3,275,049
248	3,274,657	245	3,274,742	178	3,274,829		3,274,914	76	3,275,469	281	3,275,050
259	3,274,658	284	3,274,743	179	3,274,830	96– 1	3,275,436	106	3,275,470	146– 3	3,275,051
25– 2	3,274,659	704	3,274,744	194	3,274,831	29	3,275,437	169	3,275,471	236	3,275,052
41	3,274,660	745	3,274,745	339	3,274,832	35	3,275,438	118–239	3,274,971	148– 2	3,275,480
29– 1.32	3,274,661	53– 22	3,274,746	407	3,274,833	41	3,275,439	119– 48	3,274,972	127	3,275,481
25.19	3,274,662		3,274,747	419	3,274,834	66	3,275,440	51.11	3,274,973	177	3,275,482
25.42	3,274,663	38	3,274,748	422	3,274,835	75	3,275,441	103	3,274,974	149– 22	3,275,483
33	3,274,664	251	3,274,749	74– 5.7	3,274,837	90	3,275,442	120– 1	3,274,975	38	3,275,484
	3,274,665	55– 16	3,274,750	54	3,274,838		3,275,443	42.13	3,274,976	47	3,275,485
148.4	3,274,666	33	3,274,751	102	3,274,839	105	3,275,444	122–240	3,274,977	150– 42	3,275,053
155.5	3,274,667	89	3,274,752	217	3,274,840	116	3,275,445	356	3,274,978	151– 5	3,275,054
	3,274,668	111	3,274,753	242.13	3,274,841	98– 2	3,274,915	392	3,274,979	37	3,275,055
	3,274,670	158	3,274,754	335	3,274,842	40	3,274,916	123– 8	3,274,980	152–356	3,275,056
155.7	3,274,669	171	3,274,755		3,274,843	59	3,274,917	30	3,274,981	156– 3	3,275,486
157	3,274,671	182	3,274,756	384	3,274,844	62	3,274,918	56	3,274,982	72	3,275,487
157.3	3,274,672	238	3,274,757	394	3,274,845	94	3,274,919	90	3,274,983	89	3,275,488
183	3,275,423	279	3,274,758	422	3,274,846	99– 2	3,275,446	124	3,274,984	181	3,275,489
183.5	3,275,424	482	3,274,759	425	3,274,847	50.5	3,275,447	139	3,274,985	294	3,275,490
	3,275,425	491	3,274,760	472	3,274,848	77.1	3,275,448	124– 27	3,274,986	313	3,275,491
	3,275,426	56– 1	3,274,761	480	3,274,849	80	3,275,449	126– 25	3,274,987	158– 11	3,275,057
211	3,274,673	25.4	3,274,762	501	3,274,850	94	3,275,450	39	3,274,988	28	3,275,058

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3.275.328	3.275.761	38 : 3.274.801	3.275.006	3.275.982	3.275.679
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3.275.360	3.275.767	3.275.235	3.275.076	43 : 3.274.879	3.275.684
3.275.380	3.275.781	3.275.261	3.275.079	3.275.007	3.275.686
3.275.382	3.275.795	3.275.292	3.275.080	3.275.016	48 : 3.274.664
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3.275.405	3.275.813	3.275.425	3.275.096	44 : 3.276.003	3.274.746
3.275.410	3.275.818	3.275.919	3.275.097	45 : 3.274.620	3.274.774
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3.275.461	3.275.839	39 : 3.274.998	3.275.220	3.274.931	3.274.807
3.275.478	3.275.841	3.275.133	3.275.263	3.275.252	3.274.859
3.275.479	3.275.842	3.275.421	3.275.304	3.275.271	3.274.872
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3.275.536	3.275.844	41 : 3.274.644	3.275.417	3.275.743	3.275.031
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3.275.546	3.275.860	3.275.087	3.275.551	3.276.029	3.275.165
3.275.553	3.275.864	3.275.375	3.275.552	46 : 3.274.633	3.275.176
3.275.562	3.275.886	3.275.393	3.275.588	3.274.893	3.275.189
3.275.574	3.275.905	3.275.422	3.275.698	3.274.924	3.275.228
3.275.580	3.275.921	3.275.480	3.275.699	3.275.049	3.275.346
3.275.591	3.275.929	3.275.489	3.275.704	3.275.206	3.275.372
3.275.612	3.275.930	3.275.494	3.275.757	3.275.491	3.275.414
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3.275.685	3.275.954	3.274.698	3.275.805	3.275.525	3.275.764
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Design Patents

2 : 205.867	6 : 205.852	22 : 205.825	29 : 205.864	31 : 205.859	36 : 205.836
4 : 205.839	205.856	205.826	205.869	205.862	205.837
205.848	12 : 205.849	205.850	205.873	205.863	37 : 205.870
205.857	205.854	205.865	205.878	205.868	205.874
205.866	15 : 205.876	24 : 205.827	30 : 205.840	32 : 205.841	41 : 205.875
205.871	16 : 205.843	205.835	31 : 205.831	34 : 205.851	42 : 205.828
5 : 205.844	19 : 205.829	205.855	205.833	205.860	205.834
6 : 205.830	21 : 205.846	26 : 205.838	205.853	205.880	48 : 205.872
205.845	205.847	27 : 205.877			

Plant Patents

48 : 2.672

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 27, 1966 Volume 830 Number 4

TRADEMARKS

NOTICES

Termination of Daylight Saving Time

Attention is called to the Notice published in 824 O.G. 1199, March 22, 1966, as to the operation of the Patent Office on Daylight Saving Time. This operation will terminate on October 29, 1966.

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	28,840
Date of oldest new application	July 15, 1965
Date of oldest amended application (filing date)	July 6, 1962

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF (Acting), Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	7-15-65	2-24-64
(II) F. H. WETHERBEE (Acting), Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	9-25-65	7-6-62
Renewals (All Classes)	6-29-66	----------
Sec. 12(c) Publications (All Classes)	7-7-66	----------

Applications filed during the month of July—2,057

Registrations Issued ---------- 320—No. 815,660 to No. 815,979
Renewals Issued ---------- 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 213,826. Texas Farm Products Company, Nacogdoches, Tex. Filed Mar. 11, 1965.

LONE STAR

Owner of Reg. Nos. 278,243, 691,007, and others.

Class 1—Raw or Partly Prepared Materials

For Field Seeds for Planting Purposes.
First use 1945.

Class 10—Fertilizers

For Fertilizer.
First use 1930.

Class 18—Medicines and Pharmaceutical Preparations

For Range and Mineral Blocks; Vitamin and Mineral Enriched Feed and Supplements, Both Medicated and Non-Medicated; and Vitamins for Animals.
First use 1930.

Class 46—Foods and Ingredients of Foods

For Feeds for Domestic Animals, Poultry, Game Birds, Dogs, and Fish, and Bulk Ingredients Therefor—Namely, Processed Cereal Grains, Bone Meal, Beet Pulp, Salt, Grit, Lime, and the Like; Corn Meal; Edible Peanut Oil, and Cooking and Salad Oils.
First use 1930.

SN 226,496. Atlantic Products Corporation, Trenton, N.J. Filed Aug. 26, 1965.



Owner of Reg. Nos. 504,356 and 544,379.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Baggage.

Class 22—Games, Toys, and Sporting Goods

For Golf Bags.
First use December 1945.

SN 228,861. Abbey Rents, Los Angeles, Calif. Filed Sept. 29, 1965.

ABBEY RENTS

The word "Rents" is disclaimed apart from the mark as shown. Owner of Reg. No. 440,758.

Class 2—Receptacles

For Vacuum Jugs, Serving Trays, and Wash Tubs for Icing Beverages.
First use Jan. 1, 1945, on serving trays.

Class 4—Abrasives and Polishing Materials

For Sandpaper.
First use Aug. 1, 1961.

Class 6—Chemicals and Chemical Compositions

For Wallpaper Remover.
First use Aug. 1, 1961.

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Cooking and Ice Cube Kettles, Non-Electric Coffee Pots and Staples.
First use Jan. 1, 1960, on cooking and ice cube kettles.

Class 15—Oils and Greases

For Lantern and Stove Liquid Fuels and Candles.
First use Jan. 1, 1950, on candles.

Class 19—Vehicles

For Baby Carriages, Baby Strollers, Car Top Luggage Carriers, Wheel Barrows, Appliance Dollies, and Window-Type Car Coolers.
First use Jan. 1, 1950, on baby carriages.

Class 21—Electrical Apparatus, Machines, and Supplies

For Three Way Ground Adapters, Electric Drills, Extension Cords, Electric Hedge and Shrub Trimmers, Electric Car Polishers and Bonnets and Sanders Therefor, Floor Polishers, Belt Sanders and Replacement Belts Therefor, Rug Shampoo Machines and Appliances Therefor, Electric Saws and Sabre Saws and Hole Saws and Blades Therefor, Electric Vacuum Cleaners and Attachments, Electric Fans, Electric Pointers for Use in Lectures, Automatic Microphone Stands, Amplifiers, Intercom Equipment, Wireless Microphones, AM-FM Radios, Speakers, Horn and Stand, Lavalier Microphones, TV Sets, Walkie-Talkies, Closed Circuit TV Cameras, Readmission Lights, Megaphone-Loud Hailers, Electric Coffee Pots, Incandescent and Fluorescent Lamps, Spot and Path Lights, Dimmerswitches, Low Voltage Generators, and Hot Lines for Caterers.
First use Jan. 1, 1945, on low voltage generators.

Class 22—Games, Toys, and Sporting Goods

For Umbrella Tents, Bicycle Exercisers, Sleeping Bags, Air Mattresses and Pumps Therefor.
First use Jan. 1, 1955, on bicycle exercisers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Spike Disc Lawn Aerators, Earth Augers, Drill Bits, Stapling Guns, Sledge Hammers, Chain Operated Hoists, Fertilizer Spreaders, Mandrels for Use With Drill and Hole Saws, Mason Trowels, Post Hole Diggers, Plumber Snakes, Meat Carving Sets, Base Metal Tableware, Chain Saws and Chain Grinders and Parts Therefor.
First use Jan. 1, 1934, on base metal tableware.

Class 26—Measuring and Scientific Appliances

For Baby Scales, Projectors, Sound Film Strip Projectors, Slide Projectors, Projection Screens, Electric Prompter and Viewers.
First use Jan. 1, 1945, on baby scales.

Class 28—Jewelry and Precious-Metal Ware

For Silver Plated Metal Ware—Namely, Cake Server Sets, Candlestick Holders and Candelabras, Chafing Dishes, Champagne Buckets, Compotes, Sugar Bowls and Creamers, Lazy Susans, Water Pitchers, Coffee and Tea Pourers, Seafood Servers, Coffee Urns, and Serving Trays.
First use Jan. 1, 1945, on silver plated cake server sets.

Class 30—Crockery, Earthenware, and Porcelain

For China Dishware.
First use Jan. 1, 1934.

Class 31—Filters and Refrigerators

For Ice Chests.
First use July 1, 1961.

Class 32—Furniture and Upholstery

For Baby High Chairs and Playpens and Cribs, Cots, Mattresses, Tray Stands, Champagne Carts, Camp Chairs, Dining Chairs, Card Tables, Beverage Bars, Bar Stools, Aisle Standards and Ropes Therefor, Costumers for Hanging Garments, Garment Racks, Champagne Stands, Folding Screens, Settees, Poker Tables, Dining Tables, Banquet Tables, Child's Banquet Tables, Garden Dining Tables, Snack Tables, Display Tables, Cocktail Tables, Bridge Tables, Smoking Stands, Luau Table Legs, Cushions, Spotlight Stands, Window Walls for Temporary Garden Enclosures, Pillows, and Lecterns.
First use Jan. 1, 1935, on cots.

Class 33—Glassware

For Glassware—Namely, Ashtrays, Beer Mugs, Punch Bowls and Ladles, Salad Bowls, Cocktail Bowls, Champagne Glasses, Creamers, Sugar Bowls, Punch Cups, Goblets, Liqueur Glasses.
First use Jan. 1, 1938, on glass salad bowls.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Butane Space Heaters, Luau Torches, Barbecue Braziers, Candle Lamps, Lantern and Stove Mantles, Gasoline Lanterns, Camp Stoves.
First use Jan. 1, 1947, on barbecue braziers.

Class 36—Musical Instruments and Supplies

For Tape Cartridges, Automatic Turntables, Stereo Tape Recorders, Portable Phonographs, Automatic Repeating Tape Recorders.
First use Apr. 27, 1964.

Class 41—Canes, Parasols, and Umbrellas

For Garden Umbrellas.
First use Jan. 1, 1945.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table Linens—Namely, Tablecloths, Garden Cloths, Napkins, Tea Towels, and Blankets.
First use Jan. 1, 1951.

Class 44—Dental, Medical, and Surgical Appliances

For Back Rests for Therapeutic Uses, Balkan Frames, Bradford Frames, Bradford Turners, Adjustable Hospital Beds, Fracture Beds, Vasoscillator Beds, Breast Pumps, Therapeutic Constrictors, Baby Incubators, Hyperextension Frames, Inhalators, Cold Quartz Lamps, Ultraviolet Lamps, Dehumidifier Lamps, Infra-Red Lamps, Mercury-Quartz Lamps, Sun Lamps, Stupe Kettles, Medical and Surgical Instrument Tables and Massage Tables, Buck Extension Apparatus, Hospital Bed Trapezes, Invalid Walkers, Massagers, Commodes, Crutches, Canes, Walk Aids, Suction Machines, Patient Lifters, Safety Sides for Beds, Overbed Tables, Wheel Chairs, Oxygen Face Masks, Oxygen Regulators, Oxygen Catheters, Croup Tents, Refrigerated Tents, Intermittent Positive Pressure Breathing Apparatus, Alternating Pressure Pads, Oxygen Purifiers, Hospital Heat Cradles, Hospital Linen Cradles, Intravenous Stand, Whirlpool Bath Apparatus, Hospital Bedboards, Thermo-Chemical Heat Pads, Stomach Pumps, Diathermy Apparatus, Fracture Frames, Sitz Baths, Irrigating Stands, Hospital Bed Screens, Stretchers, Traction Apparatus, Therapeutic Trapezes; Traction Accessories—Namely, Spreaders, Foot Plates, Knee Slings, Pelvic Slings, Weights With Hanger.
First use Jan. 1, 1935, on stretchers.

Class 50—Merchandise Not Otherwise Classified

For Extension Ladders, Luau Mats, Canvas Canopies, Canvas Runners.
First use Jan. 1, 1950, on canvas canopies.

Class 52—Detergents and Soaps

For Rug Shampoo.
First use Aug. 1, 1961.

SN 229,027. Earl M. Reiback, New York, N.Y. Filed Sept. 30, 1965.

LUMINAGE

Class 21—Electrical Apparatus, Machines, and Supplies

For Lamps Including an Illuminated Translucent Panel.

Class 50—Merchandise Not Otherwise Classified

For Works of Art and Advertising Displays Including Pictorial Representations and Collages Comprising an Illuminated Translucent Panel.

First use on or about July 15, 1965.

SN 237,917. C. P. Baker & Company, Philadelphia, Pa. Filed Feb. 3, 1966.

QUEEN'S LACE

Class 51—Cosmetics and Toilet Preparations

For Creme Rinse, Hand and Body Lotion, and Bubble Bath.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Nov. 18, 1965.

SN 247,549. Monico, Inc., New York, N.Y. Filed June 8, 1966.



Class 51—Cosmetics and Toilet Preparations

For Talcum Powder, Dusting Powder, Bath Powder, Bath Crystals, Bath Capsules, Cologne, After Bath Friction, Bath Oil, Dry Skin Bath Oil.
First use in or about July 1954.

Class 52—Detergents and Soaps

For Toilet Soap.
First use in or about May 1957.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.
[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 211,876. Compagnie Generale d'Electricite, Paris, France. Filed Feb. 12, 1965.

CEGEITE

Owner of French Reg. No. 439,829, dated Mar. 10, 1954 (Seine); Natl. Inst. No. 30,954.
For Thermo-Setting Molding Compound of Synthetic Plastic.

SN 230,110. Dow Corning Corporation, Midland, Mich. Filed Oct. 11, 1965.

DOW CORNING

Owner of Reg. Nos. 570,268, 667,003, and others.
For Compositions in Physical Character Comparable to Milled and Compounded Rubber Prior to Vulcanization but Containing Organosilicon Polymers and in Forms Fabricated of Such Compositions in the Forms of Tubes, Rods, Sheets, and the Like.
First use Jan. 5, 1965.

SN 231,024. Beaunit Corporation, New York, N.Y. Filed Oct. 22, 1965.

XENA

Owner of Reg. No. 782,927.
For Rayon Staple Fiber.
First use on or about July 29, 1965.

SN 231,377. Beaunit Corporation, New York, N.Y. Filed Oct. 23, 1965.

XENA, THE COMPATIBLE FIBER

No exclusive claim is made to "The Compatible Fiber" apart from the mark as shown. Owner of Reg. No. 782,927.
For Rayon Staple Fiber.
First use on or about July 15, 1965.

SN 234,080. Select Sires, Inc., Columbus, Ohio. Filed Dec. 6, 1965.

SELECT SIRES

Applicant disclaims the words "Select Sires" apart from the mark as shown.
For Livestock Animal Semen for Artificial Insemination.
First use Oct. 5, 1965.

SN 238,430. Haveg Industries, Inc., Wilmington, Del. Filed Feb. 9, 1966.

SHRINKFLEX

For Plastic Tubing for General Use in the Industrial Arts.
First use Dec. 28, 1965.

SN 239,480. Winzen Research Inc., Minneapolis, Minn. Filed Feb. 23, 1966.

STRATOFILM

Owner of Reg. No. 802,487.
For Plastic Film.
First use June 19, 1964.

SN 240,200. Reeves Brothers, Inc., New York, N.Y. Filed Mar. 4, 1966.

CURONEX

Owner of Reg. Nos. 639,185, 795,318, and others.
For Polyurethane Foams.
First use Dec. 1, 1965.

SN 240,859. Olen R. Creager, d.b.a. Vending Enterprises, Fresno, Calif. Filed Mar. 14, 1966.

PERRY PENGUIN'S

For Ice Pellets.
First use Jan. 12, 1966.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 225,244. Jack C. Abert, d.b.a. Mechanical Products Company, Phoenix, Ariz. Filed Aug. 9, 1965.

CRUISER

For Backpacking Frames.
First use December 1959.

SN 225,245. Jack C. Abert, d.b.a. Mechanical Products Company. Filed Aug. 9, 1965.

PONDEROSA

For Pack Bags.
First use Jan. 20, 1964.

SN 225,246. Jack C. Abert, d.b.a. Mechanical Products Company, Phoenix, Ariz. Filed Aug. 9, 1965.

SKYLINE

For Pack Bags.
First use July 9, 1964.

SN 229,878. St. Thomas, Incorporated, Gloversville, N.Y. Filed Oct. 11, 1965.

COINPAK

Owner of Reg. No. 426,504.
For Leather Coin Holders.
First use Sept. 1, 1945.

SN 238,135. Zale Corporation, Dallas, Tex. Filed Feb. 4, 1966.

BAYLOR

Owner of Reg. Nos. 419,683, 751,683, and others.
For Empty Make-Up Cases Made of Fabric, Leather, and Canvas, Wallets, Billfolds, Key Cases, Pass Cases, Change Purses, and Portfolios.
First use Jan. 1, 1945.

Class 4—Abrasives and Polishing Materials

SN 225,218. Weben Industries, Inc., Dallas, Tex. Filed Aug. 6, 1965.

VEND-A-WAX

For Automobile Wax To Form a Protective Coating.
First use July 20, 1965.

Class 6—Chemicals and Chemical Compositions

SN 162,160. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Feb. 6, 1963.

TRITAC

For Agricultural Chemicals—Namely, Herbicides.
First use Mar. 12, 1961.

SN 163,050. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Feb. 19, 1963.

GLYTAC

For Agricultural Chemicals—Namely, Herbicides.
First use Feb. 3, 1961.

SN 202,468. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 23, 1964.

ROACH-TOX

Owner of Reg. Nos. 164,491, 218,039, and others.
For Insecticide.
First use on or about May 27, 1932.

SN 202,469. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 23, 1964.

FLY-TOX

Owner of Reg. No. 164,491.
For Combination Insecticide-Deodorant.
First use on or about Mar. 19, 1948.

SN 202,470. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 23, 1964.

FLEA-TOX

Owner of Reg. Nos. 261,556, 218,039, and others.
For Insecticide.
First use on or about Mar. 15, 1936.

SN 211,411. Allied Chemical Corporation, New York, N.Y. Filed Feb. 5, 1965.

BOMYL

For Insecticide.
First use June 23, 1964.

SN 224,768. The Lubrizol Corporation, Cleveland, Ohio. Filed Aug. 2, 1965.

IRCOGEL

For Metallo-Organic Thixotropic Agents for Use in Formulating Vinyl Organosols and Plastisols, and Other Dispersions and Solutions.
First use June 18, 1965.

SN 225,078. Stauffer Chemical Company, New York, N.Y. Filed Aug. 5, 1965.

EXPORSAN

For Selective Herbicide.
First use June 17, 1965.

SN 228,660. DeMert & Dougherty, Inc., Chicago, Ill. Filed Sept. 27, 1965.

DAISY FRESH

For Aerosol Spray Starch.
First use on or about Sept. 15, 1965.

SN 229,482. American-Lincoln Corporation, Toledo, Ohio. Filed Oct. 7, 1965.

AMERDIS

For Preparation for Disinfecting, Sanitizing, and Deodorizing, Primarily for Industrial Use.
First use Aug. 19, 1965.

SN 232,013. National Lead Company, New York, N.Y. Filed Nov. 2, 1965.

SF-100

For Additive for Incorporation With Oil To Form Oil Mud Casing Packs and Spotting Fluids for Freeing Drill Pipe as Used in Well Drilling.
First use Sept. 11, 1964.

SN 232,934. Rhodia Inc., New York, N.Y. Filed Nov. 18, 1965.

BRAZINYL

For Pure Chemical Principally of the Class of Alcohols, Aldehydes, Esters, Ketones, and Odorants, Used in the Odorization and Reodorization of Rubber, Plastics, Textile, and Paper.
First use Oct. 22, 1965.

SN 232,942. Stauffer Chemical Company, New York, N.Y. Filed Nov. 18, 1965.

PHOSFLEX

For Triphenyl Phosphate.
First use Oct. 26, 1965.

SN 234,426. Philip A. Hunt Chemical Corporation, Palisades Park, N.J. Filed Dec. 13, 1965.

Amāzol

For Etching Additive.
First use Feb. 10, 1965.

SN 234,774. Schwarz Services International Limited, Mount Vernon, N.Y. Filed Dec. 16, 1965.

CLEARFIL

For Mineral Compositions—Namely, Processing Adsorbents.
First use at least as early as Nov. 21, 1963.

SN 235,031. Crowley Hydrocarbon Chemicals, Inc., New York, N.Y. Filed Dec. 16, 1965.

DIPANOL

For Resinous Compound Composed of Terpene and Hydrocarbons, Which Is Prepared From Selected Pine Tree Products.
First use July 9, 1953.

SN 236,273. Korfund Dynamics Corporation, Westbury, N.Y. Filed Jan. 12, 1966.

VIBRODAMPER

For Chemical Damping Preparation Which Reduces Vibration and Noise and Renders Metal Acoustically Equivalent to Cork, the Application of Which Reduces Vibration in Noise.
First use Jan. 29, 1960.

SN 236,938. Tropical Gas Company, Inc., Coral Gables, Fla. Filed Jan. 20, 1966.

MYGAS

Applicant disclaims the term "Gas" apart from the mark as shown, reserving unto itself all common law rights therein.
For Liquefied Petroleum Gas.
First use Oct. 29, 1965.

SN 241,190. Societa Italo Americana Prodotti Antiparassitari, Rome, Italy. Filed Mar. 16, 1966.

SIAPRIT

Owner of Italian Reg. No. 165,017, dated May 14, 1964.
For Pesticide.

SN 241,293. Westchester Veterinary Products, Inc., White Plains, N.Y. Filed Mar. 17, 1966.

SCRATCHEX

Owner of Reg. No. 674,455.
For Insecticides for Domestic Animals.
First use Apr. 30, 1953.

SN 241,583. R. E. Davis Chemical Corporation, Chicago, Ill. Filed Mar. 22, 1966.

REX-121

For Chemical Catalyst for Sulfuric Acid Alkylation.
First use at least as early as November 1962.

Class 7 — Cordage

SN 239,768. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Feb. 28, 1966.

PERMALON

For Synthetic Yarns and Cords for Use in Making Pneumatic Tires.
First use Dec. 17, 1965.

SN 241,398. The Wear-Flex Corporation, Milwaukee, Wis. Filed Mar. 18, 1966.



The words "Nylon Slings" are disclaimed apart from the mark as shown. Owner of Reg. No. 750,750.
For Load Lifting Slings.
First use Mar. 7, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 223,871. Commercial Solvents Corporation, New York, N.Y. Filed July 21, 1965.

ANOGEL

For Explosives.
First use June 10, 1964.

SN 223,872. Commercial Solvents Corporation, New York, N.Y. Filed July 21, 1965.

OLGEL

For Explosives.
First use July 11, 1962.

SN 224,219. Loral Corporation, Scarsdale, N.Y. Filed July 26, 1965.



For Fabricated Beryllium Metal Parts Used in Missile and Satellite Components.
First use Dec. 1, 1964.

SN 228,073. RCBS Inc., Oroville, Calif. Filed Sept. 17, 1965.

RCBS

Owner of Reg. No. 418,323.
For Reloading Presses, Powder Measure, Powder Scale, Reloading Dies, Bullet Puller, Case Forming Dies, Case Gauge Trim Dies, Stuck Case Remover, Automatic Primer Feed, Primer Arms, Powder Trickler, Powder Spoon, Burring Tool, Case Lube Kit, Resizing Lubricant, Case Lube Pad, Case Neck Brush, and Shell Holders.
First use June 1, 1943.

SN 230,141. The Dow Chemical Company, Midland, Mich. Filed Oct. 14, 1965.

DOW

Owner of Reg. Nos. 140,588, 623,077, and others.
For Explosives.
First use Sept. 25, 1962; prior to 1895 as to "Dow."

SN 230,564. R & S Marketing Service, Inc., Bozeman, Mont. Filed Oct. 19, 1965.

WARHEAD

For Fireworks, Including Firecrackers.
First use on or about Jan. 2, 1962.

SN 230,565. R & S Marketing Service, Inc., Bozeman, Mont. Filed Oct. 19, 1965.

STINGER

For Fireworks, Including Firecrackers.
First use on or about Jan. 2, 1961.

SN 230,566. R & S Marketing Service, Inc., Bozeman, Mont. Filed Oct. 19, 1965.

Grizzly

For Fireworks, Including Firecrackers.
First use on or about Apr. 1, 1959.

Class 10 — Fertilizers

SN 209,152. Duval Corporation, Houston, Tex. Filed Dec. 31, 1964.

K-MAG

For Fertilizers Which Include Sulfate of Potash Magnesia.
First use Oct. 31, 1964.

SN 227,065. Samuel J. Porter, Arlington, Va. Filed Sept. 2, 1965.

D-FGAN

For Ammonium Nitrate Fertilizer.
First use May 20, 1965.

SN 227,066. Samuel J. Porter, Arlington, Va. Filed Sept. 2, 1965.

DANF

For Ammonium Nitrate Fertilizer.
First use June 7, 1965.

Class 11 — Inks and Inking Materials

SN 230,787. Columbia Ribbon & Carbon Manufacturing Co., Inc., Glen Cove, N.Y. Filed Oct. 21, 1965.

Type Bar

Owner of Reg. No. 431,434.
For Typewriter Ribbons and Carbon Paper.
First use Aug. 5, 1925.

SN 230,788. Columbia Ribbon & Carbon Manufacturing Co., Inc., Glen Cove, N.Y. Filed Oct. 21, 1965.

Secretarial

Owner of Reg. No. 294,139.
For Carbon Paper and Typewriter Ribbons.
First use Nov. 5, 1931.

Class 12 — Construction Materials

SN 227,305. Marine Railings Company, Incorporated, St. Petersburg, Fla. Filed Sept. 7, 1965.

DIAMODIZED

For Anti-Corrosive, Electrolytical Etching and Chemical Finish Applied to and Sold as a Part of Aluminum Tubing, Seamless Marine Railings and Fittings.
First use October 1962.

SN 235,211. Montezuma Plywood Company, San Francisco, Calif. Filed Dec. 23, 1965.



The mark consists of the letter "M" together with a stylized representation of half the full face view of a head of an Aztec deity or ruler.
For Plywood.
First use Oct. 21, 1965.

SN 238,240. E. J. Lavino and Company, Philadelphia, Pa. Filed Feb. 7, 1966.

LAVREZ

For Refractory Shapes.
First use Jan. 20, 1966.

SN 238,241. E. J. Lavino and Company, Philadelphia, Pa. Filed Feb. 7, 1966.

BONDREZ

For Refractory Shapes.
First use Jan. 20, 1966.

SN 238,242. E. J. Lavino and Company, Philadelphia, Pa. Filed Feb. 7, 1966.

BONSTAR

For Refractory Shapes.
First use Jan. 20, 1966.

SN 238,243. E. J. Lavino and Company, Philadelphia, Pa. Filed Feb. 7, 1966.

PRESTAR

For Refractory Shapes.
First use Jan. 20, 1966.

SN 245,801. Edward Hines Lumber Co., Chicago, Ill. Filed May 17, 1966.



The mark consists of a symbolic representation of the letters "H" and "P."
For Built-In Vanities, Window Units, Built-In Kitchen Cabinets, Lumber, Built-In Millwork, and Plywood.
First use Apr. 1, 1963.

SN 247,462. Conodeck, Inc., Easton, Pa. Filed June 7, 1966.

CONODEC

For Concrete Panels Reinforced With Metal Truss for Floor or Roof of Buildings.
First use April 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 224,495. Aeroquip Corporation, Jackson, Mich. Filed July 29, 1965.

CONOSEAL

Owner of Reg. No. 695,159.
For Tube Joints, Pipe Joints, and Fittings.
First use on or about May 2, 1958.

SN 227,945. Industrial Bolt & Nut Company, Newark, N.J. Filed Sept. 16, 1965.



The word "Fasteners" is disclaimed.
For Pre-Packaged Fasteners—Namely, Bolts, Nuts, and Screws.
First use Jan. 10, 1962.

SN 238,229. International Telephone and Telegraph Corporation, New York, N.Y. Filed Feb. 7, 1966.

MIDGITROL

For Valves and Accessories Therefor.
First use Nov. 2, 1960.

SN 238,332. Crane Co., New York, N.Y. Filed Feb. 8, 1966.

HYDRO GEM

Owner of Reg. Nos. 256,365 and 754,881.
For Rotary Valves.
First use June 24, 1965.

SN 238,446. Preferred Utilities Manufacturing Corp., Danbury, Conn. Filed Feb. 9, 1966.

BAL-FLO

For Hydraulic Mixing Valves.
First use Nov. 22, 1965.

SN 239,581. Bailey Meter Company, Wickliffe, Ohio. Filed Feb. 25, 1966.

BELFAB

For Metallic Bellows.
First use Feb. 17, 1966.

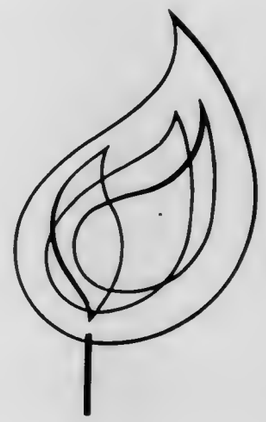
Class 15 — Oils and Greases

SN 222,772. Smith Oil Corporation, Rockford, Ill. Filed July 6, 1965.



No registration rights are claimed in the word "Oil" apart from the mark as shown.
For Petroleum Products—Namely, Home Heating Oil, Gasoline, Motor Oil, and Industrial Solvents.
First use at least as early as November 1963.

SN 229,317. Victrylite Candle Company, Oshkosh, Wis. Filed Oct. 4, 1965.



For Candles.
First use Sept. 14, 1965.

Class 17 — Tobacco Products

SN 234,253. Poul Petersen Tobaksfabriker, d.b.a. Pete Bros., Horsens, Jutland, Denmark. Filed Dec. 8, 1965.

GRAND NATIONAL

Owner of Danish Reg. No. 559, dated June 3, 1933.
For Smoking Tobacco and Pipe Tobacco.

SN 234,256. Turmac Tobacco Company N.V., Amsterdam, Netherlands. Filed Dec. 8, 1965.

ORLY

Owner of Dutch Reg. No. 126,744, dated Nov. 28, 1956.
For Cigars, Cigarettes, and Smoking Tobacco.

Class 18 — Medicines and Pharmaceutical Preparations

SN 216,767. Wolins Pharmacal Corp., Farmingdale, N.Y. Filed Apr. 16, 1965.

WOLINS

For Medicines and Pharmaceutical Preparations.
First use 1925.

SN 216,768. Wolins Pharmacal Corp., Farmingdale, N.Y. Filed Apr. 16, 1965.



For Medicines and Pharmaceutical Preparations.
First use September 1964.

SN 216,769. Wolins Pharmacal Corp., Farmingdale, N.Y. Filed Apr. 16, 1965.



For Medicines and Pharmaceutical Preparations.
First use September 1964; 1925 as to the word "Wolins."

SN 224,491. Winston Pharmaceuticals, Incorporated, Winston-Salem, N.C. Filed July 28, 1965.

Diacels

For General Line of Timed Release Capsules Containing Medication Especially Prepared To Provide Sustained Action of the Drugs Contained Therein.
First use June 16, 1965.

SN 224,710. Pharm-A-Suitable Co., Grand Rapids, Mich. Filed Aug. 2, 1965.

Pharm-A-Suitable

For Medicinal Preparation for the Relief of Stomach Distress.
First use June 21, 1965.

SN 225,999. Sandoz, Inc., Hanover, N.J. Filed Aug. 18, 1965.

NEO-CAL

Owner of Reg. No. 337,832.
For Medicinal Preparation for Calcium Therapy.
First use July 29, 1965.

SN 226,292. Sandoz, Inc., Hanover, N.J. Filed Aug. 23, 1965.

SANDOPTAL

Owner of Reg. No. 284,623.
For Isobutylallylbarbituric Acid Used as an Ingredient in a Pharmaceutical Preparation.
First use at least by July 1, 1951.

SN 226,545. Merck & Co., Inc., Rahway, N.J. Filed Aug. 26, 1965.

DECAZOLE

For Medicinal Preparation for Ophthalmic Use.
First use Aug. 10, 1965.

SN 227,248. Chemische Fabrik Promonta Gesellschaft mit beschrankter Haftung, Hamburg, Germany. Filed Sept. 7, 1965.

PROMONTA

Owner of German Reg. No. 246,047, dated Oct. 11, 1919.
For Nutritional Supplement Containing Vitamins and Minerals.

SN 229,971. Fleet Wholesale Supply Co., Inc., Appleton, Wis. Filed Oct. 12, 1965.

SPROUT

For Livestock Feed Supplement and/or Milk Replacer.
First use Sept. 8, 1965.

SN 230,023. American Promotions, Inc., Indianapolis, Ind. Filed Oct. 13, 1965.

API

For Vitamin C Tablets.
First use Sept. 24, 1965.

SN 230,032. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 13, 1965.

GERILID

For Geriatric Medication for Improving Peripheral Circulation.
First use on or about Aug. 24, 1965.

SN 231,387. Chesebrough-Pond's Inc., New York, N.Y. Filed Oct. 23, 1965.

STIMULIN

For Antidepressant.
First use Oct. 5, 1965.

SN 232,570. Eli Lilly and Company, Indianapolis, Ind. Filed Nov. 12, 1965.

ACTIMETS

For Medicinal Tablet Specially Prepared To Provide Sustained Action of the Drugs Contained Therein.
First use Nov. 1, 1965.

SN 234,526. Anasco GmbH, Wiesbaden, Germany. Filed Dec. 14, 1965.

INTENSOL

Owner of German Reg. No. 222,734, dated Sept. 21, 1917.
For Mouth and Throat Disinfectant.

SN 234,558. Geigy Chemical Corporation, Ardsley, N.Y. Filed Dec. 14, 1965.

ROCAS

For Anorexigenic Agents.
First use Nov. 30, 1965.

SN 235,592. Societe des Usines Chimiques Rhone-Poulenc, Paris, France. Filed Dec. 30, 1965.

RECTOPLEXIL

Priority claimed under Sec. 44(d) on French Reg. No. 538,227, dated July 29, 1965 (Paris); Natl. Inst. No. 265,398.
For Pharmaceutical Preparations for the Treatment of Bronchial Disorders and Other Respiratory Diseases.

SN 235,608. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Dec. 20, 1965.

VIT-A TERRAMYCIN

Owner of Reg. Nos. 577,504 and 798,482.
For Antibiotic-Vitamin Preparation for Animal Use.
First use on or before May 19, 1965.

SN 236,790. Vitamix Pharmaceuticals Incorporated, Philadelphia, Pa. Filed Jan. 18, 1966.

FERROSEL "B"

The letter "B" is disclaimed apart from the mark as shown.
Owner of Reg. No. 421,681.
For Pharmaceutical Preparation for Use in the Treatment of Iron Deficiencies and Anemia.
First use 1941.

SN 237,150. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Jan. 24, 1966.

CALMOL 4

Owner of Reg. No. 640,258.
For Rectal Suppositories.
First use Jan. 19, 1966.

SN 238,053. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and/or Cole Chemical Company, St. Louis, Mo. Filed Feb. 4, 1966.

PHETOBESE

For Appetite Depressant Tablets for Weight Reduction.
First use Oct. 16, 1952.

SN 238,639. Huntington Laboratories, Inc., Huntington, Ind. Filed Feb. 11, 1966.

SANA-RINSE

For Antiseptic Hexachlorophene Wash and Rinse Preparation for Presurgical Degerming of the Skin.
First use Nov. 5, 1965.

SN 238,863. Geigy Chemical Corporation, Ardsley, N.Y. Filed Feb. 15, 1966.

SETIMAL

For Sedative Preparations.
First use Jan. 28, 1966.

SN 239,108. Atlas Chemical Industries, Inc., Wilmington, Del. Filed Feb. 18, 1966.

KINESED

For Pharmaceutical Preparation for the Treatment of Gastrointestinal Disorders.
First use Jan. 11, 1966.

SN 239,427. Merck & Co., Inc., Rahway, N.J. Filed Feb. 23, 1966.

HydroDIURIL-KALETS

Owner of Reg. Nos. 687,813 and 711,450.
For Medicinal Preparation for Use as a Diuretic and as an Agent in the Treatment of Hypertension.
First use Dec. 23, 1965.

SN 239,538. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 24, 1966.

NAVARON

For Psychotherapeutic Agent.
First use Feb. 1, 1966.

SN 239,884. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories, Stamford, Conn. Filed Mar. 1, 1966.

SLIDEX

For Diagnostic Reagent.
First use Feb. 16, 1966.

SN 241,256. Kirkman Laboratories, Inc., d.b.a. Cabnet Pharmacal Co., Portland, Oreg. Filed Mar. 17, 1966.

cabnet

For Pharmaceutical Preparations.
First use Sept. 28, 1964.

SN 246,865. Betan Company, Inc., Knoxville, Tenn. Filed May 31, 1966.

SIGNEF

For Suppositories.
First use at least as early as December 1963.

SN 246,866. Betan Company, Inc., Knoxville, Tenn. Filed May 31, 1966.

DERMASOL

For Counter Irritant Soothing Lotions.
First use at least as early as April 1961.

SN 246,867. Betan Company, Inc., Knoxville, Tenn. Filed May 31, 1966.

SANI-VESS

For Vaginal Cleansers.
First use December 1948.

Class 19—Vehicles

SN 202,124. Moto Gilera S.p.A., Arcore, Milan, Italy. Filed Sept. 16, 1964.

GILERA

Owner of Italian Reg. No. 126,648, dated Dec. 1, 1955.
For Motor Cycles and Parts Therefor.

SN 224,243. Rolite, Inc., Grantsburg, Wis. Filed July 26, 1965.

Rolite

For Folding Travel Trailers.
First use Jan. 2, 1959.

SN 228,982. Bearfoot Airway Corporation, Wadsworth, Ohio. Filed Sept. 30, 1965.

SLIM-JIM

For Ornamental Side Wall for Automobile Wheels.
First use September 1965.

SN 231,721. Bel-Craft, Inc., Linkwood, Md. Filed Oct. 28, 1965.

Tangier

For Power Driven Boats.
First use July 26, 1965.

SN 232,048. The Hustler Co., Bossier City, La. Filed Nov. 3, 1965.

HUSTLER

For Boats.
First use June 15, 1964.

SN 232,162. Star Tank and Boat Company Inc., d.b.a. Starcraft Boat Company, Goshen, Ind. Filed Nov. 4, 1965.

SKYLARK

For Sail Boats.
First use Jan. 2, 1964.

SN 232,698. Joines Body Company, Galax, Va. Filed Nov. 15, 1965.

ALUMIVAN

For Bodies for Pick Up Trucks.
First use 1959.

SN 233,715. Kaiser Jeep Corporation, Toledo, Ohio. Filed Dec. 1, 1965.

JEEPSTER

Owner of Reg. Nos. 438,144, 689,918, and others.
For Automobiles and Structural Parts Thereof.
First use Feb. 11, 1943.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 155,468. Major Equipment Company, Inc., Chicago, Ill. Filed Oct. 9, 1962.

PRESTO-PATCH

For Cross Connection Cabinet for Stage Lighting.
First use May 1962.

SN 219,311. Atlantic Research Corporation, Alexandria, Va. Filed May 20, 1965.

LD

For Transducers—Namely, Hydrophones, Microphones, Pressure Sensors, and Acoustic Projectors.
First use July 1957.

SN 223,780. Compagnie Francaise Thomson-Houston, Paris, France. Filed July 20, 1965.

POLYVISION

Owner of French Reg. No. 519,072, dated Jan. 29, 1964 (Seine); Natl. Inst. No. 218,999.
For Electrical Apparatus, Instruments, Components and Devices for Television Receiving Sets and Television Systems and Parts Thereof.

SN 224,105. Loewe Opta GmbH, Berlin, Germany. Filed July 23, 1965.

AVISO

Owner of German Reg. No. 734,745, dated Feb. 28, 1939.
For Radio and Television Receivers, Sound Amplifiers, and Television Recorders.

SN 230,653. Kabushiki Kaisha Yaskawa Denki Seisakushuo, d.b.a. Yaskawa Electric Mfg. Co., Ltd., Yahata-ku, Kitakyushu-shi, Japan. Filed Oct. 20, 1965.

YE

The mark consists of a design of the letters "YE."
For D.C. Electric Motor and Generator; A.C. Electric Motor and Generator (Induction and Synchronous Types); Eddy Current Type Coupler, Eddy Current Type Brake; Mercury Rectifier; Electric Switch, Electric Circuit Breaker, Electric Relay; Electric Switch (Distributing) Box, Electric Switch Board; Electric Apparatus for Automatic Self-Controlling, Magnetic Amplifier; Electromagnetic Braking Device, Electronic-Applied Industrial Instruments—Namely, Electronic Profiling Apparatus, Electronic Pipe Cutting Device, Electronic (Electrostriction Type) Balancer.
First use June 1953; in commerce December 1955.

SN 232,371. Vega Electronics Corporation, Santa Clara, Calif. Filed Nov. 8, 1965.

SOUNDSERVO

For Automatic Volume Control for Electronic Sound Systems.
First use Aug. 28, 1965.

SN 232,411. Merrell Electronics Corp., Brooklyn, N.Y. Filed Nov. 9, 1965.

HORNET

For Electrical Burglar Alarms.
First use Sept. 1, 1965.

SN 236,615. McCulloch Corporation, Los Angeles, Calif. Filed Jan. 17, 1966.

Golden-Touch

For Starters for Outboard Engines.
First use Nov. 3, 1965.

Class 22—Games, Toys, and Sporting Goods

SN 219,881. J & J Enterprises, Inc., Coral Gables, Fla. Filed May 27, 1965.

SPIRAFLEX BY GATORCLASS

For Fishing Rods and Component Parts Thereof.
First use on or about Mar. 9, 1965.

SN 219,882. J & J Enterprises, Inc., Coral Gables, Fla. Filed May 27, 1965.

SPIRALITE BY GATORCLASS

For Fishing Rods and Component Parts Thereof.
First use on or about Mar. 9, 1965.

SN 220,861. Jerry Lucas Pass-Time Games, Inc., Columbus, Ohio. Filed June 10, 1965.

Spin-Play BASKETBALL

No claim of exclusive right is made to "Basketball" for the goods recited.
For Equipment (or Apparatus) Sold as a Unit for Playing a Board-Type or Parlor Basketball Game.
First use Nov. 17, 1964.

SN 220,887. Varian Associates, Palo Alto, Calif. Filed June 10, 1965.

ULLR

The mark "ULLR" was the son of "Sif," the step-son of "Thor," known for beauty and for skill with the bow and on skis.
For Ski Magnets.
First use Nov. 20, 1964.

SN 221,915. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed June 24, 1965.

EBERHARD FABER

Owner of Reg. Nos. 129,700, 699,426, and others.
For Toys and Games—Namely, Coloring Sets With Pencils, Crayons, Paints and/or Liquid Markers, Balancing Games, Mechanical Games, and Target Games With Pistol and/or Darts.
First use Aug. 2, 1955.

SN 223,000. Gabriel Industries, Inc., New York, N.Y. Filed July 8, 1965.

GABRIEL CHANNEL-SLIDE

The term "Channel-Slide" is claimed only in connection with the mark as used.
For Toy Kitchen Appliances and Furniture—Namely, Ranges, Refrigerators, Washing Machines, Sinks, Ovens, and Cabinets.
First use Sept. 1, 1964.

SN 224,370. Goodwin Alarik, La Canada, Calif. Filed July 28, 1965.

SURFERS' WORLD

For Skateboard Poles.
First use July 23, 1965.

SN 224,371. Goodwin Alarik, La Canada, Calif. Filed July 28, 1965.

SURF STICK

For Skateboard Poles.
First use July 23, 1965.

SN 224,912. Bancroft Racket Company, Pawtucket, R.I. Filed Aug. 4, 1965.

WILLIAM Bancroft

"William Bancroft" is the name of a deceased individual.
For Tennis and Badminton Rackets.
First use December 1938.

SN 227,043. Lazy Ike Corporation, Fort Dodge, Iowa. Filed Sept. 2, 1965.

MUSKY IKE

Applicant disclaims the word "Musky" apart from the mark as shown. Owner of Reg. Nos. 431,240, 781,707, and others.
For Fishing Lure.
First use Dec. 31, 1952.

SN 227,044. Lazy Ike Corporation, Fort Dodge, Iowa. Filed Sept. 2, 1965.

HUSKY IKE

Owner of Reg. Nos. 431,240, 781,707, and others.
For Fishing Lure.
First use Dec. 31, 1950.

SN 227,352. King-Seeley Thermos Co., d.b.a. Structo Division, Freeport, Ill. Filed Sept. 7, 1965.

STRUCTO

Owner of Reg. No. 91,394.

For Toys—Namely, Road Graders, Cement Mixers, Pick-Up Trucks, Dump Trucks, Stake Trucks, Wrecker Trucks, Mail Trucks, Fire Trucks, Fire Rescue Trucks, Garbage Trucks, Crane Trucks, Moving Van Trucks, Horse Vans With Trailers, Riding Academy Trucks With Trailers, Kennel Trucks, Livestock Trucks, Troop Carrier Trucks, Car Carrier Trucks, Missile Launcher Trucks, Timber Hauling Trucks, Camper Trucks, Fishermen's Trucks With Boat Trailers, Week-Ender Cars, Ride-On Type Wheeled Toys, Molded Soldiers and Animals, Power Shovels, Bull-Dozers, Mobile Cranes, Cars and Trucks With Simulated Motor Sound Devices; Packaged Sets of Truck Toys—Namely, Farm Sets, Highway Builder Sets, and Army Combat Sets.

First use 1957; 1912 as to the word "Structo."

SN 227,354. King-Seeley Thermos Co., d.b.a. Structo Division, Freeport, Ill. Filed Sept. 7, 1965.

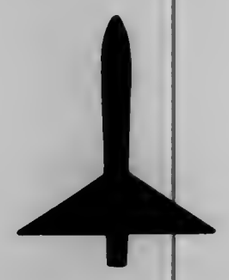
STRUCTO

Owner of Reg. No. 91,394.

For Toys—Namely, Road Graders, Cement Mixers, Pick-Up Trucks, Dump Trucks, Stake Trucks, Wrecker Trucks, Mail Trucks, Fire Trucks, Fire Rescue Trucks, Garbage Trucks, Crane Trucks, Moving Van Trucks, Horse Vans With Trailers, Riding Academy Trucks With Trailers, Kennel Trucks, Livestock Trucks, Troop Carrier Trucks, Car Carrier Trucks, Missile Launcher Trucks, Timber Hauling Trucks, Camper Trucks, Fishermen's Trucks With Boat Trailers, Week-Ender Cars, Ride-On Type Wheeled Toys, Molded Soldiers and Animals, Power Shovels, Bull-Dozers, Mobile Cranes, Cars and Trucks With Simulated Motor Sound Devices; Packaged Sets of Truck Toys—Namely, Farm Sets, Highway Builder Sets, and Army Combat Sets.

First use May 1965; 1912 as to the word "Structo."

SN 228,750. Karl Riha, Steyr, Austria. Filed Sept. 27, 1965.



Priority claimed under Sec. 44(d) on Austrian application filed Mar. 25, 1965; Reg. No. 55,330, dated Aug. 5, 1965.

For Metal Snow Skis.

SN 229,804. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Oct. 11, 1965.

Little miss no-name

For Doll.

First use on or about Sept. 29, 1965.

SN 229,807. Hassenfeld Bros., Inc., Pawtucket, R.I. Filed Oct. 11, 1965.

Stardust

For Toy Art Kits Containing Flocking Material, Pictures, and Other Accessories.

First use on or about Sept. 11, 1965.

SN 229,929. AJ Industries Corporation, Delavan, Wis. Filed Oct. 12, 1965.

Caddy Cruiser

For Golf Carts.

First use on or before Oct. 1, 1964.

SN 230,183. Old Pal Inc., Lititz, Pa. Filed Oct. 14, 1965.

Trappe

"Trappe" is the French equivalent of the English word "trap."

For Ski Boot Cases.

First use July 28, 1965.

SN 230,484. Anderson & Thompson Ski Co., Inc., Seattle, Wash. Filed Oct. 19, 1965.

PENGUIN

For Snow Skis.

First use July 13, 1962.

SN 230,489. Anderson & Thompson Ski Co., Inc., Seattle, Wash. Filed Oct. 19, 1965.

MARK II

For Snow Skis.

First use Aug. 19, 1965.

SN 231,440. Mattel, Inc., Hawthorne, Calif. Filed Oct. 23, 1965.

MATTEL-O-PHONE

Owner of Reg. Nos. 635,129 and 753,681.

For Toy Telephone.

First use Oct. 12, 1965.

SN 231,443. Mattel, Inc., Hawthorne, Calif. Filed Oct. 23, 1965.

BUNSON BURNIE

Owner of Reg. No. 811,319.

For Doll, Doll Clothes, and Doll Accessories.

First use Oct. 12, 1965.

SN 231,645. Lisbeth Whiting Company, Inc., Brooklyn, N.Y. Filed Oct. 26, 1965.

OOGLE BEADS

No claim of exclusive right is made to "Beads" for the goods recited.

For Toy Beads.

First use Mar. 29, 1965.

SN 231,803. Sara Y. Belknap, Gainesville, Fla. Filed Oct. 29, 1965.

THE GREAT SOCIETY

For Game Apparatus Sold as a Unit for Playing a Game of the Type in Which Playing Pieces Are Moved Over a Game Board.

First use at least as early as Aug. 14, 1965.

SN 232,341. Parris Mfg. Co., Savannah, Tenn. Filed Nov. 8, 1965.

STRAITSHOOTER

For Toy Rifles and Toy Pistols.

First use Sept. 30, 1965.

SN 232,592. The Program Aids Company, Inc., Mount Vernon, N.Y. Filed Nov. 12, 1965.

HERCULON

For Gymnastic Apparatus—Namely, Parallel Bars, Horses, Balance Beams, Bucks, Take-Off Boards, Trampolines, Horizontal Bars, Vaulting Boxes, and Still Rings.

First use Nov. 5, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 210,042. The Pneumatic Applications Company, Simsbury, Conn. Filed Jan. 15, 1965.

VARATORQ

For Brake Control Apparatus and Parts Therefor for Regulating Applied Brake Pressure Upon the Core or Shaft of a Mill Roll.

First use in or about February 1964.

SN 215,212. The Haigh Engineering Co. Limited, Ross-on-Wye, England. Filed Mar. 29, 1965.

SANIMATIC

Owner of British Reg. No. 844,182, dated Jan. 22, 1963.

For Machines for Disposing of Fibrous Articles by Pulverizing, Comminuting, and Grinding, and Parts of All the Aforesaid Goods.

SN 216,540. Stone Conveyor Co., Inc., Honeoye, N.Y. Filed Apr. 14, 1965.

THRIFTY-LIFTY

For Belt Conveyors and Parts Thereof.

First use Sept. 28, 1964.

SN 217,435. Escher Wyss, G.m.b.H., Ravensburg, Wurttemberg, Germany. Filed Feb. 18, 1965.

HICOFINER

Priority claimed under Sec. 44(d) on German application filed Aug. 27, 1964; Reg. No. 798,812, dated Dec. 28, 1964.

For Machinery for Handling and Preparing Raw Materials and Half Stuffs for Paper, Board and Cardboard Production—Namely, Refiners, Deflakers, Presses, Mixers, and Pumps.

SN 220,888. Weben Industries, Inc., Dallas, Tex. Filed June 10, 1965.

VEND-A-WASH

For Coin-Operated, Self-Service Car Wash Installation.

First use May 19, 1965.

SN 222,248. Bath Iron Works Corporation, Bath, Maine. Filed June 29, 1965.

VIBE-O-DECK

For Vibratory Sizing and/or Classifying Conveyors and Screens.

First use Oct. 7, 1964.

SN 223,727. Rocket Research Corporation, Seattle, Wash. Filed July 19, 1965.



The drawing is lined for red but color is not claimed as a feature of the mark. The mark is a fanciful representation of the letters "RRC."

For Jet Reaction Motors, Also Known as Rocket Engines.

First use on or about Dec. 24, 1962.

SN 227,135. Federal-Mogul Corporation, Detroit, Mich. Filed Sept. 3, 1965.

TEFGARD

For Antifriction Bearing Materials—Namely, Sleeve Bearings, Bushings, and Thrust Washers.

First use Feb. 24, 1965.

SN 231,390. Conveyor Dynamics, Inc., Syracuse, N.Y. Filed Oct. 23, 1965.

ASTROVEYOR

For Overhead Conveyors and Overhead Conveyor Systems.
First use during first half of June 1965.

SN 231,391. Conveyor Dynamics, Inc., Syracuse, N.Y. Filed Oct. 23, 1965.



For Overhead Conveyors and Overhead Conveyor Systems.
First use during first half of June 1965.

SN 232,527. Cincinnati Screen Process Supplies, Inc., Cincinnati, Ohio. Filed Nov. 12, 1965.

AEROKNIVES

For Silk Screening Dryer Apparatus.
First use on or about Oct. 14, 1965.

SN 232,615. The Torrington Company, Torrington, Conn. Filed Nov. 12, 1965.

T TORRINGTON

Owner of Reg. Nos. 202,735, 793,288, and others.
For Anti-Friction Bearings Including Straight Roller, Tapered Roller, Spherical Roller, Needle and Ball Bearings; Ball Slide Bearings; Ball, Roller and Needle Thrust Bearings; Needle and Bearing Races; Also Self-Aligning Ball Bushings; Cage and Roller Assemblies; and Small Machine Parts Made to Customers' Specifications.
First use Mar. 1, 1965.

SN 232,737. Tateisi Electronics Co., Ukyo-ku, Kyoto, Japan. Filed Nov. 15, 1965.

VENDGISTOR

Owner of Japanese Reg. No. 639,322, dated Mar. 24, 1964.
For Vending Machines.

SN 232,835. Hollymatic Corporation, Park Forest, Ill. Filed Nov. 17, 1965.

Hollymatic

The drawing is lined for the color red. Owner of Reg. No. 515,256.
For Machines for Molding Meat Patties, Machines for Conveying Meat Patties, Machines for Stacking Meat Patties and Machines for Scoring Meat Patties.
First use Oct. 1, 1964.

SN 233,137. The Smith and Winchester Manufacturing Company, South Windham, Conn. Filed Nov. 22, 1965.

PREHI

For Sheeters in the Nature of Heavy Duty Paper Cutters.
First use in or about October 1961.

SN 233,332. Erman-Bach, Ltd., New York, N.Y. Filed Nov. 26, 1965.



The portrait shown is fanciful.
For Squeeze-Type Bags for Decorating Pastry and Parts Thereof, Cookie Cutters and Sets, and Pastry Writing Bags.
First use July 10, 1962.

SN 234,042. Lawn-A-Mat Chemical and Equipment Corp., Mineola, N.Y. Filed Dec. 6, 1965.

LAWN-A-MAT

For Combine Machine for the Weeding, Feeding, and Other Treatment of Soil To Enhance the Growth of Grass.
First use May 1961.

SN 238,349. The Gillette Company, Boston, Mass. Filed Feb. 8, 1966.

LADY GILLETTE

Owner of Reg. No. 767,865.
For Safety Razors.
First use May 1930.

SN 239,488. Bolton-Emerson, Inc., Lawrence, Mass. Filed Feb. 24, 1966.



For Pulp and Paper Machinery—Namely, Disc Refiners.
First use Dec. 8, 1965.

SN 239,489. Bolton-Emerson, Inc., Lawrence, Mass. Filed Feb. 24, 1966.



For Pulp and Paper Machinery—Namely, Refiners.
First use Dec. 8, 1965.

Class 26—Measuring and Scientific Appliances

SN 221,730. Firma Heilma GmbH., Glastechnische Werkstatten, Mullheim, Baden, Germany. Filed June 22, 1965.

OS

For Absorption Cells Made of Glass and Quartz Glass (Fused Silica).
First use Sept. 1, 1959; in commerce Sept. 1, 1959.

SN 221,731. Firma Heilma GmbH., Glastechnische Werkstatten, Mullheim, Baden, Germany. Filed June 22, 1965.

QI

For Absorption Cells Made of Glass and Quartz Glass (Fused Silica).
First use Sept. 1, 1959; in commerce Sept. 1, 1959.

SN 228,901. Freeland Gauge Company, Detroit, Mich. Filed Sept. 29, 1965.

UNIVERSALAIRE

For Pneumatic Operated Dimension-Gauging Apparatus for Machined Parts.
First use May 28, 1965.

SN 229,643. Dytronics Company, Inc., Columbus, Ohio. Filed Oct. 8, 1965.



For Spectrum Analyzers, Phase Sensitive Voltmeters, Telemetry Calibrators, Impedance Comparators, Electrolytic Capacitor Analyzers, Phase Angle Standards, Phase Angle Meters, and Underwater Sound Transducer Calibrators.
First use Mar. 15, 1965.

SN 230,539. Hoffman Camera Corporation, Farmingdale, N.Y. Filed Oct. 19, 1965.

VERTICAM

For Cameras, Camera Vacuum Backs and Precision Metal Film Holders.
First use July 2, 1965.

SN 230,823. Paul S. Heitman, d.b.a. Gem-Mounts and Gem-Masks Co., New York, N.Y. Filed Oct. 21, 1965.

TINTASLIDE

For Color Correction Filters.
First use Jan. 1, 1964.

SN 240,610. High Voltage Engineering Corporation, Burlington, Mass. Filed Mar. 10, 1966.

dependex

For Particle Accelerators of the Nuclear Radiation Source Type for Use in Scientific Research and Industry, and to Accessories and Auxiliary Equipment Therefor—Namely, Actuators, Beam Tube Supports, Bellows, Chambers, Focus Rings, Ionization Gauges, Adapters, Targets, Gate Valves, Viewers, and Unions Adapted for Use With Particle Accelerators.
First use Mar. 14, 1955.

SN 247,552. Wendell P. Dubbs, Palo Alto, Calif. Filed June 8, 1966.

TYPE-FLEX

For Photographic Distortion Equipment.
First use Feb. 20, 1966.

Class 27—Horological Instruments

SN 231,150. Odo, Mores, Jura, France. Filed Oct. 22, 1965.

Odo

Owner of French Reg. No. 2,963, dated Mar. 16, 1951 (Saint-Claude); Natl. Inst. No. 491,021.
For Watches, Chronometers, Clocks, and Timers.

Class 28—Jewelry and Precious-Metal Ware

SN 230,026. Baumgold Bros. Inc., New York, N.Y. Filed Oct. 13, 1965.

LIB◆

The representation of a diamond is disclaimed.
For Diamond Rings.
First use June 1962.

SN 238,134. Zale Corporation, Dallas, Tex. Filed Feb. 4, 1966.

BAYLOR

Owner of Reg. Nos. 419,683, 751,683, and others.
For Jewelry, Pearls, Rings, Pins, and Bracelets.
First use Jan. 1, 1945.

SN 238,136. Zale Corporation, Dallas, Tex. Filed Feb. 4, 1966.

BAYLOR

Owner of Reg. Nos. 419,683, 751,683, and others.
For Wrist Watch Straps Made of Leather, Webbing, or Cord.
First use Jan. 1, 1945.

Class 31 — Filters and Refrigerators

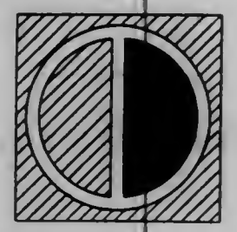
SN 181,104. The American Oil Company, Chicago, Ill. Filed Nov. 14, 1963.

FINAL / FILTER

Applicant asserts no rights in the words "Final" and "Filter" when used properly to describe filters.
For Liquid Fuel Filters.
First use July 1, 1962.

Class 32 — Furniture and Upholstery

SN 210,150. The Ohio Desk Company, Cleveland, Ohio. Filed Jan. 18, 1965.



The mark is a combination of the letters "O" and "D." The drawing is lined for the color brown, but this specific color is not claimed as an essential feature of the mark.
For Desks, Tables, Credenzas, Bookcases, Chairs, Lounge Furniture, Counter Equipment, Filing Cabinets, and Movable Office Partitions.
First use on or about May 28, 1964.

SN 228,224. Vita-Pakt Citrus Products Co., Covina, Calif. Filed Sept. 20, 1965.

← TELESCOPIC

For Display Racks.
First use May 3, 1965.

SN 234,777. Southern Equipment Company, d.b.a. Main Line Company, St. Louis, Mo. Filed Dec. 16, 1965.

CIRCUL-AIR

For Shelving—Namely, Stationary and Portable Shelving.
First use May 28, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 229,246. The Hercules Tire & Rubber Company, Stamford, Conn. Filed Oct. 4, 1965.

SAFTIPREME

For Pneumatic Tires and Tubes.
First use Aug. 27, 1965, on tires.

SN 229,383. United States Rubber Company, New York, N.Y. Filed Oct. 5, 1965.

FT-10

For Pneumatic Tires.
First use Aug. 20, 1965.

Class 36 — Musical Instruments and Supplies

SN 208,815. Concord Electronics Corporation, Los Angeles, Calif. Filed Dec. 24, 1964.

SOUND CAMERA

The word "Sound" is disclaimed apart from the mark as shown.
For Tape Recorders.
First use Oct. 17, 1964.

Class 37 — Paper and Stationery

SN 230,941. C. A. Spaulding, d.b.a. The Seaties Company, Winnetak, Ill. Filed Oct. 21, 1965.

SEATIES

For Resale Package of Sanitary Toilet Seat Covers.
First use Oct. 4, 1965.

SN 234,621. Champion Papers Inc., Knightsbridge, Hamilton, Ohio. Filed Dec. 15, 1965.

PRESSPERFECT

For Coated Printing Paper—Namely, Lithographic, Cover, Web Offset Enamel, and Postcard Paper.
First use May 16, 1964.

SN 239,561. Westab Inc., Dayton, Ohio. Filed Feb. 24, 1966.

DURA-HINGE

For Stationery Products—Namely, Loose Leaf Notebooks.
First use Feb. 1, 1966.

SN 239,878. Brown Company, Berlin, N.H. Filed Mar. 1, 1966.

VALORE

For Writing and Printing Paper.
First use Feb. 15, 1966.

SN 239,894. General Aniline & Film Corporation, New York, N.Y. Filed Mar. 1, 1966.

TRAN-ECON

For Translucent Parchment Paper.
First use January 1954.

SN 240,995. Weyerhaeuser Company, Tacoma, Wash. Filed Mar. 14, 1966.

WEYERHAEUSER

Owner of Reg. No. 614,708.
For Text and Cover Papers, Business Papers, Offset and Book Papers Coated and Uncoated, Bristol Papers, Book Publishing Papers (Coated and Uncoated), Industrial Papers, Technical and Converting Papers; Specialty Papers, Including Plastic Coating Paper and Paperboard.
First use December 1959.

SN 248,395. King Kullen Grocery Co., Inc., Westbury, N.Y. Filed June 20, 1966.



Owner of Reg. Nos. 195,504, 802,003, and others.
For Toilet Tissue and Wax Paper.
First use Aug. 27, 1965.

Class 38 — Prints and Publications

SN 201,822. The Corporation Trust Company, New York, N.Y. Filed Sept. 14, 1964.

WHAT CONSTITUTES DOING BUSINESS

For Publication Published From Time to Time.
First use during October 1920.

SN 215,657. Spot-O-Gold Corporation, Philadelphia, Pa. Filed Apr. 2, 1965.

QUIK CASH

For Business Bonus Cards.
First use Mar. 17, 1965.

SN 224,071. Charley's Chuckle Cards of Oklahoma, Inc., Tulsa, Okla. Filed July 23, 1965.



The mark portrays the fictional character known as "Charley Weaver" whose consent is of record.
For Greeting Cards.
First use Nov. 27, 1960.

SN 225,426. Ned L. Jones, Yakima, Wash. Filed Aug. 10, 1965.

Mr. Flubbers

For Printed Gummed Labels and Decals for Use in Connection With Golf.
First use July 20, 1965.

SN 225,737. Cube Card Corporation, San Rafael, Calif. Filed Aug. 16, 1965.

CANNY GREETING

Applicant disclaims the word "Greeting" apart from the mark as shown.
For Greeting Cards.
First use May 5, 1965.

SN 227,616. The Rosaen Filter Company, Hazel Park, Mich. Filed Sept. 10, 1965.

TELL CHART

For Data Sheets Incorporating Flow Curves on Filter Products.
First use Mar. 15, 1965.

SN 230,440. Simmons-Boardman Publishing Corporation, New York, N.Y. Filed Oct. 18, 1965.

INTERNATIONAL
Railway Journal

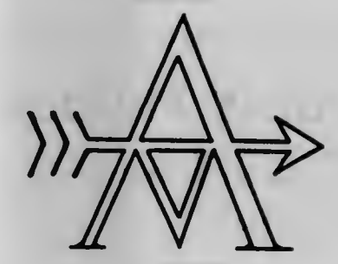
Owner of Reg. No. 728,683.
For Trade Magazine.
First use Oct. 7, 1960.

SN 230,570. Rowell Laboratories, Inc., Baudette, Minn. Filed Oct. 19, 1965.

SCRIPTFORMATION

For Pharmaceutical Product Information Booklet.
First use Oct. 1, 1965.

SN 231,016. Artemis Verlags Aktiengesellschaft, Zurich, Switzerland. Filed Oct. 22, 1965.



For Books.
First use at least as early as 1944; in commerce at least as early as 1944.

SN 231,498. The Silicocks-Miller Co., Maplewood, N.J. Filed Oct. 23, 1965.

SIMILUX

For Printed Plastic and Paper Articles for Promotional, Commercial, and Technical Usage—Namely, Charts, Labels, Signs, Badges, Calendars, Data Cards, Advertising Displays, Merchandise and Price dentifying Cards, Name Plates, Shelf Strips, and Transparent Overlays.
First use Mar. 1, 1965.

SN 233,586. The Delta Upsilon Fraternity, New York, N.Y. Filed Nov. 30, 1965.

DELTA UPSILON QUARTERLY

The word "Quarterly" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 642,148 and 645,239.
For Magazine.
First use Dec. 20, 1882.

SN 233,907. The Institute of Electrical and Electronics Engineers, Incorporated, New York, N.Y. Filed Dec. 3, 1965.



For Newsletter Issued From Time to Time.
First use at least as early as March 1964.

SN 234,059. Norcross, Inc., New York, N.Y. Filed Dec. 6, 1965.

ME, MYSELF AND I

For Greeting Cards.
First use Oct. 13, 1965.

SN 234,169. Associated Square Dancers of Superior California, Sacramento, Calif. Filed Dec. 8, 1965.

SQUARECASTER

For Monthly Magazine Devoted to Square Dancing.
First use March 1960.

SN 234,335. Chilton Company, Philadelphia, Pa. Filed Dec. 10, 1965.

MARINE PRODUCTS

Owner of Reg. No. 768,305.
For News Magazine for the Trade Devoted to the Pleasure Marine Industry.
First use Oct. 13, 1960.

SN 234,350. B. T. Heinz, d.b.a. B. T. Heinz Co., Seattle, Wash. Filed Dec. 10, 1965.

TRANSITIONS

For Photographic Transparencies.
First use Sept. 24, 1965.

SN 234,455. Newspaper Enterprise Association, Inc., Cleveland, Ohio. Filed Dec. 13, 1965.

BOOTS

For Comic Strip for Newspapers or Other Publications.
First use Sept. 9, 1934.

SN 234,947. The Squirt Company, Sherman Oaks, Calif. Filed Dec. 20, 1965.



REPORTER

Owner of Reg. Nos. 367,659, 390,686, 771,971, and others.
For Periodical Publication—Namely, a Magazine.
First use July 15, 1965.

SN 235,179. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed Dec. 23, 1965.

A FANTASY CARD

The words "A" and "Card" are disclaimed apart from the mark as shown.
For Greeting Cards.
First use September 1964.

SN 236,097. Kimball Systems, Inc., Belleville, N.J. Filed Jan. 10, 1966.

KIMCAL

For Printed Labels—Namely, Identification Markers, Name Plates, Emblems, Signs, and the Like.
First use not later than December 1964.

SN 237,577. The Merrill Anderson Company, Inc., New York, N.Y. Filed Jan. 28, 1966.

YOUR FAMILY'S FUTURE

Owner of Reg. No. 693,884.
For Monthly Bulletins Relating to Trusts, Estates and Taxes Prepared by the Applicant for Use by Applicant's Customers.
First use Oct. 1, 1960.

SN 237,707. International Telephone and Telegraph Corporation, New York, N.Y. Filed Feb. 1, 1966.

ITT

Owner of Reg. Nos. 581,615, 711,889, and others.
For House Organs Published at Intervals, and Descriptive Brochures and Handbooks Issued From Time to Time.
First use Dec. 7, 1961.

SN 237,867. National Periodical Publications, Inc., New York, N.Y. Filed Feb. 2, 1966.



For Cartoons Published in a Series, and Comic Magazines.
First use Sept. 7, 1965.

SN 238,428. Harper & Row, Publishers, Incorporated, New York, N.Y. Filed Feb. 9, 1966.

TORCHBOOKS

For Series of Paperback Books.
First use Feb. 6, 1957.

Class 39—Clothing

SN 230,627. Harry Fischer Corporation, Philadelphia, Pa. Filed Oct. 20, 1965.

BURLEIGH

For Men's and Boys' Outercoats.
First use at least as early as 1926.

SN 230,885. Peter Pan Foundations, Inc., New York, N.Y. Filed Oct. 21, 1965.

FIBER FOAM

For Brassieres.
First use Oct. 1, 1965.

SN 231,637. Blou-Slip Co., Inc., San Francisco, Calif. Filed Oct. 26, 1965.



For Slips and Half-Slips.
First use about March 1943.

SN 232,183. Blue Bell, Inc., Greensboro, N.C. Filed Nov. 5, 1965.

RUSTLER

Owner of Reg. No. 722,629.
For Ladies' and Men's Jeans.
First use Nov. 3, 1965.

SN 236,315. Jobill Sportsman, Inc., Los Angeles, Calif. Filed Jan. 12, 1966.



For Men's Sport Shirts.
First use on or about Nov. 2, 1965.

SN 236,349. C. W. Anderson Hosiery Company, Clinton, S.C. Filed Jan. 13, 1966.

COL-AND

For Ladies' Hosiery.
First use Apr. 1, 1938.

SN 236,785. A. Schreter & Sons Co., Inc., Baltimore, Md. Filed Jan. 18, 1966.

POLYTONES

For Neckties.
First use Jan. 13, 1966.

SN 237,647. Joseph Bancroft & Sons Co., Wilmington, Del. Filed Feb. 1, 1966.



Owner of Reg. Nos. 760,067, 781,168, and 783,700.
For Sport Shirts and Hosiery.
First use at least as early as November 1964; Mar. 14, 1962, as to the word "Bancora."

SN 249,094. Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. Filed June 27, 1966.

NAMESAKE

For Foundation Garments—Namely, Brassieres.
First use June 9, 1966.

SN 249,095. Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. Filed June 27, 1966.

LITTLE LOVES

For Foundation Garments—Namely, Girdles.
First use June 9, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 216,739. Colorado Ski Country U.S.A., Denver, Colo., by change of name from Ski Country USA, Inc., Denver, Colo. Filed Apr. 16, 1965.



The representation of the map of the United States is disclaimed apart from the mark as shown.
For Shoulder Patches.
First use in or about September 1963.

SN 226,334. Alexander Brenton, d.b.a. Terramar International, Beverly Hills, Calif. Filed Aug. 24, 1965.



For Artificial Eyelashes.
First use July 30, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 238,953. Hardwick & Magee Company, Philadelphia, Pa. Filed Feb. 16, 1966.



Owner of Reg. Nos. 245,770 and 419,882.
For Rugs and Carpets.
First use since November 1944.

SN 248,878. West Point-Pepperell, Inc., d.b.a. Pepperell Mfg. Co., New York, N.Y. Filed June 24, 1966.

WEAR PURE

For Shoe Fabric Specially Treated To Resist Mildew, Bacteria, and Fungus.
First use May 9, 1966.

Class 43—Thread and Yarn

SN 235,659. Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. Filed Jan. 3, 1966.

PINGOUIN SKIEUR

Owner of French Reg. No. 8,614, dated Nov. 17, 1960 (Roubaix); Natl. Inst. No. 155,235; and U.S. Reg. Nos. 303,410, 303,413, and 587,537.
For Yarns and Threads Made of Wool, Cotton, Linen, Silk, Rayon, Hemp, Flax, and Synthetic and Artificial Fibers.

Class 44—Dental, Medical, and Surgical Appliances

SN 228,648. Cutter Laboratories, Inc., Berkeley, Calif. Filed Sept. 27, 1965.

VOLU-TROLE

Owner of Reg. No. 678,947.
For Plastic Administration Set Used in the Administration of Intravenous Fluids.
First use Apr. 8, 1957.

SN 238,440. Missy, Inc., Clifton Forge, Va. Filed Feb. 9, 1966.

SYRIJET

For Needleless Injectors for Dental Use.
First use Jan. 26, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 177,391. Virginia Dare Extract Co., Inc., Brooklyn, N.Y. Filed Sept. 19, 1963.



The name "Virginia Dare" is that of a deceased historical celebrity. Owner of Reg. Nos. 244,276, 332,609, and others.
For Syrups, Concentrates, and Emulsions for the Preparation of Maltless Soft Drinks.
First use Apr. 1, 1963.

SN 209,186. The Kroger Co., Cincinnati, Ohio. Filed Dec. 31, 1964.



For Carbonated Soft Drinks.
First use at least as early as May 1962.

SN 220,322. Royal Castle System, Inc., Miami, Fla. Filed June 3, 1965.



The color lining in the drawing is for orange. Owner of Reg. No. 760,398.
For Birch Beer—a Soft Drink.
First use Mar. 18, 1938.

SN 224,802. Seven-Up Bottling Company, Inc., St. Louis, Mo. Filed Aug. 2, 1965.

TAYLOR MAID

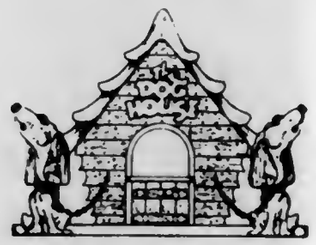
For Soft Drinks, and Syrups for Making the Same.
First use 1929.

SN 226,336. Lee Henry Clarson, d.b.a. Double Cola Bottling Co. and Hillbilly Beverages, Richland Center, Wis. Filed Aug. 24, 1965.



For Soft Drinks.
First use Apr. 1, 1959.

SN 232,682. The Dog House, Inc., Youngstown, Ohio. Filed Nov. 15, 1965.



Owner of Reg. No. 587,400.
For Soft Drinks.
First use Aug. 1, 1955.

SN 234,649. The Kroger Co., d.b.a. Wesco Foods Co., Cincinnati, Ohio. Filed Dec. 15, 1965.

ZANY ZOO

For Powder for Making a Soft Drink.
First use at least as early as Mar. 24, 1965.

SN 234,650. The Kroger Co., d.b.a. Wesco Foods Co., Cincinnati, Ohio. Filed Dec. 15, 1965.

SEA LION STRAWBERRY

Applicant disclaims the word "Strawberry" apart from the mark as shown.
For Powder for Making a Soft Drink.
First use at least as early as Mar. 24, 1965.

SN 234,651. The Kroger Co., d.b.a. Wesco Foods Co., Cincinnati, Ohio. Filed Dec. 15, 1965.

APE GRAPE

Applicant disclaims the word "Grape" apart from the mark as shown.
For Powder for Making a Soft Drink.
First use at least as early as Mar. 24, 1965.

SN 234,652. The Kroger Co., d.b.a. Wesco Foods Co., Cincinnati, Ohio. Filed Dec. 15, 1965.

CHEETAH CHERRY

Applicant disclaims the word "Cherry" apart from the mark as shown.
For Powder for Making a Soft Drink.
First use at least as early as Mar. 24, 1965.

SN 234,653. The Kroger Co., d.b.a. Wesco Foods Co., Cincinnati, Ohio. Filed Dec. 15, 1965.

OSTRICH ORANGE

Applicant disclaims the word "Orange" apart from the mark as shown.
For Powder for Making a Soft Drink.
First use at least as early as Mar. 24, 1965.

SN 234,654. The Kroger Co., d.b.a. Wesco Foods Co., Cincinnati, Ohio. Filed Dec. 15, 1965.

RHINO RASPBERRY

Applicant disclaims the word "Raspberry" apart from the mark as shown.
For Powder for Making a Soft Drink.
First use at least as early as Mar. 24, 1965.

SN 243,574. Pepsico, Inc., New York, N.Y. Filed Apr. 15, 1966.

MOUNTAIN DEW

Owner of Reg. No. 578,401.
For Soft Drinks, and Concentrates Used in the Preparation Thereof.
First use Sept. 24, 1948.

Class 46—Foods and Ingredients of Foods

SN 162,078. Colonial Provision Co., Inc., Boston, Mass. Filed Feb. 5, 1963.



Colonial

The picture is fanciful and not that of any living person. Owner of Reg. Nos. 731,929 and 784,092.
For Canned Turkey.
First use Sept. 24, 1962.

SN 201,546. Pioneer Box Lunch, Inc., Garfield, N.J. Filed Sept. 9, 1964.

PIONEER

For Sandwiches, Soups, Pies, Gelatin Desserts, Fruit Cocktails, and Salads, All Ready for Immediate Consumption.
First use 1938.

SN 212,913. Stella d'Oro Biscuit Company, Inc., New York, N.Y. Filed Feb. 26, 1965.

DORETTES

For Cookies or Biscuits.
First use May 1951.

SN 212,914. Stella d'Oro Biscuit Company, Inc., New York, N.Y. Filed Feb. 26, 1965.

REGINETTES

For Cookies or Biscuits.
First use July 1951.

SN 212,915. Stella d'Oro Biscuit Company, Inc., New York, N.Y. Filed Feb. 26, 1965.

STELLARETTES

For Cookies or Biscuits.
First use February 1951.

SN 213,683. Kabushiki Kaisha Kato Shoten, Yamato-Takada City, Nara Prefecture, Japan. Filed Mar. 9, 1965.



The ornamental Japanese character within the circle is synonymous with "eight" in English.
For Canned Narazuke, Which Is a Pickled Combination of Fruits and Vegetables.
First use Oct. 28, 1919; in commerce Oct. 28, 1919.

SN 215,552. Terres Noires Ltee, d.b.a. Terres Noires Ltd., Sherrington, Napierville, Quebec, Canada. Filed Apr. 1, 1965.

SOCA

For Fresh Vegetables.
First use August 1961; in commerce August 1961.

SN 217,913. Fred Meyer, Inc., Portland, Oreg. Filed May 3, 1965.

YOUR CHOICE

For Macaroni and Cheese.
First use Apr. 1, 1965.

SN 219,757. Automatic Canteen Company of America, Chicago, Ill. Filed May 26, 1965.

Cinadrops

Owner of Reg. Nos. 543,332 and 789,418.
For Candy.
First use Oct. 24, 1963.

SN 220,224. F. C. Matson, d.b.a. J. G. Maples Co., Martinsburg, W. Va. Filed June 2, 1965.

PETER RABBIT



The representation of the apples is disclaimed apart from the mark as shown. Owner of Reg. No. 323,525.
For Fresh Deciduous Fruits.
First use September 1923.

SN 221,066. Caesar C. Latimer, d.b.a. Latimer's Famous Barbecue Sauce, Tulsa, Okla. Filed June 14, 1965.



"The Man who made Good Barbecue Famous"

The name "Major S. Latimer" and the hand signature facsimile is that of a deceased person. The wording "Famous Bar-B-Cue Sauce" and "The Man Who Made Good Barbecue Famous" is disclaimed apart from the mark as shown. The mark is lined for the colors yellow and red.
For Barbecue Sauce.
First use January 1932.

SN 221,618. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Chicago, Ill., assignee of Joe Lowe Corporation, Englewood, N.J. Filed June 21, 1965.



Applicant disclaims the exclusive right to the use of the descriptive word "Apple" apart from the mark as shown. The drawing is lined for the colors red, brown, and green, but no claim is made to such colors. Owner of Reg. No. 796,845.
For Frozen Confections on Sticks, and Liquid Concentrates for Making the Same.
First use Aug. 28, 1964.

SN 223,103. Peter Eckrich and Sons, Inc., Fort Wayne, Ind. Filed July 12, 1965.

BAR-B LOAF

The word "Loaf" is disclaimed apart from the mark as shown.
For Luncheon Meats and Sausages.
First use Mar. 15, 1956.

SN 223,310. Hoben Candy Corp., Ashley, Ill. Filed July 14, 1965.



The word "Roll" is disclaimed separate and apart from the mark as shown.
For Candy Rolls.
First use May 15, 1965.

SN 225,348. Pet Milk Company, St. Louis, Mo. Filed Aug. 9, 1965.

CRAZY KOKO

The word "Koko" is disclaimed apart from the mark as shown.
For Chocolate Flavored Mix To Be Added to Milk To Make a Food Beverage.
First use June 29, 1965.

SN 225,962. Leaf Brands, Inc., Chicago, Ill. Filed Aug. 18, 1965.

BUBBLE-A-GO-GO

For Chewing Gum.
First use July 26, 1965.

SN 226,217. Burgers' Ozark Country Cured Hams, Inc., California, Mo. Filed Aug. 23, 1965.



For Smoked Hams.
First use Mar. 5, 1963.

SN 227,276. General Mills, Inc., Minneapolis, Minn. Filed Sept. 7, 1965.

BOWS

For Cereal Derived Ready-To-Eat Corn Snack.
First use July 30, 1965.

SN 227,277. General Mills, Inc., Minneapolis, Minn. Filed Sept. 7, 1965.

BUTTONS 'N BOWS

Owner of Reg. Nos. 197,338 and 799,196.
For Cereal Derived Ready-To-Eat Corn Snack.
First use July 30, 1965.

SN 227,485. The Dietene Company, d.b.a. The Delmark Company, Minneapolis, Minn. Filed Sept. 9, 1965.

DELMARK COUNTRY OVEN

Owner of Reg. Nos. 753,774 and 767,931.
For Powdered Dietary Custard Mix.
First use Aug. 13, 1965.

SN 228,535. Kent Feeds, Inc., Muscatine, Iowa. Filed Sept. 24, 1965.

PRECISION

For Livestock and Poultry Feed.
First use about October 1963.

SN 229,906. Worthington Foods, Inc., Worthington, Ohio. Filed Oct. 11, 1965.

PROSAGE

For Frozen Vegetable Protein Food Product, in Solid Form, Having Mixed Therein Binders, Vegetable Oil, and Monosodium Glutamate, as Well as Seasoning and Flavoring Materials.
First use Dec. 18, 1963.

SN 231,168. Meshulam's Inc., d.b.a. Fruit Fair, Los Angeles, Calif. Filed Oct. 22, 1965.



The representation of the fruit shown in the drawing is disclaimed apart from the mark shown.
For Fresh Fruits and Nuts.
First use on or about Aug. 1, 1965.

SN 231,504. Swift & Company, Chicago, Ill. Filed Oct. 23, 1965.

MAPLE VALLEY

For Sliced Bacon.
First use on or about Sept. 1, 1965.

SN 231,505. Swift & Company, Chicago, Ill. Filed Oct. 23, 1965.

MAPLE HILL

For Sliced Bacon.
First use on or about Sept. 1, 1965.

SN 231,625. Nishimoto Trading Co., Ltd., of Hawaii, d.b.a. Nishimoto Trading Co., Ltd., Honolulu, Hawaii. Filed Oct. 25, 1965.

Lucky Rose

Owner of Reg. No. 786,513.
For Canned Goods—Namely, Crabmeat, Vegetables and Fruit, Smoked Baby Clams, Top Shells, Prepared Vegetables and Bean Noodle, Boiled Bamboo Shoots, and Pink Salmon.
First use 1950.

SN 231,863. Waldman's Meats, Inc., d.b.a. Waldman's Meats, New Castle, Pa. Filed Oct. 29, 1965.

BUTTER KIST

No claim is made to the word "Butter," apart from the mark as shown, applicant's common law rights being reserved.
For Precooked Frozen and Fresh Frozen Poultry.
First use May 17, 1963.

SN 231,905. Flavor Corporation of America, Northbrook, Ill. Filed Nov. 1, 1965.

FLAVORZYME

For Preservative Flavor Additive for Animal Feeds.
First use Sept. 24, 1965.

SN 232,082. Murphy Products Company, Inc., Burlington, Wis. Filed Nov. 3, 1965.



For Livestock and Poultry Feeds.
First use Sept. 20, 1965.

SN 232,128. Hilton Seafoods Company, Inc., Seattle, Wash. Filed Nov. 4, 1965.

CATCHY

For Soups for Household Pets.
First use Apr. 21, 1965.

SN 233,266. Howard Johnson Incorporated of Florida, d.b.a. Howard Johnson Inc. of Florida, Miami, Fla. Filed Nov. 24, 1965.

CORN TOASTEES

The word "Corn" is disclaimed apart from the mark as shown.
For Corn Meal Cakes for Toasting.
First use on or about Nov. 1, 1956.

SN 233,446. E. J. Brach & Sons, Chicago, Ill. Filed Nov. 29, 1965.

BINGMONT

For Candy.
First use Nov. 3, 1965.

SN 233,794. The Benjamin P. Forbes Company, Cleveland, Ohio. Filed Dec. 2, 1965.

DESSERT-O

For Chocolate Flavored Pudding Powder.
First use Apr. 4, 1935.

SN 233,931. Modern Bakeries, Inc., Culver City, Calif. Filed Dec. 3, 1965.

KWICK OVEN

For Frozen Bread.
First use July 29, 1965.

SN 236,846. Rudy's Farm Company, Nashville, Tenn. Filed Jan. 19, 1966.

RUDY'S

For Pork Products—Namely, Sausage, Souse, Bacon, and Ham.
First use September 1946.

SN 236,847. Rudy's Farm Company, Nashville, Tenn. Filed Jan. 19, 1966.



The word "Mild" is disclaimed.
For Pork Products—Namely, Sausage, Souse, Bacon, and Ham.
First use August 1961.

SN 236,940. Weis Markets, Inc., Sunbury, Pa. Filed Jan. 20, 1966.

DUTCH VALLEY

Owner of Reg. Nos. 701,482, 793,751, and others.
For Sliced Dried Beef, Crackers; Snack Food Products, Plain and Flavored—Namely, Cheese Corn Q's, Caramel Corn and Corn Chips; Saltines, Apple Butter, Bacon, Frankfurters, Butter, and Potato Chips, Sauerkraut and Cheese, and Margarine.
First use Sept. 22, 1959, on bacon and frankfurters.

SN 245,366. Good Humor Corporation, Englewood Cliffs, N.J. Filed May 5, 1966.

SKY-RAY

For Ice Cream and Frozen Confections on a Stick.
First use Dec. 7, 1965.

SN 246,917. Mars, Incorporated, d.b.a. M & M Candies, Wilmington, Del. Filed May 31, 1966.

SPINCRISP

For Chocolate Wafer Bar.
First use Apr. 25, 1966.

SN 247,656. David Freedman & Co., Inc., Thermal, Calif. Filed June 9, 1966.

VITA-"C"-SLIM

For Fresh Citrus Fruits.
First use Apr. 16, 1966.

SN 247,766. Best Kosher Sausage Co., Chicago, Ill. Filed June 10, 1966.

ALL STAR

For Frankfurters.
First use June 2, 1966.

SN 248,389. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company, Corpus Christi, Tex. Filed June 20, 1966.

Silver Valley

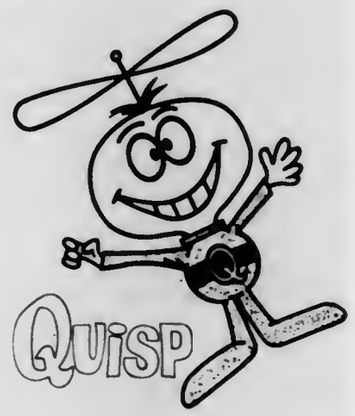
Owner of Reg. Nos. 509,328, 611,499, and 733,498.
For Oleomargarine, Frozen Biscuits, Corn Oil, Waffle Syrup, Canned Vegetables, Dry Beans, and Dried Peas.
First use Feb. 7, 1938.

SN 248,392. King Kullen Grocery Co., Inc., Westbury, N.Y. Filed June 20, 1966.



Owner of Reg. Nos. 682,619, 802,003, and others.
For Frozen Concentrated Orange Juice, Tomato Juice, Canned Fruits, Canned Fruit Cocktail, Canned Vegetables, Canned Potatoes, Canned Sweet Potatoes, Canned Tuna, California Tomato Paste, Tomato Puree, Chilled Citrus Sections, Frozen Vegetables, Frozen Vegetables in Butter Sauce, Saltines, Crisp Crackers, and Chocolate Chip Cookies.
First use July 19, 1965.

SN 248,399. The Quaker Oats Company, Chicago, Ill. Filed June 20, 1966.



For Breakfast Cereal.
First use November 1965; May 27, 1965, as to "Quisp."

SN 248,759. The Quaker Oats Company, Chicago, Ill. Filed June 23, 1966.



For Cookies.
First use May 19, 1966.

SN 248,943. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company, and Harlingen Canning Co., Corpus Christi, Tex. Filed June 27, 1966.

Don Rico

For Canned Fruits, Canned Fruit Juices, Canned Vegetables, Canned Vegetable Juices, Canned Tomatoes With Green Chili Peppers, Tomato Catsup, Canned Jalapeno Chili Peppers With Seasonings, Carrots, and Onions.
First use Feb. 17, 1956.

Class 47—Wines

SN 224,342. Sektkellerei Carstens KG., Neustadt/Weinstrasse, Germany. Filed July 27, 1965.



The German word "Bankett" means "banquet" in English.
Owner of German Reg. No. 722,203, dated Dec. 3, 1957.
For Sparkling Wines.

SN 227,477. Chandon Champagne Corporation, New York, N.Y. Filed Sept. 9, 1965.

Cuvée Dom Pérignon

The name "Dom Perignon" is that of a long deceased French cellar-master, popularly credited with being the inventor of champagne. No claim is made to the word "Cuvee" apart from the mark as shown. Owner of Reg. No. 634,170.
For Champagne Wines.
First use November 1936; in commerce November 1936.

SN 233,140. South African Wine Farmers Association (London) Limited, London, England. Filed Nov. 22, 1965.

SPRINGBOK

Owner of British Reg. No. 472,344, dated Aug. 18, 1926.
For Wines.

SN 233,141. South African Wine Farmers Association (London) Limited, London, England. Filed Nov. 22, 1965.



Owner of British Reg. No. 701,361, dated Sept. 20, 1951.
For Wines.

Class 48 — Malt Beverages and Liquors

SN 211,742. Peter Hand Brewery Company (Delaware corporation), Chicago, Ill., assignee of Peter Hand Brewery Company (Illinois corporation), Chicago, Ill. Filed Feb. 10, 1965.

Meister Bräu

Applicant claims no rights in the word "Bräu" per se. The English translation of the German words "Meister Bräu" is "master brew." Owner of Reg. Nos. 306,427 and 602,804.
For Beer.
First use Feb. 23, 1953.

SN 227,604. Molson Breweries Limited, Montreal, Quebec, Canada. Filed Sept. 10, 1965.

MOLSON CANADIAN

No claim is made to the word "Canadian" apart from the mark as shown and without prejudice to applicant's claim of common law trademark rights therein. The drawing is lined for colors blue, red, and gold. Owner of Reg. Nos. 570,348, 748,162, and others.
For Beer.
First use May 1964; in commerce Sepember 1964.

Class 49 — Distilled Alcoholic Liquors

SN 213,752. Erven Lucas Bols Incorporated, Fair Lawn, N.J. Filed Mar. 10, 1965.

BOLS Kaya

Owner of Reg. Nos. 74,897, 106,727, and 293,196.
For Vodka.
First use Dec. 19, 1963.

SN 226,756. E. Martinoni Company, d.b.a. Stewart & Co., San Francisco, Calif. Filed Aug. 30, 1965.

HUDSON HOUSE

For Gin and Vodka.
First use Aug. 13, 1964.

SN 231,159. E. Martinoni Company, d.b.a. Stewart & Co., San Francisco, Calif. Filed Oct. 22, 1965.

RACQUET CLUB

For Vodka.
First use Sept. 17, 1965.

SN 232,301. Esbeco Distilling Corporation, d.b.a. Sterling Distilling Co., Stamford, Conn. Filed Nov. 8, 1965.
For Whisky.

KENMORE

First use 1935.

SN 235,276. Coates & Co. (Plymouth) Limited, Plymouth, England. Filed Dec. 27, 1965.

PLYM-GIN

Owner of British Reg. No. B875,144, dated Feb. 3, 1965.
For Gin.

SN 236,114. E. Martinoni Company, d.b.a. Stewart & Co., San Francisco, Calif. Filed Jan. 10, 1966.

GOLD ROOM

For Vodka.
First use Dec. 6, 1965.

Class 50 — Merchandise Not Otherwise Classified

SN 227,247. Charm Originals, Inc., Kansas City, Mo. Filed Sept. 7, 1965.

GO GO GLOVES

The term "Gloves" is disclaimed apart from the mark as shown.
For Novelty in the Form of a Decorative Hand Covering for Use by Spectators at School Functions, Games, and the Like.
First use Aug. 10, 1965.

SN 229,911. Thermark Corporation, Munster, Ind. Filed Sept. 24,1965.



The mark consists of a capital "T" and a capital "M" within a triangle.
For Cellophane or Metallic Tape, Which Is Specially Treated With Colored Paint, for Use as a Transfer Medium in Hot Stamp Pressing.
First use March 1965.

SN 236,067. Dixon Corporation, Bristol, R.I. Filed Jan. 10, 1966.

FEELEY

For Advertising Novelty in the Form of a Disc.
First use Dec. 23, 1965.

SN 238,506. Erman-Bach, Ltd., New York, N.Y. Filed Feb. 10, 1966.

MERBA

Owner of Reg. No. 802,625.
For Non-Edible Color Decorations—Namely, Wafer Cake Tops and Wafer Roses, and Wafer Leaves.
First use July 10, 1962.

SN 241,080. Rapidgum Limited, Manley, Warrington, England. Filed Mar. 15, 1966.

RAPIDEX

For Bandages, Principally of Rubber, for Use in Budding and Grafting Nursery Stock.
First use Oct. 2, 1963; in commerce May 1964.

Class 51 — Cosmetics and Toilet Preparations

SN 213,204. C. L. Cleek, Pacific Palisades, Calif. Filed Mar. 3, 1965.

LORD BEASTLY

For Cologne.
First use Feb. 22, 1965.

SN 220,469. Cool-It, Inc., Chicago, Ill. Filed June 7, 1965.
For After Shave Lotion.

COOL-IT

First use on or about Feb. 24, 1965.

SN 221,612. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed June 21, 1965.

AUTO-LASHIQUE

For Mascara.
First use May 4, 1965; at least as early as 1931 as to "Lashique."

SN 222,130. Dae Health Laboratories, Limited, London, England. Filed June 28, 1965.

V420

Owner of British Reg. No. 455,254, dated Jan. 12, 1925.
For Depilatory Cream.

SN 222,408. Parfums Schiaparelli, Inc., New York, N.Y. Filed June 30, 1965.

SCHIAPARELLI

Owner of Reg. Nos. 395,116, 406,963, 707,274, and others.
For Perfumed Hair Spray, Perfume, Toilet Water, Cologne, Bath Oils, and Dusting Powder.
First use Aug. 25, 1943.

SN 222,584. King Arthur, Inc., Memphis, Tenn. Filed July 2, 1965.

Crown & Scepter

For Shaving Cream, and Personal Deodorant.
First use June 17, 1965.

SN 223,772. John H. Breck, Inc., Springfield, Mass. Filed July 20, 1965.

GO GO LIGHT

For Hair Coloring Preparation.
First use June 28, 1965.

SN 224,510. John H. Breck, Inc., Springfield, Mass., assignee of Clairol Incorporated, New York, N.Y. Filed July 29, 1965.

GO LIGHTS

For Lipstick.
First use July 21, 1965.

SN 224,700. Elizabeth Arden Sales Corporation, New York, N.Y. Filed Aug. 2, 1965.

PERFECT FINISH

For Cosmetic Facial Foundation.
First use June 29, 1965.

SN 225,052. Merle Norman Cosmetics, Inc., Los Angeles, Calif. Filed Aug. 5, 1965.



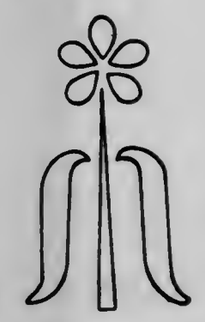
The trademark consists of a Norman soldier in armor holding a sword and shield with a pennant.
For Cologne, Pre-Shave and Shave Lotion, and Personal Deodorant.
First use August 1964.

SN 225,093. Alberto-Culver Company, Melrose Park, Ill. Filed Aug. 6, 1965.

SHEER GLORY

Owner of Reg. No. 782,184.
For Preparation for Imparting Color to Hair.
First use June 22, 1965.

SN 225,194. Merle Norman Cosmetics, Inc., Los Angeles, Calif. Filed Aug. 6, 1965.



For Powder Bases, Facial Creams and Lotions, Rouge, Personal Deodorants, and Eye Cosmetics.
First use May 1965.

SN 225,609. Shields Inc. of Attleboro, Mass. Attleboro, Mass. Filed Aug. 12, 1965.

COSMANTIC

For Men's Toiletries—Namely, After-Shave Lotion, Men's Cologne, Pre-Electric Shave Lotion, Shaving Cream, and Deodorant.
First use June 1965.

SN 226,174. Stanley Home Products, Inc., Westfield, Mass. Filed Aug. 20, 1965.

MATICARA

For Mascara.
First use Nov. 8, 1962.

SN 226,720. Bristol-Myers Company, New York, N.Y. Filed Aug. 30, 1965.

diablo

For Hair Dressing.
First use July 2, 1965.

SN 227,479. Maria Chenu, Neuilly-sur-Seine, France. Filed Sept. 9, 1965.

PRET A PORTER
READY TO WEAR

The English translation of "Pret a Porter" is "ready to wear." Owner of French Reg. No. 523,968, dated Aug. 21, 1964 (Seine); Natl. Inst. No. 231,143.
For Perfumes, Eau de Cologne, Perfume Essences, Hair Lotion, and Dentifrices.

SN 230,535. Hartz Mountain Products Corp., New York, N.Y. Filed Oct. 19, 1965.

SHOW OFF

For Animal Coat Conditioner.
First use May 17, 1965.

SN 231,365. Alexandra de Markoff Sales Corporation, New York, N.Y. Filed Oct. 23, 1965.

PRISMATIC

Owner of Reg. No. 500,648.
For Face Powder.
First use on or about July 2, 1965.

SN 231,843. N.V. Organon, Oss, Holland. Filed Oct. 29, 1965.

ENDOCIL

Owner of Dutch Reg. No. 155,458, dated May 20, 1965.
For Cosmetics—Namely, Hydrating Hormone Creams, Hydrating Fluid Cream, and Cleansing Tonic.

SN 232,503. American Aloe Corporation, Skokie, Ill. Filed Nov. 12, 1965.

TROPICALOE

For Tanning Lotion.
First use May 13, 1965.

SN 233,683. Cecilia Products, Ltd., New York, N.Y. Filed Dec. 1, 1965.

EYE ACCENT

For Eye Shadow.
First use April 1965.

SN 233,822. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif. Filed Dec. 2, 1965.

ENCORE

For Men's Toiletries—Namely, After Shave Lotion.
First use Nov. 5, 1965.

SN 234,201. Higinio Arriaza, d.b.a. Arday International Co., Bergenfield, N.J. Filed Dec. 8, 1965.

Cristina Arday

"Christina Arday" is the name of a living individual whose consent is of record.
For Eau de Cologne.
First use Nov. 18, 1965.

SN 234,338. DAS, Inc., Seattle, Wash. Filed Dec. 10, 1965.



For Men's Cosmetics—Namely, Cologne, Talcum Powder, and After Shave Lotion.
First use Nov. 18, 1965.

SN 234,339. DAS, Inc., Seattle, Wash. Filed Dec. 10, 1965.

KAT-NIP

For Men's Cosmetics—Namely, Cologne, Talcum Powder, and After Shave Lotion.
First use Nov. 18, 1965.

SN 234,811. Duvidell Sales Corporation, New York, N.Y. Filed Dec. 17, 1965.

FLAMENCO

For Men's Talcum Powder, and Toilet Water.
First use Nov. 29, 1965.

SN 234,812. Duvidell Sales Corporation, New York, N.Y. Filed Dec. 17, 1965.

BOARD ROOM

For Men's Talcum Powder, and Toilet water.
First use Nov. 29, 1965.

SN 234,813. Duvidell Sales Corporation, New York, N.Y. Filed Dec. 17, 1965.

DORSET

For Men's Talcum Powder, and Toilet Water.
First use Nov. 29, 1965.

SN 234,837. Para-Dentol Inc., Brooklyn, N.Y. Filed Dec. 17, 1965.



Applicant disclaims the words "Trade Mark" apart from the mark as shown. The drawing is lined for red, but no claim is made to color.
For Powerful and Concentrated Mouthwash for Oral Hygiene.
First use Dec. 6, 1965.

SN 237,708. Invincible Products Corporation, Chicago, Ill. Filed Feb. 1, 1966.



The words "Custom Formula" are disclaimed apart from the mark as shown.
For Hair Sprays.
First use on or about Aug. 27, 1964.

SN 237,894. The Vizuall Company, Inc., New York, N.Y. Filed Feb. 2, 1966.

IN

For Men's After Shave Cream, Lotion and Cologne.
First use June 1965.

SN 238,033. Alexandra de Markoff Sales Corporation, New York, N.Y. Filed Feb. 4, 1966.

MASQUE DE MARKOFF

The word "Masque" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 280,660; 634,466, and others.
For Facial Treatment.
First use December 1959.

SN 241,322. The Denver Chemical Manufacturing Company, d.b.a. Siroll Laboratories, Inc., Stamford, Conn. Filed Mar. 18, 1966.

SIROLENE

Owner of Reg. Nos. 632,564 and 774,708.
For Remedial Skin Softener for Chapped, Chafed, Flaky and Dry Skin, and Minor Sunburn and Windburn.
First use July 29, 1965.

SN 247,066. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed June 1, 1966.

ZINZIN

For Perfume.
First use Apr. 25, 1966.

SN 247,067. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed June 1, 1966.

ZORRO

For Perfume.
First use Apr. 25, 1966.

SN 247,069. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed June 1, 1966.

ZANZAN

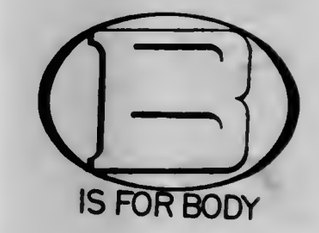
For Perfume.
First use Apr. 22, 1966.

SN 247,070. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed June 1, 1966.

JUMPING BEAN

For Perfume.
First use Apr. 27, 1966.

SN 247,553. The Gillette Company, d.b.a. The Toni Company, Chicago, Ill. Filed June 8, 1966.



For Hair Spray.
First use May 21, 1966.

SN 248,082. The Gillette Company, Boston, Mass. Filed June 15, 1966.

GYRO

For Shaving Cream.
First use May 12, 1966.

SN 248,084. The Gillette Company, Boston, Mass. Filed June 15, 1966.

NINE FLAGS

For Shaving Cologne.
First use June 1, 1966.

Class 52 — Detergents and Soaps

SN 224,868. Luzier Incorporated, Kansas City, Mo. Filed Aug. 3, 1965.

WASH-AWAY

For Medicated Skin Cleanser.
First use Oct. 12, 1964.

SN 227,556. Bymart-Tintair, Inc., New York, N.Y. Filed Sept. 10, 1965.

Emerald Sea

For Hair Shampoo.
First use Sept. 7, 1965.

SN 228,949. Sita Distributors, Collingdale, Pa. Filed Sept. 29, 1965.

ALUMA KLEEN

The word "Kleen" is disclaimed apart from the mark as shown.
For Metal Cleaner.
First use on or about Apr. 8, 1965.

SN 232,367. Thompson-Hayward Chemical Company, Kansas City, Kans. Filed Nov. 8, 1965.

Hy-SOL

For Laundry Detergent.
First use Apr. 1, 1947.

SN 232,375. Chester Whitfield Smith, d.b.a. Whitfield Chemical Company, Detroit, Mich. Filed Nov. 8, 1965.

WHITFIELD

For Industrial Metal Cleaning Chemicals.
First use 1948.

SN 234,768. Purex Corporation, Ltd., Lakewood, Calif. Filed Dec. 16, 1965.

PINK STORM

The word "Pink" is disclaimed apart from the mark as a whole.
For Hand Soap.
First use Sept. 27, 1965.

SERVICE MARKS

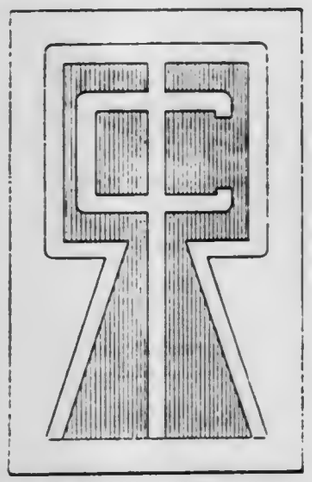
Class 100 — Miscellaneous

SN 221,833. Kemp's Hamburger Shops of America, Inc., d.b.a. Kemp's of America, Boston, Mass. Filed June 23, 1965.



For Snack Bar and Restaurant Services.
First use Mar. 3, 1965.

SN 223,728. Rocket Research Corporation, Seattle, Wash. Filed July 19, 1965.



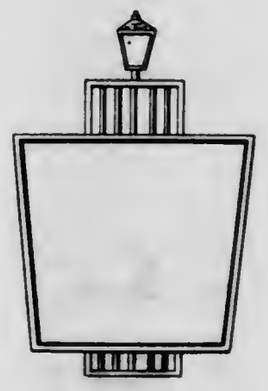
The drawing is lined for red, however color is not claimed as a feature of the mark. The mark is a fanciful representation of the letters "RRC."
For Engineering Services Incident to Research and Development of Rocket Engines, Components Thereof, and Design Proposals Respecting Same.
First use on or about July 18, 1960.

SN 224,396. The Contractor's Engineer, Neodesha, Kans. Filed July 28, 1965.



For Engineering Consulting Services in the Field of Machinery Design and Construction.
First use Aug. 15, 1963.

SN 224,442. Matthew R. Perkins, d.b.a. Perkins Pancake Houses, Cincinnati, Ohio. Filed July 28, 1965.



For Restaurant Service.
First use July 1, 1965.

SN 233,497. HMH Publishing Co., Inc., Chicago, Ill. Filed Nov. 29, 1965.

FEMLIN

For Operating Establishments Which Feature Food, Drink, and Entertainment.
First use on or about Oct. 26, 1965.

SN 234,884. Country Kitchen Incorporated, of Middletown, Ohio, Cincinnati, Ohio. Filed Dec. 20, 1965.



Owner of Reg. No. 724,610.
For Restaurant Services.
First use October 1958.

Class 101 — Advertising and Business

SN 213,000. S. K. Foster and Associates, Inc., Cincinnati, Ohio. Filed Mar. 1, 1965.



For Conducting Symposiums on the Problem of Industrial Noise.
First use Jan. 25, 1965.

SN 221,948. National Tele-Cigar, Inc., Tampa, Fla. Filed June 24, 1965.

"Tele-Cigars"

For Telegraphic Ordering of Gift Boxes of Cigars.
First use Dec. 1, 1964.

SN 224,323. The National Liquor Authority, Inc., Miami, Fla. Filed July 27, 1965.

LBW

For Sale and Delivery of Alcoholic Beverages by Telegraph and Telephone.
First use June 30, 1965.

SN 224,948. Humiston, Keeling and Company, Chicago, Ill. Filed Aug. 4, 1965.

MEN'S CENTER

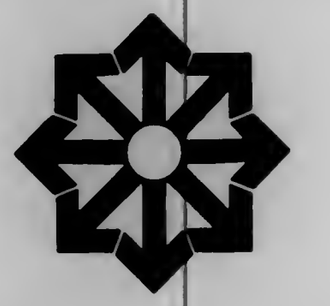
For Promoting the Sale of Men's Toiletries by Retail Drug Stores by Aiding in the Setting Up of a Special Area of the Store for This Purpose, by Being Responsible for the Maintenance of a Suitable Supply of Men's Toiletries in Each Store, and by Aiding in the Advertising of Such Goods.
First use June 22, 1965.

SN 226,558. Olean Wholesale Grocery Coop., Inc., Olean, N.Y. Filed Aug. 26, 1965.



For Retail Grocery Services.
First use about Jan. 1, 1950.

SN 227,610. Omni-Card Systems, Inc., Maspeth, N.Y. Filed Sept. 10, 1965.



For Furnishing Identification Cards, Including Photograph and Personal Data, to Institutions.
First use Aug. 4, 1965.

SN 227,611. Omni-Card Systems, Inc., Maspeth, N.Y. Filed Sept. 10, 1965.

OMNI-CARD SYSTEMS

The word "Systems" is disclaimed apart from the mark as shown.
For Furnishing Identification Cards, Including Photograph and Personal Data, to Institutions.
First use Aug. 4, 1965.

SN 228,124. Bonded Oil Company, Springfield, Ohio. Filed Sept. 20, 1965.

TREASURE ISLAND

For Sales Promotion Services—Namely, Advising Merchants of Automotive Products and Services How to Increase Sales of Their Goods and Services Primarily by Means of Premium-Redemption Services Supervised by Applicant.
First use May 19, 1965.

SN 228,125. Bonded Oil Company, Springfield, Ohio. Filed Sept. 20, 1965.

TREASURE CHIP

The word "Chip" is disclaimed apart from the mark as shown.
For Sales Promotion Services—Namely, Advising Merchants of Automotive Products and Services, How To Increase Sales of Their Goods and Services Primarily by Means of Tokens Which Are Redeemable in Premiums.
First use May 19, 1965.

SN 229,106. Mediserve Associates, Incorporated, Collegeville, Pa. Filed Oct. 1, 1965.

MEDISERVE

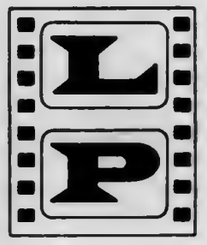
For Ethical Drug Detail Sales Service.
First use Jan. 11, 1965.

SN 229,980. Interco Incorporated, d.b.a. The Florsheim Shoe Company, Chicago, Ill., by change of name from International Shoe Company, Chicago, Ill. Filed Oct. 12, 1965.

FLORSHEIM GAY NINETIES BARBER SHOP

Applicant disclaims exclusive rights in the words "Barber Shop" apart from the mark as shown. Owner of Reg. Nos. 73,586, 782,475, and others.
For Barber Shop Services.
First use Apr. 1, 1960; January 1890 as to "Florsheim."

SN 230,172. Laird Productions Incorporated, Harrisburg, Pa. Filed Oct. 14, 1965.



For Production for Others of Insurance Educational Material in the Form of Motion Pictures, Film Strips, Recordings, Slides, Photographs, and by Printed Word.
First use on or about Nov. 1, 1964.

Class 102 — Insurance and Financial

SN 221,398. Minnesota National Life Insurance Company, Minneapolis, Minn. Filed June 17, 1965.



For Insurance Underwriting Services.
First use Dec. 29, 1964.

SN 224,634. Mid-Continent Investors Corporation, Denver, Colo. Filed July 30, 1965.



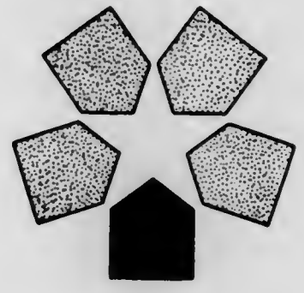
No claim is made to the representation of the globe apart from the mark as shown.
For Securities Investment Services.
First use Feb. 14, 1965.

SN 227,901. Weyerhaeuser Company, Tacoma, Wash. Filed Sept. 15, 1965.

WRH

Owner of Reg. No. 614,708.
For Financial Services—Namely, Arranging Construction and Mortgage Financing for Homes for Others.
First use January 1963.

SN 233,242. Anderson, Clayton & Co., Houston, Tex. Filed Nov. 24, 1965.



The mark generally includes a star whose points are delineated by adjoining arrowheads which contain stippling for shading and not to indicate any particular color.
For Underwriting and Servicing Insurance.
First use Nov. 4, 1965.

SN 234,408. The First National Bank of Ripon, Ripon, Wis. Filed Dec. 13, 1965.



The drawing is lined for red and gold, but color is not an essential feature of the mark.
For General Banking Service.
First use July 4, 1964.

SN 235,604. Provident Life Insurance Company, Bismarck, N. Dak. Filed Nov. 29, 1965.



Owner of Reg. No. 541,206.
For Underwriting of Life Insurance.
First use June 28, 1965.

SN 236,575. Dial Finance Company, Des Moines, Iowa. Filed Jan. 17, 1966.

DIAL

For General Consumer Finance Service, Including Cash Instalment Loans to Individuals Under Small Loan Laws, Industrial Banking Laws and Certificate Plan Laws and the Purchase of Sales Finance Contracts.
First use about May 1, 1956.

SN 237,223. Insurance Company of North America, Philadelphia, Pa. Filed Jan. 25, 1966.

INA CHALLENGER

Owner of Reg. Nos. 713,296, 779,637, and others.
For Underwriting of Automobile Insurance.
First use Jan. 1, 1966.

Class 103 — Construction and Repair

SN 207,080. Robo-Wash, Inc., Kansas City, Mo. Filed Nov. 27, 1964.



For Car Wash Services by Use of Coin-Operated Equipment.
First use Sept. 9, 1964.

SN 224,356. Harbor Service Stations, Inc., Portland, Oreg., by change of name from Westway Petroleum Co., Portland, Oreg. Filed July 27, 1965.

"COST GUARD"

For Maintenance, Repair, Cleaning, and Lubrication of Automotive Vehicles, and Parts Thereof.
First use March 1965.

SN 224,381. Bond-Bilt Construction Company, Oak Park, Mich. Filed July 28, 1965.

FLEX-A-BUDGET

For Arranging for Loans for Financing Home Construction and Repair.
First use June 28, 1964.

SN 228,061. Merit Developers, Washington, D.C. Filed Sept. 17, 1965.

MERIT

For Construction Services—Namely, Construction of Apartment Buildings, Office Buildings Private Residences, and Town Houses for Others.
First use May 1, 1962.

SN 230,011. Walcott-Taylor Company Incorporated, Bethesda, Md. Filed Oct. 12, 1965.



The drawing is lined for the color blue.
For Advice and Consultation Services—Namely, Designing Institutional and Office Furniture and Record Keeping Systems; Designing and Planning in the Use of Such Equipment; Design and Layout of Systems, Staging and Seating; and Services Relating Thereto.
First use June 1, 1964.

SN 230,157. Inter-Continental Engine Service, Inc., Brownsville, Tex. Filed Oct. 14, 1965.



For Overhaul, Modification and Repair of Aircraft, Aircraft Engines, and Aircraft Electronic Systems.
First use on or about Jan. 26, 1959.

SN 237,190. Adler and Son, Vauxhall, N.J. Filed Jan. 25, 1966.

CHEM-I-GARD

Owner of Reg. No. 551,360.
For Cleaning of Rugs and Furniture.
First use on or about Nov. 2, 1965.

Class 104 — Communication

SN 216,378. American Telephone and Telegraph Company, New York, N.Y. Filed Apr. 13, 1965.

PICTUREPHONE

For See-While-You-Talk, Sometimes Known as Visual Telephone, Services.
First use at least as early as Apr. 20, 1964.

Class 105 — Transportation and Storage

SN 201,988. Fun in the Sun Tours, Inc., Abington, Pa., assignee of Sol Whiteman and H. J. Whiteman (joint owners), Abington, Pa. Filed Sept. 15, 1964.

FUN IN THE SUN

For Travel Agency Services, Tour Planning, and Making Reservations.
First use June 10, 1964.

SN 222,014. Emery Air Freight Corporation, Wilton, Conn. Filed June 25, 1965.



For purposes of registration no claim is made to the exclusive use, either singly or in combination, of the words "Air," "Freight," "Procurement," or "Service" apart from the mark as shown. Owner of Reg. No. 638,594.
For Domestic and International Air Freight Forwarding Services.
First use May 11, 1965.

SN 227,859. Guy Mullen Ambulance Service, St. Louis, Mo. Filed Sept. 15, 1965.

AMBUCAB

For Ambulance Services, Particularly Services of Special Advantage to Ambulatory Patients.
First use Feb. 6, 1964.

SN 228,434. Air Express International Corp., New York, N.Y. Filed Sept. 23, 1965.

POSTAIR

Owner of Reg. No. 807,665.
For Air Cargo Transportation.
First use on or about Aug. 19, 1965.

SN 230,867. Mister Lease, Inc., Springfield, Mass. Filed Oct. 21, 1965.



The word "Lease" is disclaimed apart from the mark as shown. Owner of Reg. No. 799,271.
For Leasing and Renting of Motor Vehicles.
First use Oct. 7, 1965.

SN 230,967. United-Buckingham Freight Lines, Rapid City, S. Dak. Filed Oct. 21, 1965.

UNITED BUCKINGHAM

For Transportation of Freight by Truck and Van.
First use May 1962.

SN 231,658. Aaction Rent-A-Car, Inc., Chicago, Ill. Filed Oct. 27, 1965.

AACTION

For Automobile Rentals.
First use May 1, 1964.

Class 106 — Material Treatment

SN 204,386. Management and Advertising Consultants, Inc., Mobile, Ala. Filed Oct. 20, 1964.



No claim is made to the notation "Coupon Photo" apart from the mark as shown, without waiving any common law rights therein.
For Photograph Finishing Services.
First use Sept. 1, 1964.

SN 204,387. Management and Advertising Consultants, Inc., Mobile, Ala. Filed Oct. 20, 1964.



No claim is made to the notation "Q-Pon Photo" apart from the mark as shown, without waiving any common law rights therein.
For Photograph Finishing Services.
First use Sept. 1, 1964.

SN 229,388. Water Damage Protection Company, Detroit, Mich. Filed Oct. 5, 1965.

WDP

For Cleaning and Protecting Metal Surfaces and Electrical Equipment Against Rust and Corrosion.
First use on or about Jan. 7, 1964.

Class 107 — Education and Entertainment

SN 198,298. Cedric Hugh Spencer, d.b.a. H-Test Reporting Service, Ardmore, Pa. Filed July 21, 1964.

Occupational Guidelines
by H-Test Reporting Service

The words "Occupational Guidelines" are disclaimed apart from the mark as shown.
For Analytical Reports on the Occupational Interests and Aptitudes of Individuals.
First use Feb. 7, 1964.

SN 216,808. D.A.N.C.E., Inc., Dayton, Ohio. Filed Apr. 19, 1965.

DANCE, INC.

For Educational, Therapeutic, and Entertainment Services for Handicapped People—Namely, Organizing and Conducting Dance Activities for Improvement in Posture, Coordination and Self-Confidence of Persons Who Are Deaf, Blind, Retarded, or Otherwise Handicapped.
First use as early as Sept. 1, 1958.

SN 226,747. The Jerms, Inc., Topeka, Kans. Filed Aug. 30, 1965.



For Entertainment Services in the Form of Popular Music Rendered by a Vocal Group.
First use on or about Jan. 6, 1965.

SN 229,642. The Domestic and Foreign Missionary Society of the Protestant Episcopal Church in the United States of America, New York, N.Y. Filed Oct. 8, 1965.

THE WITNESS

For Title of a Religious Educational Radio Program Series.
First use May 31, 1965.

SN 230,006. Storer Broadcasting Company, Miami Beach, Fla. Filed Oct. 12, 1965.

GROUCH CLUB

For Title of a Radio Program Featuring Comedy Performances.
First use Jan. 4, 1965.

SN 230,331. Leonard Buckley Weaver, San Jose, Calif. Filed Oct. 15, 1965.



For Television Program for Children.
First use July 15, 1963.

SN 230,525. W. Arthur Fielden, d.b.a. Art/Co., Miami, Fla. Filed Oct. 19, 1965.

GOOFERS

For Television Programme in the Nature of a Quiz Contest in Connection With Merchandising Promotion of the Goods and Services of Others.
First use September 1965.

SN 230,606. The Belvederes, Norfolk, Va. Filed Oct. 20, 1965.

THE BELVEDERES

For Entertainment Services—Namely, Musical Performances.
First use Aug. 15, 1963.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 225,425. Independent Livestock Marketing Association, Columbus, Ohio. Filed Aug. 10, 1965.



For Indicating Membership in Applicant.
First use Apr. 25, 1965.

CERTIFICATION MARKS

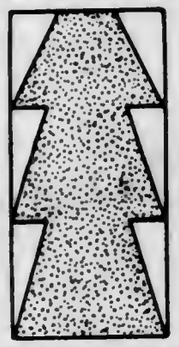
Class A — Goods

SN 205,233. Appalachian Hardwood Manufacturers, Inc., Cincinnati, Ohio. Filed Nov. 2, 1964.



The mark certifies that the goods which bear the mark are made of oak wood from the Appalachian region of the United States, and meets standards set by applicant as to quality, distinctiveness, elegance, and beauty.
For Furniture, Cabinet Work, Panelling, Flooring, and Products Made From Wood Such as Church Pews, Kneeling Rails, Altars, Beams, Rafters, Picture Frames, Lamps etc., Wherever the Use of Distinctive, Elegant, Beautiful Hardwood Oak is Required.
First use May 15, 1964.

SN 230,419. National Woodwork Manufacturers Association, Inc., Chicago, Ill. Filed Oct. 18, 1965.



The mark certifies that the doors meet the standards of construction established by applicant, particularly as to the adhesive or glue used for glue lines between the veneer plies and between the core unit and the veneer plies.
For Wood Doors.
First use June 24, 1965.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

815,660. TRICLAD AND DESIGN. Tri-Point Industries, Inc. SN 201,555. Pub. 7–12–66. Filed 9–9–64.

815,661. VERCON AND DESIGN. Vertecs Corporation. MULTIPLE CLASS (Classes 1, 12, and 34). SN 217,513. Pub. 7–12–66. Filed 4–28–65.

Class 2 — Receptades

815,662. PET-O-MATIC AND DESIGN. W. O. Anderson and J. I. Anderson. SN 217,829. Pub. 7–12–66. Filed 5–3–65.

815,663. ALPINE. Covey Corporation, by change of name from Covey Products, Inc., d.b.a. Alpine Company. SN 218,537. Pub. 7–12–66. Filed 5–11–65.

815,664. FONDA AND DESIGN. Standard Packaging Corporation. MULTIPLE CLASS (Classes 2 and 37). SN 230,993. Pub. 7–12–66. Filed 10–22–65.

Class 4 — Abrasives and Polishing Materials

815,665. EASTERDAY AND DESIGN. Easterday Supply Company of California, d.b.a. Easterday Supply Co. MULTIPLE CLASS (Classes 4, 6, and 52). SN 213,101. Pub. 7–12–66. Filed 3–2–65.

815,666. FULLER AND DESIGN. The Fuller Brush Company. SN 215,852. Pub. 7–12–66. Filed 4–6–65.

815,667. ESQUIRE BRUSH-ON ULTRA WHITE. Knomark, Inc. SN 218,442. Pub. 7–12–66. Filed 5–10–65.

815,668. STAR KLEEN. The Dorm Corporation. SN 219,328. Pub. 7–12–66. Filed 5–20–65.

815,669. ZOOK. Zook Space Age Products, Inc. SN 226,015. Pub. 7–12–66. Filed 8–18–65.

Class 5 — Adhesives

815,670. LAY-FLAT. National Starch and Chemical Corporation. SN 215,110. Pub. 7–12–66. Filed 3–26–65.

815,671. MICRO-MELD. Coin Sales Corporation. SN 217,174. Pub. 7–12–66. Filed 4–23–65.

Class 6 — Chemicals and Chemical Compositions

815,665. (See Class 4 for this trademark.)

815,672. HEPTALUBE. Woodbury Chemical Company. SN 189,412. Pub. 11–17–64. Filed 3–23–64.

815,673. SEIDLITZ. Conchemco, Incorporated. SN 201,819. Pub. 7–12–66. Filed 9–14–64.

815,674. PENTAMUL. United States Borax & Chemical Corporation. SN 211,483. Pub. 11–30–65. Filed 2–5–65.

815,675. FULLER AND DESIGN. The Fuller Brush Company. SN 215,853. Pub. 7–12–66. Filed 4–6–65.

Class 8 — Smokers' Articles, Not Including Tobacco Products

815,676. CROWN. Ronson Corporation. SN 199,397. Pub. 7–12–66. Filed 8–6–64.

815,677. COLONEL. Kanamaru Shoten, Ltd. SN 228,695. Pub. 7–12–66. Filed 9–27–65.

Class 11 — Inks and Inking Materials

815,678. HALEX. Lawter Chemicals, Inc. SN 214,881. Pub. 7–12–66. Filed 3–24–65.

815,679. 100–S. Lawter Chemicals, Inc. SN 222,722. Pub. 7–12–66. Filed 7–6–65.

Class 12 — Construction Materials

815,661. (See Class 1 for this trademark.)

815,680. HERCU-LAM. Economy Tooling Products, Inc. SN 185,765. Pub. 11–16–65. Filed 1–31–64.

815,681. N.T.K. AND DESIGN. Nippon Tile Industrial Co., Ltd. SN 202,946. Pub. 7–12–66. Filed 9–29–64.

815,682. A AND DESIGN. Aquatech Corporation. SN 205,030. Pub. 7–12–66. Filed 10–29–64.

815,683. AQUATECH. Aquatech Corporation. SN 205,032. Pub. 7–12–66. Filed 10–29–64.

815,684. ARDEC. Shower Door Company of America, d.b.a. Architectural Manufacturing Company of America. SN 215,017. Pub. 7–12–66. Filed 3–25–65.

815,685. ARTLINE. Shower Door Company of America, d.b.a. Architectural Manufacturing Company of America. SN 215,018. Pub. 7–12–66. Filed 3–25–65.

815,686. PORTA-BILT. J. W. Henley, d.b.a. J. W. Henley Manufacturing Company. SN 218,431. Pub. 7–12–66. Filed 5–10–65.

815,687. PLYOCITE. Reichhold Chemicals, Inc. SN 224,884. Pub. 7–12–66. Filed 8–3–65.

815,688. CPO. Johns-Manville Corporation. SN 225,652. Pub. 7–12–66. Filed 8–13–65.

815,689. ROYAL CREST. Doughboy Industries, Inc. MULTIPLE CLASS (Classes 12 and 22). SN 228,432. Pub. 7–12–66. Filed 9–23–65.

815,690. HOMASOTE POLYPANEL. Homasote Company. SN 229,006. Pub. 7–12–66. Filed 9–30–65.

815,691. FRITZTILE. Fritz Chemical Company. SN 229,785. Pub. 7–12–66. Filed 10–11–65.

815,692. FAIRLINER. Western Boat Building Corporation. SN 231,709. Pub. 7–12–66. Filed 10–27–65.

815,693. G AND DESIGN. The Gordon Corporation. SN 231,823. Pub. 7–12–66. Filed 10–29–65.

815,694. TUFFALT. Andersen Corporation. SN 233,435. Pub. 7–12–66. Filed 11–29–65.

815,695. MISCELLANEOUS DESIGN. Keystone Steel and Wire Company. SN 233,913. Pub. 7–12–66. Filed 12–3–65.

815,696. MISCELLANEOUS DESIGN. Keystone Steel and Wire Company. SN 233,914. Pub. 7–12–66. Filed 12–3–65.

815,697. ROMATEX. United States Ceramic Tile Company. SN 233,965. Pub. 7–12–66. Filed 12–3–65.

815,698. SAFARI AND DESIGN. Crown Aluminum Industries Corporation. SN 234,003. Pub. 7–12–66. Filed 12–6–65.

815,699. VIMCO AND DESIGN. Virginia Iron & Metal Co., Incorporated. SN 234,317. Pub. 7–12–66. Filed 12–9–65.

815,700. POST-CRETE. Post-Crete, Inc. SN 234,361. Pub. 7–12–66. Filed 12–10–65.

815,701. ADJUST-A-PANEL. Allied Building Components, Inc. SN 234,493. Pub. 7–12–66. Filed 12–13–65.

815,702. WOOD-UP. H. A. Calahan, Inc. SN 234,726. Pub. 7–12–66. Filed 12–16–65.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

815,703. PRIME. Champ-Items, Inc., d.b.a. Prime Auto Parts. MULTIPLE CLASS (Classes 13, 19, 21, and 23). SN 215,051. Pub. 7–12–66. Filed 3–26–65.

815,704. FULLER AND DESIGN. The Fuller Brush Company. SN 215,851. Pub. 7–12–66. Filed 4–6–65.

815,705. FLAME (DESIGN). Pyronics, Inc. MULTIPLE CLASS (Classes 13, 31, and 34). SN 219,456. Pub. 7–12–66. Filed 5–21–65.

815,706. SNAPTRAX AND DESIGN. Richard M. Gooderham. SN 222,474. Pub. 7–12–66. Filed 6–7–65.

815,707. RATE OF RISE, ETC. "Automatic" Sprinkler Corporation of America. SN 224,908. Pub. 7–12–66. Filed 8–4–65.

815,708. PONY. Grinnell Corporation. SN 225,152. Pub. 7–12–66. Filed 8–6–65.

815,709. LAV-STATION. Market Forge Company. SN 225,784. Pub. 7–12–66. Filed 8–16–65.

815,710. KEY-PROTECTOR. Anson Incorporated. SN 228,602. Pub. 7–12–66. Filed 9–27–65.

815,711. CENTRI-CAST. White Consolidated Industries, Inc., d.b.a. Apex Fibre-Glass Products. SN 230,727. Pub. 7–12–66. Filed 10–20–65.

815,712. CUSH 'N CHEK. Aldo-Matics, Inc. SN 232,501. Pub. 7–12–66. Filed 11–12–65.

815,713. ELECTROFLUSH AND DESIGN. Palleon Electronics, Ltd. SN 232,637. Pub. 7–12–66. Filed 10–15–65.

815,714. MISCELLANEOUS DESIGN. A/S Elektrofabrikken, Arne Brinchmann. SN 232,759. Pub. 7–12–66. Filed 11–16–65.

815,715. CHEVRON. Standard Oil Company of California. SN 232,797. Pub. 7–12–66. Filed 11–16–65.

815,716. MANTONFLANGE. Terraspan Limited. SN 232,799. Pub. 7–12–66. Filed 11–16–65.

815,717. CHEVRON (DESIGN). Standard Oil Company of California. SN 232,887. Pub. 7–12–66. Filed 11–16–65.

Class 15—Oils and Greases

815,718. MISCELLANEOUS DESIGN. Murphy Oil Corporation. SN 220,184. Pub. 7–12–66. Filed 6–1–65.

815,719. CRYSTOIL. Sinclair Refining Company. SN 229,458. Pub. 7–12–66. Filed 10–6–65.

Class 16—Protective and Decorative Coatings

815,720. BANCOR. Lloyd E. Parks, d.b.a. Lloyd E. Parks Company. SN 220,544. Pub. 7–12–66. Filed 6–7–65.

815,721. TALLY. Pittsburgh Plate Glass Company. SN 223,576. Pub. 7–12–66. Filed 7–16–65.

815,722. ALSIDE ELECTROLON SUPER ELECTROSTATIC FINISH AND DESIGN. Alside, Inc. SN 224,494. Pub. 7–12–66. Filed 7–12–65.

815,723. SUPERCOTE. Continental Oil Company. SN 233,998. Pub. 7–5–66. Filed 12–6–65.

815,724. HISEAL. Continental Oil Company. SN 233,999. Pub. 7–5–66. Filed 12–6–65.

Class 17—Tobacco Products

815,725. KLOMPEN KLOGGEN. DWG Cigar Corporation. SN 229,416. Pub. 7–12–66. Filed 10–6–65.

Class 18—Medicines and Pharmaceutical Preparations

815,726. IGA. Independent Grocers' Alliance Distributing Co. SN 230,831. Pub. 7–12–66. Filed 10–21–65.

Class 19—Vehicles

815,703. (See Class 13 for this trademark.)

815,727. ROAD MATE AND DESIGN. George F. Miller. SN 216,850. Pub. 7–12–66. Filed 4–19–65.

815,728. F20. Molded Fiber Glass Body Company. SN 216,856. Pub. 7–12–66. Filed 4–19–65.

815,729. FEATHERLIGHT AND DESIGN. Gerry Designs, Inc. SN 218,543. Pub. 7–12–66. Filed 5–11–65.

815,730. CAM-PACT. Cam-Pact Co. Inc. SN 220,633. Pub. 7–12–66. Filed 6–8–65.

815,731. AUTO/TORQ AND DESIGN. Jeffrey Galion Manufacturing Company. SN 223,129. Pub. 7–12–66. Filed 7–12–65.

815,732. INDIAN VOYAGER. The Voyager Corporation. SN 224,040. Pub. 7–12–66. Filed 7–22–65.

815,733. FLAIR. Chickasha Mobile Homes of Missouri, Inc. SN 224,072. Pub. 7–12–66. Filed 7–23–65.

815,734. NADELLA. Nadella S.A. MULTIPLE CLASS (Classes 19 and 23). SN 226,020. Pub. 7–12–66. Filed 8–19–65.

Class 20—Linoleum and Oiled Cloth

815,735. WONDERFOAM. Congoleum-Nairn Inc. SN 222,668. Pub. 7–12–66. Filed 7–6–65.

815,736. WALL-TEX. The Borden Company. SN 233,776. Pub. 7–12–66. Filed 12–2–65.

Class 21—Electrical Apparatus, Machines, and Supplies

815,703. (See Class 13 for this trademark.)

815,737. ELECTROHOME. Dominion Electrohome Industries Limited. SN 114,101. Pub. 4–3–62. Filed 2–21–61.

815,738. NODAC. The Telesco International Corporation, assignee of Gerald Lainer and Arthur Etro (joint owners). SN 114,967. Pub. 7–12–66. Filed 3–6–61.

815,739. MISCELLANEOUS DESIGN. The Singer Company, by merger and assignment of Commercial Controls Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 162,146. Pub. 7–12–66. Filed 2–6–63.

815,740. DON'T MIL-SPECULATE SPECIFY BOURNS. Bourns, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 174,491. Pub. 7–12–66. Filed 8–6–63.

815,741. DROP AND FLAME (DESIGN). General Signal Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 194,601. Pub. 7–12–66. Filed 6–1–64.

815,742. METTLER ELECTRONICS. Mettler Electronics Corp. SN 194,900. Pub. 7–12–66. Filed 6–4–64.

815,743. INCOMICA AND DESIGN. Intra Continental Semiconductors Inc. SN 202,598. Pub. 12–21–65. Filed 9–24–64.

815,744. ELECTRO-MECH. American Chain & Cable Company, Inc. SN 206,910. Pub. 7–12–66. Filed 11–25–64.

815,745. WL AND DESIGN. Ward Leonard Electric Co. SN 209,639. Pub. 7–12–66. Filed 1–8–65.

815,746. MAYFAIR. Artic Import Co. MULTIPLE CLASS (Classes 21 and 36). SN 211,857. Pub. 7–12–66. Filed 2–12–65.

815,747. BOCKLITE. Arthur Bockmann. SN 214,829. Pub. 7–12–66. Filed 3–24–65.

815,748. HOPCO. Howard Precision Inc. SN 215,218. Pub. 7–12–66. Filed 3–29–65.

815,749. AYROXEL. Yardney Electric Corporation. SN 215,472. Pub. 7–12–66. Filed 3–31–65.

815,750. GRAHAM ELECTRONICS AND DESIGN. Graham Electronics Supply, Inc. SN 215,500. Pub. 7–12–66. Filed 4–1–65.

815,751. VALUHORN. Wheelock Signals, Inc. SN 215,912. Pub. 7–12–66. Filed 4–6–65.

815,752. RADAR MATIC. Matsushita Electric Industrial Co., Ltd. SN 217,911. Pub. 7–12–66. Filed 5–3–65.

815,753. YAGISTA. Yagishita Electric Co., Ltd. SN 219,449. Pub. 7–12–66. Filed 4–15–65.

815,754. FISK. United States Rubber Company. MULTIPLE CLASS (Classes 21 and 31). SN 221,967. Pub. 7–12–66. Filed 6–24–65.

815,755. MEM AND DESIGN. Micro Electric Motors, Incorporated. SN 222,047. Pub. 7–12–66. Filed 6–25–65.

815,756. GRACIOUS LADY. S. W. Farber, Inc. SN 224,526. Pub. 7–12–66. Filed 7–29–65.

815,757. VIDEOVOX. Rogerio Azcarraga Madero, d.b.a. Orfeon-Videovox, S.A. SN 225,430. Pub. 7–12–66. Filed 8–10–65.

815,758. RODACOM. Rodale Manufacturing Company, Inc. SN 227,071. Pub. 7–12–66. Filed 9–2–65.

815,759. GATES. Gates Radio Company. MULTIPLE CLASS (Classes 21 and 36). SN 227,673. Pub. 7–12–66. Filed 9–13–65.

815,760. SWING-O-LITE. Swing-O-Lite, Inc. SN 229,379. Pub. 7–12–66. Filed 10–5–65.

815,761. MICRO HEX AND DESIGN. Sealectro Corporation. SN 229,684. Pub. 7–12–66. Filed 10–8–65.

815,762. TUFF-SKIN. Thomas Manufacturing Corporation. SN 229,890. Pub. 7–12–66. Filed 10–11–65.

815,763. PAN-POLE. Panduit Corp. SN 230,186. Pub. 7–12–66. Filed 10–14–65.

815,764. PAN-RING. Panduit Corp. SN 230,187. Pub. 7–12–66. Filed 10–14–65.

815,765. TRU-ROTA. Trump-Ross Industrial Controls, Inc. SN 230,720. Pub. 7–12–66. Filed 10–20–65.

815,766. SEAVOX. Ishak Fried, d.b.a. Fried Trading Company. SN 231,101. Pub. 7–12–66. Filed 10–22–65.

815,767. ALLCAR AND DESIGN. Allcar Motor Parts Corp. SN 231,362. Pub. 7–12–66. Filed 10–23–65.

815,768. MAGNECRAFT. Magnecraft Electric Co. SN 231,770. Pub. 7–12–66. Filed 10–23–65.

815,769. SERVOPOLE. Servo Corporation of America. SN 231,948. Pub. 7–12–66. Filed 11–1–65.

815,770. TEDDIE BEDDIE LITE. The Richard Grinnell Corporation. SN 231,995. Pub. 7–12–66. Filed 11–2–65.

815,771. MDI. Modern Devices, Inc. SN 232,413. Pub. 7–12–66. Filed 11–9–65.

815,772. CAMBI-CARD. Cambridge Thermionic Corporation. SN 237,812. Pub. 7–12–66. Filed 2–2–66.

815,773. SEA VOICE. Signa-Com Corporation. SN 243,515. Pub. 7–12–66. Filed 4–15–66.

Class 22—Games, Toys, and Sporting Goods

815,689. (See Class 12 for this trademark.)

815,774. BRONCO. Mattel, Inc. SN 215,759. Pub. 7–12–66. Filed 4–5–65.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

815,703. (See Class 13 for this trademark.)

815,734. (See Class 19 for this trademark.)

815,775. TEMCO AND DESIGN. Tractor Implement Motive Parts, Inc. SN 190,213. Pub. 4–13–65. Filed 4–2–64.

815,776. COLUMWARE. Columware, Inc. SN 205,771. Pub. 7–12–66. Filed 11–9–64.

815,777. ZERO-LASH. Eaton Yale & Towne Inc., by change of name and merger of Eaton Manufacturing Company. SN 208,053. Pub. 3–29–66. Filed 12–14–64.

815,778. ROTODRESS AND DESIGN. Clipper Diamond Tool Co., Inc. SN 212,860. Pub. 7–12–66. Filed 2–26–65.

815,779. TELESTACK. The Cleveland Crane & Engineering Company. SN 214,429. Pub. 7–12–66. Filed 3–18–65.

815,780. ACCUCYL. Chemcut Corporation, by change of name from Centre Circuits, Inc. SN 215,327. Pub. 7–12–66. Filed 3–30–65.

815,781. HI-EX. Walter Kidde & Company, Inc. SN 216,703. Pub. 7–12–66. Filed 4–16–65.

815,782. POWER EEZ. Berkeley Machine Works, Incorporated. SN 218,175. Pub. 7–12–66. Filed 5–6–65.

815,783. PRECIS-O-MATIC. Royal Master Grinders, Inc. SN 219,142. Pub. 7–12–66. Filed 5–18–65.

815,784. CLEVELAND AND DESIGN. The Cleveland Twist Drill Company. SN 219,685. Pub. 7–12–66. Filed 5–25–65.

815,785. VIBURRATOR. Henco Enterprises, Inc. SN 219,990. Pub. 7–12–66. Filed 5–28–65.

815,786. PAK-LOK. Illinois Tool Works, Inc. SN 224,422. Pub. 7–12–66. Filed 7–28–65.

815,787. E-Z LIFT. Machinery Development, Inc. SN 224,769. Pub. 7–12–66. Filed 8–2–65.

815,788. SANDMASTER. Machinery Incorporated, Maine. SN 228,473. Pub. 7–12–66. Filed 9–23–65.

815,789. MOODY. Moody Machine Products Co., Inc. SN 228,478. Pub. 7–12–66. Filed 9–23–65.

815,790. STELLAR AND DESIGN. Astra Trading Corporation. SN 228,979. Pub. 7–12–66. Filed 9–30–65.

815,791. MISCELLANEOUS DESIGN. The Originators Engineering and Development Company. SN 229,120. Pub. 7–12–66. Filed 10–1–65.

815,792. ECP. Viking Drill and Tool Co., Inc., d.b.a. North American-Viking Drill Corporation. SN 229,700. Pub. 7–12–66. Filed 10–8–65.

815,793. CL AND DESIGN. Edmund J. Lynch, d.b.a. Center-Line Machinery. SN 230,175. Pub. 7–12–66. Filed 10–14–65.

815,794. SUNBEAM. Sunbeam Corporation. SN 230,208. Pub. 7–12–66. Filed 10–14–65.

815,795. KENWORTH. Pacific Car and Foundry Company. SN 230,280. Pub. 7–12–66. Filed 10–15–65.

815,796. CALWELD AND DESIGN. Smith Industries International, Inc. SN 230,442. Pub. 7–12–66. Filed 10–18–65.

815,797. BULLDOG. Tel-E-Lect, Inc. SN 230,456. Pub. 7–12–66. Filed 10–18–65.

815,798. DYNA-RAM. Dyna-Quip Corporation. SN 230,522. Pub. 7–12–66. Filed 10–19–65.

815,799. DOF-MASTER. John D. Hollingsworth on Wheels, Inc. SN 230,646. Pub. 7–12–66. Filed 10–20–65.

815,800. AMICA. Nelco Corp. SN 230,679. Pub. 7–12–66. Filed 10–20–65.

815,801. SIMPATICA. Nelco Corp. SN 230,680. Pub. 7–12–66. Filed 10–20–65.

815,802. BYNAL. Bynal Products, Inc. SN 232,899. Pub. 7–12–66. Filed 11–18–65.

815,803. PLAST-A-MATIC. Liquid Package Equipment Co. SN 232,922. Pub. 7–12–66. Filed 11–18–65.

815,804. CHORE MATE AND DESIGN. Robert Agulnick and Leonard B. Secklin (partnership). SN 232,957. Pub. 7–12–66. Filed 11–19–65.

Class 24 — Laundry Appliances and Machines

815,805. FULLER AND DESIGN. The Fuller Brush Company. SN 215,857. Pub. 7–12–66. Filed 4–6–65.

815,806. ARDMORE. Hampton Sales Co. Inc. SN 225,023. Pub. 7–12–66. Filed 8–5–65.

815,807. VIDEOVOX. Rogerio Azcarraga Madero, d.b.a. Corporacion Nacional Distribuidora, S.A. SN 225,431. Pub. 7–12–66. Filed 8–10–65.

Class 26 — Measuring and Scientific Appliances

815,739. (See Class 21 for this trademark.)

815,740. (See Class 21 for this trademark.)

815,741. (See Class 21 for this trademark.)

815,808. CALTROL. Benjamin F. Breslauer, d.b.a. Scientific Products of America. SN 181,453. Pub. 7–12–66. Filed 11–19–63.

815,809. TAC. Transistor Automation Corporation. MULTIPLE CLASS (Classes 26 and 34). SN 182,982. Pub. 7–12–66. Filed 12–13–63.

815,810. VIEWFAX AND DESIGN. Viewlex, Inc. SN 203,631. Pub. 7–12–66. Filed 10–8–64.

815,811. RAMAPO MARK V. Ramapo Instrument Company, Inc. SN 221,097. Pub. 7–12–66. Filed 6–14–65.

815,812. RAMAPO MARK VI. Ramapo Instrument Company, Inc. SN 221,098. Pub. 7–12–66. Filed 6–14–65.

815,813. RAMAPO MARK X. Ramapo Instrument Company, Inc. SN 221,099. Pub. 7–12–66. Filed 6–14–65.

815,814. STYLIZED L. Loral Corporation. SN 224,222. Pub. 7–12–66. Filed 7–26–65.

815,815. SONIC COMPARATOR. Robert G. Rowe, d.b.a. Saturn Electronics Company. SN 224,245. Pub. 7–12–66. Filed 7–26–65.

815,816. BAND-SCAN. Sequential Electronic Systems, Inc. SN 224,470. Pub. 7–12–66. Filed 7–28–65.

815,817. FPL. Sequential Electronic Systems, Inc. SN 224,471. Pub. 7–12–66. Filed 7–28–65.

815,818. HIGH SPEED. "Automatic" Sprinkler Corporation of America. SN 224,907. Pub. 7–12–66. Filed 8–4–65.

815,819. RATE OF RISE ETC. "Automatic" Sprinkler Corporation of America. SN 224,909. Pub. 7–12–66. Filed 8–4–65.

815,820. MAGNA-WEIGH. Howe Richardson Scale Company. SN 225,562. Pub. 7–12–66. Filed 8–12–65.

815,821. MAGNA-VIEW. Howe Richardson Scale Company. SN 225,564. Pub. 7–12–66. Filed 8–12–65.

815,822. MAGNA-TRONIC. Howe Richardson Scale Company. SN 225,566. Pub. 7–12–66. Filed 8–12–65.

815,823. LDX. Xerox Corporation. SN 226,489. Pub. 7–12–66. Filed 8–25–65.

815,824. FUJICA MINI. Fuji Photo Film Co., Ltd. SN 227,668. Pub. 7–12–66. Filed 9–13–65.

815,825. PENCIL. Lugene, Inc. SN 227,765. Pub. 7–12–66. Filed 9–14–65.

815,826. SKIPPER. International Register Company. SN 229,096. Pub. 7–12–66. Filed 10–1–65.

815,827. SEA SPEED. Airguide Instrument Company. SN 229,173. Pub. 7–12–66. Filed 10–4–65.

815,828. BESSY. Voigtlander, A.G. SN 229,472. Pub. 7–12–66. Filed 10–6–65.

Class 27 — Horological Instruments

815,829. MODELE AND DESIGN. Rodi & Wienenberger Aktiengesellschaft. SN 221,300. Pub. 7–12–66. Filed 6–16–65.

815,830. WYLER. Fabrique de Montres Wyler Societe Anonyme (Wyler Uhrenfabrik Aktiengesellschaft) (Wyler Watch Factory Limited). SN 225,748. Pub. 7–12–66. Filed 8–16–65.

Class 28 — Jewelry and Precious-Metal Ware

815,831. MARGARITA. D. Swarovski & Co., Glasschleiferei. SN 197,197. Pub. 7–12–66. Filed 7–6–64.

815,832. BLAZE OF GLORY. Waltham Watch Company. SN 214,391. Pub. 7–12–66. Filed 3–17–65.

815,833. TJI. Tropical Jewelers, Inc. SN 219,835. Pub. 7–12–66. Filed 5–26–65.

815,834. MAN (DESIGN). Kermit R. Goldbergh, d.b.a. Kavanaugh's. SN 225,139. Pub. 7–12–66. Filed 8–6–65.

815,835. MAJESTIC. Merchandiser's Association, Incorporated. SN 231,452. Pub. 7–12–66. Filed 10–23–65.

815,836. LEATHA-FLEX. Textron Inc. SN 231,508. Pub. 7–12–66. Filed 10–23–65.

Class 29 — Brooms, Brushes, and Dusters

815,837. FULLER AND DESIGN. The Fuller Brush Company. SN 215,850. Pub. 7–12–66. Filed 4–6–65.

815,838. FULLER AND DESIGN. The Fuller Brush Company. SN 215,858. Pub. 7–12–66. Filed 4–6–65.

815,839. SERV-WELL. Fairway Foods, Inc. SN 230,809. Pub. 7–12–66. Filed 10–21–65.

815,840. FAIRWAY. Fairway Foods, Inc. SN 230,810. Pub. 7–12–66. Filed 10–21–65.

815,841. IGA. Independent Grocers' Alliance Distributing Co. SN 230,830. Pub. 7–12–66. Filed 10–21–65.

815,842. SELFIX. Selfix, Inc. SN 231,496. Pub. 7–12–66. Filed 10–23–65.

815,843. PLAF AND DESIGN. Geigy Chemical Corporation. SN 231,750. Pub. 7–12–66. Filed 10–28–65.

Class 31 — Filters and Refrigerators

815,705. (See Class 13 for this trademark.)

815,754. (See Class 21 for this trademark.)

815,844. WATERCARE. Granger Sofwater Supply & Mfg. Corp., d.b.a. International Watercare Corporation. SN 158,617. Pub. 7–12–66. Filed 12–6–62.

815,845. MILKHOUSE. Fleet Wholesale Supply Co., Inc. MULTIPLE CLASS (Classes 31 and 35). SN 209,599. Pub. 7–12–66. Filed 1–8–65.

815,846. ARDMORE. Hampton Sales Co. Inc. SN 225,021. Pub. 7–12–66. Filed 8–5–65.

815,847. TRANSCARB. American Filtrona Corporation. SN 226,972. Pub. 7–12–66. Filed 9–2–65.

815,848. MARVAIR-DIFFUSER. Marvel Engineering Company. SN 232,327. Pub. 7–12–66. Filed 11–8–65.

815,849. MARVELINE-C. Marvel Engineering Company. SN 232,328. Pub. 7–12–66. Filed 11–8–65.

815,850. MARVELMAG. Marvel Engineering Company. SN 232,329. Pub. 7–12–66. Filed 11–8–65.

815,851. MARVINDICATOR. Marvel Engineering Company. SN 232,330. Pub. 7–12–66. Filed 11–8–65.

Class 32 — Furniture and Upholstery

815,852. WALDRON. Waldron Furniture Manufacturing Corporation. SN 171,205. Pub. 7–12–66. Filed 6–17–63.

815,853. ROYAL CREST ETC. AND DESIGN. Royal Crest Venetian Blinds, Inc. SN 180,451. Pub. 7–12–66. Filed 11–4–63.

815,854. COMMUNICATIONS. Edwin Busch, d.b.a. Busch Film and Equipment Company. SN 189,650. Pub. 7–12–66. Filed 3–26–64.

815,855. TABORET. Edson, Incorporated. SN 204,461. Pub. 7–12–66. Filed 10–21–64.

815,856. FRENCH IN THE COUNTRY MANNER. Drexel Enterprises, Inc. SN 214,756. Pub. 7–12–66. Filed 3–23–65.

815,857. TENSION-LOK TABLE. Meilink Steel Safe Company. SN 219,037. Pub. 7–12–66. Filed 5–17–65.

815,858. KA AND DESIGN. Sprague & Carleton, Incorporated. SN 220,411. Pub. 7–12–66. Filed 6–4–65.

815,859. POSTURE REST. Slumber Shop, Inc. SN 222,627. Pub. 7–12–66. Filed 7–2–65.

815,860. K9-KOT. Multiproducts, Inc. SN 223,432. Pub. 7–12–66. Filed 7–15–65.

815,861. CLOS-POLE. McDonald Products Corporation. SN 225,049. Pub. 7–12–66. Filed 8–5–65.

815,862. STYLIZED CONFIGURATION OF THE OUTLINE OF A LAWN CHAIR. The Dow Chemical Company. SN 225,937. Pub. 7–12–66. Filed 8–18–65.

815,863. DORMMASTER. Thonet Industries, Inc. SN 229,703. Pub. 7–12–66. Filed 10–6–65.

815,864. AEROCRYLIC. The Aeroshade Company, Inc. SN 229,930. Pub. 7–12–66. Filed 10–12–65.

Class 33 — Glassware

SN 815,865. LEAVLITE. Leavlite Limited. SN 215,976. Pub. 7–12–66. Filed 4–7–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

815,661. (See Class 1 for this trademark.)

815,705. (See Class 13 for this trademark.)

815,809. (See Class 26 for this trademark.)

815,866. THERMA DRIVE. National Tank Company. SN 220,872. Pub. 7–12–66. Filed 6–10–65.

815,867. ARDMORE. Hampton Sales Co. Inc. SN 225,022. Pub. 7–12–66. Filed 8–5–65.

815,868. SAMUEL JACKSON AND DESIGN. Samuel Jackson Manufacturing Corporation. SN 228,463. Pub. 7–12–66. Filed 9–23–65.

815,869. SAMUEL JACKSON. Samuel Jackson Manufacturing Corporation. SN 228,464. Pub. 7–12–66. Filed 9–23–65.

815,870. CO-RAY-VAC. Roberts-Gordon Appliance Corp. SN 229,132. Pub. 7–12–66. Filed 10–1–65.

815,871. HX. Midland-Ross Corporation. SN 232,334. Pub. 7–12–66. Filed 11–8–65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

815,845. (See Class 31 for this trademark.)

815,872. MR XSEL AND DESIGN. Minnesota Rubber Company. SN 216,719. Pub. 7–12–66. Filed 4–16–65.

815,873. GORTIFLEX. A & A Manufacturing Company, Inc. SN 219,495. Pub. 7–12–66. Filed 5–24–65.

Class 36 — Musical Instruments and Supplies

815,746. (See Class 21 for this trademark.)

815,759. (See Class 21 for this trademark.)

815,874. HONOR YOUR PARTNER. Educational Activities Inc. SN 199,810. Pub. 7–12–66. Filed 8–13–64.

815,875. DYNARANGE. Minnesota Mining and Manufacturing Company. SN 224,436. Pub. 7–12–66. Filed 7–28–65.

815,876. MUSETTE. Aeolian Corporation. SN 226,703. Pub. 7–12–66. Filed 8–30–65.

Class 37 — Paper and Stationery

815,664. (See Class 2 for this trademark.)

815,877. VYNAR. Kingsbacher-Murphy Company. SN 175,118. Pub. 9–15–64. Filed 8–15–63.

815,878. WRENN'S. The Mead Corporation. SN 202,034. Pub. 7–12–66. Filed 9–16–64.

815,879. WRENN'S AND DESIGN. The Mead Corporation. SN 202,035. Pub. 7–12–66. Filed 9–16–64.

815,880. SUPER-TAC. Enterprise Tape Co., Inc., d.b.a. Enterprise Tape Co. SN 212,870. Pub. 7–12–66. Filed 2–26–65.

815,881. LITE-TAC. Enterprise Tape Co., Inc., d.b.a. Enterprise Tape Co. SN 212,990. Pub. 7–12–66. Filed 3–1–65.

815,882. VIVA AND DESIGN. Scott Paper Company. SN 217,938. Pub. 7–12–66. Filed 5–3–65.

815,883. HOUSE OF MAJI. Lois Rudy Rife, d.b.a. House of Maji. SN 219,730. Pub. 7–12–66. Filed 5–25–65.

815,884. SCRIPTO. Scripto, Inc. SN 227,711. Pub. 7–12–66. Filed 9–13–65.

815,885. HEVI-WRITE. Eberhard Faber Inc. SN 229,341. Pub. 7–12–66. Filed 10–5–65.

815,886. DENSETONE. The Northwest Paper Company. SN 229,673. Pub. 7–12–66. Filed 10–8–65.

815,887. COTEWALD. Waldorf Paper Products Company. SN 231,322. Pub. 7–12–66. Filed 10–22–65.

815,888. "RILEY THE DOG" AND DESIGN. Harry D. Riley, d.b.a. Riley Advertising Company. SN 231,598. Pub. 7–12–66. Filed 10–24–65.

815,889. JADSET. Joseph A. De Varennes Church Collection Records. SN 231,812. Pub. 7–12–66. Filed 10–29–65.

815,890. DENT-O-MATIC. Albert W. Trtanj, D.D.S. SN 231,861. Pub. 7–12–66. Filed 10–29–65.

815,891. METALMIST. The Dow Chemical Company. SN 231,895. Pub. 7–12–66. Filed 11–1–65.

815,892. CROWN D.S.F. Crown Zellerbach Corporation. SN 232,292. Pub. 7–12–66. Filed 11–8–65.

815,893. UNISTENCIL. KVP Sutherland Paper Company. SN 232,320. Pub. 7–12–66. Filed 11–8–65.

815,894. PALMER. Fort Howard Paper Company. SN 239,252. Pub. 7–12–66. Filed 2–21–66.

815,895. CRACK 'N PEEL. Avery Products Corporation. SN 240,841. Pub. 7–12–66. Filed 3–14–66.

Class 39 — Clothing

815,896. GROTESQUE BEE (DESIGN). Beeline Fashions, Inc., assignee of Beeline Fashions, Inc. SN 201,921. Pub. 7–12–66. Filed 9–15–64.

815,897. JEAN BIANI. Paul Rubiani. SN 201,967. Pub. 7–12–66. Filed 9–15–64.

815,898. TOWN & COUNTRY. Gordon & Ferguson Co. SN 204,976. Pub. 7–12–66. Filed 10–28–64.

815,899. K-MART AND DESIGN. S. S. Kresge Company. SN 205,064. Pub. 7–13–65. Filed 10–29–64.

815,900. WATCH DOG SUPPORT-O-MATIC. Penron Associated Hosiery Mills, Inc. SN 205,197. Pub. 7–12–66. Filed 10–30–64.

815,901. DANDI PETITES. Stockton Manufacturing Co., Inc. SN 214,712. Pub. 7–12–66. Filed 3–22–65.

815,902. REX-ROLL ROLL-UP HAT AND DESIGN. Eleja Cap Manufacturing Co. SN 214,854. Pub. 7–12–66. Filed 3–24–65.

815,903. FULLER AND DESIGN. The Fuller Brush Company. SN 215,859. Pub. 7–12–66. Filed 4–6–65.

815,904. NODIS-CLOSURE. Marie Inc. SN 218,452. Pub. 7–12–66. Filed 5–10–65.

815,905. CUSTOM NATURAL. Hughes & Hatcher, Inc. SN 218,770. Pub. 7–12–66. Filed 5–13–65.

815,906. BELL TOPTEX. Bell-Toptex, Incorporated. SN 218,954. Pub. 7–12–66. Filed 5–17–65.

815,907. BELL. Bell-Toptex, Incorporated. SN 218,955. Pub. 7–12–66. Filed 5–17–65.

815,908. PITTER PATS AND DESIGN. Allied Chemical Coatings, Inc. SN 220,438. Pub. 7–12–66. Filed 6–7–65.

815,909. Q GROUP. Puritan Fashions Corporation. SN 222,864. Pub. 7–12–66. Filed 7–7–65.

815,910. YOUNG ARROGANTS. Puritan Fashions Corporation. SN 222,867. Pub. 7–12–66. Filed 7–7–65.

815,911. SYNOPSIS. Puritan Fashions Corporation. SN 222,868. Pub. 7–12–66. Filed 7–7–65.

815,912. SKIP-ITS. Puritan Fashions Corporation. SN 223,346. Pub. 7–12–66. Filed 7–14–65.

815,913. GAY HEARTS. Craddock-Terry Shoe Corporation. SN 224,299. Pub. 7–12–66. Filed 7–27–65.

815,914. DANDY LION. Puritan Fashions Corporation. SN 224,644. Pub. 7–12–66. Filed 7–30–65.

815,915. SONARI. Alma Foundations, Inc. SN 224,696. Pub. 7–12–66. Filed 8–2–65.

815,916. PASH. Pandora Knitwear, Inc. SN 224,877. Pub. 7–12–66. Filed 8–3–65.

815,917. MAN (DESIGN). Kermit R. Goldbergh, d.b.a. Kavanaugh's. SN 225,138. Pub. 7–12–66. Filed 8–6–65.

815,918. SMIDGEN. Vanity Fair Mills, Inc. SN 226,594. Pub. 7–12–66. Filed 8–26–65.

815,919. ENGINEERS SPECIAL AND DESIGN. Boss Manufacturing Company. SN 226,718. Pub. 7–12–66. Filed 8–30–65.

815,920. RAIN-TOTE. Magna Sales Co. SN 227,952. Pub. 7–12–66. Filed 9–16–65.

815,921. RESPONSE. Caldwell Dress Co. SN 228,129. Pub. 7–12–66. Filed 9–20–65.

815,922. BACK TONER. Flexnit Company, Inc. SN 228,251. Pub. 7–12–66. Filed 9–21–65.

815,923. TRIMGARD. The Puritan Sportswear Corp. SN 228,836. Pub. 7–12–66. Filed 9–28–65.

815,924. TOLOS. Strathmore Shoe Co., Inc. SN 229,146. Pub. 7–12–66. Filed 10–1–65.

815,925. DREAM WHIP. Caldwell Dress Co. SN 229,406. Pub. 7–12–66. Filed 10–6–65.

815,926. WINGS. Piedmont Shirt Company. SN 230,190. Pub. 7–12–66. Filed 10–14–65.

815,927. SHALEEN. Chadbourn Gotham, Inc. SN 230,358. Pub. 7–12–66. Filed 10–18–65.

815,928. SILVER MEDAL. Anderson & Thompson Ski Co., Inc. SN 230,491. Pub. 7–12–66. Filed 10–19–65.

815,929. GRENOBLE. Anderson & Thompson Ski Co., Inc. SN 230,497. Pub. 7–12–66. Filed 10–19–65.

815,930. VIVA AMERICANA. The United States Shoe Corporation. SN 230,588. Pub. 7–12–66. Filed 10–19–65.

815,931. GEOTEC. The Electric Storage Battery Company. SN 230,620. Pub. 7–12–66. Filed 10–20–65.

815,932. SNAP 'N GO. Perfection Frocks, Inc. SN 230,884. Pub. 7–12–66. Filed 10–21–65.

815,933. THE AUTOMATIC WASHERS. Exquisite Form Industries, Inc. SN 230,989. Pub. 7–12–66. Filed 10–21–65.

815,934. NOXATOX. Koratron Company, Inc. SN 231,143. Pub. 7–12–66. Filed 10–22–65.

815,935. FLIPPER. Mattel, Inc. SN 231,161. Pub. 7–12–66. Filed 10–22–65.

815,936. SIMPLEX. Simplex Shoe Manufacturing Company, Inc. SN 234,674. Pub. 7–12–66. Filed 12–15–65.

815,937. ACADEMY. Chips 'N Twigs, Inc. SN 238,343. Pub. 7–12–66. Filed 2–8–66.

815,938. PRIDE-PREST. The Valor Manufacturing Co., Inc. SN 238,469. Pub. 7–12–66. Filed 2–9–66.

Class 40 — Fancy Goods, Furnishings, and Notions

815,939. FULLER AND DESIGN. The Fuller Brush Company. SN 215,860. Pub. 7–12–66. Filed 4–6–65.

815,940. IGA. Independent Grocers' Alliance Distributing Co. SN 230,832. Pub. 7–12–66. Filed 10–21–65.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

815,941. DENDRON. Weyerhaeuser Company. SN 199,334. Pub. 7–12–66. Filed 8–5–64.

815,942. UNDER CURRENT. Stacy Fabrics Corp. SN 207,245. Pub. 7–12–66. Filed 12–1–64.

815,943. CALIFOAM. Califoam Corporation of America. SN 215,174. Pub. 7–12–66. Filed 3–29–65.

815,944. ROCKINGHAM FABRICS. Rockingham Mills, Inc. SN 218,482. Pub. 7–12–66. Filed 5–10–65.

815,945. TAC-GRIP. Frank A. Fedele, Sr. SN 223,985. Pub. 7–12–66. Filed 7–22–65.

815,946. LEAFLAM. ACSA—Applicazioni Chimiche S.p.A. SN 224,689. Pub. 7–12–66. Filed 8–2–65.

815,947. SCAFLO. Scapa Dryers, Inc. SN 233,833. Pub. 7–12–66. Filed 12–2–65.

Class 43 — Thread and Yarn

815,948. SPECTRELL. Deering Milliken, Inc. SN 221,358. Pub. 7–12–66. Filed 6–17–65.

Class 44 — Dental, Medical, and Surgical Appliances

815,949. METTLER ELECTRONICS. Mettler Electronics Corp. SN 194,899. Pub. 7–12–66. Filed 6–4–64.

815,950. TURBOBIT. S-B Power Surgical Tools, Inc. SN 198,900. Pub. 7–12–66. Filed 7–30–64.

815,951. GOLDEN SUN. Sea & Ski Corporation, assignee of Botany Industries, Inc., d.b.a. Sea & Ski Company. SN 208,169. Pub. 7–12–66. Filed 12–15–64.

815,952. PLEXITRAY. Baxter Laboratories, Inc. SN 221,985. Pub. 7–12–66. Filed 6–25–65.

815,953. IGA. Independent Grocers' Alliance Distributing Co. SN 230,833. Pub. 7–12–66. Filed 10–21–65.

815,954. HOPE. Air Reduction Company, Incorporated. SN 231,972. Pub. 7–12–66. Filed 11–2–65.

815,955. MQ. S. S. White Company. SN 232,174. Pub. 7–12–66. Filed 11–4–65.

815,956. PERMA-HAND. Ethicon, Inc. SN 233,174. Pub. 7–12–66. Filed 11–23–65.

815,957. STERI-SONIC 400. Vernitron Corporation, d.b.a. Medical Products Division. SN 238,905. Pub. 7–12–66. Filed 2–15–66.

Class 46 — Foods and Ingredients of Foods

815,958. OVEN FRESH. Weston Biscuit Company, Inc., d.b.a. American Superior Biscuit Co., and Weston Biscuit Co. SN 171,824. Pub. 5–24–66. Filed 6–25–63.

815,959. SNOWMAN. Eskimo Pie Corporation. SN 175,567. Pub. 4–14–64. Filed 8–22–63.

815,960. PEPSUP. American Home Products Corporation. SN 185,007. Pub. 6–16–64. Filed 1–21–64.

815,961. GEMINI. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, assignee of Joe Lowe Corporation. SN 197,969. Pub. 4–6–65. Filed 7–16–64.

815,962. IGA. Independent Grocers' Alliance Distributing Co. SN 230,834. Pub. 7–12–66. Filed 10–21–65.

Class 50 — Merchandise Not Otherwise Classified

815,963. BLACK VELVET. Art Award Co., Inc. SN 191,481. Pub. 6–8–65. Filed 4–20–64.

815,964. FULLER. The Fuller Brush Company. SN 215,861. Pub. 7–12–66. Filed 4–6–65.

815,965. CHEERY CHUMS. Shel-Lynn Art Creations. SN 240,963. Pub. 7–12–66. Filed 3–14–66.

Class 51 — Cosmetics and Toilet Preparations

815,966. MEDI-SKREEN. Dermik Pharmacal Co., Inc. SN 192,800. Pub. 1–26–65. Filed 5–6–64.

Class 52 — Detergents and Soaps

815,665. (See Class 4 for this trademark.)

815,967. LIDO. "42" Products, Ltd., Inc., d.b.a. Spray Specialties Co. SN 202,075. Pub. 2–1–66. Filed 9–17–64.

815,968. PRISTINE. Colgate-Palmolive Company. SN 221,017. Pub. 10–12–65. Filed 6–14–65.

Service Marks

Class 102 — Insurance and Financial

815,969. HEARTHSTONE INSURANCE COMPANY OF MASSACHUSETTS. Hearthstone Insurance Company of Massachusetts. SN 204,163. Pub. 7–12–66. Filed 10–16–64.

Class 104 — Communication

815,970. ROHN AND DESIGN. Rohn Systems, Inc. SN 213,051. Pub. 7–12–66. Filed 3–1–65.

Class 107 — Education and Entertainment

815,971. SAFE CAR AND DESIGN. Safe Car Educational Institute. SN 223,730. Pub. 4–26–66. Filed 7–19–65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 8 — Smokers' Articles, Not Including Tobacco Products

815,972. C-Thru Products, Inc., Brooklyn, N.Y. SN 205,249. Filed P.R. 11–2–64; Am. S.R. 8–4–66.

Tobac-o-Pak

For Polyethylene Tobacco Pouches.
First use July 14, 1964.

Class 12 — Construction Materials

815,973. Hugh Miller, d.b.a. Western Stone and Construction Company, Phoenix, Ariz. SN 228,062. Filed P.R. 9–17–65; Am. S.R. 7–27–66.

PALO-VERDE PRECAST STONE

For Precast Stone.
First use Aug. 14, 1964.

815,974. Texas Industries, Inc., Arlington, Tex. SN 228,952. Filed P.R. 9–29–65; Am. S.R. 8–1–66.

EZY-BOND

For Liquid Compound for Patching, Filling Holes and Cracks and for Resurfacing Concrete, Mortar and Plaster.
First use July 24, 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

815,975. Work-O-Lite Company, Belleville, N.J. SN 224,827. Filed P.R. 8–2–65; Am. S.R. 7–5–66.

WORK-O-LITE

For Fluorescent Lamps for Industrial Lighting.
First use Oct. 1, 1940.

815,976. J. E. Plastics Mfg. Corp., Yonkers, N.Y. SN 226,076. Filed P.R. 8–19–65; Am. S.R. 7–21–66.

SALESLIGHT

For Electric Advertising Lamps.
First use June 14, 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

815,977. The Fairfield Engineering Company, Marion, Ohio. SN 175,267. Filed P.R. 8–19–63; Am. S.R. 7–26–66.

BUNKERLOADER

For Enclosed Flight Conveyor Systems.
First use about 1959.

815,978. Eversharp, Inc., Milford, Conn. SN 223,221. Filed P.R. 7–13–65; Am. S.R. 7–12–66.

FITS ALL DOUBLE EDGE RAZORS
SCHICK
THIN AZUL
5

For Razor Blades.
First use July 7, 1965.

Class 39 — Clothing

815,979. Acme Laundry & Cleaners, Inc., Little Rock, Ark. SN 215,150. Filed P.R. 3–29–65; Am. S.R. 6–15–66.

"A Man has a Right to be Particular about His Shirts"

For Shirts.
First use July 11, 1963.

TRADEMARK REGISTRATIONS RENEWED

54,769. SHINOLA. Cl. 4. 7–31–06.
54,834. KEYSTONE AND DESIGN. Cl. 34. 7–31–06.
54,938. GENUINE. Cl. 46. 8–7–06.
55,029. TIFFANY & CO. Cl. 28. 8–7–06.
55,433. (ACE OF CLUBS). Cl. 39. 8–14–06.
55,818. PRESTO. Cl. 46. 8–21–06.
56,105. TIFFANY & CO. Cl. 27. 8–21–06.
56,223. SHINOLA. Cl. 29. 9–4–06.
56,422. COVER THE EARTH AND DESIGN. Cl. 16. 9–25–06.
56,942. BROWNIE. Cl. 39. 10–23–06.
58,790. HH IN DIAMOND DESIGN. Cl. 46. 12–25–06.
58,872. TIFFANY & CO. Cl. 28. 12–25–06.
59,739. FLINCH. Cl. 22. 1–15–07.
211,768. LAFAYETTE. Cl. 46. 4–20–26.
212,506. BUHRING. Cl. 31. 5–4–26.
212,593. UHB AND DESIGN. Cl. 14. 5–11–26.
212,595. THREE CIRCLES IN RECTANGLE (DESIGN). Cl. 14. 5–11–26.
215,224. CYANOGAS. Cl. 23. 7–13–26.
215,805. SERVEL. Cl. 31. 7–27–26.
215,894. FEMME DU JOUR. Cl. 51. 7–27–26.
216,038. GATOR HIDE KRAFT WRAPPING PAPER. Cl. 37. 8–3–26.
216,075. EXCEL. Cl. 35. 8–3–26.
216,432. PARCO. Cl. 12. 8–10–26.
216,606. "ROYAL CORD FABRICS." Cl. 42. 8–17–26.
217,157. CHARM VOILE. Cl. 42. 8–24–26.
217,630. PABST-ETT. Cl. 46. 9–7–26.
217,977. ICE-BERG AND DESIGN. Cl. 46. 9–14–26.
218,070. PARK LANE. Cl. 39. 9–21–26.
218,465. DOUBLE Q. Cl. 46. 9–28–26.
218,675. ULTRALITE. Cl. 16. 9–28–26.
219,268. SETH THOMAS. Cl. 27. 10–12–26.
219,711. COTY PARIS AND DESIGN. Cl. 51. 10–19–26.
219,972. HITS THE MARK. Cl. 46. 10–26–26.
220,007. CLIMAX. Cl. 46. 10–26–26.
220,020. REVERTEX. Cl. 1. 10–26–26.
220,331. HELLER'S VAN-BOUQUET. Cl. 46. 11–9–26.
220,367. RED HOT DOLLARS. Cl. 46. 11–9–26.
220,980. ESMOND AND DESIGN. Cl. 42. 11–23–26.
222,066. TARGET AND ARROW (DESIGN). Cl. 46. 12–21–26.
222,774. BLUE ANCHOR AND DESIGN. Cl. 46. 1–11–27.
223,213. HALF AND HALF. Cl. 17. 1–18–27.
420,835. DUFF'S. Cl. 46. 5–7–46.
422,658. KYSO. Cl. 15. 8–6–46.
422,705. AMERIFLAN. Cl. 42. 8–6–46.
422,711. AMERIGLAZE. Cl. 42. 8–6–46.
422,742. CONTINENTAL ELECTRIC. Cl. 21. 8–13–46.
423,480. ONE-WAY. Cl. 46. 9–3–46.
423,719. VETAVITE. Cl. 18. 9–10–46.
423,742. 25 AOUT. Cl. 51. 9–10–46.
423,780. CLDP AND DESIGN. Cl. 51. 9–10–46.
423,949. EQUATOR. Cl. 46. 9–17–46.
423,990. CARACAS. Cl. 46. 9–17–46.
424,007. AYDS. Cl. 46. 9–17–46.
424,197. ANTI GYP. Cl. 6. 9–24–46.
424,711. DISTRIBUTION AGE. Cl. 38. 10–22–46.
424,752. WISHING. Cl. 51. 10–22–46.
425,142. ODALISQUE. Cl. 51. 11–5–46.
425,179. TENIATHANE. Cl. 18. 11–5–46.
425,251. EMPCO AND DESIGN. Cl. 26. 11–12–46.
425,584. SEMET-SOLVAY COKE AND DESIGN. Cl. 1. 11–26–46.
425,841. KRAYSTAY. Cl. 46. 12–3–46.
426,347. CYCLONE RED. Cl. 51. 12–24–46.
426,348. RIDDLE RED. Cl. 51. 12–24–46.
426,629. ANCORBOND. Cl. 40. 1–7–47.
426,667. VITA-GUARD. Cl. 2. 1–7–47.
426,820. ISLAND. Cl. 23. 1–14–47.
426,821. ULTIMATE. Cl. 23. 1–14–47.
426,920. CROWN DUET. Cl. 51. 1–21–47.
426,968. VA-LO. Cl. 18. 1–21–47.
426,974. RICH UNCLE. Cl. 22. 1–21–47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Aug. 9, 1960

702,424. BAVICO. Cl. 1.
702,425. ACRYTHERM. Cl. 1.
702,427. LION-BOND AND REPRESENTATION OF LION'S HEAD. Cl. 5.
702,429. AGICIDE. Cl. 6.
702,432. MAGNADOR N. 41 M.M. & R. Cl. 6.
702,433. MAGIC TOUCH. Cl. 6.
702,442. KWIK-FIL. Cl. 8.
702,443. SPYRON. Cl. 8.
702,446. IDOR AND DESIGN. Cl. 12.
702,448. NODRIFIL. Cl. 12.
702,455. GASOFLEX. Cl. 13.
702,463. COLOR KING. Cl. 16.
702,467. C-I-L IN OVAL DESIGN. Cl. 16.
702,468. WOODZAN AND DESIGN. Cl. 16.
702,469. SPARZAN. Cl. 16.
702,479. SUIPASTIN. Cl. 18.
702,480. TRIPLVAX. Cl. 18.
702,481. TASPIRIN. Cl. 18.
702,483. HOLZALL. Cl. 19.
702,484. SHIP-O-MATIC. Cl. 19.
702,489. E. W. BLISS CO. Cl. 21.
702,498. SANI-PAK. Cl. 21.
702,502. TWO WING DESIGN. Cl. 21.
702,506. 5 STAR AND DESIGN. Cl. 22.
702,508. JY ETC. AND DESIGN. Cl. 22.
702,509. ONE ARM BANDIT. Cl. 22.
702,510. SOMA. Cl. 22.
702,513. FLAIR AND DESIGN. Cl. 22.
702,514. GUARDIAN. Cl. 23.
702,518. WALTERSCHEID. Cl. 23.
702,521. CORTEX. Cl. 23.
702,524. DI. Cl. 23.
702,525. GENISCO. Cl. 23.
702,527. NAVKUT AND DESIGN. Cl. 23.
702,528. TURN-RITE. Cl. 23.
702,533. FORTO. Cl. 23.
702,537. MINIFACT. Cl. 26.
702,540. TIMIT. Cl. 26.
702,541. BINO-SPECS. Cl. 26.
702,544. DRILL-O-METER. Cl. 26.
702,547. A.T.C. Cl. 26.
702,549. RADCELL. Cl. 26.
702,550. LOCKER CON-WEY. Cl. 26.
702,562. STRATUS. Cl. 29.
702,563. MITTMOP AND DESIGN. Cl. 29.
702,565. SR (STYLIZED MONOGRAM). Cl. 31.
702,571. FUTURE FOAM. Cl. 32.
702,577. SR. Cl. 34.
702,580. GASOFLEX. Cl. 35.
702,581. LAWN VUE. Cl. 35.
702,582. SUPER-SENSITIVE. Cl. 36.
702,584. DORE AND REPRESENTATION OF FEATHER. Cl. 36.
702,588. LAMASTRIPE. Cl. 37.
702,597. WORK SMARTER NOT HARDER AND DESIGN. Cl. 38.
702,606. NATIONAL WILDLANDS NEWS. Cl. 38.
702,607. THE COGITATOR. Cl. 38.
702,613. ELEGANT AND DESIGN. Cl. 39.
702,617. ROMANELLA. Cl. 39.
702,618. ROMANTICA. Cl. 39.
702,623. CHALON. Cl. 39.
702,628. PEERESS BY PRESTON. Cl. 39.
702,632. "LIVABLE LOUNGER." Cl. 39.
702,637. COMBO TIGHTS AND DESIGN. Cl. 39.
702,641. SILQUISITE. Cl. 42.
702,644. AUTOGRAPH. Cl. 42.
702,652. E-J. Cl. 44.
702,655. ENAMELETTES. Cl. 44.
702,659. QUEEN BEE. Cl. 46.
702,664. MATADOR. Cl. 46.
702,668. POLO. Cl. 46.
702,671. NUTRITION VILLAGE. Cl. 46.
702,674. ALTASOL AND DESIGN. Cl. 46.
702,677. GORMIE. Cl. 46.
702,689. MARETAN. Cl. 51.
702,690. NO GOAT. Cl. 51.
702,692. FYF FOR YOUR FEET AND DESIGN. Cl. 51.
702,693. CASTEL BLEU. Cl. 51.
702,695. PROFUMERIE DAMA TORINO AND DESIGN. Cl. 51.
702,696. PURORYL. Cl. 51.
702,699. STRICKMAN. Cl. 52.
702,703. CEMOTON. Cl. 100.
702,705. PAM. Cl. 100.
702,709. B.G. GAME HUNTING SERVICE AND DESIGN. Cl. 101.
702,712. MORTONIZED. Cl. 103.
702,717. KL KROM-LUME ETC. AND DESIGN. Cl. 106.
702,723. PHILCO FACTORY SUPERVISED SERVICE AND DESIGN. Cl. 107.
702,724. THIS WEEK IN MEDICINE. Cl. 107.
702,725. FAST DRAW. Cl. 107.
702,726. UNCLE LOONEY. Cl. 107.
702,731. SUPER LIFT. Cl. 12.
702,732. KAR KARRIER. Cl. 19.

INDEX OF REGISTRANTS

SEPTEMBER 27, 1966

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

ACF Industries, Inc., New York, N.Y. 702,484, canc. Cl. 19.
A/S Elektrofabrikken, Arne Brinchmann, Skoyen, Oslo, Norway. 815,714, pub. 7–12–66. Cl. 13.
Acme Laundry and Cleaners, Inc., Little Rock, Ark. 815,979. Cl 39.
Acsa-Applicazin Chimiche S.p.A., Milan, Italy. 815,946, pub. 7–12–66. Cl. 42.
Ador Corp., Fullerton, Calif. 702,446, canc. Cl. 12.
Aeolian Corp., New York, N.Y. 815,876, pub. 7–12–66. Cl. 36.
Aeroshade Co., Inc., The, Waukesha, Wis. 813,864, pub. 7–12–66. Cl. 32.
Agulnick, Robert, and Leonard B. Secklin, Milwaukee, Wis. 815,804, pub. 7–12–66. Cl. 28.
Airguide Instrument Co., Chicago, Ill. 815,827, pub. 7–12–66, Cl. 26.
Air Reduction Co., Inc., New York, N.Y. 815,954, pub. 7–12–66. Cl. 44.
Air-Way, Inc., Toledo, Ohio. 702,498, canc. Cl. 21.
Aldo-Matics, Inc., Crystal Lake, Ill. 815,712, pub. 7–12–66. Cl. 13.
Allbaugh, Harold V., d.b.a. Super Sensitive Musical String Co., Chicago, Ill. 702,582, canc. Cl. 36.
Allcar Motor Parts Corp., New York, N.Y. 815,767, pub. 7–12–66. Cl. 21.
Allied Building Components, Inc., Tacoma, Wash. 815,701, pub. 7–12–66. Cl. 12.
Allied Chemical Coatings, Inc., Saco, Maine. 815,908, pub. 7–12–66. Cl. 39.
Allied Chemical Corp. : *See*—
Semet-Solvay Co.
Allied Laboratories, Inc., d.b.a. Pitman-Moore Co., Indianapolis, Ind., to The Dow Chemical Co., Midland, Mich. 425,179, ren. 9–27–66. Cl. 18.
Alma Foundations, Inc., New York, N.Y. 815,915, pub. 7–12–66. Cl. 39.
Almy & Orrin Inc., San Francisco, Calif. 702,513, canc. Cl. 22.
Alpine Co. : *See*—
Covey Corp.
Covey Products, Inc.
Alside, Inc., Akron, Ohio. 815,722, pub. 7–12–66. Cl. 16.
American Chain and Cable Co., Inc., Bridgeport, Conn. 815,744, pub. 7–12–66. Cl. 21.
American Chemical Mfg. & Mining Co., Rochester, N.Y., to Corn Products Co., New York, N.Y. 54,769, ren. 9–27–66. Cl. 4.
American Chemical Mfg. & Mining Co., Rochester, N.Y., to Corn Products Co., New York, N.Y. 56,223, ren. 9–27–66. Cl. 29.
American Cyanamid Co., Wayne, N.J. 215,224, ren. 9–27–66. Cl. 23.
American Filtrona Corp., Richmond, Va. 815,847, pub. 7–12–66. Cl. 31.
American Home Products Corp., New York, N.Y. 815,960, pub. 6–16–64. Cl. 46.
American Scientific Laboratories, Inc., Madison, Wis. 702,479–80, canc. Cl. 18.
American Superior Biscuit Co. : *See*—
Weston Biscuit Co., Inc.
American Tobacco Co., The, New York, N.Y. 223,213, ren. 9–27–66. Cl. 17.
Andersen Corp., Chicago, Ill. 815,694, pub. 7–12–66. Cl. 12.
Anderson & Thompson Ski Co., Inc., Seattle, Wash. 815,928–9, pub. 7–12–66. Cl. 39.
Anderson, W. O., & J. I. Anderson, Los Angeles, Calif. 815,662, pub. 7–12–66. Cl. 2.
Anson Inc., Providence, R.I. 813,710, pub. 7–12–66. Cl. 13.
Aquatech Corp., Wilmington, Del. 815,682–3, pub. 7–12–66, Cl. 12.
Architectural Mfg. Co. of America : *See*—
Shower Door Co. of America.
Art Award Co., Inc., Brooklyn, N.Y. 815,963, pub. 6–8–65. Cl. 50.
Artic Import Co., Chicago, Ill. 815,746, pub. 7–12–66. Multiple Class (Classes 21 and 36).
Asbestos Corp. of America : *See*—
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Astra Trading Corp., New York, N.Y. 815,790, pub. 7–12–66. Cl. 23.
"Automatic" Sprinkler Corp. of America, Youngstown, Ohio. 815,818–9, pub. 7–12–66. Cl. 26.
"Automatic" Sprinkler Corp. of America, Youngstown, Ohio. 815,707, pub. 7–12–66. Cl. 13.
Avery Products Corp., San Marino, Calif. 815,895, pub. 7–12–66. Cl. 37.
Avon Products, Inc., New York, N.Y. 424,752, ren. 9–27–66. Cl. 51.
Avon Products, Inc., New York, N.Y. 426,347–8, ren. 9–27–66. Cl. 51.
Baker, Franklin, C., Hobken, N.J., to General Foods Corp., White Plains, N.Y. 220,007, ren. 9–27–66. Cl. 46.
Baker, J. T., Chemical Co., Phillipsburg, N.J. 702,424–5, canc. Cl. 1.
Baker, Walter, & Co., Inc., Dorchester Mass., to General Foods Corp., White Plains, N.Y. 423,949, ren. 9–27–66. Cl. 46.
Baker, Walter, & Co., Inc., Dorchester, Mass., to General Foods Corp. White Plains, N.Y. 423,990, ren. 9–27–66. Cl. 46.
Barth, George F., d.b.a. Marketing-Sales Plans Co., New York, N.Y. 702,563, canc. Cl. 29.
Bastrop Pulp & Paper Co., Bastrop, La., to International Paper Co., New York, N.Y. 216,038, ren. 9–27–66. Cl. 37.
Baxter Laboratories, Inc., Morton Grove, Ill. 815,952, pub. 7–12–66. Cl. 44.
Beeline Fashions, Inc., to Beeline Fashions, Inc., Bensenville, Ill. 815,896, pub. 7–12–66. Cl. 39.
Bell & Howell Co., Chicago, Ill. 702,502, canc. Cl. 21.
Bell-Toptex, Inc., Long Beach, Calif. 815,906–7, pub. 7–12–66. Cl. 39.
Berkeley Machine Works, Inc., Roxbury, Mass. 815,782, pub. 7–12–66. Cl. 23.
Berliner, Edwin E., & Co., to United Merchants & Mfg., Inc., New York, N.Y. 217,157, ren. 9–27–66. Cl. 42.
Big Game Hunting Service : *See*—
Crane, James S.
Bliss, E. W., Co., Canton, Ohio. 702,489, canc. Cl. 21.
Bockmann, Arthur, Chicago, Ill. 815,747, pub. 7–12–66. Cl. 21.
Bond Stores, Inc. : *See*—
Goodlow Corp.
Borden Co., The, New York, N.Y. 815,736, pub. 7–12–66. Cl. 20.
Boss Mfg. Co., Kewanee, Ill. 815,919, pub. 7–12–66. Cl. 39.
Bourns, Inc., Riverside, Calif. 815,740, pub. 7–12–66. Multiple Class (Classes 21 and 26).
Bowers, Norman W., Sunnyvale, Calif. 702,528, canc. Cl. 23.
Breslauer, Benjamin F., d.b.a. Scientific Products of America, New York, N.Y. 815,808, pub. 7–12–66. Cl. 26.
Buhring Water Purifying Co. : *See*—
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Busch, Edwin d.b.a. Busch Film & Equipment Co., Saginaw, Mich. 815,854, pub. 7–12–66. Cl. 32.
Busch Film & Equipment Co. : *See*—
Busch, Edwin.
Bynal Products, Inc., Franklin Park, Ill. 815,802, pub. 7–12–66. Cl. 23.
C-Thru Products, Inc., Brooklyn, N.Y. 815,972. Cl. 8.
Calahan, H. A., Inc., Mamaroneck, N.Y. 815,702, pub. 7–12–66. Cl. 12.
Caldwell Dress Co., Philadelphia, Pa. 815,921, pub. 7–12–66. Cl. 39.
Caldwell Dress Co., Philadelphia, Pa. 815,925, pub. 7–12–66. Cl. 39.
Califoam Corp. of America, Compton, Calif. 815,943, pub. 7–12–66. Cl. 42.
California Fruit Exchange, Sacramento, Calif. 222,774, ren. 9–27–66. Cl. 46.
Cambridge Thermionic Corp., Cambridge, Mass. 815,772, pub. 7–12–66. Cl. 21.
Cambridge Tile Mfg. Co., The, Cincinnati, Ohio. 702,427, canc. Cl. 5.
Cam-Pact Co., Inc., Nokomis, Fla. 815,730, pub. 7–12–66. Cl. 19.
Canadian Industries Ltd., Montreal, Quebec, Canada. 702,467, canc. Cl. 16.
Carlay Co., The : *See*—
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Castagna, Maria, South Bend, Ind. 702,613, canc. Cl. 39.
Center-Line Machinery : *See*—
Lynch, Edmund J.
Centre Circuits, Inc. : *See*—
Chemcut Corp.
Chadbourn Gotham, Inc., Charlotte, N.C. 815,927, pub. 7–12–66. Cl. 39.
Chain Bike Corp., Rockaway Beach, N.Y. 702,514, canc. Cl. 23.
Champ-Items, Inc., d.b.a. Prime Auto Parts, St. Louis, Mo. 815,703, pub. 7–12–66. Multiple Class (Classes 13, 19, 21, and 23).
Chaney, Allan T., Newark, Ohio. 702,547, canc. Cl. 26.
Chartrand, Francis M., Collinsville, Ill. 702,607, canc. Cl. 38.
Chatham Mfg. Co. : *See*—
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Chemcut Corp., from Centre Circuits, Inc., State College, Pa. 815,780, pub. 7–12–66. Cl. 23.
Chesebrough-Pond's Inc. : *See*—
Prince Matchabelli, Inc.
Chicago Copper & Chemical Co., Blue Island, Ill. 424,197, ren. 9–27–66. Cl. 6.
Chickasha Mobile Homes of Missouri, Inc., North Kansas City, Mo. 815,733, pub. 7–12–66. Cl. 19.
Chilton Co. : *See*—
Distribution & Warehousing Publications Inc.
Chips 'N Twigs, Inc., Philadelphia, Pa. 815,937, pub. 7–12–66. Cl. 39.
Cincinnati Sash & Door Co., The, Cincinnati, Ohio. 702,731, canc. Cl. 12.
Clayton Mark & Co., Chicago, Ill. 216,075, ren. 9–27–66. Cl. 35.

Cleveland Crane and Engineering Co., The, Wickliffe, Ohio. 815,779, pub. 7–12–66. Cl. 23.
Cleveland Twist Drill Co., The, Cleveland, Ohio. 815,784, pub. 7–12–66. Cl. 23.
Clipper Diamond Tool Co., Inc., New York, N.Y. 815,778, pub. 7–12–66. Cl. 23.
Coca, Luis D., Union City, N.J. 702,692, canc. Cl. 51.
Cohn-Hall-Marx Co., to United Merchants and Manufacturers, Inc., New York, N.Y. 422,705, ren. 9–27–66. Cl. 42.
Cohn-Hall-Marx Co., to United Merchants and Manufacturers, Inc., New York, N.Y. 422,711, ren. 9–27–66. Cl. 42.
Coin Sales Corp., New York, N.Y. 815,671, pub. 7–12–66. Cl. 5.
Colgate-Palmolive Co., New York, N.Y. 815,968, pub. 10–25–65. Cl. 52.
Columware, Inc., Lynwood, Calif. 815,776, pub. 7–12–66. Cl. 23.
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Singer Co., The.
ConChemco, Inc., Kansas City, Mo. 815,673, pub. 7–12–66. Cl. 6.
Congoleum-Nairn Inc., Kearny, N.J. 815,735, pub. 7–12–66. Cl. 20.
Consolidated Foods Corp., d.b.a. Joe Lowe Co., from Joe Lowe Corp., Englewood, N.J. 815,961, pub. 4–6–65. Cl. 46.
Continental Electric Co., Inc., Newark, N.J. 422,742, ren. 9–27–66. Cl. 21.
Continental Merchandise Co., Inc., New York, N.Y. 702,442, canc. Cl. 8.
Continental Oil Co., Ponca City, Okla. 815,723–4, pub. 7–5–66. Cl. 16.
Corn Products Co.: *See*—
American Chemical Mfg. & Mining Co.
H-O (Hornby's Oatmeal) Co., The.
Corning Glass Works: *See*—
MacBeth-Evans Glass Co.
Corporacion Nacional Distribuidora, S.A.: *See*—
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Coty, Inc., Wilmington, Del., and New York, N.Y., to Chas. Pfizer and Co., Inc., New York, N.Y. 219,711, ren. 9–27–66. Cl. 51.
Coty, Inc., to Chas. Pfizer and Co., Inc., New York, N.Y. 423,742, ren. 9–27–66. Cl. 51.
Coty, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 423,780, ren. 9–27–66. Cl. 51.
Covey Corp., from Covey Products, Inc., d.b.a. Alpine Co., Houston, Tex. 815,663, pub. 7–12–66. Cl. 2.
Craddock-Terry Shoe Corp., Lynchburg, Va. 813,913, pub. 7–12–66. Cl. 39.
Crane, James S., d.b.a. Big Game Hunting Service, Palo Alto, Calif. 702,709, canc. Cl. 101.
Crown Aluminum Industries Corp., Pittsburgh, Pa. 815,698, pub. 7–12–66. Cl. 12.
Crown Zellerbach Corp., San Francisco, Calif. 815,892, pub. 7–12–66. Cl. 37.
DWG Cigar Corp., Detroit, Mich. 815,725, pub. 7–12–66. Cl. 17.
Deering Milliken, Inc., New York, N.Y. 815,948, pub. 7–12–66, Cl. 43.
Deeter, Raymond Y., Bellflower, Calif. 702,725, canc. Cl. 107.
Dermik Pharmacal Co., Inc., Syosset, N.Y. 815,966, pub. 1–26–65. Cl. 51.
Designs, Gerry, Inc., Boulder, Colo. 815,720, pub. 7–12–66. Cl. 19.
DeVareness, Joseph A., Church Collection Records, Dundee, Ill. 815,889, pub. 7–12–66. Cl. 37.
Devereux Butcher, Washington, D.C. 702,606, canc. Cl. 38.
Distribution & Warehousing Publications Inc., New York, N.Y., to Chilton Co., Philadelphia, Pa. 424,711, ren. 9–27–66. Cl. 38.
Dominion Electrohome Industries Ltd., Kitchener, Ontario, Canada. 815,737, pub. 4–3–62. Cl. 21.
Dore Records', Hollywood, Calif. 702,584, canc. Cl. 36.
Dorm Corp., The, Amarillo, Tex. 815,668, pub. 7–12–66. Cl. 4.
Doughboy Industries, Inc., New Richmond, Wis. 815,689, pub. 7–12–66. Multiple Class (Classes 12 and 22).
Dow Chemical Co., The: *See*—
Allied Laboratories, Inc.
Dow Chemical Co., The, Midland, Mich. 815,862, pub. 7–12–66. Cl. 32.
Dow Chemical Co., The, Midland, Mich. 815,891, pub. 7–12–66. Cl. 37.
Dresser Industries, Inc., Dallas, Tex. 702,524, canc. Cl. 23.
Dresser Industries, Inc., Dallas, Tex. 702,703, canc. Cl. 100.
Drexel Enterprises, Inc., Drexel, N.C. 815,856, pub. 7–12–66. Cl. 32.
Duff, P., and Sons, Inc., Pittsburgh, Pa., to Martha White, Inc., Nashville, Tenn. 420,835, ren. 9–27–66. Cl. 46.
Dyna-Quip Corp. Columbus, Ohio. 815,798, pub. 7–12–66. Cl. 23.
Easterday Supply Co. of California, Los Angeles, Calif. 815,665, pub. 7–12–66. Multiple Class (Classes 4, 6, and 52).
Eaton Mfg. Co.: *See*—
Eaton Yale and Towne Inc.
Eaton Yale and Towne Inc., from Eaton Mfg. Co., Cleveland, Ohio. 815,777, pub. 3–29–66. Cl. 23.
Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. 815,885, pub. 7–12–66. Cl. 37.
Economy Tooling Products, Inc., Malden, Mass. 815,680, pub. 11–16–65. Cl. 12.
Edson, Inc., Chicago, Ill. 815,855, pub. 7–12–66. Cl. 32.
Educational Activities Inc., Baldwin, N.Y. 815,874, pub. 7–12–66. Cl. 36.
Electric Storage Battery Co., The, Philadelphia, Pa. 815,931, pub. 7–12–66. Cl. 39.
Electronic Mechanical Products Co., The, Atlantic City, N.J. 425,251, ren. 9–27–66. Cl. 26.
Eleja Cap Mfg. Co., New York, N.Y. 815,902, pub. 7–12–66. Cl. 39.
Elliott Paint & Varnish Co., Chicago, Ill. 702,463, canc. Cl. 16.
Enterprise Tape Co.: *See*—
Enterprise Tape Co., Inc.
Enterprise Tape Co., Inc., d.b.a. Enterprise Tape Co., Dolton, Ill. 815,880, pub. 7–12–66. Cl. 37.
Enterprise Tape Co., Inc., d.b.a. Enterprise Tape Co., Dolton, Ill. 815,881, pub. 7–12–66. Cl. 37.
Eskimo Pie Corp., Richmond, Va. 815,959, pub. 4–14–64. Cl. 46.
Esmond Mills, The, Smithfield, R. I., to Chatham Mfg. Co., Elkin, N.C. 220,980, ren. 9–27–66. Cl. 42.
Etablissements Chevallier, d.b.a. Societe Des Anciens Etablissements Chevallier Perr, Maine de Loire, France. 702,693. canc. Cl. 51.
Ethicon, Inc., Somerville, N.J. 815,956, pub. 7–12–66. Cl. 44.
Everest & Jennings, Inc., Los Angeles, Calif. 702,652, canc. Cl. 44.
Eversharp, Inc., Milford, Conn. 815,978. Cl. 23.
Exquisite Form Industries, Inc., New York, N.Y. 815,933, pub. 7–12–66. Cl. 39.
Fabrique de Montres Wyler Societe Anonyme, Biel, Bienne, Switzerland. 815,830, pub. 7–12–66. Cl. 27.
Fairfield Engineering Co., The, Marion, Ohio. 815,977. Cl. 23.
Fairway Foods, Inc., St. Paul, Minn. 815,839, pub. 7–12–66. Cl. 29.
Fairway Foods, Inc., St. Paul, Minn. 815,840, pub. 7–12–66. Cl. 29.
Farber, S. W., Inc., New York, N.Y. 815,756, pub. 7–12–66. Cl. 21.
Fedele, Frank A., Sr., Rochester, N.Y. 815,945, pub. 7–12–66, Cl. 42.
Fernly, Joseph E., d.b.a. Fernly Products Co., Muskigon Heights, Mich. 702,483, canc. Cl. 19.
Fernly Products Co.: *See*—
Fernly, Joseph E.
Five Star Industries, Inc., Hoboken, N.J. 702,506, canc. Cl. 22.
Fleet Wholesale Supply Co., Inc., Appleton, Wis. 815,845, pub. 7–12–66. Multiple Class (Classes 31 and 35).
Flexnit Co., Inc., New York, N.Y. 815,922, pub. 7–12–66. Cl. 39.
Flinch Card Co., Kalamazoo, Mich., to Parker Brothers, Inc., Salem, Mass. 59,739, ren. 9–27–66. Cl. 22.
Fort Howard Paper Co., Green Bay, Wis. 815,894, pub. 7–12–66. Cl. 37.
"42" Products, Ltd., Inc., d.b.a. Spray Specialties Co., Santa Monica, Calif. 815,967, pub. 2–1–66. Cl. 52.
Fried, Ishak, d.b.a. Fried Trading Co., Brooklyn, N.Y. 815,766, pub. 7–12–66. Cl. 21.
Fried Trading Co.: *See*—
Fried, Ishak.
Fritz Chemical Co., Dallas, Tex. 815,691, pub. 7–12–66. Cl. 12.
Fuji Photo Film Co., Ltd., Ashigara-Kamigun, Kanagawa, Japan. 815,824, pub. 7–12–66. Cl. 26.
Fuller Brush Co., The, East Hartford, Conn. 815,666, pub. 7–12–66. Cl. 4.
Fuller Brush Co., The, East Hartford, Conn. 815,675, pub. 7–12–66. Cl. 6.
Fuller Brush Co., The, East Hartford, Conn. 815,704, pub. 7–12–66. Cl. 13.
Fuller Brush Co., The, East Hartford, Conn. 815,805, pub. 7–12–66. Cl. 24.
Fuller Brush Co., The, East Hartford, Conn. 815,837–8, pub. 7–12–66. Cl. 29.
Fuller Brush Co., The, East Hartford, Conn. 815,903, pub. 7–12–66. Cl. 39.
Fuller Brush Co., The, East Hartford, Conn. 815,939, pub. 7–12–66. Cl. 40.
Fuller Brush Co., The, East Hartford, Conn. 815,964, pub. 7–12–66. Cl. 50.
Futter, Carl A., d.b.a. The Carlay Co., Chicago, Ill., to Purex Corp., Ltd., Lakewood, Calif. 424,007, ren. 9–27–66. Cl. 46.
Future Foam & Co.: *See*—
Schneider, Charles, & Co., Inc.
Gant Perrin, Ancienne Maison Perrin Freres et Cie, Societe Anonyme: *See*—
Perrin, V., & Cie.
Gates Radio Co., Quincy, Ill. 815,759, pub. 7–12–66. Multiple Class (Classes 21 and 36).
Gelgy Chemical Corp., Ardsley, N.Y. 815,843, pub. 7–12–66. Cl. 29.
Gem Color Co., Inc., New York, N.Y. 702,510, canc. Cl. 22.
General Foods Corp.: *See*—
Baker, Franklin, Co.
Baker, Walter, & Co., Inc.
General Signal Corp., Rochester, N.Y. 815,741, pub. 7–12–66. Multiple Class (Classes 21 and 26).
General Time Corp.: *See*—
Thomas, Seth, Clock Co.
Genisco, Inc., Los Angeles, Calif. 702,525, canc. Cl. 23.
Girl Scouts of the United States of America: *See*—
Grieb, J. G., & Sons.
Goldbergh, Kermit R., d.b.a. Kavanaugh's, Baltimore, Md. 815,834, pub. 7–12–66. Cl. 28.
Goldbergh, Kermit R., d.b.a. Kavanaugh's, Baltimore, Md. 815,917, pub. 7–12–66. Cl. 39.
Gooderham, Richard M., Toronto, Ontario, Canada. 815,706, pub. 7–12–66. Cl. 13.
Goodlow Corp., to Bond Stores, Inc., New York, N.Y. 218,070, ren. 9–27–66. Cl. 39.

Gordon & Ferguson Co., St. Paul, Minn. 815,898, pub. 7–12–66. Cl. 39.
Gordon Corp., The, Farmington, Conn. 815,693, pub. 7–12–66. Cl. 12.
Gormle Kitchen's Inc., Norristown, Pa. 702,677, canc. Cl. 46.
Graham Electronics Supply, Inc., Indianapolis, Ind. 815,750, pub. 7–12–66. Cl. 21.
Granger Sofwater Supply & Mfg. Corp., d.b.a. International Watercare Corp., Manitowoc, Wis. 815,844, pub. 7–12–66. Cl. 31.
Grieb, J. G., & Sons, Philadelphia, Pa., to Girl Scouts of the United States of America, New York, N.Y. 56,942, ren. 9–27–66. Cl. 39.
Grinnell Corp., Providence, R.I. 815,708, pub. 7–12–66. Cl. 13.
Grinnell, Richard, Corp., The, Larchmont, N.Y. 815,770, pub. 7–12–66. Cl. 21.
H-O (Hornby's Oatmeal) Co., The, to Corn Products Co., New York, N.Y. 55,818, ren. 9–27–66. Cl. 46.
Hampton Sales Co., Inc., Garden City, N.Y. 815,806, pub. 7–12–66. Cl. 24.
Hampton Sales Co., Inc., Garden City, N.Y. 815,846, pub. 7–12–66. Cl. 31.
Hampton Sales Co., Inc., Garden City, N.Y. 815,867, pub. 7–12–66. Cl. 34.
Harris, P. E., & Co., to Peter Pan Seafoods, Inc., Seattle, Wash. 218,465, ren. 9–27–66. Cl. 46.
Harrison, Donna L., Dallas, Tex. 702,544, canc. Cl. 26.
Hawley & Hoops, New York, N.Y., to Henry Heide, Inc., New Brunswick, N.J. 211,768, ren. 9–27–66. Cl. 46.
Hearthstone Insurance Co. of Massachusetts, Boston, Mass. 815,969, pub. 7–12–66. Cl. 102.
Heide, Henry, New York, N.Y., to Henry Heide, Inc., New Brunswick, N.J. 54,938, ren. 9–27–66. Cl. 46.
Heide, Henry, New York, N.Y., to Henry Heide, Inc., New Brunswick, N.J. 58,790, ren. 9–27–66. Cl. 46.
Heide, Henry, Inc.: *See*—
Hawley & Hoops.
Heide, Henry.
Heide, Henry, Inc., New Brunswick, N.J. 220,367, ren. 9–27–66. Cl. 46.
Heller, B., & Co., Chicago, Ill. 220,331, ren. 9–27–66. Cl. 46.
Henco Enterprises, Inc., Niles, Mich. 815,785, pub. 7–12–66. Cl. 23.
Henley, J. W., d.b.a. J. W. Henley Mfg. Co., Memphis, Tenn. 815,686, pub. 7–12–66. Cl. 12.
Hennings, Oscar, d.b.a. Buhring Water Purifying Co., New York, N.Y., to Asbestos Corp. of America, Garwood, N.J. 212,506, ren. 9–27–66. Cl. 31.
Hepler, Elmer, Carlsbad, New Mexico. 702,690, canc. Cl. 51.
Higby, William, Bakersfield, Calif. 702,655, canc. Cl. 44.
Hill Novelties Mfg. Corp., New York, N.Y. 702,541, canc. Cl. 26.
Hollingsworth, John D., On Wheels, Inc., Greenville, S.C. 815,799, pub. 7–12–66. Cl. 23.
Homasote Co., Trenton, N.J. 815,690, pub. 7–12–66. Cl. 12.
Hompesch, George, d.b.a. Service Hard-Chromium Co., Union, N.J. 702,717, canc. Cl. 106.
House of Maji: *See*—
Rife, Lois R.
Howard Precision Inc., Fanwood, N.J. 815,748, pub. 7–12–66. Cl. 21.
Hughes & Hatcher, Inc., Detroit, Mich. 815,905, pub. 7–12–66. Cl. 39.
Hughes, Thomas J., Jr., Roanoke, Va. 702,726, canc. Cl. 107.
Illinois Tool Works, Inc., Chicago, Ill. 815,786, pub. 7–12–66. Cl. 23.
Independent Grocers' Alliance Distributing Co., Chicago, Ill. 815,726, pub. 7–12–66. Cl. 18.
Independent Grocers' Alliance Distributing Co., Chicago, Ill. 815,841, pub. 7–12–66. Cl. 29.
Independent Grocer's Alliance Distributing Co., Chicago, Ill. 815,940, pub. 7–12–66. Cl. 40.
Independent Grocers' Alliance Distributing Co., Chicago, Ill. 815,953, pub. 7–12–66. Cl. 44.
Independent Grocers' Alliance Distributing Co., Chicago, Ill. 815,962, pub. 7–12–66. Cl. 46.
International Paper Co.: *See*—
Bastrop Pulp & Paper Co.
International Register Co., Chicago, Ill. 815,826, pub. 7–12–66. Cl. 26.
International Watercare Corp.: *See*—
Granger Sofwater Supply & Mfg. Corp.
Intra Continental Semiconductors Inc., New York, N.Y. 815,743, pub. 12–21–65. Cl. 21.
Island Equipment Corp., Hialeah, Fla. 426,820, ren. 9–27–66. Cl. 23.
Island Equipment Corp., Hialeah, Fla. 426,821, ren. 9–27–66. Cl. 23.
J. E. Plastics Mfg. Corp., Yonkers, N.Y. 815,976. Cl. 21.
Jackson, Samuel, Mfg. Corp., Lubbock, Tex. 815,868–9, pub. 7–12–66. Cl. 34.
Jeffrey Gallon Mfg. Co., Columbus, Ohio. 815,731, pub. 7–12–66. Cl. 19.
Johns-Manville Corp., New York, N.Y. 815,688, pub. 7–12–66. Cl. 12.
Jones & Yandell Mfg. Co., Inc., Canton, Miss. 702,508, canc. Cl. 22.
Jonsales Ltd., London, England. 702,443, canc. Cl. 8.
K & W Tackle Mfg., Firm, Warrensburg, Mo. 702,509, canc. Cl. 22.
K.D.P. Ltd., to Rexertex Ltd., London, England. 220,020, ren. 9–27–66. Cl. 1.
Kvp Sutherland Paper Co., Kalamazoo, Mich. 815,893, pub. 7–12–66. Cl. 37.
Kanamaru Shoten, Ltd., Tokyo, Japan. 815,677, pub. 7–12–66. Cl. 8.
Kandu Chemicals, Inc., New York, N.Y. 702,699, canc. Cl. 52.
Kavanaugh's: *See*—
Goldberg, Kermit R.
Keystone Steel & Wire Co., Peoria, Ill. 815,695–6, pub. 7–12–66. Cl. 12.
Kenwood Laboratories, Inc., Brooklyn, N.Y. 702,481, canc. Cl. 18.
Key Mfg. Co., Marathon, Fla. 702,689, canc. Cl. 51.
Kidde, Walter, and Co., Inc., Belleville, N.J. 815,781, pub. 7–12–66. Cl. 23.
Kingsbacher-Murphy Co., Los Angeles, Calif. 815,877, pub. 7–12–66. Cl. 37.
Klear-Vu Corp.: *See*—
Siegel, A. L., Co., Inc.
Knight-Gordon Engineering, Tulsa, Okla. 702,540, canc. Cl. 26.
Knomark, Inc., Jamaica, N.Y. 815,667, pub. 7–12–66. Cl. 4.
Koratron Co., Inc., San Francisco, Calif. 815,934, pub. 7–12–66. Cl. 39.
Kraft Foods Co., to National Dairy Products Corp., Chicago, Ill. 425,841, ren. 9–27–66. Cl. 46.
Krege, S. S., Co., Detroit, Mich. 815,899, pub. 7–13–65. Cl. 39.
Lahr, Jerry, Fort Lauderdale, Fla. 702,597, canc. Cl. 38.
Lanier, Gerald & Arthur Etro: *See*—
Telesco International.
Lawter Chemicals, Inc., Chicago, Ill. 815,678–9, pub. 7–12–66. Cl. 11.
Leavilte Ltd., Near Lichfield, England. 815,865, pub. 7–12–66. Cl. 33.
Lionel Trading Co., Inc., New York, N.Y., to Parfums Corday Inc., Hollywood, Calif. 215,894, ren. 9–27–66. Cl. 51.
Liquid Package Equipment Co., Woodstock, Ill. 815,803, pub. 7–12–66. Cl. 23.
Lockers (Engineers) Ltd., Warrington, England. 702,550, canc. Cl. 26.
Loral Corp., Scarsdale, N.Y. 815,814, pub. 7–12–66. Cl. 26.
Lowe, Joe, Co.: *See*—
Consolidated Foods Corp.
Lowenstein, M., & Sons, Inc., New York, N.Y. 702,644, canc. Cl. 42.
Lucente Enterprises, Inc., Youngstown, Ohio. 702,696, canc. Cl. 51.
Lugene, Inc., New York, N.Y. 815,825, pub. 7–12–66. Cl. 26.
Lynch, Edmund J., d.b.a. Center-Line Machinery, Orange, Calif. 815,793, pub. 7–12–66. Cl. 23.
MacBeth-Evans Glass Co., Pittsburgh, Pa., to Corning Glass Works, Corning, N.Y. 54,834, ren. 9–27–66. Cl. 34.
Machinery Development, Inc., Denver, Colo. 815,787, pub. 7–12–66. Cl. 23.
Madero, Rogerio A., d.b.a. Corporacion Nacional Distribuidora, S.A., Mexico City, Mexico. 815,807, pub. 7–12–66. Cl. 24.
Madero, Rogerio A., d.b.a. Orfeon-Videovox, S.A., Mexico City, Mexico. 815,757, pub. 7–12–66. Cl. 21.
Madison Hosiery Corp., New York, N.Y. 702,637, canc. Cl. 39.
Magna Sales Co., Chicago, Ill. 815,920, pub. 7–12–66. Cl. 39.
Magnecraft Electric Co., Chicago, Ill. 815,768, pub. 7–12–66. Cl. 21.
Magnus, Mabee & Reynard, Inc., New York, N.Y. 702,482, canc. Cl. 6.
Maine, Machinery Inc., Falmouth, Maine. 815,788, pub. 7–12–66. Cl. 23.
Marie Inc., Coconut Grove, Fla. 815,904, pub. 7–12–66. Cl. 39.
Market Forge Co., Everett, Mass. 815,709, pub. 7–12–66. Cl. 13.
Marketing-Sales Plans Co.: *See*—
Barth, George F.
Marvel Engineering Co., Chicago, Ill. 815,848–51, pub. 7–12–66. Cl. 31.
Matador Food & Export Co.: *See*—
Mogens, Berg.
Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan. 815,752, pub. 7–12–66. Cl. 21.
Mattel, Inc., Hawthorne, Calif. 815,774, pub. 7–12–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 815,935, pub. 7–12–66. Cl. 39.
McDonald Products Corp., Buffalo, N.Y. 815,861, pub. 7–12–66. Cl. 32.
Mead Corp., The, Dayton, Ohio. 815,878–9, pub. 7–12–66 Cl. 37.
Medical Products Division: *See*—
Vernitron Corp.
Medical News, Inc., New York, N.Y. 702,724, canc. Cl. 107.
Mellink Steel Safe Co., Toledo, Ohio. 815,857, pub. 7–12–66. Cl. 32.
Mercantile Stores Co., Inc., Wilmington, Del. 702,581, canc. Cl. 35.
Merchandiser's Association, Inc., Chicago, Ill. 815,835, pub. 7–12–66. Cl. 28.
Metallschlauchfabrik Pforzheim vorm. Hch. Witzenmann G.m.b.H., Pforzheim, Baden, Germany. 702,455, canc. Cl. 13.
Metallschlauchfabrik Pforzheim vorm. Hch. Witzenmann G.m.b.H., Pforzheim, Baden, Germany. 702,580, canc. Cl. 35.
Mettler Electronics Corp., Pasadena, Calif. 815,742, pub. 7–12–66. Cl. 21.

Mettler Electronics Corp., Pasadena, Calif. 815,949, pub. 7–12–66. Cl. 44.
Miami Sportswear Co., Inc., Opa Locka, Fla. 702,623, canc. Cl. 39.
Micro Electric Motors, Inc., Utuado, Puerto Rico. 815,755, pub. 7–12–66. Cl. 21.
Midland-Ross Corp., Toledo, Ohio. 815,871, pub. 7–12–66. Cl. 34.
Miller, George F., Torrance, Calif. 815,727, pub. 7–12–66. Cl. 19.
Miller, Hugh, d.b.a. Western Stone and Construction Co., Phoenix, Ariz. 815,973. Cl. 12.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 815,875, pub. 7–12–66. Cl. 36.
Minnesota Rubber Co., Minneapolis, Minn. 815,872, pub. 7–12–66. Cl. 35.
Modern Devices, Inc., Glenbrook, Conn. 815,771, pub. 7–12–66. Cl. 21.
Morgens, Berg, d.b.a. Matador Food & Export Co., Charlottenlund, near Copenhagen, Denmark. 702,664, canc. Cl. 46.
Molded Fiber Glass Body Co., Union City, Pa. 815,728, pub. 7–12–66. Cl. 19.
Moody Machine Products Co., Inc., Providence, R.I. 815,789, pub. 7–12–66. Cl. 23.
Moore, Maynard H., Jr., Inc., Stoneham, Mass. 426,629. ren. 9–27–66. Cl. 40.
Morton's Inc., Boston, Mass. 702,712, canc. Cl. 103.
Multiproducts, Inc., Tarrytown, N.Y. 815,860, pub. 7–12–66. Cl. 32.
Murphy Oil Corp., El Dorado, Ark. 815,718, pub. 7–12–66. Cl. 15.
Nadella S.A., Seine et Oise, France. 815,734, pub. 7–12–66. Multiple Class (Classes 19 and 23).
National Dairy Products Corp.: *See*—
Pabst Corp.
National Dairy Products Corp.: *See*—
Kraft Foods Co.
National Starch & Chemical Corp., New York, N.Y. 815,670, pub. 7–12–66. Cl. 5.
National Tank Co., Tulsa, Okla. 815,866, pub. 7–12–66. Cl. 34.
Nelco Corp., New York, N.Y. 815,800–1, pub. 7–12–66. Cl. 23.
New York Mills Corp., to United Merchants & Mfg., Inc., New York, N.Y. 216,606, ren. 9–27–66. Cl. 42.
Nippon Tile Industrial Co., Ltd., Tajimi, Gifu, Japan. 815,681, pub. 7–12–66. Cl. 12.
North American Viking Drill Corp.: *See*—
Viking Drill & Tool Co., Inc.
Northwest Paper Co., The, Cloquet, Mich. 815,886, pub. 7–12–66. Cl. 37.
Oberland Silk Mfg. Co. Ltd., Chan, Zug, Switzerland. 702,641, canc. Cl. 42.
Orfeon-Videovox, S.A.: *See*—
Madero, Rogerio A.
Originators Engineering & Development Co., The, Fort Worth, Tex. 815,791, pub. 7–12–66. Cl. 23.
Pabst Corp., to National Dairy Products Corp., Chicago, Ill. 217,630, ren. 9–27–66. Cl. 46.
Pacific Car & Foundry Co., Renton, Wash. 815,795, pub. 7–12–66. Cl. 23.
Palleon Electronics, Ltd., Cornwall, Ontario, Canada. 815,713, pub. 7–12–66. Cl. 13.
Pam Associates, Inc., Baltimore, Md. 702,705, canc. Cl. 100.
Pandora Knitwear, Inc., New York, N.Y. 815,916, pub. 7–12–66. Cl. 39.
Panduit Corp., Tinley Park, Ill. 815,763–4, pub. 7–12–66. Cl. 21.
Parfums Corday Inc.: *See*—
Lionel Trading Co., Inc.
Park City Cornice Works, Inc., Bridgeport, Conn. 216,432, ren. 9–27–66. Cl. 12.
Parker Brothers, Inc.: *See*—
Flinch Card Co.
Parker Brothers, Inc., Salem, Mass. 426,974, ren. 9–27–66. Cl. 22.
Parks, Lloyd E., Co.: *See*—
Parks, Lloyd E.
Parks, Lloyd E., d.b.a. Lloyd E. Parks Co., Charlotte, N.C. 815,720, pub. 7–12–66. Cl. 16.
Pasqualina "Profumerie Dama-Toring" Di Zandrino-Odenino: *See*—
Pasqualina Zandrino-Odenino.
Pasqualina Zandrino-Odenino, d.b.a. Pasqualina "Profumerie Dama-Toring" Di Zandrino-Odenino, Turin, Italy. 702,695, canc. Cl. 51.
Penfon Associated Hosiery Mills, Inc., High Point, N.C. 815,900, pub. 7–12–66. Cl. 39.
Per Gunnar Brundell, Gavle, Sweden. 702,521, canc. Cl. 23.
Perfection Frocks, Inc., New York, N.Y. 815,932, pub. 7–12–66. Cl. 39.
Perrin, V., & Cie, New York, N.Y., and Grenoble, France, to Gant Perrin, Ancienne Maison Perrin Freres et Cie. Societe Anonyme, Paris, France. 55,433, ren. 9–27–66. Cl. 39.
Peter Pan Seafoods, Inc.: *See*—
Harris, P. E., & Co.
Pfeiffer Co., The: *See*—
Pfeiffer, S., Mfg. Co.
Pfeiffer, S., Mfg. Co., to The Pfeiffer Co., St. Louis, Mo. 426,968, ren. 9–27–66. Cl. 18.
Pfizer, Chas., and Co., Inc.: *See*—
Coty, Inc.
Philco Corp., Philadelphia, Pa. 702,723, canc. Cl. 107.
Piedmont Shirt Co., Greenville, S.C. 815,926, pub. 7–12–66 Cl. 39.
Pitman-Moore Co.: *See*—
Allied Laboratories, Inc.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 815,721, pub. 7–12–66. Cl. 16.
Polo Wholesale Grocery Co., Hoboken, N.J. 702,668, canc. Cl. 46.
Poly-Sil Inc., Pittsburgh, Pa. 702,448, canc. Cl. 12.
Post-Crete, Inc., Glendale, Calif. 815,700, pub. 7–12–66. Cl. 12.
Preston Shirt Co., Inc., New York, N.Y. 702,628, canc. Cl. 39.
Prime Auto Parts: *See*—
Champ-Items, Inc.
Prince Matchabelli, Inc., to Chesebrough-Pond's Inc., New York, N.Y. 426,920, ren. 9–27–66. Cl. 51.
Purex Corp., Ltd.: *See*—
Futter, Carl A.
Puritan Fashions Corp., New York, N.Y. 815,909–12, pub. 7–12–66. Cl. 39.
Puritan Fashions Corp., New York, N.Y. 815,914, pub. 7–12–66. Cl. 39.
Puritan Sportswear Corp., The, Altoona, Pa. 815,923, pub. 7–12–66. Cl. 39.
Pyronics, Inc., Cleveland, Ohio. 815,705, pub. 7–12–66. Multiple Class (Classes 13, 31, and 34).
Queen Bee Food Products, Inc., from Specialty Bakers Service, Detroit, Mich. 702,659, canc. Cl. 46.
Ramapo Instrument Co., Inc., Bloomingdale, N.J. 815,811–13, pub. 7–12–66. Cl. 26.
Raphel, Jack H., New York, N.Y. 702,562, canc. Cl. 29.
Reichhold Chemicals, Inc., White Plains, N.Y. 815,687, pub. 7–12–66. Cl. 12.
Revertex, Ltd.: *See*—
K.D.P. Ltd.
Richardson, Howe, Scale Co., Clifton, N.J. 815,820–22, pub. 7–12–66. Cl. 26.
Riegel Paper Corp., New York, N.Y. 702,588, canc. Cl. 37.
Rife, Lois R., d.b.a. House of Maji, Pasadena, Calif. 815,883, pub. 7–12–66. Cl. 37.
Riley Advertising Co.: *See*—
Riley, Harry D.
Riley, Harry D., d.b.a. Riley Advertising Co., Omaha, Nebr. 815,888, pub. 7–12–66. Cl. 37.
Roberts, Dr. David, Veterinary Co., Inc., Waukesha Wis. 702,429 canc. Cl. 6.
Roberts-Gordon Appliance Corp., Buffalo, N.Y. 815,870, pub. 7–12–66. Cl. 34.
Robinco New York, Inc., New York, N.Y. 702,533, canc. Cl. 23.
Rockingham Mills, Inc., Rockingham, N.C. 815,944, pub. 7–12–66. Cl. 42.
Rodale Mfg. Co., Inc., Emmaus, Pa. 815,758, pub. 7–12–66. Cl. 21.
Rodi and Wienenberger Aktiengesellschaft, Pforzheim, Germany. 815,829, pub. 7–12–66. Cl. 27.
Rohn Systems, Inc., Peoria, Ill. 815,970, pub. 7–12–66. Cl. 104.
Ronson Corp., Woodbridge, N.J. 815,676, pub. 7–12–66. Cl. 8.
Rosenstein, Nettie, Inc., New York, N.Y. 425,142, ren. 9–27–66. Cl. 51.
Rowe, Robert G., d.b.a. Saturn Electronics Co., Grand Island, N.Y. 815,815, pub. 7–12–66. Cl. 26.
Royal Crest Venetian Blinds, Inc., Rossford, Ohio. 815,853, pub. 7–12–66. Cl. 32.
Royal Master Grinders, Inc., Riverdale, N.J. 815,783, pub. 7–12–66. Cl. 23.
Rubiani, Paul, Fontenay-Sous-Bois (Seine), France. 815,897, pub. 7–12–66. Cl. 39.
S-B Power Surgical Tools, Inc., Fort Worth, Tex. 815,950, pub. 7–12–66. Cl. 44.
Sabatini, Josephine A., New York, N.Y. 702,632, canc. Cl. 39.
Safe Car Educational Institute, Butler, N.J. 815,971, pub. 4–26–66. Cl. 107.
Saturn Electronics: *See*—
Rowe, Robert G.
Scapa Dryers, Inc., Waycross, Ga. 815,947, pub. 7–12–66. Cl. 42.
Schneider, Charles, & Co., Inc., d.b.a. Future Foam & Co., Council Bluffs, Iowa. 702,571, canc. Cl. 32.
Scientific Products of America: *See*—
Breslauer, Benjamin F.
Scott Paper Co., Philadelphia, Pa. 815,882, pub. 7–12–66. Cl. 37.
Scripto, Inc., Atlanta, Ga. 815,884, pub. 7–12–66. Cl. 37.
Sea & Ski Co.: *See*—
Botany Industries.
Sea & Ski Corp.
Sea & Ski Corp., to Botany Industries, d.b.a. Sea & Ski Co., Reno, Nev. 815,951, pub. 7–12–66. Cl. 44.
Seaboard Chemical Corp., Livingston, N.J. 702,433, canc. Cl. 6.
Sealectro Corp., Mamaroneck, N.Y. 815,761, pub. 7–12–66. Cl. 21.
Sears, Roebuck & Co., Chicago, Ill. 702,565, canc. Cl. 31.
Sears, Roebuck & Co., Chicago, Ill. 702,577, canc. Cl. 34.
Seckiln, Leonard B.: *See*—
Agulnick, Robert.
Selfix, Inc., Chicago, Ill. 815,842, pub. 7–12–66. Cl. 29.
Semet-Solvay Co., to Allied Chemical Corp., New York, N.Y. 425,584, ren. 9–27–66. Cl. 1.
Sequential Electronic Systems, Inc., Elmsford, N.Y. 815,816, pub. 7–12–66. Cl. 26.
Sequential Electronic Systems, Inc., Elmsford, N.Y. 815,817, pub. 7–12–66. Cl. 26.
Serv-el Corp., Evansville, Ind., to Whirlpool Corp., Benton Harbor, Mich. 215,805, ren. 9–27–66. Cl. 31.
Service Hard-Chromium Co.: *See*—
Hompesch, George.

Servo Corp. of America, Hicksville, N.Y. 815,769, pub. 7–12–66. Cl. 21.
Shel-Lynn Art Creations, Los Angeles, Calif. 815,965, pub. 7–12–66. Cl. 50.
Sherwin-Williams Co., Cleveland, Ohio. 56,422, ren. 9–27–66. Cl. 16.
Shower Door Co. of America, d.b.a. Architectural Mfg. Co. of America, Atlanta, Ga. 815,864–5, pub. 7–12–66. Cl. 12.
Siegel, A. L., Co., Inc., to Klear-Vu Corp., New York, N.Y. 426,667, ren. 9–27–66. Cl. 2.
Signa-Com Corp., Beverly, Mass. 815,773, pub. 7–12–66. Cl. 21.
Simplex Shoe Mfg. Co., Inc., Milwaukee, Wis. 815,936, pub. 7–12–66. Cl. 39.
Sinclair Refining Co., New York, N.Y. 815,719, pub. 7–12–66. Cl. 15.
Singer Co., The, New York, N.Y., from Commercial Controls Corp., Rochester, N.Y. 815,739, pub. 7–12–66. Multiple Class (Classes 21 and 26).
Sipe, James B., & Co., to James B. Sipe and Co., Pittsburgh, Pa. 218,675, ren. 9–27–66. Cl. 16.
Slumber Shop, Inc., New Orleans, La. 815,859, pub. 7–12–66. Cl. 32.
Smith Industries International, Inc., Gardena Heights, Calif. 815,796, pub. 7–12–66. Cl. 23.
Smucer, Roman, d.b.a. Roman Smucer Woolen, New York, N.Y. 702,617–8, canc. Cl. 39.
Smucer, Roman, Woolen: *See*—
Smucer, Roman.
Societe des Anciens Etablissements Chevallier Perr: *See*—
Etablissements Chevallier.
Societe d'Exploitation de Produits Industriels, Sepi, Paris, France. 702,537, canc. Cl. 26.
Solidaire, Inc., Monrovia, Calif. 702,527, canc. Cl. 23.
Specialty Bakers Service: *See*—
Queen Bee Food Products, Inc.
Sprague & Carleton, Inc., Keene, N.H. 815,858, pub. 7–12–66. Cl. 32.
Spray Specialties Co.: *See*—
"42" Products, Ltd., Inc.
Stacy Fabrics Corp., New York, N.Y. 815,942, pub. 7–12–66. Cl. 42.
Staley, A. E., Mfg. Co., Decatur, Ill. 219,972, ren. 9–27–66. Cl. 46.
Staley, A. E., Mfg. Co., Decatur, Ill. 222,066, ren. 9–27–66. Cl. 46.
Standard Oil Co., Louisville, Ky., to Standard Oil Co., Lexington, Ky. 422,658, ren. 9–27–66. Cl. 15.
Standard Oil Co. of California, San Francisco, Calif. 815,715, pub. 7–12–66. Cl. 13.
Standard Oil Co. of California, San Francisco, Calif. 815,717, pub. 7–12–66. Cl. 13.
Standard Packing Corp., New York, N.Y. 815,664, pub. 7–12–66. Multiple Class (Classes 2 and 37).
Sterling Drug Inc.: *See*—
Winthrop Chemical Co., Inc.
Stockton Mfg. Co., Inc., Dallas, Tex. 815,901, pub. 7–12–66. Cl. 39.
Strathmore Shoe Co., Inc., Brockton, Mass. 815,924, pub. 7–12–66. Cl. 39.
Sun Mfg. Co., Yakima, Wash. 702,732, canc. Cl. 19.
Sunbeam Corp., Chicago, Ill. 815,794, pub. 7–12–66. Cl. 23.
Super Sensitive Musical String Co.: *See*—
Allbaugh, Harold V.
Swarovski, D., & Co., Wattens, Tyrol, Austria. 815,831, pub. 7–12–66. Cl. 28.
Sweets Co., of America, Inc., The, d.b.a. The Sweets Co. of America, Inc., to Tootsie Roll Industries, Inc., Hoboken, N.J. 423,480, ren. 9–27–66. Cl. 46.
Swing-O-Lite, Inc., Hackensack, N.J. 815,760, pub. 7–12–66. Cl. 21.
Tel-E-Lect, Inc., Minneapolis, Minn. 815,797, pub. 7–12–66. Cl. 23.
Telesco International, The, from Gerald Lainer & Arthur Etro, New York, N.Y. 815,738, pub. 7–12–66. Cl. 21.
Terraspan Ltd., Birmingham, England. 815,716, pub. 7–12–66. Cl. 13.
Texas Industries, Inc., Arlington, Tex. 815,974. Cl. 12.
Textron Inc., Providence, R.I. 815,836, pub. 7–12–66. Cl. 28.
Thomas Mfg. Corp., Parkton, Md. 815,762, pub. 7–12–66. Cl. 21.
Thomas, Seth, Clock Co., Thomaston, Conn., to General Time Corp., Stamford, Conn. 219,268, ren. 9–27–66. Cl. 27.
Thonet Industries, Inc., New York, N.Y. 815,863, pub. 7–12–66. Cl. 32.
Tiffanq & Co., New York, N.Y. 55,029, ren. 9–27–66. Cl. 28.
Tiffany & Co., New York, N.Y. 56,105, ren. 9–27–66. Cl. 27.
Tiffany & Co., New York, N.Y. 58,872, ren. 9–27–66. Cl. 28.
Tootsie Roll Industries, Inc.: *See*—
Sweets Co., of America, Inc., The.
Tractor Implement Motive Parts, Inc., Whitehaven, Tenn. 815,775, pub. 4–13–65. Cl. 23.
Transistor Automation Corp., Cambridge, Mass. 815,809, pub. 7–12–66. Multiple Class (Classes 26 and 34).
Tri-Point Industries, Inc., Albertson, N.Y. 815,660, pub. 7–12–66. Cl. 1.
Tropical Jewelers, Inc., Miami, Fla. 815,833, pub. 7–12–66. Cl. 28.
Trtanj, Albert W., D.D.S., Granite City, Ill. 815,890, pub. 7–12–66. Cl. 37.
Trump-Ross Industrial Controls, Inc., Billerica, Mass. 815,765, pub. 7–12–66. Cl. 21.
Tucker, Jacob, Boca Raton, Fla. 702,671, canc. Cl. 46.
Uddeholms Aktiebolag, Uddeholm, Sweden. 212,959, ren. 9–27–66. Cl. 14.
Uddeholms Aktiebolag, Uddeholm, Sweden. 212,595, ren. 9–27–66. Cl. 14.
United Merchants & Mfg., Inc.: *See*—
Berliner, Edwin E., & Co.
Cohn-Hall-Marx Co.
New York Mills Corp.
United States Borax & Chemical Corp., Los Angeles, Calif. 815,674, pub. 11–30–65. Cl. 6.
United States Ceramic Tile Co., Canton, Ohio. 815,697, pub. 7–12–66. Cl. 12.
United States Rubber Co., New York, N.Y. 815,754, pub. 7–12–66. Multiple Class (Classes 21 and 31).
United States Shoe Corp., The, Cincinnati, Ohio. 815,930, pub. 7–12–66. Cl. 39.
Valor Mfg. Co., Inc., The, New Bedford, Mass. 815,938, pub. 7–12–66. Cl. 39.
Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. 815,918, pub. 7–12–66. Cl. 39.
Vernitron Corp., d.b.a. Medical Products Division, Torrance, Calif. 815,957, pub. 7–12–66. Cl. 44.
Vertecs Corp., Kirkland, Wash. 815,661, pub. 7–21–66. Multiple Class (Classes 12, 1, and 34).
Victoreen Instrument Co., The, Cleveland, Ohio. 702,549, canc. Cl. 26.
Viewlex, Inc., Holbrook, N.Y. 815,810, pub. 7–12–66. Cl. 26.
Viking Drill & Tool Co., Inc., d.b.a. North American-Viking Drill Corp., St. Paul, Minn. 815,792, pub. 7–12–66. Cl. 23.
Virginia Iron & Metal Co., Inc., Richmond, Va. 815,699, pub. 7–12–66. Cl. 12.
Voigtlander, A.G., Braunschweig, Germany. 815,828, pub. 7–12–66. Cl. 26.
Voyager Corp., The, St. Clair Shores, Mich. 815,732, pub. 7–12–66. Cl. 19.
Waldorf Paper Products Co., St. Paul, Minn. 815,887, pub. 7–12–66. Cl. 37.
Waldron Furniture Mfg. Corp., Waldron, Ark. 815,852, pub. 7–12–66. Cl. 32.
Walterscheid, Jean, Siegburg, Germany. 702,518, canc. Cl. 23.
Waltham Watch Co., Chicago, Ill. 815,832, pub. 7–12–66. Cl. 28.
Ward Leonard Electric Co., Mount Vernon, N.Y. 815,745, pub. 7–12–66. Cl. 21.
Wesson Oil & Snowdrift Co., Inc., New Orleans, La. 702,674, canc. Cl. 46.
Western Boat Building Corp., Tacoma, Wash. 815,692, pub. 7–12–66. Cl. 12.
Western Stone and Construction Co.: *See*—
Miller, Hugh.
Weston Biscuit Co., Inc., d.b.a. American Superior Biscuit Co., Passaic, N.J. 815,958, pub. 5–24–66. Cl. 46.
Weyerhaeuser Co., Tacoma, Wash. 815,941, pub. 7–12–66. Cl. 42.
Wheelock Signals, Inc., Long Branch, N.J. 815,751, pub. 7–12–66. Cl. 21.
Whirlpool Corp.: *See*—
Serv-el Corp.
White Consolidated Industries, Inc., Cleveland, Ohio. 815,711, pub. 7–12–66. Cl. 13.
White, Martha, Inc.: *See*—
Duff, P., and Sons, Inc.
White, S. S., Co., Philadelphia, Pa. 815,995, pub. 7–12–66. Cl. 44.
Winthrop Chemical Co., Inc., to Sterling Drug Inc., New York, N.Y. 423,719, ren. 9–27–66. Cl. 18.
Woodbury Chemical Co., St. Joseph, Mo. 815,672, pub. 7–12–66. Cl. 6.
Woodzan Industries, Inc., Lodi, N.J. 702,468–9, canc. Cl. 16.
Work-o-Lite Co., Belleville, N.J. 815,975. Cl. 21.
Xerox Corp., Rochester, N.Y. 815,823, pub. 7–12–66. Cl. 26.
Yagishita Electric Co., Ltd., Kanagawa-ken, Japan. 815,753, pub. 7–12–66. Cl. 21.
Yardney Electric Corp., New York, N.Y. 815,749, pub. 7–12–66. Cl. 21.
Zook Space Age Products, Inc., Pensacola, Fla. 815,669, pub. 7–12–66. Cl. 4.

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